University of Exeter

Doctoral Thesis

The Medieval Iron Industry of the Weald

Centres of Production and Manorial Ironworks

Volume 2 of 2

Submitted by John Lincoln Mark Cranfield to the University of Exeter as a thesis for the degree of Doctor of Philosophy in Archaeology

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Signature Jaux Garperd

Appendix A

Secondary sources

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Appendix A: Secondary Sources

Appendix A1: Historical Sources Pertaining to Roffey

| Date | Source | Bibliographic Ref | Description | Significance |
|------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| 1296 | Sussex Subsidy Rolls 1296 | Hudson, W. (1910) 'The Three Earliest Subsidies for the County of Sussex in the years 1296, 1327 and 1332', The Sussex Record Society, 10. The Sussex Record Society | Subsidy Rolls record 18 people as paying tax in the Villat' de Rozghee. Total taxation came to £4 6s. 0 d. | |
| 1315 | C. 5274 | Maxwell Lyte, H.C. (1915 b) 'Deeds: C.5201 - C.5300', in Maxwell Lyte, H.C. (ed.) A Descriptive Catalogue of Ancient Deeds: Volume 6. London: Her Majesty's Stationary Office, 188-204. | Quitclaim by Christian de Effolde to William Urri of 2a. land in a field called 'le Tyghe' between his land, land of Thomas le Lewere and land formerly of Richard de Effolde, her father, at 'la Rogheye' in Horsham. Horsham, Sunday after St. Gregory the Pope, 8 Edward II. | Possible reference to common fields existing at Roffey. |
| 1327 | Chancery Liberate Rolls 12 Edw. III | Durrant Cooper 1865, 117 | The Sheriff was allowed: £43 6s. 8d., for the purchase of 200 quarters of wheat; £4 3s. 4d., for 1000 horseshoes; 2s. 1d., for measuring the wheat; 3s., for the carriage of the horseshoes from Le Rogheye, near Horsham, where they were made, to Shoreham; 4s. 8d., for the purchase of 14 barrels to put these horseshoes, and 3000 others, and 80,000 nails in; 4d., for wooden hoops for the barrels; 2d., for iron nails to strengthen the bottoms of the barrels; 7d., for the wages of the workmen cleaning and hooping the barrels; 14d., for the porterage of them to the ship; 100s., for freight from Shoreham to Newcastle-upon-Tyne; and 10s., for the wages of a clerk to take care of them on board ship. | |
| 1338 | | Lower 1870, 239 Hurst 1889, 9 | Horsham noted for its quarrels, or arrows shot from crossbows. The Sheriff of Sussex purchased 6000 arrows, 240 sheaves at 14d, each sheaf to contain good dry wood, with heads well sharpened, called dogebil. The record tells us that these were placed within a cask and taken from Horsham to the Tower of | |

| | | | London – this all cost £14. 10s. 4d | |
|------|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date | Source | Bibliographic Ref | Description | Significance |
| 1340 | Deeds: B.1501- B.1600 | Maxwell Lyte, H.C. (1890) 'Deeds: B.1501 - B.1600', in Maxwell Lyte, H.C. (ed.) A Descriptive Catalogue of Ancient Deeds: Volume 1. London: Her Majesty's Stationary Office, 359-368. | 1340 - Grant by Robert Edyng, of Ma Rogheye, 'to William le Rose, of the same place, of houses and curtilages in 'la Rogheye' (Deeds: B.1501- B.1600). | Suggestive of the existence of a settlement at Roffey by 1340. |
| 1342 | C. 4327 | Maxwell Lyte, H.C. (1915 c) 'Deeds: C.4301 - C.4400', in Maxwell Lyte, H.C. (ed.) A Descriptive Catalogue of Ancient Deeds: Volume 6. London: His Majesty's Stationary Office, 66-78. British History Online [Online]. Available at: http://www.british-history.ac.uk/ancient-deeds/vol6/pp66-78 (Accessed 26 October 2022). | Grant by Roger Schullyghe of Rogheye to William called 'le Taylur' of Rousparr of a field in the parish of Rousparr opposite the highway from Rogheye to Cherlewod. Sunday before Hokkeday, 16 Edward III. | Roffey existed as a hamlet by this date for it is referred to as a location. |
| 1345 | Descriptive Catalogue of Ancient Deeds: Volume 3 | Maxwell Lyte, H.C. (1900) 'Deeds: B.4001 - B.4100', in Maxwell Lyte, H.C. (ed.) A Descriptive Catalogue of Ancient Deeds: Volume 3. London: Her Majesty's Stationary Office, 282-293. British History Online [Online]. Available at: http://www.british-history.ac.uk/ancient-deeds/vol3/pp282-293 (Accessed 17 September 2020). | Demise by Thomas Chyew de la 'Rogheye,' to Matilda, late the wife of Walter de Bonewyk, for two hundred years, of a smithy with the bellows, anvils, hammers &c. belonging thereto, and a portion of a garden adjoining, with a way to a well situate at 'la Rogheye' in Horsham. 3 October, 18 Edward III. Seal, broken. | |
| 1369 | | Sussex Fines: 41-45 Edward III | 1369 - John Urry v. Henry Bussh and Agnes his wife; 5 acres of land, 5 acres of pasture, 6d. rent in le Rogheye; to John for 10 marks (Sussex Fines: 41-45 Edward III) | Could this be referring to Bush Copse? |
| 1381 | 2614 | Salzmann, L.F. (1916 a). 'Sussex Fines: 11- 15 Richard II', in Salzmann, L.F. (ed.) An Abstract of Feet of Fines for the County of Sussex: Volume 3, 1308-1509. Lewes: Sussex Record Society, 194-200. | 2614. John Bonewyk of Horsham and Simon Andreu, citizen and saddler of London, and Agnes his wife; a messuage, 8 acres 3 roods of land in Roghey by Horsham; to John. (File 77. No. 33.) 14 Richard II | Continued connection to Roffey by the Bonwick family |
| 1383 | C. 3387 | Maxwell Lyte, H.C. (1900) 'Deeds: C.3301 - B.3400', in Maxwell Lyte, H.C. (ed.) A Descriptive Catalogue of Ancient Deeds: Volume 3. London: Her Majesty's Stationary Office, 351-362. British History Online [Online]. Available at: http://www.british-history.ac.uk/ancient-deeds/vol3/pp351-362 (Accessed 12 May 2023). | 1383 - Grant by John Urry and John Pope, to James Urry and John his son, of two crofts called 'Bakeresham' and 'Hugetesham' lying at 'La Rogheye' (Deeds: C.3301-C.3400). Could this be Bakehouse Field it is referring to? | Suggests the origins of Bakehouse Field and the possibility of baking as an industry at Roffey in the 13 th / 14 th centuries. |
| 1383 | C.4984 | Maxwell Lyte, H.C. (1915 a) 'Deeds: C.4901 - C.5000', in Maxwell Lyte, H.C. (ed.) A Descriptive Catalogue of Ancient Deeds: Volume 6. London: Her Majesty's Stationary Office, 146-159. British History Online [Online]. Available at: http://www.british-history.ac.uk/ancient-deeds/vol6/pp146-159 (Accessed 5 May 2020). | 1383 - Grant by James Edyng to William Marscot of all his land, &c. in 'La Rogheye' in the parish of Horsham; also grant that a field called 'Westfeld' with [meadow] called 'Asshefold' and 1a. arable lying in the said meadow with two gardens lying at the said field [and] meadow, in the parish of Horsham, which William Bonwyk and Alice his | This could be referring to the field West Mead – particularly when it says the field is also a meadow. |

| Date 1390 | Source 2614 | Bibliographic Ref D. Hurst 1889, 146 Salzmann, L.F. (1916 a). 'Sussex Fines: 11- | wife hold for the term of the life of the said Alice, of him and his heirs by his gift, with reversion to himself, his heirs and assigns, may remain to the said William. Description John Bonewyk of Horsham and Simon Andreu, citizen and saddler of London, and Agnes | Significance |
|------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | 15 Richard II', in Salzmann, L.F. (ed.) An Abstract of Feet of Fines for the County of Sussex: Volume 3, 1308-1509. Lewes: Sussex Record Society, 194-200. | his wife; a messuage, 8 acres 3 roods of land in Roghey by Horsham; to John. (File 77. No. 33.) 14 Richard II | |
| 1425 | B.1591 | Maxwell Lyte, H.C. (1890) 'Deeds: B.1501 - B.1600', in Maxwell Lyte, H.C. (ed.) A Descriptive Catalogue of Ancient Deeds: Volume 1. London: Her Majesty's Stationary Office, 359-368. | B. 1591. Demise by Thomas Pottere and William Cloterwyne to William Wallere, William Stowe, John Wodye and Thomas Coupere, of a messuage at Rogheye called 'Roseplace' in the parish of Horsham which they had of the feoffment of the said Thomas Coupere. 26 September, 4 Henry VI. Seals, broken. | Surnames such as Pottere and Coupere are suggestive of industries – or former industries in the area. |
| 1439 | Arundel Cast. MS. A 1859 | Baggs, C.R.J., Currie, C.R., Elrington, Keeling, S.M. and Rowland, A.M. (1989). 'Horsham: Manors and other estates', in Hudson, T.P. (ed.) A History of the County of Sussex: Volume 6 Part 2, Bramber Rape, London: Oxford University Press, 156-166. | A reference to a park existing at Roffey Manor is made in 1439, which was located within St Leonards Forest and by 1480 was recorded as Old Park and Home Park | |
| 1442 | 3142 | D. Hurst 1889, 146 Salzmann, L.F. (1916 b) 'Sussex Fines: 36- 39 Henry VI', in Salzmann, L.F. (ed.) An Abstract of Feet of Fines for the County of Sussex: Volume 3, 1308-1509. Lewes: Sussex Record Society, 269-272. | John Michelgrove, esquire, Bartholomew Bolney, William Gaynesford, William Sondes, John Ernele, John Threle, Richard Profyt and John Foche, clerk, v. Thomas Hoo, esquire, and Alice his wife; manors of Warnham and Roghey, and 8 messuages, 800 acres of land, 200 acres of meadow, 300 acres of pasture, 500 acres of wood, 300 acres of heath, £14 rent in Warnham, Roghey, Horsham, Rowesparre and Hechyngfeld; to John Foche, etc. (File 91. No. 19.) | A fine was levied by John Michelgrove and others, by which the manor of Roughey was settled on Thomas Hoo, Esq., and Alice, his wife |
| 1449 | B. 4043 | Maxwell Lyte, H.C. (1900 a) 'Deeds: B.4001 - B.4100', in Maxwell Lyte, H.C. (ed.) A Descriptive Catalogue of Ancient Deeds: Volume 3. London: Her Majesty's Stationary Office, 282-293. | B. 4043. Grant by Thomas Edward of Leuesham, co. Kent, to Thomas Hoo, esquire, John Fysshlake, clerk, and John Wodye, of all the lands and tenements at Rogheye in Horsham, late John Edward's, the grantor's father; also letter of attorney authorising William Wallere, to deliver seisin. 16 May, 27 Henry VI. Seal. | |

