



# Environmental Monitoring Report

Reporting Period

01/11/2010-28/11/2010



Former Bayer Crop Science Site  
Hauxton  
Cambridgeshire

10<sup>th</sup> December 2010

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## 1.0 Introduction

### 1.1. *General*

This report has been prepared and submitted in accordance Environmental Permitting Regulations 2007 with reference to the approved Deployment of Vertase FLI's Environmental Permit Ref: ERP/QP3293FY for the remediation works at the former Bayer CropScience site Hauxton, and in accordance with Condition 4 of the planning permission dated 5<sup>th</sup> February 2010.

The time period that this report represents is from the 1<sup>st</sup> of November 2010, until the 28<sup>th</sup> of November 2010.

### 1.2. *The site*

The site is the former Bayer Crop Science site, Cambridge Road, Hauxton, Cambridge. The site was used for the storage and production of agrichemicals from the 1940's through to ceasing production in 2004. The site was used primarily for the synthesis, formulation, packaging and storage of agrichemicals (both herbicides and pesticides). It is this former historical use that has led to the contamination legacy of soil and groundwater at the site.

There is also a Waste Water Treatment Plant (WWTP) and other agricultural land which is part of the former land holding of Bayer Crop Science and is part of that controlled by Harrow Estates. The WWTP will be utilised to assist in the treatment of recovered groundwater and will be improved to undertake this task and then maintained for the duration of the remediation. This area of the site will not be subject to remediation as part of this phase of works but will be remediated as a separate phase of work under a separate contract and separate Remediation Method Statement in the future.

### 1.3. *Remediation Brief and Philosophy*

The philosophy for this remediation project is set out in detail in the agreed Remediation Method Statement. The remediation of the site has been developed from knowledge of the site gained from historical site investigations, Atkins Preliminary Conceptual Model Report August 2006 (interpretative report defining the current and correct understanding of the geological and



environmental conditions) and subsequent sampling and analysis defining the extent of contamination following further investigation. This information has allowed the conceptual site model and pollutant linkages to be developed to form the remediation methodology. Whilst the remediation work itself is complex and varied, the philosophy is simple and defines the proposed remedial action required. This philosophy has been designed with the brief in mind. This brief can be defined as “a remediation to address all pollutant linkages and ensure that following remediation and re-development no unacceptable risks will remain associated with the treated area of the site by applying the best available techniques not entailing excessive costs (BATNEEC)”.

The philosophy behind the remediation is to remove all uncertainty relating to soils and groundwater within the site area by the excavation, characterisation and treatment. All pathways between the identified sources and receptors will be removed and the contaminant mass within soils reduced as far as the practical limits of cost effective technology permit. The Remediation Method Statement sets out how this philosophy or strategy will be achieved practically on site and validated with confirmative post remediation risk assessment.

These remediation works are also required to satisfy the regulators that adequate remediation works have been completed to satisfy their requirements under Part IIa of the Environmental Protection Act 1990.

## 2.0 Monthly Progress

### Week 34. Week Commencing 1<sup>st</sup> November 2010

Excavation continued in grid squares G16 and G17, removing non odorous visually clean soils and placing them in to treatment beds adjacent to the excavation. Breaking out of concrete followed by excavation preceded through grid squares G15, H16 and I16. A trail pitting exercise was conducted within these grid square to asses the depth of impact from contaminants. A number of treatment beds were relocated to release the eastern parts of the site to enable the next phase of works in this area. A trial pitting and borehole exercise was conducted along the bentonite cut-off wall to assess the integrity of the structure and the level of impact from contaminated ground adjacent. Contaminated soils resistant to biological treatment previously quarantined on site, were hauled from site under controlled conditions and disposed of at a suitable off site hazardous waste treatment facility, in total six wagon loads of recalcitrant soils left the site.

### Week 35. Week Commencing 8<sup>th</sup> November 2010

Due to a number of heavy rain events during the week no further excavation was undertaken, however braking out of concrete continued through grid squares D16 to D18 and E16 to E18, concrete was stockpile to await further crushing and processing. The investigatory works on the structure and levels of contamination within the bentonite cut-off wall continued, progressing along the northeast boundary. The turning of treatment beds was also hampered due to the wet weather conditions and a number of beds were covered to prevent the infiltration of ponding rain water. Two of the remaining single storey substations was demolished to allow excavation of contaminated materials beneath them, the demolition arising were stockpiled to await crushing and processing.

### Week 36. Week Commencing 15<sup>th</sup> November 2010

Breaking out of concrete was undertaken in grid squares K7 and J6, the main excavation works were undertaken in grid squares C17, D17 and E 17 removing non odours sands and gravels, this material was stockpiled and tested to asses the levels of contamination. Turning and processing of the treatment beds continued with treatment beds being selected for processing depending on their moisture levels and predominant wind direction.

Sections of the eastern boundary wall were removed using large plant under the supervision of the site manager. This was carried out due to the instability of the structure, and the wall was replaced with solid panel fencing.

**Week 37. Week Commencing 22<sup>nd</sup> November 2010**

Excavation of non odorous sand and gravel continued through grid squares E and F, 11 to 14, this material was formed into treatment beds adjacent to the excavation. Excavation was also undertaken in grid squares C7, D7 and E7 to an approximate depth of 1.5m removing hydrocarbon impacted soils and forming them into treatment beds within the excavation. A crusher and screener were mobilised to site and commenced crushing the recent stockpile of broken concrete, preventative measures were in place to stop dust arising from this process. Turning and processing of the treatment beds continued with treatment beds being selected for processing depending on their moisture levels and predominant wind direction.

### **3.0 Environmental Monitoring Summary**

The environmental monitoring locations detailed in the Environmental Permit deployment form for the site are highlighted in drawing D907\_33C in Appendix A.

The detailed environmental monitoring data can be found in Appendix B, the following chapters summarise the findings from the monitoring undertaken by Vertase FLI Site Engineers.

#### **3.1. Odour and VOC Emissions**

Odour and VOC monitoring around the site boundary commenced on the 22<sup>nd</sup> March 2010 and has been undertaken twice daily at eight compass points around the site boundary, in the public access areas. Odour and VOC related observations in between the eight compass points around the site are also noted by the Vertase FLI representative undertaking the monitoring.

In addition to physical control via covers and management of activities odour controlling suppressants and masking agent are being used around the site boundary to mitigate the impact of odour migration off site. Initially two mobile telescopic misting fans were used on site and a full boundary misting system was also erected to supplement the mobile units, along with the addition of two further mobile units to focus specifically on the excavation.

Site generated odours including those from the remediation processes and the odour suppression systems observed during the monitoring rounds beyond the site boundary are listed in the environmental monitoring data spreadsheet in Appendix B.

The Vertase FLI Environmental Engineers and Site Management team have been working closely to prevent odours and VOC's generated by the remediation processes migrating off site, along with trying to achieve a fine balance of using a variety of odour control fragrance's at a variety of dilutions to reduce the impact of any odours detected off site.

The Environmental Engineers have logged the actions undertaken on site to reduce the impact of VOC/odours off site, these are noted in the environmental monitoring data in Appendix B. All mitigation measures have been in accordance with the actions stipulated in the deployment

form, including some additional actions to reduce the potential of odour nuisance e.g. repositioning of mobile odour control systems.

During the twice daily environmental monitoring a Photoionisation Detector (PID) has been used to record VOC's present beyond the site boundary. During the reported period VOC's, were detected by the PID (Limit of detection of 0.1ppm) on the following occasion:

- 18/11/2010 (10:00) Approximately 5m south of the eastern monitoring location a maximum intermittent PID reading of 0.2ppm was recorded, the odour was described as a moderate chemical and earthy odour, a mobile odour control unit was dispatched to the eastern parts of the site to aid in the reduction of this odour.

All PID reading above 1ppm recorded beyond the site boundary are reported to the Environment Agency immediately, along with details of the additional mitigation methods being implemented to reduce the migration of VOC's from the site.

Long term passive VOC monitoring is carried out at eight compass point locations around the site boundary, in the public accessible areas, further monitoring locations are located within the centre of the waste water treatment works, on Church Road, Hauxton and Queens Close, Harston.

The results for the long term passive VOC monitoring carried out between 28/11/2010 and 25/11/2010 are pending laboratory analysis and will be submitted at a later date in a supplemental report.

### ***3.2. Dust Fibre and Particulate Emission***

Both real time dust measurement and long term dust deposition monitoring has been undertaken around the site boundary at six compass point locations, north, east, south, west with two monitoring positions in the northeast (drawing D907\_30C, Appendix A).

Real time airborne dust monitoring is undertaken as a minimum twice daily by an Environmental Engineer using a 'Dustmate' dust particle monitor around the site boundary as part of the environmental monitoring schedule, results are recorded in the environmental monitoring

spreadsheet (Appendix B). The 'Dustmate' dust particle monitor will not function correctly in wet weather conditions, therefore on occasion data may be missing from the environmental monitoring spreadsheet for this reason. Dust migration is however less likely in wet weather conditions.

Dust particle measurements at each monitoring location have varied, with the higher dust readings being generally at the locations adjacent to the heavily trafficked Cambridge Road (A10). The average Total Suspended Particulates (TSP) reading around the site is  $134.40\mu\text{g}/\text{m}^3$ , the average PM10 dust reading around the site is  $79.17\mu\text{g}/\text{m}^3$ . Where a potential for dust has been observed, on site dust suppression methods have been deployed immediately to reduce the generation of site dust and all haul routes are continually wetted to prevent dust release.

Directional dust deposition gauges at the six monitoring locations are analysed every fortnight for Effective Area Coverage (EAC) (percentage of dust deposition relating to the potential to cause nuisance), results generated by an external laboratory are presented in Appendix D.

Baseline dust monitoring undertaken between 19/02/2010 to 19/03/2010 (4 locations monitored) recorded a maximum dust deposition rate of 0.54%EAC at the western monitoring location.

Dust monitoring undertaken from the 15/10/2010 to 01/11/2010 (6 locations monitored) recorded a maximum dust deposition rate was 0.65%EAC at the west monitoring location. All other locations had a maximum dust deposition rate of 0.59%EAC, or less.

Dust monitoring undertaken from the 01/11/2010 to 12/11/2010 (5 locations monitored) recorded a maximum dust deposition rate of 2.00% EAC at the north monitoring location. All other locations had a maximum dust deposition rate of 1.91%EAC, or less.

Dust monitoring undertaken from the 12/11/2010 to 26/11/2010 (6 locations monitored) recorded a maximum dust deposition rate of 0.43% EAC at the northeast1, northeast2 and east monitoring locations. All other locations had a maximum dust deposition rate of 0.36%EAC, or less.

Dust deposition values of less than 2.5% are regarded as having a very low nuisance potential. Only when percentages rise from 2.5% – 5% EAC is dust considered to have a low nuisance causing potential. During the reported period dust, fibre and particle emissions have been low, and have not caused visual dusting off site.

### **3.3. Control of Mud and Debris**

A pressure washer has been on site constantly to allow any maintenance or plant delivery vehicles leaving contaminated parts of the site to be washed down thoroughly first, as not to take potentially contaminated mud and debris through the clean zone and off site. The movement of vehicles between the contaminated and clean parts of the site is strictly controlled by the site management team.

### **3.4. Noise**

Noise monitoring around the site boundary commenced on the 22<sup>nd</sup> March 2010 and has been undertaken twice daily as a minimum, recording findings at eight compass points around the site boundary in the public access areas (drawing D907\_30C, Appendix A).

Site operations are restricted to 8am to 6pm and site noise levels are consistently at an average acceptable low background level of 66.54dB. Exceedance's of the 80dB threshold (stipulated in the Environmental Permit deployment document) have been recorded during the monitoring period, however traffic along the A10 has been identified as the source of the slightly elevated noise levels. Data is recorded in the environmental monitoring data spreadsheet, Appendix B.

### **3.5. Litter**

All litter occurrences are removed from within the site, and off site around the boundary fence, and disposed of appropriately. Litter is generally low off site, and is well managed on site, by all site personnel. All recordings of the presence of litter are noted in the Environmental Monitoring Data spreadsheet in Appendix B.



## **4.0 Surface and Ground Water Condition**

### **4.1 Surface Water Monitoring**

As part of the environmental monitoring programme, the Riddy Brook located to the east of the site (Drawing D907\_33C, Appendix A) is inspected daily as a minimum at two locations up and down stream for general observations, on any discolouration, sedimentation etc. The observations are recorded on the Environmental Monitoring Data (Appendix B). Throughout the monitoring period there have been no visual signs that the remediation works on site are having any impact on the Riddy Brook.

The water level within the Riddy Brook is monitored and recorded on a daily basis at a minimum of two locations, footbridge adjacent to Mill House (Riddy 1) and the most southerly footbridge over the Riddy Brook, adjacent to the eastern corner of the site (Riddy 4). Two further locations are also monitored, Riddy 2 at the footbridge over the Riddy Brook approximately 150m southeast of Mill House and the former fire exit bridge (Riddy 3), 210m southeast of Mill House. All the water level data is recorded in the main groundwater level data sheet in Appendix E. During the monitoring period there has been very little change in level and flow along the Riddy Brook.

### **4.2 Surface Water Sampling and Analysis**

Upstream and downstream water samples from both the River Cam (Granta) and the Riddy Brook are taken on a monthly basis. The results for samples taken on 26<sup>th</sup> November 2010 are pending and will be presented in a supplemental report.

### **4.3 Groundwater Level Monitoring**

Groundwater levels are recorded within at least 11 borehole locations onsite on a daily basis, to ensure the groundwater beneath the site remains in a static condition during the remediation works and does not pose a risk to surface and groundwater bodies beyond the site boundary.

During the initial excavation works on site very little groundwater has been encountered, the majority of excavations located in the northern parts of the site have exceeded a depth of 4m below current ground level and have penetrated the Gault Clay in parts.

The main source of water encountered during excavations has been discontinuous contaminated perched water present in the Made Ground. This water has been captured and treated in the Waste Water Treatment Works associated with the site.

From approximately 2-3m below ground level discontinuous thin sand and gravel bands have also produced some limited quantities of water, which have tended to dry up within 24 hours.

The groundwater levels measured at locations around the site are shown in drawing D907\_31E, in appendix A. The groundwater levels are presented in Appendix E.

Groundwater contour plots are drawn up on a weekly basis to interpret the potential movement of the water beneath the site. Contour plots D907\_116, D907\_117, D907\_118 and D907\_119 (Appendix G) illustrate the weekly groundwater levels for the reported period.

The five contour plots constructed (Appendix G) illustrate that there have been very few subtle changes in groundwater levels during the monitoring period.

There has been no recharge of groundwater in the central and northern part of the site where the main excavations have taken place, the base of excavations on site are approximately at 10.00mAOD and remain free of groundwater. There has not been any change to the pumping regime in this part of the site during the monitoring period.

#### **4.4. Groundwater Sampling and Analysis**

Groundwater samples from 11 monitoring locations on site are taken on a monthly basis. The results for samples taken on 26<sup>th</sup> of November 2010 are pending and will be presented in a supplemental report.

## **5.0 Waste Water Treatment Plant**

The Waste Water Treatment Plant (WWTP) is part of the former land holding of Bayer Cropscience and is part of that controlled by Harrow Estates. The WWTP was an integral part of the former Bayer Crop Science site, located to the west of the A10, specifically designed to treat and discharge liquid waste products derived from the production of agrochemicals (both herbicides and pesticides) and sewage from the facility.

The WWTP has been previously operated (until the 15<sup>th</sup> of March 2010) by Alpheus Environmental Ltd. to maintain the required discharge volume generated by the groundwater pumping systems on the main Bayer Cropscience site along the bentonite cut off wall and the high bay warehouse.

Vertase FLI have established a maintenance programme and control procedures to ensure the WWTP is operated within the constraints of the discharge consent. Essential system checks and improvements have been made to the plant to ensure it can treat the volume and concentrations of influent generated by the continued groundwater control and the contaminated water recovered during the remediation activities on the main site.

The composition of the water discharged to the River Cam (Granta) must not exceed the permitted levels in paragraphs 1.7.1, 1.8.1 and 1.8.2 of the discharge consent PR1NF/1744D01 Issued and regulated by the Environment Agency.

The treated effluent is sampled at the specified location as stipulated in the discharge consent. Vertase FLI also sample the influent to the WWTP, along with a sample taken after the primary carbon treatment, this is to assess the performance of main treatment process of the WWTP and highlight potential expiry of the primary carbon vessels.

The fortnightly samples are analytically tested for the water quality parameters and the chemical compounds specified in paragraph 1.7.1 of the discharge consent PR1NF/1744 D 01. The data is tabulated and presented in Appendix H along with the raw data from the laboratory reports.

Throughout the reporting period the WWTP has been successful in treating the compounds listed within paragraph 1.7.1 (consent PR1NF/1744D01) to acceptable levels for discharge to the River Cam (Granta) under the regulated discharge consent.

