








South West Bicester
Remediation Register
Countryside Properties (Bicester) Ltd

November 2011



QUALITY MANAGEMENT

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Project number	12370399/001	00015178/002 (12370324/002)	00020861/001	00020861/001	00020861/001
File reference	Bicester School and Southwest Bicester land Parcels KM1, KM2, KM3, KM4, KM5, KM6, KM15, KM18, KM21 and the healthcare centre.	Central Eastern Land Parcels KM7, KM8, KM9, KM10, KM11, KM12, KM13, KM19 and the commercial centre.	Central Land Parcels KM13, KM14, KM15, KM16, KM17, KM18, KM19, KM20, the local centre and the Howes Lane area.	Re-assessment of the Primary School against WSPE Public Parks GAC	Update to KM7 and KM9

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1 INTRODUCTION

1.1 BACKGROUND, PURPOSE AND OBJECTIVES OF THIS REPORT

The development site is of an irregular shaped parcel of land covering an area of approximately 188 hectares. The proposed site development comprises a combination of residential, commercial, local amenities and open space end-use. The planning conditions of this development pertinent to contamination issues are:

Condition 20;

“No development shall commence until a remediation scheme has been submitted to deal with the identified areas of contamination and the submitted scheme has been approved in writing by the Local Planning Authority. The scheme shall be implemented in accordance with the approved details and a validation report shall thereafter be submitted confirming the works have been completed within 2 months of the works being carried out.” Cherwell District Council, application number 06/00967/OUT (2006)

A number of previous site investigations and surveys have been undertaken for different parts of the Bicester site which are detailed below.

This report summarises the contamination issues established from the investigations and, where necessary, recommends approaches of remediation measures. In doing so, it sets out a coherent approach on how the planning conditions will be addressed.

1.2 PREVIOUS REMEDIATION REGISTERS

This report acts as an updated report to the WSPE Remediation Register dated March 2011 and includes relevant information from a further phase of investigation carried out at the wider South West Bicester, Whitelands Farm site. The details of the further site investigation which covers additional plots KM13, KM14, KM15, KM16, KM17, KM18, KM19, KM20 and the Local Centre are presented within WSPE Report 00020861/001 dated September 2011. Further details of the investigation undertaken within the vicinity of the Made Ground at Howes Lane are presented within WSPE Report 00022478/002 dated July 2011.

1.3 PREVIOUS GROUND INVESTIGATION REPORTS

This Remediation Register collates the potential contamination issues derived from the following investigations and reports;

- WSPE Report Ref. 00020861/001 (2011) *Central Land Parcels, Whitelands Farm, Southwest Bicester, Oxfordshire, Geo-Environmental and Geotechnical Interpretative Report;*
- WSPE Report Ref. 00022478/001 (2011), *Howes Lane, Southwest Bicester, Oxfordshire, Phase II Geo-Environmental Assessment and DQRA;*
- WSPE Report Ref. 12370324/002 (2011) *Central Eastern Land Parcels, Whitelands Farm, Southwest Bicester, Oxfordshire, Geo-Environmental and Geotechnical Interpretative Report;*
- WSPE Report Ref. 12370399/001/01 (2010) *Southwest Bicester Geo-Environmental and Geotechnical Interpretative Report;*
- WSPE Report Ref. 12370324/001 (2009) *Southwest Bicester Schools Sites Geo-E-Environmental and Geotechnical Interpretative Report;*
- WSPE Report Ref. 12370178/001 (2007), *Whitelands Farm, South West Bicester Geo-Environmental and Geotechnical Interpretative Report;* and,

- Pell Frischmann Report Ref, 410511/01 (2001), South West Bicester, Oxfordshire Ground Investigation, Factual and Interpretative Report.

2 THE SITE

2.1 SITE SETTING

Site details are presented in Table 1. The location of the site is indicated in **Figure 1**.

Table 1: Site Details

Site Address	Land at Whitelands Farm, Middleton Stoney Road, Southwest Bicester, Oxfordshire.
National Grid Reference	Centre of site: SP 566 219
Size	188 hectares

SITE DESCRIPTION

The site is of an irregular shaped parcel of land covering an area of approximately 188 hectares. The topography of the site slopes gently in an easterly direction. The site is bound to the north by the B4030 Middleton Stoney Road and residential properties beyond. To the east the site is bound by the A41 Oxford Road and the edges of a service station in the north-eastern part of the site. To the east the site is bound by the A4095 Howes Lane and agricultural land to the south.

