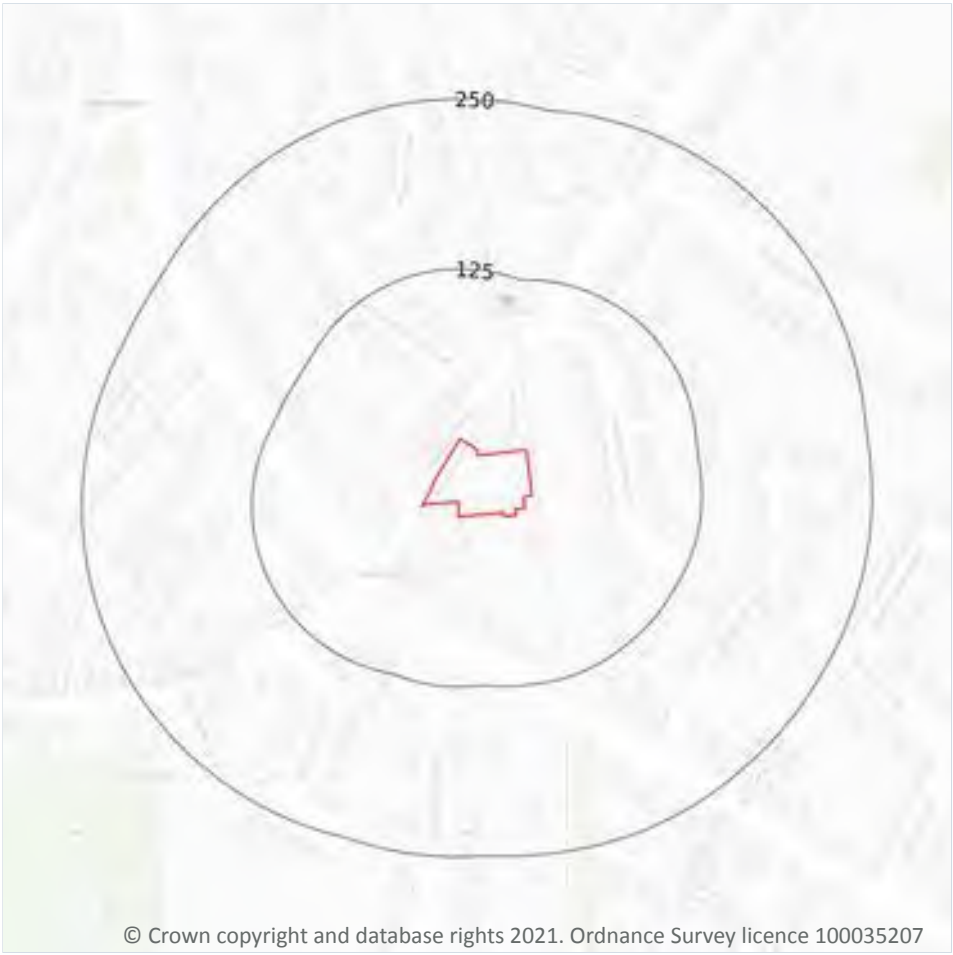
19 Radon



Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

19.1 Radon

Records on site	1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 98**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Less than 1%**	**None****

This data is sourced from the British Geological Survey and Public Health England.

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	**6**

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km^2. In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km^2; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**15 - 30 mg/kg**
24m NW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	**0**

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

Site Outline

Search buffers in metres (m)

- Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 1 Worksites
- Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

21.1 Underground railways (London)

Records within 250m	0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	12

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

Features are displayed on the Railway infrastructure and projects map on **page 101**

Location	Land Use	Year of mapping	Mapping scale
On site	**Railway Sidings**	**1886**	**2500**
On site	**Railway Sidings**	**1903**	**2500**
On site	**Railway Sidings**	**1885**	**10560**
6m E	Railway Sidings	1946	10560
6m E	Railway Sidings	1901	10560
14m E	Railway Sidings	1886	2500
15m E	Railway Sidings	1970	2500
56m N	Railway Sidings	1959	10560
86m N	Railway Sidings	1901	10560
112m N	Railway Sidings	1886	2500
131m N	Railway Sidings	1886	2500
186m N	Railway Sidings	1901	10560

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	1

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

Features are displayed on the Railway infrastructure and projects map on **page 101**

Location	Description
225m S	Dismantled

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	5

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

Features are displayed on the Railway infrastructure and projects map on **page 101**

Location	Name	Type
4m E	Not given	Multi Track
7m E		rail
11m E		rail
77m N	Not given	Multi Track
160m S	Not given	Multi Track

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 ltd.

Cam and Ely Ouse Chalk Overview

Download Water Body as CSV / GeoJSON

Overall classification for 2019
Poor

Id	GB40501G400500
Type	Groundwater Body
Hydromorphological designation	not applicable
NGR	TL5183229017
Groundwater area	299577.401 ha
Surface area	2995.774 km2
Surveillance Water Body	No

Classifications

Cycle 2 classifications

Download as CSV

Classification Item	2013	2014	2015	2016	2019
Overall Water Body	Poor	Poor	Poor	Poor	Poor
Quantitative	Poor	Poor	Poor	Poor	Poor
Chemical (GW)	Poor	Poor	Poor	Poor	Poor

Cycle 1 classifications Show

Upstream water bodies

Name
No data to show

Downstream water bodies

Name
No data to show

Investigations into classification status

Download as CSV

Classification Element	Cycle	Year	Status	Outcome
No data to show				

Reasons for not achieving good status and reasons for deterioration

Download as CSV

Reason Type	SWMI	Activity	Category	More	Classification Element
RNAG	Flow	Groundwater abstraction	Other	Details	Quantitative GWDTEs test
RNAG	Diffuse source	Poor nutrient management	Agriculture and rural land management	Details	General Chemical Test
RNAG	Flow	Groundwater abstraction	Industry	Details	Quantitative Dependent Surface Water Body Status
RNAG	Diffuse source	Transport Drainage	Industry	Details	General Chemical Test
RNAG	Point source	Sewage discharge (continuous)	Water Industry	Details	General Chemical Test
RNAG	Diffuse source	Transport Drainage	Industry	Details	Chemical Drinking Water Protected Area
RNAG	Diffuse source	Poor nutrient management	Agriculture and rural land management	Details	Chemical Drinking Water Protected Area
RNAG	Flow	Groundwater abstraction	Water Industry	Details	Quantitative Water Balance
RNAG	Flow	Groundwater abstraction	Industry	Details	Quantitative Water Balance
RNAG	Flow	Groundwater abstraction	Agriculture and rural land management	Details	Quantitative Water Balance
RNAG	Point source	Sewage discharge (continuous)	Domestic General Public	Details	General Chemical Test
RNAG	Diffuse source	Poor nutrient management	Agriculture and rural land management	Details	General Chemical Test
RNAG	Diffuse source	Poor nutrient management	Agriculture and rural land management	Details	Trend Assessment
RNAG	Diffuse source	Other (not in list, must add details in comments)	Other	Details	Trend Assessment
RNAG	Flow	Groundwater abstraction	Agriculture and rural land management	Details	Quantitative Dependent Surface Water Body Status
RNAG	Flow	Groundwater abstraction	Water Industry	Details	Quantitative Dependent Surface Water Body Status

Objectives

Download as CSV

Classification Item	Status	Year	Reasons
Overall Water Body	Poor	2015	Unfavourable balance of costs and benefits Disproportionate burdens
Quantitative	Poor	2015	Unfavourable balance of costs and benefits Disproportionate burdens
Quantitative Status element	Poor	2015	Unfavourable balance of costs and benefits Disproportionate burdens
Quantitative Saline Intrusion	Good	2015	
Quantitative Water Balance	Poor	2015	Unfavourable balance of costs and benefits
Quantitative GWDTEs test	Good	2027	Disproportionate burdens
Quantitative Dependent Surface Water Body Status	Good	2027	Disproportionate burdens
Chemical (GW)	Poor	2015	Unfavourable balance of costs and benefits
Chemical Status element	Poor	2015	Unfavourable balance of costs and benefits
Chemical Drinking Water Protected Area	Poor	2015	Unfavourable balance of costs and benefits
General Chemical Test	Poor	2015	Unfavourable balance of costs and benefits
Chemical GWDTEs test	Good	2015	
Chemical Dependent Surface Water Body Status	Good	2015	
Chemical Saline Intrusion	Good	2015	

Protected areas

Download as CSV

PA Name	ID	Directive	Type	More information
Stansted Mountfitchet G152	G152	Nitrates Directive		
Sandlings and Chelmsford G78	G78	Nitrates Directive		
Anglian Chalk G71	G71	Nitrates Directive		

PA Name	ID	Directive	Type	More information
Risby	GWSGZ0011	Safeguard Zone		
Sandringham Sands South G150	G150	Nitrates Directive		
Cam and Ely Ouse Chalk	UKGB40501G400500	Drinking Water Protected Area		
Buntingford Chalk G141	G141	Nitrates Directive		
Brettenham	GWSGZ0002	Safeguard Zone		
Euston	GWSGZ0003	Safeguard Zone		
Fleam Dyke 1	GWSGZ0004	Safeguard Zone		
Fowlmere	GWSGZ0005	Safeguard Zone		
Fulbourn 2	GWSGZ0006	Safeguard Zone		
Linton	GWSGZ0007	Safeguard Zone		
Melbourn	GWSGZ0008	Safeguard Zone		
Babraham	GWSGZ0001	Safeguard Zone		
Morden Grange	GWSGZ0009	Safeguard Zone		
North Pickenham	GWSGZ0010	Safeguard Zone		

Issues preventing waters reaching good status

Issues preventing waters reaching good status and the sectors identified as contributing to them are shown in a table in the new summary page.

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Granta

Download Water Body as CSV / GeoJSON

Overview

Overall classification for 2019
Moderate

Id	GB105033037810
Type	River
Hydromorphological designation	not designated artificial or heavily modified
NGR	TL5906446883
Catchment area	11523.726 ha
Length	29.175 km
Surveillance Water Body	No
Catchment area	115.237 km2

Classifications

Cycle 2 classifications

Download as CSV

Classification Item	2013	2014	2015	2016	2019
Overall Water Body	Good	Moderate	Moderate	Moderate	Moderate
Ecological	Good	Moderate	Moderate	Moderate	Moderate
Chemical	Good	Good	Good	Good	Fail

Cycle 1 classifications

Show

Upstream water bodies

Name
No data to show

Downstream water bodies

Name
Cam (Stapleford to Hauxton Junction)

Investigations into classification status

Download as CSV

Classification Element	Cycle	Year	Status	Outcome
No data to show				

Reasons for not achieving good status and reasons for

deterioration

Download as CSV

Reason Type	SWMI	Activity	Category	More	Classification Element
RNAG	Flow	Groundwater abstraction	Water Industry	Details	Hydrological Regime
RNAG	Flow	Surface water abstraction	Agriculture and rural land management	Details	Hydrological Regime
RNAG	Flow	Groundwater abstraction	Local and Central Government	Details	Hydrological Regime
RNAG	Flow	Groundwater abstraction	Industry	Details	Hydrological Regime
RNAG	Flow	Groundwater abstraction	Agriculture and rural land management	Details	Hydrological Regime
RNAG	Point source	Sewage discharge (continuous)	Water Industry	Details	Phosphate
RNAG	Point source	Sewage discharge (continuous)	Water Industry	Details	Macrophytes and Phytobenthos Combined

Objectives

Download as CSV

Classification Item	Status	Year	Reasons
Overall Water Body	Moderate	2015	No known technical solution is available
Ecological	Moderate	2015	No known technical solution is available
Supporting elements (Surface Water)	Not assessed	2015	
Biological quality elements	Moderate	2015	No known technical solution is available
Macrophytes and Phytobenthos Combined	Moderate	2015	No known technical solution is available
Fish	Good	2015	
Invertebrates	Good	2015	
Hydromorphological Supporting Elements	Supports Good	2015	
Hydrological Regime	Supports Good	2021	
Physico-chemical quality elements	Moderate	2015	No known technical solution is available
Ammonia (Phys-Chem)	Good	2015	
Dissolved oxygen	Good	2015	
pH	Good	2015	
Phosphate	Poor	2015	No known technical solution is available
Temperature	Good	2015	
Specific pollutants	Not assessed	2015	
Chemical	Good	2015	
Priority substances	Does not require assessment	2015	
Other Pollutants	Does not require assessment	2015	
Priority hazardous substances	Does not require assessment	2015	

Protected areas

Download as CSV

PA Name	ID	Directive	Type	More information
Ely Ouse and Cut-off channel NVZ S390	S390	Nitrates Directive		
River Blackwater NVZ S434	S434	Nitrates Directive		
Lower Stour NVZ S424	S424	Nitrates Directive		