The Environment Agency carry out independent discharge monitoring at the WWTP on a monthly basis, during the reportable period Vertase FLI and Harrow Estates Plc have not been notified of any unacceptable effluent discharging to the River Cam (Granta) from the operating plant.

## 6.0 Contaminants Not Previously Identified

To fulfil the requirements of condition 4 and condition 9, Planning Condition Document ref:S/2307/06/f Issued 10/02/2010, Vertase FLI are continually undertaking soil characterisation sampling prior to remediation processes to identify the types and concentrations of contaminants present in the specific grid squares across the entire site.

The soil characterisation samples undergo a series of laboratory analyses consisting of targeted analysis, screening against known contaminants and a full GCMS scan to identify any contaminants not previously identified.

All characterisation samples analysed and found to contain previously unidentified contaminants are reported in accordance with condition 9 of the Planning Condition Document ref:S/2307/06/f Issued 10/02/2010.

From the commencement of site works (15/03/2010) to 28/11/2010, sixty six characterisation samples have been taken by Vertase FLI in partnership with Atkins to assess the contamination type and concentrations prior to remediation of the materials. Thirty two characterisation samples analysed contained a total of twenty one compounds / potential contaminants that had not been previously identified.

A summary table of the soil characterisation testing is presented in Appendix I, the previously unidentified compounds are listed here, with comments regarding the origin and likely usage on site.

The remediation project consultants Atkins continuously review the soil characterisation analysis and report previously unidentified contaminants in accordance with condition 9, Planning Condition Document ref:S/2307/06/f Issued 10/02/2010.






**Appendix A**

**Drawings**

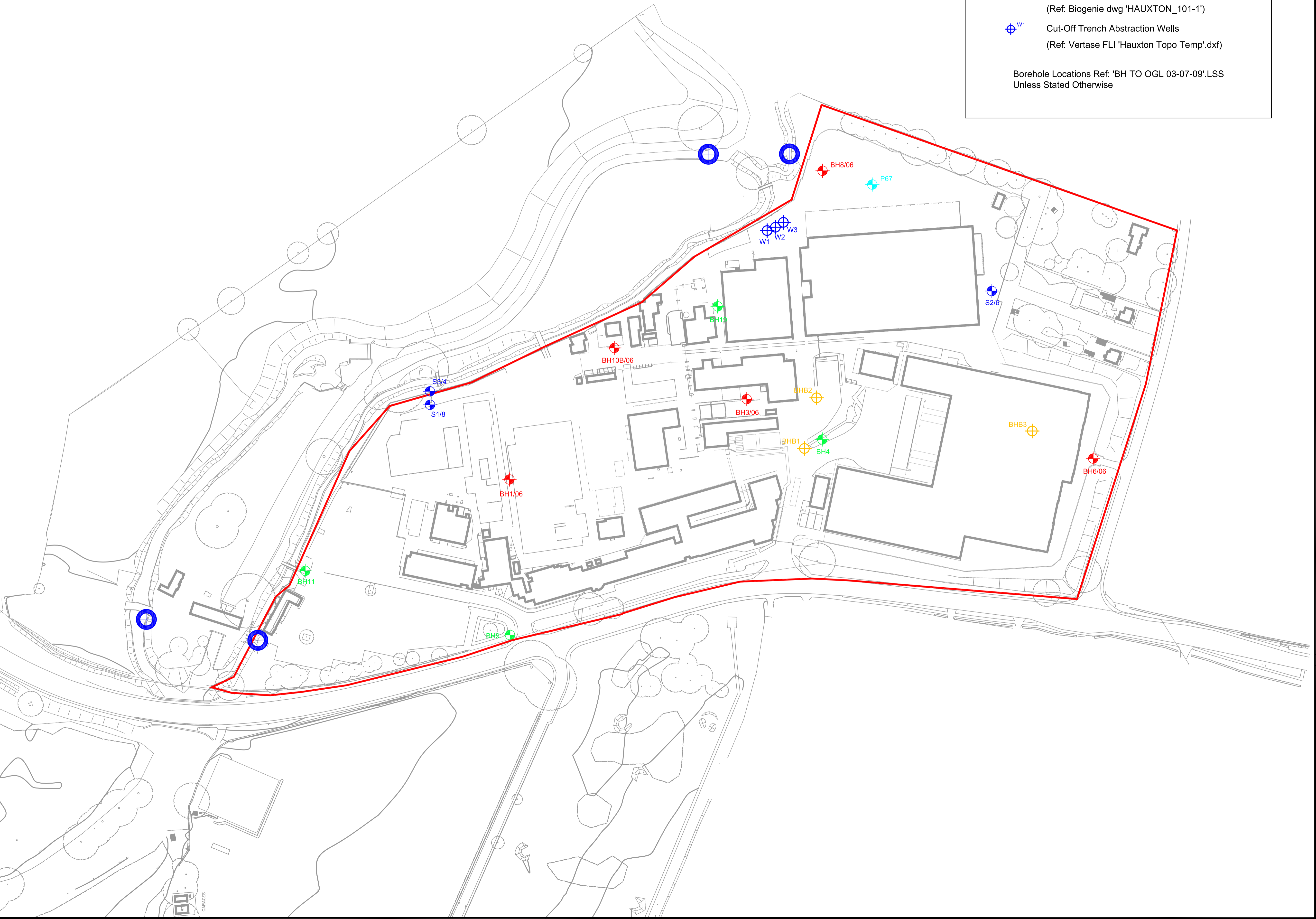




**Legend**

-  BH1/06 Atkins Exploratory Hole Location
-  BH7, P67 Previous Borehole Location
-  Water Sampling Location
-  BHB1 Biogenic Boreholes  
(Ref: Biogenic dwg 'HAUXTON\_101-1')
-  W1 Cut-Off Trench Abstraction Wells  
(Ref: Vertase FLI 'Hauxton Topo Temp'.dxf)

Borehole Locations Ref: 'BH TO OGL 03-07-09'.LSS  
Unless Stated Otherwise



E	BHB1, BHB2, BHB3, W1, W2, W3, BH3-06 & BH08-06 Added (BH3-06 & BH08-06 Ref: D907_31 Iss 0)	MRG	17-08-09
D	BH1 Removed & BH19 Added	MRG	07-07-08
C	BH1 Added	JWH	11 June 2008
B	BH5/06 Erased S2/6 Added	JWH	09 June 2008
A	Boreholes Erased	JWH	14 May 2008
	FIRST ISSUE		23 April 2008

Rev.	Description	Revised By	Date
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**Vertase F.L.I.**

- Bristol Head Office: Tel: 01275 397600 Fax: 01275 397601
- Sheffield Office: Tel: 01246 813289 Fax: 01246 812983
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www.vertasefl.com

Site Address: Bayer Site Hauxton Cambridge	Rev: <b>E</b>
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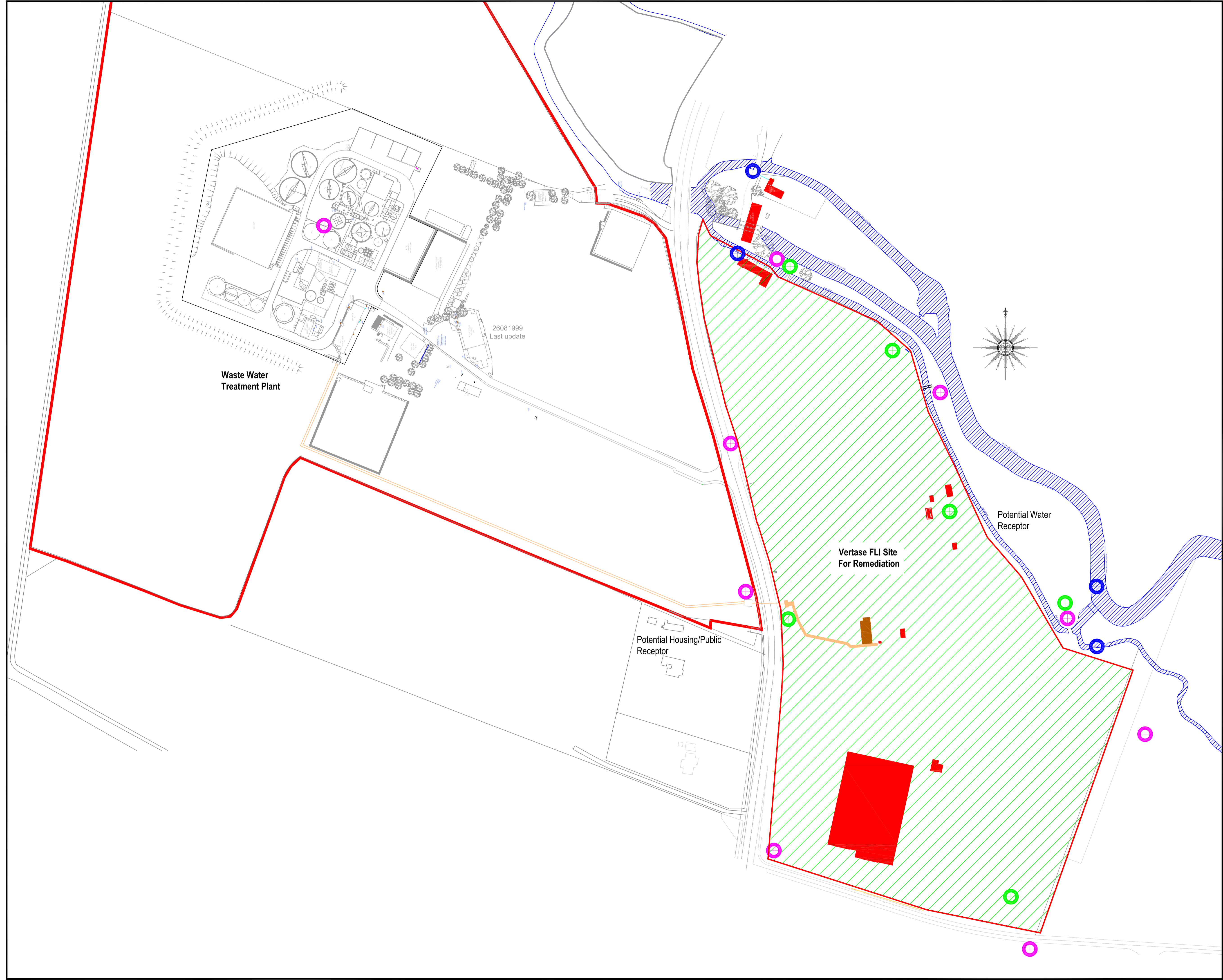
Title: Retained Boreholes for Monitoring & Reference

Client: Harrow Estates

Drawn: JWH	Checked: MA	Approved: MA
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Dwg: D907_31	Contract: 907BRI	Scale: 1:1000
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**Legend**

- Sub-Station/Buildings to Remain
- Water Course
- Vertase FLI Site for Remediation
- Mobile Treatment Licence Boundary
- Site Effluent Sump and Ducting
- Diffusion Tubes /Monitoring Location
- Dust Monitoring Location
- Water Sampling Location

Drawing Base : Ref  
LW/HAUX-002/2006

C	Dust Monitoring Locations Amended	MRG	14 July 08
B	Dust Monitoring Location Amended	JWH	09 June 08
A	Water Sampling Points Added Treatment Building Amended FIRST ISSUE	JWH	15 May 2008 21 April 2008

Rev.	Description	Revised By	Date
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- Bristol Head Office: Tel: 01275 397600 Fax: 01275 397601
  - Sheffield Office: Tel: 01246 813289 Fax: 01246 812983
  - Hertford Office: Tel: 01992 535757 Fax: 01992 535858
  - Manchester Office: Tel: 01614 372708 Fax: 01614 376300
- email: info@vertasefli.co.uk  
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Site Address: Bayer Site, Hauxton, Cambridge

Title: Environmental Monitoring Plan

Client: Harrow Estates

Drawn: JWH    Checked: MA    Approved: MA

Dwg: D907\_33    Contract: 907BRI    Scale: 1:1250

## **Appendix B**

### **Environmental Monitoring Data**







## Appendix C

### Long term Passive VOC Monitoring



Results Pending

## **Appendix D**

### **Directional Dust Monitoring**

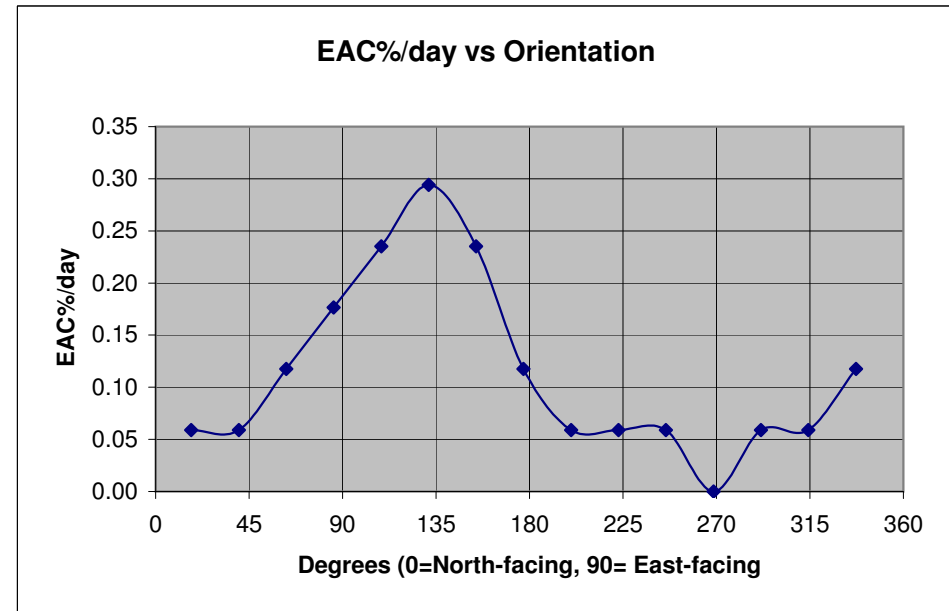
### Gauge Number - North location 907BRI

#### Sticky Pad Data

Date On 15/10/2010 Date Off 01/11/2010 Days = 17

Clean = 90

X Axis mm	Meter	Angle deg	EAC%/day
20	88	337	0.12
40	89	314	0.06
60	89	291	0.06
80	90	269	0.00
100	89	246	0.06
120	89	223	0.06
140	89	200	0.06
160	88	177	0.12
180	86	154	0.24
200	85	131	0.29
220	86	109	0.24
240	87	86	0.18
260	88	63	0.12
280	89	40	0.06
300	89	17	0.06



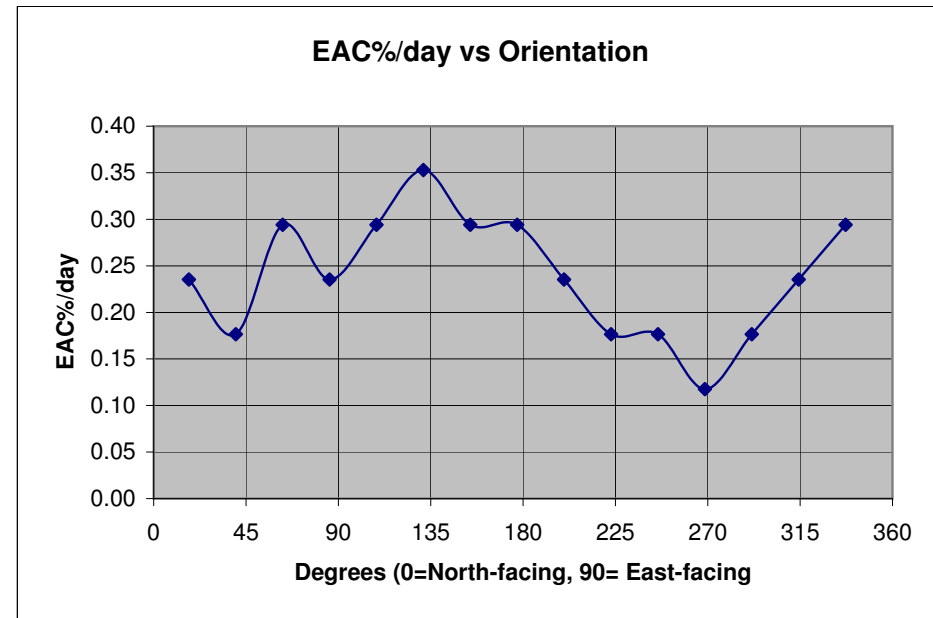
Note: Cells coloured yellow are inputs.  
The rest are either constants or calculated values.  
The calculation is based on taking readings at 40mm intervals along the sticky pad.

