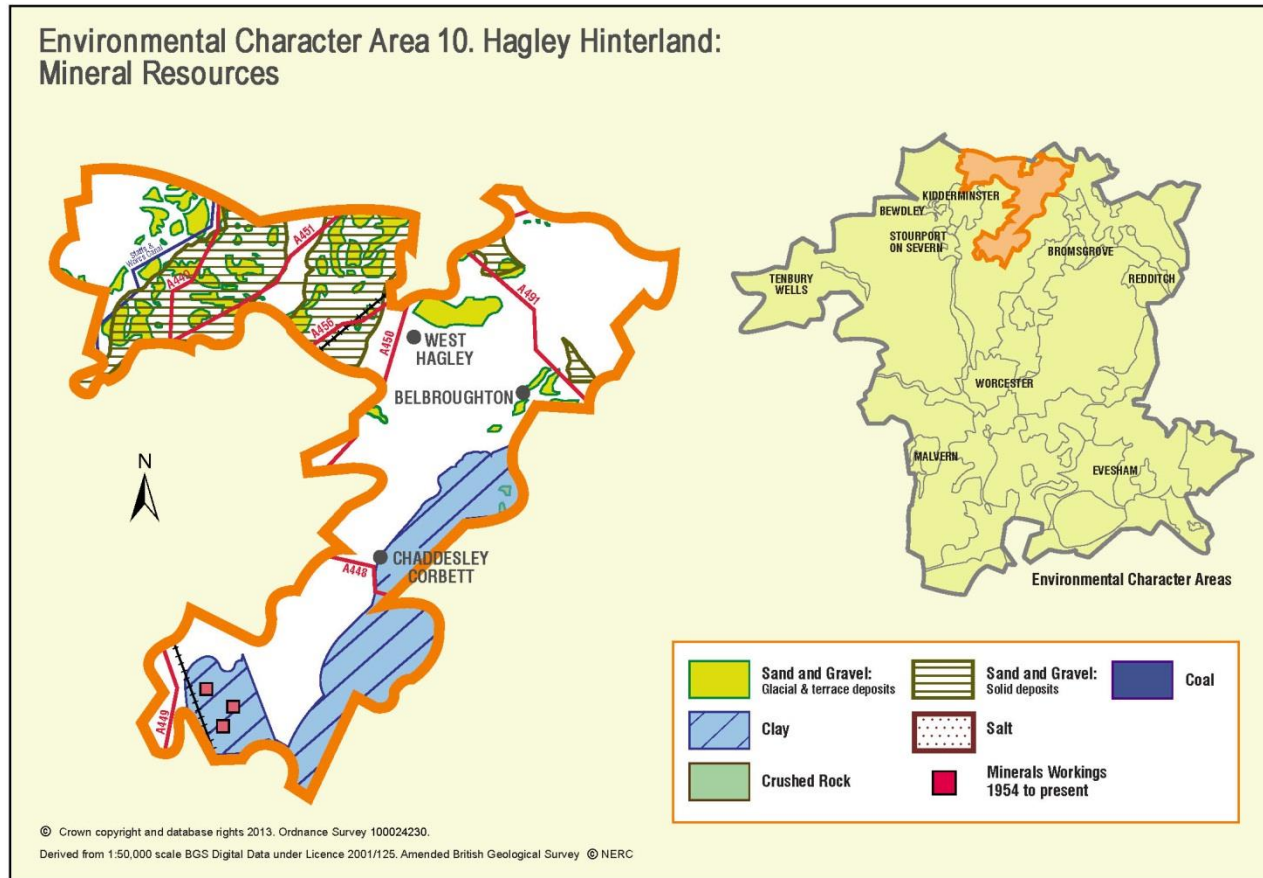


Appendix 10: Analysis of aggregate resources in ECA 10: Hagley Hinterland



ECA Summary for the Third Stage consultation on MLP (Spring 2015):

Sand and gravel

There are 32 resource areas identified for sand and gravel in Hagley Hinterland ECA:

- Key: 5
- Significant: 1
- Not significant: 17
- Compromised: 9

Crushed rock

There are no resource areas identified in Hagley Hinterland ECA for crushed rock.

Non-aggregates

BGS data indicates that there are deposits of clay in this ECA.

Overview of resource assessment for ECA 10

Sand and gravel resource areas:

Resource number*	Second Stage Consultation		Third Stage Consultation	
	Original estimated resource tonnage (2 tonnes/m ³)	Significance	Revised estimate of resource tonnage (1.65 tonnes/m ³)	Significance
10/1	Depth not known	Not significant	Depth not known	Not significant
10/2	Depth not known	Not significant	Depth not known	Not significant
10/3	Depth not known	Not significant	Depth not known	Not significant
10/4	Depth not known	Not significant	Depth not known	Not significant
10/5	240,000	Not significant	198,000	Not significant
10/6	360,000	Not significant	297,000	Not significant
10/7	Depth not known	Not significant	Depth not known	Not significant
10/7a	Depth not known	Compromised	Depth not known	Compromised
10/8	Depth not known	Not significant	Depth not known	Not significant
10/8 a	Depth not known	Compromised	Depth not known	Compromised
10/9	Depth not known	Not significant	Depth not known	Not significant
10/10	Depth not known	Not significant	Depth not known	Not significant
10/11	Depth not known	Compromised	Depth not known	Compromised
10/11a	Depth not known	Compromised	Depth not known	Compromised
10/12	3,536,000	Key	2,917,200	Key
10/13	Depth not known	Not significant	Depth not known	Not significant
10/14	Depth not known	Not significant	Depth not known	Not significant
10/15	Depth not known	Not significant	Depth not known	Not significant
10/16	Depth not known	Not significant	Depth not known	Not significant
10/17	Depth not known	Significant	Depth not known	Significant
10/18	Depth not known	Not significant	Depth not known	Not significant
10/19	Depth not known	Not significant	Depth not known	Not significant
10/20	Depth not known	Not significant	Depth not known	Not significant
10/21	8,164,000	Key	6,735,300	Key
10/21a	624,000	Compromised	514,800	Compromised
10/22	738,000	Compromised	608,850	Compromised
10/23	182,512,000	Key	150,572,400	Key
10/23a	22,400,000	Compromised	18,480,000	Compromised
10/24	220,500,000	Key	181,912,500	Key
10/25	446,936,000	Key	368,722,200	Key
10/26	11,629,000	Compromised	9,593,925	Compromised
10/27	36,405,000	Compromised	30,034,125	Compromised

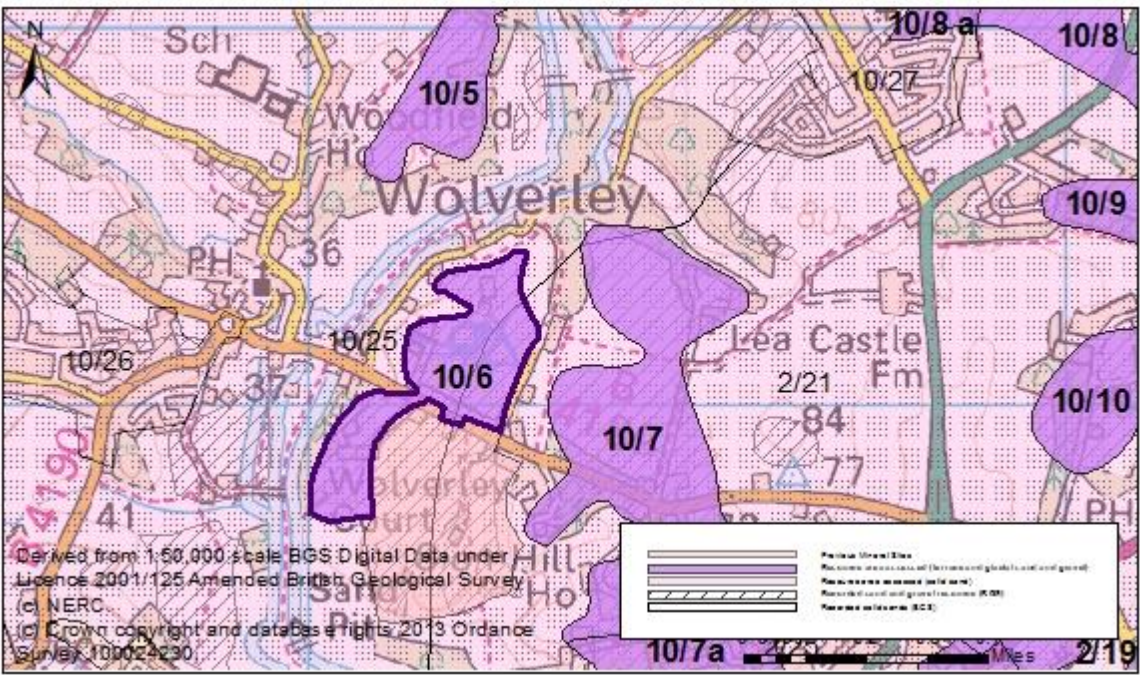
Overview	
Resource number:	10/1
Resource name:	Kinver Lane West
Resource area:	17ha
Resource depth:	Not known
Location	
OS sheet reference:	SO 88 SW
National grid ref:	384203, 281221
Resource description:	
Resource description:	Resource area 10/1 is 4 th terrace (Kidderminster Station) sand and gravel. No information on thicknesses available. This is underlain by solid sand (assessed as resource area 10/25).
Assessment of resource for the second consultation on MLP (Autumn 2013)	
Commentary:	A small resource area with little built development.
Crude estimate of resource:	Depth not known
Conclusion:	Not significant: Small deposit with no information to estimate the resource in this area. Not for consideration in defining areas of search.
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)	
Revised estimate of resource:	No change to the assessment.
Conclusion:	Not significant.

Overview		
Resource number:	10/2	
Resource name:	Kinver Lane East	
Resource area:	18ha	
Resource depth:	Not known	
Location		
OS sheet reference:	SO 88 SW	
National grid ref:	384808, 281663	
Resource description:		
Resource description:	Resource area 10/2 is 4 th terrace (Kidderminster Station) sand and gravel. No information on thicknesses available. This is underlain by solid sand (assessed as resource area 10/25).	
Assessment of resource for the second consultation on MLP (Autumn 2013)		
Commentary:	A small resource area with little built development. North Worcestershire path crosses the area.	
Crude estimate of resource:	Depth not known	
Conclusion:	Not significant: Small deposit with no information to estimate the resource in this area. Not for consideration in defining areas of search.	
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)		
Revised estimate of resource:	No change to the assessment.	
Conclusion:	Not significant.	