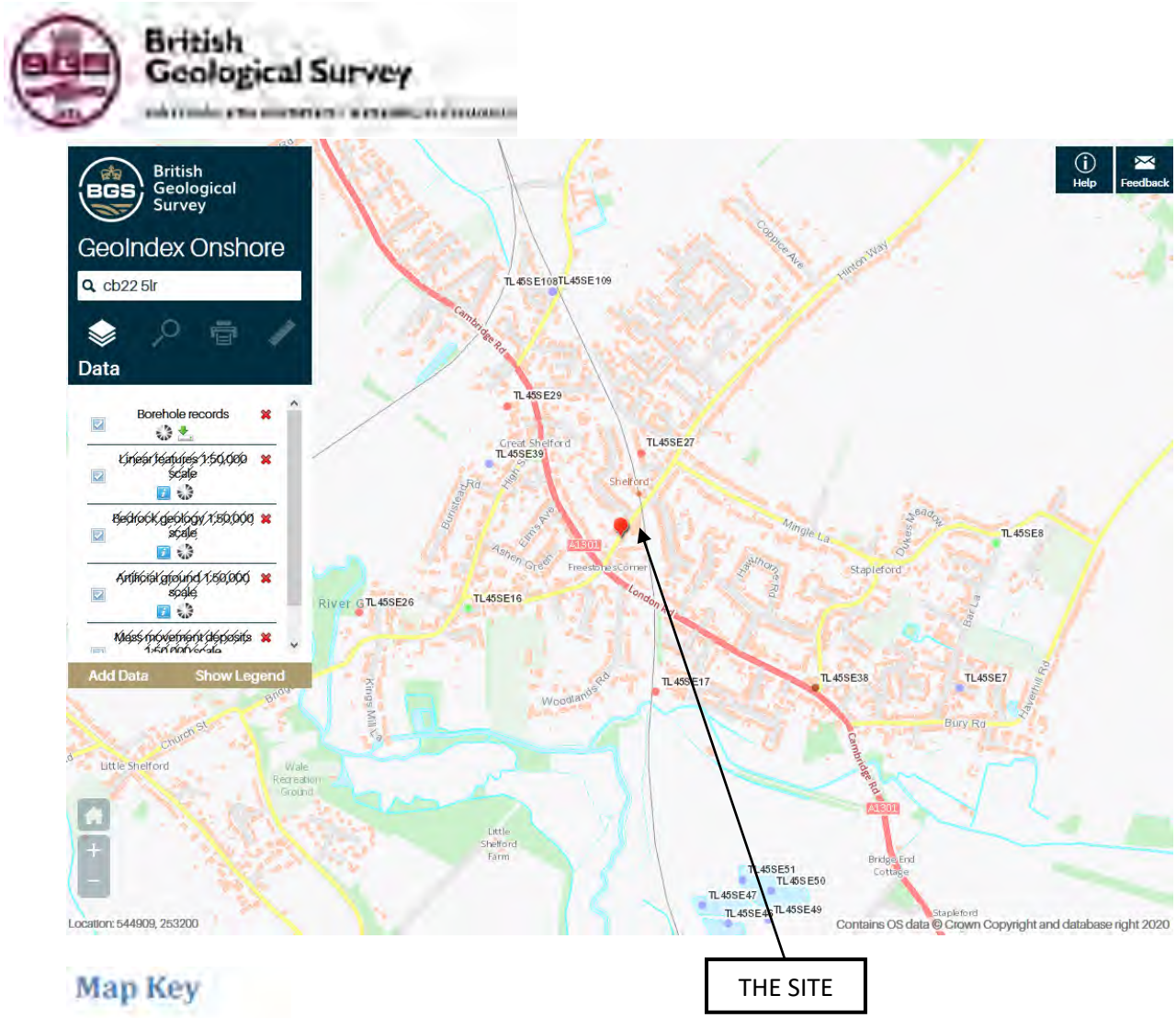
Issues preventing waters reaching good status

Issues preventing waters reaching good status and the sectors identified as contributing to them are shown in a table in the new summary page.

View Table

Notes:

1. The maps contain data reproduced under the Open Government Licence, available for viewing at http://www.nationalarchives.gov.uk/doc/open-government-licence
2. The maps contain Environment Agency Information ©Environment Agency



THE SITE

Map Key

Borehole records

- Unknown Length
- Confidential
- 0 - 10m
- 10 - 30m
- 30m+

BGS ID: 542586 : BGS Reference: TL45SE27
British National Grid (27700) : 546520,252350

205/76

TL45/7

TL 4652 5235

GREAT SHELFORD

McDougalls Flour mill, Station Road.

4. Mills by Railway Station.

		Thickness. Feet.	Depth. Feet.
Valley Gravel	Coarse gravel	10	10
Lower Chalk	Clunch, with coprolite-bed at bottom ...	90	100
Gault	Blue clay	170	270
	Soft bluish earth ("bear's muck") ...	2	272
Lower Greensand	Brown quick-sand ...	6	278
	Dark grey ironstone rock	2	280

Surface c. 50 O.D.
Shaft 10'. Pipes 10' from surface. R.W.L. c. 20' ~~down~~.
Air compressor to raise water. Yield large.
Soft water c. 1885.
Sited on 6" Cambs 54 NW/E. ~~Water~~ 17.4.12.

900 yds N.E. of St. Mary's Ch.

Visited:- McDougalls Flour Mill. Shaft x b'; bore lined to 7ft 3in b.s.
Date of bore unknown, but probably before 1900; sunk by George Lack.
In use for boilers and ~~flour~~ wheats conditioning; pumps 24 h.p.d. 5 d.p.week.
Electric motor driving airlift which raises water into shaft, compressor, and surface pump. About ½ water returned straight back to well from overflow from feed tank. Bottom of airlift ~~Surface~~ thought to be c. 150-120' b.s.
on Saturday { R.W.L. in shaft = 7' 7½" b.s.
R.W.L. in bore 42ft 1 in. b.s.
Bore pumped sandy water in past; v. soft. Consumption unknown but engineering dept. of McDougalls estimated it to be less than the notifiable amount. Information from Manager, and maintenance engineer. O.D. +60. A.S. 7/5/60

Water Supply of
Cambs., Hunts.
& Rutland.
Page 89

DATA Bank

TL 45 SE/27

TL 4662 5235

205/76 Messrs. McDougall, Flour Mill, Station Road, Great Shelford

W.S.C.H.R. p. 89. Surface +60. Shaft 40 x 6; rest bore. Lining tubes: from 7¼ down. LGS -212. *Lack, G., c.1885.*
R.W.L. +c.40. Air lift. *Apr. 1942.* R.W.L. +c.52½ (shaft); +18 (bore). Suction -c.60. Electric air lift. *May 1960.*

Drift	...	...	10	10
LCk	...	...	90	100
G	...	...	172	272
LGS	...	...	8	280

Coarse gravel		10	10
[Chalk] Clunch with coprolite bed at bottom		90	100
[Gault]	Blue clay	170	270
	Soft bluish earth ("bear's muck")	2	272
[Lower Greensand]	Brown quick-sand	6	278
	Dark grey ironstone rock	2	280

APPENDIX III

APPENDIX III – GROUND INVESTIGATION AND MONITORING DATA

This Appendix presents relevant ground investigation factual records, together with summary tables of monitoring data and analytical laboratory test results, as primarily relating to the site. The data was obtained from the following reports:

SLR (October 2018) *Fuel Depot, 2 Station Road, Great Shelford: Phase 1 Data Review and Preliminary Land Quality Assessment* Ref. 416.05952.00003 –PLQRA Draft v2

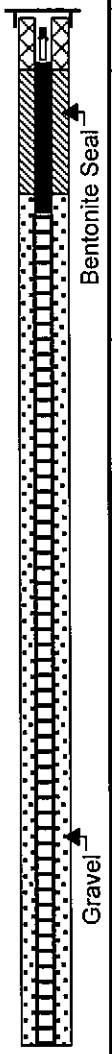
SLR (August 2019) Fuel *Depot, 2 Station Road, Great Shelford: Detailed Quantitative Risk Assessment* Ref. 416.05952.00004 –DQRA Final v2

It is noted that the exploratory hole records are not compliant with the edition of BS5930 current at the time of the works (particularly in the omission of accurate strata strengths/consistency terms). It is recommended that the accuracy of data in this Appendix be further assessed on completion of the ground investigation as recommended in Section 6 of the report.

REC
Resource & Environmental Consultants Ltd
3 Crittall Drive
Springwood Industrial
Estate
Braintree
Essex
CM7 2RT
Tel: 01376 554400
Fax: 01355 528980

Borehole: WS22
Project Location: Station Road, Great Shelford
Client: Oakley Soils
Method: Windowless Sampling
Total Depth of Borehole: 5.0m

Project Number: 50740
Date: 25.09.2008
Logged By: JK



Elevation (m)	Depth (m)	Description/Classification of Materials	Sample Type	Remarks
0.0	0	Ground Surface		
-0.3		MADE GROUND Tarmac.		
		MADE GROUND Concrete.	D, G	PID=<0.1ppm
	1	Dark orange to brown, clayey, sandy (fine to coarse) GRAVEL. Gravel of fine to medium, sub-angular to sub-rounded flint. Becoming clayier with much coarse, sub-angular chalk gravel below 0.8m.	D, G	PID=<0.1ppm
-1.6				
		Soft, dark brown, slightly sandy, gravelly CLAY. Gravel of fine, sub-rounded flint.	D, G	PID=<0.1ppm
-2.2	2			
		CHALK Recovered as grey to cream calcareous silt with chalk nodules.	D, G	PID=<0.1ppm
	3			
			D, G	PID=<0.1ppm
	4			
			D, G	PID=<0.1ppm
-5.0	5			

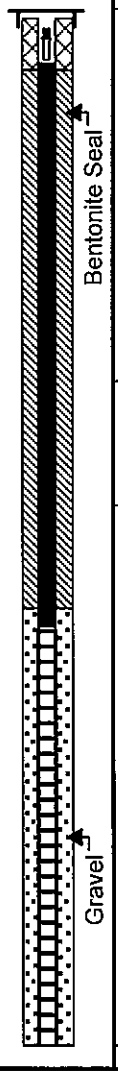
B. Bulk, D. Disturbed, W. Water, G. Glass Jar, PID. Photo Ionisation Detector (ppm), V. 40ml Vial

Notes: Groundwater at 2.94m.

REC
Resource & Environmental Consultants Ltd
3 Crittall Drive
Springwood Industrial
Estate
Braintree
Essex
CM7 2RT
Tel: 01376 554400
Fax: 01355 528980

Borehole: WS23
Project Location: Station Road, Great Shelford
Client: Oakley Soils
Method: Windowless Sampling
Total Depth of Borehole: 5.0m

Project Number: 50740
Date: 26.09.2008
Logged By: JK



Elevation (m)	Depth (m)	Description/Classification of Materials	Sample Type	Remarks
0.0	0	Ground Surface		
		MADE GROUND Tarmac.		
		Soft to firm mid to dark brown, slightly sandy, gravelly CLAY. Gravel of fine sub-rounded flint and course to cobble size sub-angular to angular chalk. Occasional black, carbonaceous inclusions between 0.2 and 0.4m.	D, G	PID=<0.1ppm
	1	Occasional pockets of coarse, orange chalky SAND.	D, G	PID=<0.1ppm
-1.8				
	2	CHALK Recovered as pale cream to white sandy silt with frequent chalk gravel.	D, G	PID=1.6ppm
-2.4				
		CHALK Recovered as grey sandy silt with hydrocarbon odour and staining.	D, G	PID=43.6ppm
	3		D, G	PID=83.3ppm
	4		D, G	PID=<0.1ppm
-5.0	5			

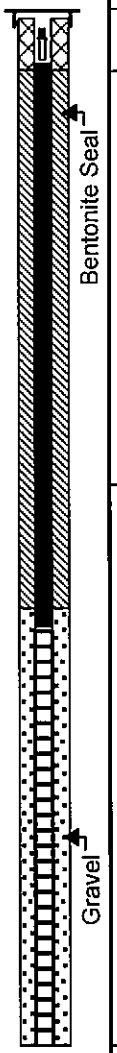
B. Bulk, D. Disturbed, W. Water, G. Glass Jar, PID. Photo Ionisation Detector (ppm), V. 40ml Vial

Notes:

REC
Resource & Environmental Consultants Ltd
3 Crittall Drive
Springwood Industrial
Estate
Braintree
Essex
CM7 2RT
Tel: 01376 554400
Fax: 01355 528980

