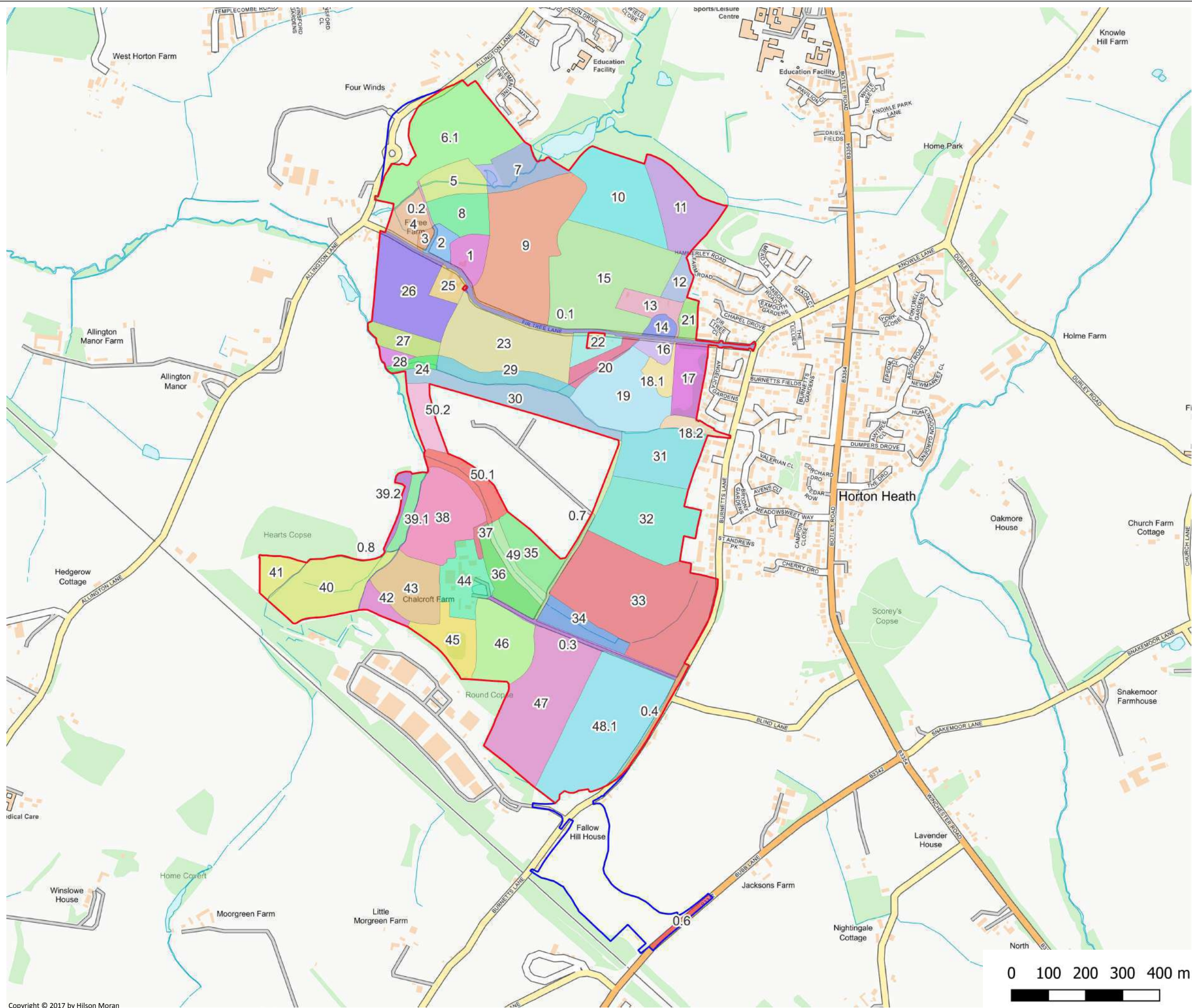

Appendix 1 GIS Parcels and Field Parcel Agricultural Summary



Do not scale from this drawing.
Verify dimensions by site measurement.
Read this drawing in conjunction with the latest architectural and structural drawings.
This drawing is based on the following information:-

Key

- OPA Boundary
- Area in Applicant's Control

N

Rev	Date	Description	Drawn	Checked

H | M

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Client
Eastleigh Borough Council

Project
Horton Heath Masterplan

Drawing Title
Horton Heath Masterplan Field Parcels

Scale 1:8,000	Sheet Size A3	Checked TH	Approved
Status			

FOR INFORMATION			
Drawing No. 25709-HM-ZZ-XX-DR-IF-6000-02			Rev 01

Software: Bluebeam Revu

Parcel	Area (m2)	Area (Ha)	Land Use	Soil Type	Texture	Aquifer	Drainage	Hazard	Fertiliser Application (kg N/ha)	Manure Application (kg N/ha)	Total Fertiliser N (kg)	Total FYM N (kg)	Field Notes	Use
0.1	11,265.10	1.1265	Fir Tree Lane	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Highway with grass verges	U
0.2	701.54	0.0702	Unnamed Track	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Hardstanding track between Parcels 4 and 5/8	U
0.3	6,336.91	0.6337	Chalcroft Farm Access Road	Freely draining slightly acid sandy soils	Sandy	Bedrock - Secondary A	Freely draining. Drains to groundwater.	Vulnerable to leaching of nitrate and pesticides to groundwater; Highly erodible under arable and vegetable crops, where sloping, resulting in eutrophication and clogging of stream bed with sand.	0	0	0.00	0.00	Tarmac road with grass verges	U
0.4	3,540.09	0.3540	Burnetts Lane	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Highway with grass verges	U
0.7	5,829.91	0.5830	Chalcroft Farm Track	Freely draining slightly acid sandy soils	Sandy	Bedrock - Secondary A	Freely draining. Drains to groundwater.	Vulnerable to leaching of nitrate and pesticides to groundwater; Highly erodible under arable and vegetable crops, where sloping, resulting in eutrophication and clogging of stream bed with sand.	0	0	0.00	0.00	Highway with grass verges	U
0.7	5,829.91	0.5830	Chalcroft Farm Track	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Farm track with grass verges	U
0.8	1,313.52	0.1314	River	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Watercourse network around Parcels 40 and 41.	R
1	10,305.93	1.0306	Residential house with gardens	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Residential dwelling with private gardens and swimming pool. Surrounded by 3 m wide hedge (PB1).	U
2	5,184.59	0.5185	Demolished buildings.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Area of bare muddy compacted ground with demolition debris throughout. Surrounded by 2 m wide hedge. Small drainage ditch with running water along northern boundary, approx 100 mm deep flowing westwards (PB2).	U
3	1,899.44	0.1899	Boarded up house with derelict pool and gardens.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Derelict residential dwelling, with derelict private gardens and disused swimming pool. Plot surrounded by 2 m wide hedge. Small drainage ditch with running water along northern boundary, approx 100 mm deep flowing westwards (PB3)	U
4	10,993.01	1.0993	Fallow grass field. Cut only, not grazed.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	100	0	109.93	0.00	Permanent pasture (hay cut). Small watercourse meanders across this field with shallow open channel/wetland area with rushes established along course. Deep ruts formed where vehicles have tracked across this very wet field exposing orange silty/clayey soils. Free oil contamination exposed on standing water within ruts. From plant? 2 m wide hedge along southern and eastern boundary. NE boundary is fenced (barbed wire) with vehicle track beyond. South western boundary currently comprises temporary fence to adjacent residential dwelling beyond red-line boundary. North western boundary comprises small watercourse flowing southwards towards pool in residential property. Water muddy and up to 0.5 m deep. Some poaching evident adjacent to watercourse (by sheep and/or cattle, although not present at the time). Free oil evident on standing water in this poached area. Molehills indicate soils pass to sandy/gravelly loam adjacent to watercourse (alluvium?) (PB4, PB5 & PB6). Wet rough unimproved grassland with rushes. Small watercourse, the banks lined with small trees and shrubs, flows through centre of plot, approx 0.4 m deep, flowing westwards. Southern boundary fenced, northern boundary 2 m wide hedge (PB7).	F
5	13,758.03	1.3758	Fallow grass field. Cut only, not grazed, marshy.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	100	0	137.58	0.00	Permanent pasture (hay cut). Small watercourse meanders across this field with shallow open channel/wetland area with rushes established along course. Deep ruts formed where vehicles have tracked across this very wet field exposing orange silty/clayey soils. Free oil contamination exposed on standing water within ruts. From plant? 2 m wide hedge along southern and eastern boundary. NE boundary is fenced (barbed wire) with vehicle track beyond. South western boundary currently comprises temporary fence to adjacent residential dwelling beyond red-line boundary. North western boundary comprises small watercourse flowing southwards towards pool in residential property. Water muddy and up to 0.5 m deep. Some poaching evident adjacent to watercourse (by sheep and/or cattle, although not present at the time). Free oil evident on standing water in this poached area. Molehills indicate soils pass to sandy/gravelly loam adjacent to watercourse (alluvium?) (PB4, PB5 & PB6). Wet rough unimproved grassland with rushes. Small watercourse, the banks lined with small trees and shrubs, flows through centre of plot, approx 0.4 m deep, flowing westwards. Southern boundary fenced, northern boundary 2 m wide hedge (PB7).	F

Parcel	Area (m2)	Area (Ha)	Land Use	Soil Type	Texture	Aquifer	Drainage	Hazard	Fertiliser Application (kg N/ha)	Manure Application (kg N/ha)	Total Fertiliser N (kg)	Total FYM N (kg)	Field Notes	Use
6.1	59,692.44	5.9692	Grazed by sheep.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	90	2.2	537.23	13.13	Permanent pasture - grass with buttercups, very little clover. Rutting by vehicles in western half of field indicates a clayey loam soil. Ground very wet with standing water in ruts. Majority of field enclosed by 2 m wide hedge. Archaeological dig in northern half of the field at the time of the survey indicated ~300 mm chestnut brown silty clayey loam overlying orange clay bedrock. Wide drainage channel running along northern boundary adjacent to road. Approx 200 mm depth of water flowing north eastwards. Piezometer with blue wellhead in western centre of field. Free oil contamination observed on standing water in north eastern corner of field, adjacent to spoil heap of sandy clay. Beyond eastern boundary hedge lies a series of small ponds with bullrushes. Residential development progressing beyond. Amphibian fencing around ponds. Ponds interconnected by drainage channel flowing north along northern half of boundary towards highway drainage and south along southern half of boundary towards woodland and Quobleigh Pond (PB8, PB9 & PB10).	RG
7	17,628.34	1.7628	Wet woodland area.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Wet broadleaved woodland, with grass and bramble understorey. Wide vegetated wetland through centre, flowing westwards towards large pond. Dry channel running eastwards along fenced northern boundary (PB11).	W
8	15,646.93	1.5647	Fallow grass field. Cut only, not grazed, marshy.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	100	0	156.47	0.00	Permanent pasture. Sloping gently north-westwards towards Parcel 5 and adjacent watercourse. Fenced along northern boundary. Aprox 2 m wide hedges forming remaining boundaries with flowing drainage ditches along south western and western boundaries, flowing westerly and northerly, respectively. Footpath along northern boundary. Molehills indicate soil is a medium brown silty loam (PB12).	F
9	73,477.19	7.3477	Pasture with hay cut.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	90	0	661.29	0.00	Permanent pasture. Southern, western and south eastern boundaries ~2 m thick hedgerow. Northern boundary fenced, with woodland beyond. Scrub and woodland understorey encroaches approx 3 m into field along this boundary. Hedgerow approx 3 m wide in north eastern corner adjacent to Parcel 10. Footpath also along northern boundary. Northern half of field drains north-westerly towards Parcel 7 and associated watercourse. Southern half of field drains south-westerly towards Fir Tree Lane. Piezometer close to northern boundary - metal cover badly damaged by machinery with head of well open to the elements - needs repairing (PB13).	RG
10	45,392.00	4.5392	Wheat.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	300	0	1,361.76	0.00	Arable (wheat?) crop. Known as "10 acre field". Northern boundary fenced, with flailed woodland understorey/set aside encroaching approx 5 m into field (including footpath which is also along this boundary). ield generally drains westwards. Small wet drainage ditch along north western boundary flowing towards the watercourse in Parcel 7. Relic hedge along eastern boundary although mainly just fence with scattered shrubs. 2 m wide hedge along southern boundary, with 3 m wide hedge along western boundary. Occasional free oil contamination on standing water along northern boundary and in north east corner (PB15).	M/W
11	28,651.02	2.8651	Fallow grass field. Cut only, not grazed.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	100	0	286.51	0.00	Permanent pasture. Northern and eastern boundary fenced, with flailed woodland understorey/set aside encroaching approx 3 m into field. Western boundary fenced with relic hedge, comprising occasional scattered shrubs. Footpath through centre of field. Field generally drains northwards. Occasional free oil contamination on standing water along northern and western boundarie (PB16).	F