### Gauge Number - NE1 location 907BRI

#### Sticky Pad Data

Date On **15/10/2010** Date Off **01/11/2010** Days = 17  
 Clean = **90**

X Axis mm	Meter	Angle deg	EAC%/day
20	85	337	0.29
40	86	314	0.24
60	87	291	0.18
80	88	269	0.12
100	87	246	0.18
120	87	223	0.18
140	86	200	0.24
160	85	177	0.29
180	85	154	0.29
200	84	131	0.35
220	85	109	0.29
240	86	86	0.24
260	85	63	0.29
280	87	40	0.18
300	86	17	0.24



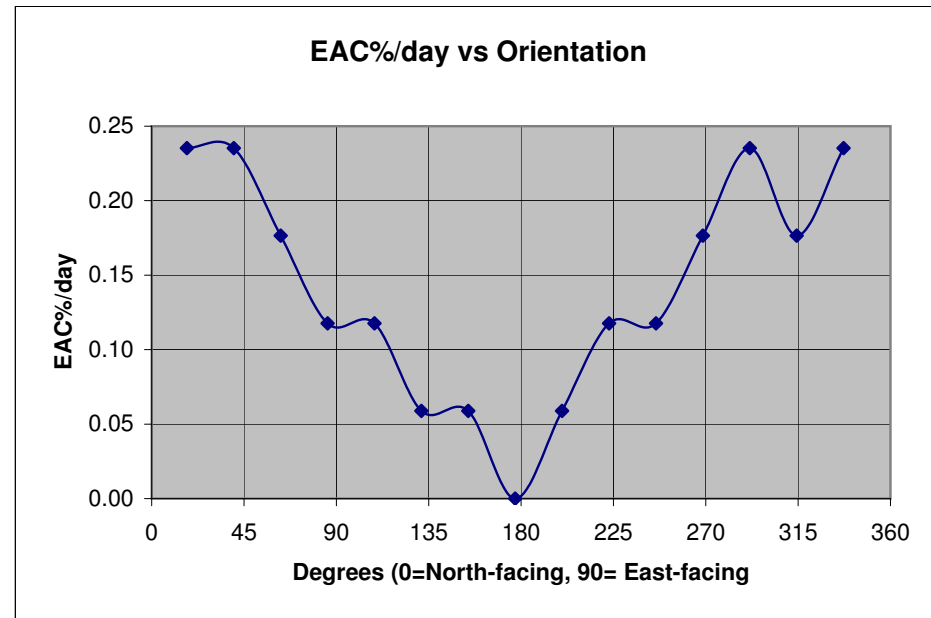
Note: Cells coloured yellow are inputs.  
 The rest are either constants or calculated values.  
 The calculation is based on taking readings at 40mm intervals along the sticky pad.

### Gauge Number - NE2 location 907BRI

#### Sticky Pad Data

Date On **15/10/2010** Date Off **01/11/2010** Days = 17  
 Clean = **90**

X Axis mm	Meter	Angle deg	EAC%/day
20	86	337	0.24
40	87	314	0.18
60	86	291	0.24
80	87	269	0.18
100	88	246	0.12
120	88	223	0.12
140	89	200	0.06
160	90	177	0.00
180	89	154	0.06
200	89	131	0.06
220	88	109	0.12
240	88	86	0.12
260	87	63	0.18
280	86	40	0.24
300	86	17	0.24



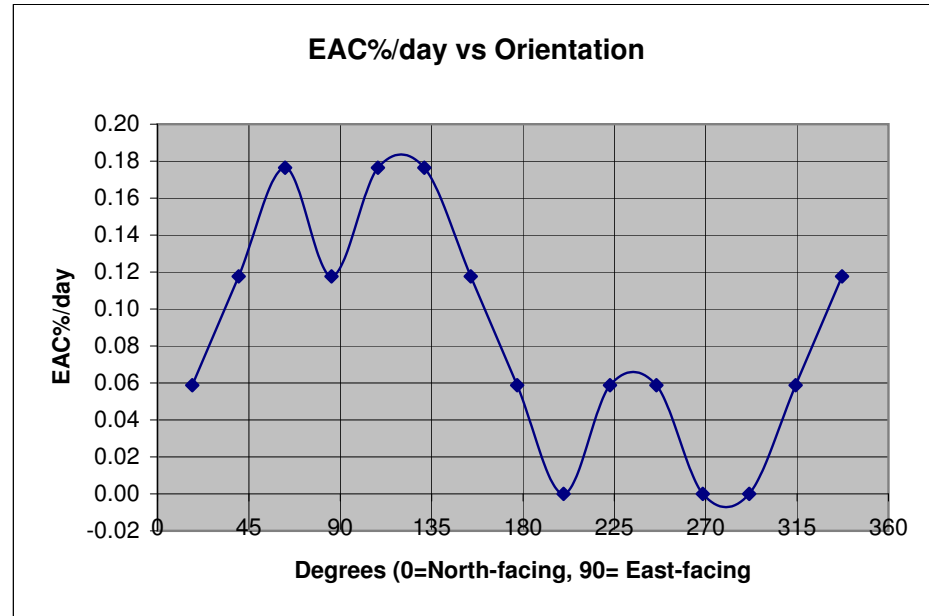
Note: Cells coloured yellow are inputs.  
 The rest are either constants or calculated values.  
 The calculation is based on taking readings at 40mm intervals along the sticky pad.

### Gauge Number - South location 907BRI

#### Sticky Pad Data

Date On **15/10/2010** Date Off **01/11/2010** Days = 17  
 Clean = **90**

X Axis mm	Meter	Angle deg	EAC%/day
20	88	337	0.12
40	89	314	0.06
60	90	291	0.00
80	90	269	0.00
100	89	246	0.06
120	89	223	0.06
140	90	200	0.00
160	89	177	0.06
180	88	154	0.12
200	87	131	0.18
220	87	109	0.18
240	88	86	0.12
260	87	63	0.18
280	88	40	0.12
300	89	17	0.06
			5.29



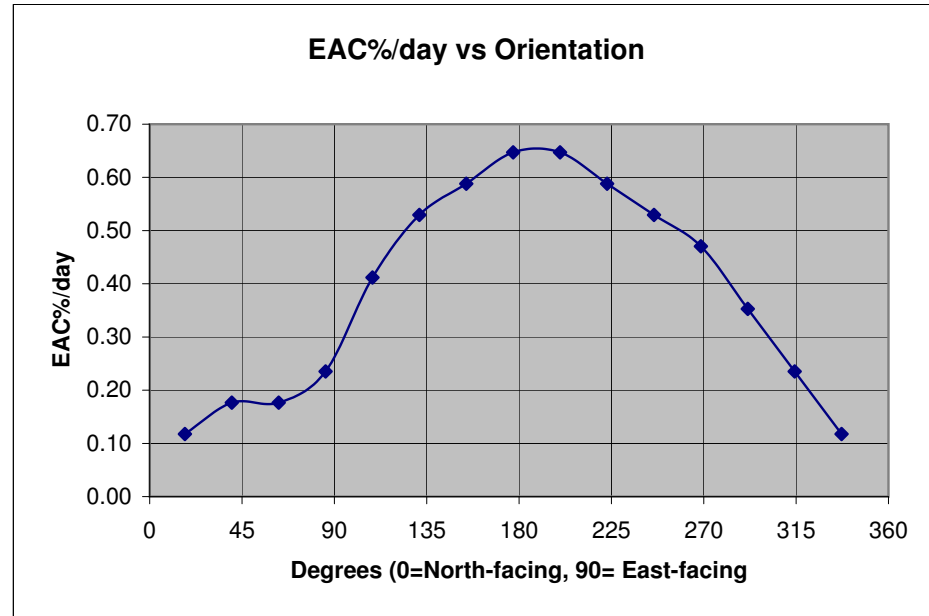
Note: Cells coloured yellow are inputs.  
 The rest are either constants or calculated values.  
 The calculation is based on taking readings at 40mm intervals along the sticky pad.

### Gauge Number - West location 907BRI

#### Sticky Pad Data

Date On **15/10/2010** Date Off **01/11/2010** Days = 17  
 Clean = **90**

X Axis mm	Meter	Angle deg	EAC%/day
20	88	337	0.12
40	86	314	0.24
60	84	291	0.35
80	82	269	0.47
100	81	246	0.53
120	80	223	0.59
140	79	200	0.65
160	79	177	0.65
180	80	154	0.59
200	81	131	0.53
220	83	109	0.41
240	86	86	0.24
260	87	63	0.18
280	87	40	0.18
300	88	17	0.12



Note: Cells coloured yellow are inputs.  
 The rest are either constants or calculated values.  
 The calculation is based on taking readings at 40mm intervals along the sticky pad.

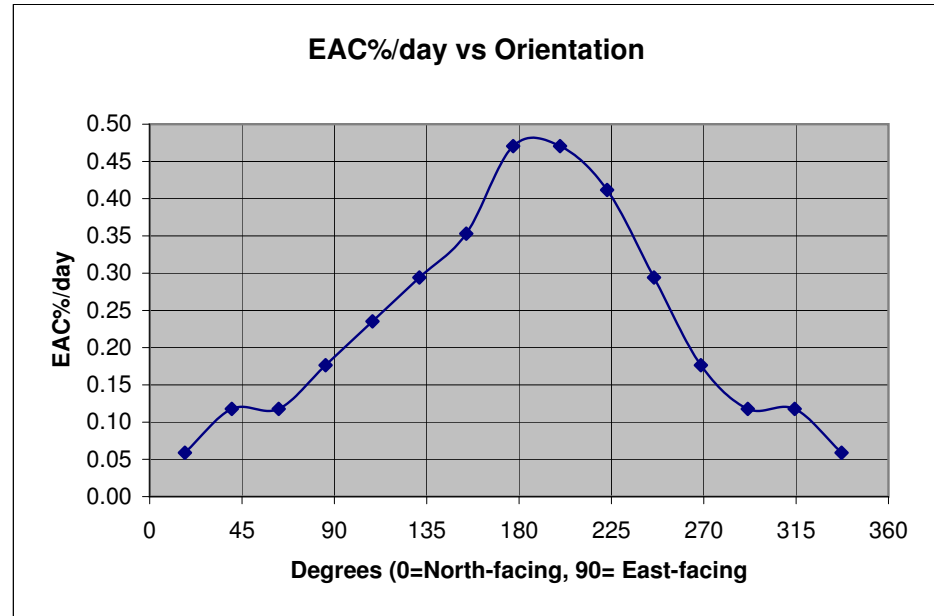


### Gauge Number - East location 907BRI

#### Sticky Pad Data

Date On **15/10/2010** Date Off **01/11/2010** Days = 17  
 Clean = **90**

X Axis mm	Meter	Angle deg	EAC%/day
20	89	337	0.06
40	88	314	0.12
60	88	291	0.12
80	87	269	0.18
100	85	246	0.29
120	83	223	0.41
140	82	200	0.47
160	82	177	0.47
180	84	154	0.35
200	85	131	0.29
220	86	109	0.24
240	87	86	0.18
260	88	63	0.12
280	88	40	0.12
300	89	17	0.06



Note: Cells coloured yellow are inputs.  
 The rest are either constants or calculated values.  
 The calculation is based on taking readings at 40mm intervals along the sticky pad.

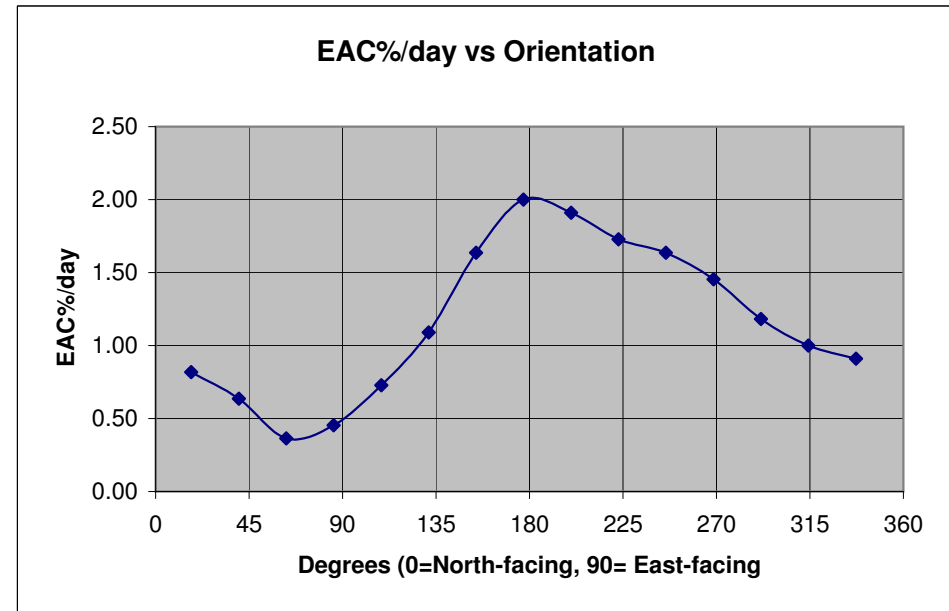
### Gauge Number - North location 907BRI

#### Sticky Pad Data

Date On 01/11/2010 Date Off 12/11/2010 Days = 11

Clean = 90

X Axis mm	Meter	Angle deg	EAC%/day
20	80	337	0.91
40	79	314	1.00
60	77	291	1.18
80	74	269	1.45
100	72	246	1.64
120	71	223	1.73
140	69	200	1.91
160	68	177	2.00
180	72	154	1.64
200	78	131	1.09
220	82	109	0.73
240	85	86	0.45
260	86	63	0.36
280	83	40	0.64
300	81	17	0.82



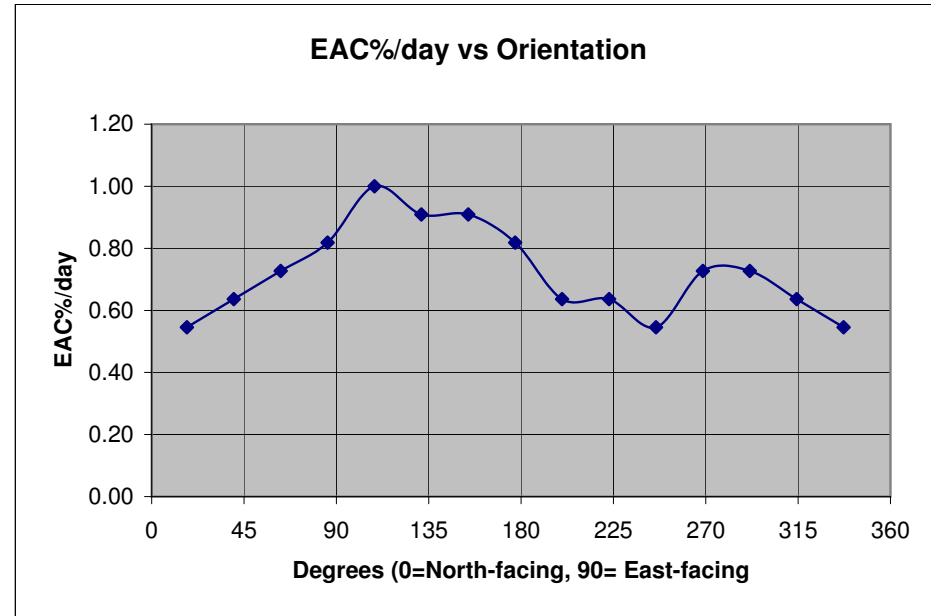
Note: Cells coloured yellow are inputs.  
The rest are either constants or calculated values.  
The calculation is based on taking readings at 40mm intervals along the sticky pad.

### Gauge Number - NE2 location 907BRI

#### Sticky Pad Data

Date On **01/11/2010** Date Off **12/11/2010** Days = 11  
 Clean = **90**

X Axis mm	Meter	Angle deg	EAC%/day
20	84	337	0.55
40	83	314	0.64
60	82	291	0.73
80	82	269	0.73
100	84	246	0.55
120	83	223	0.64
140	83	200	0.64
160	81	177	0.82
180	80	154	0.91
200	80	131	0.91
220	79	109	1.00
240	81	86	0.82
260	82	63	0.73
280	83	40	0.64
300	84	17	0.55



Note: Cells coloured yellow are inputs.  
 The rest are either constants or calculated values.  
 The calculation is based on taking readings at 40mm intervals along the sticky pad.