Borehole: WS24
Project Location: Station Road, Great Shelford
Client: Oakley Soils
Method: Windowless Sampling
Total Depth of Borehole: 5.0m

Project Number: 50740
Date: 26.09.2008
Logged By: JK



Elevation (m)	Depth (m)	Description/Classification of Materials	Sample Type	Remarks
0.0	0	Ground Surface		
-0.3		MADE GROUND Tarmac over concrete.		
		Soft, mid to dark brown, slightly gravelly, sandy CLAY. Gravel of fine sub-rounded flint and medium to course sub-angular to angular chalk.	D, G	PID=<0.1ppm
	1		D, G	PID=<0.1ppm
	2			
-2.3		CHALK Recovered as pale grey sandy silt with frequent chalk gravel. Slight hydrocarbon odour throughout.	D, G	PID=224ppm
	3		D, G	PID=13.2ppm
	4		D, G	PID=0.9ppm
-5.0	5			

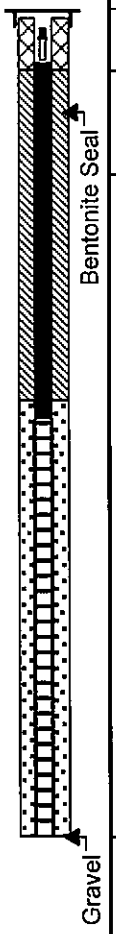
B. Bulk, D. Disturbed, W. Water, G. Glass Jar, PID. Photo Ionisation Detector (ppm), V. 40ml Vial

Notes:

REC
Resource & Environmental Consultants Ltd
3 Crittall Drive
Springwood Industrial
Estate
Braintree
Essex
CM7 2RT
Tel: 01376 554400
Fax: 01355 528980

Borehole: WS25
Project Location: Station Road, Great Shelford
Client: Oakley Soils
Method: Windowless Sampling
Total Depth of Borehole: 4.0m

Project Number: 50740
Date: 25.09.2008
Logged By: JK



Elevation (m)	Depth (m)	Description/Classification of Materials	Sample Type	Remarks
0.0	0	Ground Surface		
-0.3		MADE GROUND Tarmac over concrete.		
-0.8		Firm, orange brown, very gravelly CLAY. Gravel of medium to coarse and occasional cobble size sub-angular to sub-rounded flint. - Occasional pockets of soft dark brown clay.	D, G	PID=<0.1ppm
	1	CHALK Recovered as pale grey to cream sandy silt with frequent chalk gravel.	D, G	PID=<0.1ppm
	2		D, G	PID=224ppm
	3		D, G	PID=13.2ppm
-4.0	4	End of Log	D, G	PID=0.9ppm
	5			

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

Notes:

Borehole Log

WS410

PAGE 1 OF 1

CLIENT Mr Paul Davis
PROJECT NUMBER 8182
PROJECT NAME Great Shelford
DRILLING CONTRACTOR Exploration Limited
SCALE 1:30

DRILLING METHOD Hand Pit and Windowless Sampling
GROUND LEVEL
EASTING **NORTHING**
DATE STARTED 9/1/15 **DATE FINISHED** 9/1/15
LOGGED BY MT **CHECKED BY** MT

	DESCRIPTION OF STRATA	LEGEND	RED. LEVEL	WATER	SAMPLING REF.	SAMPLING DEPTH	PID RESULTS (ppm)	BACKFILL/ INSTALLATION
	MADE GROUND: Asphalt. 0.10							
	MADE GROUND: Concrete. 0.30					0.30	4.5	
1	MADE GROUND: Fine to coarse, sub angular gravel of flint. Fragments of coal identified throughout. 1.40				J	1.40	3.9	
	ZIG ZAG CHALK FORMATION: Firm off white CHALK.							Backfilled with arisings.
2						2.00	3.2	
						2.50	1.0	
3	3.00					3.00	2.2	

Borehole terminated at 3.0m due to refusal.

REMARKS
1. Logged in general accordance with BS 5930:1999.
2. PID = volatile vapour concentration in ppm.

PROGRESS

Date	Time	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks

CASING

Top (m)	Base (m)	Diameter (mm)	Remarks

WATER OBSERVATIONS

Date	Time	Strike at Depth (m)	Rise to Depth (m)	Time (mins)	Flow Remarks	Casing Depth (m)	Sealed at (m)

CHISELLING

From (m)	To (m)	Time (hh:mm)

OHES Environmental
1 The Courtyard, Denmark Street
RG40 2AZ
Telephone: 01189 797755

Borehole Log

WS411

PAGE 1 OF 1

CLIENT Mr Paul Davis
PROJECT NUMBER 8182
PROJECT NAME Great Shelford
DRILLING CONTRACTOR Exploration Limited
SCALE 1:30

DRILLING METHOD Hand Pit and Windowless Sampling
GROUND LEVEL
EASTING **NORTHING**
DATE STARTED 9/1/15 **DATE FINISHED** 9/1/15
LOGGED BY MT **CHECKED BY** MT

	DESCRIPTION OF STRATA	LEGEND	RED. LEVEL	WATER	SAMPLING REF.	SAMPLING DEPTH	PID RESULTS (ppm)	BACKFILL/ INSTALLATION
	MADE GROUND: Asphalt. 0.10							
	MADE GROUND: Fine to coarse, sub angular sandy gravel. Sand is medium to coarse. Gravel is of flint.				J	0.30	4.8	
	0.90					0.90	3.8	
1	ZIG ZAG CHALK FORMATION: Firm off white CHALK.					1.50	4.1	Backfilled with arisings.
2						2.00	4.3	
						2.50	5.1	
3					J	3.00	5.0	
	3.50					3.50	4.6	

Borehole terminated at 3.5m due to refusal.

REMARKS
1. Logged in general accordance with BS 5930:1999.
2. PID = volatile vapour concentration in ppm.

PROGRESS						CASING			
Date	Time	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks	Top (m)	Base (m)	Diameter (mm)	Remarks

WATER OBSERVATIONS								CHISELLING		
Date	Time	Strike at Depth (m)	Rise to Depth (m)	Time (mins)	Flow Remarks	Casing Depth (m)	Sealed at (m)	From (m)	To (m)	Time (hh:mm)

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Borehole Log

WS412

PAGE 1 OF 1

CLIENT Mr Paul Davis
PROJECT NUMBER 8182
PROJECT NAME Great Shelford
DRILLING CONTRACTOR Exploration Limited
SCALE 1:30

DRILLING METHOD Hand Pit and Windowless Sampling
GROUND LEVEL
EASTING **NORTHING**
DATE STARTED 9/1/15 **DATE FINISHED** 9/1/15
LOGGED BY MT **CHECKED BY** MT

	DESCRIPTION OF STRATA		LEGEND	RED. LEVEL	WATER	SAMPLING REF.	SAMPLING DEPTH	PID RESULTS (ppm)	BACKFILL/ INSTALLATION
	MADE GROUND: Asphalt.	0.10							
	MADE GROUND: Fine to coarse gravel of asphalt	0.30					0.30	3.3	
	MADE GROUND: Mid to yellow brown sandy gravelly clay. Gravel is fine to medium, sub angular and of flint and chalk. Fragments of coal identified throughout.	0.70					0.70	5.1	
1	MADE GROUND: Fine to medium, sub angular gravel of flint and chalk.						1.40	5.4	Backfilled with arisings.
2		2.00				J	2.00	6.6	

Borehole terminated at 2.0m due to refusal.

REMARKS
1. Logged in general accordance with BS 5930:1999.
2. PID = volatile vapour concentration in ppm.

PROGRESS						CASING			
Date	Time	Hole Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks	Top (m)	Base (m)	Diameter (mm)	Remarks

WATER OBSERVATIONS								CHISELLING		
Date	Time	Strike at Depth (m)	Rise to Depth (m)	Time (mins)	Flow Remarks	Casing Depth (m)	Sealed at (m)	From (m)	To (m)	Time (hh:mm)

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Station Road Great Shelford - Compiled Groundwater Monitoring Data

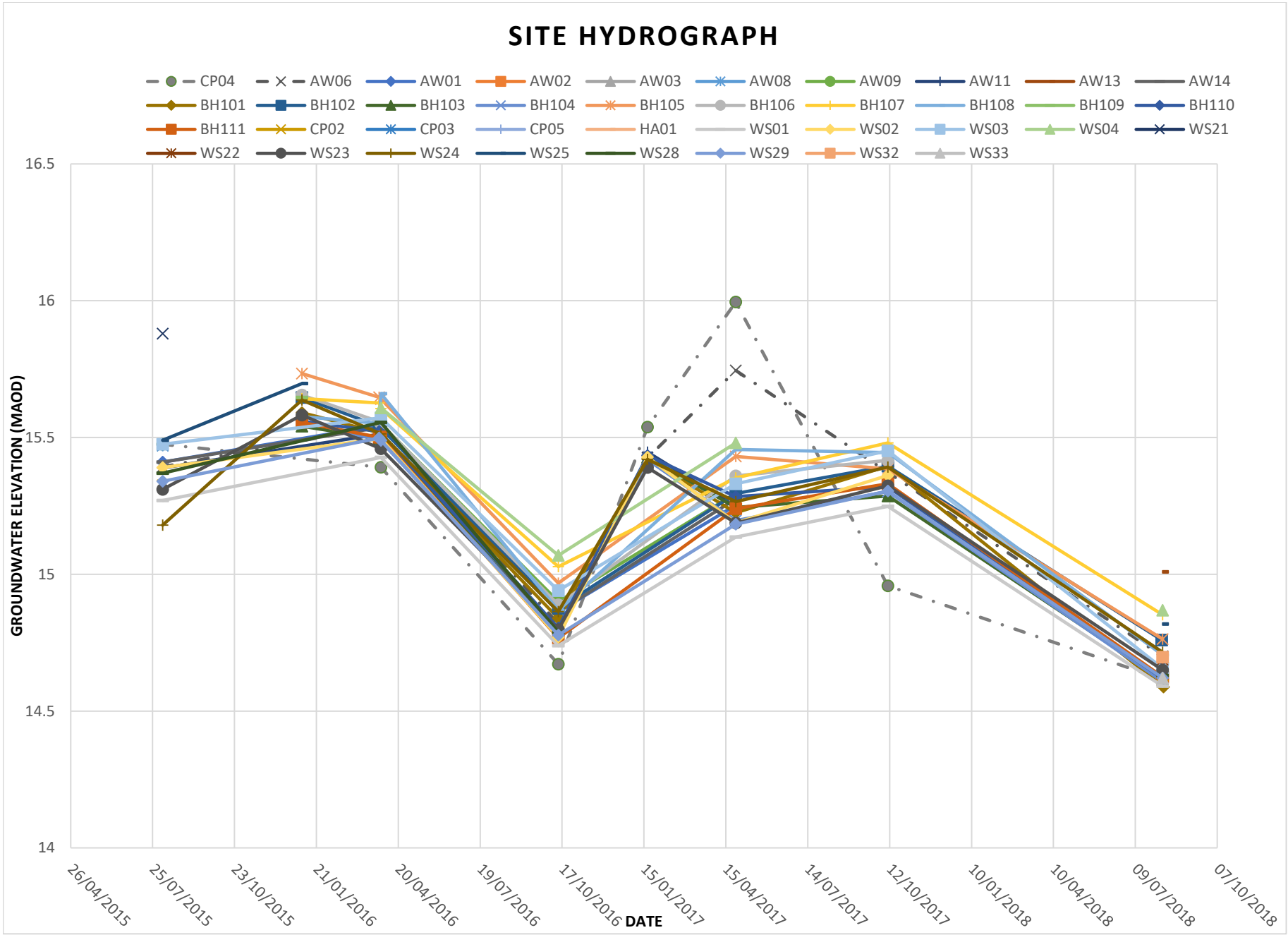
BH Ref	Ground Elevation	Date	Groundwater Level	GW Elevation
WS03	18.7	08/08/2018	4.044	14.656
WS04	17.89	01/04/2016	2.282	15.608
WS04	17.89	13/10/2016	2.821	15.069
WS04	17.89	26/04/2017	2.41	15.48
WS04	17.89	10/10/2017	NR	-
WS04	17.89	08/08/2018	3.021	14.869
WS21	18.15	05/08/2015	2.27	15.88
WS21	18.15	10/10/2017	NR	-
WS21	18.15	08/08/2018	3.482	14.668
WS22	18.08	08/08/2018	3.392	14.688
WS23	18.01	05/08/2015	2.7	15.31
WS23	18.01	05/01/2016	2.428	15.582
WS23	18.01	01/04/2016	2.551	15.459
WS23	18.01	13/10/2016	3.212	14.798
WS23	18.01	19/01/2017	2.62	15.39
WS23	18.01	26/04/2017	2.823	15.187
WS23	18.01	10/10/2017	2.687	15.323
WS23	18.01	08/08/2018	3.36	14.65
WS24	17.98	05/08/2015	2.8	15.18
WS24	17.98	05/01/2016	2.343	15.637
WS24	17.98	01/04/2016	2.467	15.513
WS24	17.98	13/10/2016	3.116	14.864
WS24	17.98	19/01/2017	2.56	15.42
WS24	17.98	26/04/2017	2.714	15.266
WS24	17.98	10/10/2017	2.588	15.392
WS24	17.98	08/08/2018	3.265	14.715
WS25	17.97	05/08/2015	2.48	15.49
WS25	17.97	05/01/2016	2.273	15.697
WS25	17.97	10/10/2017	NR	-