The site originally comprised a number of fields, most of which are covered by grass soft standing surfacing. Whitelands Farmhouse (now vacant), with associated outbuildings and yard are situated almost at the centre of the site which are accessed by a lane from the B4030. Whiteland Cottages are situated approximately halfway between the Farmhouse and the B4030. The majority of the site now forms part of a construction site.

The edges of existing field plots are generally bounded by hedgerows and mature trees. A particularly boggy area stretches west from the north-eastern corner of the site is overgrown by bog grasses either side of the shallow stream (Pingle Brook). The stream continues westwards into the adjacent field.

A large part of the site has become generally boggy through the winter period of 2010 to 2011.

The site layout is presented in **Figure 2**.

3 REMEDIATION REGISTER

The following table outlines the current remediation status of the site on a plot by plot basis.

Table 2.: Remediation Status.

Land Parcel	Report Reference and WSPE Boreholes	Contamination Status	Remediation Strategy/ Specification	Remediation/ Validation	Remaining Action for Planning Condition to be Discharged	Planning Condition Discharged?	
Specific Issues found on-site							
Soils							
KM1	WSPE Report 12370178/001 (2007)	CP101, TP101 to TP104, TP111, TP112, WS101, WS102, WS104	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370399/001 (2010)	TP21, TP22, TP52					
	Pell Frischmann Report 410511/01 (2001)	TP32, TP42					

Land Parcel	Report Reference and WSPE boreholes		Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged
KM2	WSPE Report 12370178/001 (2007)	TP23	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370399/001 (2010)	CP102, TP105, TP106, TP107, WS103, WS105 to WS107					
	Pell Frischmann Report 410511/01 (2001)	TP33					
KM3	WSPE Report 12370399/001 (2010)	CP103, TP115, TP116, WS111, WS112, WS115	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	Pell Frischmann Report 410511/01 (2001)	TP43, TP53					

Land Parcel	Report Reference and WSPE boreholes		Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged
KM4	WSPE Report 12370399/001 (2010)	CP104, TP113, TP114, TP117, TP118	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	Pell Frischmann Report 410511/01 (2001)	TP54, TP55,					
KM5 (including parcel of land to the west)	WSPE Report 12370178/001 (2007)	TP21, TP25,	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370399/001 (2010)	CP105, TP108 to TP110, TP119 to TP124, WS108, WS109, WS116 to WS120					
	Pell Frischmann Report 410511/01 (2001)	TP34, TP35, TP44					

Land Parcel	Report Reference and WSPE boreholes		Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged
KM6 (and surrounding land to east and south)	WSPE Report 12370178/001 (2007)	TP46, TP48, TP49, TP53, TP56,	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370399/001 (2010)	CP107, TP125, TP127 to TP134, TP137, WS122 to WS126, WS128, WS129, WS134, WS138, WS140					
	Pell Frischmann Report 410511/01 (2001)	TP72, TP79, TP79A, TP79B, TP83, TP89, TP89B					

Land Parcel	Report Reference and WSPE boreholes		Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged
KM7	WSPE Report 12370178/001 (2007)	TP32, TP33	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370324/002 (2011)	CP202, TP208, TP209, TP210, SA205, WS204.	An elevated concentration of arsenic (32.50mg/kg) was encountered within WS204 at 0.70mbgl (Cornbrash Formation).	<i>Updated December 2011:</i> Significant fill material (>1m) has been placed across Plot KM7 effectively severing any potential active pathways. However, the placed material was sit won and therefore validation testing of these materials shall be required prior to top soiling as part of the detailed development and verification plan to be submitted to the Local Authority.	Site won capping materials have been placed. However, validation testing and a verification plan will be required to demonstrate that no risks remain to future site users.	None for outline planning. Remaining actions to be considered as part of the detailed planning application and conditions therein.	Pending
	Pell Frischmann Report 410511/01 (2001)	TP68	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending

Land Parcel	Report Reference and WSPE boreholes		Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged
KM8	WSPE Report 12370178/001 (2007)	TP30, TP31	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370324/002 (2011)	TP207, SA03					
	Pell Frischmann Report 410511/01 (2001)	BH10, TP67					
KM9	WSPE Report 12370178/001 (2007)	TP64	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370324/002 (2011)	TP211 to TP214					
	Pell Frischmann Report 410511/01 (2001)	TP76, TP76A					