Overview	
Resource number:	10/3
Resource name:	Caunsall North
Resource area:	19ha
Resource depth:	Depth not known
Location	
OS sheet reference:	SO 88 SW, SO 88 SE
National grid ref:	385090, 281314
Resource description:	
Resource description:	Resource area 10/3 is 3 rd terrace (Holt Heath) sand and gravel. No information on thicknesses available. This is underlain by solid sand (assessed as resource area 10/25).
Assessment of resource for the second consultation on MLP (Autumn 2013)	
Commentary:	A small resource area with little built development. North Worcestershire path crosses the area.
Crude estimate of resource:	Depth not known
Conclusion:	Not significant: Small deposit with no information to estimate the resource in this area. Not for consideration in defining areas of search.
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)	
Revised estimate of resource:	No change to the assessment.
Conclusion:	Not significant.

Overview	
Resource number:	10/4
Resource name:	Caunsall Bridge
Resource area:	12ha
Resource depth:	Not known
Location	
OS sheet reference:	SO 88 SE
National grid ref:	385508, 280923
Resource description:	
Resource description:	Resource area 10/4 is 1 st terrace (Powerhouse) sand and gravel. No information on thicknesses available. This is underlain by solid sand (assessed as resource areas 10/25 and 2/21).
Assessment of resource for the second consultation on MLP (Autumn 2013)	
Commentary:	A small resource area intersected by a road but with little other built development.
Crude estimate of resource:	Depth not known
Conclusion:	Not significant: Small deposit with no information to estimate the resource in this area. Not for consideration in defining areas of search.
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)	
Revised estimate of resource:	No change to the assessment.
Conclusion:	Not significant.

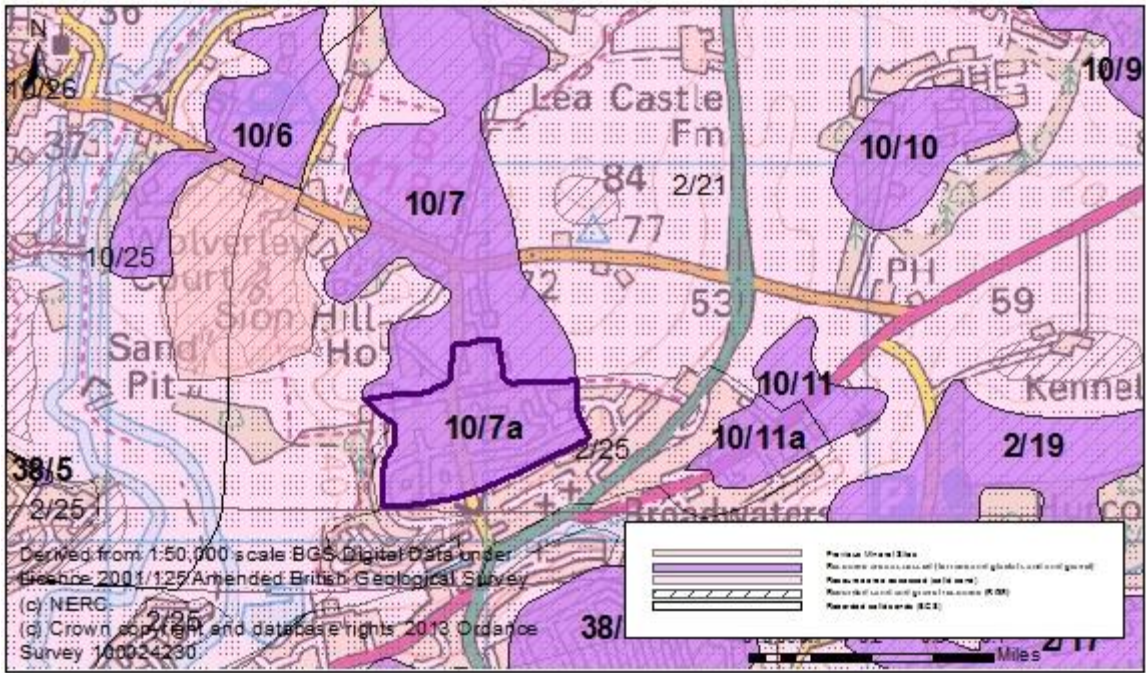
Overview	
Resource number:	10/5
Resource name:	Gloucester Coppice
Resource area:	10ha
Resource depth:	Estimated 2.4m
Location	
OS sheet reference:	SO 87 NW
National grid ref:	383367, 279858
Resource description:	
Resource description:	<p>Resource area 10/5 is 3rd terrace (Holt Heath) sand and gravel. The terrace was exposed in a working to the south (at Wolverley) showing up to 3m thickness in the centre, thinning to 1m to the east and west and consisting of coarse sand, bunter pebbles and chert. An extension to the working permitted in 1987 reported an average depth of 2.8m of sand and gravel.</p> <p>Estimated resource depth based on mean average of: a) Wolverley Pit original working (median average 3m to 1m): 2m and b) Wolverley Pit extension 2.8m = 2.4m.</p> <p>This is underlain by solid sand (assessed as resource area 10/25).</p>
Assessment of resource for the second consultation on MLP (Autumn 2013)	
Commentary:	A small resource area with little built development.
Crude estimate of resource:	<p>Area: 10 ha x average depth: 2.4m ÷ 2</p> <p>Estimated resource volume: 120,000 m³</p> <p>Estimated resource tonnage (at 2 t/m³): 240,000 tonnes</p>
Conclusion:	<p>Not significant: Small deposit with less than 300,000m³.</p> <p>Not for consideration in defining areas of search.</p>
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)	
Revised estimate of resource:	<p>Area: 10 ha x average depth: 2.4m ÷ 2</p> <p>Estimated resource volume: 120,000 m³</p> <p>Estimated resource tonnage (at 1.65 t/m³): 198,000 tonnes</p>
Conclusion:	Not significant.

Overview	
Resource number:	10/6
Resource name:	Wolverley Court
Resource area:	15ha
Resource depth:	Estimated 2.4m
Location	
OS sheet reference:	SO 87 NW
National grid ref:	383333, 279064
	
Resource description:	
Resource description:	<p>Resource area 10/6 is 3rd terrace (Holt Heath) sand and gravel. The terrace was exposed in a working at Wolverley showing up to 3m thickness in the centre, thinning to 1m to the east and west and consisting of coarse sand, bunter pebbles and chert. An extension to the working permitted in 1987 reported an average depth of 2.8m of sand and gravel. A letter in support of the application stated "there is no further sand and gravel available on the land south of Wolverley Road".</p> <p>Estimated resource depth based on mean average of: a) Wolverley Pit original working (median average 3m to 1m): 2m and b) Wolverley Pit extension 2.8m = 2.4m.</p> <p>This is underlain by solid sand (assessed as resource area 2/22 and 10/25).</p>
Assessment of resource for the second consultation on MLP (Autumn 2013)	
Commentary:	A small resource area with dispersed built development. The southern end of the deposit has previously been worked, this section is not included as part of the resource area.
Crude estimate of resource:	<p>Area: 15 ha x average depth: 2.4m ÷ 2</p> <p>Estimated resource volume: 180,000 m³</p> <p>Estimated resource tonnage (at 2 t/m³): 360,000 tonnes</p>
Conclusion:	<p>Not significant: Small deposit with less than 300,000m³.</p> <p>Not for consideration in defining areas of search.</p>
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)	
Revised estimate of	Area: 15 ha x average depth: 2.4m ÷ 2

resource:	Estimated resource volume: 180,000 m ³ Estimated resource tonnage (at 1.65 t/m³): 297,000 tonnes
Conclusion:	Not significant.

Overview	
Resource number:	10/7
Resource name:	North of Broadwaters
Resource area:	37ha
Resource depth:	Not known
Location	
OS sheet reference:	SO 87 NW
National grid ref:	383897, 278904
Resource description:	
Resource description:	Resource area 10/7 is 4 th terrace (Kidderminster Station) sand and gravel. There are no details recorded of possible thicknesses but bunter pebbles are visible in the soil at the surface. This is underlain by solid sand (assessed as resource area 2/21 and 10/25).
Assessment of resource for the second consultation on MLP (Autumn 2013)	
Commentary:	A small resource area intersected by roads with some ribbon development The deposit extends to the south under the settlement of Broadwaters, this section is considered as resource area 10/7a.
Crude estimate of resource:	Depth not known
Conclusion:	Not significant: Small deposit with no information to estimate the resource in this area. Not for consideration in defining areas of search.
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)	
Additional information	A 51ha site covering part of this resource area was submitted in response to the Second Stage Consultation. This stated that "The site consists of 4th River Terrace Deposits, Glacial sands and gravels and Upper Mottled Sandstone, as per the geological map based on detailed site investigation and laboratory gradings". No more detailed geological information was provided with the site submission. This site also covers the solid sands of resource area 2/21 and a glacial deposit which was not assessed for the second consultation the MLP as it is less than 10ha and less than 200m wide.
Revised estimate of resource:	No change to the assessment.

Conclusion:	Not significant.
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Overview	
Resource number:	10/7a
Resource name:	Broadwaters
Resource area:	15ha
Resource depth:	Not known
Location	
OS sheet reference:	SO 87 NW
National grid ref:	383897, 278904
	
Resource description:	
Resource description:	Resource area 10/7a is 4 th terrace (Kidderminster Station) sand and gravel. There are no details recorded of possible thicknesses but bunter pebbles are visible in the soil at the surface. This is underlain by solid sand (assessed as resource area 2/25).
Assessment of resource for the second consultation on MLP (Autumn 2013)	
Commentary:	A small resource area compromised by the settlement of Broadwaters. The deposit extends to the north, this is considered as resource area 10/7.
Crude estimate of resource:	Depth not known
Conclusion:	Compromised by development.
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)	
Revised estimate of resource:	No change to the assessment.
Conclusion:	Compromised by development.