| 1480 | Deed of Gift to Battle Abbey by Thomas Hoo | Thorpe, T. (1835) Descriptive Catalogue of the Original Charters, Royal Grants, and Donations, many with the seals, in fine preservation, monastic chartulary, official, manorial, court baron, court leet, and rent rolls, registers, and other documents, constituting the Muniments of Battle Abbey London: Thomas Thorpe. | Deed of Gift to Battle Abbey by Thomas Hoo. Refers to Old Park and Home Park at the Manor of Roffey. | Manor of Roffey and Old Park and Home Park |
|------|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Date | Source | Bibliographic Ref | Description | Significance |
| 1480 | Battel Abbey | Turner, E. (1865). Battel Abbey. Sussex Archaeological Collections Vol. XVII, 20-21 | Deed: The half-brother of Sir Thomas Hoo, also called Thomas Hoo, gave to the Abbot and convent of Battel, rents, lands, and tenements, in the manor of Roughey, and in the parishes of Horsham and Ruspar, and other properties in and about Horsham, which he had purchased of John, Duke of Norfolk; and lands in the parish of Farleigh, for the maintenance of two monks within the Abbey, whose duty it was to be to celebrate at the obsequies, and at all future times to pray in the Abbey Church for the soul of Sir Thomas Hoo' | Demonstrates the existence of the Manor of Roffey by 1480 and the existence of tenements. |
| 1481 | B. 4041. | Maxwell Lyte, H.C. (1900 a) 'Deeds: B.4001 - B.4100', in Maxwell Lyte, H.C. (ed.) A Descriptive Catalogue of Ancient Deeds: Volume 3. London: Her Majesty's Stationary Office, 282-293. | Release by William Est and Thomas Agas, to John, bishop of Ely, and others (named), of all their right in the lands and tenements at Roughey in Horsham, called 'Elyottes,' 'Cokhuntys grove,' 'Hethelonde and 'Segrymes,' late Henry Boteler's of Horsham, and which they had of the demise of Bartholomew Bolney. 29 October, 20 Edward IV. Seal. | Likely origin of the fieldname Elliots Mead. Elliots Mead – probably refers to a tenement called Elyottes, which is recorded in 1481. |
| 1495 | B. 4047 | Maxwell Lyte, H.C. (1900 a) 'Deeds: B.4001 - B.4100', in Maxwell Lyte, H.C. (ed.) A Descriptive Catalogue of Ancient Deeds: Volume 3. London: Her Majesty's Stationary Office, 282-293. | Demise by Henry Roos, knight, Richard Emson, John Apsley, Andrew Wyndesora, esquires, and Edmund Dudley, to Thomas, earl of Surrey, Henry Chauncy, Bennet Brocas and John Horseman, of the manor of Colstaple in Horsham, with a messuage called 'Stanes,' another messuage and land called 'Edwardys,' a pasture called 'Ganteryns,' and pasture within Rowghey park called 'Bonewyckys,' other land in the same park and an acre of pasture in Rowghey, and all the lands and tenements &c. in Horsham called 'Langherst'; which manor and other premises they, with John, archbishop of Canterbury, and others (named), had of the gift | Pasture within Roughey Park referred to as 'Bonewyckys' suggesting land formally held by the family. |

| | | | of Henry Assheborne, and Thomas Butsyte, by deed dated 4 December, 10 Henry VII; also letter of attorney authorising Henry Mychell and Richard Foyce to deliver seisin. 14 February, 19 Henry VII. Signatures of Emson and Dudley. Three seals, one broken, and seal of arms. | |
|------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date | Source | Bibliographic Ref | Description | Significance |
| 1549 | Inventories of Goods, & c., in the Manor of Cheseworth in the Countie of Sussex. | Ellis, H. (1861). Inventories of Goods, & c., in the Manor of Cheseworth, Sedgewick, and other Parks, the Manor Place of Sheffield, and in the Forest of Worth, with the Iron-works belonging to the Lord Admiral Seymour, at the time of his attainder, taken 1549. Sussex Archaeological Collections Vol. XIII. | 'a payer of newe belowes; a cove iron; a grete andvyle; a sledge; ij. Hand hamers; ij payer tongs; one peyer of plyers; a stampe; a pounce; a horse nayle toole; a perser to make holys in horse shoys; a chesell; a shovyll for cloys; a poynttyng stethye [small anvil]; a pan to dres horssez fete; a pece of a brokyn pan; a pece of a swadyng iron; a payle; a marking iron; a small perser; a bedsted in the smythe's chamber; a perser iiij or. Square.' | Although of a post medieval date, this inventory outlines the equipment contained within a smithy in the local area of Roffey. Roffey formed a sub-manor of the Manor of Cheseworth and this smiths, whether it be the Roffey smithy 200 years later? S likely to still represent a typical smiths. |

Appendix A2: The Tudeley Ironworks Accounts

The following accounts were originally transcribed by Montague Spencer Giuseppi who discovered them at the Public Records Office (PRO) and published in *Archaeologia* in 1913. The accounts were subsequently translated by Anne Drewery in 1998 and published in *Wealden Iron* by Hodgkinson and Whittick (1998). The transcription and translations have been reproduced here, and placed side by side with photographs of the original manuscript, by the author. Permission to view and photograph the accounts was kindly given by the National Archives. The archive numbers of each record are provided alongside each account.

1329-1330 (PRO SC 6/890/22)

Compotus Ricardi de Grofherst custodis chacie domine Elizabethe de Burgo domine de Clara de Southfryth a festo Ominium Sanctorum anno regini regis Edwardi tercii a conquest tercio usque [ad] festum Sancti Michaelis proximum sequens videlicet regini regis predicti quarto.

Account of Richard de Gothurst, keeper of Lady Elizabeth de Burgh, lady of Clare's chase of Southfrith, 1 November 1329 – 29 September 1330

Idem respondet de viij li. Iij s. viij d. ob. De exitibus fabrice ut extra.

Summa – viij li. iij s. viij d. ob.

He answers for £8 3s 8½d for the issues of the works as over

Sum £8 3s 81/2d

Compotus de fabrica de Teudele anno regni regis Edwardi tercii a conquest quarto.

Account of the works of Tudeley for 1329-1330

Idem respondet de xx li. di- xj d. ob. de ix(xx small) xiiij blomos ferri de exitibus fabrice predicte venditis precium C. xv marce dimidium. Et de xxviij s. de bosco mortuo in Southfryth vendito pro carbonibus faciendis ad dictos blomos conflandos.

summa – xxj li. viij s. xj d. ob.

He answers for £20 0s 11½d for the sale of 194 blooms of iron of the issues of the said works, at 15½ marks [£10 6s 8d] per hundred; and of 28s for dead wood in Southfrith sold for making charcoal for blowing the said blooms.

sum £21 8s 11½d

[Item] in petris fodiendis ad ix(xx small) xiiij blomos cum cariagio earundem ad furnum xl s. In eisdem elendis iij s. vj d. pro C. ij s.

In digging stones for 194 blooms with carriage of them to the hearth 40s; in burning them (elendis) 3s 6d, at 2s per 100

Note: elendis could mean 'to be sifted' or 'be eliminated' as there is a similar Turkish word for this 'elendi'. Perhaps this could relate to sorting the ore for purity and quality? Does eisdem translate as 'the same' in this instance? If so, could an alternative translation of this line be 'in sorting (sifting) the same [stones] 3s 6d, at 2s per 100' ([C)).

In xxxvj decenis carbonum empties pro dictis blom' faciendis vj li. vj s. pro decena iij s. vj d.

In 36 tens of charcoal bought for making the said blooms £6 6s (at 3s 6d per ten);

In salariis operariorum pro ix(xxsmall) xiiii blom' faciendis iiii li. viii s. xi d. pro capite v d. ob.

In the salaries of the workmen for making 194 blooms £4 8s 11d (at 5½d a head);

Note: Could this figure be used to work out how many workers there were at the works at this time? Based on the calculation 1 medieval pound = 240d, 1 shilling = 12d, so in total the salary expense was $1067d \div 5.5 = 194$. Pro capite does translate to 'a head' but perhaps it means salary per bloom? (JC).

In potagio operariorum xx d.

In the workmen's drink-money 20d;

In gersuma eorundem iij s. vj d.

In their bonus (gersuma) 3s 6d;

In utensilibus reparandis cum unncto [sic] empto ad follia xx d.