Land Parcel	Report Reference and WSPE boreholes	Contamination Status	Remediation strategy/ spec	Remediation/validation	Remaining action for planning condition to be discharged	Planning Condition Discharged	
KM10	WSPE Report 12370178/001 (2007)	TP38	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370324/002 (2011)	CP203, CP204, WS207, SA207, SA208					
	Pell Frischmann Report 410511/01 (2001)	TP74, TP81					
KM11	WSPE Report 12370324/002 (2011)	TP203, WS201, SA201	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	Pell Frischmann Report 410511/01 (2001)	TP57					
KM12	WSPE Report 12370324/002 (2011)	CP201, TP201, TP202, TP204, TP205,	No visual or olfactory evidence of contamination during site works. All concentrations are	No further remediation required.	Not required	No action	Pending

Land Parcel	Report Reference and WSPE boreholes		Contamination Status	Remediation strategy/ spec	Remediation/validation	Remaining action for planning condition to be discharged	Planning Condition Discharged
	Pell Frischmann Report 410511/01 (2001)	TP58	below relevant SGV/GAC.				
KM13	WSPE Report 00020861/001 (2011)	TP507, TP508, TP513, WS505, WS508, SA506	Marginally elevated concentrations of arsenic were recorded within the topsoil of WS505 and WS508 (38 and 32.8mg/kg respectively) at 0.15 and 0.10m bgl.	Elevated arsenic levels should be considered in terms of their specific locations in the final masterplan layout to determine whether they are within building footprints, under road corridors or within residential gardens or landscaped areas	Any exceedances within residential or communal garden areas may require excavation and appropriate disposal, capping and/or further testing on a plot by plot basis once the final masterplan layout is determined.	To be determined after re-appraisal of results in the final masterplan layout.	Pending
	WSPE Report 12370324/002 (2011)	TP206, WS202	An elevated concentration of arsenic (57.20mg/kg) was encountered within TP206 at 0.50mbgl (Kellaways Clay) and within WS202 (33.60 mg/kg) at 1.50m bgl (Forest Marble Clay).	Elevated arsenic levels should be considered in terms of their specific locations in the final masterplan layout to determine whether they are within building footprints, under road corridors or within residential gardens or landscaped areas. Given the depth of the sample within WS202 (and assuming current proposed site levels are not significantly altered in	Any exceedances within residential or communal garden areas may require excavation and appropriate disposal, capping and/or further testing on a plot by plot basis once the final masterplan layout	To be determined after re-appraisal of results the final masterplan layout.	Pending

Land Parcel	Report Reference and WSPE boreholes	Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged	
				this area), this marginal exceedance is not currently considered to pose a risk to human health.	is determined.		
	WSPE Report 12370178/001 (2007)	TP29, TP40	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	Pell Frischmann Report 410511/01 (2001)	TP68	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
KM14	WSPE Report 00020861/001 (2011)	CP501, TP502, TP503, TP504, TP505, WS501, WS502, WS503, SA501	Marginally elevated concentrations of arsenic were recorded within the topsoil at 0.15m bgl of WS501 (32.6mg/kg), within the Kellaways Clay at 0.10m bgl within WS503 (34mg/kg) and within the Cornbrash Formation at 0.30m bgl	Elevated arsenic levels should be considered in terms of their specific locations in the final masterplan layout to determine whether they are within building footprints, under road corridors or within residential gardens or landscaped areas	Any exceedances within residential or communal garden areas may require excavation and appropriate disposal, capping and/or further testing on a plot by plot basis once	To be determined after re-appraisal of results the final masterplan layout.	Pending

Land Parcel	Report Reference and WSPE boreholes	Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged	
			within CP501 (32.8m bgl).		the final masterplan layout is determined.		
	Pell Frischmann Report 410511/01 (2001)	TP45, TP56	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
KM15	WSPE Report 00020861/001 (2011)	CP502, TP509, TP521, TP527, WS506, WS509, SA515	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370178/001 (2007)	TP26					
	WSPE Report 12370324/002 (2011)	CP106, TP126, WS121					
	Pell Frischmann Report 410511/01	TP63					