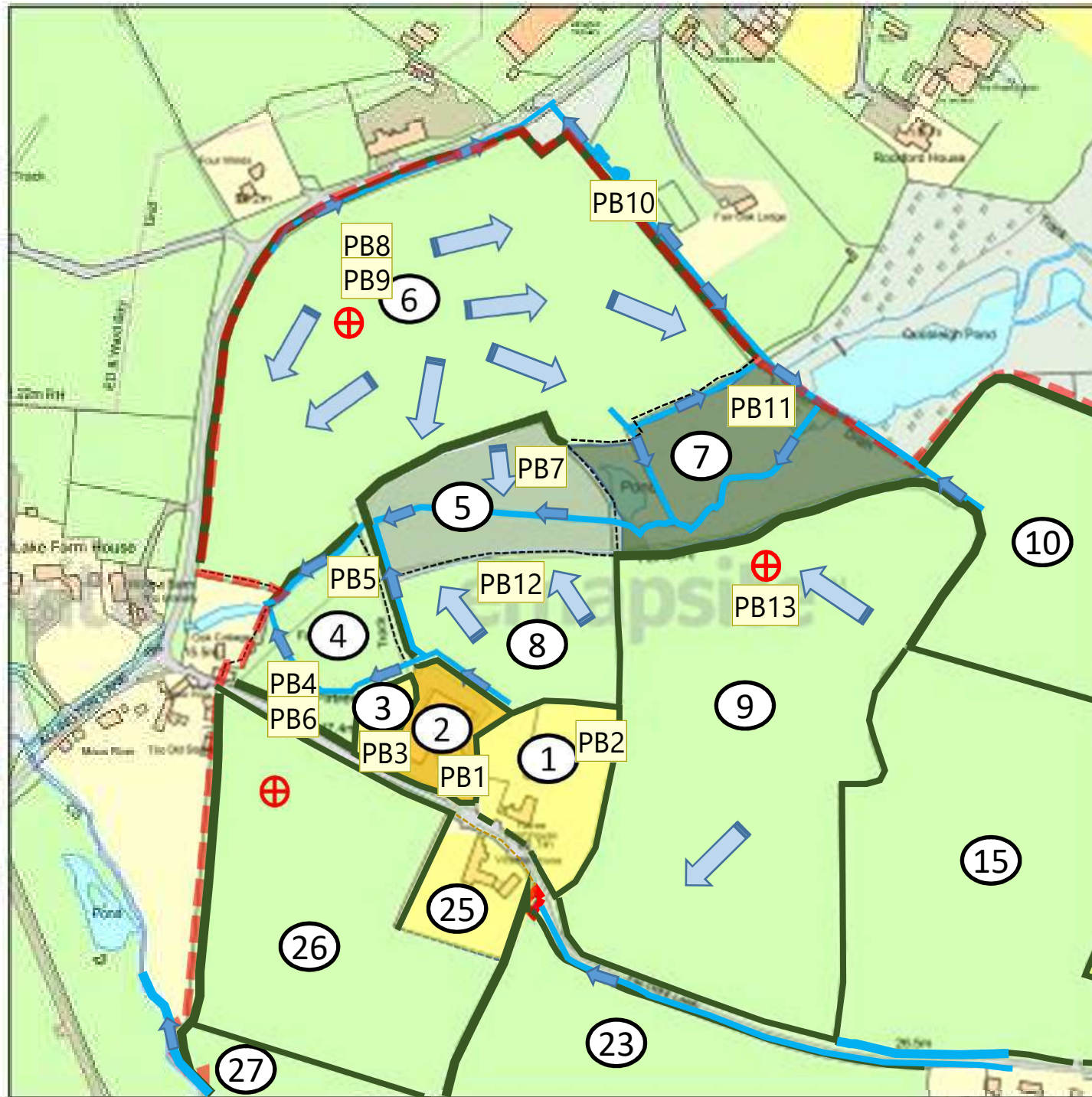
Parcel	Area (m2)	Area (Ha)	Land Use	Soil Type	Texture	Aquifer	Drainage	Hazard	Fertiliser Application (kg N/ha)	Manure Application (kg N/ha)	Total Fertiliser N (kg)	Total FYM N (kg)	Field Notes	Use
12	6,283.91	0.6284	Fallow grass field. Cut only, containing old manure pile.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	100	0	62.84	0.00	Pasture. Some waterlogging at northern end with localised oil contamination. New housing development currently being built beyond site boundary to the east. Ditch running northwards and new trash screen constructed just beyond hedge along eastern boundary, as part of new development. Public footpath runs through middle of field. Large well rotted manure heap, comprising straw and cattle waste at northern end of field adjacent to northern boundary. Low percentage of clover with docks and chickweed in sward. 2 m wide hedge with scattered trees along eastern boundary. Gappy 2 m wide hedge along western boundary, incomplete at northern end (PB17).	F
13	9,523.57	0.9524	Dwelling and surrounding grounds.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Foxhole Cottages - residential dwellings, buildings and associated gardens. Surrounded by thick 2 m wide hedge with scattered trees (PB18).	U
14	4,303.98	0.4304	Fallow grass field. Cut only.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	100	0	43.04	0.00	Wet and scrubby fallow land with rushes. 3 m wide hedge with scattered trees along northern, eastern and southern boundaries with scrub encroaching into field. More formal 2 m wide hedge along western boundary (PB19).	F
15	74,614.50	7.4615	Wheat.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	300	0	2,238.44	0.00	Winter wheat. Field gently sloping towards Fir Tree Lane. 2 m wide hedges along northern, eastern and southern boundaries. Thicker 3 m hedge with shrubs and small trees along western boundary. Piezometer located at southern end opposite residential dwelling/flower retailer. Large ditch along southern boundary fronting onto Fir Tree Lane full of standing water and overtopping onto highway (PB20).	M/W
16	4,847.59	0.4848	Fallow grass field. Cut only.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	100	0	48.48	0.00	Set aside. Rough grassland with tall ruderals. Thick informal hedge along northern and western boundaries. Remnant hedge along eastern boundary and fencing along southern boundary (PB21).	F
17	16,069.23	1.6069	Playing field	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Playing fields with relatively long amenity turf surrounded by thick hedges with areas of woodland and shrubs along eastern and southern boundaries. Waterlogging of soils at southern end and associated poaching by human footfall at the southern access point to the fields (PB22).	SA
18.1	6,345.38	0.6345	Demolished farmhouse and surrounding garden (now rubble and scrub).	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Highly disturbed area - former Foxholes Farmhouse, comprising heaps of demolition rubble, comprising bricks, soil, steel supports, corrugated iron sheeting, paint and chemical cans and a number of large gas cylinders. Enclosed by temporary construction fencing. Standing water in wheel ruts and puddles exhibiting significant algal growth, with large patches of black of oil stained soils in places (PB24).	SA
18.2	5,198.55	0.5199	Small wooded area beside watercourse.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Small strip of coppiced woodland with muddy public footpath and small stream running through it (flowing westwards) (PB23).	W
19	38,757.17	3.8757	Fallow scrubby field.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Rough grassland with tall sward and ruderals (set aside). 3 m wide thick hedgerows along western and eastern boundaries. Thick area of woodland and shrubs along southern boundary with 200 mm deep fast flowing stream - flowing eastwards dissipating in places into diffuse wetland, particularly at eastern end. Channel becomes more defined westwards. Also wet ditch flowing southwards at southern end of western boundary. Large overgrown pond in SW corner, with emergent vegetation and surrounded by brambles. Small island in middle. Small stand of Japanese Knotweed in centre of southern boundary on the northern side of the stream (stand approximately 4 x 3 m) (PB25).	SA
20	7,269.16	0.7269	Wet scrubland area.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Rough grassland with clumps of tall ruderals. Small watercourse flowing through middle of parcel towards stream to the south. All hedgerow boundaries other than fenced boundary with Foxholes Garage to north and west (PB26).	SA

Parcel	Area (m2)	Area (Ha)	Land Use	Soil Type	Texture	Aquifer	Drainage	Hazard	Fertiliser Application (kg N/ha)	Manure Application (kg N/ha)	Total Fertiliser N (kg)	Total FYM N (kg)	Field Notes	Use
21	5,110.46	0.5110	Small wooded area to east of footpath.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Small area of woodland to east of footpath with public access.	W
22	6,498.21	0.6498	Private grassed field and outbuildings	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Grassland/ lawn surrounding Foxholes Garage and associated outbuildings (PB28).	U
23	49,428.79	4.9429	Wheat.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	300	0	1,482.86	0.00	"12 Acres" field. Winter wheat. 2 m wide hedge along eastern and northern boundaries. Wet shallow ditch full of litter along Fir Tree Lane frontage. Little evidence of flow, but slope westwards. 3 m wide hedge along western boundary with scattered trees. To the south lies a strip of woodland with stream (see Parcel 24) (PB29).	M/W
24	3,794.23	0.3794	Wet scrubland.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Wet scrubby and woodland area with small watercourse (approx 300 mm deep) flowing westwards forming confluence with boundary watercourse to the west, which then flows northwards (PB39).	SA
25	6,371.43	0.6371	Victoria Farmhouse.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Victoria House - residential dwelling with associated gardens and out buildings. Walled along frontage to Fir Tree Lane, with hedges along western and eastern boundaries and fenced along southern boundary (PB33).	U
26	42,012.66	4.2013	Hay field.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	90	38.4	378.11	161.33	Pasture. 3 m wide hedges with scattered trees along western and eastern boundary. 2 m wide hedge along Fir Tree Lane frontage. Piezometer in NW corner. Field slopes southwards with gappy 2 m wide hedge along southern boundary. Molehills indicate that soil is a light brown silty loam (PB34).	RG
27	10,167.34	1.0167	Fallow field, only cut.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	100	0	101.67	0.00	Pasture - grading into wetter conditions southwards. 3 m wide hedge along western boundary with scattered trees and small watercourse flowing northwards. 3 m wide hedge with scattered trees along eastern boundary, with woodland bordering small watercourse flowing westwards along SE boundary (PB37).	F
28	2,826.64	0.2827	Fallow field, only cut.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	100	0	28.27	0.00	To the south of Parcel 27 lies a triangle of wet tall ruderals. Vegetation recently cut and left on ground. In places standing water exhibited bright orange staining and free oil contamination. To the west lies 3 m wide hedge and associated watercourse (up to 500 mm deep in places) flowing northwards. To the south lies scrubby/woodland area of Parcel 29 with watercourse flowing westwards (PB38).	F
29	13,625.70	1.3626	Wet scrub and woodland.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Strip of woodland and shrubs with small stream running westwards through it (PB30).	W
30	28,785.59	2.8786	Grazed by cattle.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	3	96.68	8.64	278.30	Pasture. Narrow strip of land north of the solar farm. Gentle slope to the north towards the stream. Bordered to the north by trees. While the solar farm is outside the site boundary, Simon Owton mentioned that he owned the land and leased it to the solar farm. He cuts the grass around the solar panels 3 times a year, the grass is left on site (JG21).	PP
31	30,953.66	3.0954	Alternates annually between maize and silage.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	49	66.8	151.67	206.77	Maize (grown every other year) (JG1).	M
32	47,589.84	4.7590	Silage cut in May, than grazed by cattle June -Nov.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	120	38.2	571.08	181.79	Pasture/silage (JG2).	RG

Parcel	Area (m2)	Area (Ha)	Land Use	Soil Type	Texture	Aquifer	Drainage	Hazard	Fertiliser Application (kg N/ha)	Manure Application (kg N/ha)	Total Fertiliser N (kg)	Total FYM N (kg)	Field Notes	Use
33	98,086.96	9.8087	Silage cut in May, than grazed by cattle June -Nov.	Freely draining slightly acid sandy soils	Sandy	Bedrock - Secondary A	Freely draining. Drains to groundwater.	Vulnerable to leaching of nitrate and pesticides to groundwater; Highly erodible under arable and vegetable crops, where sloping, resulting in eutrophication and clogging of stream bed with sand.	120	38.2	1,177.04	374.69	Pasture/silage. Land gently slopes towards stream. Gravel clay at far south west corner. Fence on boundary with Parcel 2, 3 m hedge all along eastern flank and boundary with parcel 4. Borehole location indicated by red cross. Water sample location 1 at star. Water sample taken as stream enters site boundary shows nitrite levels 0 ppm, ammonia levels between 0.25 and 0.5 ppm and nitrate levels around 5 ppm. Hedge also runs along farm track. North boundary of this field is a barbed wire fence between this field and Parcel 32 (JG3, EF9 & EF10).	RG
34	13,149.53	1.3150	Marshy land, grazed by cattle who have access to watercourse - very large manure pile in this field.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils.	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	3	96.68	3.94	127.13	Narrow strip of boggy marsh land with land sloping gently towards a stream cutting through the middle of the field. Path divides Parcel 4 and 6. Large manure heap in south east corner of parcel to the right of the path just as you enter the field (brown circle). Water sample location 2 indicated by yellow star. 3 m hedge borders parcel (JG4 & EF12).	PP
35	17,530.47	1.7530	Grazed by cattle.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	3	96.68	5.26	169.48	Pasture. Gently sloping south east towards stream. Field surrounded with 3 m hedge (JG5).	PP
36	14,219.40	1.4219	Grazed by cattle.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	3	96.68	4.27	137.47	Pasture. Gently sloping towards stream. Flatter in south eastern corner. Low 3 m wide hedge on boundary with Parcel 39, high 3 m hedge on western flank closer to farm buildings (JG8).	PP
37	1,498.10	0.1498	Ditch full of slurry.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	96.68	0.00	14.48	Steeply sloping towards stream. Ditch running along east and south east boundary of parcel filled with polluted water. Manure left in piles. Water run off from farm building and yard runs through here via ditch towards stream in Parcel 20. Contents of the ditch were more like sludge than water despite the recent heavy rain (JG9 & EF6).	PP
38	38,067.78	3.8068	Grazed by cattle.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	3	96.68	11.42	368.04	Pasture. Land quickly falls away towards the streams on the western and northern boundaries of the field as shown by the green lines and arrows. Slope is particularly steep on boundary with Parcel 39 (see image). Tall, wide hedgerow boundary with Parcel 39. Despite the slope, the field is very waterlogged in placed with a mainly clay soil (JG10 & EF4).	PP
39.1	6,566.80	0.6567	Grazed by cattle.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	3	96.68	1.97	63.49	Narrow strip of land accessible by a small rickety bridge. Very waterlogged, parts were knee deep with water at time of site visit. Long grasses and reed species were established here. A small wood on a steep slope is located to the north east of the field. A ditch slowly flowing north was located at the boundary of the waterlogged field and the wooded area. Cut branches were piled around the field (J11 & EF3).	PP
39.2	3,409.73	0.3410	Woodland	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	A small wood on a steep slope located north-east of field 39.	W
40	35,560.41	3.5560	Marshy grazing for cattle.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	3	96.68	10.67	343.80	Pasture, but at time of visit very boggy waterlogged marsh-land. Land flat. Small watercourses found running through the middle of the field and in water ditches along all the edges of the field, all flowing in a north-easterly direction. Two large clumps of frogspawn were found in the stream in the middle of the field. A small wooden footbridge allows access via the footpath through the field over the stream ditches. Woodland on either side (JG12).	PP
41	8,780.17	0.8780	Marshy grazing for cattle.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	3	96.68	2.63	84.89	Pasture. Land is separated from Parcel 10 by a small hedgerow within which was located a drainage ditch. Land is flat and enclosed by woodland to the north and south (JG13).	PP