Overview		
Resource number:	10/8	
Resource name:	West of Cookley	
Resource area:	25ha	
Resource depth:	Not known	
Location		
OS sheet reference:	SO 87 NW, SO 87 NE, SO 88 SW, SO 88 SE	
National grid ref:	385167, 279996	
Resource description:		
Resource description:	Resource area 10/8 is 4 th terrace (Kidderminster Station) sand and gravel. No information on thicknesses available. This is underlain by solid sand (assessed as resource area 2/21).	
Assessment of resource for the second consultation on MLP (Autumn 2013)		
Commentary:	A small resource area intersected by roads. The deposit extends to the west under the settlement of Cookley, this is assessed as resource area 10/8a.	
Crude estimate of resource:	Depth not known	
Conclusion:	Not significant: Small deposit with no information to estimate the resource in this area. Not for consideration in defining areas of search.	
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)		
Revised estimate of resource:	No change to the assessment.	
Conclusion:	Not significant.	

Overview	
Resource number:	10/8a
Resource name:	West of Cookley
Resource area:	25ha
Resource depth:	Not known
Location	
OS sheet reference:	SO 87 NW, SO 87 NE, SO 88 SW, SO 88 SE
National grid ref:	385167, 279996
Resource description:	
Resource description:	Resource area 10/8a is 4 th terrace (Kidderminster Station) sand and gravel. No information on thicknesses available. This is underlain by solid sand (assessed as resource area 10/27).
Assessment of resource for the second consultation on MLP (Autumn 2013)	
Commentary:	A small resource area compromised by the settlement of Cookley. The deposit continues to the east, this is assessed as resource area 10/8.
Crude estimate of resource:	Depth not known
Conclusion:	Compromised by development.
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)	
Revised estimate of resource:	No change to the assessment.
Conclusion:	Compromised by development.

Overview		
Resource number:	10/9	
Resource name:	Axborough Lane	
Resource area:	26ha	
Resource depth:	Not known	
Location		
OS sheet reference:	SO 87 NW, SO 87 NE	
National grid ref:	385610, 279391	
Resource description:		
Resource description:	Resource area 10/9 is glaciofluvial sand and gravel. No information on thicknesses available. This is underlain by solid sand (assessed as resource area 2/21).	
Assessment of resource for the second consultation on MLP (Autumn 2013)		
Commentary:	A small resource area with dispersed development across the site.	
Crude estimate of resource:	Depth not known	
Conclusion:	Not significant: Small deposit with no information to estimate the resource in this area. Not for consideration in defining areas of search.	
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)		
Additional information	An 80ha site covering a small part of this resource area was submitted in response to the "Call for Sites" in summer 2014. No geological information was submitted to support the site proposal but the landowner's agent estimated that the 80ha site contained 1,000,000 tonnes of Terrace deposit and Fluvio-glacial deposit. There is no information to determine how much of this might be within resource area 10/9.	
Revised estimate of resource:	No change to the assessment.	
Conclusion:	Not significant.	

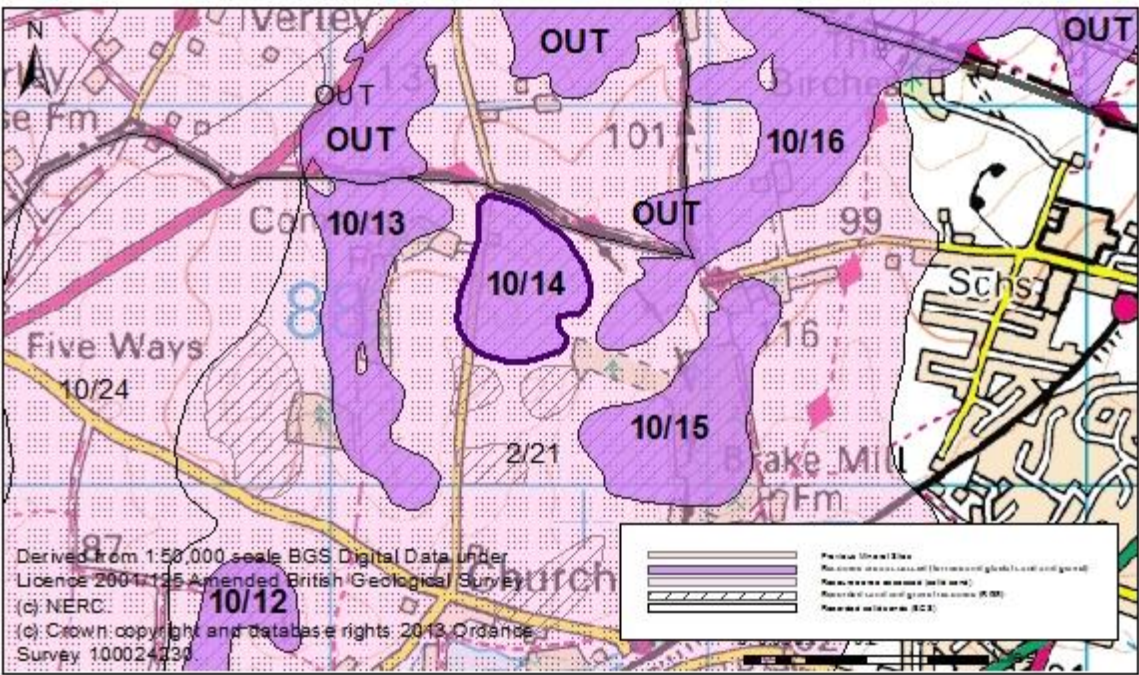
Overview	
Resource number:	10/10
Resource name:	Three Cornered Covert
Resource area:	11ha
Resource depth:	Not known
Location	
OS sheet reference:	SO 87 NW, SO 87 NE
National grid ref:	385121, 279032
Resource description:	
Resource description:	Resource area 10/10 is 4 th terrace (Kidderminster Station) sand and gravel. No information on thicknesses available. This is underlain by solid sand (assessed as resource area 2/21).
Assessment of resource for the second consultation on MLP (Autumn 2013)	
Commentary:	A small resource area with dispersed development across the site.
Crude estimate of resource:	Depth not known
Conclusion:	Not significant: Small deposit with no information to estimate the resource in this area. Not for consideration in defining areas of search.
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)	
Revised estimate of resource:	No change to the assessment.
Conclusion:	Not significant.

Overview		
Resource number:	10/11	
Resource name:	East of Broadwaters	
Resource area:	5ha remaining	
Resource depth:	Not known	
Location		
OS sheet reference:	SO 87 NW	
National grid ref:	384785, 278332	
Resource description:		
Resource description:	Resource area 10/11 is 3 rd terrace (Holt Heath) sand and gravel. No information on thicknesses available. This is underlain by solid sand (assessed as resource area 2/21).	
Assessment of resource for the second consultation on MLP (Autumn 2013)		
Commentary:	A small resource area intersected by a road. The deposit continues to the south west beneath the settlement of Broadwaters, Kidderminster, this section is considered as resource area 10/11a.	
Crude estimate of resource:	Depth not known	
Conclusion:	Compromised by development with less than 10ha of the deposit remaining.	
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)		
Revised estimate of resource:	No change to the assessment.	
Conclusion:	Compromised by development.	

Overview	
Resource number:	10/11a
Resource name:	Broadwaters
Resource area:	5ha
Resource depth:	Not known
Location	
OS sheet reference:	SO 87 NW
National grid ref:	384716, 278256
Resource description:	
Resource description:	Resource area 10/11a is 3 rd terrace (Holt Heath) sand and gravel. No information on thicknesses available. This is underlain by solid sand (assessed as resource area 2/25).
Assessment of resource for the second consultation on MLP (Autumn 2013)	
Commentary:	A small resource area that is overlain by the settlement of Broadwaters, Kidderminster. The deposit continues to the north east, this section is considered as resource area 10/11.
Crude estimate of resource:	Depth not known
Conclusion:	Compromised by development.
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)	
Revised estimate of resource:	No change to the assessment.
Conclusion:	Compromised by development.

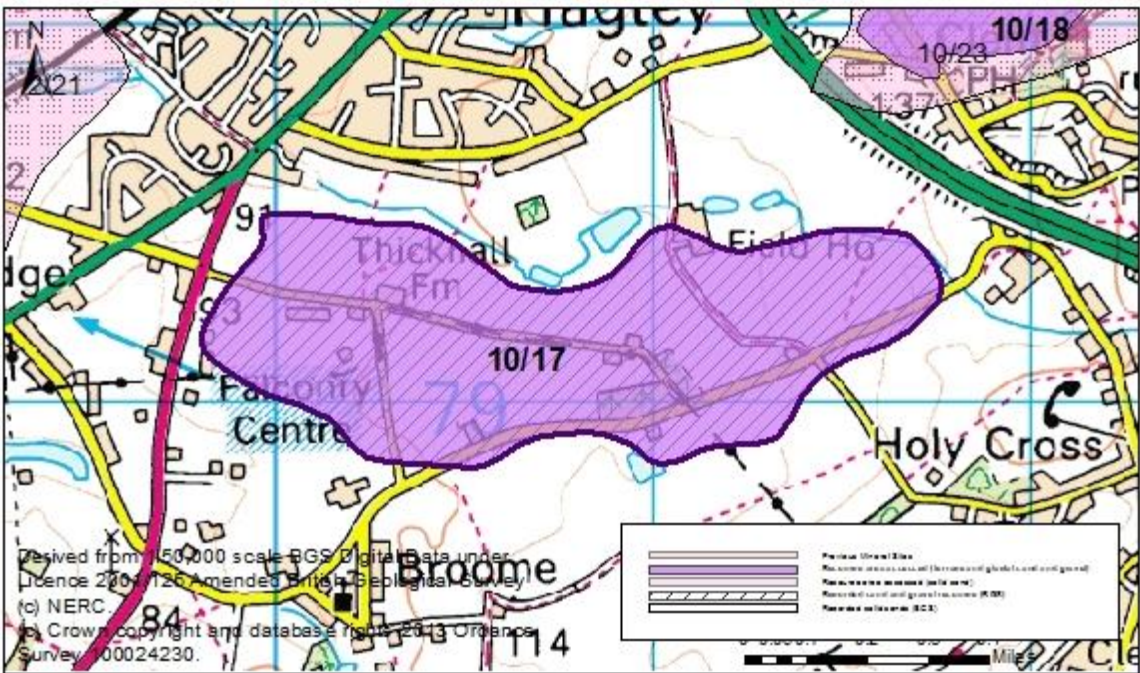
Overview		
Resource number:	10/12	
Resource name:	Waggon Lane	
Resource area:	52ha	
Resource depth:	Estimated 6.8m	
Location		
OS sheet reference:	SO 87 NE	
National grid ref:	387233, 279018	
Resource description:		
Resource description:	<p>Resource area 10/12 is glaciofluvial sand and gravel. A glacial sand and gravel deposit capping Bunter pebble beds (Kidderminster Formation) in the north west and Upper Mottled Sandstone in the south east. No details of thickness or composition are recorded. A similar deposit at Barnett Hill to the south east showed, in downward succession, false bedded sand with thin lenses of gravel 10' (3m), on false bedded sand 10'-15' (3m-4.6m) (total 6m to 7.6m).</p> <p>Estimated resource depth based on median depth at Barnett Hill: (6m to 7.6m) = 6.8m</p> <p>This is underlain by solid sand (assessed as resource areas 2/21 and 10/24).</p>	
Assessment of resource for the second consultation on MLP (Autumn 2013)		
Commentary:	A medium resource area with little built development.	
Crude estimate of resource:	<p>Area: 52 ha x average depth: 6.8 m ÷ 2</p> <p>Estimated resource volume: 1,768,000 m³</p> <p>Estimated resource tonnage (at 2 t/m³): 3,536,000 tonnes</p>	
Conclusion:	<p>Significant – key resource.</p> <p>Use to define areas of search.</p>	
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)		
Revised estimate of resource:	<p>Area: 52 ha x average depth: 6.8 m ÷ 2</p> <p>Estimated resource volume: 1,768,000 m³</p> <p>Estimated resource tonnage (at 1.65 t/m³): 2,917,200 tonnes</p>	
Conclusion:	Significant – key resource.	