Land Parcel	Report Reference and WSPE boreholes	Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged	
	(2001)						
KM16	WSPE Report 00020861/001 (2011)	TP510, TP516, TP522, TP523, TP529, WS504, WS510, WS513, SA517, SA528,	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370178/001 (2007)	TP60					
	Pell Frischmann Report 410511/01 (2001)	TP63A, TP64					
KM17	WSPE Report 00020861/001 (2011)	CP503, TP511, TP518, WS507, WS511, WS514	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370178/001 (2007)	TP27					

Land Parcel	Report Reference and WSPE boreholes		Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged
	Pell Frischmann Report 410511/01 (2001)	TP73					
KM18	WSPE Report 00020861/001 (2011)	CP505, TP524,, TP530, TP532, WS517, WS518, WS519, SA531	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370399/001 (2010)	WS127					
	Pell Frischmann Report 410511/01 (2001)	TP80					
KM19	WSPE Report 12370324/002 (2011)	TP220 to TP223, WS208 WS210, WS211, SA209, SA210.	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant	No further remediation required.	Not required	No action	Pending

Land Parcel	Report Reference and WSPE boreholes		Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged
	Pell Frischmann Report 410511/01 (2001)	TP86	SGV/GAC.				
KM20	WSPE Report 00020861/001 (2011)	TP519, TP526, WS512, WS515, WS516, SA520	Marginally elevated concentrations of arsenic were recorded within the topsoil at 0.50m bgl of WS512 and within the Cornbrash Formation at 0.15m bgl within WS515.	Elevated arsenic levels should be considered in terms of their specific locations in the final masterplan layout to determine whether they are within building footprints, under road corridors or within residential gardens or landscaped areas	Any exceedances within residential or communal garden areas may require excavation and appropriate disposal, capping and/or further testing on a plot by plot basis once the final masterplan layout is determined.	To be determined after re-appraisal of results the final masterplan layout.	Pending
	Pell Frischmann Report 410511/01 (2001)	TP73A	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	
KM21	WSPE Report 12370178/001 (2007)	TP54	No visual or olfactory evidence of contamination during site	No further remediation required.	Not required	No action	Pending

Land Parcel	Report Reference and WSPE boreholes	Contamination Status	Remediation strategy/ spec	Remediation/validation	Remaining action for planning condition to be discharged	Planning Condition Discharged	
	<p>WSPE Report 12370399/001 (2010)</p> <p>Pell Frischmann Report 410511/01 (2001)</p>	<p>CP110, TP135, WS130</p> <p>TP89A</p>	<p>works.</p> <p>All concentrations are below relevant SGV/GAC</p>				
Primary School**	WSPE Report 12370178/001 (2007)	TP39	<p>No visual or olfactory evidence of contamination during site works.</p> <p>All concentrations are below relevant SGV/GAC.</p>	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370324/001 (2009)	TP33 to TP45, WS4, WS5, WS6.	Elevated level of arsenic within Cornbrash Formation within TP41 at 0.50m (52mg/kg).	No further remediation is required assuming that in-keeping with surrounding parcels the land will be raised by a minimum of 0.5m using suitable material.			
	Pell Frischmann Report 410511/01 (2001)	TP75	<p>No visual or olfactory evidence of contamination during site works.</p> <p>All concentrations are below relevant SGV/GAC.</p>	No further remediation required.			

Land Parcel	Report Reference and WSPE boreholes	Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged	
Secondary School	WSPE Report 12370178/001 (2007)	TP65	No visual or olfactory signs of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370324/001 (2009)	TP01 to TP32, WS1, WS2, WS3.					
	Pell Frischmann Report 410511/01 (2001)	TP69, TP70, TP76B, TP77, TP78,					
Local Centre	WSPE Report 00020861/001 (2011)	CP504, TP512, TP513, TP514,	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370178/001 (2007)	TP28, TP29					
Commercial Centre	WSPE Report 12370178/001 (2007)	TP36, TP37, TP42	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC (for commercial end use).	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370324/002 (2009)	TP215 to TP219, WS206, WS209, WS212, SA206					