Parcel	Area (m2)	Area (Ha)	Land Use	Soil Type	Texture	Aquifer	Drainage	Hazard	Fertiliser Application (kg N/ha)	Manure Application (kg N/ha)	Total Fertiliser N (kg)	Total FYM N (kg)	Field Notes	Use
42	6,126.63	0.6127	Marshy grazing for cattle.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	3	96.68	1.84	59.23	Pasture. Flat marsh-land. 3 m wide hedge on northern flank, woodland on southern. Two mounds of earth mixed with rubble and gravel were found close to the woodland side of the field halfway along the length of the field. A ditch runs along the southern boundary closest to the woodland transporting water in a westerly direction. A medium sized stream to the north west separates Parcels 42 and 40 (JG14).	PP
43	25,484.19	2.5484	Grazed by cattle, small manure pile on slope.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	3	96.68	7.65	246.38	Pasture. Gently sloping to the west. Waterlogged ground to the west and south-west. Drainage ditch running alongside hedge on the north west flank. Two streams converge in the northern corner of the field and at the time of site visit the stream was flowing fast. The car park for the farm buildings (capacity approx 50 cars) is adjacent to the eastern flank of the field. Small manure pile in western corner of the field indicated by brown circle (JG15 & EF11).	PP
44	20,909.17	2.0909	Chalcroft Farmstead	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Buildings to the south of the pond are mostly derelict with a dumping ground behind. Waste is well organised and is mostly scrap metal, broken pallets and cardboard. Car park has space for around 50 cars, with about 40-45 parked at the time of visit. Some butchery occurs in the buildings in the farm yard and there was regular pressure hosing of vehicles and other equipment on this site (JG16 & EF5).	U
45	18,142.81	1.8143	Grazed by cattle.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	3	96.68	5.44	175.40	Flat field with collection of trees in the middle. Used for pasture. Bound by hedge to the east and thin line of tree to south in front of which is a drainage ditch with water flowing west. Clay soils to the south east, gravel/clay soils to the west. Slopes at the edge of the field towards the drainage ditch which contains vegetation (JG17 & EF8).	PP
46	29,440.87	2.9441	Grazed by cattle.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	3	96.68	8.83	284.63	Pasture. Flat field with 3 m wide hedge on west side, woodland on south side and a mixture of fence and hedgerow on east side. Clay soils, slight slope towards Parcel 47 in SE corner of field (JG18 & RF13).	PP
47	66,462.29	6.6462	Silage cut in May, then grazed by cattle until early Nov.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	120	38.2	797.55	253.89	Pasture. Mostly flat field with a gentle slope towards the south west. The south west and southern boundary is marked with trees and fence. Eastern boundary is marked with a mixture of hedgerow and fences. Large puddles had formed in front of the fence in places. Clayey soils. There was a borehole in the field shown on the map by the red cross (JG19).	RG
48.1	78,060.91	7.8061	Silage cut in May, then grazed by cattle until early Nov.	Freely draining slightly acid sandy soils	Sandy	Bedrock - Secondary A	Freely draining. Drains to groundwater.	Vulnerable to leaching of nitrate and pesticides to groundwater; Highly erodible under arable and vegetable crops, where sloping, resulting in eutrophication and clogging of stream bed with sand.	120	38.2	936.73	298.19	Pasture/silage. Similar to Parcel 47 except for aspect - here land is highest on the side by Burnetts Lane halfway up the field. There is a small ditch transporting water northwards in the hedgerow separating Parcels 47 and 48. At the time of our visit there was evidence of hedgerow removing on the western flank exposing fence and there were large ruts where vehicles had tracked across the wet field (JG20).	RG
49	8,194.19	0.8194	Marshy land, grazed by cattle who have access to watercourse.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	3	96.68	2.46	79.22	Narrow strip of marshy land surrounding stream. Gentle slope in direction of stream. Bordered by 3 m hedge (JG7).	PP
50.1	13,258.74	1.3259	Marshy land, grazed by cattle who have access to watercourse.	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	3	96.68	3.98	128.19	Narrow strip of marshy land surrounding stream. Gentle slope in direction of stream. Bordered by 3 m hedge. Does not appear to be grazed as longer sedges and grasses in this area, barbed wire fence between this strip of land and the solar farm. Streams join here and flow north (JG6 & EF2).	PP
50.2	10,913.16	1.0913	Solar Farm	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Loamy and clayey	Superficial - Secondary A/ Bedrock - Secondary A	Impeded. Drains to stream network.	Overland flow of organic slurry, dirty water, fertiliser, pathogens and fine sediment with drain water.	0	0	0.00	0.00	Solar farm with amenity grassland managed to avoid impact on operation of the solar farm.	SA
TOTAL	1,245,855.89	124.5856									11,347.55	4,049.94		

Appendix 2 Field Observations from Site Walkover



Slide 1

- PB1** Parcel 1 - Residential dwelling with private gardens and swimming pool. Surrounded by 3 m wide hedge
Paul Bond, 17/02/2020
- PB2** Parcel 2 - Area of bare muddy compacted ground with demolition debris throughout. Surrounded by 2 m wide hedge. Small drainage ditch with running water along northern boundary, approx 100 mm deep flowing westwards.
Paul Bond, 17/02/2020
- PB3** Parcel 3 - Derelict residential dwelling, with derelict private gardens and disused swimming pool. Plot surrounded by 2 m wide hedge. Small drainage ditch with running water along northern boundary, approx 100 mm deep flowing westwards.
Paul Bond, 17/02/2020
- PB4** Parcel 4 - Permanent pasture (hay cut). Small watercourse meanders across this field with shallow open channel/wetland area with rushes established along course. Deep ruts formed where vehicles have tracked across this very wet field exposing orange silty/clayey soils. Free oil contamination exposed on standing water within ruts. From plant?
Paul Bond, 17/02/2020
- PB6** 2 m wide hedge along southern and eastern boundary. NE boundary is fenced (barbed wire) with vehicle track beyond. South western boundary currently comprises temporary fence to adjacent residential dwelling beyond red-line boundary.
Paul Bond, 17/02/2020
- PB5** North western boundary comprises small watercourse flowing southwestwards towards pool in residential property. Water muddy and up to 0.5 m deep. Some poaching evident adjacent to watercourse (by sheep and/or cattle, although not present at the time). Free oil evident on standing water in this poached area. Molehills indicate soils pass to sandy/gravelly loam adjacent to watercourse (alluvium?).
Paul Bond, 17/02/2020
- PB7** Parcel 5 - Wet rough unimproved grassland with rushes. Small watercourse, the banks lined with small trees and shrubs, flows through centre of plot, approx 0.4 m deep, flowing westwards. Southern boundary fenced, northern boundary 2 m wide hedge.
Paul Bond, 17/02/2020
- PB8** Parcel 6 - Permanent pasture - grass with buttercups, very little clover. Rutting by vehicles in western half of field indicates a clayey loam soil. Ground very wet with standing water in ruts. Majority of field enclosed by 2 m wide hedge.
Paul Bond, 17/02/2020
- PB9** Archaeological dig in northern half of the field at the time of the survey indicated ~300 mm chestnut brown silty clayey loam overlying orange clay bedrock. Wide drainage channel running along northern boundary adjacent to road. Approx 200 mm depth of water flowing north eastwards. Piezometer with blue wellhead in western centre of field. Free oil contamination observed on standing water in north eastern corner of field, adjacent to spoil heap of sandy clay.
Paul Bond, 17/02/2020
- PB10** Beyond eastern boundary hedge lies a series of small ponds with bullrushes. Residential development progressing beyond. Amphibian fencing around ponds. Ponds interconnected by drainage channel flowing north along northern half of boundary towards highway drainage and south

Slide 1 (Continued)

along southern half of boundary towards woodland and Quobleigh Pond.

Paul Bond, 17/02/2020

- PB11** Parcel 7 - Wet broadleaved woodland, with grass and bramble understorey. Wide vegetated wetland through centre, flowing westwards towards large pond. Dry channel running eastwards along fenced northern boundary.

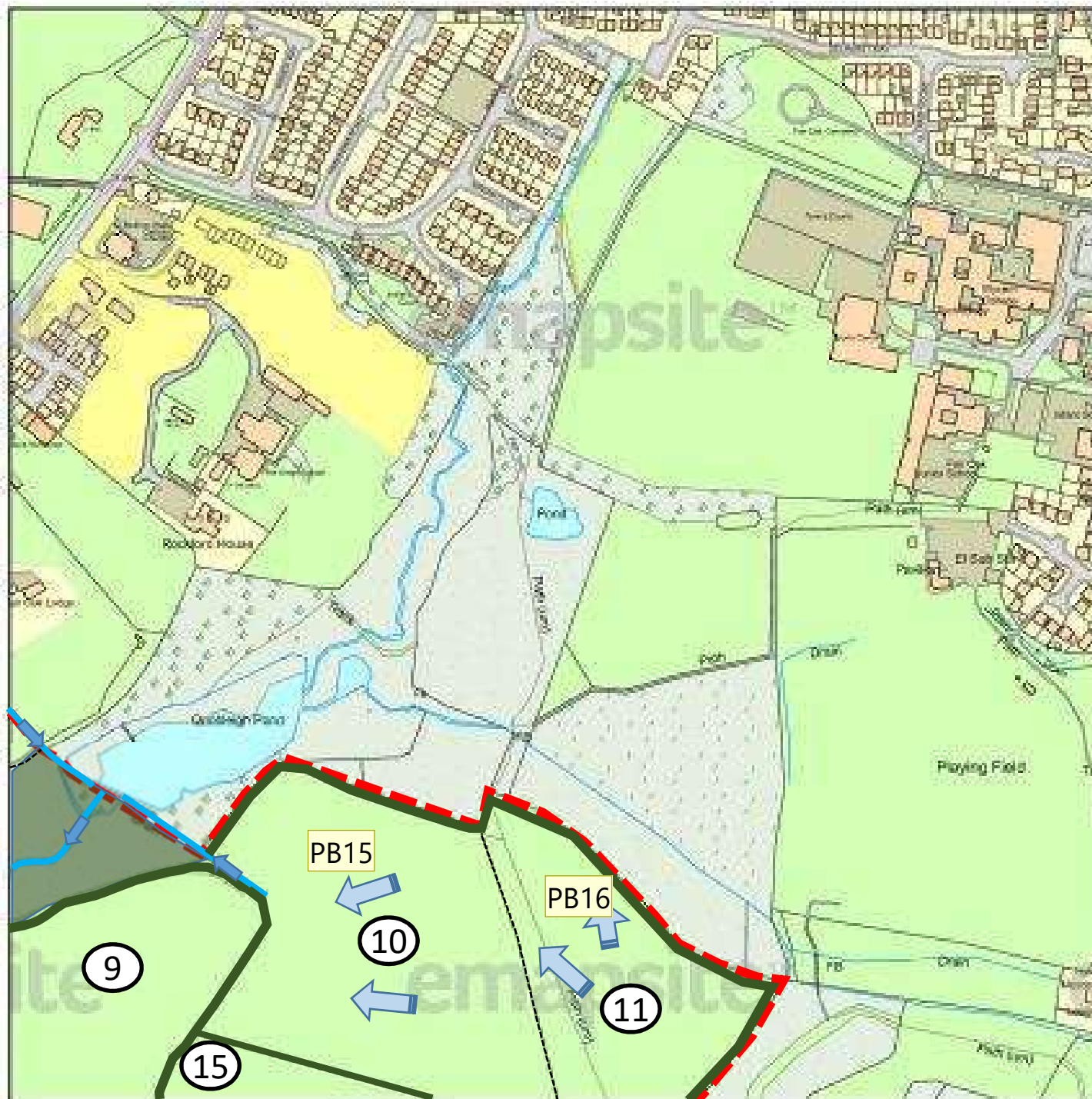
Paul Bond, 17/02/2020

- PB12** Parcel 8 - Permanent pasture. Sloping gently north-westwards towards Parcel 5 and adjacent watercourse. Fenced along northern boundary. Aprox 2 m wide hedges forming remaining boundaries with flowing drainage ditches along south western and western boundaries, flowing westerly and northerly, respectively. Footpath along northern boundary. Molehills indicate soil is a medium brown silty loam.