FH Great Shelford Ltd

Station Road Great Shelford - Compiled Groundwater Monitoring Data

BH Ref	Ground Elevation	Date	Groundwater Level	GW Elevation
WS25	17.97	08/08/2018	3.152	14.818
WS28	19.04	05/08/2015	3.67	15.37
WS28	19.04	01/04/2016	3.485	15.555
WS28	19.04	13/10/2016	4.252	14.788
WS28	19.04	26/04/2017	NR	-
WS28	19.04	08/08/2018	4.41	14.63
WS29	17.96	05/08/2015	2.62	15.34
WS29	17.96	30/03/2016	2.462	15.498
WS29	17.96	01/04/2016	2.471	15.489
WS29	17.96	13/10/2016	3.182	14.778
WS29	17.96	26/04/2017	2.777	15.183
WS29	17.96	10/10/2017	2.656	15.304
WS29	17.96	08/08/2018	3.339	14.621
WS32	19.76	08/08/2018	5.063	14.697
WS33	19.22	08/08/2018	4.599	14.621

SITE HYDROGRAPH



Compiled LNAPL Thickness data

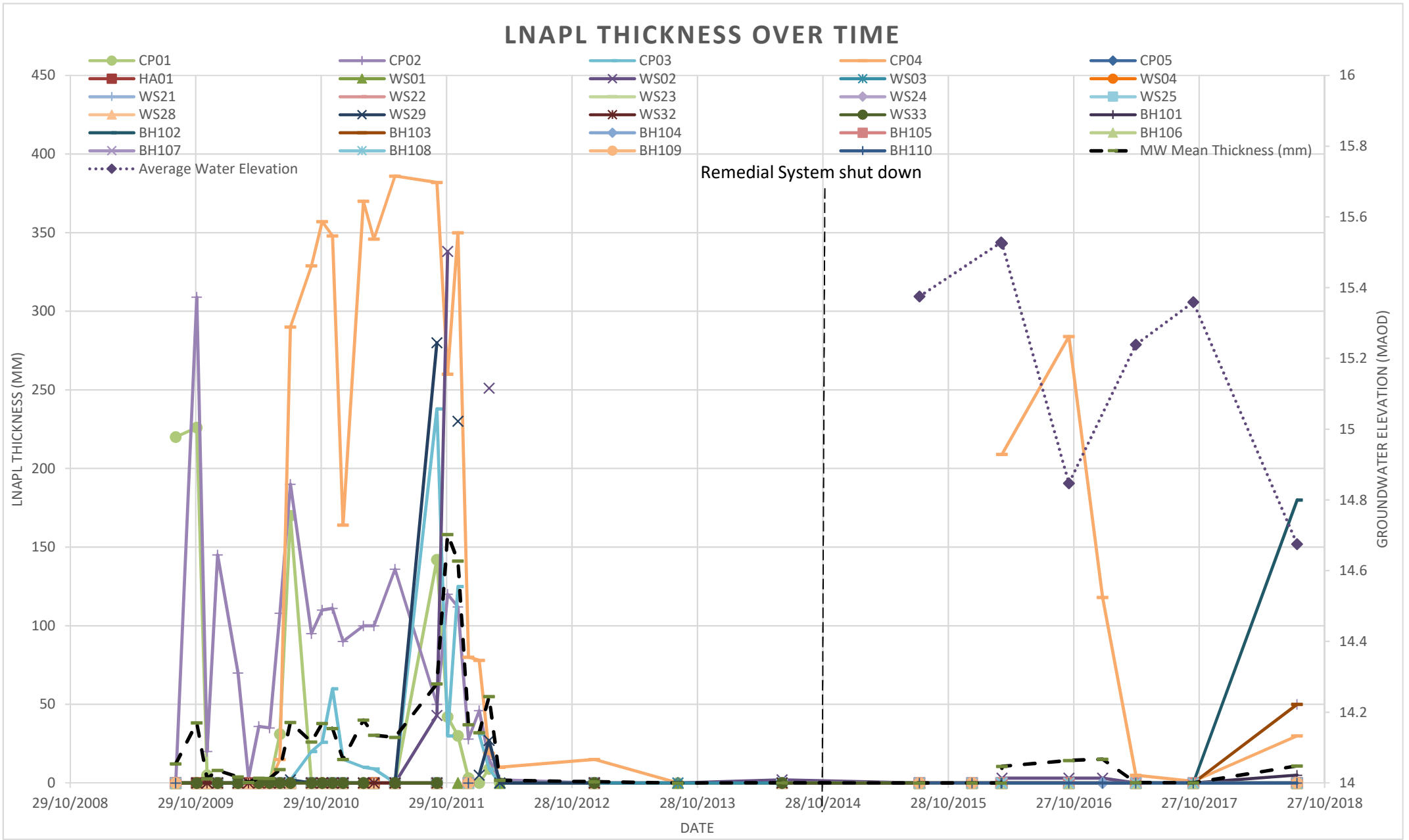
		Pre & During Remediation																			
	Well ID	01/09/2009	01/11/2009	01/12/2009	01/01/2010	01/03/2010	01/04/2010	01/05/2010	01/06/2010	01/07/2010	01/08/2010	01/10/2010	01/11/2010	01/12/2010	01/01/2011	01/03/2011	01/04/2011	01/06/2011	01/10/2011	01/11/2011	01/12/2011
Remediation Wells	AW01	0	0	0	0	0	0	0	0				0		0		0	0	0		
	AW02	0	0	3	13	0	0		0	0			0					0			
	AW03	0	0	0	0	0	0	0	0	0			0		0		0	0	0		
	AW04	30	1	1	2	0	1	5	0	0			0		0		0	0	5		
	AW05	40	39	0	2	0	0	2	0	0			0		0		0	0	0		
	AW06	40	13	0	0	0	0	0	0				0		0		0	0	100		
	AW07	0	0	0	0	0	0	0	0				0		0		0	0	3		
	AW08	20	147	0	0	0	0	0	0	0			0				0	12	20		
	AW09	10	2	1	0	0	1	8	1	6			0					0	10		
	AW10	0	0	0	0	0	0	0	0				0		0		0	0	50		
	AW11	0	0	0	0	0	1	0		0			0		0		0	5	20		
	AW12	0	0	0	0	0	0	0	0				0		0		0	0	0		
	AW13	0	0	0	0	0	0	0	10	0			72		40		0	13	20		
	AW14	0	0	0	0	0	0	0	0				0		0		0	0	0		
Monitoring Wells	CP01	220	226	5	0	0		0	0	31	170	0	0	0	0	0	0	0	142	42	30
	CP02	0	309	20	145	70	3	36	35	108	190	95	110	111	90	100	100	136	50	120	112
	CP03	0	0	0	0	0	0	0	0	1	2	20	26	60	15	10	9	0	238	30	125
	CP04	0	0	1	0	0	0	0	0	15	290	329	357	348	164	370	346	386	382	260	350
	CP05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	HA01	0	0	0	0	0	0	0	0	0	0	0		0	0		0	0	0		
	WS01	0	0	0	0	0		0		0	0	0	0	0	0	0	0	0	0		0
	WS02	0	0		0	0		0	0	0	0	0	0	0	0	0	0	0	43	338	
	WS03	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	WS04	0	0		0	0			0	0	0		0		0		0	0	0		
	WS21	0			0	0				0	0	0		0	0		0	0	0		
	WS22																				
	WS23	0			0	0				0	0	0			0		0	0	0		
	WS24	0			0	0				0	0	0			0		0	0	0		
	WS25	0			0	0				0	0	0		0	0			0	0		
	WS28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	WS29	0	0	0	0	0				0	2	0	0	0	0	0		0	280		230
	WS32	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0		
	WS33	0	0		0	0		0	0	0	0	0	0	0	0	0		0	0		
	BH101	*Borehole not drilled until December 2015*																			
	BH102	*Borehole not drilled until December 2015*																			
	BH103	*Borehole not drilled until December 2015*																			
	BH104	*Borehole not drilled until December 2015*																			
	BH105	*Borehole not drilled until December 2015*																			
	BH106	*Borehole not drilled until December 2015*																			
	BH107	*Borehole not drilled until December 2015*																			
	BH108	*Borehole not drilled until December 2015*																			
	BH109	*Borehole not drilled until December 2015*																			
	BH110	*Borehole not drilled until December 2015*																			
	BH111	*Borehole not drilled until December 2015*																			
RW Mean Thickness (mm)		10	14	0	1	0	0	1	1	1			5		4		0	2	18		
MW Mean Thickness (mm)		12	38	3	8	4	0	3	3	9	38	26	38	35	15	40	30	29	63	158	141

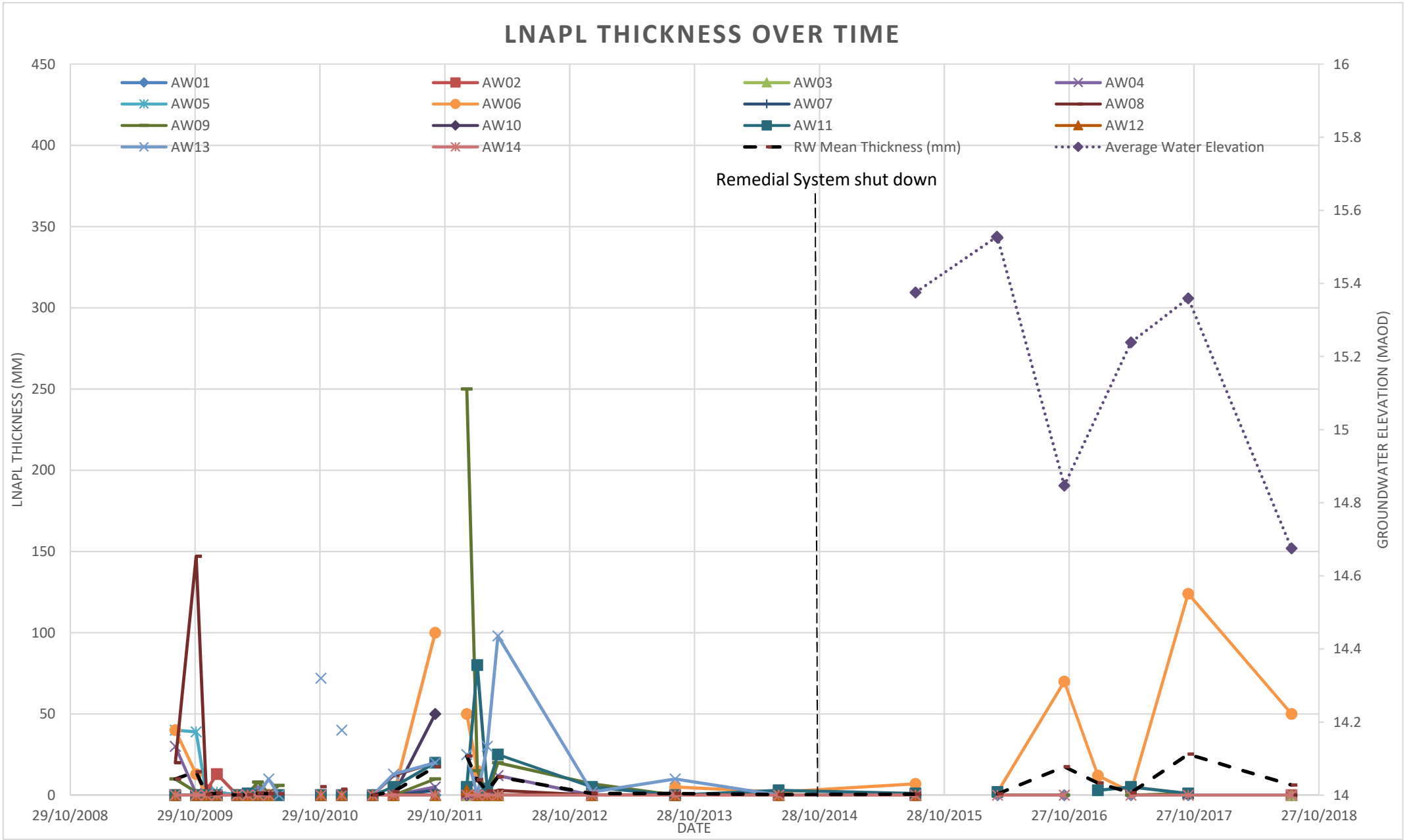
All measured thicknesses in millimetres (mm)
Wells containing measured LNAPL are highlighted red
cell blank = Well not monitored