Land Parcel	Report Reference and WSPE boreholes	Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged	
	Pell Frischmann Report 410511/01 (2001)	TP81, TP82, TP87,					
Healthcare Centre	WSPE Report 12370178/001 (2007)	TP55	No visual or olfactory evidence of contamination during site works.	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370399/001 (2010)	CP108, TP36, TP28, TP40, TP41, WS131 to WS133, WS135 to WS137	All concentrations are below relevant SGV/GAC.				
	WSPE Report 12370324/002 (2011)	TP224	An elevated concentration of arsenic was encountered within TP224 at 0.20mbgl (35.60mg/kg) (topsoil) compared against residential (with plant uptake) SGV/GAC. No exceedances were seen when compared against	Depending on the final layout of the proposed development, it is possible that the exceedance may be located under a building footprint / associated car parking, therefore mitigating the Source-Pathway-Receptor linkage. However, it is anticipated that the topsoil within this location shall be	Stripping of, and disposing of topsoil appropriately		

Land Parcel	Report Reference and WSPE boreholes		Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged
			commercial SGV/GAC.	stripped prior to redevelopment and this will need to be disposed of appropriately.			
	Pell Frischmann Report 410511/01 (2001)	TP85, TP86, TP90.	No visual or olfactory evidence of contamination during site works. All concentrations are below relevant SGV/GAC.	No further remediation required.	Not required	No action	Pending
Howes Lane***	WSPE Report 00022478/001 (2011)	TP301 - TP310, TP401 - TP424, BH401 - BH410	Elevated levels of heavy metals and Polyaromatic Hydrocarbons within the topsoil and Made Ground across the area,	Depending on the final layout of the proposed development, it is possible that the exceedance may be located under a building footprint, road or associated car parking, therefore mitigating the Source-Pathway-Receptor linkage. However, it is anticipated that the topsoil and	Not required	No action	Pending
	WSP Report 12370178/001 (2007)	TP01, TP61					

Land Parcel	Report Reference and WSPE boreholes		Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged
	Pell Frischmann Report 410511/01 (2001)	BH1, BH2, TT1, TT2, TT3, TP1	Elevated levels of heavy metals (arsenic, lead mercury and nickel) were identified within the topsoil, Made Ground and Cornbrash Formation across the area,	Made Ground within this location shall be stripped prior to redevelopment and this will need to be disposed of appropriately.			

GROUNDWATER

KM1	WSPE Report 12370178/001 (2007)	TP21, TP22, TP52.	All concentrations are below the relevant assessment criteria.	No further remediation required.	Not required	No action	Pending
KM2	WSPE Report 12370178/001 (2007)	TP33	All concentrations are below the relevant assessment criteria.	No further remediation required.	Not required	No action	Pending
KM3	WSPE Report 12370399/001 (2010)	TP115	All concentrations are below the relevant assessment criteria.	No further remediation required.	Not required	No action	Pending
KM4	WSPE Report 12370399/001 (2010)	CP104, TP113	All concentrations are below the relevant assessment criteria.	No further remediation required.	Not required	No action	Pending

Land Parcel	Report Reference and WSPE boreholes		Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged
KM5	WSPE Report 12370399/001 (2010)	TP122, TP129, TP131, TP137	All concentrations are below the relevant assessment criteria.	No further remediation required.	Not required	No action	Pending
KM6 (and surrounding land to east and south)	WSPE Report 12370178/001 (2007)	TP48, TP56	All concentrations are below the relevant assessment criteria.	No further remediation required.	Not required	No action	Pending
KM7	WSPE Report 12370324/002 (2011)	CP202, WS204,	Slight exceedances of benzo(a)pyrene within CP202 (0.0369µg/l) and WS204 (0.0407µg/l).	<i>Updated December 2011:</i> Further groundwater monitoring has been undertaken at the site and WSPE have formally responded to EA comments (June and September 2011). Based on our on-going monitoring and discussions, no source of contamination has been identified on site and therefore with the absence of a plausible pollutant linkage, it is considered that the potential risks to receptors are very low to negligible. In addition the proposed raising of site levels and capping within soft landscaped areas will further reduce infiltration and act to reduce the identified pathway.	To be determined through discussions with the EHO – currently on-going and awaiting a response (Dec 2011)	To be determined	Pending