Paul Bond, 18/02/2020

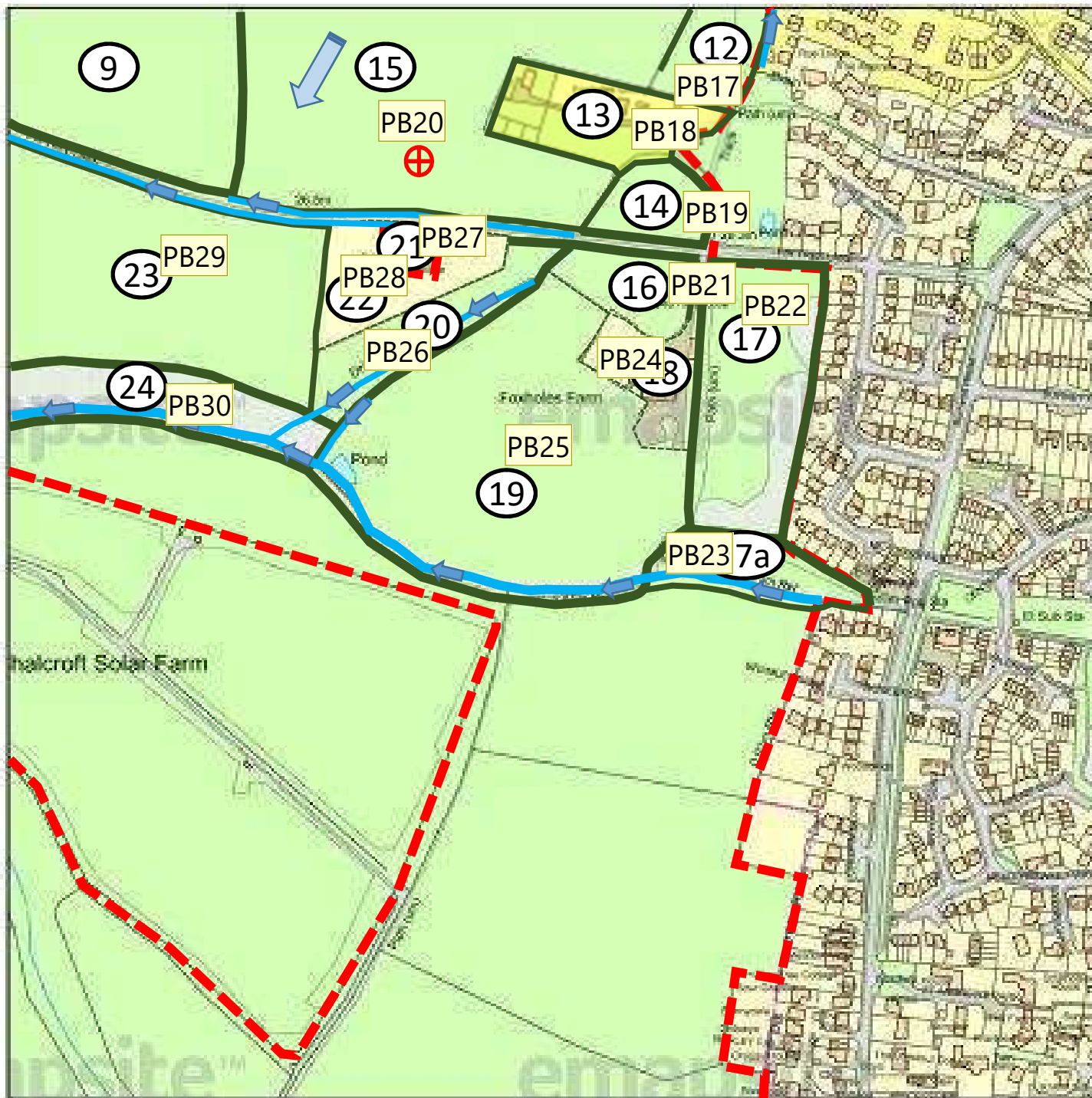
- PB13** Parcel 9 - Permanent pasture. Southern, western and south eastern boundaries ~2 m thick hedgerow. Northern boundary fenced, with woodland beyond. Scrub and woodland understorey encroaches approx 3 m into field along this boundary. Hedgerow approx 3 m wide in north eastern corner adjacent to Parcel 10. Footpath also along northern boundary. Northern half of field drains north-westerly towards Parcel 7 and associated watercourse. Southern half of field drains south-westerly towards Fir Tree Lane. Piezometer close to northern boundary - metal cover badly damaged by machinery with head of well open to the elements - needs repairing.

Paul Bond, 18/02/2020



Slide 2

- PB15** Parcel 10 - Arable (wheat?) crop. Known as "10 acre field". Northern boundary fenced, with flailed woodland understorey/set aside encroaching approx 5 m into field (including footpath which is also along this boundary). Field generally drains westwards. Small wet drainage ditch along north western boundary flowing towards the watercourse in Parcel 7. Relic hedge along eastern boundary although mainly just fence with scattered shrubs. 2 m wide hedge along southern boundary, with 3 m wide hedge along western boundary. Occasional free oil contamination on standing water along northern boundary and in north east corner.
Paul Bond, 18/02/2020
- PB16** Parcel 11- Permanent pasture. Northern and eastern boundary fenced, with flailed woodland understorey/set aside encroaching approx 3 m into field. Western boundary fenced with relic hedge, comprising occasional scattered shrubs. Footpath through centre of field. Field generally drains northwards. Occasional free oil contamination on standing water along northern and western boundaries.
Paul Bond, 18/02/2020



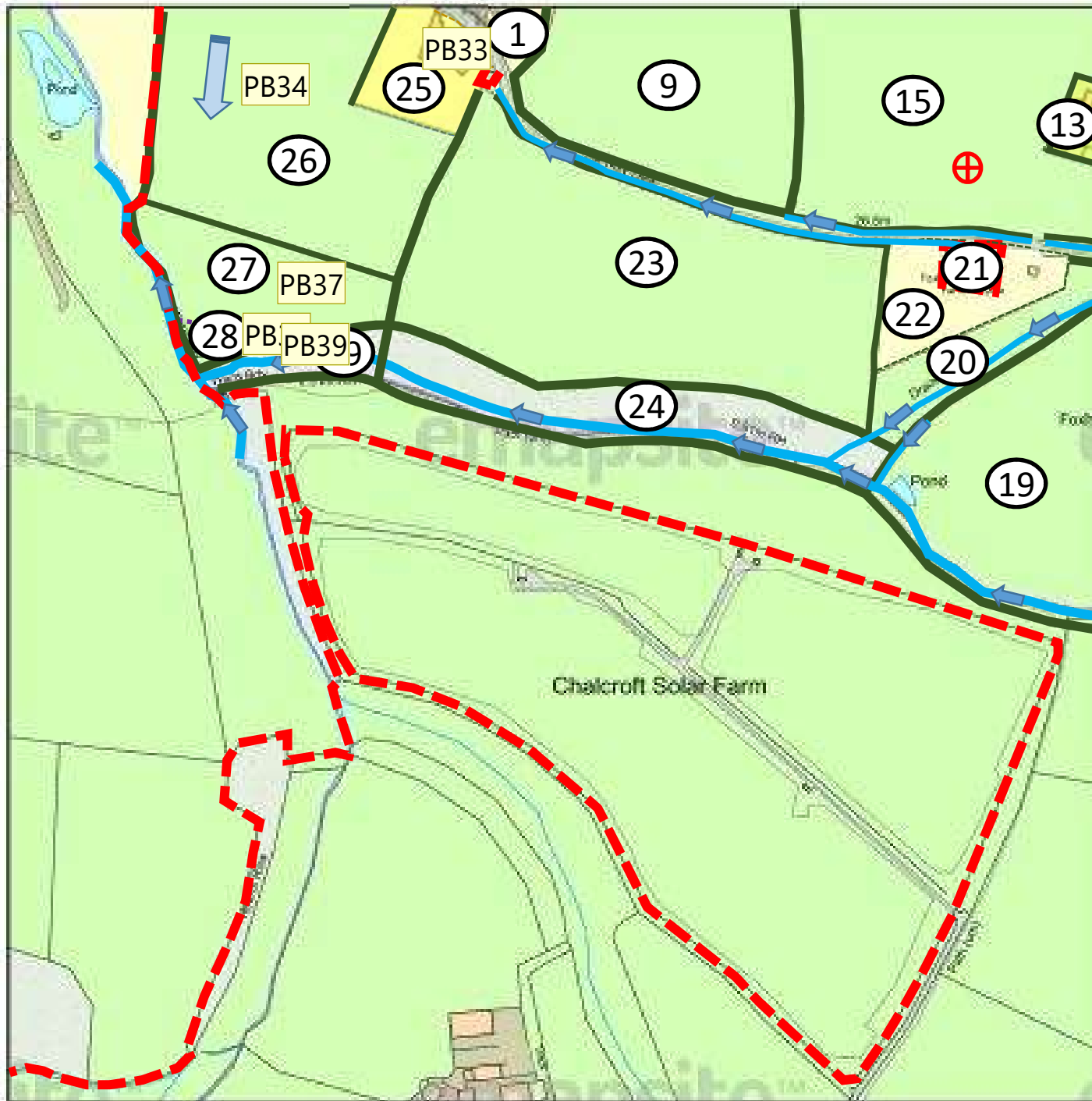
Slide 3

- PB17** Parcel 12 - Pasture. Some waterlogging at northern end with localised oil contamination. New housing development currently being built beyond site boundary to the east. Ditch running northwards and new trash screen constructed just beyond hedge along eastern boundary, as part of new development. Public footpath runs through middle of field. Large well rotted manure heap, comprising straw and cattle waste at northern end of field adjacent to northern boundary. Low percentage of clover with docks and chickweed in sward. 2 m wide hedge with scattered trees along eastern boundary. Gappy 2 m wide hedge along western boundary, incomplete at northern end.
Paul Bond, 18/02/2020
- PB18** Parcel 13 - Foxhole Cottages - residential dwellings, buildings and associated gardens. Surrounded by thick 2 m wide hedge with scattered trees.
Paul Bond, 18/03/2020
- PB19** Parcel 14 - wet and scrubby fallow land with rushes. 3 m wide hedge with scattered trees along northern, eastern and southern boundaries with scrub encroaching into field. More formal 2 m wide hedge along western boundary.
Paul Bond, 18/03/2020
- PB20** Parcel 15 - Winter wheat. Field gently sloping towards Fir Tree Lane. 2 m wide hedges along northern, eastern and southern boundaries. Thicker 3 m hedge with shrubs and small trees along western boundary. Piezometer located at southern end opposite residential dwelling/flower retailer. Large ditch along southern boundary fronting onto Fir Tree Lane full of standing water and overtopping onto highway.
Paul Bond, 19/03/2020
- PB21** Parcel 16 - set aside. Rough grassland with tall ruderals. Thick informal hedge along northern and western boundaries. Remnant hedge along eastern boundary and fencing along southern boundary.
Paul Bond, 19/03/2020
- PB22** Parcel 17 - Playing fields with relatively long amenity turf surrounded by thick hedges with areas of woodland and shrubs along eastern and southern boundaries. Waterlogging of soils at southern end and associated poaching by human footfall at the southern access point to the fields.
Paul Bond, 19/03/2020
- PB23** Parcel 17a - Small strip of coppiced woodland with muddy public footpath and small stream running through it (flowing westwards).
Paul Bond, 19/03/2020
- PB24** Parcel 18 - Highly disturbed area - former Foxholes Farmhouse, comprising heaps of demolition rubble, comprising bricks, soil, steel supports, corrugated iron sheeting, paint and chemical cans and a number of large gas cylinders. Enclosed by temporary construction fencing. Standing water in wheel ruts and puddles exhibiting significant algal growth, with large patches of black of oil stained soils in places.
Paul Bond, 19/03/2020
- PB25** Parcel 19 - Rough grassland with tall sward and ruderals (set aside). 3 m wide thick hedgerows along western and eastern boundaries. Thick area of woodland and shrubs along southern boundary with 200 mm deep fast flowing stream - flowing eastwards dissipating in places into diffuse wetland, particularly at eastern end. Channel becomes more defined westwards. Also wet ditch flowing southwards at southern end of western boundary. Large overgrown pond in SW corner, with emergent vegetation and surrounded by brambles. Small island in middle. Small stand of Japanese Knotweed in centre of southern boundary on the northern side of the stream (stand approximately 4 x 3 m).

Slide 3 (Continued)