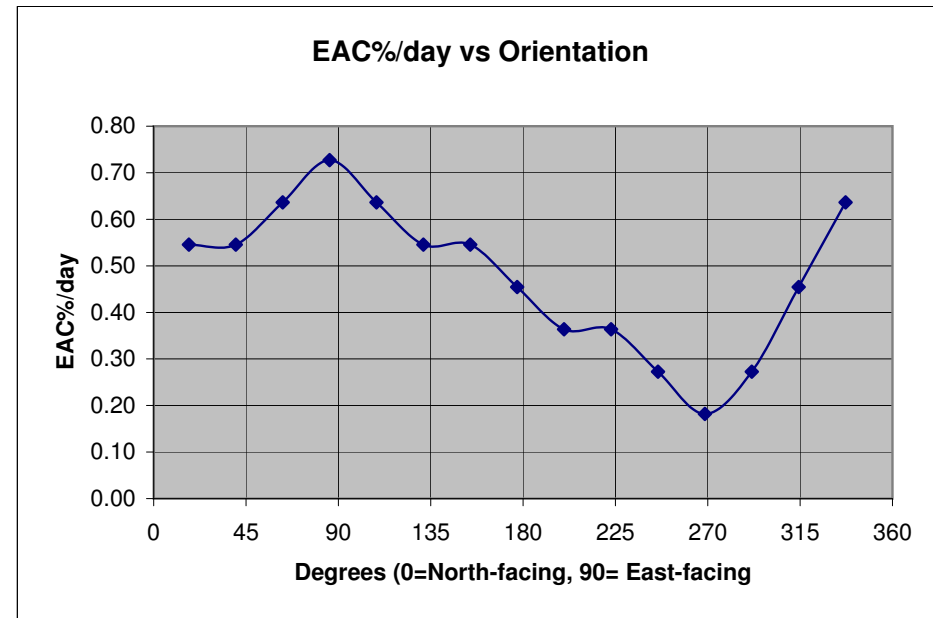
### Gauge Number - South location 907BRI

#### Sticky Pad Data

Date On **01/11/2010** Date Off **12/11/2010** Days = 11

Clean = **90**

X Axis mm	Meter	Angle deg	EAC%/day
20	83	337	0.64
40	85	314	0.45
60	87	291	0.27
80	88	269	0.18
100	87	246	0.27
120	86	223	0.36
140	86	200	0.36
160	85	177	0.45
180	84	154	0.55
200	84	131	0.55
220	83	109	0.64
240	82	86	0.73
260	83	63	0.64
280	84	40	0.55
300	84	17	0.55
			8.18



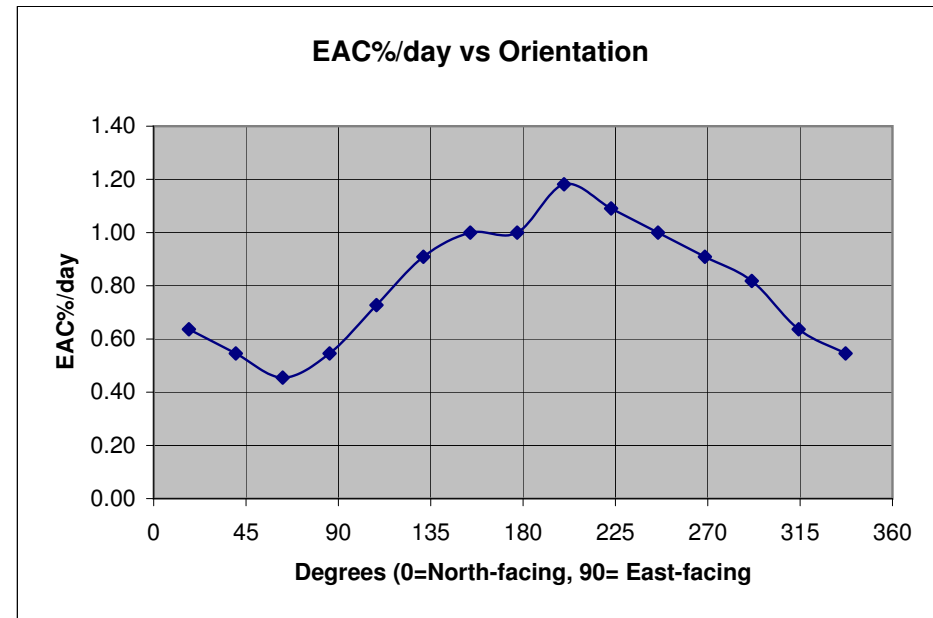
Note: Cells coloured yellow are inputs.  
 The rest are either constants or calculated values.  
 The calculation is based on taking readings at 40mm intervals along the sticky pad.

### Gauge Number - West location 907BRI

#### Sticky Pad Data

Date On **01/11/2010** Date Off **12/11/2010** Days = 11  
 Clean = **90**

X Axis mm	Meter	Angle deg	EAC%/day
20	84	337	0.55
40	83	314	0.64
60	81	291	0.82
80	80	269	0.91
100	79	246	1.00
120	78	223	1.09
140	77	200	1.18
160	79	177	1.00
180	79	154	1.00
200	80	131	0.91
220	82	109	0.73
240	84	86	0.55
260	85	63	0.45
280	84	40	0.55
300	83	17	0.64



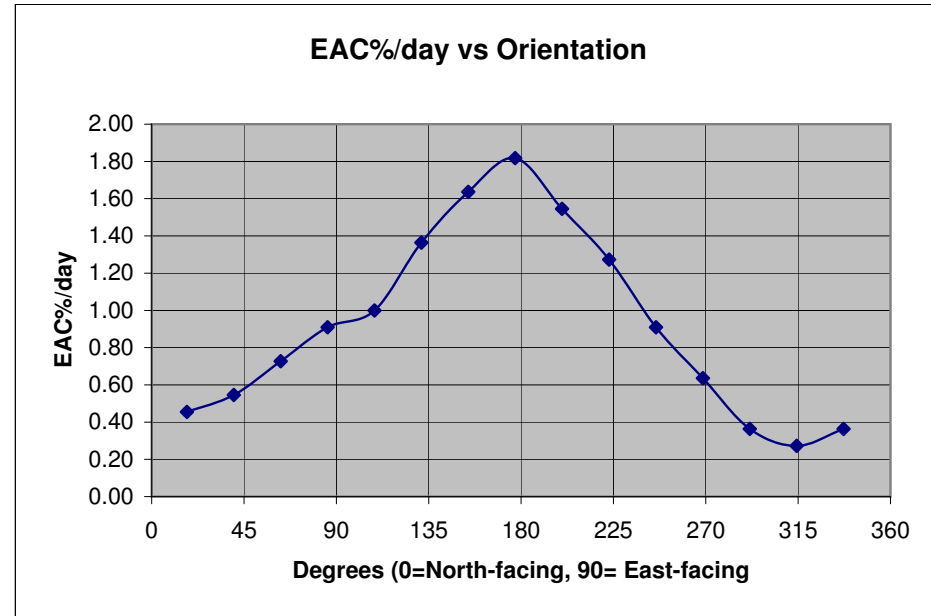
Note: Cells coloured yellow are inputs.  
 The rest are either constants or calculated values.  
 The calculation is based on taking readings at 40mm intervals along the sticky pad.

### Gauge Number - East location 907BRI

#### Sticky Pad Data

Date On **01/11/2010** Date Off **12/11/2010** Days = 11  
 Clean = **90**

X Axis mm	Meter	Angle deg	EAC%/day
20	86	337	0.36
40	87	314	0.27
60	86	291	0.36
80	83	269	0.64
100	80	246	0.91
120	76	223	1.27
140	73	200	1.55
160	70	177	1.82
180	72	154	1.64
200	75	131	1.36
220	79	109	1.00
240	80	86	0.91
260	82	63	0.73
280	84	40	0.55
300	85	17	0.45



Note: Cells coloured yellow are inputs.  
 The rest are either constants or calculated values.  
 The calculation is based on taking readings at 40mm intervals along the sticky pad.

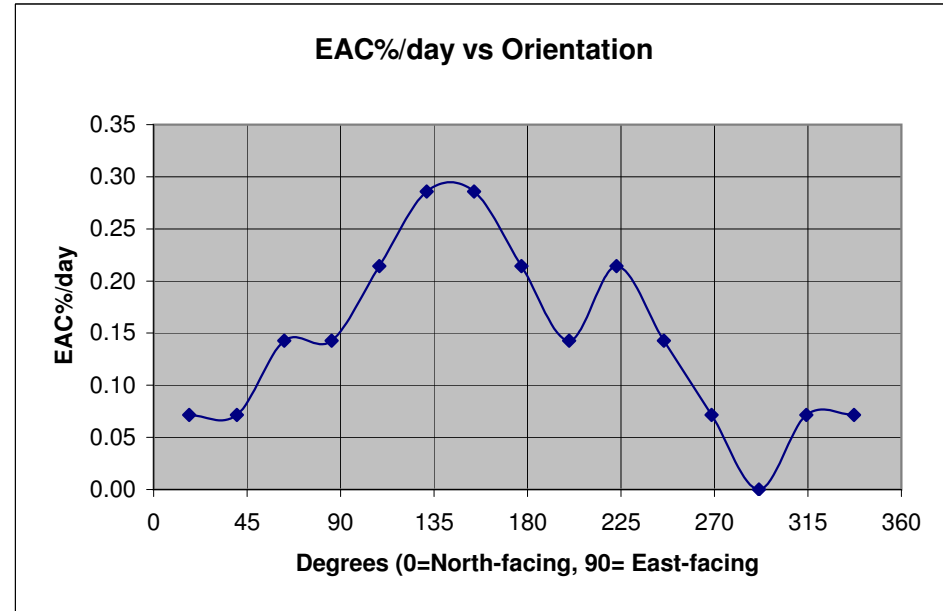
### Gauge Number - North location 907BRI

#### Sticky Pad Data

Date On **12/11/2010** Date Off **26/11/2010** Days = 14

Clean = **90**

X Axis mm	Meter	Angle deg	EAC%/day
20	89	337	0.07
40	89	314	0.07
60	90	291	0.00
80	89	269	0.07
100	88	246	0.14
120	87	223	0.21
140	88	200	0.14
160	87	177	0.21
180	86	154	0.29
200	86	131	0.29
220	87	109	0.21
240	88	86	0.14
260	88	63	0.14
280	89	40	0.07
300	89	17	0.07



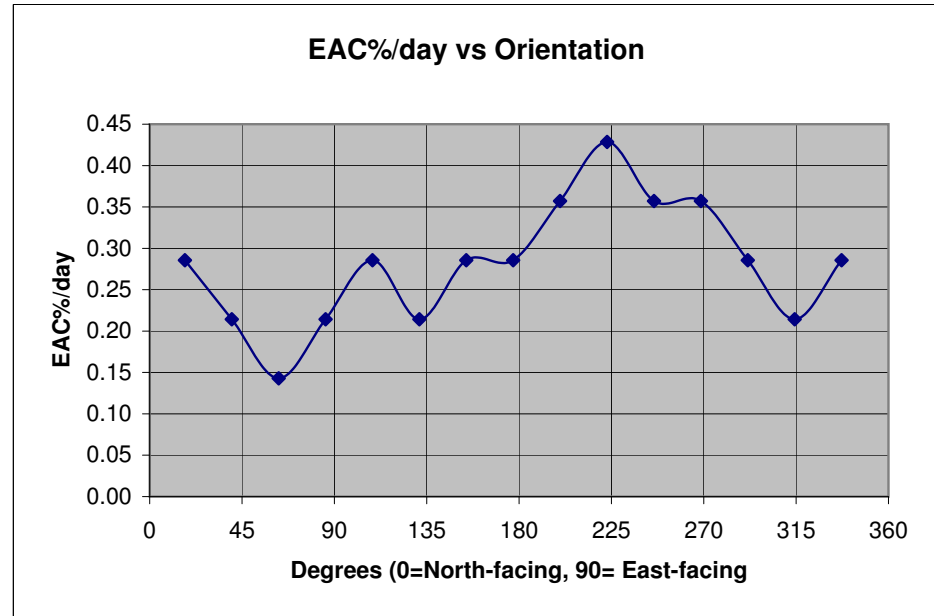
Note: Cells coloured yellow are inputs.  
 The rest are either constants or calculated values.  
 The calculation is based on taking readings at 40mm intervals along the sticky pad.

### Gauge Number - NE1 location 907BRI

#### Sticky Pad Data

Date On **12/11/2010** Date Off **26/11/2010** Days = 14  
 Clean = **90**

X Axis mm	Meter	Angle deg	EAC%/day
20	86	337	0.29
40	87	314	0.21
60	86	291	0.29
80	85	269	0.36
100	85	246	0.36
120	84	223	0.43
140	85	200	0.36
160	86	177	0.29
180	86	154	0.29
200	87	131	0.21
220	86	109	0.29
240	87	86	0.21
260	88	63	0.14
280	87	40	0.21
300	86	17	0.29



Note: Cells coloured yellow are inputs.  
 The rest are either constants or calculated values.  
 The calculation is based on taking readings at 40mm intervals along the sticky pad.

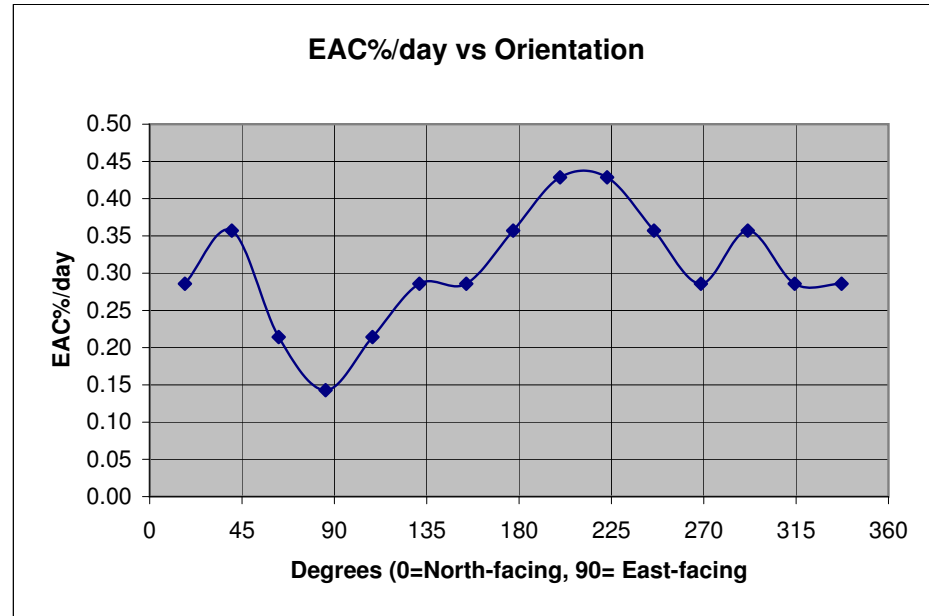


### Gauge Number - NE2 location 907BRI

#### Sticky Pad Data

Date On 12/11/2010 Date Off 26/11/2010 Days = 14  
 Clean = 90

X Axis mm	Meter	Angle deg	EAC%/day
20	86	337	0.29
40	86	314	0.29
60	85	291	0.36
80	86	269	0.29
100	85	246	0.36
120	84	223	0.43
140	84	200	0.43
160	85	177	0.36
180	86	154	0.29
200	86	131	0.29
220	87	109	0.21
240	88	86	0.14
260	87	63	0.21
280	85	40	0.36
300	86	17	0.29



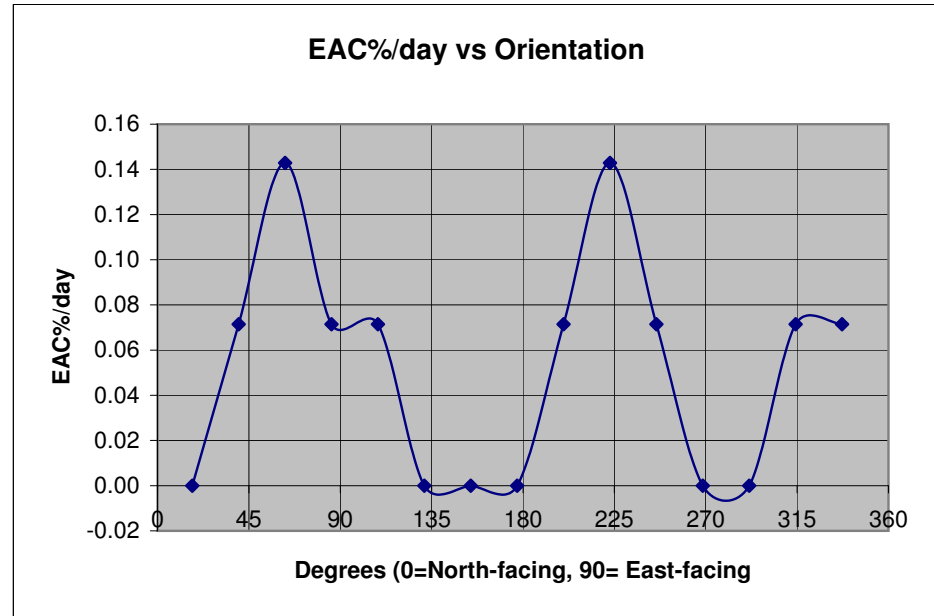
Note: Cells coloured yellow are inputs.  
 The rest are either constants or calculated values.  
 The calculation is based on taking readings at 40mm intervals along the sticky pad.