Overview		
Resource number:	10/13	
Resource name:	West of Common Farm	
Resource area:	16ha	
Resource depth:	Not known	
Location		
OS sheet reference:	SO 88 SE, SO 87 NE	
National grid ref:	388107, 280431	
Resource description:		
Resource description:	Resource area 10/13 is glaciofluvial sand and gravel. No information on thicknesses available. This is underlain by solid sand (assessed as resource area 2/21).	
Assessment of resource for the second consultation on MLP (Autumn 2013)		
Commentary:	A small resource area with some dispersed development. The deposit extends to the north out of the county into Staffordshire, this is marked as OUT on the figure.	
Crude estimate of resource:	Depth not known	
Conclusion:	Not significant: Small deposit with no information to estimate the resource in this area. Not for consideration in defining areas of search.	
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)		
Revised estimate of resource:	No change to the assessment.	
Conclusion:	Not significant.	

Overview	
Resource number:	10/14
Resource name:	Iveley Lane
Resource area:	11ha
Resource depth:	Not known
Location	
OS sheet reference:	SO 88 SE, SO 87 NE
National grid ref:	388498, 280526
	
Resource description:	
Resource description:	Resource area 10/14 is glaciofluvial sand and gravel. No information on thicknesses available. This is underlain by solid sand (assessed as resource area 2/21).
Assessment of resource for the second consultation on MLP (Autumn 2013)	
Commentary:	A small resource area with little built development.
Crude estimate of resource:	Depth not known
Conclusion:	Not significant: Small deposit with no information to estimate the resource in this area. Not for consideration in defining areas of search.
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)	
Revised estimate of resource:	No change to the assessment.
Conclusion:	Not significant.

Overview		
Resource number:	10/15	
Resource name:	Brakemill Plantation	
Resource area:	17ha	
Resource depth:	Not known	
Location		
OS sheet reference:	SO 88 SE, SO 87 NE	
National grid ref:	388952, 280185	
Resource description:		
Resource description:	<p>Resource area 10/15 is glaciofluvial sand and gravel. The deposit is described as sandy soil with abundant quartz and quartzite pebbles and cobbles. No information available on thicknesses.</p> <p>This is underlain by solid sand (assessed as resource area 2/21).</p>	
Assessment of resource for the second consultation on MLP (Autumn 2013)		
Commentary:	A small resource area with little built development.	
Crude estimate of resource:	Depth not known	
Conclusion:	<p>Not significant: Small deposit with no information to estimate the resource in this area.</p> <p>Not for consideration in defining areas of search.</p>	
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)		
Revised estimate of resource:	No change to the assessment.	
Conclusion:	Not significant.	

Overview		
Resource number:	10/16	
Resource name:	The Birches	
Resource area:	27ha	
Resource depth:	Not known	
Location		
OS sheet reference:	SO 88 SE	
National grid ref:	388161, 280912	
Resource description:		
Resource description:	Resource area 10/16 is glaciofluvial sand and gravel. No information on thicknesses available. This is underlain by solid sand (assessed as resource area 2/21).	
Assessment of resource for the second consultation on MLP (Autumn 2013)		
Commentary:	A small resource area with little built development. The deposit extends to the north and west outside the county boundary into Staffordshire, this is not considered as part of the resource areas and is shown as OUT on the figure.	
Crude estimate of resource:	Depth not known	
Conclusion:	Not significant: Small deposit with no information to estimate the resource in this area. Not for consideration in defining areas of search.	
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)		
Revised estimate of resource:	No change to the assessment.	
Conclusion:	Not significant.	

Overview	
Resource number:	10/17
Resource name:	Thicknall Lane
Resource area:	89ha
Resource depth:	Not known
Location	
OS sheet reference:	SO 87 NE, SO 97 NW
National grid ref:	390740, 279170
	
Resource description:	
Resource description:	Alluvial fan gravel. No information on thicknesses available.
Assessment of resource for the second consultation on MLP (Autumn 2013)	
Commentary:	A medium resource area intersected by roads with little other built development.
Crude estimate of resource:	Depth not known
Conclusion:	Significant. Consider in defining areas of search.
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)	
Revised estimate of resource:	No change to the assessment.
Conclusion:	Significant.

Overview		
Resource number:	10/18	
Resource name:	Lower Clent	
Resource area:	17ha	
Resource depth:	Not known	
Location		
OS sheet reference:	SO 97 NW, SO 98 SW	
National grid ref:	391859, 280074	
Resource description:		
Resource description:	Resource area 10/18 is glaciofluvial sand and gravel. No information on thicknesses available. This is underlain by solid sand (assessed as resource area 10/23).	
Assessment of resource for the second consultation on MLP (Autumn 2013)		
Commentary:	A small resource area with little built development.	
Crude estimate of resource:	Depth not known	
Conclusion:	Not significant: Small deposit with no information to estimate the resource in this area. Not for consideration in defining areas of search.	
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)		
Revised estimate of resource:	No change to the assessment.	
Conclusion:	Not significant.	

Overview		
Resource number:	10/19	
Resource name:	Hollies Hill	
Resource area:	11ha	
Resource depth:	Not known	
Location		
OS sheet reference:	SO 97 NW	
National grid ref:	392741, 277614	
Resource description:		
Resource description:	Alluvial fan deposit and 3 rd terrace (Holt Heath) sand and gravel. No information on thicknesses available.	
Assessment of resource for the second consultation on MLP (Autumn 2013)		
Commentary:	A small resource area with little built development.	
Crude estimate of resource:	Depth not known	
Conclusion:	Not significant: Small deposit with no information to estimate the resource in this area. Not for consideration in defining areas of search.	
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)		
Revised estimate of resource:	No change to the assessment.	
Conclusion:	Not significant.	

Overview		
Resource number:	10/20	
Resource name:	Hartle Lane	
Resource area:	15ha	
Resource depth:	Not known	
Location		
OS sheet reference:	SO 97 NW	
National grid ref:	393011, 277138	
Resource description:		
Resource description:	3 rd terrace (Holt Heath) sand and gravel. No information on thicknesses available.	
Assessment of resource for the second consultation on MLP (Autumn 2013)		
Commentary:	A small resource area intersected by a road with some ribbon development.	
Crude estimate of resource:	Depth not known	
Conclusion:	Not significant: Small deposit with no information to estimate the resource in this area. Not for consideration in defining areas of search.	
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)		
Revised estimate of resource:	No change to the assessment.	
Conclusion:	Not significant.	

Overview		
Resource number:	10/21	
Resource name:	Wildmoor Superficial Deposits	
Resource area:	157ha	
Resource depth:	Estimated 5.2m	
Location		
OS sheet reference:	SO 97 NE, SO 97 SE	
National grid ref:	369373, 275900	
Resource description:		
Resource description:	<p>Resource area 10/21 is Alluvial fan deposits, glaciofluvial and 3rd terrace (Holt Heath) sand and gravel. This is a complex area of geology but with some limited information available:</p> <ul style="list-style-type: none"> To the north of Junction 4 of the M5 motorway, between Chadwich Grange Farm and Manor Farm, 3 boreholes have recorded: <ul style="list-style-type: none"> 3.6m of sand and gravel on sandstone overlain by 0.7m of sandy clay; 1.4m of clayey, silty sand on 7.6m of sandstone and 1.3m of clayey, pebbly sand on 5.7m of sandstone. 2 boreholes at Lydiate Ash recorded 2.1m and 1.8m of sand and gravel on sandstone. An exposure at the southern end of the Chadwich Farm pit shows 1.9m of sand and gravel on sandstone. A borehole adjacent to the M5 south east of the Chadwich Lane / Money Lane junction proves 8.2m of sand and gravel on sandstone overlain by 1.4m of boulder clay. An exposure at Tramontana's Pit (in the Chadwich Lane, Money Lane, Sandy Lane area) on the south side of the County Council tip showed a 15m base of well bedded sand and gravel. The pit now infilled by Austin / BL formerly exposed 7.6m of gravel on 4m of coarse sand and fine gravel with the base not seen (total 11.6m). <p>Estimated resource depth based on mean average of: a) boreholes to the north of Junction 4: (average of 3.6m, 1.4m and 1.3m = 2.1m), b) boreholes at Lydiate Ash: (average of 1.8m to 2.1m = 1.95m), c) exposure at</p>	

Chadwich Farm Pit: 1.9m d) borehole adjacent to M5 south east of Chadwich Lane/Money Lane: 8.2m, and e) average of exposures at Tramontana's Pit: 11.6m = 5.15m rounded to 5.2m)

This is underlain by solid sand (assessed as resource area 3/7 and 3/11).