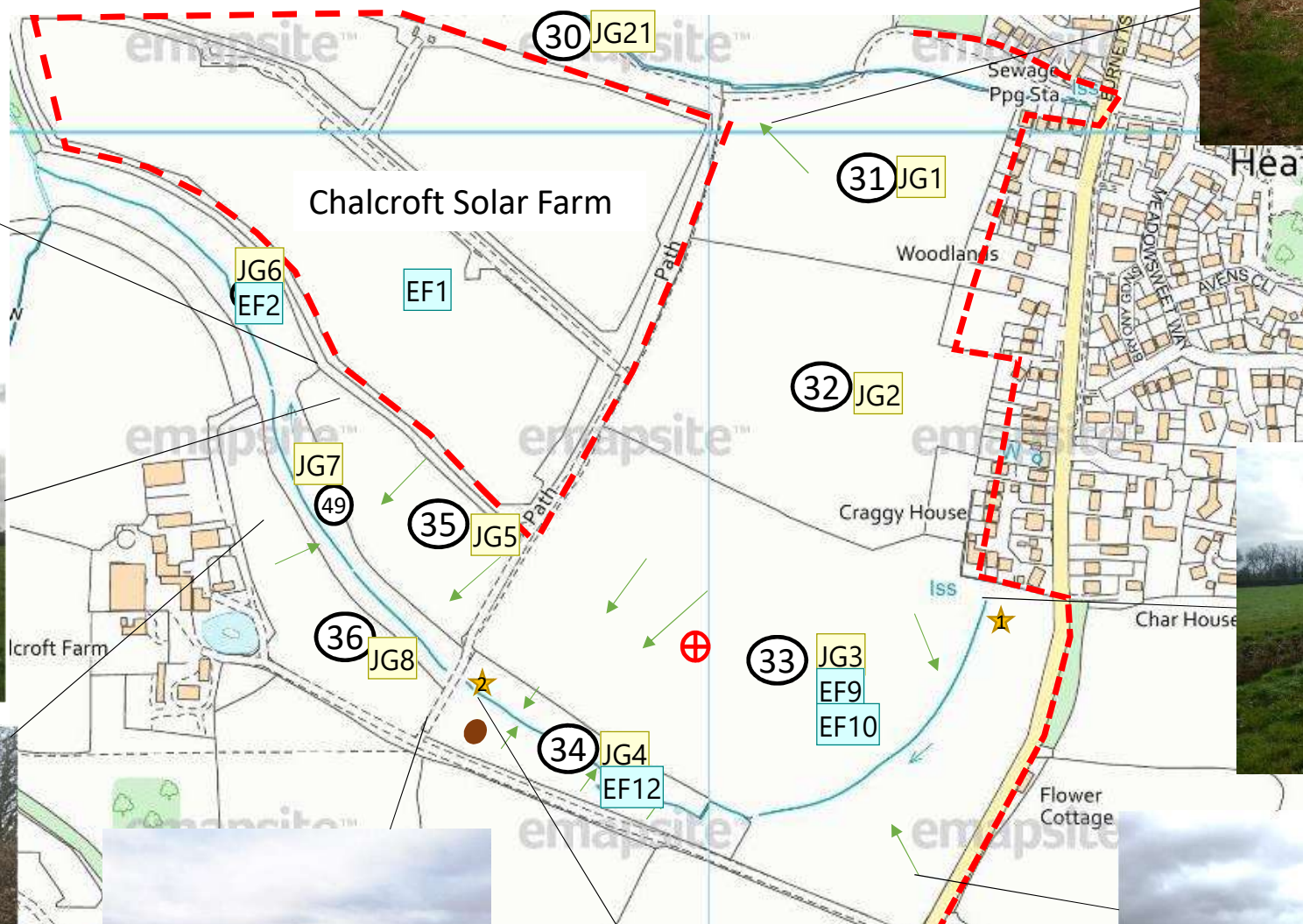
Paul Bond, 19/03/2020

- PB26** Parcel 20 - rough grassland with clumps of tall ruderals. Small watercourse flowing through middle of parcel towards stream to the south. All hedgerow boundaries other than fenced boundary with Foxholes Garage to north and west.
Paul Bond, 19/03/2020
- PB27** Parcel 21 - Outside of site - residential dwelling and outbuildings including Foxholes Garage and flower retailer. Small wet ditch with standing water along frontage onto Fir Tree Lane.
Paul Bond, 19/03/2020
- PB28** Parcel 22 - Outside of Site - grassland/ lawn surrounding Foxholes Garage and associated outbuildings.
Paul Bond, 19/03/2020
- PB29** Parcel 23 - "12 Acres" field. Winter wheat. 2 m wide hedge along eastern and northern boundaries. Wet shallow ditch full of litter along Fir Tree Lane frontage. Little evidence of flow, but slope westwards. 3 m wide hedge along western boundary with scattered trees. To the south lies a strip of woodland with stream (see Parcel 24).
Paul Bond, 19/03/2020
- PB30** Parcel 24 - Strip of woodland and shrubs with small stream running westwards through it.
Paul Bond, 19/03/2020



Slide 4

- PB33** Parcel 25 - Victoria House - residential dwelling with associated gardens and out buildings. Walled along frontage to Fir Tree Lane, with hedges along western and eastern boundaries and fenced along southern boundary.
Paul Bond, 19/03/2020
- PB34** Parcel 26 - Pasture. 3 m wide hedges with scattered trees along western and eastern boundary. 2 m wide hedge along Fir Tree Lane frontage. Piezometer in NW corner. Field slopes southwards with gappy 2 m wide hedge along southern boundary. Molehills indicate that soil is a light brown silty loam.
Paul Bond, 19/03/2020
- PB37** Parcel 27 - Pasture - grading into wetter conditions southwards. 3 m wide hedge along western boundary with scattered trees and small watercourse flowing northwards. 3 m wide hedge with scattered trees along eastern boundary, with woodland bordering small watercourse flowing westwards along SE boundary.
Paul Bond, 19/03/2020
- PB38** Parcel 28 - to the south of Parcel 27 lies a triangle of wet tall ruderals. Vegetation recently cut and left on ground. In places standing water exhibited bright orange staining and free oil contamination. To the west lies 3 m wide hedge and associated watercourse (up to 500 mm deep in places) flowing northwards. To the south lies scrubby/woodland area of Parcel 29 with watercourse flowing westwards.
Paul Bond, 19/03/2020
- PB39** Parcel 29 - wet scrubby and woodland area with small watercourse (approx 300 mm deep) flowing westwards forming confluence with boundary watercourse to the west, which then flows northwards.
Paul Bond, 19/03/2020

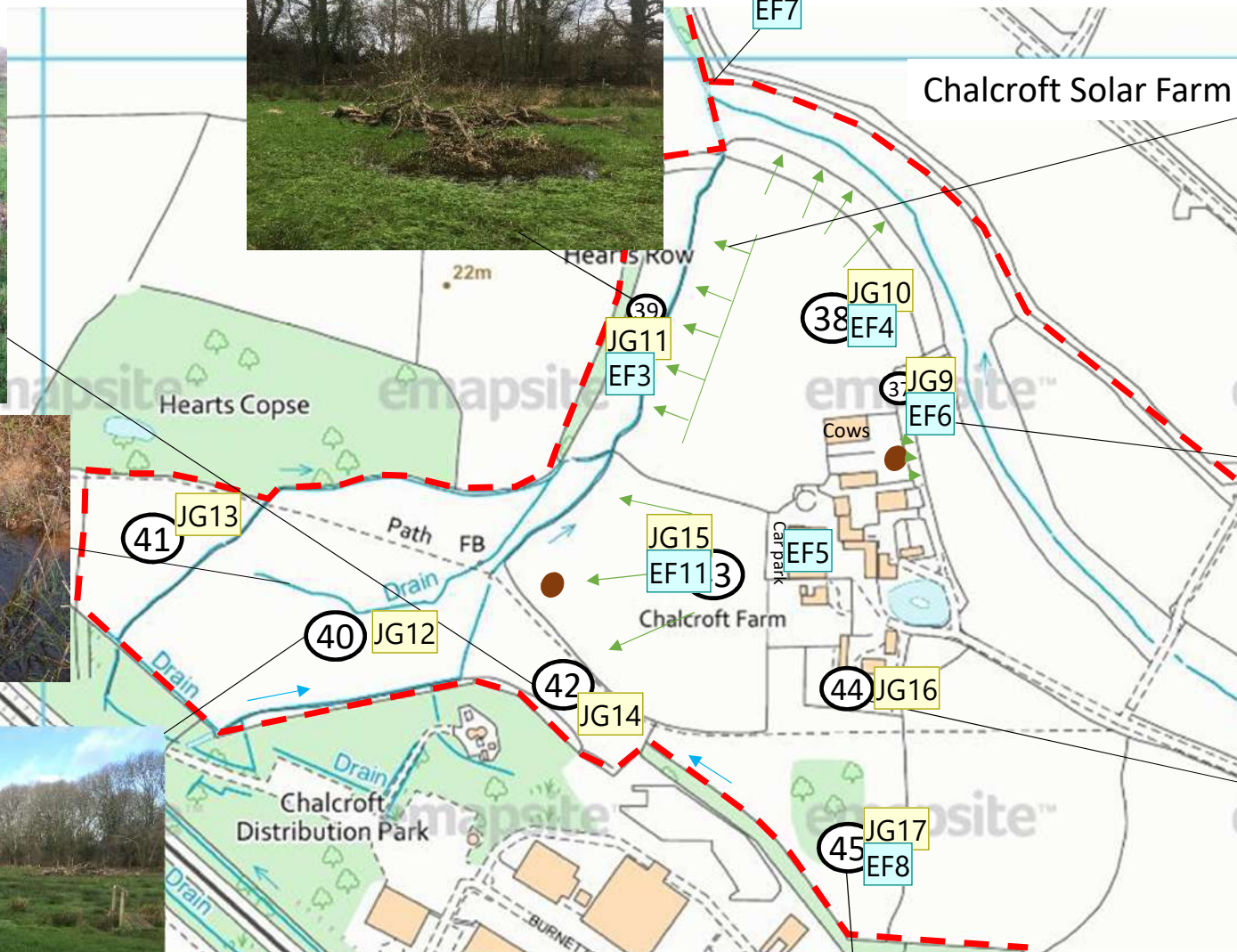


Slide 1

- JG1** Parcel 31 - Maize (grown every other year). 2.75 ha.
James Gibson, 19/02/2020
- JG2** Parcel 32 - Pasture/silage. 4.64ha.
James Gibson, 19/02/2020
- JG3** Parcel 33 - Pasture/silage. Land gently slopes towards stream. Gravel clay at far south west corner. Fence on boundary with Parcel 2, 3m hedge all along eastern flank and boundary with parcel 4. Borehole location indicated by red cross. Water sample location 1 at star. 9.67ha.
James Gibson, 19/02/2020
- EF9** Water sample taken as stream enters site boundary shows Nitrite levels 0 ppm, ammonia levels between 0.25 and 0.5 ppm and Nitrate levels around 5 ppm.
Emma Flower, 26/02/2020
- EF10** Hedge also runs along farm track. North boundary of this field is a barbed wire fence between this field and Parcel 32.
Emma Flower, 26/02/2020
- JG4** Parcel 34 - Narrow strip of boggy marsh land with land sloping gently towards a stream cutting through the middle of the field. Path divides Parcel 4 and 6. Large manure heap in south east corner of parcel to the right of the path just as you enter the field (brown circle). Water sample location 2 indicated by yellow star. 3 m hedge borders parcel. 1.24 ha.
James Gibson, 19/02/2020
- EF12** Results of the water test at this site show nitrate and nitrite levels very similar to that of the other test site, nitrite around 0 ppm and nitrate around 5 ppm. The levels of ammonia at this site were noticeably higher, around 2 ppm, this was noticeably higher than the test site 1.
Emma Flower, 26/02/2020
- JG5** Parcel 35 - Pasture. Gently sloping south east towards stream. Field surrounded with 3 m hedge. 1.56 ha.
James Gibson, 19/02/2020
- JG6** Parcel 50 - Narrow strip of marshy land surrounding stream. Gentle slope in direction of stream. Bordered by 3 m hedge. 1.04 ha.
James Gibson, 19/02/2020
- EF2** Does not appear to be grazed as longer sedges and grasses in this area, barbed wire fence between this strip of land and the solar farm.
Emma Flower, 26/02/2020
- JG7** Parcel 49 - Narrow strip of marshy land surrounding stream. Gentle slope in direction of stream. Bordered by 3 m hedge. 0.8 ha.
James Gibson, 19/02/2020

Slide 1 (Continued)

- JG8** Parcel 36 - Pasture. Gently sloping towards stream. Flatter in south eastern corner. Low 3 m wide hedge on boundary with Parcel 39, high 3 m hedge on western flank closer to farm buildings. 1.44 ha.
James Gibson, 19/02/2020
- JG21** Parcel 30 - Pasture. Narrow strip of land north of the solar farm. Gentle slope to the north towards the stream. Bordered to the north by trees. 1.52 ha.
James Gibson, 20/02/2020
- EF1** While the solar farm is outside the site boundary, Simon Owton mentioned that he owned the land and leased it to the solar farm. He cuts the grass around the solar panels 3 times a year, the grass is left on site.
Emma Flower, 25/02/2020



Slide 2

- JG9** Parcel 37 - Steeply sloping towards stream. Ditch running along east and south east boundary of parcel filled with polluted water. Manure left in piles. Water run off from farm building runs through here via ditch towards stream in Parcel 20. 0.08 ha.
James Gibson, 19/02/2020
- EF6** Contents of the ditch were more like sludge than water despite the recent heavy rain.
Emma Flower, 26/02/2020
- JG10** Parcel 38 - Pasture. Land quickly falls away towards the streams on the western and northern boundaries of the field as shown by the green lines and arrows. Slope is particularly steep on boundary with Parcel 39 (see image). Tall, wide hedgerow boundary with Parcel 39. 3.72 ha.
James Gibson, 19/02/2020
- EF4** Despite the slope, the field is very waterlogged in places with a mainly clay soil.
Emma Flower, 26/02/2020
- JG11** Parcel 39 - Narrow strip of land accessible by a small rickety bridge. Very waterlogged, parts were knee deep with water at time of site visit. Long grasses and reed species were established here. A small wood on a steep slope is located to the north east of the field. 1.27 ha.
James Gibson, 19/02/2020
- EF3** A ditch slowly flowing north was located at the boundary of the waterlogged field and the wooded area. Cut branches were piled around the field.
Emma Flower, 26/02/2020
- JG12** Parcel 40 - Pasture, but at time of visit very boggy waterlogged marsh-land. Land flat. Small watercourses found running through the middle of the field and in water ditches along all the edges of the field, all flowing in a north-easterly direction. Two large clumps of frogspawn were found in the stream in the middle of the field. A small wooden footbridge allows access via the footpath through the field over the stream ditches. Woodland on either side. 3.3 ha.
James Gibson, 19/02/2020
- JG13** Parcel 41 - Pasture. Land is separated from Parcel 10 by a small hedgerow within which was located a drainage ditch. Land is flat and enclosed by woodland to the north and south. 0.9 ha.
James Gibson, 19/02/2020
- JG14** Parcel 42 - Pasture. Flat marsh-land. 3 m wide hedge on northern flank, woodland on southern. Two mounds of earth mixed with rubble and gravel were found close to the woodland side of the field halfway along the length of the field. A ditch runs along the southern boundary closest to the woodland transporting water in a westerly direction. A medium sized stream to the north west separates Parcels 42 and 40. 0.66 ha.
James Gibson, 19/02/2020
- JG15** Parcel 43 - Pasture. Gently sloping to the west. Waterlogged ground to the west and south-west. Drainage ditch running alongside hedge on the north west flank. Two streams converge in the northern corner of the field and at the time of site visit

Slide 2 (Continued)

the stream was flowing fast. The car park for the farm buildings (capacity approx 50 cars) is adjacent to the eastern flank of the field. 2.42 ha.

James Gibson, 19/02/2020

EF11 Small manure pile in western corner of the field indicated by brown circle.