Compiled LNAPL Thickness data

		Pre & During Remediation							Post Remediation								
	Well ID	01/01/2012	01/02/2012	01/03/2012	01/04/2012	01/01/2013	01/09/2013	01/07/2014	05/08/2015	05/01/2016	30/03/2016	01/04/2016	13/10/2016	19/01/2017	26/04/2017	10/10/2017	08/08/2018
Remediation Wells	AW01	0	0	0	0	0	0	0	0			0	0		0	0	0
	AW02	0	0	0	0	0	0	0	0								0
	AW03	0	0	0	0	0	0	0	0								0
	AW04	1	13	0	12	0	0	0	0								
	AW05	0	0	0	0	0	0	0	0								
	AW06	50	15	2	0		5	2	7			2	70	12	2	124	50
	AW07	0	0	0	0	0	0	0	0								0
	AW08	3	10	0	3	0	0	0									0
	AW09	250	15	0	20	7	0	0				0	0		0	1	
	AW10	0	0	0	0	0	0	0	0								
	AW11	5	80	4	25	5	0	3	1			2		3	5	1	
	AW12	3	0	0	0	0	0	0	0								
	AW13	25	0	30	98	2	10	0	0								0
	AW14	0	0	0	0	0	0	0	0			0	0		0	0	0
Monitoring Wells	CP01	3	0	9	0	0	0	0	0	0	0	0	0		0	0	0
	CP02	28	46	15	2	0	0	0	0	0							50
	CP03		31	9	0	0	0	0	0	0							0
	CP04	80	78	19	10	15	0	0	0	0		209	284	118	5	1	30
	CP05					0	0	0		0							0
	HA01					0											0
	WS01				0	0	0	0	0			0	0		0	0	0
	WS02			251		0	0	2	0			3	3	3	0	0	
	WS03				0	0	0	0	0	0		0	0		0	0	0
	WS04					0		0		0		0	0		0		0
	WS21					0		0	0	0							0
	WS22																0
	WS23					0		0	0	0		0	0	0	0	0	0
	WS24					0		0	0	0		0	0	0	0	0	0
	WS25					0		0	0	0							0
	WS28					0		0	0	0		0	0				0
	WS29		5	27	0	0		0	0	0	0	0	0		0	0	0
	WS32					0		0	0	0							0
	WS33					0		0	0								0
	BH101	*Borehole not drilled until December 2015*							-	0	0	0	0	0	0	0	5
	BH102	*Borehole not drilled until December 2015*							-	0	0	0	0		0	0	180
	BH103	*Borehole not drilled until December 2015*							-	0	0	0	0	0	0	0	50
	BH104	*Borehole not drilled until December 2015*							-	0		0	0	0	0	0	0
	BH105	*Borehole not drilled until December 2015*							-	0	0	0	0		0	0	0
	BH106	*Borehole not drilled until December 2015*							-	0	0	0	0		0	0	0
	BH107	*Borehole not drilled until December 2015*							-	0	0	0	0		0	0	0
	BH108	*Borehole not drilled until December 2015*							-	0	0	0	0		0	0	0
	BH109	*Borehole not drilled until December 2015*							-	0							0
	BH110	*Borehole not drilled until December 2015*							-	0	0	0	0	0	0	0	0
	BH111	*Borehole not drilled until December 2015*							-	0	0	0	0		0	0	0
RW Mean Thickness (mm)		24	10	3	11	1	1	0	1			1	18	8	1	25	6
MW Mean Thickness (mm)		37	32	55	2	1	0	0	0	0	0	11	14	15	0	0	11

All measured thicknesses in millimetres (mm)
Wells containing measured LNAPL are highlighted red
cell blank = Well not monitored


LNAPL THICKNESS OVER TIME
CP01
CP02
CP03
CP04
CP05
HA01
WS01
WS02
WS03
WS04
WS21
WS22
WS23
WS24
WS25
WS28
WS29
WS32
WS33
BH101
BH102
BH103
BH104
BH105
BH106
BH107
BH108
BH109
BH110
MW Mean Thickness (mm)
Average Water Elevation
Remedial System shut down
LNAPL THICKNESS (MM)
GROUNDWATER ELEVATION (MAOD)
DATE
450
400
350
300
250
200
150
100
50
0
16
15.8
15.6
15.4
15.2
15
14.8
14.6
14.4
14.2
14
29/10/2008
29/10/2009
29/10/2010
29/10/2011
28/10/2012
28/10/2013
28/10/2014
28/10/2015
27/10/2016
27/10/2017
27/10/2018


LNAPL THICKNESS OVER TIME
AW01
AW02
AW03
AW04
AW05
AW06
AW07
AW08
AW09
AW10
AW11
AW12
AW13
AW14
RW Mean Thickness (mm)
Average Water Elevation
Remedial System shut down
LNAPL THICKNESS (MM)
GROUNDWATER ELEVATION (MAOD)
DATE
450
400
350
300
250
200
150
100
50
0
16
15.8
15.6
15.4
15.2
15
14.8
14.6
14.4
14.2
14
29/10/2008
29/10/2009
29/10/2010
29/10/2011
28/10/2012
28/10/2013
28/10/2014
28/10/2015
27/10/2016
27/10/2017
27/10/2018

Borehole Number		BH101					BH102					BH103					BH104	
Sample Method	WQS	Purged	Purged	Grab	Low Flow		Low Flow	Low Flow	Low Flow	Low Flow		Low Flow	Low Flow	Purged	Low Flow		Low Flow	Low Flow
Well Screen Depth (m)		1.5-6.0					1.5-6.0					1.0-6.0					1.0-6.0	1.0-6.0
Sample Depth (m)		3.69	4.85	5.20	5.00		3.62	4.85	5.25	5.0		2.41	4.10	4.05	5.0		2.33	4.20
Sample Date		07/01/16	30/03/16	11/10/16	26/04/17	08/08/18	07/01/16	31/03/16	11/10/16	26/04/17	08/08/18	06/01/16	31/03/16	12/10/16	26/04/17	08/08/18	06/01/16	08/08/18
MTBE	**0.015**	<0.0001	<0.0001	<0.0001	<0.0001		**0.001**	**0.0005**	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	**0.0003**
Benzene	**0.01**	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005	**0.0007**	<0.0005		**0.013**	**0.0083**	**0.0088**	**0.0073**		**0.015**	<0.0005
Toluene	**0.074**	<0.0005	<0.005	<0.005	<0.005		<0.0005	<0.005	<0.005	<0.005		<0.0005	<0.005	<0.005	<0.005		<0.0005	<0.005
Ethyl benzene	**0.3**	<0.0005	<0.0005	<0.0005	<0.001		<0.0005	<0.0005	<0.0005	<0.001		<0.0005	<0.0005	<0.0005	<0.001		<0.0005	<0.001
m & p Xylene	**0.03**	<0.001	<0.001	<0.001	<0.002		<0.001	<0.001	**0.001**	<0.002		<0.001	<0.001	<0.001	<0.002		<0.001	<0.002
o Xylene	**0.03**	<0.0005	<0.0005	<0.0005	<0.001		<0.0005	<0.0005	<0.0005	<0.001		<0.0005	<0.0005	<0.0005	<0.001		<0.0005	<0.001
Aliphatics C5-C6	**0.01**	<0.005	<0.005	<0.005	<0.01		<0.005	<0.005	<0.005	<0.01		<0.005	<0.005	<0.005	<0.01		<0.005	<0.01
Aliphatics >C6-C8	**0.01**	**0.029**	**0.017**	**0.049**	<0.01		**0.044**	**0.006**	**0.006**	<0.01		**0.049**	**0.031**	**0.049**	<0.01		<0.005	<0.01
Aliphatics >C8-C10	**0.01**	**0.44**	**0.095**	**0.2**	**0.24**		**0.27**	**0.055**	**0.093**	**0.22**		**0.22**	**0.072**	**0.26**	**0.09**		**0.12**	<0.01
Aliphatics >C10-C12	**0.01**	**0.98**	**0.29**	**0.096**	**0.16**		**0.39**	<0.005	<0.005	**0.078**		**1.5**	**0.13**	**0.29**	**0.14**		<0.005	<0.005
Aliphatics >C12-C16	**0.01**	**1.9**	**0.51**	**0.24**	**0.27**		**1.1**	<0.01	<0.01	**0.23**		**2.9**	**0.3**	**0.67**	**0.5**		<0.01	<0.01
Aliphatics >C16-C21	**0.01**	**1.1**	**0.23**	**0.14**	**0.14**		**0.82**	<0.01	<0.01	**0.14**		**1.7**	**0.12**	**0.4**	**0.41**		<0.01	<0.01
Aliphatics >C21-C35	**0.01**	**0.18**	<0.01	<0.01	<0.01		**0.07**	<0.01	<0.01	<0.01		**0.46**	<0.01	**0.06**	**0.06**		<0.01	<0.01
Total aliphatics C5-35	-	**4.63**	**1.14**	**0.73**	**0.81**		**2.69**	**0.06**	**0.1**	**0.67**		**6.83**	**0.65**	**1.73**	**1.2**		**0.12**	<0.01
Aromatics C6-C7	**0.01**	<0.005	<0.005	<0.005	<0.01		<0.005	<0.005	<0.005	<0.01		**0.011**	**0.008**	**0.008**	<0.01		**0.012**	<0.01
Aromatics >C7-C8	**0.01**	<0.005	<0.005	<0.005	<0.01		<0.005	<0.005	<0.005	<0.01		<0.005	<0.005	<0.005	<0.01		<0.005	<0.01
Aromatics >EC8-EC10	**0.01**	**0.016**	<0.005	<0.005	<0.01		<0.005	<0.005	<0.005	<0.01		**0.011**	<0.005	**0.027**	<0.01		<0.005	<0.01
Aromatics >EC10-EC12	**0.01**	**0.62**	**0.61**	**0.42**	**0.62**		**0.5**	**0.21**	**0.18**	**0.41**		**0.59**	**0.31**	**0.36**	**0.25**		**0.12**	**0.23**
Aromatics >EC12-EC16	**0.01**	**0.88**	**0.57**	**0.36**	**0.47**		**0.93**	**0.21**	**0.21**	**0.57**		**1.1**	**0.3**	**0.49**	**0.22**		**0.1**	**0.13**
Aromatics >EC16-EC21	**0.01**	**0.63**	**0.16**	**0.14**	**0.01**	LNAPL	**0.71**	<0.01	<0.01	**0.19**	LNAPL	**0.88**	**0.05**	**0.2**	**0.05**	LNAPL	<0.01	<0.01
Aromatics >EC21-EC35	**0.01**	**0.18**	<0.01	<0.01	<0.01	present	**0.17**	<0.01	<0.01	<0.01	present	**0.22**	<0.01	<0.01	<0.01	present	<0.01	<0.01
Total aromatics C5-35	-	**2.33**	**1.34**	**0.92**	**1.1**		**2.31**	**0.42**	**0.39**	**1.17**		**2.81**	**0.67**	**1.09**	**0.52**		**0.23**	**0.36**
TPH C5-C35	-	**6.96**	**2.48**	**1.65**	**1.91**		**5.0**	**0.48**	**0.49**	**1.84**		**9.64**	**1.32**	**2.82**	**1.72**		**0.35**	**0.36**
MNA Parameters																		
Total Dissolved Iron	-	19.0	47.0	45.0	39.0		38.0	51.0	54.0	48		40.0	36.0	28.0	42		27.0	-
Dissolved Manganese	-	1.4	1.6	1.3	1.3		1.8	1.9	1.9	1.8		0.8	0.8	0.8	0.84		1.1	-
Sulphate	-	12.0	<0.05	0.5	<0.5		5.1	<0.05	1.0	<0.5		7.6	1.6	1.1	4.2		<0.05	-
Nitrate as N	-	<0.05	0.1	<0.05	<0.05		<0.05	<0.05	<0.05	0.08		0.1	<0.05	0.8	<0.05		0.1	-
Manganese II	-	0.5	6.1	4.0	4.2		1.8	1.9	5.5	5.4		4.1	0.8	2.0	4.3		3.6	-
Total Inorganic Carbon	-	180	180	200	190		160	140	170	170		190	130	26	160		150	-
Dissolved Methane	-	6.9	8.9	16.0	17.0		14.0	17.0	18.0	21		15.0	15.0	18.0	17		25.0	-
Sulphide	-	<0.3	<0.01	<0.01	<0.01		<0.3	<0.01	<0.01	<0.01		<0.3	<0.01	<0.01	<0.01		<0.3	-
Dissolved Iron II	-	<1.00	35.0	38.0	36.0		2.0	48.0	29.0	31		34.0	35.0	2.4	2.8		2.3	-
Dissolved Iron III	-	19.0	12.0	7.0	3.0		36.0	3.0	25.0	17		6.0	1.0	25.6	39.2		24.7	-
In-Situ Parameters	**Units**																	
Electrical Conductivity	uS/cm	1705	2173	2517	3256		1356	1747	1909	2268.6		339.2	1259	1357	1656.7		1198	1835
Oxidation Reduction Potential	mV	143	-31	-37	-73		119	-29	-56	-76.8		109	-24	-53	-106		109	-91
Dissolved Oxygen	%	0.76	0.59	1.14	0.31		0.54	0.65	0.65	0.27		0.66	0.42	0.88	0.16		0.69	0.43
pH	pH units	7.8	6.5	6.4	6.7		8.0	6.4	6.4	6.68		8.0	6.4	6.4	6.8		8.1	6.6
Temperature	degrees C	9	12	15	11		11	13	15	11.86		11	11	14	11		11	20

Key

All results are in mg/l.