Assessment of resource for the second consultation on MLP (Autumn 2013)

Commentary: A large but sprawling resource area. The deposit extends under the M5 motorway in a number of places these areas have not been included as part of the resource area. Where the deposit extends under the urban area of Catshill, Bromsgrove these are considered as a separate resource area (10/21a). The 3rd terrace deposit also continues to the south of Catshill and this is considered as a separate resource area (10/22).

Crude estimate of resource: Area: 157 ha x average depth: 5.2 m ÷ 2
Estimated resource volume: 4,082,000 m³
Converted to tonnes (at 2 t/m³): 8,164,000 tonnes

Conclusion: Significant – key resource.
Use to define areas of search.

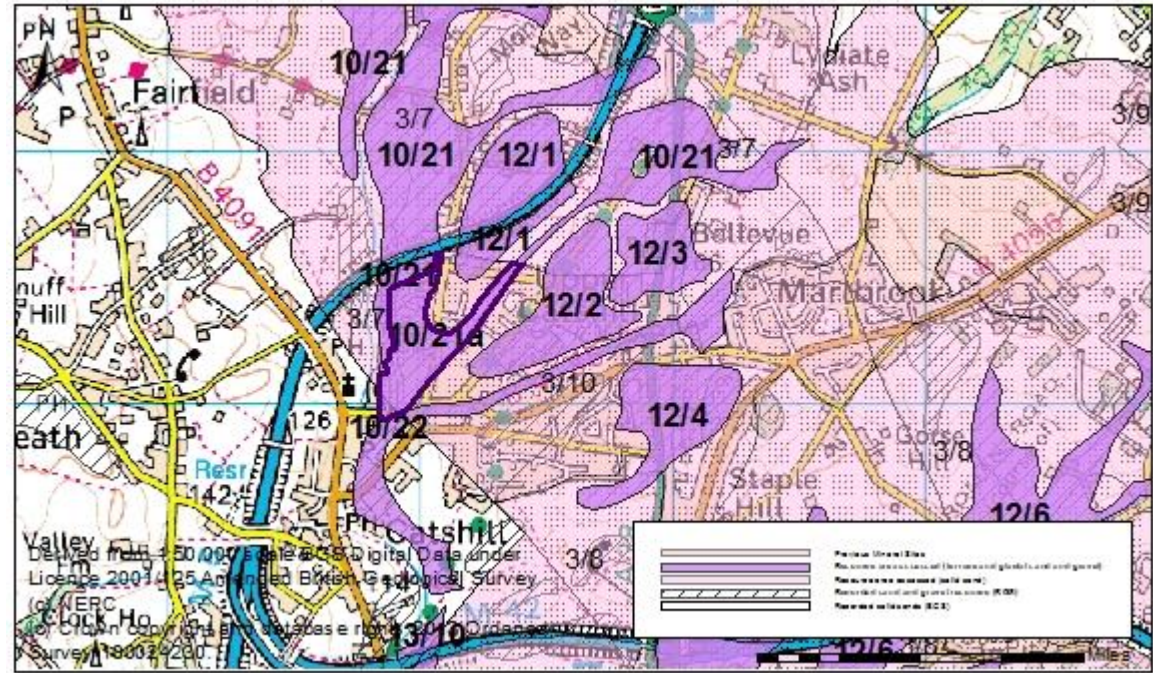
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)

Additional information 2 sites (one 10ha site and one 4ha) covering part of this resource area were submitted in response to the Second Stage Consultation. No detailed geological information was provided with the site submissions. They also cover part of resource area 3/7.

Revised estimate of resource: Area: 157 ha x average depth: 5.2 m ÷ 2
Estimated resource volume: 4,082,000 m³
Estimated resource tonnage (at 1.65 t/m³): 6,735,300 tonnes

Conclusion: Significant – key resource.

Overview	
Resource number:	10/21a
Resource name:	Wildmoor Superficial Deposit a)
Resource area:	12ha
Resource depth:	Estimated 5.2m
Location	
OS sheet reference:	SO 97 SE
National grid ref:	396014, 274261



Resource description:	
Resource description:	<p>Resource area 10/21a is Alluvial fan deposits and 3rd terrace (Holt Heath) sand and gravel. This is a complex area of geology but with some limited information available:</p> <ul style="list-style-type: none"> To the north of Junction 4 of the M5 motorway, between Chadwich Grange Farm and Manor Farm, 3 boreholes have recorded: <ul style="list-style-type: none"> 3.6m of sand and gravel on sandstone overlain by 0.7m of sandy clay; 1.4m of clayey, silty sand on 7.6m of sandstone and 1.3m of clayey, pebbly sand on 5.7m of sandstone. 2 boreholes at Lydiat Ash recorded 2.1m and 1.8m of sand and gravel on sandstone. An exposure at the southern end of the Chadwich Farm pit shows 1.9m of sand and gravel on sandstone. A borehole adjacent to the M5 south east of the Chadwich Lane / Money Lane junction proves 8.2m of sand and gravel on sandstone overlain by 1.4m of boulder clay. An exposure at Tramontana's Pit (in the Chadwich Lane, Money Lane, Sandy Lane area) on the south side of the County Council tip showed a 15m base of well bedded sand and gravel. The pit now infilled by Austin / BL formerly exposed 7.6m of gravel on 4m of coarse sand and fine gravel with the base not seen (total 11.6m). <p>Estimated resource depth based on mean average of: a) boreholes to the north of Junction 4: (average of 3.6m, 1.4m and 1.3m = 2.1m), b) boreholes at Lydiat Ash: (average of 1.8m to 2.1m = 1.95m), c) exposure at</p>

Chadwich Farm Pit: 1.9m d) borehole adjacent to M5 south east of Chadwich Lane/Money Lane: 8.2m, and
e) average of exposures at Tramontana's Pit: 11.6m = 5.15m rounded to 5.2m)

This is underlain by solid sand (assessed as resource area 3/10).

Assessment of resource for the second consultation on MLP (Autumn 2013)

Commentary: A small resource area overlain by the settlement of Catshill. The deposit continues to the north (10/21) and the 3rd terrace deposit also continues to the south of Catshill and this is considered as a separate resource area (10/22).

Crude estimate of resource: Area: 12 ha x average depth: 5.2 m ÷ 2
Estimated resource volume: 312,000 m³
Converted to tonnes (at 2 t/m³): 624,000

Conclusion: Compromised by development.

Assessment of resource for the Third Stage consultation on MLP (Spring 2015)

Revised estimate of resource: Area: 12 ha x average depth: 5.2 m ÷ 2
Estimated resource volume: 312,000 m³
Estimated resource tonnage (at 1.65 t/m³): 514,800 tonnes

Conclusion: Compromised by development.

Overview		
Resource number:	10/22	
Resource name:	South of Catshill	
Resource area:	18ha	
Resource depth:	Estimated 4.1m	
Location		
OS sheet reference:	SO 97 SE	
National grid ref:	396339, 273912	
Resource description:		
Resource description:	<p>Resource area 10/22 is 3rd terrace (Holt Heath) sand and gravel. This is a confused area of geology with limited information available. A borehole to the south east of the deposit near the M42 showed 3.2m of sand and gravel and 0.9m of sandy clay (total = 4.1m). It is not clear whether this is in the 3rd terrace or the alluvial fan deposit.</p> <p>Part of this resource is underlain by solid sand (assessed as resource area 3/10).</p>	
Assessment of resource for the second consultation on MLP (Autumn 2013)		
Commentary:	A small narrow resource area with built development across much of the area.	
Crude estimate of resource:	Area: 18 ha x average depth: 4.1 m ÷ 2 Estimated resource volume: 369,000 m ³ Estimated resource volume: 738,000 tonnes	
Conclusion:	Compromised by development with less than 10ha of the deposit remaining.	
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)		
Revised estimate of resource:	Area: 18 ha x average depth: 4.1 m ÷ 2 Estimated resource volume: 369,000 m ³ Estimated resource tonnage (at 1.65 t/m³): 608,850 tonnes	
Conclusion:	Compromised by development.	