In repairing tools with grease bought for the bellows 20d.

Summa – xiij li. v s. iij d. Et debet viij li. iij s. viij d. ob. Et respondet infra.

Sum £13 5s 3d; and he owes £8 3s ½d and answers over.

1331-1332 (PROSC 6/890/24)

Compotus Johannis de Me... camerarii domine Elizabethe de Bourgo domine de Clare del Southfrith ab incrastino Sancti Michaelis [anno] regni regis Edwardi [tercii a] conquestu v° usque ad idem festrum anno regni regis ejusdem sexton per j annum.

Account of John de Me[synglegh], chamberlain of Lady Elizabeth de Burgh, Lady of Clare for Southfrith, 30 September 1331 – 30 September 1332.

Compotus fabrice de Teudele anno regni regis Edwardi tercii a conquestu sexton.

Account of the works of Tudeley for 1331 – 1332.

Idem respondet de cc xxiiij blom' factis de exitibus fabrice hoc anno. De quibus mercede operariorum pro dictis blom' faciendis xxxij blom', capientium pro opere suo septimam blom'. In vendicione ix(xxsmall) xij blom'.

He answers for 224 blooms made of the issues of the works this year; of which in the payment of the workmen for making them 32 blooms, taking for their work the seventh bloom; in sale 192 blooms.

Idem respondet de xvj li. de ix(xxsmall) xij blom' ferri venditis, precium blom' xx d.

He answers for £16 for 192 blooms of iron sold at 20d each.

In petris fodiendis ad cc xxiiij blom' ferri xl s. iiij d., pro C. xviij s.

In digging stones for 224 blooms of iron 40s 4d, at 18s the hundred;

In cariagio earundem ad furnum xij (?) s. ij (?) d. q^a.

In carriage of them to the hearth 12s 2 ¼ d [?];

In dictis petris [confl]andis iiij s vj d., pro C. ij s.

In blowing them 4s 6d, at 2s per 100;

Item solutis anterrioribus flatoribus pro opere suo de consuetudine xlij s. [pro] qualibet blom' ij d. q^a.

Paid to the fore-blowers for their work by custom 42s, at 2 ¼ d for each bloom;

Item ... carbonibus [em]ptis, qualibet decena continente xxiiij [quarteria] carbonum ad dictas blom faciendas... elandis vj li. xiij s. iij d., pro decena iij s. iij d.

In [41 tens] of charcoals bought, each ten containing 24 quarters, for making the said blooms [and] burning them £6 13s 3d, at 3s 3d per ten;

In cariagio eorundem ad fabricam xiij s. viij d. pro decena iiij d.

In the carriage of them to the works 13s 8d, at 4d per ten;

In potagio operariorum ij s.

In the workmen's drink-money 2s;

In reparacione diversorum utensilium dicte fabrice ij s.

In the repair of various tools of the said works 2s;

In stipendio operariorum quod dicitur gersuma iij s.

In the wage of the workmen which is called bonus (gersuma) 3s.

Summa – xij li. xij s. xj d. q^a.

Sum £12 12s 11 ¼ d.

Summa totalis expensorum xij li. xij s. xj d. q^a. Et debet lxvij s. [ob. q^a.] Unde respondet ut infra. Et sic quietus hic.

Sum total of expenses £12 12s 11 ¼d; and he owes 67s [¾d] whereof he answers as below; and thus he is quit here.

1332-1333 (PROSC 6/890/25)

Compotus Johannis de Mesynglegh camerarii domine Elizabethe de Burgo de Clara del Southfrith ab incrastino Sancti Michaelis Arcangeli anno regni regis Edwardi tercii a conquest sexton usque festum Sancti Michaelis Arcangeli anno regni regis ejusdem septimo per j annum.

Account of John de Mesynglegh, chamberlain of Lady Elizabeth de Burgh, Lady of Clare for Southfrith, 30th September 1332 – 30th September 1333.

Idem respondet de

He answers for

Vendicio petrarum.

Et de xij s. de petris venditis ad iij blom ferri, precium C. iiij s.

And for 12s for stones sold for 300 blooms of iron, at 4s a hundred

Summa - xij s.

Sum - 12s

Allocacio Fabrorum

Expensa.

In allocacione f[c]acta fabris pro c iiij x xviij blom' factis apud Teudel' que remanent extra usque in annum futurum vij li. x s. xj d. ob. q^{a} .

In allowance made to the smiths for 198 blooms made at Tudeley which remain over to next year £7 10s 11 $\frac{3}{4}$ d.

[In dorso]

Compotus fabrice de Teudele anno regni regis Edwardi tercii a conquest septimo.

Account of the works of Tudeley for 1332 - 1333

Idem respondet de cc xxxj blom' ferri de exitibus fabrice de Teudele hoc anno.

He answers for 231 blooms of iron of the issues of the works of Tudeley this year

Summa – cc xxxj blom'.

Sum – 231 blooms

De quibus in mercede operariorum pro dictis blom' faciendis xxxiij blom' capientium pro opere suo septimam blom'.

Of which in the payment of the workmen for making them 33 blooms, taking for their work the seventh bloom.

Summa – xxxiij blom' Et remanent c iiij^{xx} xviij blom'.

Sum – 33 blooms and there remain 198 blooms.

In petris fodiendis ad cc xxxj blom' ferri xlj s. vj d. ob., pro centena xviij s.

In digging stones for 231 blooms of iron 41s 6 ½ d, at 18s the hundred

In cariagio eorundem usque ad fernum xj s. vj d., pro centena v s.

In carriage of them to the hearth 11s 6d, at 5s the hundred

In dictis petris combustis iiij s. vij d. ob., pro centena ij s.

In burning the stones 4s 7 ½ d, at 2s the hundred

In mercede anteriorum flatorum de consuetudine facta xliij s. iij d. ob. q^a ., pro quolibet blom' ij d. q^a .

In the wage of the fore-blowers by custom 43s 3 ½ d, at 2 ¼ d for each bloom.

[In] vij decenis et dimidio carbonum emptis ad dictos blom' faciendos et petras ardendas preter xxxiiij decenas p... de bosco domine xxx s., pro decena iiij s.

In $7 \frac{1}{2}$ tens of charcoals bought for making the blooms and burning the stones, besides 34 tens made from the lady's wood, 30s, at 4s per ten.

In cariagio dictarum xxxiiij decenarum carbonum de bosco domine usque ad fabricam xj s. iiij d., pro decena iiij d.

In the carriage of the said 34 tens of charcoal from the lady's wood to the works 11s 4d at 4d per ten.

In potagio operariorum ij s. j d.

In the workmen's drink-money 2s 1d

In reparacione diversorum utensilium dicte fabrice ij s.

In the repair of various tools of the said works 2s.

In uncto empto pro follibus unguendis iij d.

In grease bought for greasing the bellows 3d.

In stipendio operariorum quod dicitur gersuma iiij s.

In the wage of the workmen which is called bonus (gersuma) 4s.

Summa – vij l. x s. xj d. ob. q^a . [sic.]

Sum - £7 10s 11 ¾ d.

1333-1334 (PROSC 6/890/26)

Compotus Johannis de Mesinglegh camerarii domine Elizabethe de Bourg' domine de Clare de Southfrith a festo Sancti Michaelis anno rengni [sic] Regis Edwardi tercii a conquestu

Account of John de Mesynglegh, chamberlain of Lady Elizabeth de Burgh, Lady of Clare for Southfrith, 29 September 1333 – 29th September 1334.

Idem respondet de...

He answers for...

Et de xxiiij li. x s. de cc iiij^{xx} xiiij blom' venditis ut extra, precium blom' xx d. Et de vj s. viij d. de firma fabrice de Teudele a festo Pasche usque festum Sancti Michaelis pro dimidio anno hoc anno dimisse mense Marcii per dominum Thomam de Gedewerth.

and for £24 10s for 294 blooms sold as over, at 20d a bloom; and of 6s 8d of the farm of the works of Tudeley from Easter to Michaelmas for half a year this year, let in the month of March by Sir Thomas de Gedewerth.

Summa – xxiiij li. xvj s. viij d.

Sum - £24 16s 8d.

Et de xx s. de petris ad cccc blom' venditis hoc anno, precium C. v s.

And for 20s for stones sold for 400 blooms this year, at 5s a hundred.

Summa xx s.

Sum 20s.

Inde idem computat in facture et expensis circa c et xij blom' faciendis apud fabricam de Teudele ante festum Pasche ut plenius continetur extra in tergo vj li. xiij s. ob.

He accounts for the making and expenses concerning 112 blooms made at the works of Tudeley before Easter as is more fully contained on the back £6 13s $0\frac{1}{2}$ d.

[In dorso]

Idem respondet de c iiij^{xx} xviij blom' de remanentia in dicta fabrica super compotum anni precedentis Et de c et xij blom' factis ibidem hoc anno ante Pascham Et extunc predicta fabrica dimittitur ad firmam per dominum Thomam de Gedewerthe.

He accounts for 198 blooms remaining in the said works upon last year's accounts; and for 112 blooms made there this year before Easter; and then the said works was let to farm by Sir Thomas de Gedewerth.

Summa – cccx blom'.

Sum - 310 blooms.

De quibus in mercede operariorum pro dictis blom' faciendis xvj blom' capientium pro opere suo septimam blom'. In vendicione ut infra cc iiij^{xx} xiiij blom'.

Of which in the payment of the workmen for making them 16 blooms, taking for their work the seventh bloom; in sales as below 294 blooms.

Et Nichil remanet.

And nothing remains.

Idem computat in petris fodiendis ad c et xij blom' faciendas ut supra xxij s. vj d., pro C. xx s.

He accounts in digging stones for making 112 blooms as above 22s 6d, at 20s the hundred.