### Gauge Number - South location 907BRI

#### Sticky Pad Data

Date On **12/11/2010** Date Off **26/11/2010** Days = 14  
 Clean = **90**

X Axis mm	Meter	Angle deg	EAC%/day
20	89	337	0.07
40	89	314	0.07
60	90	291	0.00
80	90	269	0.00
100	89	246	0.07
120	88	223	0.14
140	89	200	0.07
160	90	177	0.00
180	90	154	0.00
200	90	131	0.00
220	89	109	0.07
240	89	86	0.07
260	88	63	0.14
280	89	40	0.07
300	90	17	0.00
			6.43



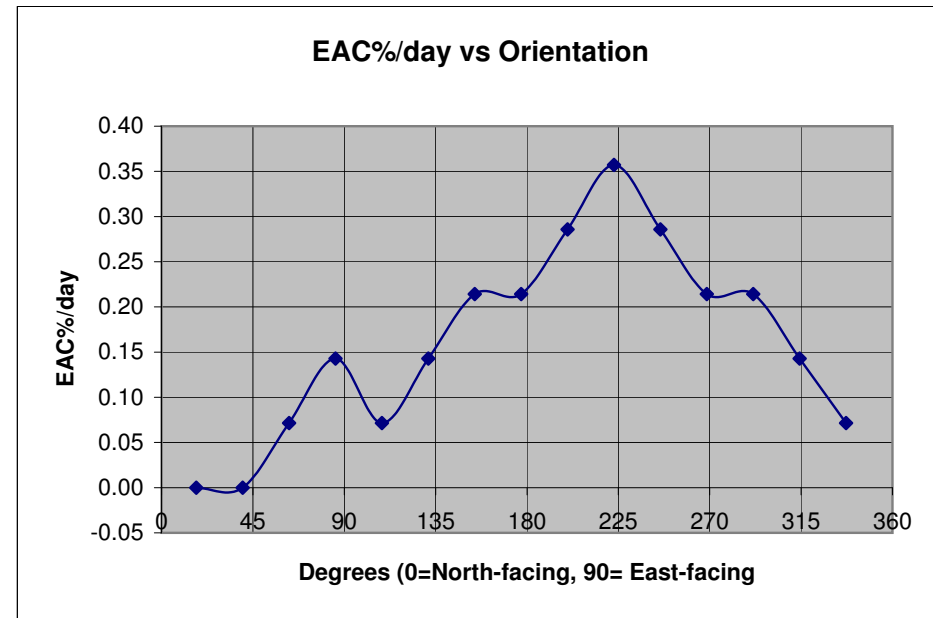
Note: Cells coloured yellow are inputs.  
 The rest are either constants or calculated values.  
 The calculation is based on taking readings at 40mm intervals along the sticky pad.

### Gauge Number - West location 907BRI

#### Sticky Pad Data

Date On **12/11/2010** Date Off **26/11/2010** Days = 14  
 Clean = **90**

X Axis mm	Meter	Angle deg	EAC%/day
20	89	337	0.07
40	88	314	0.14
60	87	291	0.21
80	87	269	0.21
100	86	246	0.29
120	85	223	0.36
140	86	200	0.29
160	87	177	0.21
180	87	154	0.21
200	88	131	0.14
220	89	109	0.07
240	88	86	0.14
260	89	63	0.07
280	90	40	0.00
300	90	17	0.00



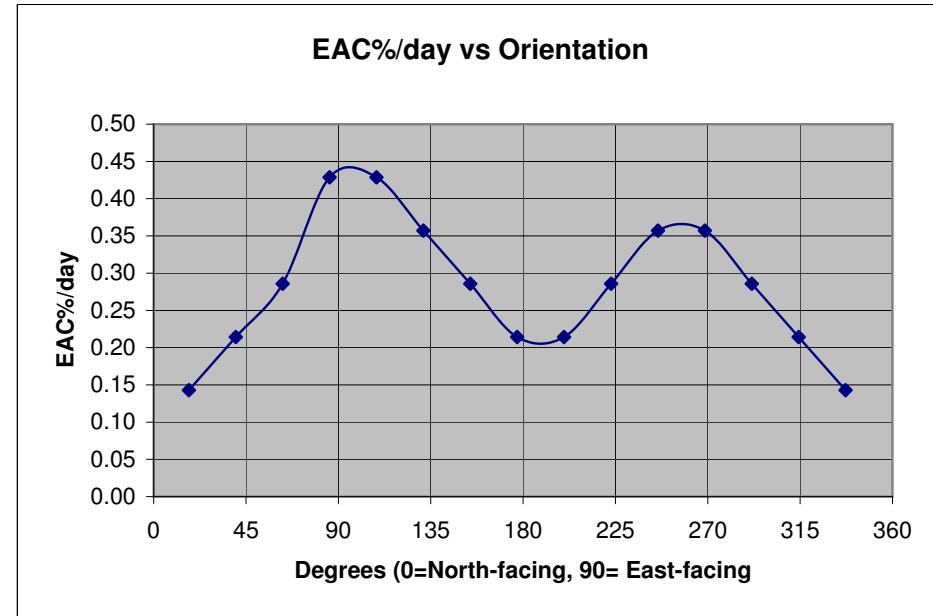
Note: Cells coloured yellow are inputs.  
 The rest are either constants or calculated values.  
 The calculation is based on taking readings at 40mm intervals along the sticky pad.

### Gauge Number - East location 907BRI

#### Sticky Pad Data

Date On **12/11/2010** Date Off **26/11/2010** Days = 14  
 Clean = **90**

X Axis mm	Meter	Angle deg	EAC%/day
20	88	337	0.14
40	87	314	0.21
60	86	291	0.29
80	85	269	0.36
100	85	246	0.36
120	86	223	0.29
140	87	200	0.21
160	87	177	0.21
180	86	154	0.29
200	85	131	0.36
220	84	109	0.43
240	84	86	0.43
260	86	63	0.29
280	87	40	0.21
300	88	17	0.14



Note: Cells coloured yellow are inputs.  
 The rest are either constants or calculated values.  
 The calculation is based on taking readings at 40mm intervals along the sticky pad.

**Appendix E**  
**Groundwater Level Data**

## Former Bayer Cropscience Site

## Groundwater and surface water levels

Date	BH6/06	S3/4	BH4	BH10B/06	BH9	S1/8	BH11*	S2/6	BHB1	W1 (n)	W2	W3 (s)	Riddy 1	Riddy 2	Riddy 3	Riddy 4
01/11/2010	10.05	10.61	10.234	10.431	10.509	10.624	9.773	10.413	9.65	10.23	10.17	10.16	9.219	9.294	9.540	9.649
02/11/2010	10.06	10.62	10.224	10.441	10.499	10.624	9.783	10.423	9.66	10.24	10.18	10.17	9.209	9.304	9.550	9.649
03/11/2010	10.05	10.6	10.224	10.431	10.509	10.604	9.793	10.413	9.65	10.22	10.17	10.17	9.209	9.304	9.550	9.649
04/11/2010	10.04	10.61	10.234	10.421	10.509	10.614	9.783	10.413	9.66	10.23	10.18	10.16	9.219	9.304	9.550	9.649
05/11/2010	10.04	10.62	10.224	10.431	10.509	10.604	9.783	10.413	9.66	10.23	10.19	10.16	9.219	9.304	9.550	9.659
08/11/2010	10.1	10.65	10.254	10.481	10.519	10.624	9.833	10.453	9.68	10.26	10.21	10.19	9.229	9.304	9.550	9.659
09/11/2010	10.09	10.64	10.234	10.461	10.519	10.624	9.823	10.433	9.67	10.24	10.2	10.18	9.229	9.304	9.550	9.659
10/11/2010	10.09	10.63	10.234	10.441	10.519	10.624	9.813	10.423	9.66	10.23	10.19	10.17	9.219	9.304	9.550	9.649
11/11/2010	10.08	10.63	10.234	10.431	10.509	Lost	9.813	10.423	9.67	10.23	10.19	10.17	9.219	9.304	9.550	9.649
12/11/2010	10.07	10.62	10.224	10.421	10.509	Lost	9.803	10.423	9.66	10.22	10.19	10.17	9.219	9.304	9.550	9.659
15/11/2010	10.04	10.61	10.234	10.431	10.519	Lost	9.793	10.413	9.66	10.22	10.2	10.18	9.219	9.304	9.550	9.659
16/11/2010	10.05	10.61	10.234	10.431	10.509	Lost	9.793	10.413	9.65	10.23	10.2	10.17	9.229	9.304	9.550	9.659
17/11/2010	10.06	10.59	10.244	10.441	10.489	Lost	9.773	10.433	9.66	10.26	10.18	10.18	9.209	9.294	9.550	9.649
18/11/2010	10.07	10.6	10.254	10.431	10.499	Lost	9.783	10.423	9.66	10.25	10.19	10.17	9.209	9.304	9.550	9.649
19/11/2010	10.06	10.61	10.244	10.441	10.489	Lost	9.773	10.413	9.65	10.24	10.18	10.16	9.219	9.304	9.550	9.659
22/11/2010	10.05	10.6	10.254	10.441	10.489	Lost	9.763	10.423	9.64	10.24	10.19	10.17	9.219	9.304	9.550	9.659
23/11/2010	10.05	10.61	10.254	10.431	10.489	Lost	9.763	10.423	9.65	10.23	10.19	10.17	9.219	9.304	9.550	9.659
24/11/2010	10.06	10.62	10.244	10.441	10.499	Lost	9.773	10.423	9.65	10.24	10.19	10.17	9.219	9.304	9.550	9.659
25/11/2010	10.07	10.61	10.254	10.431	10.489	Lost	9.773	10.413	9.66	10.24	10.18	10.16	9.209	9.304	9.550	9.659
26/11/2010	9.93	10.62	10.214	Covered	10.499	Lost	9.763	10.363	9.61	10.23	10.18	10.16	9.209	9.294	9.540	9.659

**Appendix F**  
**Surface Water Analysis Reports**

Results Pending

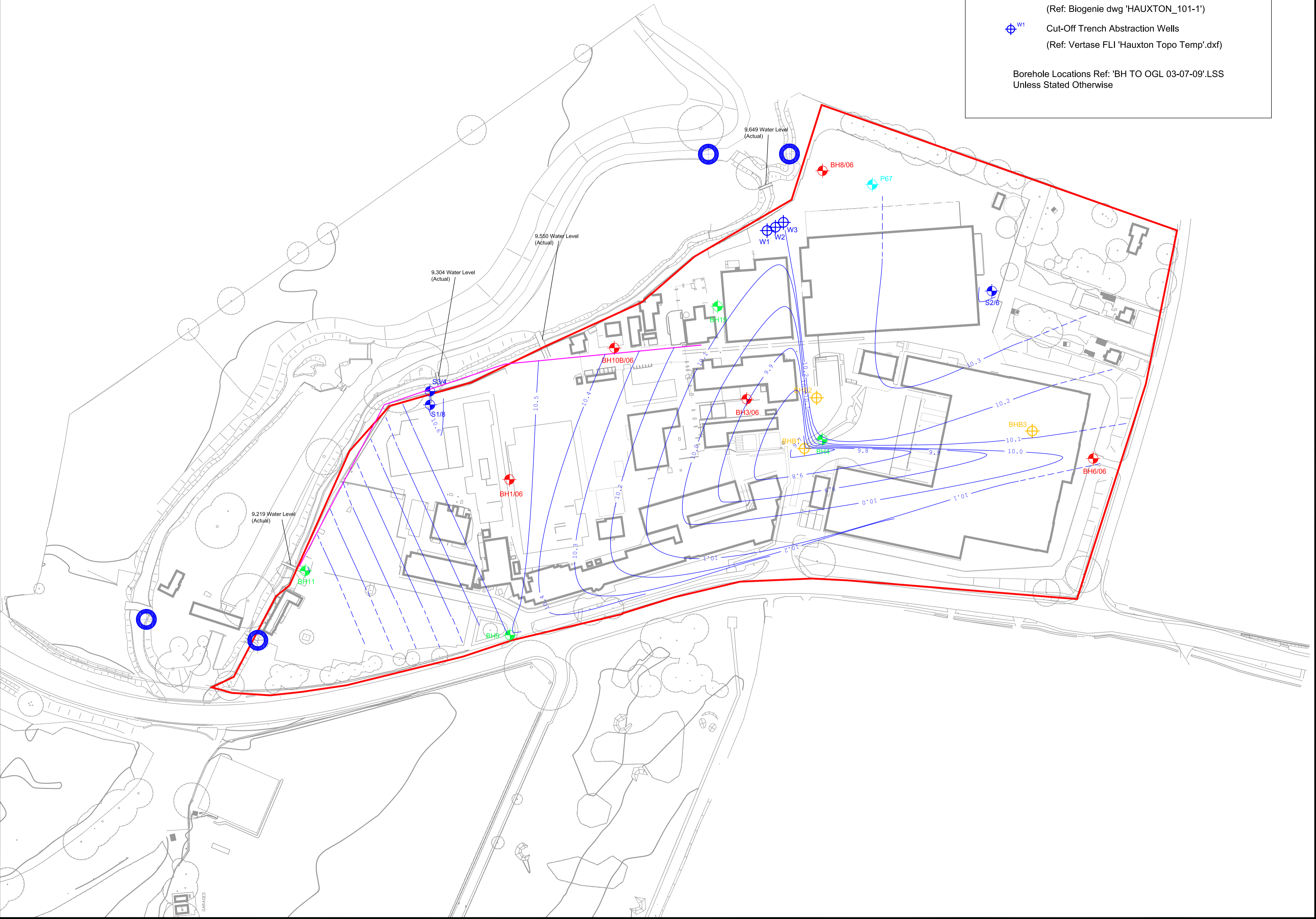


**Appendix G**  
**Groundwater Contour Plots**

**Legend**

- ⊕ BH1/06 Atkins Exploratory Hole Location
- ⊕ BH7, P67 Previous Borehole Location
- ⊕ Water Sampling Location
- ⊕ BHB1 Biogenie Boreholes  
(Ref: Biogenie dwg 'HAUXTON\_101-1')
- ⊕ W1 Cut-Off Trench Abstraction Wells  
(Ref: Vertase FLI 'Hauxton Topo Temp'.dxf)

Borehole Locations Ref: 'BH TO OGL 03-07-09'.LSS  
Unless Stated Otherwise



Rev.	Description	Revised By	Date
	FIRST ISSUE		10-12-10

**Vertase F.L.I.**

- Bristol Head Office: Tel: 01275 397600 Fax: 01275 397601
- Sheffield Office: Tel: 01246 813289 Fax: 01246 812983
- Hertford Office: Tel: 01992 535757 Fax: 01992 535858
- Manchester Office: Tel: 01614 372708 Fax: 01614 376300

email: info@vertasefli.co.uk  
www.vertasefli.com

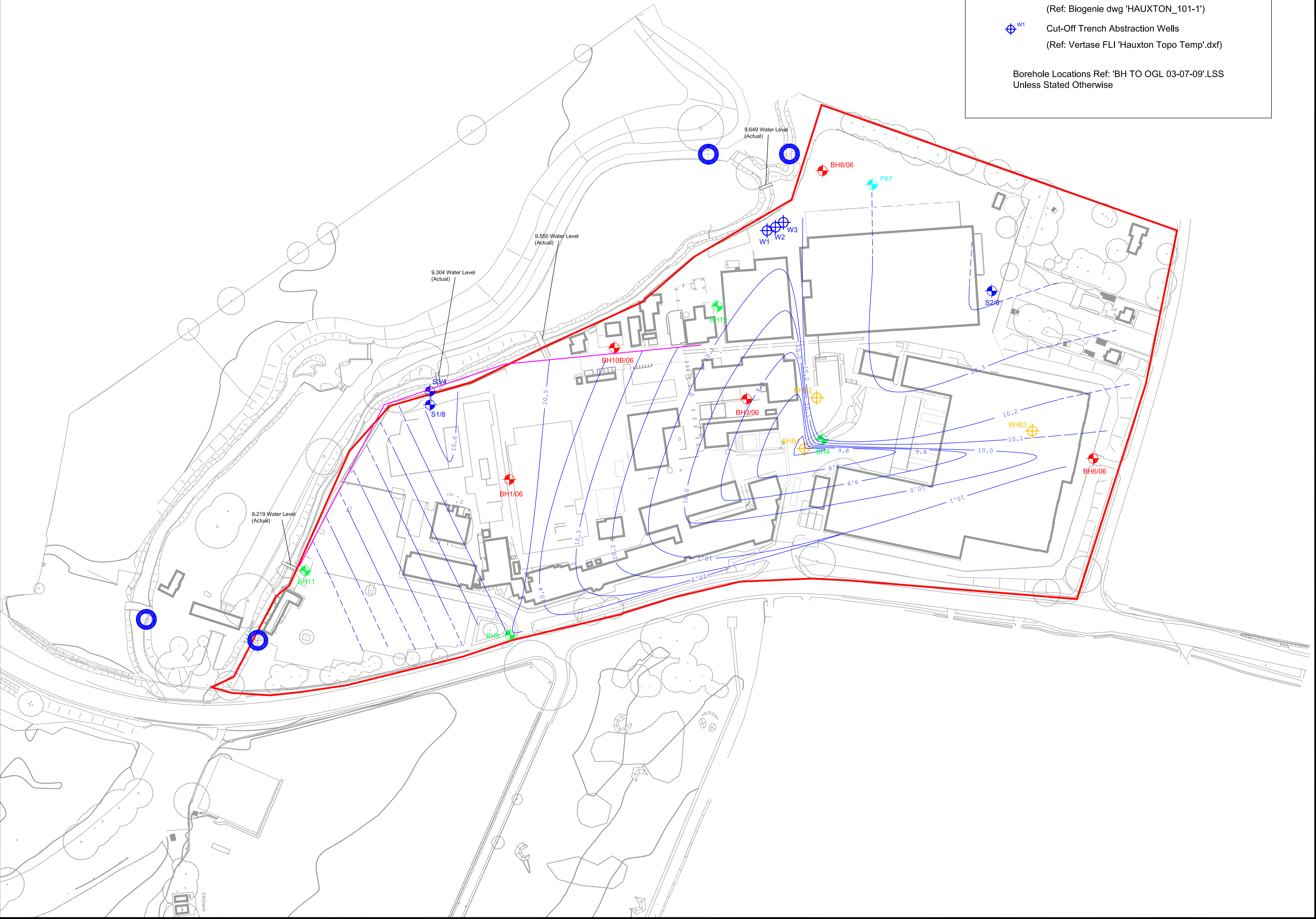
Site Address:	Rev:	
Bayer Site Hauxton Cambridge		
Title: Ground Water Contours 04-11-10		
Client: Harrow Estates		
Drawn: MRG	Checked: MA	Approved: MA
Dwg: D907_116	Contract: 907 BR1	Scale: 1:1000