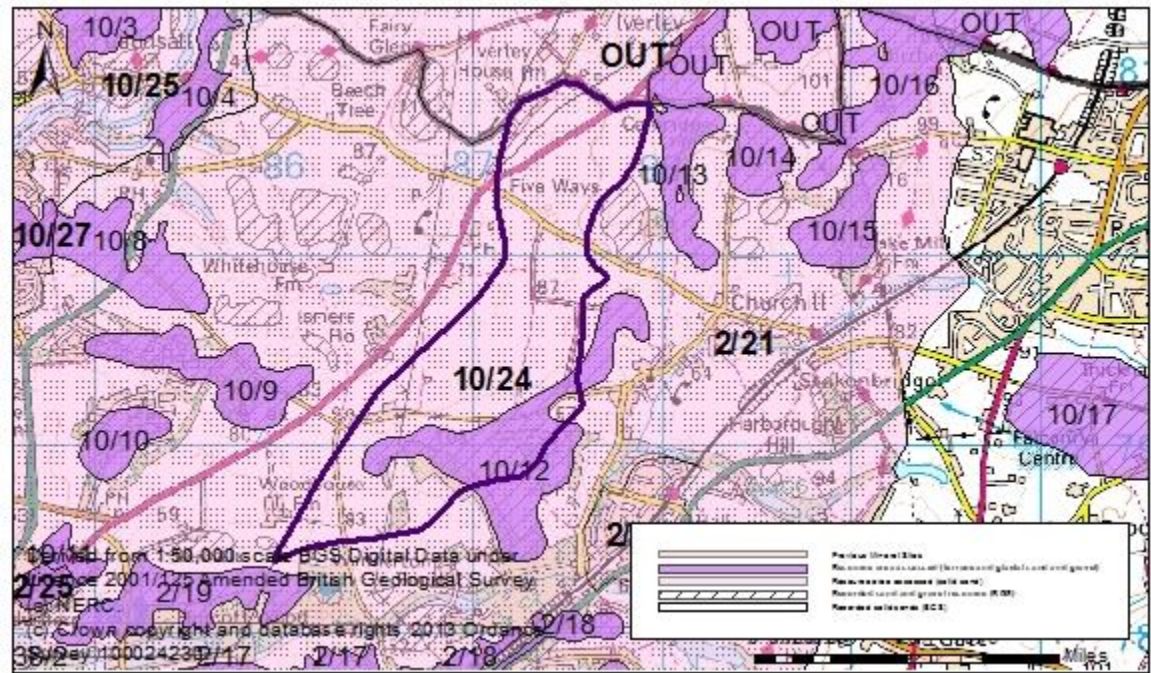
Overview	
Resource number:	10/23
Resource name:	Hagley Hall
Resource area:	136 ha
Resource depth:	Estimated 134.2m
Location	
OS sheet reference:	SO 98 SW
National grid ref:	391897, 280608
Resource description:	
Resource description:	<p>Resource area 10/23 is Wildmoor sandstone and Kidderminster formation solid sands. The memoir for Dudley and Bridgnorth records that on the south west flanks of the Clent hills, and near Hagley, the pebble beds resting directly upon the Clent Breccia are of the shingle-bed type with some lenses of red or brown sand or sand-rock. The Wildmoor Sandstone formation ranges in thickness from 90m-120m, although a borehole near Hagley (at grid reference 389940, 281690) proved 175m of red hard and soft sandstone some of this could be attributed to the underlying Kidderminster Formation since the lower boundary is indistinct. The memoir states that the thickness of the Kidderminster formation varies, but records that it is 112m-133m in the north of the county near Hagley.</p> <p>Estimated resource depth calculated as a mean average of: a) range of Wildmoor Formation (mid-point of 90m to 120m): 105m, b) borehole near Hagley: 175m, c) memoir record for near Hagley: (mid-point of 112m to 133m): 122.5m = 134.2m</p> <p>Part of this resource is overlain by terrace or glacial sand and gravel (assessed as resource area 10/18).</p>
Assessment of resource for the second consultation on MLP (Autumn 2013)	
Commentary:	A medium-sized resource area intersected by roads with some built development across the resource area. This deposit extends under the settlement of Hagley, this section is considered separately as resource area 10/23a.
Crude estimate of resource:	<p>Area: 136 ha x average depth: 134.2 m ÷ 2</p> <p>Estimated resource volume: 91,256,000m³</p>

	Estimated resource tonnage (at 2 t/m³): 182,512,000 tonnes
Conclusion:	Significant – key resource. Use to define areas of search.
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)	
Revised estimate of resource:	Area: 136 ha x average depth: 134.2 m ÷ 2 Estimated resource volume: 91,256,000m ³ Estimated resource tonnage (at 1.65 t/m³): 150,572,400 tonnes
Conclusion:	Significant – key resource.

Overview		
Resource number:	10/23a	
Resource name:	Hagley	
Resource area:	16 ha	
Resource depth:	Estimated 140m	
Location		
OS sheet reference:	SO 98 SW	
National grid ref:	391533, 280894	
Resource description:		
Resource description:	<p>Resource area 10/23a is Wildmoor Sandstone Formation solid sand. The memoir for Dudley and Bridgnorth records that on the south west flanks of the Clent hills, and near Hagley, the pebble beds resting directly upon the Clent Breccia are of the shingle-bed type with some lenses of red or brown sand or sand-rock. The Wildmoor Sandstone formation ranges in thickness from 90m-120m, although a borehole near Hagley (at grid reference 389940 281690) proved 175m of red hard and soft sandstone some of this could be attributed to the underlying Kidderminster Formation since the lower boundary is indistinct.</p> <p>Estimated resource depth calculated as a mean average of: a) range of Wildmoor Formation (mid-point of 90m to 120m): 105m, b) borehole near Hagley: 175m = 140m</p>	
Assessment of resource for the second consultation on MLP (Autumn 2013)		
Commentary:	A small resource area which is compromised by the settlement of Hagley. The deposit extends to the south and east of Hagley, this section is considered separately as resource area 10/23.	
Crude estimate of resource:	<p>Area: 16 ha x average depth: 140 m ÷ 2</p> <p>Estimated resource volume: 11,200,000 m³</p> <p>Estimated resource tonnage (at 2 t/m³): 22,400,000 tonnes</p>	
Conclusion:	Compromised by development.	
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)		
Revised estimate of resource:	<p>Area: 16 ha x average depth: 140 m ÷ 2</p> <p>Estimated resource volume: 11,200,000 m³</p> <p>Estimated resource tonnage (at 1.65 t/m³): 18,480,000 tonnes</p>	

Conclusion: Compromised by development.

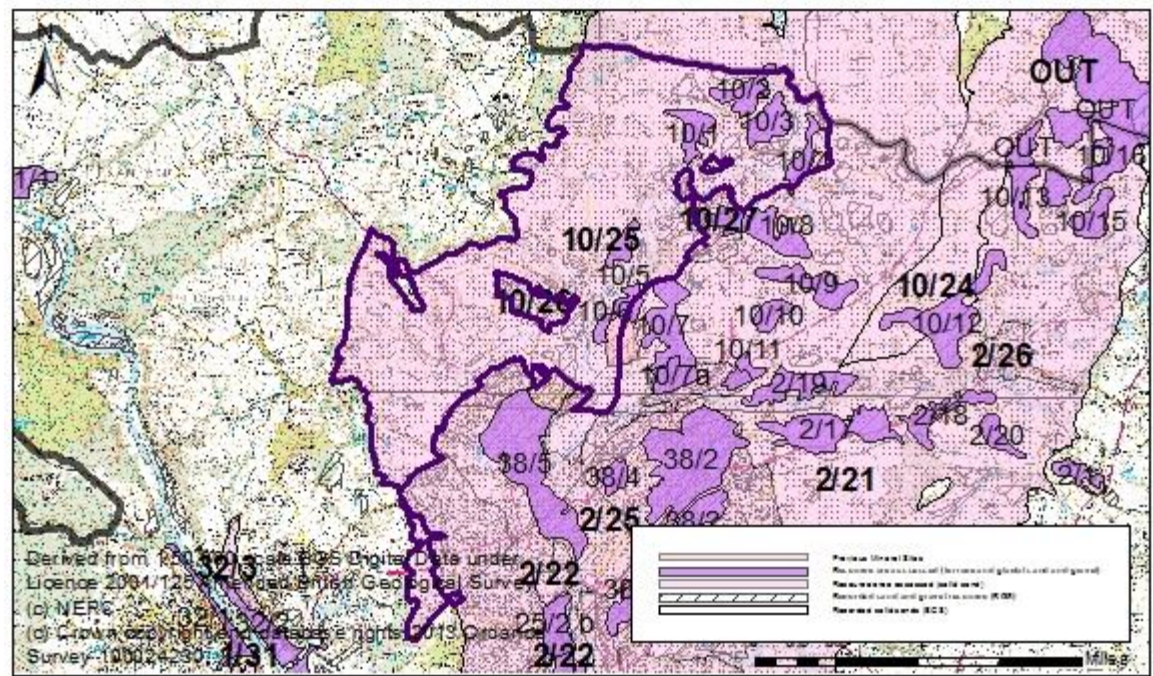
Overview	
Resource number:	10/24
Resource name:	Five Ways
Resource area:	180ha
Resource depth:	Estimated 122.5m
Location	
OS sheet reference:	SO 87 NE, SO 88 SE
National grid ref:	387078, 279572



Resource description:	
Resource description:	<p>The sand and gravel resources of this part of the county are Wildmoor sandstone formation and Kidderminster formation solid sand of considerable geological complexity. Resource area 10/24 is mapped as Kidderminster Formation.</p> <p>The Kidderminster Formation is generally described as well-rounded pebble to cobble size conglomerate and red-brown, medium to coarse sandstone. The lower part of the formation predominantly consists of clast-supported conglomerate composed largely of pebbles and cobbles of red, red brown and grey fine-grained quartzite together with red sandstone, milky quartz and rare porphyritic igneous rocks and re-worked conglomerate. The formation rests uncomfortably on Bridgnorth Sandstone. The maximum thickness of the conglomerate dominated facies is probably about 20m but this is gradational into the overlying sandstone dominated facies, which also contains beds and lenses of pebble conglomerate.</p> <p>The thickness of the Kidderminster formation in this district ranges from 112m – 133m, although the upper boundary is difficult to recognise because of the lithological similarity of the Kidderminster sandstone to the predominantly non-pebbly Wildmoor Sandstone. This resource area is an outcrop of the Kidderminster Formation bounded to the West by Stapenhill Fault which, near Iwerley House Farm, truncates the Kidderminster Formation escarpment of Bunkers Hill, and then continues in a SSW direction to Hurcott Wood.</p> <p>Estimated resource depth calculated as mid-point of 112m to 133m = 122.5m</p>

	Part of this resource is overlain by terrace or glacial sand and gravel (assessed as resource area 10/12).
Assessment of resource for the second consultation on MLP (Autumn 2013)	
Commentary:	A large resource area with little built development. The Wildmoor and Kidderminster sandstone deposits are extensive and extend in all directions beyond this resource area and beneath the settlements of Kidderminster, Stourport, Blakedown, Fairfield, Arley Kings (these sections are considered as resource areas 1/32, 1/33, 2/21, 2/22, 2/23, 2/24, 2/25, 2/26, 10/25, 10/26 and 10/27) and to the north of the county boundary.
Crude estimate of resource:	Area: 180 ha x average depth: 122.5 m ÷ 2 Estimated resource volume: 110,250,000 m ³ Estimated resource tonnage (at 2 t/m³): 220,500,000 tonnes
Conclusion:	Significant – key resource. Use to define areas of search.
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)	
Revised estimate of resource:	Area: 180 ha x average depth: 122.5 m ÷ 2 Estimated resource volume: 110,250,000 m ³ Estimated resource tonnage (at 1.65 t/m³): 181,912,500 tonnes
Conclusion:	Significant – key resource.