In cariagio dictarum petrarum usque fabricam v s. vij d. ob., pro C. v s.

In carriage of them to the hearth 5s 7½d, at 5s the hundred.

In dictis petris comburendis ad supradictas blom' ij s. iij d., pro C. ij s.

In burning the stones for the blooms 2s 3d, at 2s the hundred.

In consuetudine de Forblouweris pro dictis blom' xxj s., pro qualibet blom' ij d. q^a.

In the custom of the fore-blowers for the said blooms 21s, at 21/4d for each bloom.

In emendacione del tuer' viij d.

In mending the tuyere 8d.

In potagio operariorum xvj d.

In the workmen's drink-money 16d.

In xx duodenis carbonum ad dictas blom' cum cariagio usque fabricam lxxvj s. viij d., precium duodene iij s. x d.

In 20 dozens of charcoals for the said blooms, with carriage to the works 76s 8d, at 3s 10d a dozen.

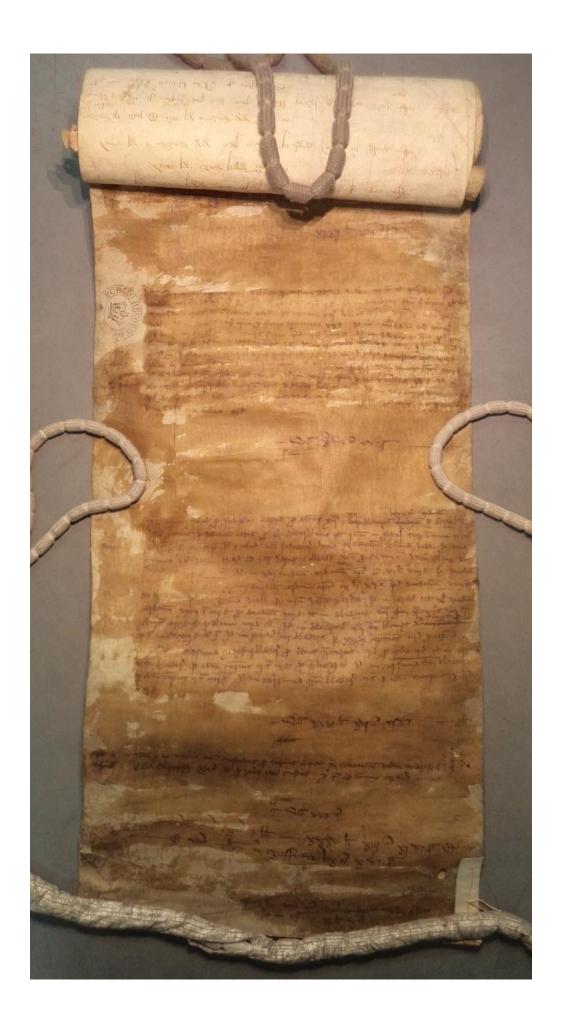
In stipendio supradictorum operariorum iij s. pro dimidio anno.

In the wage of the above workmen 3s for the half-year.

Summa – vj li. xiij s. ob. ut computatur infra.

Sum - £6 13s 0½d as is accounted below.

.....





Compotus Thome Springet custodis fabrice de Teudele a xvj die Octobris die lune proxima post festum Sancti Luce Ewanglie anno regni regis Edwardi tercii a conquest xxiiij° usque xxx diem Julii diem Sabbati in provigilia ad vincula [sic] Sancti Petri anno supradicti Regis xxv° per xlj septimanas xxxviij septimanas.

Account of Thomas Springet, keeper of the works of Tudeley from 25 October 1350 to 30 July 1351 for 38 weeks from 16 October 1350 to 30 July 1351 for 41 weeks.



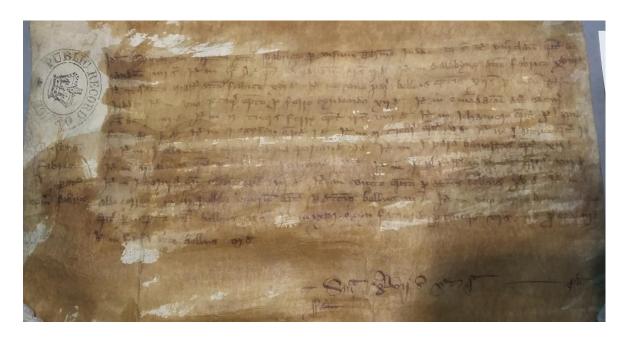
Idem respondet de iiij li. viij s. x d. ... j s. x d. receptis de xxvj blomys venditis, precii blome iij s. v d. Et de viij li. xvj s. iij d. receptis de xlvij blomys venditis precii blome iij s. ix d. Et de xix li. viij s. vj d. $\frac{1}{2}$ s. receptis de $\frac{1}{2}$ s. precii blome iij s. vj d. Et de vj d. receptis de $\frac{1}{2}$ s. receptis de $\frac{1}{2}$ s. $\frac{1}{2}$ s.

He answers for £4 8s 10d received from 26 blooms sold, at 3s 5d a bloom. And for £8 16s 3d received from 47 blooms sold, at 3s 9d a bloom. And for £18 11s £19 8s 6d received from 111 blooms sold, at 3s 6d a bloom.

And for 6d received from graynes sold.

Summa – xxxij li. xiiij s. j d. probatur.

Sum - £32 14s 1d <checked>



Idem computat in carpentria dicte fabrice per visum Thome Judde vj s.

He accounts for carpentry of the said works by the view of Thomas Judde 6s.

Item viij ^c clavis empties ad eandem iiij s.

Item 800 nails bought for the same 4s.

Item in ij m ^I. Prig' empties ad eandem ij s. ij d.

Item 2000 prigs bought for the same 2s 2d.

Item in dawbyng dicte fabrice xviij d.

Item in daubing the works 18d.

Item in fractura arrastrii dicte fabrice xvj d.

Item in making the hearth of the said works 16d.

Item in uno pari belleis empties [sic] xij s. per visum Thome Judde.

Item in a pair of bellows bought 12s, by the view of Thomas Judde.

Item in uno securi empto pro ferro cyndendo xij d.

Item in an axe bought for splitting iron 12d.

Item in emendacione dicti secures cum acere iij d.

Item in mending the axe with steel 3d.

Item in ij tuers ferry empties ij s. viij d.

Item in two tuyeres of iron bought 2s 8d.

Item j hamer empto pro lapidibus frangendis jd.

Item in a hammer bought to break stones 1d.

Item in j egyson empto j d.

Item in an egyson bought 1d.

Item in ij crebris empties v d.

Item in two sieves bought 5d.

Item in j scope empto j d. q^a.

Item in a scope bought 1¼d.

Item in j olla lutea empta pro aqua portanda j d.

Item in a clay pot bought to carry water 1d.

Item in j pare banostis empto xij d.

Item in a pair of bannasters bought 12d.

Item in ij alveis empties pro lapidibus portandis v d.

Item in two troughs bought to carry stones 5d.

Item in j plaustro manuali empto vij d.

Item in a hand cart bought 7d.

Item in j serura cum clave empta iij d.

Item in a lock and key bought 3d.

Item in uncto empto pro dictis belliis xv d.

Item in grease bought for the said bellows 15d.

Item in albo correo et in iij pellibus leporum empties pro dictis belliis iij d.

Item in white leather and 3 hareskins bought for the bellows 3d.

Item in uno correo bovino novo empto pro coopertura dictarum belliis v s.

Item a new ox-hide bought for covering the bellows 5s.

Item in xxvj egyn faciendis pro tuers vj s. vj d., pro ege iij d.

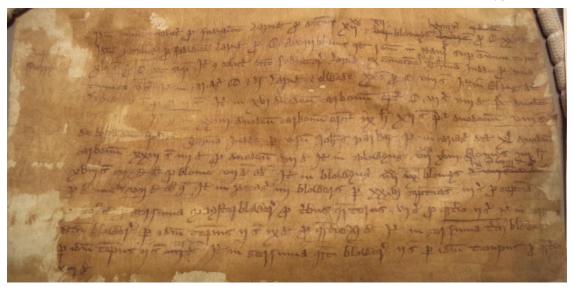
Item in making 26 egyn for the tuyeres 6s 6d, at 3d an ege.

Item in facture dicte belliis vj d.

Item in making the bellows 6d.

Summa – xlvij s. v d. q^a. probatur.

Sum - 47s 51/4d <checked>



Idem computat solutos pro fodiacione lapidum pro dictis xij^{xx} et xij vij blomys lxviij s. lxvj s. ij d. ob., pro C. xxvij s.

He accounts for payments for digging stones for the said $\frac{247}{252}$ blooms $\frac{66s}{242}$ 68s, at 27s for 100.

Idem computat solutos pro fodiacione lapidum pro clviij bloms quod remanet in stauro super annum sequentem xlj s., pro C. ut supra

For digging stones for the 158 blooms which remain in stock to next year 41s, at 27s for 100

Item computat solutos dicto fodiatori lapidum ex convencione facta per Thomam Judde pro una tunica v s.

To the stone-digger by contract made by Thomas Judde for a tunic 5s

Item in cariagio cc et dimidii lapidum et olwode xx s., pro C. viij s.

In the carriage of 250 stones and olwode 20s, at 8s for 100

Item in elyng' dictorum lapidum v s., pro C. ij s.

In burning the said stones 5s, at 2s for 100

Item in xvj duodenis carbonum emptis cvj s. viij d., precium duodene vj s. viij d.

In 16 dozen of charcoal bought 116s (106?) 8d, at 6s 8d the dozen

Item computat in xxiiij duodenis carbonum empties ix li. xij s., precium duodenne [sic] viij s. de bosco domine empto cum Thoma Judde per visum Johannis Parker

In 24 dozen of charcoal bought £9 12s, at 8s the dozen, bought from the lady's wood with Thomas Judde by the view of John Parker

Item in cariagio dictarum xl duodenarum carbonum xxiij s. iij d., pro duodena vij d.