MTBE	Methyl tertiary butyl ether
-	Not analysed/no WQS/unknown
WQS	Water Quality Standard
888	Exceeds WQS
888	Exceeds detection limit
	Unknown Well Screen Interval
	Well installed in Chalk
	River Terrace Deposits & Chalk Strata

Borehole Number		BH105					BH106					BH107					BH108				
Sample Method	WQS	Low Flow	Low Flow	Purged	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Grab	Grab	Low Flow	Low Flow
Well Screen Depth (m)		1.0-6.0					1.5-6.5					2.0-6.0					1.5-6.5				
Sample Depth (m)		3.07	4.60	4.75	4.50	5.00	4.13	5.35	5.80	5.00	6.10	2.29	4.00	3.80	4.00	4.00	4.08	5.30	5.65	5.0	5.90
Sample Date		05/01/16	30/03/16	11/10/16	26/04/17	09/08/18	07/01/16	30/03/16	11/10/16	26/04/17	09/08/18	05/01/16	30/03/16	11/10/16	26/04/17	07/08/18	05/01/16	30/03/16	12/10/16	26/04/17	07/08/18
MTBE	**0.015**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	**0.0096**	**0.0065**	**0.0024**	**0.0025**	**0.0011**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Benzene	**0.01**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0005**	<0.0005	<0.0005
Toluene	**0.074**	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.0005	<0.005	<0.005	<0.005	<0.005
Ethyl benzene	**0.3**	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	**0.001**	**0.0007**	**0.002**	<0.001
m & p Xylene	**0.03**	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002	<0.002	**0.019**	**0.012**	**0.006**	**0.03**	**0.005**
o Xylene	**0.03**	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.001	<0.001
Aliphatics C5-C6	**0.01**	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01
Aliphatics >C6-C8	**0.01**	<0.005	<0.005	<0.005	<0.01	<0.01	**0.01**	**0.016**	<0.005	**0.02**	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01
Aliphatics >C8-C10	**0.01**	<0.005	<0.005	<0.005	<0.01	<0.01	**0.16**	<0.005	<0.005	**0.06**	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01	**0.082**	**0.067**	**0.045**	**0.17**	<0.01
Aliphatics >C10-C12	**0.01**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.33**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aliphatics >C12-C16	**0.01**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.33**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C16-C21	**0.01**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.07**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C21-C35	**0.01**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total aliphatics C5-35	-	<0.01	<0.01	<0.01	<0.01	<0.01	**0.17**	**0.02**	<0.01	**0.08**	**0.73**	<0.01	<0.01	<0.01	<0.01	<0.01	**0.08**	**0.07**	**0.05**	**0.17**	<0.01
Aromatics C6-C7	**0.01**	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01
Aromatics >C7-C8	**0.01**	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01
Aromatics >EC8-EC10	**0.01**	<0.005	<0.005	<0.005	<0.01	<0.01	**0.008**	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01	**0.022**	**0.017**	**0.01**	**0.05**	<0.01
Aromatics >EC10-EC12	**0.01**	**0.089**	<0.005	<0.005	<0.005	<0.005	**0.25**	**0.053**	**0.1**	**0.12**	**0.31**	<0.005	<0.005	<0.005	<0.005	<0.005	**0.18**	**0.046**	**0.031**	**0.42**	**0.22**
Aromatics >EC12-EC16	**0.01**	**0.06**	<0.01	<0.01	<0.01	<0.01	**0.23**	**0.03**	**0.1**	**0.11**	**0.36**	<0.01	<0.01	<0.01	<0.01	<0.01	**0.05**	**0.01**	<0.01	**0.17**	**0.15**
Aromatics >EC16-EC21	**0.01**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.06**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC21-EC35	**0.01**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total aromatics C5-35	-	**0.15**	<0.01	<0.01	<0.01	<0.01	**0.49**	**0.08**	**0.2**	**0.23**	**0.73**	<0.01	<0.01	<0.01	<0.01	<0.01	**0.25**	**0.07**	**0.04**	**0.64**	**0.37**
TPH C5-C35	-	**0.15**	<0.01	<0.01	<0.01	<0.01	**0.66**	**0.1**	**0.2**	**0.31**	**1.46**	<0.01	<0.01	<0.01	<0.01	<0.01	**0.33**	**0.14**	**0.09**	**0.81**	**0.37**
MNA Parameters																					
Total Dissolved Iron	-	3.1	0.6	25.0	12	-	24.0	27.0	32.0	30	-	1.5	0.1	<0.02	0.03	-	13.0	16.0	13.0	29	-
Dissolved Manganese	-	0.9	0.7	0.9	0.98	-	2.0	2.1	2.1	2.1	-	1.3	0.1	<0.002	<0.002	-	0.8	0.7	0.6	0.63	-
Sulphate	-	32.0	24.0	36.0	180	-	0.8	0.2	0.9	2.1	-	46.0	54.0	56.0	52	-	16.0	69.0	50.0	2.2	-
Nitrate as N	-	0.4	0.1	<0.05	<0.05	-	<0.05	0.1	0.1	0.08	-	1.5	4.9	11.0	7.8	-	<0.05	0.1	<0.05	<0.05	-
Manganese II	-	1.2	0.9	2.9	1.7	-	1.9	4.5	4.4	4.4	-	1.6	0.1	0.1	<0.02	-	1.8	1.9	1.4	3.2	-
Total Inorganic Carbon	-	170	150	140	140	-	150	150	140	150	-	88	67	62	66	-	190	180	24	200	-
Dissolved Methane	-	1.9	0.7	5.7	1.9	-	13.0	14.0	18.0	17	-	<0.001	<0.001	0.01	0.056	-	6.8	4.4	5.4	12	-
Sulphide	-	<0.3	<0.01	<0.01	<0.01	-	<0.3	<0.01	<0.01	<0.01	-	<0.3	<0.01	<0.01	<0.01	-	<0.3	<0.01	<0.01	<0.01	-
Dissolved Iron II	-	0.5	0.2	2.8	2.2	-	1.4	22.0	2.3	2.5	-	0.1	<0.02	0.1	<0.02	-	1.5	15.0	2.5	27	-
Dissolved Iron III	-	2.6	0.4	22.2	9.8	-	22.6	5.0	29.7	27.5	-	1.4	0.1	<0.04	0.03	-	11.5	1.0	10.5	2	-
In-Situ Parameters	**Units**																				
Electrical Conductivity	uS/cm	945	919	848	1306	1099	769	832	915	1068	1072	506	569	550	682	771	301.6	1031	1094	1295	1350
Oxidation Reduction Potential	mV	163	78	-52	-83	-110	112	-28	-59	-94	-104	155	135	133	2	55	132	-15	-32	-72	-67
Dissolved Oxygen	%	0.6	0.8	1.14	0.24	0.33	0.68	0.74	0.99	0.42	0.43	0.56	2.24	4.42	3.92	4.98	0.58	0.81	0.73	1.77	0.37
pH	pH units	8.4	6.7	6.6	6.9	6.8	8.5	6.6	6.6	6.8	6.8	8.5	7.0	6.9	7.2	7.1	8.2	6.5	6.5	6.7	6.6
Temperature	degrees C	11	11	13	11	17	11	11	15	12	17	11	10	13	10	21	11	11	13	11	20

Key

All results are in mg/l.

MTBE	Methyl tertiary butyl ether
-	Not analysed/no WQS/unknown
WQS	Water Quality Standard
888	Exceeds WQS
888	Exceeds detection limit
	Unknown Well Screen Interval
	Well installed in Chalk
	River Terrace Deposits & Chalk Strata