Overview	
Resource number:	10/25
Resource name:	North West of Kidderminster
Resource area:	1288 ha
Resource depth:	Estimated 34.7m
Location	
OS sheet reference:	SO 88 SW, SO 88 SE, SO87 NW, SO 77 NE
National grid ref:	382703, 279781



Resource description:

The sand and gravel resources of this part of the county are Wildmoor sandstone formation and Kidderminster formation solid sand of considerable geological complexity. Resource area 10/25 is mapped as Kidderminster Formation.

The Kidderminster and Wildmoor sandstones are partially but extensively overlain by terrace and glacial sand and gravel deposits, which are recorded as separate resource areas (10/1, 10/2, 10/3, 10/4, 10/5 and 10/6).

The Kidderminster Formation is generally described as well-rounded pebble to cobble size conglomerate and red-brown, medium to coarse sandstone. The lower part of the formation predominantly consists of clast-supported conglomerate composed largely of pebbles and cobbles of red, red brown and grey fine-grained quartzite together with red sandstone, milky quartz and rare porphyritic igneous rocks and re-worked conglomerate. The formation rests uncomfortably on Bridge north Sandstone. The maximum thickness of the conglomerate dominated facies is probably about 20m but this is gradational into the overlying sandstone dominated facies, which also contains beds and lenses of pebble conglomerate. The memoir states that the thickness of the formation ranges from 112m – 133m, although the upper boundary is difficult to recognise because of the lithological similarity of the Kidderminster sandstone to the predominantly non-pebbly Wildmoor Sandstone.

There is some more detailed information about some sections of the deposit:

- Near Low Habberley and Franche: Along the east side of Habberley Valley a pronounced escarpment is

formed by the Kidderminster Formation capping Wildmoor Sandstone and many exposures of the latter are visible in the lower part of the scarp. Crags of brown, current bedded sandstone are abundant on the floor of the valley, conspicuously at the Peckett Rock, 250m north-north-west of the Habberley Valley Inn, where over 50' (15.2m) of sandstone is exposed.

Numerous exposures are reported to occur in the valleys to the north west of Franche in the escarpment which bounds the Habberley Valley. In a road section south east of High Habberley over 140' (42.7m) of sandstone beds with some pebbles are exposed. A northerly trending fault throws these beds against 5' (1.5m) of reddish brown sandstone without pebbles (Wildmoor Sandstone).

North west of this road cutting, in the grounds of High Habberley House, exposures near the base of the Kidderminster Formation show a conspicuous band of very coarse breccia containing large angular fragments up to 6" in diameter. A typical section in this location consists of: 6' of pebbly red sandstone overlying 8" of red sandstone with fewer pebbles, 4' of pebbly red sandstone, and 5' 6" of coarse breccia (total depth of 16'2", 4.9m).

The Kidderminster Formation, present as a calcareous grit, caps the Wildmoor Sandstone cliff at Ridgestone Rock and Jacob's Ladder at the northern end of Habberley Valley. Elsewhere, calcareous grit and conglomerate near the base of the Kidderminster Formation were formally exposed adjacent to the Kidderminster to Bridgenorth road about 650 yards north east of Lower Barns Farm, at the junction of Lower Lane and Honeybrook lane however, sandstone of Kidderminster type, with few or no pebbles is exposed.

- Blakeshall, Wolverley and Cookley: There are reported to be many exposures near Blakeshall, Wolverley and Cookley although few details are given. Red sandstone with calcareous grit and breccia, a little above the middle of the Pebble beds, appears in the sides of the valley about 900 yards North West of Cookley Church, while a lane near Wolverley Church shows up to 50' (15.2m) of pebbly sandstones. In general, in this area, pebbly sandstones and coarse pebbly grits, in part calcareous, range nearly to the top of the formation, but conglomerates are rare.
- Kinver Edge and Drakelow: At Kinver Edge the memoir records the basement bed is only approximately 2' (0.6m) thick consisting of a marly or sandy breccia with, in places, coarse pebbly grit above. Shingle beds higher in the sequence make a feature parallel to and south east of the Edge, but this dies out near the Lodge, on the county boundary. A calcareous grit on breccia forms the basement bed along the remainder of the escarpment. Near Drakelow it appears to be about 2' (0.6m) thick but lenses of similar calcareous breccia occur in places above the actual base.
- There is a distinctive 5 1/2ft (1.7m) band of coarse angular breccia near the base of the Formation at High Habberley.
- A borehole at Sleepy Pool Mill (on the boundary between this resource area and 2/21 at grid reference 385480 280630, near Caunsall) recorded 8m of sandy clay (alluvium) overlying 2m of red, soft sandstone (Wildmoor) and 40m of red sandstone (tentatively assigned to the Kidderminster formation) (total 42m).

Estimated resource depth calculate as a mean average of: a) memoir range of the Kidderminster formation (median average of 112m to 133m): 122.5m, b) exposure near Habberley Valley Inn: 15.2m, c) road section

south east of High Habberley: 42.7m, d) typical section at High Habberley House: 4.9m, e) exposure in a lane near Wolverley Church: 15.2m, f) memoir record for Kinver Edge: 0.6m, g) borehole at Sleepy Pool Mill: 42m = 34.7m

Assessment of resource for the second consultation on MLP (Autumn 2013)

Commentary: A large resource area with dispersed development throughout. The Wildmoor and Kidderminster sandstone deposits are extensive and extend to the south and east beyond this resource area and beneath the settlements of Kidderminster, Stourport, Blakedown, Fairfield, Arley Kings (these sections are considered as resource areas 1/32, 1/33, 2/21, 2/22, 2/23, 2/24, 2/25, 2/26, 10/24, 10/26 and 10/27) and to the north of the county boundary.

Crude estimate of resource: Area: 1288 ha x average depth: 34.7 m ÷ 2
 Estimated resource volume: 223,468,000 m³
Estimated resource tonnage (at 2 t/m³): 446,936,000 tonnes

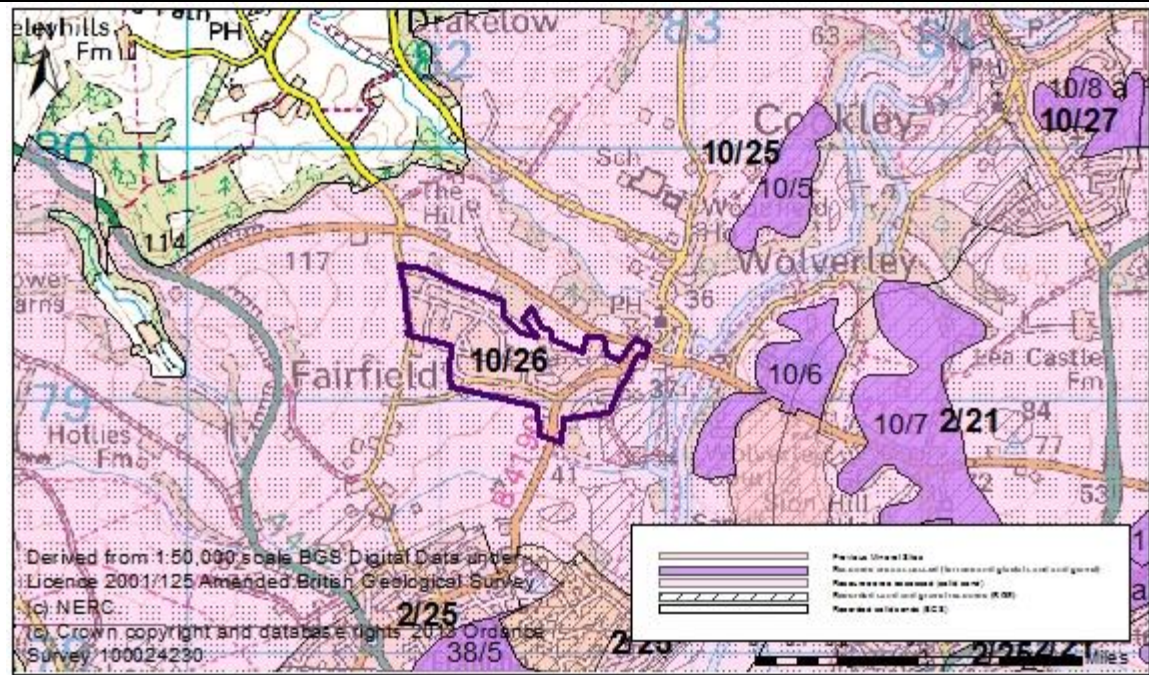
Conclusion: Significant – key resource.
 Use to define areas of search.

Assessment of resource for the Third Stage consultation on MLP (Spring 2015)

Revised estimate of resource: Area: 1288 ha x average depth: 34.7 m ÷ 2
 Estimated resource volume: 223,468,000 m³
Estimated resource tonnage (at 1.65 t/m³): 368,722,200 tonnes

Conclusion: Significant – key resource.

Overview	
Resource number:	10/26
Resource name:	Fairfield
Resource area:	29 ha
Resource depth:	Estimated 40.1m
Location	
OS sheet reference:	SO 87 NW
National grid ref:	382703, 279781