In carriage of the said 40 dozen of charcoal 23s 4d, at 7d the dozen

Item in blowyng' vij^{xx} xviij blomys iiij li. xviij s. ix d. ob. pro blome vij d. ob.

In blowing 158 blooms £4 18s 9½d, at 7½d a bloom

Item in blowyng' iiij^{xx} xiiij ix-blomys lx s. viij d. ob. lvij s. v d. ob. pro blome vij d. ob. q^a.

In blowing 89 94 *blooms* 57s 51/2d 60s 81/2d, at 73/4d a *bloom*

Item in potagio iiij blowers per xxxvj septimanas iij s., pro septimana j d.

In the drink-money of 4 blowers for 36 weeks 3s, at 1d a week

Item solutos pro gersuma maysterblower pro tribus quarteriis vi s., pro quarterio ij s.

For the bonus (gersuma) of the master-blower for three quarters 6s, at 2s a quarter

Item in gersuma secundi blower per idem tempus ij s. ix d., pro quarterio xj d.

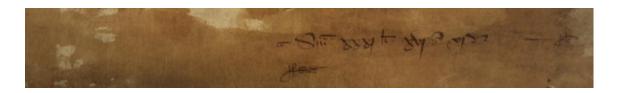
In the bonus of the second blower for the same time 2s 9d, at 11d a quarter

Item in gersuma tercii blowere per idem tempus ij s. iij d. iiij d.

In the bonus of the third blower for the same time 2s 3d 4d.

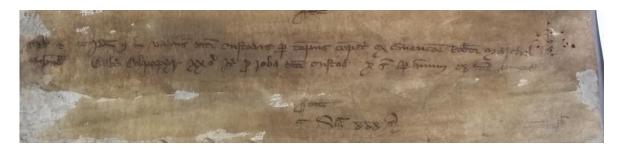
Item in gersuma quarti blower ij s. per idem tempus, pro quarterio viij d.

In the bonus of the fourth blower 2s for the same time, at 8d a quarter.



Summa – xxxj li. xvj s. vj d. probatur.

Sum - £31 16s 6d <checked>



Idem computat in vadiis dicti custodis per tempus compoti ex convencione Roberti Marchal et Walteri Colpepyr xx s. Item pro roba dicti custodis x s. per annum ex dicta convencione.

He accounts in the wages of the said keeper for the time of the account, by contract of Robert Marchal and Walter Colpepyr 20s; for a gown for the said keeper 10s a year by the same contract.

Summa – xxx s. probatur

Sum - 30s <checked>

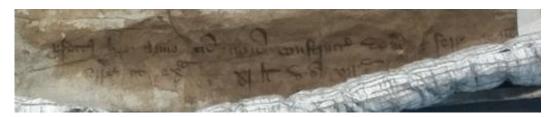


Summa omnium expensorum et liberacionum xxxv li. xiij s. xj d. q^a.

Sum of all expenses and liveries £35 13s 11¾d.

Et sic est dictus Thomas in excess de lix s. x d. q^a

And thus is the said Thomas in excess 59s 104/d



Profectus hoc anno cum nova constructa domo et ferro remanente appreciato ut extra xj li. v s. vij d.

Profit this year with the newly constructed building and the iron remaining valued as over at £11 5s 7d.



[In dorso]



Idem respondet de xij[™] vij blomys ferri receptis de exitu fabrice. De eodem exitu prout probatum est super compotum v blomes.

He answers for 247 blooms of iron received from the issue of works; from the same issue as is checked upon account 5 blooms.

Summa xij[™] xij et vij. probatur.

Sum - 252 <checked>.



De quibus computat in vendicione ix^{xx} iiij viij^{xx} et xix blomes ut infra.

Of which he accounts in sale 179 184 blooms as below

Summa – ix^{xx} iiij viij^{xx} et xix. Et remanent lxviij blomys probatur.

Sum - 179 184; and there remain 68 blooms <checked>



Idem respondet de xl duodenis carbonum receptis de empcione ut patet per talliam contra Johannem Parker forestarium.

He answers for 40 dozen charcoal received from purchase as appears by a tally against John Parker the forester

Summa xl duodene probatur.

Sum - 40 dozen <checked>



De quibus computat in fractura dictarum xij^{xx} et xij vij blomys xxxix duodenas et dimidium per visum dicti Johannis Parker.

Of which he accounts in the making of the said 247 252 blooms 39½ dozen, by the view of the said John Parker

Summa – xxxix duodene et dimidium Et remanet dimidium duodene.

*Sum - 39*½ dozen; and there remains half a dozen

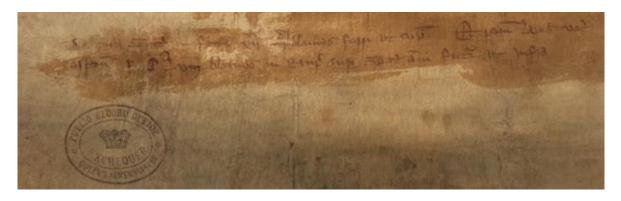


Idem respondet de lapidibus vocatis orston receptis de fodiacione in foresta pro $iiij^c$ et v blomys ut infra.

He accounts for stones called orston received from digging in the forest for 405 blooms as below

Summa – patet.

The sum is clear



De quibus computat in fractura xij^{xx} xij vij blomys ferri ut supra Et remanent lapides vocati orston pro clviij blomys in stauro super compotum anni futuri ut infra.

Of which he accounts in the making of 247 252 blooms of iron as above; and there remain stones called orston [sufficient] for 158 blooms in stock upon next years's account as below

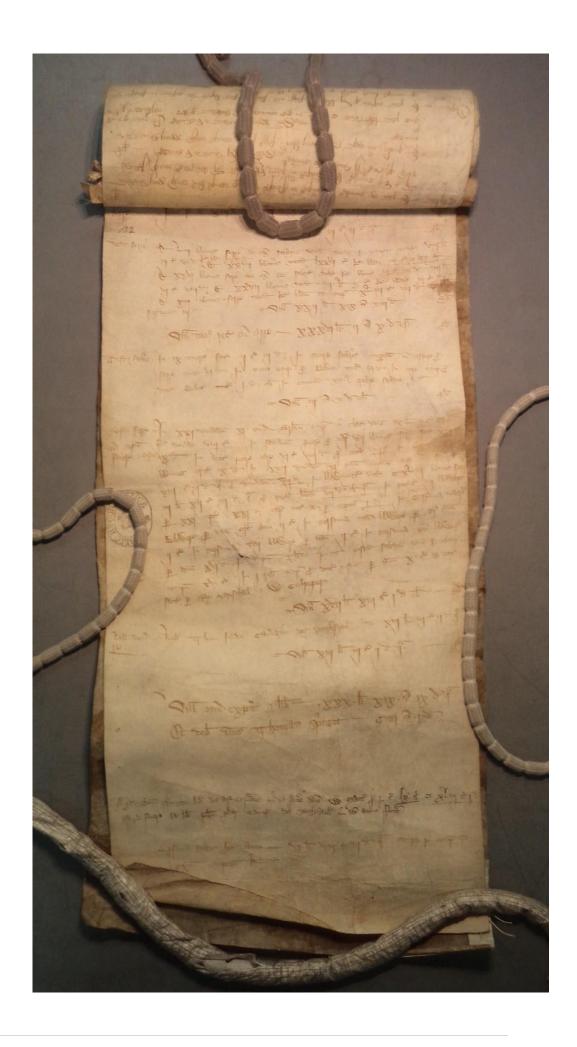
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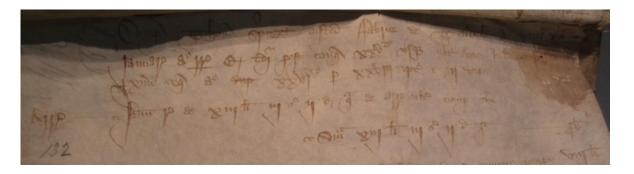


... Springet custodis fabrice de Teudele anno xxv^{to}.

[Thomas] Springet keeper of the works of Tudeley for the year ****

1352 Front Page (PRO E101/485/11)





Compotus Thome Springet custodis fabrice de Teudele a xiiij^{to} die Januarii anno regni regis Edwardi tercii post conquestrum xxv^{to} usque ultimum diem Julii tempore tunc proxime sequente anno xxvj^{to} per xxviij septimanas et ij dies.

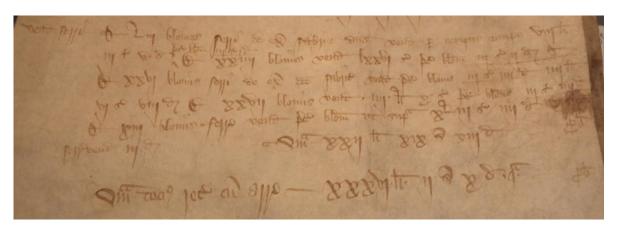
Account of Thomas Springet, keeper of the works of Tudeley from 14 January 1352 to 31 July 1352 for 28 weeks and 2 days.

Idem respondet de xiij li. iij s. ij d. q^a de arreragiis ultimi compoti sui.

He answers for £13 3s 2¼d from the arrears of his last account.

Summa – xiij li. iij s. ij d. q^a. Probatur

Sum - £13 3s 21/4d <checked>



De liij blomes ferri de exitu fabrice domine venditis per tempus compoti viij li. iij s. v d., precium blom' iij s. j d.

Of 53 blooms of iron of the issue of the lady's works sold during the time of the account £8 3s 5d, at 3s 1d a bloom,

De xxiiij blomis venditis lxxvj s., precium blom' iij s. ij d.