**Legend**

- ⊕ BH1/06 Atkins Exploratory Hole Location
- ⊕ BH7 P67 Previous Borehole Location
- ⊕ Water Sampling Location
- ⊕ BHB1 Biogenie Boreholes  
(Ref: Biogenie dwg 'HAUXTON\_101-1')
- ⊕ W1 Cut-Off Trench Abstraction Wells  
(Ref: Vertase FLI 'Hauxton Topo Temp'.dxf)

Borehole Locations Ref: 'BH TO OGL 03-07-09'.LSS  
Unless Stated Otherwise



Rev.	Description	Revised By	Date
	FIRST ISSUE		10-12-10

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- Hertford Office: Tel: 01992 535757 Fax: 01992 535858
- Manchester Office: Tel: 01614 372708 Fax: 01614 376300

email: info@vertasefli.co.uk  
www.vertasefli.com

Site Address: Bayer Site, Hauxton, Cambridge

Title: Ground Water Contours 11-11-10

Client: Harrow Estates

Drawn: MRG    Checked: MA    Approved: MA

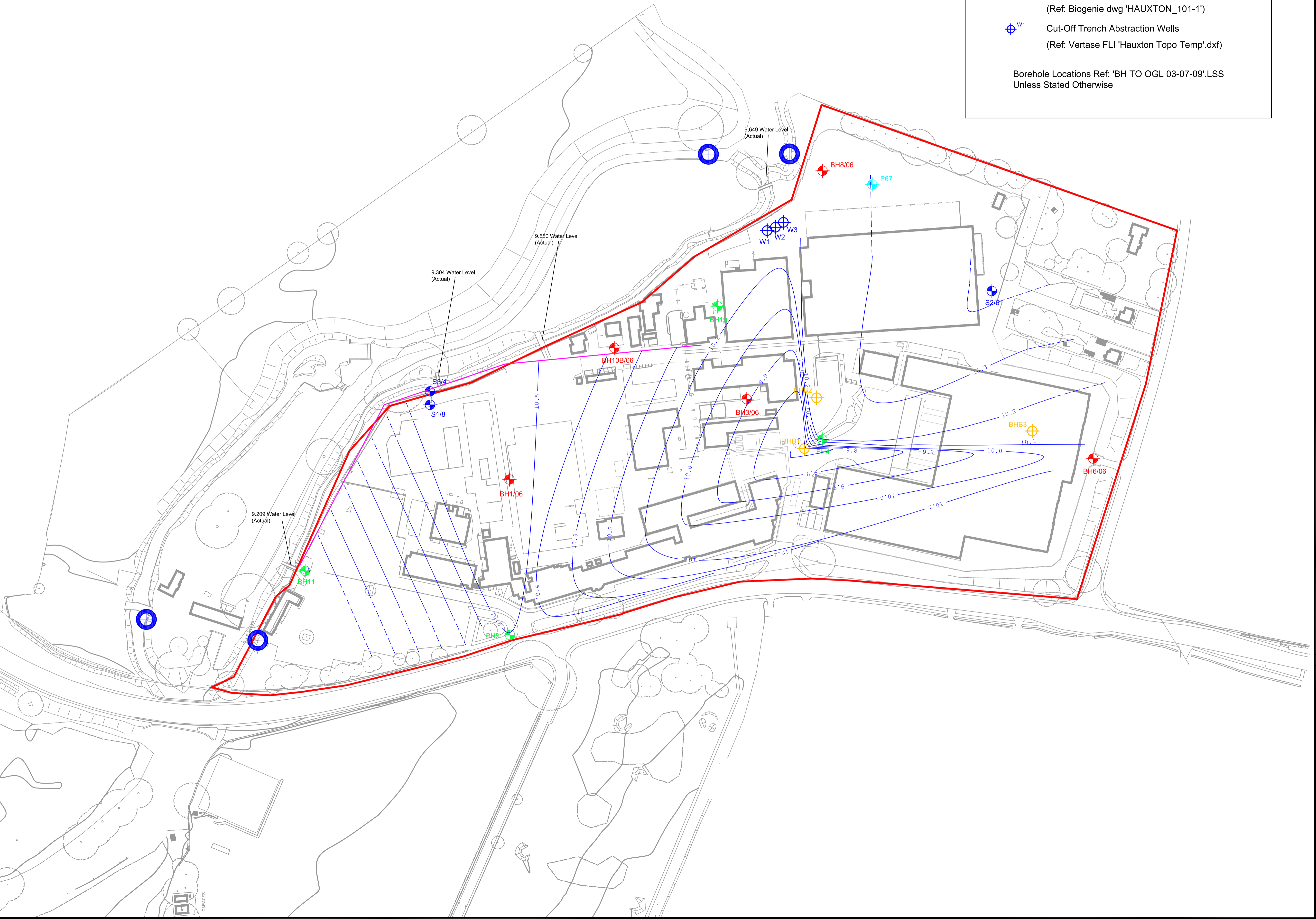
Dwg: D907\_117    Contract: 907 BR1    Scale: 1:1000



**Legend**

- ⊕ BH1/06 Atkins Exploratory Hole Location
- ⊕ BH7 P67 Previous Borehole Location
- ⊕ Water Sampling Location
- ⊕ BHB1 Biogenie Boreholes  
(Ref: Biogenie dwg 'HAUXTON\_101-1')
- ⊕ W1 Cut-Off Trench Abstraction Wells  
(Ref: Vertase FLI 'Hauxton Topo Temp'.dxf)

Borehole Locations Ref: 'BH TO OGL 03-07-09'.LSS  
Unless Stated Otherwise



Rev.	Description	Revised By	Date
	FIRST ISSUE		10-12-10

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- Sheffield Office: Tel: 01246 813289 Fax: 01246 812983
- Hertford Office: Tel: 01992 535757 Fax: 01992 535858
- Manchester Office: Tel: 01614 372708 Fax: 01614 376300

email: info@vertasefli.co.uk  
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Site Address: Bayer Site, Hauxton, Cambridge

Title: Ground Water Contours 18-11-10

Client: Harrow Estates

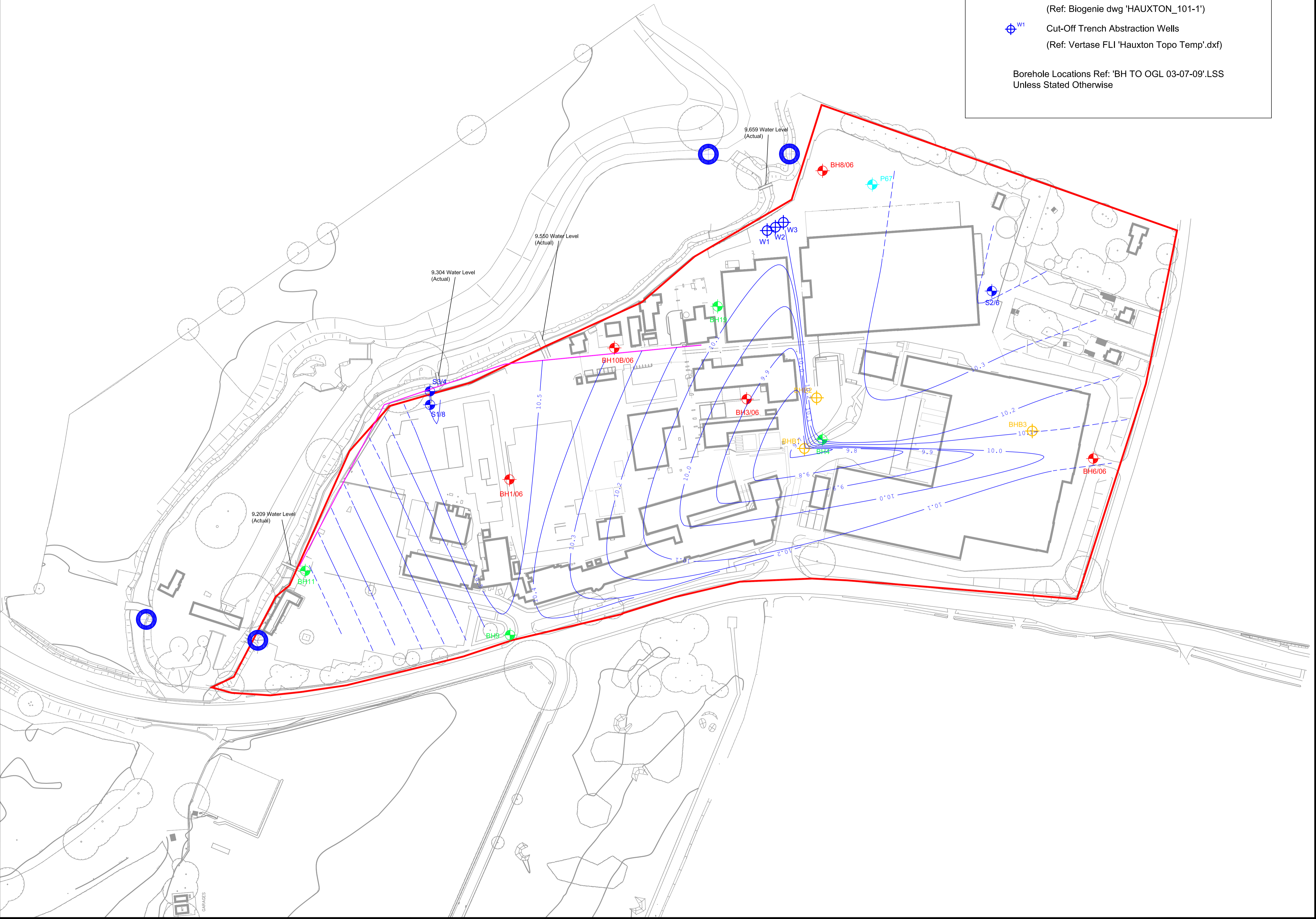
Drawn: MRG	Checked: MA	Approved: MA
Dwg: D907_118	Contract: 907 BR1	Scale: 1:1000



**Legend**

- ⊕ BH1/06 Atkins Exploratory Hole Location
- ⊕ BH7 P67 Previous Borehole Location
- ⊕ Water Sampling Location
- ⊕ BHB1 Biogenie Boreholes  
(Ref: Biogenie dwg 'HAUXTON\_101-1')
- ⊕ W1 Cut-Off Trench Abstraction Wells  
(Ref: Vertase FLI 'Hauxton Topo Temp'.dxf)

Borehole Locations Ref: 'BH TO OGL 03-07-09'.LSS  
Unless Stated Otherwise



Rev.	Description	Revised By	Date
	FIRST ISSUE		10-12-10

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- Sheffield Office: Tel: 01246 813289 Fax: 01246 812983
- Hertford Office: Tel: 01992 535757 Fax: 01992 535858
- Manchester Office: Tel: 01614 372708 Fax: 01614 376300

email: info@vertasefli.co.uk  
www.vertasefli.com

Site Address: Bayer Site, Hauxton, Cambridge

Title: Ground Water Contours 25-11-10

Client: Harrow Estates

Drawn: MRG    Checked: MA    Approved: MA

Dwg: D907\_119    Contract: 907 BR1    Scale: 1:1000

**Appendix H**  
**Waste Water Treatment Plant Discharge Analysis**

Water Quality Analysis of Effluent Discharge Sample

Sample Taken	Report Date	Report Number	Sample Location	Bromide mg/l	Chloride mg/l	Sulphate Ion mg/l	Suspended Solids (Total) mg/l	Ammoniacal Nitrogen mg/l	Biochemical Oxygen Demand mg/l	pH	Atrazine µg/l	Trietazine µg/l	Simazine µg/l	Total Atrazine, Trietazine and Simazine ug/l	Benazolin µg/l	2,3,6-TBA µg/l	Dicamba µg/l	Hempa µg/l	Schradan µg/l
<i>Consented Levels</i>				50	3000	5000	45	15	30	na	<i>Total of all three</i>			250	50	20	50	274	135
01/03/2010	17/03/2010	193447	Discharge Point	0.30	84.00	150.00	<10	<0.05	<3	8.4	<0.02	0.07	<0.01	0.07	<0.1	0.40	<0.1	<0.1	<0.1
30/03/2010	09/04/2010	195429	Discharge Point	0.40	110.00	180.00	<10	<0.05	<3	8.7	<0.01	<0.01	<0.01	0.00	<0.1	0.30	<0.1	0.40	<0.1
08/04/2010	13/04/2010	196139	T99 Circ	<1.0	110.00	190.00	<10	<0.05	<3	8.0	<0.01	<0.01	<0.01	0.00	<0.1	<0.1	<0.1	2.90	0.40
10/04/2010	19/04/2010	196379	T100 Circ	<1.0	110.00	190.00	<10	0.05	<3	7.9	<0.01	0.01	<0.01	0.01	<0.1	<0.1	<0.1	0.90	0.30
12/04/2010	21/04/2010	196517	T100 Circ	<1.0	1100.00	200.00	<10	<0.05	<3	8.2	<0.01	<0.01	<0.01	0.00	<0.1	<0.1	<0.1	1.50	<0.1
28/04/2010	19/05/2010	199291	Discharge Point	<1.0	130.00	200.00	<10	<0.05	<3	8.1	<0.01	<0.01	<0.01	0.00	<0.1	<0.1	<0.1	5.10	1.50
07/05/2010	17/05/2010	199176	T99 Discharge	<1.0	110.00	200.00	<10	<0.05	6.6	8.2	<0.01	<0.01	<0.01	0.00	<0.2	3.00	<0.2	3.30	0.60
18/05/2010	01/06/2010	200382	Discharge Point	<1.0	180.00	280.00	<10	0.09	<3	8.0	<0.01	0.01	<0.01	0.01	0.60	5.20	0.20	6.30	3.80
28/05/2010	17/06/2010	201487	Discharge Point	<1.0	130.00	210.00	<10	<0.05	<3	8.1	<0.01	<0.01	<0.01	0.00	<0.1	1.30	<0.1	4.30	1.10
15/06/2010	28/06/2010	203351	WTW Discharge	2.7	240.00	320.00	<10	0.05	<3	8.1	<0.01	0.02	<0.01	0.02	<0.1	2.40	0.2	4.10	1.00
01/07/2010	19/07/2010	205613	WWTW Discharge	3.3	290.00	370.00	13	0.07	<3	8.1	<0.01	<0.01	<0.01	0.00	<0.1	0.40	<0.1	<0.1	<0.1
05/08/2010	16/08/2010	208693	WWTW Discharge	<1.0	160.00	300.00	<10	<0.05	<3	8.0	0.02	0.09	0.02	0.13	<0.5	0.40	<0.1	<0.1	<0.1
19/08/2010	26/08/2010	209961	WWTW Discharge	<1.0	160.00	260.00	<10	<0.05	<3	7.7	<0.01	<0.01	<0.01	0.00	<0.1	<0.1	<0.1	<0.1	<0.1
01/09/2010	09/09/2010	211356	WWTW Discharge	2.6	180.00	280.00	<10	<0.05	5	8.1	<0.01	<0.01	<0.01	0.00	<0.1	<0.1	<0.1	2.9	<0.1
16/09/2010	29/09/2010	212901	WWTW Discharge	<1.0	86.00	170.00	<10	0.08	<3	7.9	<0.01	<0.01	<0.01	0.00	<0.1	<0.1	<0.1	24	3.5
24/09/2010	04/10/2010	213745	WWTW Discharge	<1.0	160.00	340.00	35	<0.05	<3	8.0	<0.01	<0.01	<0.01	0.00	<0.1	<0.1	<0.1	24	0.6
08/10/2010	21/10/2010	215625	WWTW Discharge	<1.0	150.00	270.00	<10	<0.05	<3	8.2	<0.01	<0.01	<0.01	0.00	<0.1	<0.1	<0.1	52	2.2
21/10/2010	01/11/2010	216826	WWTW Discharge	<1.0	200.00	240.00	11	<0.05	<3	7.7	<0.01	<0.01	<0.01	0.00	<0.1	<0.1	<0.1	24	9.4
10/11/2010	22/11/2010	218850	WWTW Discharge	<1.0	81.00	120.00	<10	<0.05	<3	8.1	<0.01	0.03	<0.01	0.03	<0.1	0.7	<0.1	15	6.2
16/11/2010	23/22/2010	219447	WWTW Discharge	<1.0	150.00	160.00	<10	<0.05	<3	8.0	<0.01	<0.01	<0.01	0.00	<0.1	0.9	0.1	14	24