Land Parcel	Report Reference and WSPE boreholes	Contamination Status	Remediation strategy/ spec	Remediation/validation	Remaining action for planning condition to be discharged	Planning Condition Discharged	
KM8	No groundwater samples analysed.						
KM9	WSPE Report 12370324/002 (2011)	WS205	Exceedance of benzo(a)pyrene within WS205 (0.0418µg/l).	Discussion should be sought with the local Environmental Health Officer and further monitoring and sampling within these areas may be required prior to redevelopment.	To be determined through discussions with the EHO	To be determined	Pending
KM10	WSPE Report 12370324/002 (2011)	CP203, CP204,	Slight exceedance of benzo(a)pyrene within CP203 (0.0254µg/l).	Discussion should be sought with the local Environmental Health Officer and further monitoring and sampling within these areas may be required prior to redevelopment.	To be determined through discussions with the EHO	To be determined	Pending
KM11	WSPE Report 12370324/002 (2011)	WS201	Slight exceedance of TPH within WS201 (124µg/l).	The comparison criteria used are the more stringent drinking water standards and with the low permeability of the Kellaways Clay Member reducing vertical and lateral migration of groundwater it is considered that therefore the risk posed by such levels within groundwater is considered to be low.	Considered to be required	Conformation that the marginal exceedance combined with mitigated pathway is acceptable to the EHO	Pending
KM12	WSPE Report 12370324/002 (2011)	WS203	Slight exceedance of benzo(a)pyrene within WS203 (0.0171µg/l).	Discussion should be sought with the local Environmental Health Officer and further monitoring and sampling within these areas may be required prior to redevelopment.	To be determined through discussions with the EHO	To be determined	Pending

Land Parcel	Report Reference and WSPE boreholes	Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged	
KM13	No groundwater samples analysed.						
KM14	No groundwater samples analysed.						
KM15	No groundwater samples analysed.						
KM16	No groundwater samples analysed.						
KM17	WSPE Report 12370178/001 (2007)	TP27	All concentrations are below the relevant assessment criteria.	No further remediation required.	Not required	No action	Pending
KM18	No groundwater samples analysed.						
KM19	No groundwater samples analysed.						
KM20	No groundwater samples analysed.						
KM21	WSPE Report 12370178/001 (2007)	TP54	All concentrations are below the relevant assessment criteria.	No further remediation required.	Not required	No action	Pending
Primary School	No groundwater samples analysed.						
Secondary School	WSPE Report 12370178/001 (2007)	TP65	All concentrations are below the relevant assessment criteria.	No further remediation required.	Not required	No action	Pending
	WSPE Report 12370324/001 (2009)	TP03, TP08, TP25.					
Local Centre	No groundwater samples analysed.						

Land Parcel	Report Reference and WSPE boreholes		Contamination Status	Remediation strategy/ spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged
Commercial Centre	WSPE Report 12370324/002 (2011)	WS209	Exceedance of benzo(a)pyrene within WS209 (0.0185µg/l).	Discussion should be sought with the local Environmental Health Officer and further monitoring and sampling within these areas may be required prior to redevelopment.	Given the exceedance is proposed to be capped by the Commercial Centre; it is unlikely that remedial action will be required.	To be determined through discussions with the EHO	Pending
Healthcare Centre	No groundwater samples analysed.						
Howes Lane	WSPE Report 00022478/001 (2011)	BH402, BH406, BH407, BH408, BH409	Exceedances of arsenic, TPH, Phenol and PAH within selected soil and leachate samples.	A Detailed Quantative Risk Assessment has identified that the contaminants within the soil leachate and ground water do not pose a risk to human health or controlled water receptors.	Not required	No action	Pending

* A comprehensive site investigation has not been undertaken across these land parcels at this stage.

** Compared to WSPE derived Public Parks GAC.

*** Compared to a range of residential (with plant uptake) and parks/open space end use.

Report Reference	Contamination Status	Remediation strategy/spec	Remediation/ validation	Remaining action for planning condition to be discharged	Planning Condition Discharged
GENERAL ISSUES					
Asbestos	N/A	Possibly within farmhouse buildings	Asbestos to be removed by a specialist licensed contractor. Asbestos-containing materials should be either removed to landfill or options should be discussed with the relevant statutory body.	N/A	Pending
Unidentified areas of contaminations	N/A	Site-wide	<p>Any areas of possible contamination (within landscaped areas) not previously identified during the site investigations should be removed and replaced with clean certified topsoil. Alternatively, a break layer maybe put in place.</p> <p>In areas of proposed hardstanding, further action may not be required. This should be agreed with the local authority and Environment Agency.</p>	N/A	Pending

4 SUMMARY OF FINDINGS FROM PREVIOUS INVESTIGATIONS

4.1 SCOPE OF PREVIOUS INVESTIGATIONS

The following sections outline the scope of each investigation.