Of 24 blooms sold 76s, at 3s 2d a bloom.

De xxvj blomis ferri de exitu dicte fabrice venditis, precium blome iij s. iiij d., iiij li. vj s. viij d.

Of 26 blooms of iron of the issue of the said works sold at £4 6s 8d, at 3s 4d a bloom

De xxvij blomis venditis iiij li. x s., precium blom' iij s. iiij d.

Of 27 blooms sold £4 10s, at 3s 4d a bloom,

De xiij blomis ferri venditis, precium blom' ut supra xlij s. iiij d.

Of 13 blooms of iron sold 42 s 4d, price of a bloom as above,

De greyn' ferri venditis iij d.

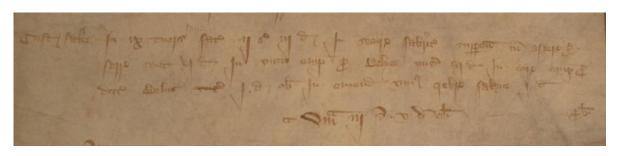
For graynes of iron sold 3d.

Summa – xxij li. xix s. viij d. probatur.

Sum - £22 19s 8d <checked>

Summa tocius recepte cum arreragiis – xxxvj li. ij s. x d. q^a. probatur.

Sum total of receipts with arrears £36 2s 101/4d <checked>



In ix tuers ferr faciendis ij s. iij d.

In making 9 tuyers of iron 2s 3d.

In secure fabrice superponenda cum ascere pro ferro scindendo vj d.

In trimming the works axe with steel to split iron 6d.

In uncto empto pro belyes unguendis vj d.

In grease bought to grease the bellows 6d.

In corio empto pro dictis beliis j d. ob.

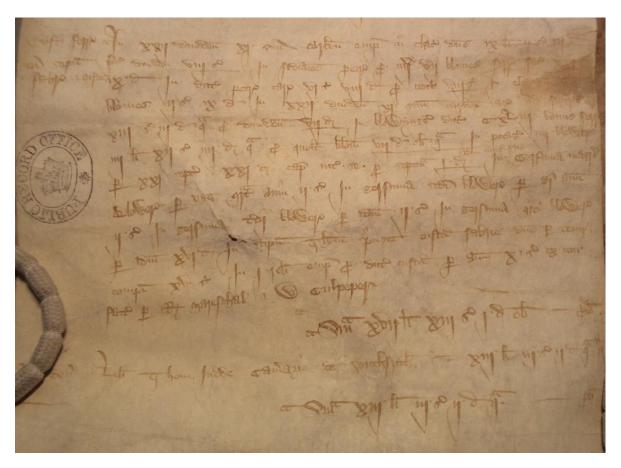
In leather bought for the said bellows 1½d.

In emendacione unius crebri fabrice j d.

In mending a works sieve 1d.

Summa – iij s. v d. ob. probatur.

 $Sum - 3s 5\frac{1}{2}d$ < checked>.



In xxij duodenis xj summagiis carbon emptis in chacea domine ix li. ij s. iij d., precium duodene viij s.

In 22 dozen and 11 seams of charcoal bought in the lady's chase £9 2s 3d, at 8s a dozen.

In fodiacione petrarum pro iiij^{xx} vij blomes ferri faciendis xxj s. ix d.

In digging stones for making 87 blooms of iron 21s 9d.

In dictis petris cariandis vj s. viij d. pro centena viij s.

For the carriage of the said stones 6s 8d, at 8s for 100

In elyngg' cxliij blomes ij s. ix d.

In burning 143 blooms 2s 9d. (*JC could it be 'In burning stones for 143 blooms'?*)

In xxij duodenis xj summagiis carbonum cariandis ad fabricam xiij s. iij d. q^a, pro duodena vij d.

In carrying 22 dozen and 11 seams of charcoal to the works 13s 3¼d, at 7d the dozen.

In blowyngg' dictis cxliij bomis [sic] ferri iiij li. xij s. iiij d. q^a, pro quolibet blom' vij d. ob. q^a.

In blowing the said 143 blooms of iron £4 12s 4¼d, at 7¾d a bloom

In potagio iiij blowers per xxj septimanas xxj d. capientium inter se per septimanam j d. secundum consuetudinem patrie.

In the drink-money of 4 blowers for 21 weeks 21d, at 1d a week among themselves according to the custom of the country.

In gersuma magistri blower per unum quarterium anni ij s.

For the bonus (gersuma) of the master-blower for one quarter of a year 2s

In gersuma secondi blower per dimidium annum ij s.

In the bonus of the second blower for half a year 2s

In gersuma tercii blower per idem ij s.

In the bonus of the third blower for the same time 2s

In gersuma quarti blower per idem xvj d.

In the bonus of the fourth blower for the same time 16d

In stipendio Thome Springet custodis fabrice domine per tempus compoti xv s.

In the wages of Thomas Springet the keeper of the lady's works for the time of the account 15s

In j roba empta pro dicto custode per annum x s. ex convencione facta per R. Mareschal et W. Culpeper.

For a gown bought for the said keeper annually 10s by a contract made by R[obert] Mareschal and W[alter] Colpeper.

Summa – xvij li. xiij s. j d. ob. probatur.

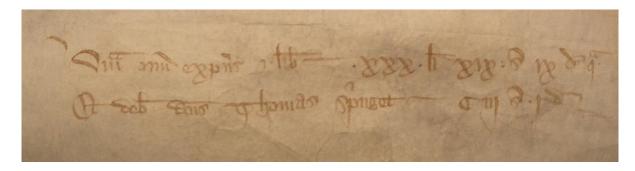
Sum £17 13s 1½d <checked>.

Liberata Thome Judde camerario de Southfrith xiij li. iij s. ij d. q^a.

Delivered to Thomas Judde, the chamberlain of Southfrith, £13 3s 21/4d

Summa – xiij li. iij s. ij d. q^a. Probatur

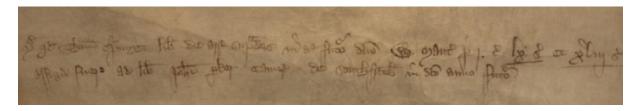
Sum £13 3s 2¼d <checked>



Summa omnium expensorum et liberacionum – xxx li. xix s. ix d. q^a.

Sum of all expenses and liveries £30 19s 9¼d

Et debet dictus Thomas Springet ciij s. j d.



Memorandum quod Thomas Springet liberavit de arreragiis supradictis in anno future domino W. Mant per unam talliam lx s. Et xliij s. j d. assignati fuerunt ad liberandos Johanni Parker camerario de Southfrith in dicto anno futuro.

Memorandum that Thomas Springet delivered of the above arrears the following year to Sir W Mant by a tally 60s; and 43s 1d were assigned to be delivered to John Parker, the chamberlain of Southfrith, in the said following year.



Profectus fabrice hoc anno vj li. viij s. iij d. q^a . Ut patet per compotum istum et proximum compotum precedentem.

Profit of the works this year £6 8s 3¼d as appears by this account and the last account before

[In dorso]

De exitu fabrice per tempus compoti cxliij blomes ferri.

Of the issue of the works during the time of the account 143 blooms of iron

Summa – cxliij probatur.

Sum 143 <checked>

De quibus computat in vendicione ut infra. Et equat. probatur

Of which he accounts in sales as below; and it balances <checked>

De empcione pro ferro faciendo in foresta domine xxij duodene xj summagia carbonum.

Of purchases for making iron in the lady's forest 22 dozen 11 seams of charcoal

Summa – xxij duodene xj summagia, probatur.

Sum 22 dozen 11 seams <checked>

De quibus in expensis cxliij blomes faciendarum xx duodene et xj summagia.

Of which in the cost of making 143 blooms 20 dozen and 11 seams

Summa – xx duodene et xj summagia.

Et remanent ij duodene carbonum. probatur.

And there remain 2 dozen of charcoal <checked>

De remanentia orston pro lxviij blomes faciendis. De fodiacione lapidum de orston pro iiij xx vij blomes faciendis.

Of the remaining orston for making 68 blooms; of the digging of stones of orston for making 87 blooms.

Summa – orston pro clv blomes. probatur.

Sum - orston for 155 blooms <checked>

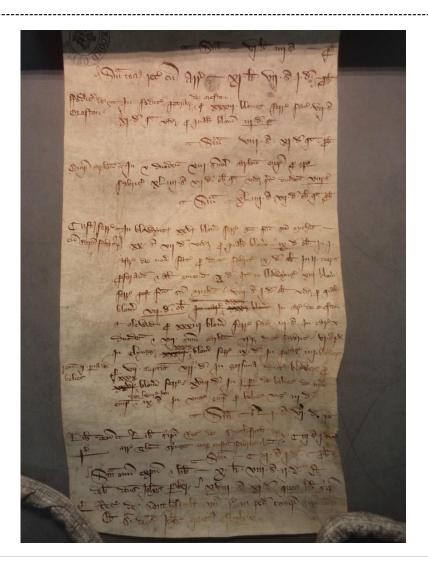
De quibus in expensis pro cxliij blomes superius factis.

Of which in costs for the 143 blooms made above

Et remanet orston pro xij blomes ferri faciendis. probatur.

And there remains orston for making 12 blooms of iron <checked>

1353 Front Page (PRO E101/485/11)



Compotus Johannis Parker custodis fabrice ibidem per vij septimanas mensium Septembris Octobris et Novembris anno xxvij[™].

Account of John Parker, keeper of the works there (Tudeley) for seven weeks of the months of September, October and November 1353.

Idem oneratur de ciij s. j d. de arreragiis Thome Springet nuper custodis fabrice ibidem.

He is charged with 103s 1d from the arrears of Thomas Springet the late keeper of the works there.