Emma Flower, 26/02/2020

JG16 Parcel 44 - Buildings to the south of the pond are mostly derelict with a dumping ground behind. Waste is well organised and is mostly scrap metal, broken pallets and cardboard. 0.36 ha.

James Gibson, 19/02/2020

JG17 Parcel 45 - Flat field with collection of trees in the middle. Used for pasture. Bound by hedge to the east and thin line of tree to south in front of which is a drainage ditch with water flowing west. Clay soils to the south east, gravel/clay soils to the west. 1.82 ha.

James Gibson, 19/02/2020

EF8 Slopes at the edge of the field towards the drainage ditch which contains vegetation.

Emma Flower, 26/02/2020

EF5 Car park has space for around 50 cars, with about 40-45 parked at the time of visit. Some butchery occurs in the buildings in the farm yard and there was regular pressure hosing of vehicles and other equipment on this site.

Emma Flower, 26/02/2020

EF7 Streams join here and flow north.

Emma Flower, 26/02/2020



Slide 3

- JG18** Parcel 46 - Pasture. Flat field with 3 m wide hedge on west side, woodland on south side and a mixture of fence and hedgerow on east side. 2.93 ha.
James Gibson, 19/02/2020
- EF13** Clay soils, slight slope towards Parcel 47 in SE corner of field.
Emma Flower, 26/02/2020
- JG19** Parcel 47 - Pasture. Mostly flat field with a gentle slope towards the south west. The south west and southern boundary is marked with trees and fence. Eastern boundary is marked with a mixture of hedgerow and fences. Large puddles had formed in front of the fence in places. Clayey soils. There was a borehole in the field shown on the map by the red cross. 6.5 ha.
James Gibson, 19/02/2020
- JG20** Parcel 48 - Pasture/silage. Similar to Parcel 47 except for aspect - here land is highest on the side by Burnetts Lane halfway up the field. There is a small ditch transporting water northwards in the hedgerow separating Parcels 47 and 48. At the time of our visit there was evidence of hedgerow removing on the western flank exposing fence and there were large ruts where vehicles had tracked across the wet field. 7.85 ha.
James Gibson, 19/02/2020



Slide 4

EF14

Parcel 51 - Grass field sloping steeply towards Burnetts Lane to the NW, and less steeply towards the SE & Bubb Lane. Site is owned by Queens College, so its exact use is not clear. Archaeologists were on site digging trenches. Soil appeared less clayey and more loamy. Trees border the field at the southern boundary with the train line, and a hedge 3 m, to the NE of the field. All hedges had been removed along both boundaries with the roads and heras fencing was in its place. 4.84 ha.

Emma Flower, 26/02/2020



Appendix 3 Farmer Interview Notes

Interview with Rob and Adam Marsh 04/02/20

Management of each parcel (refer to walkover plans for parcel locations)

- Nitrogen Fertiliser Application Field Record Sheets supplied for the following fields:
 - Parcel 10 ("10 acre" field); 4.64 ha (11.5 acres)
 - Parcel 15 ("18 acre" field); and 7.39 ha (18.3 acres)
 - Parcel 23 ("12 acre" field. 4.96 ha (12.3 acres)

These fields above were wheat last year, but alternate between wheat and maize. Figures in the table from the nitrate ordering sheet for Foxholes WW were used for amounts of Nitrate applied to these areas per ha.

- Parcel 6 – Previously grazed by a flock of sheep (~50 head) from the Davies farmstead. Treated as rotational grassland in Farmscoper. 6.12 ha (15.1 acres) within OPA.
- Parcel 9 – Pasture with hay cut. 7.37 ha (18.2 acres), parcels 9 and 26 (11.52 ha total) are classed as Victor's hay on the fertiliser sheets, classed as rotational grassland on Farmscoper
- Parcel 11 – pasture/fodder. 2.86 ha (7.1 acres).
- Parcel 17 – playing field – no applications. Treated as set aside in the calculations. 1.53 ha 3.8 acres.
- Parcels 14 and 16 are fallow with one cut per year. – Treated as fodder in the calculations. Total area 1.0 ha (2.5 acres).
- Parcel 19 with no applications. Treated as set aside in the calculations. Total area 3.73 ha (9.2 acres).
- Parcels 20 and 24 wet and scrubby with no applications and perhaps only one cut per year (1st cut) and perhaps a flail in summer. Treated as set aside in the calculations. Total area 2.03 ha (3.7 acres).

General

- Between 150 to 200 tonne of farmyard manure (FYM) imported into their land within red line boundary. This is applied to the maize crop which is grown alternate years. Consequently, in Farmscoper this is represented as 87.5 tonnes per year on the maize crop i.e. $(150+200)/2/2$.
- Most hay cuts for home (local) trade.
- No boundary walls – all hedges and fences.
- Maize crops require very low nitrogen – typically alternate between maize and wheat.
- Typical annual field operations comprise a machine till, drill, roll, fertiliser application and then harvest. All machinery tractor toed other than a combine for harvesting.
- On-site machinery comprises 1, perhaps 2 tractors, a 4-wheel drive (although most daily access is on foot), a quad which is only used in summer and a combine for harvesting.
- For hay, first cut end of May/beginning of June, 2nd cut in August.
- The areas which are developed buildings or demolished buildings are not included in Farmscoper.

NVZ Field Record Sheet

Main Business: R & A Marsh Farms Ltd
Year: 2019
Area: ha

Crop Management Partners LLP
Rhys Evans
Tel: E-Mail: rhys@cropmanagement.co.uk



10 Acre

Holding name: Main Holding
Field reference:
Map / NG Number: SU4917 / 0167
Postcode:
Crop: Wheat Winter

Holding reference:
Working area (ha): 4.54
Soil type: Medium (Eng)
NVZ Region: England and Wales NVZ (2009 or earlier)
Variety: KWS Zyatt

Field Cropping History

Cropping Year	Part Field Ref	Crop Name	Crop Sequence
2018	Whole field	Maize Forage	1

Nitrogen Fertiliser Applications

Application		Manure Type	Quantity	Rate/ha	Units	Available N		Total Organic N	
Date	Product					%	kg/ha	%	kg/ha
07/02/2019	38N 19so3	Mineral Fertiliser	1194.020	263.000	kg	38.000	99.94		
16/03/2019	34.5% AN	Mineral Fertiliser	1316.600	290.000	kg	34.500	100.05		
10/05/2019	34.5% AN	Mineral Fertiliser	1293.900	285.000	kg	34.500	98.33		
						298.32		0.00	

Date Comment

12 Acre

Holding name: Main Holding
Field reference:
Map / NG Number: SU4817 / 4.95
Postcode:
Crop: Wheat Winter

Holding reference:
Working area (ha): 4.95
Soil type: Medium (Eng)
NVZ Region: England and Wales NVZ (2009 or earlier)
Variety: KWS Zyatt

Field Cropping History

Cropping Year	Part Field Ref	Crop Name	Crop Sequence
2018	Whole field	Maize Forage	1

Nitrogen Fertiliser Applications

Application		Manure Type	Quantity	Rate/ha	Units	Available N		Total Organic N	
Date	Product					%	kg/ha	%	kg/ha
07/02/2019	38N 19so3	Mineral Fertiliser	1301.850	263.000	kg	38.000	99.94		
16/03/2019	34.5% AN	Mineral Fertiliser	1435.500	290.000	kg	34.500	100.05		
10/05/2019	34.5% AN	Mineral Fertiliser	1410.750	285.000	kg	34.500	98.33		
						298.32		0.00	

Date Comment

NVZ Field Record Sheet

Main Business: R & A Marsh Farms Ltd
Year: 2019
Area: ha

Crop Management Partners LLP

Rhys Evans
Tel: E-Mail: rhys@cropmanagement.co.uk

CROP
MANAGEMENT
PARTNERS

18 Acre

Holding name: Main Holding

Field reference:

Map / NG Number: SU4817 / 9946

Postcode:

Crop: Wheat Winter

Holding reference:

Working area (ha): 7.46

Soil type: Medium (Eng)

NVZ Region: England and Wales NVZ (2009 or earlier)

Variety: KWS Zyatt

Field Cropping History

<u>Cropping Year</u>	<u>Part Field Ref</u>	<u>Crop Name</u>	<u>Crop Sequence</u>
2018	Whole field	Maize Forage	1

Nitrogen Fertiliser Applications

<u>Application</u>	<u>Product</u>	<u>Manure Type</u>	<u>Quantity</u>	<u>Rate/ha</u>	<u>Units</u>	<u>Available N</u>	<u>Total Organic N</u>
<u>Date</u>						% kg/ha	% kg/ha
? 07/02/2019	38N 19so3	Mineral Fertiliser	1961.980	263.000	kg	38.000 99.94	
? 16/03/2019	34.5% AN	Mineral Fertiliser	2163.400	290.000	kg	34.500 100.05	
? 10/05/2019	34.5% AN	Mineral Fertiliser	2126.100	285.000	kg	34.500 98.33	
						298.32	0.00

Date

Comment

Holme, New Barn & Foxholes 2019 Nitrogen & Sulphur Ordering Sheet

ONLY CHANGE NUMBERS IN RED

Products	27N 95c3		Nitram		K2O		10:20:30		38N 19Sc3	
	N (kg/ha)	So3 (kg/ha)	N (kg/ha)	So3 (kg/ha)	K2O (kg/ha)	MgO (kg/ha)	P205 (kg/ha)	K2O (kg/ha)	N (kg/ha)	So3 (kg/ha)
	27	9	34.5	0	60	0	20	30	38	19
Comp	Total N		Total prod. per crop		Total prod. per crop		Total prod. per crop		Total prod. per crop	
	kg/ha N	kg/ha So3	kg/ha N	kg/ha So3	kg/ha N	kg/ha So3	kg/ha N	kg/ha So3	kg/ha N	kg/ha So3
Fishings WW	14.25	300	0	0	0	0	0	0	0	0
Prochies WW	16.95	300	0	0	0	0	0	0	0	0
Grass - Grazing 1	14.16	30	0	0	0	0	0	0	0	0
Grass - Hay 1	13.97	100	0	0	0	0	0	0	0	0
Grass - Stage 1 (inc New Crates)	4.64	75	0	0	0	0	0	0	0	0
New Crates Field (New Barn) Stage 2	4.64	75	0	0	0	0	0	0	0	0
New Crates Field (New Barn) Stage 3	4.64	75	0	0	0	0	0	0	0	0
S Barley (inc Moonlights HES)	34.22	150	0	0	0	0	0	0	0	0
S Barley Moonlights	11.24	30	0	0	0	0	0	0	0	0
Maize (Jacksons & Lons Only) (PK Jackson ONLY)	9.55	120	0	0	0	0	0	0	0	0
Total Product (kg) = 2472 Total Product (kg) = 2472 Total Product (kg) = 2472										
In Stock 0 In Stock 0 In Stock 0										
To Order 2472 To Order 2472 To Order 2472										

12t in stock - order 13.2t (conv with Adam 112.4t in stock)

Spring Barley

Seedbed = 250kg/ha 0:20:30
Seedbed = 211kg/ha 38N 19Sc3
1 leaf of Sbarley = 203kg/ha Nitram 34.5% N

Wheat

Late Feb/Early March = 250kg/ha 0:20:30 (Holme Only)
Late Feb = 116kg/ha Nitram 34.5% N
Mid - Late March = 263kg/ha 38N 19Sc3
End March/Early April = 290kg/ha Nitram 34.5% AN
Pre Flag Leaf = 174kg/ha Nitram 34.5% AN

Hay (Victors)

Early March = 333kg/ha 27N 95c3
Late Feb/Early March = 150kg/ha 0:20:30

Silage 1st Cut (New Crates, Cheeks, Foxhole Park and Beeches)

Late Feb = 370kg/ha 27N 95c3
Late Feb/Early March = 275kg/ha 0:20:30

Maize

Seedbed = 185kg/ha 27N 95c3
Seedbed = 217kg/ha MOP (MOP NOT NEEDED IF MUCK IS APPLIED)
1 Leaf of Maize and NO Later = 260kg/ha 27N 95c3

Grazing (all other grass)

Early March = 222kg/ha 27N 95c3

Silage 2nd Cut (New Crates)

After Cutting = 278kg/ha 26N 95c3
After Cutting = 200kg/ha 0:20:30

Silage 3rd Cut (New Crates)

After Cutting = 278kg/ha 26N 95c3
After Cutting = 150kg/ha 0:20:30

Owton Farm Interview Notes

Focussing on last year's activities/crops it would be useful to know:

6. The percentage of your fields directly adjacent to watercourses; **approx. 60%**
7. The types of field boundaries and the approximate percentage of these types (i.e. hedges, walls, fences or other); **hedges (80%), fences (5%) and trees (15%)**
8. The area (in hectares) of each type of land use, including types of crops, pasture, rough grazing, grassland, orchards, bare fallow, woodland and set aside;
 - **60ha total**
 - **Pasture 50ha**
 - **Maize 6.75ha (2.75ha and 4ha parcels alternating every two years) I had 4 ha maize**
 - **Silage 22.16ha I had 60 acres/ 24ha silage**
 - **3.25ha other**
9. Fertiliser (N and P₂O₅) additions in kg/ha for each type of land use. Typical application rates for some crops are included on the spreadsheet, but these can be modified to suit your own applications;
 - **Maize – 20/10/10 fertiliser applied 150kg per acre (or 370kg per ha) = 2497kg total on maize fields.**
 - **Silage – 25/15 fertiliser 75kg per acre (or 185kg per ha) I had it as after silage cut 25/5/15 applied (75kg)**
 - **Pasture – 34.5% N fertiliser 200kg in 3 doses**
10. Manure applications - including tonnage and type of manure received on site and the percentage application to the respective land uses.
 - **Maize – 24 tons per ha (10 tons per acre)**
 - **Silage – the same as maize? I had the farm yard manure as 10 tonnes overall applied to silage & maize fields (not per acre) applied in 1 dose in April and then ploughed in after 1 week, or sometimes a couple of days between application and ploughing**
 - **No manure imports**
 - **All farm yard manure (FYM) only applied on fields used for maize and silage**
 - **No dirty water store / slurry store on site. No manure exported.**

For each type of land use, we would also be interested in the respective field operations, including:

6. Length of ley; **2 years**
7. The number of times each year the land is ploughed, cultivated, harrowed, subsoiled, disced, rolled, sprayed, fertilised etc. **Land chain harrowed once in spring, they use a slot drill to overseed the grass**
8. Type of equipment used for planting; **One JCB and one tractor**
9. Any irrigation (mm/ha); **None**
10. Number of cuts per year and type of harvesting equipment used. **Contractors brought in to harvest who use the tractor. (For the maize field).**
For hay /

Finally, we would also be interested in what type of vehicles/plant you regularly use on the farm e.g. tractors, pick-ups, quad bikes etc. **JCB and tractor only.**

Animal stock:

1 bull

70 cows < 1 year old

50 cows 1-2 years old

20 cows 2+ years old

Typically 220 cows start the winter diminishing to 160 in spring.