WSPE REPORT REF 00020861/001 (2011)

The scope of works consisted of the following:

- Advancement of five cable percussion boreholes to a maximum depth of 1.70m bgl (below ground level);
- Mechanical excavation of 24 trial pits;
- Advancement of 13 window sampler boreholes;
- Soakaway testing within nineteen trial pits spread across the site;
- Chemical testing of 29 soil samples for a range of commonly occurring contaminants.
- The exploratory hole location plan is presented in Appendix A.

WSPE REPORT 00022478/001 (2011)

The scope of works consisted of the following:

- Advancement of nine cable percussion boreholes to a maximum depth of 10.00m bgl;
- Mechanical excavation of 34 trial pits;
- Chemical testing of 43 soil and six water samples for a range of commonly occurring contaminants.
- The exploratory hole location plan is presented in Appendix B.

WSPE REPORT REF. 12370324/002 (2011)

The scope of works consisted of the following:

- Advancement of four cable percussion boreholes to a maximum depth of 3.00m bgl;
- Mechanical excavation of 24 trial pits;
- Advancement of 12 window sampler boreholes;
- Soakaway testing within ten trial pits spread across the site;
- Chemical testing of 71 soil and nine water samples for a range of commonly occurring contaminants.
- The exploratory hole location plan is presented in Appendix C.

WSPE REPORT REF. 12370399/001 (2010)

The scope of works consisted of the following:

- Sinking of 10 cable percussion boreholes to a maximum depth of 5.36m bgl;
- Mechanical excavation of 41 trial pits; and
- Sinking of 38 window sampler boreholes.

The exploratory hole location plans are presented in Appendix D.

WSPE REPORT REF. 12370324/001 (2009)

The scope of works consisted of the following:

- Mechanical excavation of 45 trial pits;
- Advancement of six window sampler boreholes;
- Chemical testing of 43 soil and five water samples for a range of commonly occurring contaminants.

The exploratory hole location plan is presented in Appendix E.

WSPE REPORT REF. 12370178/001 (2007)

The scope of works consisted of the following:

- Mechanical excavation of 59 trial pits;
- Chemical testing of 39 soil and 13 water samples for a range of commonly occurring contaminants.

The exploratory hole location plan is presented in Appendix F.

PELL FRISCHMANN REPORT REF, 410511/01 (2001)

The scope of works consisted of the following:

- Mechanical excavation of 110 trial pits;
- Advancement of 11 cable percussion boreholes; and,
- Chemical testing of 58 soil, 11 leachate and 11 water samples for a range of commonly occurring contaminants.

The exploratory hole location plan is presented in Appendix G.

Table 3 shows the remediation status of the site.

Table 3:. Remediation Status of Land at Whitelands Farm, Southwest Bicester.

Remediation register at October 2011			
Report Reference	Site Coverage	GI undertaken	Contamination Status
1. WSPE 00020861/001 (2011)	17 hectares	August 2011	A number of exceedances of arsenic were noted across the site.
2. WSPE 00022478/001 (2011)	0.50 hectares	June 2011	A number of exceedances of metals, TPH and PAH were noted within the soil, leachate and groundwater results
3. WSPE 12370399/001 (2011)	20 hectares	November 2010	A number of exceedances of arsenic were noted across the site. Six water samples showed a marginal exceedances of Benzo(a)pyrene and one marginal exceedance of TPH.

Remediation register at October 2011

4. WSPE 12370399/001 (2010)	16.7 hectares	January- February 2010	No visual or olfactory evidence of contamination during site work. All concentrations are below relevant SGV/GAC.
5. WSPE 12370324/001 (2009)	Primary School – 2.47 hectares Secondary School – 6.5 hectares	August 2009	Arsenic within Cornbrash Formation within TP41.
6. WSPE 12370178/001 (2007)	188 hectares	April-May 2007	Arsenic and in a few locations, nickel. Made Ground within the northern corner of the site
7. Pell Frischmann 410511/01 (2001)	188 hectares	August 2001	Immobile heavy metals within the north-west corner of the site.

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