Summa – ciij s. j d. probatur

Sum 103s 1d Checked

De xxvj blomes ferri venditis de exitu dicte fabrice per tempus compoti iiij li. ij s. x d., precium blome iij s. ij d.

Of 26 blooms of iron of the issue of the said works sold during the time of the account £4 2s 10d, at 3s 2d a bloom

De xiij blomes ferri postea venditis per J. Parker xlj s. ij d., precium blome ut supra.

Of 13 blooms of iron afterwards sold by John Parker 41s 2d, at 3s 2d a bloom.

Summa – vj li. iiij s. probatur.

Sum £6 4s checked

Summa tocius recepte cum arreragiis – xj li. vij s. j d. probatur.

Sum total of receipts with the arrears £11 7s 1d checked.

In fodicione petrarum de oreston pro xxxiij blomes ferri faciendis viij s. xj d. q^a ., videlicet pro qualibet blom' iij d. q^a .

In digging stones of orston for making 33 blooms of iron 8s 11¼d, at 3¼d for each bloom.

Summa – viij s. xj d. q^a. probatur.

Sum 8s 11¼d checked

In v duodenis viij summagiis carbonum emptis pro opere fabrice xliiij s. vij d. ob. q^a ., videlicet precium duodene viij s.

In 5 dozen (and) 8 seams of charcoal bought for the work of the works 44s 7¾d, at 8s the dozen.

Summa – xliiij s. vij d. ob. q^a. probatur.

Sum 44s 7¾d checked.

In blowyng' xxvj blomis ferri ante festum Sancti Michaelis xx s. vij d., videlicet pro qualibet blom' ix d. ob.

In blowing 26 blooms of iron before $\underline{29^{th}}$ September 1353 20s 7d, at $9\frac{1}{2}$ d each bloom.

In j astrio de novo faciendo pro dicta fabrica ix d. ob.

In making the hearth anew for the said works 9½d.

In ij tuers perforandis et [al' *struck through*] emendandis x d.

In piercing and mending two tuyeres 10d.

Item in blowyng' xiij blom' ferri post festum Sancti Michaelis viij s. j d. ob., videlicet pro qualibet blom' vij d. ob.

In blowing 13 blooms of iron after 29th September 1353 8s 1½d, at 7½d each bloom,

In cariagio de oreston et olewod pro xxxiij blom' [in cariagio xxxix blom' *struck through*] ferri faciendis iij s.

In the carriage of oreston and olewod for making 33 blooms of iron 3s

In cariagio v duodenarum et viij summagiorum carbonum usque dictam fabricam vj s. j d.

In the carriage of 5 dozen and 8 seams of charcoal to the works 6s 1d

In elyngg' xxxix [xxxiij *struck through*] blom' ferri ix d.

In burning 33-39 blooms of iron 9d

In potagio iiij blowers per vij septimanas vij d.

In the drink-money of 4 blowers for 7 weeks 7d.

In gersuma dictorum blowers pro xxxix [xxvj struck through] blom' ferri xviij d.

For the bonus (gersuma) of the said blowers for 26 39 blooms of iron 18d

In j pari de belies de novo empto de Henrico Jon ix s.

In the new purchase of a pair of bellows from Henry Jon 9s.

In uncto empto pro belies unguendis iij d.

In grease bought to grease the bellows 3d.

Summa – li s. vj d. probatur.

Sum 51s 6d checked.

Liberata sibi ipsi Receptori de Southfrith de arreragiis Thome Springet nuper custodis fabrice ibidem ciij s. j d.

Delivered to the receiver of Southfrith of the arrears of Thomas Springet the late keeper of the works there 103s 1d

Summa ciij s. j d. probatur.

Sum 103s 1d checked

Summa ominium expensorum et liberacionum – x li. viij s. ij d.

Sum of all expenses and liveries £10 8s 2d

Et debet dictus Johannes Parker xviij s. xj d. quos liberat sibi ipsi Receptori de Southfrith unde respondet in pede compoti sui ibidem.

And the said John Parker owes 18s 11d which he delivered to the Receiver of Southfrith, of which he answers at the foot of his account there.

Et sic dictus Johannes quietus est hic.

And so the said John is quit here.

[In dorso]

[Stock]

De exitu fabrice per tempus hujus compoti xxvj blomes ferri.

Of the issue of the works during the time of this account 26 blooms of iron.

Item de exitu dicte fabrice post festum Sancti Michaelis xiij blom' ferri. For the issue after 29 September 1353 13 blooms of iron.

Summa – xxxix [xxvj blomes ferri struck through] blomes ferri.

Sum 26 39 blooms of iron

Et venditur ut infra. Et equat. probatur.

Sold as over; and it balances; checked.

De remanentia ij duodene carbonum.

There remains 2 dozen of charcoal

De empcione pro ferro faciendo in foresta domine v duodene et viij summagia carbonum.

Of purchase for making iron in the lady's wood 5 dozen and 8 seams of charcoal.

Summa vij duodene et viij summagia. probatur.

Sum 7 dozen and 8 seams. Checked.

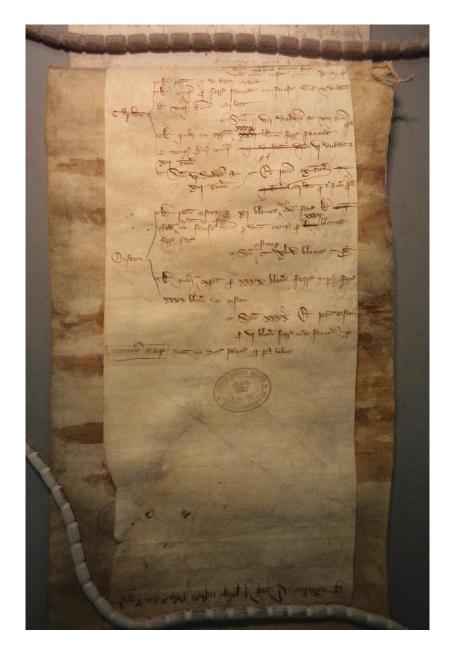
De quibus in expensis xxxix [xxvj *struck through*] blom' ferri faciendarum per tempus hujus compoti vj duodene et xiij summagia [iiij duodene dimidium *struck through*].

Of which in the costs of making $\frac{26}{39}$ blooms of iron during the time of this account $\frac{41/2}{20}$ dozen and 13 seams.

Summa vj duodene et xiij summagia. Et remanent ix [et j summagium *struck through*] summagia carbonum pro anno futuro. Probatur.

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(PRO E101/485/11)



Sum 6 dozen and 13 seams; and there remain 9 seams of charcoal for next year. Checked.

De remanentia orston pro xij blomes ferri inde faciendis [De empcione *struck through*]

Of the remains orston for making 12 blooms of iron; the purchasing

De fodicione lapidum de orston in foresta domine per dictum tempus pro xxxiij [lij *struck through*] blomes ferri faciendis.

Of digging stone of orston in the lady's forest during the said time for making 52 33 blooms of iron.

Summa orstoni pro xlv blomes. probatur.

Sum of orston per 45 blooms. Checked.

De quibus in expensis pro xxxix blom' ferri superius faciendis xxxix blom' de orston.

Of which in the costs of making the above 39 blooms of iron 39 blooms of orston.

Summa xxxix, Et remanet orston pro vj blom' ferri inde faciendis. probatur.

Sum 39, and there remains orston for making 6 blooms of iron. Checked.

Remanent in dicta fabrica ij paria belies.

There remain in the said works two pairs of bellows

[Endorsed.]

Teudelee. Compotus J. Parker custodis fabrice ibidem anno xxvij°.

Tudeley. Composed by J. Parker, the keeper of the works of the same place in the year 1353

1354 Front Page (PRO E101/485/11)

Compotus Thome Springet custodis fabrice ibidem per xxv septimanas [hoc *struck through*] anno regni regis Edwardi tercii post conquestum xxviij°.

Account of Thomas Springet, keeper of the works there [Tudeley] for 25 weeks in 1354.

De arreragiis nichil quia quietus in ultimo compoto.

In arrears nothing because he was quit in the last account.

Summa - nulla.

Sum nothing.

De lxxiiij blomes ferri de exitu fabrice venditis xij li. xix s., precium blom' iij s. vj d.

Of 74 blooms of iron of the issue of the works sold £12 19s, at 3s 6d a bloom.

De iij aliis blom' ferri de exitu dicte fabrice venditis x s., precium blome iij s. iiij d.

Of 3 other blooms of iron of the issue of the said works sold 10s, at 3s 4d a bloom.

De lxj blomis ferri de exitu dicte fabrice venditis x li. iij s. iiij d., precium blom' iij s. iiij d.

Of 61 blooms of iron of the issue of the said works sold £10 3s 4d, at 3s 4d a bloom.

De corio unius veteris paris bel' vendito vj d.

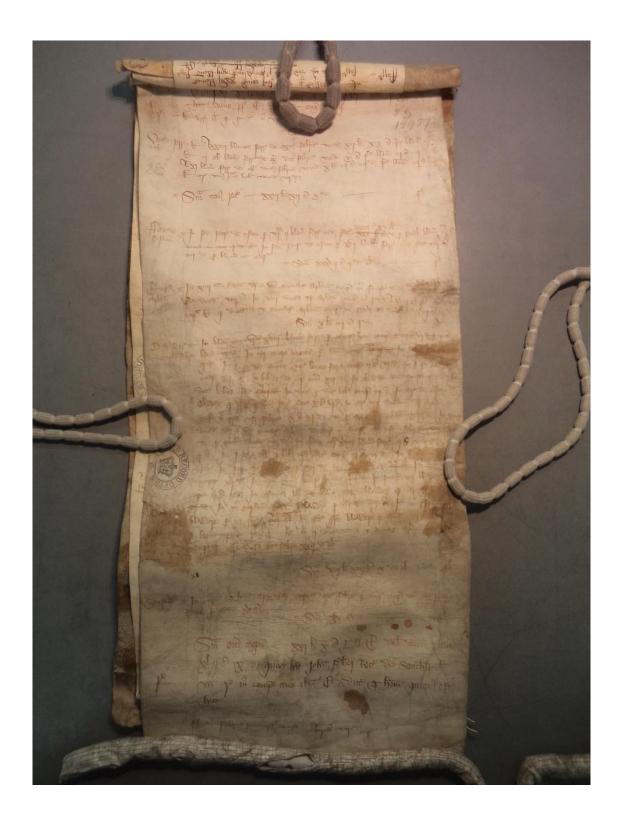
Of the leather of an old pair of bellows sold 6d.