Simon confirmed that he farmed all of the fields to the south of Fir Tree Lane, apart from the field across Burnetts Lane in the far south east corner of the development site, this is owned by Queens College. He owns the land which the solar farm is and leases it to the solar farm. He cuts the grass around the solar farm 3 times a year and leaves the grass in situ.

24ha/56.8 acres silage but when the silage fields are measured on GIS they are around 29ha so this higher figure is used in Farmscoper. Silage fields receive part of the 10 tonne manure along with 100kg / acre 20/10/10. Also there is an after cut application of 25/5/15 at 75kg/acre

Fields around 72.15 acre total for silage so 7215kg 20/10/10 fertiliser of which 20% is Nitrate, so 1443kg N total, /29.2ha = 49.42 kg N/ha.

Plus 5411 kg of 25/5/15 of which 25% is N, 1352 kgN / 29.2ha = 46.33 kg N/ha

Both Fertiliser applications total 120 kg N/yr/ha. The silage production at the Marshes Farm (out of the site) uses 100kgN / yr I don't know whether this is also grazed, so the Owton's figure doesn't seem too far out.

40ha/98.8 acres pasture, around 25 ha of this is permanent pasture (during grazing season) and the remainder is grown for silage in the spring & then grazed afterwards. Fields 32, 33, 47, and 48 are classed as silage fields, these are cut in May and then cattle graze them from June until early November.

4ha maize grown for cattle feed & used on site. Fertilised with manure and 20/10/10

Field 51 classed as set aside as owned by Queens College, grass field possibly grazed but no info on this, if information is obtained then this can be added in.

The fields to the west of the site are not cut for silage and are only grazed, these are grazed from mid-March, cattle are housed in the barn during the winter – early Nov to mid-March depending on how wet the ground is this can vary. Grazing fields receive 34.5N 200kg ammonium nitrate 3 times a year, this is 200kg total throughout the year, not each time. So 34.5%N which equates to around 3kg N/ha applied per year, (this seems low but I did check this figure with him today).

Appendix 4 ADAS Farmscoper Inputs & Outputs

Input

[illegible]



Farmscoper Create

03/11/2020



File Information	
Create File:	201105 PB Revision
Climate:	700 - 900 mm
Soil Type:	Impermeable - Drained for Arable
Farm Area:	56.11 ha

	Nitrate (kg)	Phosphorus (kg)	Sediment (kg)	Ammonia (kg)	Methane (kg)	Nitrous Oxide (kg)	Pesticides (units)	FIOs (10 ⁹ cfu)	Soil Carbon (t)	Energy Use (kg CO ₂)	Production (£)
Arable	1,265	23.15	17,676	430.3	0	266.3	1.28	15	4,748	39,896	-
Grass	304	2.57	707	187.6	1,966	210.6	0.00	1,477	2,505	15,768	-
Rough	0	0.00	0	0.0	0	0.0	0.00	0	0	0	-
Other	7	0.70	1	32.5	82	3.3	0.61	106	0	11,399	-
Total	1,576	26.42	18,384	650.3	2,047	480.1	1.89	1,598	7,254	67,063	66,147

Report Units
☒ Total Loss
☐ Loss Per ha

Compact or Expand Report

Arable Cropping	ha
Winter Wheat	8
Winter Barley	0
Spring Barley	0
Winter OSR	0
Maize	8
Potatoes	0
Sugar Beet	0
Peas	0
Beans	0
Fodder Crops	10
Other Crops	0
Vegetables (Brassicas)	0
Vegetables (Other)	0
Orchards	0
Soft Fruit	0
Bare Fallow	0
Set Aside	8
Woodland	3

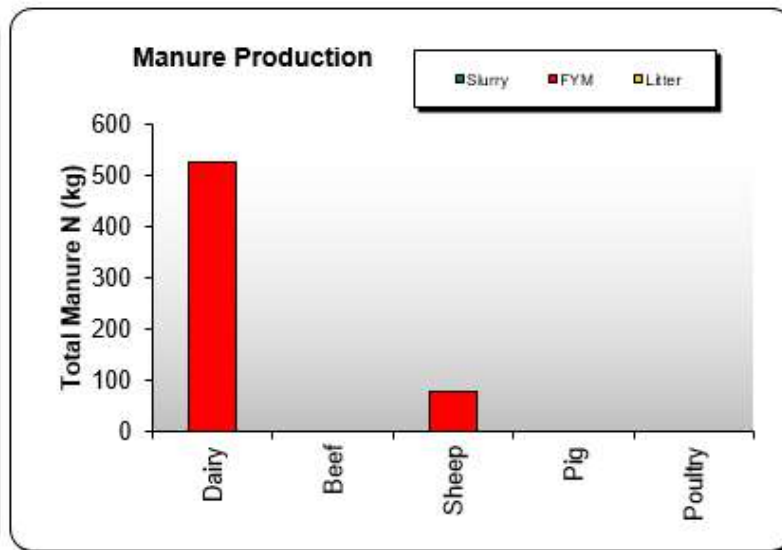
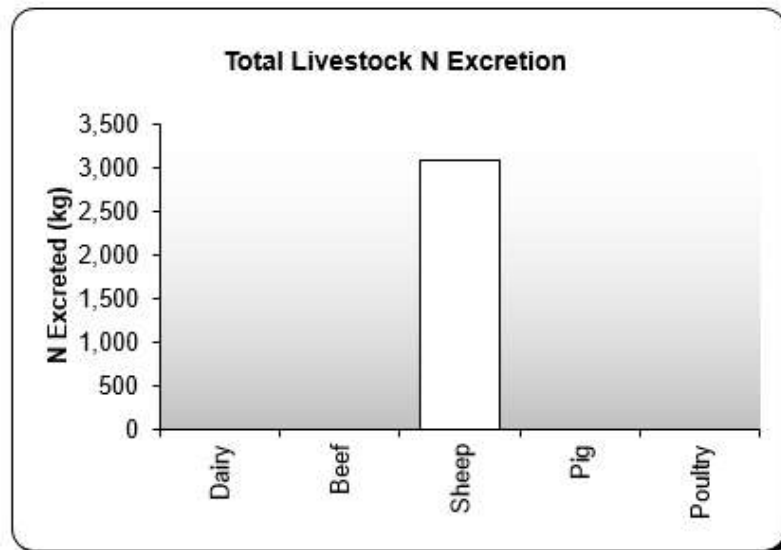
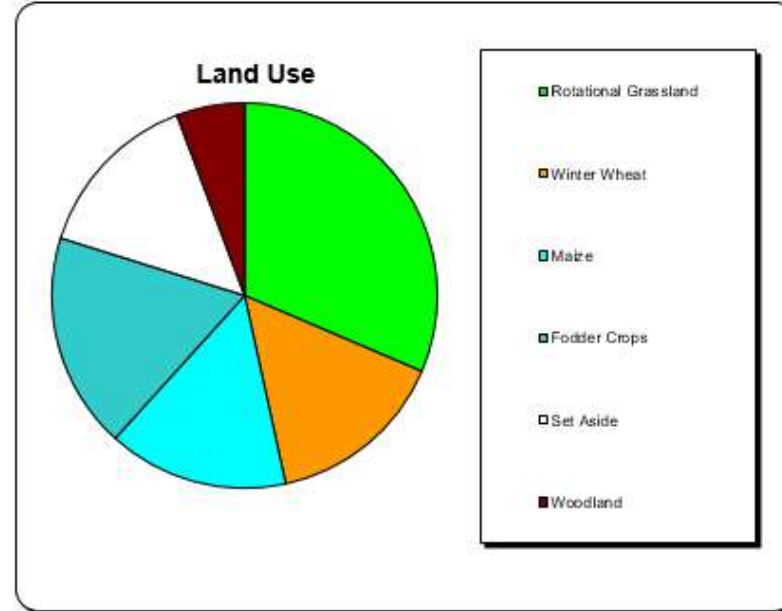
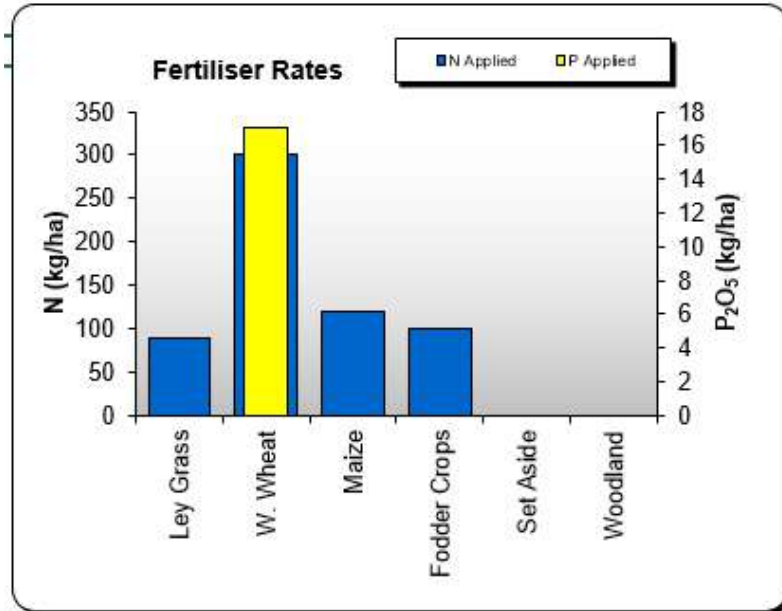
Grassland	ha
Permanent Pasture	0
Rotational Grassland	18
Rough Grazing	0

Livestock	Count
Dairy	
Cows and Heifers	0
Heifers in Calf (2 years +)	0
Heifers in Calf (< 2 years)	0
Beef	
Cows and Heifers	0
Heifers in Calf (2 years +)	0
Heifers in Calf (< 2 years)	0
Other Cattle	
Bulls (2 years +)	0
Cattle (2 years +)	0
Cattle (1 - 2 years)	0
Cattle (< 1 year) & Calves	0
Sheep	
Sheep	250
Lambs (< 1 year)	0

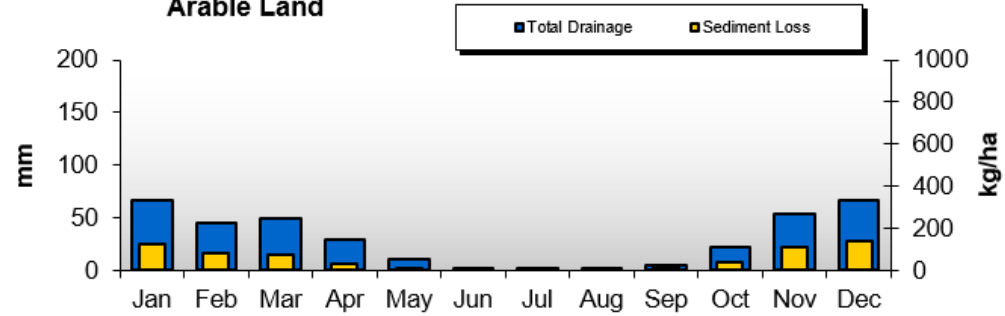
Livestock	Count
Indoor Pigs	
Sows in Pig & Other Sows	0
Gilts in Pig & Barren Sows	0
Gilts Not Yet in Pig	0
Boars	0
Other Pigs (> 110kg)	0
Other Pigs (80 - 110kg)	0
Other Pigs (50 - 80kg)	0
Other Pigs (20 - 50kg)	0
Other Pigs (< 20kg)	0
Outdoor Pigs	
Sows in Pig & Other Sows	0
Gilts in Pig & Barren Sows	0
Gilts Not Yet in Pig	0
Boars	0
Other Pigs (> 110kg)	0
Other Pigs (80 - 110kg)	0
Other Pigs (50 - 80kg)	0
Other Pigs (20 - 50kg)	0
Other Pigs (< 20kg)	0

Livestock	Count
Poultry	
Layers	0
Layers (Free range)	0
Pullet	0
Broilers	0
Turkeys	0
Breeding Birds	0
Other Poultry	0

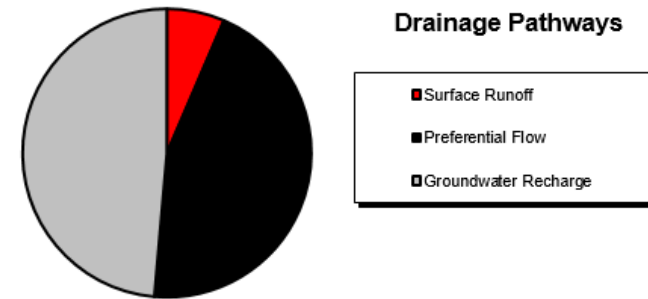
Manure Values	kg N
Dairy FYM	528
Dairy Slurry	0
Beef FYM	0
Beef Slurry	0
Sheep FYM	78
Pig FYM	0
Pig Slurry	0
Poultry Muck	0