Borehole Number		BH109		BH110					BH111					CP01				CP05	HA01	WS01	WS03	WS04
Sample Method		Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Grab	Low Flow	Grab	Grab	Low Flow	Low Flow	Low Flow
Well Screen Depth (m)	WQS	1.0-6.0		1.5-6.0					1.0-6.0					4.0-6.0				3.0-7.0	1.0-4.0	2.0-4.0	4.0-6.0	4.0-6.0
Sample Depth (m)		3.55	5.10	3.63	4.80	5.15	4.80	4.90	2.56	3.90	4.20	5.0	4.50	4.90	5.25	5.2	5.4	4.7	3.0	3.9	4.0	4.0
Sample Date		05/01/16	09/08/18	06/01/16	31/03/16	12/10/16	26/04/17	09/08/18	06/01/16	31/03/16	12/10/16	26/04/17	08/08/18	31/03/16	11/10/16	27/04/17	08/08/18	09/08/18	09/08/18	09/08/18	09/08/18	09/08/18
MTBE	**0.015**	<0.0001	<0.0001	<0.0001	**0.0006**	**0.0006**	**0.0007**	**0.0007**	<0.0001	<0.0001	<0.0001	<0.0001	**0.0003**	**0.0005**	**0.001**	**0.0004**	**0.0009**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Benzene	**0.01**	<0.0005	<0.0005	**0.004**	**0.0021**	<0.0005	<0.0005	<0.0005	**0.0013**	<0.0005	**0.0007**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Toluene	**0.074**	<0.0005	<0.005	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Ethyl benzene	**0.3**	<0.0005	<0.001	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
m & p Xylene	**0.03**	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	**0.001**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
o Xylene	**0.03**	<0.0005	<0.001	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	**0.0005**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aliphatics C5-C6	**0.01**	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	**0.01**	<0.005	<0.01	**0.046**	<0.005	<0.005	<0.01	<0.01	**0.032**	<0.005	**0.033**	<0.01	<0.01	**0.03**	**0.008**	**0.42**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	**0.01**	**0.14**	<0.01	**0.19**	<0.005	<0.005	<0.01	<0.01	**0.34**	**0.091**	**0.082**	<0.01	<0.01	**0.057**	**0.11**	**5.8**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	**0.01**	**0.1**	<0.005	**0.025**	<0.005	<0.005	<0.005	<0.01	**0.14**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**8.4**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aliphatics >C12-C16	**0.01**	**0.38**	<0.01	**0.04**	<0.01	<0.01	<0.01	<0.01	**0.29**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**15**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C16-C21	**0.01**	**0.27**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.06**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**10**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C21-C35	**0.01**	**0.05**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**2.8**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total aliphatics C5-35	-	**0.94**	<0.01	**0.3**	<0.01	<0.01	<0.01	<0.01	**0.86**	**0.09**	**0.12**	<0.01	<0.01	**0.09**	**0.12**	**42.42**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics C6-C7	**0.01**	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >C7-C8	**0.01**	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	**0.01**	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.01	**0.009**	<0.005	<0.005	<0.01	<0.01	<0.005	**0.013**	**0.17**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	**0.01**	**0.36**	**0.2**	**0.13**	**0.28**	**0.054**	**0.12**	<0.005	**0.36**	**0.36**	**0.2**	**0.34**	**0.42**	**0.33**	**0.23**	**3.3**	**0.52**	<0.005	**0.22**	**0.4**	<0.005	<0.005
Aromatics >EC12-EC16	**0.01**	**0.48**	**0.2**	**0.07**	**0.12**	**0.02**	**0.05**	<0.01	**0.26**	**0.17**	**0.08**	**0.15**	**0.15**	**0.32**	**0.27**	**9.2**	**0.34**	<0.01	**0.32**	**0.26**	<0.01	<0.01
Aromatics >EC16-EC21	**0.01**	**0.26**	**0.03**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.02**	**8.3**	**0.04**	<0.01	**0.14**	<0.01	<0.01	<0.01
Aromatics >EC21-EC35	**0.01**	**0.04**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**2.7**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total aromatics C5-35	-	**1.14**	**0.43**	**0.2**	**0.4**	**0.07**	**0.17**	<0.01	**0.63**	**0.53**	**0.28**	**0.49**	**0.57**	**0.65**	**0.53**	**23.67**	**0.9**	<0.01	**0.68**	**0.66**	<0.01	<0.01
TPH C5-C35	-	**2.08**	**0.43**	**0.5**	**0.4**	**0.07**	**0.17**	<0.01	**1.49**	**0.62**	**0.4**	**0.49**	**0.57**	**0.74**	**0.65**	**66.09**	**0.9**	<0.01	**0.68**	**0.66**	<0.01	<0.01
MNA Parameters																						
Total Dissolved Iron	-	0.5	-	28.0	40.0	8.6	27	-	26.0	29.0	37.0	40	-	57.0	65.0	58.0	-	-	-	-	-	-
Dissolved Manganese	-	1.0	-	0.9	0.8	0.4	0.58	-	0.7	0.7	0.8	0.91	-	1.6	1.9	1.6	-	-	-	-	-	-
Sulphate	-	120.0	-	7.2	4.5	34.0	7.7	-	<0.05	0.1	1.0	<0.5	-	<0.05	<0.5	<0.5	-	-	-	-	-	-
Nitrate as N	-	22.0	-	<0.05	<0.05	<0.05	<0.05	-	0.1	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	-	-	-	-
Manganese II	-	1.8	-	3.7	0.7	0.8	3.4	-	2.8	0.7	3.3	4.2	-	1.5	6.2	6.1	-	-	-	-	-	-
Total Inorganic Carbon	-	200	-	210	160	19	180	-	140	120	14	160	-	160	170	190	-	-	-	-	-	-
Dissolved Methane	-	0.7	-	11.0	12.0	3.7	9.9	-	11.0	12.0	18.0	16.0	-	23.0	19.0	18	-	-	-	-	-	-
Sulphide	-	<0.3	-	<0.3	<0.01	<0.01	<0.01	-	<0.3	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	-	-	-	-	-
Dissolved Iron II	-	0.1	-	24.0	39.0	1.9	26	-	23.0	29.0	2.3	1.5	-	54.0	2.3	2.9	-	-	-	-	-	-
Dissolved Iron III	-	0.4	-	4.0	1.0	6.7	1	-	3.0	<0.50	34.7	38.5	-	3.0	62.7	55.1	-	-	-	-	-	-
In-Situ Parameters	**Units**																					
Electrical Conductivity	uS/cm	377	2842	1138	1323	1434	1791	2307	975	982	1415	1671	1928	1265	1487	-	1855	-	-	800	-	738
Oxidation Reduction Potential	mV	174	-54	130	-8	-6	-78	-66	124	-37	-54	-91	-91	-21	-52	-	-80.3	-	-	-118	-	43
Dissolved Oxygen	%	0.6	0.26	0.65	0.59	0.94	0.2	0.44	0.61	0.59	0.45	0.14	0.41	0.49	0.63	-	0.43	-	-	0.39	-	1.89
pH	pH units	7.8	6.6	8.1	6.4	6.5	6.7	6.5	8.1	6.5	6.6	6.8	6.6	6.3	6.4	-	6.5	-	-	7.1	-	7.1
Temperature	degrees C	11	14	11	11	13	11	14	11	10	14	10.72	18	12	15	-	17.9	-	-	17.4	-	18.74

Key

All results are in mg/l.

MTBE	Methyl tertiary butyl ether
-	Not analysed/no WQS/unknown
WQS	Water Quality Standard
888	Exceeds WQS
888	Exceeds detection limit
	Unknown Well Screen Interval
	Well installed in Chalk
	River Terrace Deposits & Chalk Strata

Borehole Number		WS21		WS22	WS23	WS24		WS25		WS28			WS29				WS32	WS33	AW06		
Sample Method		Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	GRAB	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Well Screen Depth (m)	WQS	4.0-5.0		1.0-5.0	3.0-5.0	3.0-5.0		2.0-4.0		3.3-5.3			3.0-5.0				-	-	-		
Sample Depth (m)		2.53	4.2	4.3	4.3	2.34	4.10	2.27	3.50	4.40	5.45	4.70	4.00	4.10	5.0	3.8	5.50	3.10	6.30	5.50	5.0
Sample Date		07/01/16	07/08/18	07/08/18	07/08/18	07/01/16	07/08/18	07/01/16	07/08/18	01/04/16	13/10/16	09/08/18	31/03/16	12/10/16	26/04/17	09/08/18	09/08/18	09/08/18	01/04/16	13/10/16	26/04/17
MTBE	**0.015**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	**0.0003**	**0.0009**	**0.0006**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	**0.0025**	**0.0072**	0.0014
Benzene	**0.01**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0014**	<0.0005
Toluene	**0.074**	<0.0005	<0.005	<0.005	<0.005	<0.0005	<0.005	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Ethyl benzene	**0.3**	<0.0005	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001
m & p Xylene	**0.03**	<0.001	<0.002	<0.002	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002
o Xylene	**0.03**	<0.0005	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	**0.0009**	<0.001
Aliphatics C5-C6	**0.01**	<0.005	<0.01	<0.01	<0.01	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.01	<0.01	<0.005	<0.005	<0.01
Aliphatics >C6-C8	**0.01**	<0.005	<0.01	<0.01	<0.01	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	**0.023**	**0.034**	<0.01	<0.01	<0.01	<0.01	<0.005	<0.005	<0.01
Aliphatics >C8-C10	**0.01**	**0.13**	<0.01	<0.01	<0.01	<0.005	<0.01	<0.005	<0.01	**0.23**	**0.058**	**0.6**	**0.17**	**0.11**	**0.06**	<0.01	<0.01	<0.01	<0.005	**0.062**	<0.01
Aliphatics >C10-C12	**0.01**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.069**	<0.005	**0.19**	**0.13**	**4.2**	<0.005	**0.33**	**0.3**	<0.005	**0.16**	<0.005	**0.032**	<0.005	0.43
Aliphatics >C12-C16	**0.01**	**0.2**	<0.01	<0.01	<0.01	<0.01	<0.01	**0.03**	<0.01	**0.36**	**0.25**	**5.5**	**0.11**	**1.2**	**0.9**	<0.01	**0.21**	<0.01	**0.22**	<0.01	1.9
Aliphatics >C16-C21	**0.01**	**0.07**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.04**	**0.02**	**1.3**	**0.09**	**0.84**	**0.59**	<0.01	**0.12**	<0.01	**0.28**	<0.01	2.5
Aliphatics >C21-C35	**0.01**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.25**	<0.01	**0.18**	**0.08**	<0.01	<0.01	<0.01	**0.11**	<0.01	0.79
Total aliphatics C5-35	-	**0.4**	<0.01	<0.01	<0.01	<0.01	<0.01	**0.1**	<0.01	**0.82**	**0.46**	**11.85**	**0.39**	**2.69**	**1.93**	<0.01	**0.49**	<0.01	**0.64**	**0.06**	5.62
Aromatics C6-C7	**0.01**	<0.005	<0.01	<0.01	<0.01	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.01	<0.01	<0.005	<0.005	<0.01
Aromatics >C7-C8	**0.01**	<0.005	<0.01	<0.01	<0.01	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.01	<0.01	<0.005	<0.005	<0.01
Aromatics >EC8-EC10	**0.01**	<0.005	<0.01	<0.01	<0.01	<0.005	<0.01	<0.005	<0.01	<0.005	**0.005**	<0.01	**0.007**	**0.006**	<0.01	<0.01	<0.01	<0.01	<0.005	<0.005	<0.01
Aromatics >EC10-EC12	**0.01**	**0.041**	**0.13**	<0.005	**0.23**	**0.042**	<0.005	**0.061**	<0.005	**0.22**	**0.14**	**0.62**	**0.45**	**0.35**	**0.31**	**0.99**	**0.11**	<0.005	**0.15**	**0.16**	0.26
Aromatics >EC12-EC16	**0.01**	**0.09**	**0.11**	<0.01	**0.15**	**0.08**	<0.01	<0.01	<0.01	**0.24**	**0.19**	**1**	**0.34**	**0.58**	**0.39**	**0.52**	**0.06**	<0.01	**0.28**	**0.2**	1.1
Aromatics >EC16-EC21	**0.01**	<0.01	<0.01	<0.01	**0.04**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.38**	<0.01	**0.39**	**0.25**	**0.03**	<0.01	<0.01	**0.11**	<0.01	1.7
Aromatics >EC21-EC35	**0.01**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.06**	<0.01	**0.08**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.4
Total aromatics C5-35	-	**0.13**	**0.24**	<0.01	**0.42**	**0.12**	<0.01	**0.06**	<0.01	**0.46**	**0.34**	**2.06**	**0.8**	**1.41**	**0.95**	**1.54**	**0.17**	<0.01	**0.54**	**0.36**	3.46
TPH C5-C35	-	**0.53**	**0.24**	<0.01	**0.42**	**0.12**	<0.01	**0.16**	<0.01	**1.28**	**0.8**	**13.91**	**1.19**	**4.1**	**2.88**	**1.54**	**0.66**	<0.01	**1.18**	**0.42**	9.08
MNA Parameters																					
Total Dissolved Iron	-	0.7	-	-	-	1.0	-	1.3	-	1.2	3.0	-	13.0	17.0	17.0	-	-	-	62.0	50.0	60.0
Dissolved Manganese	-	0.2	-	-	-	0.8	-	0.5	-	0.2	0.3	-	0.9	1.0	1.0	-	-	-	1.5	1.3	1.5
Sulphate	-	23.0	-	-	-	85.0	-	42.0	-	44.0	38.0	-	<0.05	1.0	<0.5	-	-	-	1.8	<0.5	0.9
Nitrate as N	-	0.9	-	-	-	0.3	-	4.5	-	0.5	0.2	-	<0.05	<0.05	<0.05	-	-	-	0.1	0.1	<0.05
Manganese II	-	0.2	-	-	-	0.7	-	0.5	-	0.2	0.5	-	0.9	2.1	2.7	-	-	-	5.9	3.7	4.2
Total Inorganic Carbon	-	74	-	-	-	100	-	49	-	100	130	-	140	16	170	-	-	-	140	140	150.0
Dissolved Methane	-	0.01	-	-	-	0.6	-	0.01	-	0.4	0.8	-	21.0	24.0	26.0	-	-	-	16.0	16.0	21.0
Sulphide	-	<0.3	-	-	-	<0.3	-	<0.3	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01
Dissolved Iron II	-	0.0	-	-	-	0.2	-	<0.02	-	0.8	0.7	-	13.0	14.0	2.3	-	-	-	59.0	2.1	57.0
Dissolved Iron III	-	0.6	-	-	-	0.8	-	1.3	-	0.4	2.3	-	<0.50	3.0	14.7	-	-	-	3.0	47.9	3.0
In-Situ Parameters	**Units**																				
Electrical Conductivity	uS/cm	1165	2371	1187	1146	666	1102.6	615	810.6	704	913	-	1352	1481	1764	1974	1683.8	2594.1	1424	1071	1765.9
Oxidation Reduction Potential	mV	169	-130	53	-101	74	-1	83	69	83	-57	-	92	-40	-76	-65	-114	-68	-43	-86	-119
Dissolved Oxygen	%	0.65	0.31	5.52	0.29	0.94	0.5	0.68	6.51	0.67	1.08	-	0.93	0.53	0.21	0.46	0.36	0.69	0.65	0.78	0.19
pH	pH units	7.9	6.9	7.1	7.0	8.1	7.0	8.2	7.3	6.6	6.6	-	6.4	6.5	6.8	6.6	6.9	6.6	6.5	6.5	6.8
Temperature	degrees C	7	23.8	21.15	17.89	6.8	18.5	6.8	24.7	11	12	-	10	15	11	17	17	14	12	14	11

Key

All results are in mg/l.