# Scientific Analysis Laboratories

## Certificate of Analysis

Hadfield House  
Hadfield Street  
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Manchester  
M16 9FE  
Tel : 0161 874 2400  
Fax : 0161 874 2468

Scientific Analysis Laboratories is a limited company registered in England and Wales (No 2514788) whose address is at Hadfield House, Hadfield Street, Manchester M16 9FE

**Report Number:** 218850-1

**Date of Report:** 22-Nov-2010

**Customer:** VertaseFLI Limited  
19 Napier Court  
Barlborough Links  
Barlborough  
S43 4PZ

**Customer Contact:** The Project Management

**Customer Job Reference:** 907 BRI WWTW  
**Date Job Received at SAL:** 11-Nov-2010  
**Date Analysis Started:** 11-Nov-2010  
**Date Analysis Completed:** 22-Nov-2010

The results reported relate to samples received in the laboratory  
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation  
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Tests covered by this certificate were conducted in accordance with SAL SOPs



1549

Report checked  
and authorised by :  
Amelia McVennon  
Project Manager

Issued by :  
Amelia McVennon  
Project Manager



<b>SAL Reference:</b> 218850						
<b>Customer Reference:</b> 907 BRI WWTW						
<b>Water</b>		Analysed as Water				
<b>Miscellaneous</b>						
<b>SAL Reference</b>		<b>218850 001</b>		<b>218850 002</b>		
<b>Customer Sample Reference</b>		<b>WWTW Discharge</b>		<b>WWTW Primary B</b>		
<b>Date Sampled</b>		<b>05-NOV-2010</b>		<b>05-NOV-2010</b>		
<b>Determinand</b>	<b>Method</b>	<b>Test Sample</b>	<b>LOD</b>	<b>Units</b>		
Ammoniacal nitrogen	T4	AR	50	µg/l	<50	<50
Biochemical Oxygen Demand	T7	AR	3000	µg/l	<3000	<3000
pH	T7	AR			<b>8.1</b>	<b>8.2</b>

<b>SAL Reference:</b> 218850						
<b>Customer Reference:</b> 907 BRI WWTW						
<b>Water</b>		Analysed as Water				
<b>Suite A</b>						
<b>SAL Reference</b>		<b>218850 001</b>		<b>218850 002</b>		
<b>Customer Sample Reference</b>		<b>WWTW Discharge</b>		<b>WWTW Primary B</b>		
<b>Date Sampled</b>		<b>05-NOV-2010</b>		<b>05-NOV-2010</b>		
<b>Determinand</b>	<b>Method</b>	<b>Test Sample</b>	<b>LOD</b>	<b>Units</b>		
Atrazine	T16	AR	0.01	µg/l	<0.01	<b>0.93</b>
Trietazine	T16	AR	0.01	µg/l	<b>0.03</b>	<b>4.4</b>

<b>SAL Reference:</b> 218850						
<b>Customer Reference:</b> 907 BRI WWTW						
<b>Water</b>		Analysed as Water				
<b>Suite B</b>						
<b>SAL Reference</b>		<b>218850 001</b>		<b>218850 002</b>		
<b>Customer Sample Reference</b>		<b>WWTW Discharge</b>		<b>WWTW Primary B</b>		
<b>Date Sampled</b>		<b>05-NOV-2010</b>		<b>05-NOV-2010</b>		
<b>Determinand</b>	<b>Method</b>	<b>Test Sample</b>	<b>LOD</b>	<b>Units</b>		
Benazolin	T16	AR	0.1	µg/l	<0.1	<b>56</b>
2,3,6-TCB	T16	AR	0.1	µg/l	<b>0.7</b>	<b>1.7</b>

<b>SAL Reference:</b> 218850						
<b>Customer Reference:</b> 907 BRI WWTW						
<b>Water</b>		Analysed as Water				
<b>Suite C</b>						
<b>SAL Reference</b>		<b>218850 001</b>		<b>218850 002</b>		
<b>Customer Sample Reference</b>		<b>WWTW Discharge</b>		<b>WWTW Primary B</b>		
<b>Date Sampled</b>		<b>05-NOV-2010</b>		<b>05-NOV-2010</b>		
<b>Determinand</b>	<b>Method</b>	<b>Test Sample</b>	<b>LOD</b>	<b>Units</b>		
Bromide	T253	AR	100	µg/l	<1000	<1000
Chloride	T253	AR	200	µg/l	<b>81000</b>	<b>80000</b>
Sulphate ion	T253	AR	100	µg/l	<b>120000</b>	<b>120000</b>
Suspended Solids (Total)	T2	AR	10000	µg/l	<10000	<b>47000</b>

<b>SAL Reference:</b> 218850 <b>Customer Reference:</b> 907 BRI WWTW  <b>Water</b> Analysed as Water <b>Suite D</b>					
<b>SAL Reference</b>		218850 001		218850 002	
<b>Customer Sample Reference</b>		WWTW Discharge		WWTW Primary B	
<b>Date Sampled</b>		05-NOV-2010		05-NOV-2010	
<b>Determinand</b>	<b>Method</b>	<b>Test Sample</b>	<b>LOD</b>	<b>Units</b>	
Dicamba	T16	AR	0.1	µg/l	<0.1
Hempa	T16	AR	0.1	µg/l	15
Schradan	T16	AR	0.1	µg/l	6.2
Simazine	T16	AR	0.01	µg/l	<0.01

<b>SAL Reference:</b> 218850 <b>Customer Reference:</b> 907 BRI WWTW  <b>Water</b> Analysed as Water <b>Suite E</b>					
<b>SAL Reference</b>		218850 001		218850 002	
<b>Customer Sample Reference</b>		WWTW Discharge		WWTW Primary B	
<b>Date Sampled</b>		05-NOV-2010		05-NOV-2010	
<b>Determinand</b>	<b>Method</b>	<b>Test Sample</b>	<b>LOD</b>	<b>Units</b>	
TVC at 22&deg;C after 3 days	T34	AR	10	cfu/ml	2000
TVC at 37&deg;C after 2 days	T34	AR	10	cfu/ml	6100

### Index to symbols used in 218850-1

Value	Description
AR	As Received
W	Analysis was performed at another SAL laboratory
S	Analysis was subcontracted
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

### Method Index

Value	Description
T16	GC/MS
T34	Micro
T253	IC(EID299)
T7	Probe
T2	Grav
T4	Colorimetry

### Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Ammoniacal nitrogen	T4	AR	50	µg/l	U	001-002
Biochemical Oxygen Demand	T7	AR	3000	µg/l	N	001-002
pH	T7	AR			U	001-002
Atrazine	T16	AR	0.01	µg/l	N	001-002
Trietazine	T16	AR	0.01	µg/l	N	001-002
Benazolin	T16	AR	0.1	µg/l	N	001-002
2,3,6-TCB	T16	AR	0.1	µg/l	N	001-002
Bromide	T253	AR	100	µg/l	WU	001-002
Chloride	T253	AR	200	µg/l	WU	001-002
Sulphate ion	T253	AR	100	µg/l	WU	001-002
Suspended Solids (Total)	T2	AR	10000	µg/l	N	001-002
Dicamba	T16	AR	0.1	µg/l	N	001-002
Hempa	T16	AR	0.1	µg/l	N	001-002
Schradan	T16	AR	0.1	µg/l	N	001-002
Simazine	T16	AR	0.01	µg/l	N	001-002
TVC at 22&deg;C after 3 days	T34	AR	10	cfu/ml	SN	001-002

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
TVC at 37&deg;C after 2 days	T34	AR	10	cfu/ml	SN	001-002





# Scientific Analysis Laboratories

## Certificate of Analysis

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Scientific Analysis Laboratories is a  
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Wales (No 2514788) whose address is at  
Hadfield House, Hadfield Street, Manchester M16 9FE

**Report Number:** 219447-1

**Date of Report:** 23-Nov-2010

**Customer:** VertaseFLI Limited  
19 Napier Court  
Barlborough Links  
Barlborough  
S43 4PZ

**Customer Contact:** The Project Management

**Customer Job Reference:** 907BRI WWTW  
**Date Job Received at SAL:** 17-Nov-2010  
**Date Analysis Started:** 18-Nov-2010  
**Date Analysis Completed:** 23-Nov-2010

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Tests covered by this certificate were conducted in accordance with SAL SOPs



1549

Report checked  
and authorised by :  
Amelia McVennon  
Project Manager

Issued by :  
Amelia McVennon  
Project Manager

<b>SAL Reference:</b> 219447						
<b>Customer Reference:</b> 907BRI WWTW						
<b>Water</b>		Analysed as Water				
<b>Miscellaneous</b>						
<b>SAL Reference</b>			<b>219447 001</b>		<b>219447 002</b>	
<b>Customer Sample Reference</b>			<b>WWTW Discharge</b>		<b>WWTW Primary B</b>	
<b>Date Sampled</b>			<b>16-NOV-2010</b>		<b>16-NOV-2010</b>	
<b>Determinand</b>	<b>Method</b>	<b>Test Sample</b>	<b>LOD</b>	<b>Units</b>		
Ammoniacal nitrogen	T4	AR	50	µg/l	<50	<50
Biochemical Oxygen Demand	T7	AR	3000	µg/l	<3000	<3000
pH	T7	AR			<b>8.0</b>	<b>8.0</b>

<b>SAL Reference:</b> 219447						
<b>Customer Reference:</b> 907BRI WWTW						
<b>Water</b>		Analysed as Water				
<b>Suite A</b>						
<b>SAL Reference</b>			<b>219447 001</b>		<b>219447 002</b>	
<b>Customer Sample Reference</b>			<b>WWTW Discharge</b>		<b>WWTW Primary B</b>	
<b>Date Sampled</b>			<b>16-NOV-2010</b>		<b>16-NOV-2010</b>	
<b>Determinand</b>	<b>Method</b>	<b>Test Sample</b>	<b>LOD</b>	<b>Units</b>		
Atrazine	T16	AR	0.01	µg/l	<0.01	<b>12</b>
Trietazine	T16	AR	0.01	µg/l	<0.01	<b>8.8</b>

<b>SAL Reference:</b> 219447						
<b>Customer Reference:</b> 907BRI WWTW						
<b>Water</b>		Analysed as Water				
<b>Suite B</b>						
<b>SAL Reference</b>			<b>219447 001</b>		<b>219447 002</b>	
<b>Customer Sample Reference</b>			<b>WWTW Discharge</b>		<b>WWTW Primary B</b>	
<b>Date Sampled</b>			<b>16-NOV-2010</b>		<b>16-NOV-2010</b>	
<b>Determinand</b>	<b>Method</b>	<b>Test Sample</b>	<b>LOD</b>	<b>Units</b>		
Benazolin	T16	AR	0.1	µg/l	<0.1	<b>1.5</b>
2,3,6-TCB	T16	AR	0.1	µg/l	<b>0.9</b>	<b>87</b>

<b>SAL Reference:</b> 219447						
<b>Customer Reference:</b> 907BRI WWTW						
<b>Water</b>		Analysed as Water				
<b>Suite C</b>						
<b>SAL Reference</b>			<b>219447 001</b>		<b>219447 002</b>	
<b>Customer Sample Reference</b>			<b>WWTW Discharge</b>		<b>WWTW Primary B</b>	
<b>Date Sampled</b>			<b>16-NOV-2010</b>		<b>16-NOV-2010</b>	
<b>Determinand</b>	<b>Method</b>	<b>Test Sample</b>	<b>LOD</b>	<b>Units</b>		
Bromide	T253	AR	100	µg/l	<sup>(9)</sup> <1000	<sup>(9)</sup> <1000
Chloride	T253	AR	200	µg/l	<b>150000</b>	<b>150000</b>
Sulphate ion	T253	AR	100	µg/l	<b>160000</b>	<b>160000</b>
Suspended Solids (Total)	T2	AR	10000	µg/l	<10000	<10000

SAL Reference: 219447						
Customer Reference: 907BRI WWTW						
Water		Analysed as Water				
Suite D						
SAL Reference			219447 001		219447 002	
Customer Sample Reference			WWTW Discharge		WWTW Primary B	
Date Sampled			16-NOV-2010		16-NOV-2010	
Determinand	Method	Test Sample	LOD	Units		
Dicamba	T16	AR	0.1	µg/l	0.1	4.8
Hempa	T16	AR	0.1	µg/l	14	11
Schradan	T16	AR	0.1	µg/l	24	25
Simazine	T16	AR	0.01	µg/l	<0.01	1.0

SAL Reference: 219447						
Customer Reference: 907BRI WWTW						
Water		Analysed as Water				
Suite E						
SAL Reference			219447 001		219447 002	
Customer Sample Reference			WWTW Discharge		WWTW Primary B	
Date Sampled			16-NOV-2010		16-NOV-2010	
Determinand	Method	Test Sample	LOD	Units		
TVC at 22&deg;C after 3 days	T34	AR	10	cfu/ml	> 10000	> 10000
TVC at 37&deg;C after 2 days	T34	AR	10	cfu/ml	1700	1900

### Index to symbols used in 219447-1

Value	Description
AR	As Received
9	LOD raised due to dilution of sample
W	Analysis was performed at another SAL laboratory
S	Analysis was subcontracted
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

### Method Index

Value	Description
T34	Micro
T4	Colorimetry
T7	Probe
T253	IC(EID299)
T16	GC/MS
T2	Grav

### Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Ammoniacal nitrogen	T4	AR	50	µg/l	U	001-002
Biochemical Oxygen Demand	T7	AR	3000	µg/l	N	001-002
pH	T7	AR			U	001-002
Atrazine	T16	AR	0.01	µg/l	N	001-002
Trietazine	T16	AR	0.01	µg/l	N	001-002
Benazolin	T16	AR	0.1	µg/l	N	001-002
2,3,6-TCB	T16	AR	0.1	µg/l	N	001-002
Bromide	T253	AR	100	µg/l	WU	001-002
Chloride	T253	AR	200	µg/l	WU	001-002
Sulphate ion	T253	AR	100	µg/l	WU	001-002
Suspended Solids (Total)	T2	AR	10000	µg/l	N	001-002
Dicamba	T16	AR	0.1	µg/l	N	001-002
Hempa	T16	AR	0.1	µg/l	N	001-002
Schradan	T16	AR	0.1	µg/l	N	001-002

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Simazine	T16	AR	0.01	µg/l	N	001-002
TVC at 22&deg;C after 3 days	T34	AR	10	cfu/ml	SN	001-002
TVC at 37&deg;C after 2 days	T34	AR	10	cfu/ml	SN	001-002



**Appendix I**  
**Soil Characterisation Results Summary**



Results Received	Reported to SCDC	Grid square	Contaminant	Concentration (µg/kg)	Likely use/origin
12.04.2010	06.05.2010	K15	VOC/SVOC peaks detected		
12.04.2010	06.05.2010	K16	Series of Aromatic Hydrocarbons circa C <sub>13</sub> -C <sub>16</sub>	17,000	Potential herbicide degradation products. The structures are smaller and less complex than contaminants of concern and will therefore degrade more readily than the target contaminants and will be captured by the remediation process.
15.04.2010	06.05.2010 (09.06.2010)	J16	2(1-methylpropyl)-phenol	10,000	Encountered and assessed during site investigation, not a priority contaminant
			2,6-bis(1-methylpropyl)-phenol	100,000	Commonly used in the manufacture of specialty surfactants used as wetting agents for agrochemicals.
			2,6-bis(1,1-dimethylethyl)-4-(1-methylpropyl)-phenol	6,000	Commonly used as an antioxidant and stabiliser, also used in oils used in industrial applications.
			Unidentified branched aromatic alcohol, C <sub>14</sub>	240,000	Potential herbicide degradation products. The structures are smaller and less complex than contaminants of concern and will therefore degrade more readily than the target contaminants and will be captured by
			Unidentified branched aromatic alcohol, C <sub>18</sub>	290,000	
15.04.2010	06.05.2010	K14	Phenanthrene	4,100	Encountered and assessed during site investigation, concentration below target value
			Fluoranthene	4,800	
			Pyrene	3,900	
			Benzo(b/k)Fluoranthene	2,200	
07.05.2010	24.05.2010	K9	Dodecanoic acid (Lauric acid), isooctyl ester	2,400	Lauric acid - main acid in coconut oil and palm kernel oil, is non-toxic and safe to handle, is used in many soaps, shampoos and body butters.
			Unidentified Aliphatic Hydrocarbon circa C <sub>30</sub>	2,300	Potential herbicide degradation products. The structures are smaller and less complex than contaminants of concern and will therefore degrade more readily than the target contaminants and will be captured by the remediation process.
			2,4-Dichloro-o-cresol	9,000	Potential herbicide degradation product
			Bis(2-ethylhexyl) maleate	3,800	Commonly used as an intermediate in hydrogenation or acetylation reactions, possibly used in agrochemicals manufacture
			Cyclo octaatomic sulphur	2,800	S <sub>8</sub> is the most common form of sulphur in the solid state, widely used in insecticide and fungicide manufacture