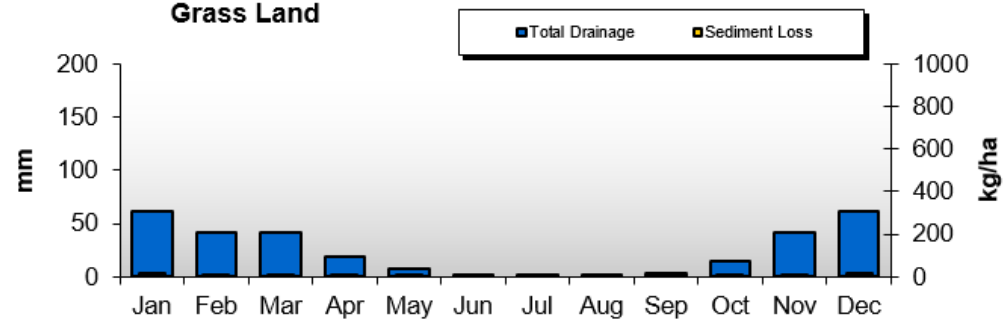
Arable Land



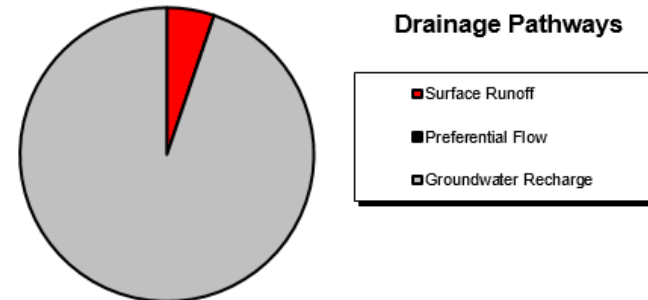
Drainage Pathways

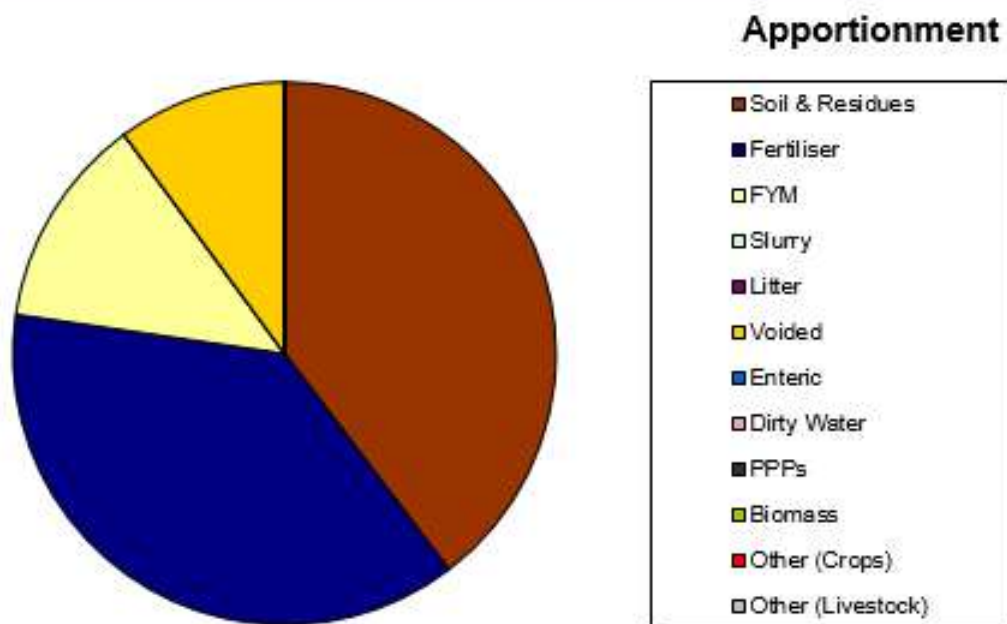
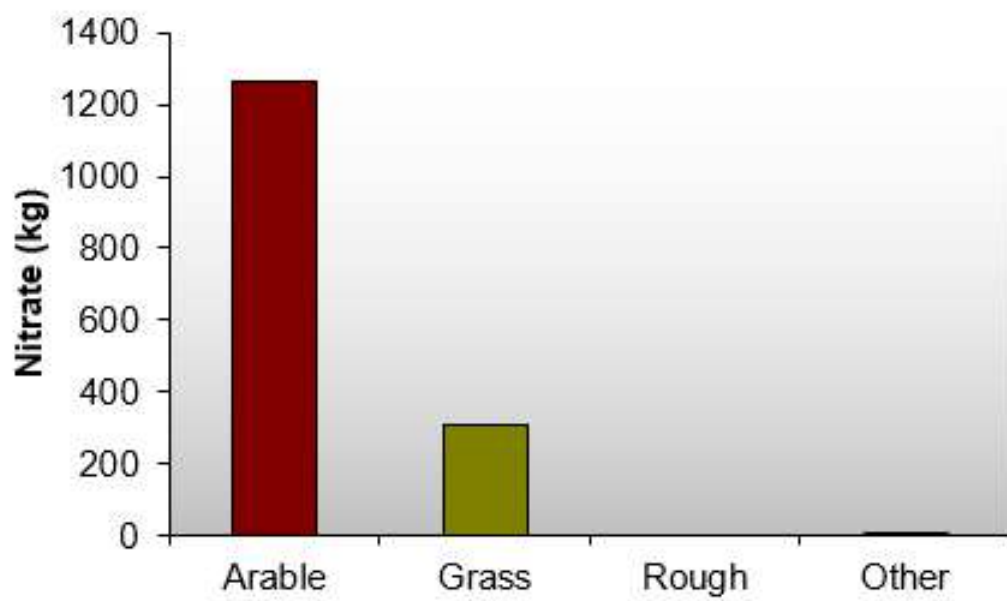


Grass Land



Drainage Pathways





Results Summary

Farmed area = 53.46 ha (including set aside and woodland)

Annual total applied fertiliser-N = 7670.9 kg NO₃-N

Annual total applied FYM-N = 173.0 kg N

Annual total agricultural applied N = 7843.9 kg N

Annual total Nitrate-N loss = **1576.4 kg NO₃-N**

Percentage Nitrate-N loss of agricultural N input = 20.1 %

Nitrate-N loss from arable land uses = 1265 kg NO₃-N (80.2 % of total loss)

Nitrate-N loss from grassland uses = 304 kg NO₃-N (19.3 % of total loss)

Nitrate-N loss from other uses = 7 kg NO₃-N (0.4 % of total loss)

Average concentration in runoff = 8.96 mg NO₃-N/l

Annual total Ammonia (gaseous) loss = 650.3 kg NH₃-N

Annual total Nitrous Oxide (gaseous) loss = 480.2 kg N₂O



Appendix 5 Baseline Tracker

Masterplan

Parcel	Farm Area	Area (Ha)	Use	Nitrate Output/ha (kg)	Total Nitrate Output (kg)	Phosphorus Output/ha (kg)	Total Phosphorus Output (kg)	Sediment Output/ha (kg)	Total Sediment Output (kg)	Comments
0.1	-	1.13	U	15.38	17.33	1.65	1.86	502.00	565.51	
0.2	-	0.07	U	15.38	1.08	1.65	0.12	502.00	35.22	
0.3	Owton	0.63	U	15.38	9.75	1.65	1.05	502.00	318.11	Sediment derived from Ellis (1996) according to most relevant road type
0.4	-	0.35	U	15.38	5.44	1.65	0.58	502.00	177.71	
0.7	Owton	0.58	U	15.38	8.97	1.65	0.96	502.00	292.66	
0.8	Owton	0.13	R	0.00	0.00	0.00	0.00	0.00	0.00	
1	-	1.03	U	15.38	24.51	1.65	2.83	75.00	77.29	1x Residential property allowance added for N and P
2	-	0.52	U	15.38	7.97	1.65	0.86	75.00	38.88	
3	-	0.19	U	15.38	11.58	1.65	1.44	75.00	14.25	
4	Marsh	1.10	F	25.33	26.64	0.73	0.80	682.28	750.03	
5	Marsh	1.38	F	25.33	33.35	0.73	1.00	682.28	938.68	
6.1	Marsh	5.97	RG	17.34	99.05	0.73	4.36	40.35	240.87	
7	Marsh	1.76	W	0.25	0.43	0.02	0.04	0.31	0.54	
8	Marsh	1.56	F	25.33	37.92	0.73	1.14	682.28	1,067.56	
9	Marsh	7.35	RG	17.34	121.92	0.73	5.36	40.35	296.49	
10	Marsh	4.54	M/W	49.95	216.97	0.95	4.31	616.70	2,799.34	
11	Marsh	2.87	F	25.33	69.44	0.73	2.09	682.28	1,954.80	
12	Marsh	0.63	F	25.33	15.23	0.73	0.46	682.28	428.74	
13	-	0.95	U	15.38	40.63	1.65	4.96	75.00	123.75	3x Residential property allowance added for N and P
14	Marsh	0.43	F	25.33	10.43	0.73	0.31	682.28	293.65	
15	Marsh	7.46	M/W	49.95	356.64	0.95	7.09	616.70	4,601.51	
16	Marsh	0.48	F	25.33	11.75	0.73	0.35	682.28	330.74	
17	Marsh	1.61	SA	20.96	32.24	0.73	1.17	69.80	112.17	
18.1	Marsh	0.63	SA	20.96	21.39	0.73	1.59	69.80	44.29	1x Residential property allowance added for N and P
18.2	Marsh	0.52	W	0.25	0.13	0.02	0.01	0.31	0.16	
19	Marsh	3.88	SA	20.96	77.75	0.73	2.83	69.80	270.53	
20	Marsh	0.73	SA	20.96	14.58	0.73	0.53	69.80	50.74	
21	Marsh	0.51	W	0.25	0.12	0.02	0.01	0.31	0.16	
22	-	0.65	U	15.38	9.99	1.65	1.07	75.00	48.74	
23	Marsh	4.94	M/W	49.95	236.26	0.95	4.70	616.70	3,048.30	
24	Marsh	0.38	SA	20.96	7.61	0.73	0.28	69.80	26.48	
25	-	0.64	U	15.38	18.46	1.65	2.18	75.00	47.79	1x Residential property allowance added for N and P
26	Marsh	4.20	RG	17.34	69.71	0.73	3.07	40.35	169.53	
27	Marsh	1.02	F	25.33	24.64	0.73	0.74	682.28	693.70	
28	Marsh	0.28	F	25.33	6.85	0.73	0.21	682.28	192.86	
29	Marsh	1.36	W	0.25	0.33	0.02	0.03	0.31	0.42	
30	Owton	2.88	PP	33.85	93.25	0.60	1.73	39.62	114.06	
31	Owton	3.10	M	44.61	132.16	0.95	2.94	691.13	2,139.31	
32	Owton	4.76	RG	33.85	154.17	0.73	3.47	39.62	188.57	NB - 20% uplift to livestock inputs on grazed land for Owtons farm to reflect increased grazing season, added to the Nitrate Output/ha score
33	Owton	9.81	RG	33.85	317.76	0.73	7.16	39.62	388.66	
34	Owton	1.31	PP	33.85	42.60	0.60	0.79	39.62	52.10	
35	Owton	1.75	PP	33.85	56.79	0.60	1.05	39.62	69.46	
36	Owton	1.42	PP	33.85	46.07	0.60	0.85	39.62	56.34	NB - 20% uplift to livestock inputs on grazed land for Owtons farm to reflect increased grazing season, added to the Nitrate Output/ha score
37	Owton	0.15	PP	33.85	4.85	0.60	0.09	39.62	5.94	
38	Owton	3.81	PP	33.85	123.32	0.60	2.28	39.62	150.84	
39.1	Owton	0.66	PP	33.85	21.27	0.60	0.39	39.62	26.02	
39.2	Owton	0.34	W	0.25	0.08	0.02	0.01	0.31	0.10	
40	Owton	3.56	PP	33.85	115.20	0.60	2.13	39.62	140.91	

Parcel	Farm Area	Area (Ha)	Use	Nitrate Output/ha (kg)	Total Nitrate Output (kg)	Phosphorus Output/ha (kg)	Total Phosphorus Output (kg)	Sediment Output/ha (kg)	Total Sediment Output (kg)	Comments
41	Owton	0.88	PP	33.85	28.44	0.60	0.53	39.62	34.79	NB - 20% uplift to livestock inputs on grazed land for Owtons farm to reflect increased grazing season, added to the Nitrate Output/ha score
42	Owton	0.61	PP	33.85	19.85	0.60	0.37	39.62	24.28	
43	Owton	2.55	PP	33.85	82.56	0.60	1.53	39.62	100.98	
44	Owton	2.09	U	8.20	43.13	1.21	5.92	750.00	1,568.19	Added as a commercial/industrial property from Allen (2017) 3x Residential property allowance added for N and P
45	Owton	1.81	PP	33.85	58.78	0.60	1.09	39.62	71.89	NB - 20% uplift to livestock inputs on grazed land for Owtons farm to reflect increased grazing season, added to the Nitrate Output/ha score
46	Owton	2.94	PP	33.85	95.38	0.60	1.77	39.62	116.66	
47	Owton	6.65	RG	33.85	215.31	0.73	4.85	39.62	263.35	
48.1	Owton	7.81	RG	33.85	252.89	0.73	5.70	39.62	309.31	NB - 20% uplift to livestock inputs on grazed land for Owtons farm to reflect increased grazing season, added to the Nitrate Output/ha score
49	Owton	0.82	PP	33.85	26.55	0.60	0.49	39.62	32.47	
50.1	Owton	1.33	PP	33.85	42.95	0.60	0.80	39.62	52.54	
50.2	Owton	1.09	SA	21.63	22.59	0.73	0.80	69.80	76.18	
Total		124.59			3,643.06		107.13		26,035.11	