MTBE	Methyl tertiary butyl ether
-	Not analysed/no WQS/unknown
WQS	Water Quality Standard
888	Exceeds WQS
888	Exceeds detection limit
	Unknown Well Screen Interval
	Well installed in Chalk
	River Terrace Deposits & Chalk Strata

N

NOTES

1. DRAWING IS BASED ON ENDEAVOR SURVEYING SERVICE TRACE, DRAWING NUMBER ES00006, DATED NOVEMBER 2015.

- DERV — FUEL LINE - DIESEL, KERO OR PARAFFIN
- ELEC — ELECTRICITY CABLE
- BT — BT CABLE
- GAS — GAS
- WATER — WATER SUPPLY PIPE
- FW — FOUL WATER DRAIN
- SW — SURFACE WATER DRAIN
- MET — METALLIC TARGET
- UI — UNIDENTIFIED - SEE NOTES
- BT — STATUTORY INFORMATION
- END OF TRACE

LEGEND

- SITE BOUNDARY
- HISTORIC AST (NO LONGER PRESENT)
- EXISTING AST's
- GROUNDWATER MONITORING WELL (REC JULY 2008)
- GROUNDWATER MONITORING WELL (REC SEPTEMBER 2008)
- GROUNDWATER MONITORING WELL (OHES JULY 2009)
- LNAPL AND GROUNDWATER ABSTRATION WELL (OHES 2009)
- SLR BOREHOLES 2015
- WINDOW SAMPLE (OHES 2015)
- HAND AUGER LOCATION (OHES 2015)

Granary House

Barley House

Rough Ground

Concrete

Cabin

AST

WS411 WS22 WS412 WS410 WS25 WS24 WS23 WS21 WS408 WS03 BH107 CP03 AW14 WS32 WS405 BH101 WS407 WS406 AW11 AW12 BH105 WS04 AW13 CP02 BH106 CP01 AW10 AW09 WS01 AW08 BH102 BH104 WS409 BH103 WS29 WS02 WS404 AW05 WS402 AW07 AW06 CP04 HA1 BH111 AW04 WS403 WS401 BH108 AW03 BH109 HA401 WS33 BH110 AW02 AW01 WS28 HA403 HA402 CP05

0 5 10 15 20m 30 40 50

Metres 1:500

05952.00001.19.002.1_DQRA_SITE_LAYOUT&BH_LOC.dwg

FH GREAT SHELFORD LTD

LANGFORD LODGE
109 PEMBROKE ROAD
CLIFTON, BRISTOL
BS8 3EU
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GREAT SHELFORD FUEL DEPOT

DETAILED QUANTITATIVE RISK ASSESSMENT

SITE LAYOUT AND BOREHOLE LOCATION PLAN

DWG No. 2

Scale: 1:500 @ A3

Date: AUGUST 2019

N

OFFICES
CAR PARKING
OFFICES
RESIDENTIAL
STATION ROAD
RAILWAY LINES
ACCESS TO OFFICES
OIL DEPOT ACCESS
Granary House
OFFICES
Lime House
OFFICES
Barley House
OFFICES
RESIDENTIAL
RESIDENTIAL
RESIDENTIAL
OVERGROWN VEGETATED AREA
SOURCE AREA B
SOURCE AREA A
AST
Cabin
Concrete
Rough Ground

WS22 <0.01
WS25 <0.01
WS23 0.42
WS24 <0.01
WS21 0.24
BH107 <0.01
WS03 <0.01
WS32 0.66
BH105 <0.01
WS04 <0.01
BH101 LNAPL
CP03
AW14
AW11
AW13
AW12
BH108 1.46
CP02 LNAPL
CP01 0.9
AW08
AW10
AW09
BH102 1.8
WS01 0.66
BH104 0.36
WS02
WS29 1.54
BH103 LNAPL
AW05
AW07
AW06 LNAPL
CP04 LNAPL
HA1 0.68
BH111 0.57
AW04
BH109 0.43
AW03
WS33
AW01
BH108 0.37
BH110 <0.01
AW02 <0.01
WS28 13
CP05 <0.01

0.5
1.0
1.5
2.0

0 5 10 15 20m 30 40 50
Metres 1:500

05952.00001.19.004.1_DQRA_GW_TPH_CON.dwg

LEGEND

TPH CONCENTRATION

- TPH >2.0 mg/l
- TPH >1.5 mg/l
- TPH >1.0 mg/l
- TPH >0.5 mg/l
- 0.9 — TPH CONCENTRATION (m/gl) AUGUST 2018
- LNAPL — NO GROUNDWATER SAMPLE COLLECTED DUE TO MEASURABLE LNAPL

- SITE BOUNDARY
- AST's
- VEHICLE WASH INTERCEPTOR
- DEPOT OIL / WATER INTERCEPTOR
- GROUNDWATER MONITORING WELL (REC JULY 2008)
- GROUNDWATER MONITORING WELL (REC SEPTEMBER 2008)
- GROUNDWATER MONITORING WELL (OHES JULY 2009)
- LNAPL AND GROUNDWATER ABSTRACTION WELL (OHES 2009)
- SLR BOREHOLES 2015
- EXTENT OF MEASURABLE LNAP (2016 - 2018)
- SOURCE AREA
- GROUNDWATER FLOW DIRECTION

NOTES

1. DRAWING IS BASED ON ENDEAVOR SURVEYING SERVICE TRACE, DRAWING NUMBER ES00006, DATED NOVEMBER 2015.

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GREAT SHELFROD FUEL DEPOT

DETAILED QUANTITATIVE RISK ASSESSMENT

PLAN OF GROUNDWATER TPH CONCENTRATIONS (AUGUST 2018) & LNAPL DISTRIBUTION (2016-2018)

DWG No. 4

Scale	Date
1:500 @ A3	AUGUST 2019

Karen Pell-Coggins
South Cambridgeshire District Council
Development Control
South Cambridgeshire Hall (6010)
Cambourne Business Park
Cambourne
Cambridge
CB3 6EA

Our ref: AC/2019/129012/01-L01
Your ref: s/3809/19

Date: 17 December 2019

Dear Sir/Madam

DEMOLITION OF EXISTING BUILDINGS AND STRUCTURES (EX' FUEL DEPOT) AND THE ERECTION OF A 63-BED CARE HOME (USE CLASS C2) WITH EXTERNAL AMENITY SPACE, ACCESS, CAR PARKING, LANDSCAPING AND OTHER ASSOCIATED WORKS. 2, STATION ROAD, GREAT SHELFORD, CAMBRIDGE, CAMBRIDGESHIRE, CB22 5LR.

Thank you for your consultation.

Site Specific comments.
The site is underlain by River Terrace Deposits Secondary A Aquifer which in turn overlies the Grey Chalk Subgroup Principal Aquifer. Secondary A aquifers are permeable geological strata capable of supporting water supplies at a local rather than strategic scale, and often form an important source of base flow to rivers, wetlands and lakes and private water supplies in rural areas. Principal aquifers are geological strata that exhibit high permeability and provide a high level of water storage. They support water supply and river base flow on a strategic scale. The site is not located within a groundwater source protection zone (SPZ) meaning that it does not lie within the catchment of a protected groundwater abstraction used for water supply. The site is considered to be of high sensitivity and could present potential pollutant/contaminant linkages to controlled waters.

Environment Agency position.
Whilst the Agency has no objection in principle to the proposed development we wish to offer the following recommendations and informatives.

We are reliant on the accuracy and completeness of the reports in undertaking our review, and can take no responsibility for incorrect data or interpretation made by the authors.

Groundwater & Contaminated Land response:
Based on the information provided, we do not consider this proposal to be high priority and we do not have the resource to review these documents at this time. Therefore we will not be providing detailed site-specific advice or comments with regard to land contamination issues for this site at this time.

The developer should address risks to controlled waters from contamination at the site, following the requirements of the National Planning Policy Framework and the Environment

Agency Guiding Principles for Land Contamination.

Notwithstanding the above, we note the reported presence of residual LNAPL beneath the site which has been indicated to be potentially mobile. On this basis we would recommend remediation works to reduce the potential risks to controlled waters, such as source reduction or a barrier to prevent off-site migration.

General Advice to Applicant – Groundwater & Contaminated land.
We recommend that developers should:

1. Refer to our Groundwater Protection webpages, which include the Groundwater Protection Position Statements;
2. Follow the Land Contamination: Risk Management guidance when dealing with land affected by contamination;
3. Refer to the CL:AIRE Water and Land Library (WALL) which includes the Guiding Principles for Land Contamination for the type of information that we require in order to assess risks to controlled waters from the site. The Local Authority can advise on risk to other receptors, for example human health;
4. Refer to our Land Contamination Technical Guidance;
5. Refer to Position Statement on the Definition of Waste: Development Industry Code of Practice;
6. Refer to British Standards BS 5930:1999 A2:2010 *Code of practice for site investigations* and BS10175:2011 A1: 2013 *Investigation of potentially contaminated sites – code of practice*
   Refer to our Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination National Groundwater & Contaminated Land Centre Project NC/99/73. The selected method, including environmental mitigation measures, should be presented in a 'Foundation Works Risk Assessment Report', guidance on producing this can be found in Table 3 of 'Piling Into Contaminated Sites';
7. Refer to our Good Practice for Decommissioning Boreholes and Wells.
   Refer to our Dewatering building sites and other excavations: environmental permits guidance when temporary dewatering is proposed.

Other Environmental Informatives and Advice.
Surface Water Drainage and Infiltration Sustainable Drainage Systems (SuDS):
All surface water from roofs shall be piped direct to an approved surface water system using sealed downpipes. Open gullies should not be used.

Only clean, uncontaminated surface water should be discharged to any soakaway, watercourse or surface water sewer.

The water environment is potentially vulnerable and there is an increased potential for pollution from inappropriately located and/or designed infiltration (SuDS). We consider any infiltration (SuDS) greater than 2.0 m below ground level to be a deep system and are generally not acceptable. All infiltration SuDS require a minimum of 1.2 m clearance between the base of infiltration SuDS and peak seasonal groundwater levels. All need to meet the criteria in our Groundwater Protection: Principles and Practice (GP3) position statements G1 to G13 which can be found here:
https://www.gov.uk/government/collections/groundwater-protection. In addition, they must not be constructed in ground affected by contamination and if the use of deep bore soakaways is proposed, we would wish to be re-consulted. The proposals will need to comply with our Groundwater protection position statements G1 and G9 to G13.

Pollution Control:

Surface water from roads and impermeable vehicle parking areas shall be discharged via trapped gullies.

Prior to being discharged into any watercourse, surface water sewer or soakaway system, all surface water drainage from lorry parks and/or impermeable parking areas for fifty car park spaces or more and hardstandings should be passed through an oil interceptor designed compatible with the site being drained. Roof water shall not pass through the interceptor.

Site operators should ensure that there is no possibility of contaminated water entering and polluting surface or underground waters.

Foul Water Drainage:
Foul water drainage (and trade effluent where appropriate) from the proposed development should be discharged to the public foul sewer, with the prior approval of AWS, unless it can be satisfactorily demonstrated that a connection is not reasonably available.

Anglian Water Services Ltd. should be consulted by the Local Planning Authority and be requested to demonstrate that the sewerage and sewage disposal systems serving the development have sufficient capacity to accommodate the additional flows, generated as a result of the development, without causing pollution or flooding. If there is not capacity in either of the sewers, the Agency must be reconsulted with alternative methods of disposal.

General Informatives:
Notwithstanding the provision of the Town and Country Planning General Permitted Development Order 1995 (or any order revoking or re-enacting that Order), any oil storage tank shall be sited on an impervious base and surrounded by oil tight bunded walls with a capacity of 110% of the storage tank, to enclose all filling, drawing and overflow pipes. The installation must comply with Control of Pollution Regulations 2001, and Control of Pollution (Oil Storage) Regulations 2001.

Site operators should ensure that there is no possibility of contaminated water entering and polluting surface or underground waters.

Conservation:
Opportunities should be provided for wildlife habitat enhancement through enlargement and/or appropriate management of existing habitats and through creation of new habitats.

De Watering:
There have been changes to the licensing process for de-watering purposes. A provision of the Water Act 2003 was that abstraction of water for de-watering purposes would require an abstraction licence. This is provision is now being implemented and we are inviting applications from existing abstractors from January 2018. There will be a transitional period where abstractors will have up to two years to apply for a licence of a previously exempt activity. When the 2 year application period has closed the Environment Agency can take up to a further 3 years to determine any application.

More information on this and how to apply for a de-watering licence can be found on our website using the below link: https://www.gov.uk/guidance/apply-for-a-new-abstraction-licence-for-a-currently-exempt-abstraction

Yours faithfully

Mr. T.G. Waddams
Planning Liaison

Direct e-mail planning.brampton@environment-agency.gov.uk

Please note – Our current hourly charge for pre application assessments is currently £100 + VAT

Environment Agency, East Anglia Area (West), Bromholme Lane, Brampton, Huntingdon, Cambs. PE28 4NE.
www.gov.uk/environment-agency