07.05.2010	24.05.2010 (09.06.2010)	L8	Dodecanoic acid (Lauric acid), isooctyl ester	7,400	Lauric acid - main acid in coconut oil and palm kernel oil, is non-toxic and safe to handle, is used in many soaps, shampoos and body butters.
			Unidentified aromatic hydrocarbon containing O and Cl circa C <sub>7</sub>	8,400	Potential herbicide degradation products. The structures are smaller and less complex than contaminants of concern and will therefore degrade more readily than the target contaminants and will be captured by the remediation process.
07.05.2010	24.05.2010	L9	Unidentified Aliphatic Hydrocarbon circa C <sub>30</sub>	2,300	Potential herbicide degradation products. The structures are smaller and less complex than contaminants of concern and will therefore degrade more readily than the target contaminants and will be captured by the remediation process.
13.05.2010	24.05.2010	H8	No VOC/SVOC peaks detected		
13.05.2010	24.05.2010 (09.06.2010)	H9	1,2-bis(2,4,6-trichlorophenoxy)ethane	6,900	Potential Prochloraz degradation product
			Prochloraz	9,100	Fungicide
			Unidentified aromatic hydrocarbon containing Cl circa C <sub>8</sub>	9,400	Potential herbicide degradation products. The structures are smaller and less complex than contaminants of concern and will therefore degrade more readily than the target contaminants and will be captured by the remediation process.
			Unidentified aromatic amine containing Cl circa C <sub>11</sub>	2,100	
13.05.2010	24.05.2010	I7	No SVOC peaks detected		
13.05.2010	24.05.2010 (09.06.2010)	I9	2,4-Dichloro-o-cresol	29,000	Potential herbicide degradation product
			2,3,6-Trichlorotoluene	47,000	
			1-(2-Chloroethoxy)-2-(o-Tolyloxy)ethane	20,000	
			Unidentified aromatic alcohol containing Cl circa C <sub>7</sub>	25,000	Potential herbicide degradation products. The structures are smaller and less complex than contaminants of concern and will therefore degrade more readily than the target contaminants and will be captured by the remediation process.
			Unidentified aromatic hydrocarbon containing O circa C <sub>16-18</sub>	12,000	
13.05.2010	24.05.2010	J7	No VOC/SVOC peaks detected		
20.05.2010	24.05.2010	J8	No VOC/SVOC peaks detected		
26.05.2010		J9	No VOC/SVOC peaks detected		
04.06.2010	16.06.2010 (09.06.2010)	H7	Dichloromethyl phenol	2,100	Same as 2,4-Dichloro-o-cresol (I9)
05.05.2010	16.06.2010 (09.06.2010)	K7	1,2-bis(2,4,6-trichlorophenoxy)ethane	2400.0	As for H9
05.05.2010	16.06.2010	K8	No VOC/SVOC peaks detected		

18.06.2010	29.06.2010	I8	2-methyl phenol	5,500	Encountered and assessed during site investigation, not a priority contaminant
			1,2-dichlorobenzene	3,600	Contaminant of concern, already included in the standard validation suite
17.06.2010	29.06.2010 (09.06.2010)	K10	2,4-Dichloro-o-cresol	550,000	As for I9 and H7
22.06.2010		L10	Cyclo octaatomic sulphur	16,000	As for L8 - Sulphur
20.07.2010	21.07.2010	K10 NAPL	Dichloromethyl phenol	1,800,000	As for 2,4-Dichloro-o-cresol (I9, H7, K10)
			Naphthalene	4,600,000	Encountered and assessed during site investigation, not a priority contaminant
			2-methylnaphthalene	3,900,000	
			1-methylnaphthalene CAS 90-12-0	2,400,000	More toxic than 2-methylnaphthalene, must be assessed separately
			Dinoseb CAS 88-85-7	68,000,000	2-(1-methylpropyl)-4,6-dinitro-phenol - herbicide and insecticide. Yellow crystalline solid.
21.07.2010	22.07.2010	J10	Dichloromethyl phenol	24,000	As for 2,4-Dichloro-o-cresol (I9, H7, K10)
			1-(2-Chloroethoxy)-2-(o-Tolyloxy)ethane CAS 21120-80-9	13,000	Same as I9
			1,2,4-Trichlorobenzene	28,000	Encountered and assessed during site investigation, not a priority contaminant
			Trichlorobenzene	32,000	
			2-Chlorotoluene	60,000	
			Trichloro toluene isomer	48,000	Same as I9
			Trichloro benzenamine isomer	11,000	Potential herbicide degradation product
2,3-Dichlorotoluene CAS 32768-54-0	290,000				
21.07.2010	22.07.2010	L11	Dichloromethyl phenol	5,000	As for 2,4-Dichloro-o-cresol (I9, H7, K10, J10)
28.07.2010	02.08.2010	H10	2,4-Dichloro-o-cresol CAS 1570-65-6	10,000	As for I9, H7, K10, J10, L11
			Trichloro toluene isomers	58,000	Same as I9, J10
			Dichlorotoluene isomer	52,000	6 possible isomers, but very little data, using surrogate.
			2-Chlorotoluene	39,000	Encountered and assessed during site investigation, not a priority contaminant
			Trichlorobenzene	350,000	
28.07.2010	02.08.2010	I10	2,4-Dichloro-o-cresol CAS 1570-65-6	5,000	As for I9, H7, K10, J10, L11, H10
			Trichloro toluene isomers	24,000	Same as I9, J10, H10
03.08.2010	04.08.2010	L12	2,4-Dichloro-o-cresol CAS 1570-65-6	7,000	As for I9, H7, K10, J10, L11, H10, I10
03.08.2010	04.08.2010	L13	No VOC/SVOC peaks detected		
03.08.2010	04.08.2010	K12	2,4-Dichloro-o-cresol CAS 1570-65-6	7,000	As for I9, H7, K10, J10, L11, H10, I10, L12

03.08.2010	04.08.2010	K13 sand & gravel	Cyclo octaatomic sulphur	68,000	As for L8, L10 - Sulphur
05.08.2010	N/A	K13 chalk	2,4-Dichloro-o-cresol CAS 1570-65-6	650,000	As for I9, H7, K10, J10, L11, H10, I10, L12, K12
			Trichloro toluene isomers	1,140,000	Same as I9, J10, H10, I10
			1-(2-Chloroethoxy)-2-(o-Tolyloxy) ethane CAS 21120-80-9	140,000	Same as I9 and J10
			Dichlorotoluene isomer	99,000	Same as J10, H10
			2-Chlorotoluene	12,000	Encountered and assessed during site investigation, not a priority contaminant
05.08.2010	N/A	K11	2,4-Dichloro-o-cresol CAS 1570-65-6	22,000	As for I9, H7, K10, J10, L11, H10, I10, L12, K12, K13
05.08.2010	N/A	J11	2,4-Dichloro-o-cresol CAS 1570-65-6	220,000	As for I9, H7, K10, J10, L11, H10, I10, L12, K12, K13
			Trichloro toluene isomers	376,000	Same as I9, J10, H10, I10, K13
			Dinoseb CAS 88-85-7	90,000	Same as K10
			Dichlorotoluene isomer	18,000	Same as H10, K13
			2-Chlorotoluene	13,000	Encountered and assessed during site investigation, not a priority contaminant
12.08.2010	17.08.2010	J12	2-chloro Benzenemethanol CAS 17849-38-6	620	Potential agrochemical synthesis ingredient - further investigation is required
			2-Chlorobenzalazine CAS 5328-80-3	5,900	
			2,4-Dichloro-o-cresol CAS 1570-65-6	2,000	As for I9, H7, K10, J10, L11, H10, I10, L12, K12, K13, J11
			2(1-methylpropyl)-phenol	610	Encountered and assessed during site investigation, not a priority contaminant
12.08.2010	N/A	J13	2,4-Dichloro-o-cresol CAS 1570-65-6	3,400	As for I9, H7, K10, J10, L11, H10, I10, L12, K12, K13, J11, J12
24.08.2010	25.08.2010	J14	Total Petroleum Hydrocarbons (C5-C12)	43,000	Encountered and assessed during site investigation, not a priority contaminant
			1,3,5-Trimethylbenzene CAS 108-67-8	1,600	Encountered and assessed during site investigation, not a priority contaminant
			1,2,4-Trimethylbenzene CAS 95-63-6	600	
			1,2,3-Trimethylbenzene CAS 526-73-8	700	Isomers encountered and assessed during site investigation, quantitative risk assessment not required
			1-Ethyl-2-Methylbenzene CAS 611-14-3	500	Potential agrochemical synthesis ingredient - further investigation is required
25.08.2010	N/A	I13	1-methylnaphthalene CAS 90-12-0	100	Same as K10NAPL

## Former Bayer Cropscience Site

## Contaminants Not Previously Identified

			Phenanthrene	200	Encountered and assessed during site investigation, not a priority contaminant
			Fluoranthene	300	
			Pyrene	300	
			Benzo(b/k)Fluoranthene	200	
01.09.2010	N/A	I14	Trichloro methyl benzene (trichloro toluene)	400	Same as I9, J10, H10, I10, K13, J11
01.09.2010	N/A	I15	Dichlorocresol	2600	As for I9, H7, K10, J10, L11, H10, I10, L12, K12, K13, J11, J12
			Dichlorophenoxybutyric acid	6300	Herbicide encountered and assessed during site investigation, similar to MCPA and Mecoprop which are higher risk substances, therefore not a priority contaminant
01.09.2010	N/A	H14	No VOC/SVOC peaks detected		
01.09.2010	N/A	H15	No VOC/SVOC peaks detected		
03.09.2010	N/A	I11	Dichlorocresol	3,300	As for I9, H7, K10, J10, L11, H10, I10, L12, K12, K13, J11, J12, I15
			Trichloro methyl benzene (trichloro toluene)	1,000	Same as I9, J10, H10, I10, K13, J11, I14
			Prochloraz CAS 67747-09-5	800	Same as H9
03.09.2010	N/A	I12	1-methylnaphthalene CAS 90-12-0	40,000	Same as K10NAPL, I13
			Dibenzofuran	24,000	Encountered and assessed during site investigation, not a priority contaminant
			Phenanthrene	60,000	
			Fluoranthene	29,000	
Acenaphthene	31,000				
24.09.2010	N/A	J15	Methylpropyl phenol	340	Encountered and assessed during site investigation, not a priority contaminant
24.09.2010	28.09.2010	H13	Oxathiane 4,4-dioxide CAS 107-61-9	220	
	N/A		Trichloro methyl benzene (trichloro toluene)	230	Same as I9, J10, H10, I10, K13, J11, I14, I11
			Dichloromethylphenol	2100	As for I9, H7, K10, J10, L11, H10, I10, L12, K12, K13, J11, J12, I15, I11
			1-(2-Chloroethoxy)-2-(o-Tolyloxy) ethane CAS 21120-80-9	470	Same as I9, J10, K13
01.10.2010	N/A	H11	No VOC/SVOC peaks detected		
01.10.2010	05.10.2010	H12	Indane CAS 496-11-7	3700000	2-ring hydrocarbon
	N/A		Ethyltoluene (ethyl methyl benzene) isomer	4500000	As J14
			Bis methylpropyl phenol isomer	980000	As J16
			1,3,5-Trimethylbenzene	3900000	Encountered and assessed during site

			1,2,4-Trimethylbenzene	1000000	investigation, not a priority contaminant
			1,2,3-Trimethylbenzene	3100000	
22.10.2010 (216017)	25.10.2010	G12	Nicotine	6400	Natural insecticide
	N/A		Dichloromethyl phenol	2900	As for I9, H7, K10, J10, L11, H10, I10, L12, K12, K13, J11, J12, I15, I11, H13
			Methylpropyl phenol	9400	Encountered and assessed during site investigation, not a priority contaminant
			Schradan	1200	Contaminant of concern, already included in the standard validation suite
22.10.2010 (216017)	N/A	G13	1-methylnaphthalene CAS 90-12-0	170	Same as K10NAPL, I13, I12
			Isophorone CAS 78-59-1	530	Encountered and assessed during site investigation, not a priority contaminant
			Naphthalene	690	
			2-methylnaphthalene	270	
			Phenanthrene	410	
			Fluoranthene	380	
			Pyrene	310	
22.10.2010 (216017)	N/A	G14	No VOC/SVOC peaks detected		
29.10.2010 (216821)	N/A	H17	No VOC/SVOC peaks detected		
29.10.2010 (216821)	N/A	G17	No VOC/SVOC peaks detected		
01.11.2010 (216817)	30.11.2010	G10	Dibromochloromethane CAS 124-48-1	300	Risk Assessment
	N/A		Dichloromethyl phenol	1300	As for I9, H7, K10, J10, L11, H10, I10, L12, K12, K13, J11, J12, I15, I11, H13, G12
			Isophorone	7100	Encountered and assessed during site investigation, not a priority contaminant
			Benzyl Chloride (1-chloro-2-methylbenzene CAS 95-49-8)	200	
			Methylpropyl phenol	7100	
3,3,5-trimethyl cyclohexanone	700				
01.11.2010 (216817)	N/A	G11	Dichloromethyl phenol	2300	As for I9, H7, K10, J10, L11, H10, I10, L12, K12, K13, J11, J12, I15, I11, H13, G12, G10
			Trichloro methyl benzene (trichloro toluene)	2400	Same as I9, J10, H10, I10, K13, J11, I14, I11, H13
			1-Methyl naphthalene	760	Same as K10NAPL, I13, I12, G13
			2-methyl phenol	800	Encountered and assessed during site investigation, not a priority contaminant
			Methylpropyl phenol	22000	

			2-Methylnaphthalene	1500	
			2,4,5-Trichlorophenol	360	
			Chloroform	500	
			1,2-dibromoethane	700	
			EthylBenzene	1800	
			1,4-Dichlorobenzene	700	
			1,2,3-Trichlorobenzene	2000	
01.11.2010 (216817)	30.11.2010	G15	Ethyl methyl phenol	18000	Risk Assessment
	N/A		Dimethyl naphthalene	59000	Risk Assessment
			Dichloromethyl phenol	2400	As for I9, H7, K10, J10, L11, H10, I10, L12, K12, K13, J11, J12, I15, I11, H13, G12, G10, G11
			1-Methyl naphthalene	26000	Same as K10NAPL, I13, I12, G13
			1-ethyl-3-methyl benzene (ethyl toluene)	600	As J14, H12
			Ethyltoluene	300	
			Isophorone	37000	Encountered and assessed during site investigation, not a priority contaminant
			Naphthalene	43000	
			Methylpropyl phenol	30000	
			2-Methylnaphthalene	21000	
			Phenanthrene	110000	
			Fluoranthene	69000	
	1,3,5-Trimethylbenzene		900		
1,2,4-Trimethylbenzene	1600				
1,2,3-Trimethylbenzene	400				
08.11.2010 (217789)	N/A	M7	No VOC/SVOC peaks detected		
08.11.2010 (217789)	N/A	M8	2-methyl phenol	11,000	Encountered and assessed during site investigation, not a priority contaminant
08.11.2010 (217793)	N/A	M6	No VOC/SVOC peaks detected		
08.11.2010 (217793)	N/A	N6	No VOC/SVOC peaks detected		
08.11.2010 (217795)	N/A	L5	No VOC/SVOC peaks detected		
08.11.2010 (217795)	N/A	M4	No VOC/SVOC peaks detected		
08.11.2010 (217797)	N/A	M5	No VOC/SVOC peaks detected		
08.11.2010 (217797)	N/A	N4	No VOC/SVOC peaks detected		
08.11.2010 (217797)	N/A	N5	No VOC/SVOC peaks detected		
08.11.2010 (217800)	N/A	M9	No VOC/SVOC peaks detected		