Resource description:	<p>The sand and gravel resources of this part of the county are Wildmoor sandstone formation and Kidderminster formation solid sand of considerable geological complexity. This resource area is mapped as Kidderminster Formation.</p> <p>The Kidderminster and Wildmoor sandstones are partially but extensively overlain by terrace and glacial sand and gravel deposits, which are recorded as separate resource areas.</p> <p>The Kidderminster Formation is generally described as well-rounded pebble to cobble size conglomerate and red-brown, medium to coarse sandstone. The lower part of the formation predominantly consists of clast-supported conglomerate composed largely of pebbles and cobbles of red, red brown and grey fine-grained quartzite together with red sandstone, milky quartz and rare porphyritic igneous rocks and re-worked conglomerate. The formation rests uncomfortably on Bridge north Sandstone. The maximum thickness of the conglomerate dominated facies is probably about 20m but this is gradational into the overlying sandstone dominated facies, which also contains beds and lenses of pebble conglomerate. The memoir states that the thickness of the formation ranges from 112m – 133m, although the upper boundary is difficult to recognise because of the lithological similarity of the Kidderminster sandstone to the predominantly non-pebbly Wildmoor Sandstone.</p> <p>There is some more detailed information about some sections of the deposit:</p> <ul style="list-style-type: none"> Near Low Habberley and Franche: Along the east side of Habberley Valley a pronounced escarpment
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is formed by the Kidderminster Formation capping Wildmoor Sandstone and many exposures of the latter are visible in the lower part of the scarp. Craggs of brown, current bedded sandstone are abundant on the floor of the valley, conspicuously at the Peckett Rock, 250m north-north-west of the Habberley Valley Inn, where over 50' (15.2m) of sandstone is exposed. Numerous exposures are reported to occur in the valleys to the north west of Franche in the escarpment which bounds the Habberley Valley. In a road section south east of High Habberley over 140' (42.7m) of sandstone beds with some pebbles are exposed. A northerly trending fault throws these beds against 5' (1.5m) of reddish brown sandstone without pebbles (Wildmoor Sandstone). North west of this road cutting, in the grounds of High Habberley House, exposures near the base of the Kidderminster Formation show a conspicuous band of very coarse breccia containing large angular fragments up to 6" in diameter. A typical section in this location consists of: 6" of pebbly red sandstone overlying 8" of red sandstone with fewer pebbles, 4' of pebbly red sandstone, and 5' 6" of coarse breccia (total depth of 16'2", 4.9m). The Kidderminster Formation, present as a calcareous grit, caps the Wildmoor Sandstone cliff at Ridgestone Rock and Jacob's Ladder at the northern end of Habberley Valley. Elsewhere, calcareous grit and conglomerate near the base of the Kidderminster Formation were formally exposed adjacent to the Kidderminster to Bridgenorth road about 650 yards north east of Lower Barns Farm, at the junction of Lower Lane and Honeybrook lane however, sandstone of Kidderminster type, with few or no pebbles is exposed.

- Blakeshall, Wolverley and Cookley: There are reported to be many exposures near Blakeshall, Wolverley and Cookley although few details are given. Red sandstone with calcareous grit and breccia, a little above the middle of the Pebble beds, appears in the sides of the valley about 900 yards North West of Cookley Church, while a lane near Wolverley Church shows up to 50' (15.2m) of pebbly sandstones. In general, in this area, pebbly sandstones and coarse pebbly grits, in part calcareous, range nearly to the top of the formation, but conglomerates are rare.
- There is a distinctive 5 1/2ft (1.7m) band of coarse angular breccia near the base of the Formation at High Habberley.

Estimated resource depth calculate as a mean average of: a) memoir range of the Kidderminster formation (median average of 112m to 133m): 122.5m, b) exposure near Habberley Valley Inn: 15.2m, c) road section south east of High Habberley: 42.7m, d) typical section at High Habberley House: 4.9m, e) exposure in a lane near Wolverley Church: 15.2m = 40.1m

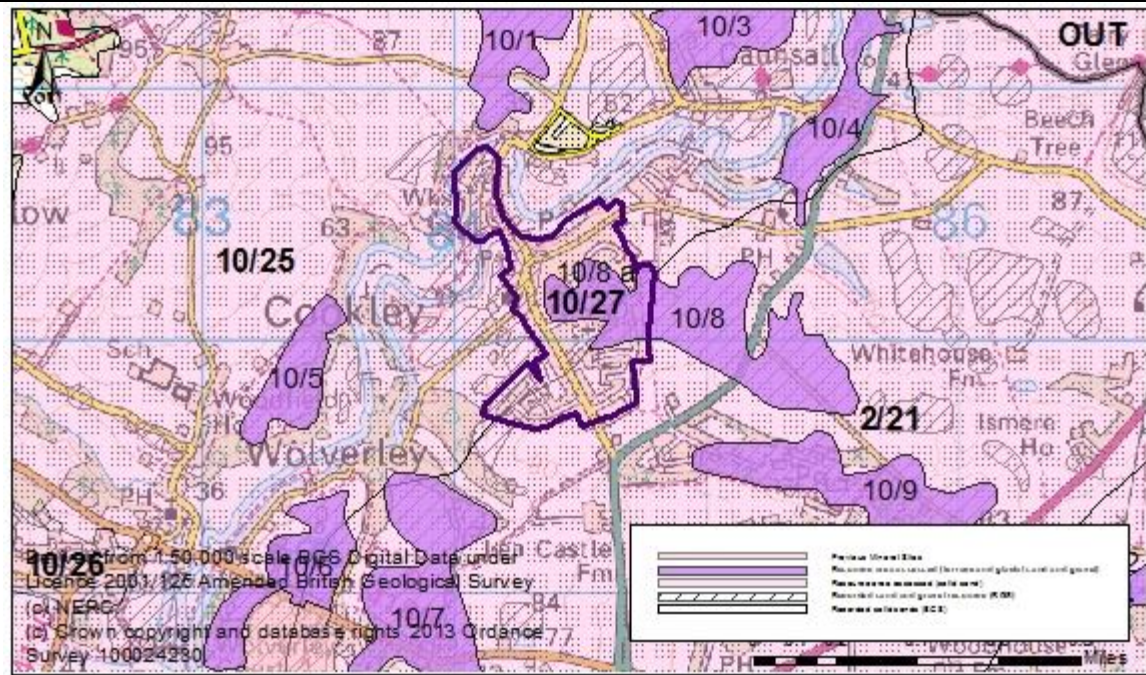
Assessment of resource for the second consultation on MLP (Autumn 2013)

Commentary: An small resource area overlain by the settlement of Fairfield. The Wildmoor and Kidderminster sandstone deposits are extensive and extend in all directions beyond this resource area and beneath the settlements of Kidderminster, Stourport, Blakedown, Arley Kings (these sections are considered as resource areas 1/32, 1/33, 2/21, 2/22, 2/23, 2/24, 2/25, 2/26, 10/24, 10/25 and 10/27) and to the north of the county boundary.

Crude estimate of resource: Area: 29 ha x average depth: 40.1 m ÷ 2
 Estimated resource volume: 5,814,500 m³
Estimated resource tonnage (at 2 t/m³): 11,629,000 tonnes

Conclusion:	Compromised by development.
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)	
Revised estimate of resource:	Area: 29 ha x average depth: 40.1 m ÷ 2 Estimated resource volume: 5,814,500 m ³ Estimated resource tonnage (at 1.65 t/m³): 9,593,925 tonnes
Conclusion:	Compromised by development.

Overview	
Resource number:	10/27
Resource name:	Cookley
Resource area:	45 ha
Resource depth:	Estimated 80.9m
Location	
OS sheet reference:	SO 87 NW
National grid ref:	382703, 279781



Resource description:	
Resource description:	<p>Resource area 10/27 is Wildmoor Formation and Kidderminster Formation solid sand. The sand and gravel resources of this part of the county are Wildmoor sandstone formation and Kidderminster formation solid sand of considerable geological complexity. The Kidderminster and Wildmoor sandstones are partially but extensively overlain by terrace and glacial sand and gravel deposits, which are recorded as separate resource areas (this resource area is overlain by 10/8a).</p> <p>Kidderminster Formation</p> <p>The Kidderminster Formation is generally described as well rounded pebble to cobble size conglomerate and red-brown, medium to coarse sandstone. The lower part of the formation predominantly consists of clast-supported conglomerate composed largely of pebbles and cobbles of red, red brown and grey fine-grained quartzite together with red sandstone, milky quartz and rare porphyritic igneous rocks and re-worked conglomerate. The formation rests uncomfortably on Bridgnorth Sandstone. The maximum thickness of the conglomerate dominated facies is probably about 20m but this is gradational into the overlying sandstone dominated facies, which also contains beds and lenses of pebble conglomerate. The memoir states that the thickness of the formation ranges from 112m – 133m, although the upper boundary is difficult to recognise because of the lithological similarity of the Kidderminster sandstone to the predominantly non-pebbly Wildmoor Sandstone.</p> <p>There is some more detailed information about some sections of the deposit:</p>

- Blakeshall, Wolverley and Cookley: There are reported to be many exposures near Blakeshall, Wolverley and Cookley although few details are given. Red sandstone with calcareous grit and breccia, a little above the middle of the Pebble beds, appears in the sides of the valley about 900 yards North West of Cookley Church, while a lane near Wolverley Church shows up to 50' (15.2m) of pebbly sandstones. In general, in this area, pebbly sandstones and coarse pebbly grits, in part calcareous, range nearly to the top of the formation, but conglomerates are rare.

Wildmoor Formation

The Wildmoor Formation is generally described as red-brown and orange, fine to medium grained, feldspathic sandstone with sparse, thin mudstone beds. Generally the formation is characterised by an absence of pebbles, in contrast to the Kidderminster Formation, although sparse pebbly stringers are recorded. The fine grain-size and soft, poorly cemented nature of the sandstone made it ideal for exploitation as moulding sand for use in the foundry industry. The memoir states that the Wildmoor Sandstone formation ranges in thickness from 90m-120m. There is no more detailed information about depths for the Wildmoor deposit in this area.

Estimated depth

Estimated resource depth calculate as a mean average of: a) memoir range of the Kidderminster formation (median average of 112m to 133m): 122.5m, b) exposure in a lane near Wolverley Church: 15.2m, c) BGS estimates of Wildmoor Sandstone formation (mid-point 90m to 120m): 105m = 80.9m

Assessment of resource for the second consultation on MLP (Autumn 2013)	
Commentary:	An small resource area overlain by the settlement of Cookley. The Wildmoor and Kidderminster sandstone deposits are extensive and extend in all directions beyond this resource area and beneath the settlements of Kidderminster, Stourport, Blakedown, Fairfield, Arley Kings (these sections are considered as resource areas 1/32, 1/33, 2/21, 2/22, 2/23, 2/24, 2/25, 2/26, 10/24, 10/25 and 10/26) and to the north of the county boundary.
Crude estimate of resource:	Area: 29 ha x average depth: 40.1 m ÷ 2 Estimated resource volume: 5,814,500 m ³ Estimated resource tonnage (at 2 t/m³): 11,629,000 tonnes
Conclusion:	Compromised by development.
Assessment of resource for the Third Stage consultation on MLP (Spring 2015)	
Revised estimate of resource:	The wrong area and depth information was used in the calculation of the estimate of this resource in the section above. Area: 45 ha x average depth: 80.9 m ÷ 2 Estimated resource volume: 18,202,500 m ³ Estimated resource tonnage (at 1.65 t/m³): 30,034,125 tonnes
Conclusion:	Compromised by development.