Summa tocius recepte – xxiij li. xij s. x d. probatur.

Sum total of receipts £23 12s 10d. Checked.

In fodicione petrarum de orston pro vj^{xx} ij blom' ferri inde faciendis xxxij s. x d. ob. [xxxiij s. struck through] videlicet pro qualibet blom' iij d. q^a. [minus in toto j d. ob. struck through].

In digging stones of orston for making 122 blooms of iron 32s 10½d, at 3¼d for each bloom



In fodicione petrarum de orston pro xvj blom' ferri inde faciendis iiij s. iiij d. pro blom' ut supra.

In digging stones of orston for making 16 blooms of iron 4s 4d, at 3¼d for each bloom.

Summa – xxxvij s. ij d. ob. probatur.

Sum 37s 2½d. checked.

In xiiij duodenis dimidio et v summagiis carbonum emptis in foresta domine cxviij s. x d. [cxix s. iij d. *struck through*], precium duodene viij s.

In 14½ dozen and 5 seams of charcoal bought in the lady's forest 118s 10d, at 8s the dozen.

In viij duodenis dimidio carbonum emptis in patria lxviij s., precium duodene ut supra.

In 8 $\frac{1}{2}$ dozen of charcoal bought in the neighbourhood 68s, at 8s the dozen

De ij duodenis et v summagiis carbonum emptis in patria ad diversa precia xvij s. iij d.

In 2 dozen and 5 seams of charcoal bought in the neighbourhood at various prices 17s 3d.

Summa – x li. iiij s. j d. probatur.

Sum - £10 4s 1d. checked.

In blowyng' vj^{xx} xviij blom' ferri per tempus hujus compoti ciij s. vj d. pro qualibet blom' ix d.

In blowing 138 blooms of iron during the time of this account 103s 6d, at 9d a bloom

In iiij tuers emendandis per idem tempus xij d. xiij d.

in mending the 4 tuyeres during the same time 12d

In j augisen' emendando ij d.

In mending an augisen 2d

In j pari de tonges vocatis loves ferri empto ij s. vj d.

In a pair of iron tongs called loves bought 2s 6d

In j pari coddes empto xij d.

In a pair of coddes bought 12d

In belies de corio empties xij d.

In leather bellows bought 12d;

In clavis ad idem empties viij d.

in nails bought for them 8d

In dictis belies faciendis vj d. viij d.

In making the said bellows 8d 6d

In uncto pro dictis bel' empto iij d.

In grease bought for them

In cariagio de orston et olwode pro vj^{xx} xviij blom' ferri faciendis x s. vj d.

In the carriage of orston (ore) and olwode (oldwood) for making 138 blooms of iron 10s 6d

In cariagio viij duodenarum dimidii carbonum de empcione in patria usque fabricam ix s. xj d. videlicet pro cariagio cujuslibet duodene xiiij d.

In the carriage of $8\frac{1}{2}$ dozen of charcoal bought in the neighbourhood to the works 9s 11d, at 14d a dozen

In xiiij duodenis dimidio et v summagiis carbonum de empcione in foresta cariandis usque fabricam viij s. viij d. videlicet pro quolibet [*sic*] duodena vij d.

In the carriage of $14\frac{1}{2}$ dozen and 5 seams of charcoal bought in the forest to the works 8s 8d, at 7d a dozen

In elyng' vj^{xx} viij blom' ferri ij s. viij d., pro centena ij s.

In burning (elyng) 138 blooms of iron 2s 8d, at 2s for 100

In j corio albo pro bel' inde faciendis empto iij s. vj d.

In one white hide bought for making bellows 3s 6d

In brakyng ejusdem vj d.

In brakyng (braking / cutting?) it 6d

In j pari de codd' empto xij d.

In a pair of codd bought 12d

In j crebro empto ij d. ob. iij d.

In a sieve bought 3d 2½d

In emendacione iiij toyeres xij d.

In mending 4 tuyeres 12d

In emendacione unius secures per vices ij d. iiij d.

In mending an axe on [several] occasions 4d 2d

In potagio iiij blowers per xxv septimanas ij s. j d.

In the drink-money of 4 blowers for 25 weeks 2s 1d

In gersuma Johannis Tubbe magistri blowere pro iij quarteriis anni viij s. vj d.

For the bonus (gersuma) of John Tubb the master-blower for three quarters of a year 8s

In in [sic] gersuma secondi blowere per dimidium anni iiij s.

in the bonus of the second blower for half a year 4s

Item in gersuma tercii blowere pro iij quarteriis anni vi s. v s. vi d.

In the bonus of the third blower for three quarters of a year 5s

In gersuma quarti blowere per idem iiij s. (vj d.-interlineated)

In the bonus on the fourth blower for the same time 4s

In j trey pro lapidibus importandis j d. ob.

In a trey for bringing in stones 1½d

Item in ij duodenis et v summagiis carbonum cariandis de empcione in patria cariandis usque ad fabricam xxij d. ob.

For the carriage of 2 dozen and 5 seams of charcoal bought in the neighbourhood to the works 22½d

Summa – viij li. xiij s. ix d. ob. probatur.

Sum £8 13s 9½d checked

In stipendio Thome Sprynget custodis dicte fabrice per tempus compoti unacum proparte robe sue per idem xv s.

In the wages of Thomas Springet the keeper of the said works during the time of the account, together with the share of his gown 15s

Summa – xv s. probatur.

Sum 15s checked

Summa ominium expensorum – xxj li. x s. j d. Et debet dictus Thomas xlij s. ix d. quos liberavit Johanni Parker receptori de Southfrith unde respondet in compoto suo ibidem. sic dictus Thomas quietus est hic.

Sum of all expenses £21 10s 1d; and the said Thomas owes 42s 9d which he has delivered to John Parker the receiver of Southfrith, of which he answers in his account there; and so the said Thomas is quit here.

Profectus fabrice per tempus compoti liij s. viij d.

Profit of the works during the time of the account 53s 8d

[In dorso]

[stock]

De exitu fabrice per tempus compoti vj^{xx} xviij blom'.

Iron of the issue of the works during the time of the account 138 blooms

Summa vj^{xx} xviij blom'. Et vendite ut infra. Et equat. probatur.

Sum 138 blooms; sold as over; and it balances. checked

De remanentia ix summagia.

[charcoal] of remains 9 seams

De empcione in foresta domine per tempus hujus compot xiiij duodene dimidium et v summagia.

Of purchase in the lady's wood during the time of this account 14½ dozen and 5 seams

De empcione in patria viij duodene dimidium ante visum compoti. Item de empcione post visum compoti ij duodene et v summagia.

Of purchase in the neighbourhood $8\frac{1}{2}$ dozen before the view of the account and 2 dozen and 5 seams after

Summa – xxvj duodene et v summagia. probatur.

Sum 26 dozen and 5 seams checked

De quibus in expensis vj^{xx} xviij blom' ferri faciendarum per tempus compoti xxiiij duodene et v summagia.

Of which in the costs of making 138 blooms of iron during the time of this account 24 dozen and 5 seams

Summa – xxiiij duodene et v summagia. Et remanent ij duodene carbonum. probatur. Que remanentia liberator Ricardo Colpeper in parte convencionis 1 duodenarum per annum.

Sum 24 dozen and 5 seams; and there remain 2 dozen of charcoal checked; which remains are delivered to Richard Colpeper in part of the contract of 50 dozen annually

Et remanet orston pro vj blomes ferri inde faciendis. De fodicione lapidum de orston in foresta domine per tempus hujus compoti pro vj^{xx} xviij blom' inde faciendis.

And there remains orston (ore) for making 6 blooms of iron; of digging stone of orston in the lady's forest during the time of this account for making 138 blooms

Summa - vij^{xx} iij blom' ferri. probatur.

Sum 124 blooms of iron

De quibus in expensis pro vj^{xx} xviij blom' ferri superius factis vj^{xx} xviij blom' de orston.

Of which in the costs of making the above 138 blooms of iron 138 blooms of orston

Summa - vj^{xx} xviij blom'. Et remanet orston pro vj blom' ferri inde faciendis. probatur.

Sum 138 blooms; and there remains orston for making 6 blooms of iron checked

Que remanentia liberator Ricardo Colpeper in parte convencionis iij^c de oreston per annum.

Which remains are delivered to Richard Colpeper in part of the contract of 300 of oreston annually

Remanent in fabrica ij para belies j secures pro ferro scindendo j aundire j par toyers j hamer, pro lapidibus frangendis j cribrum j scope j olla lutea pro aqua portanda j par lanost' [sic] ij alvei pro lapidibus portandis j ciner manualis j serura cum clave.

There remain in the works two pairs of bellows, an axe for splitting iron, an andiron, a pair of tuyeres, a hammer for breaking stones, a sieve, a scope (scoop?), a clay pot for carrying water, a

pair of bannasters (probably a type of basket for carrying charcoal), two trays for carrying stones, a hand barrow, a lock and key.

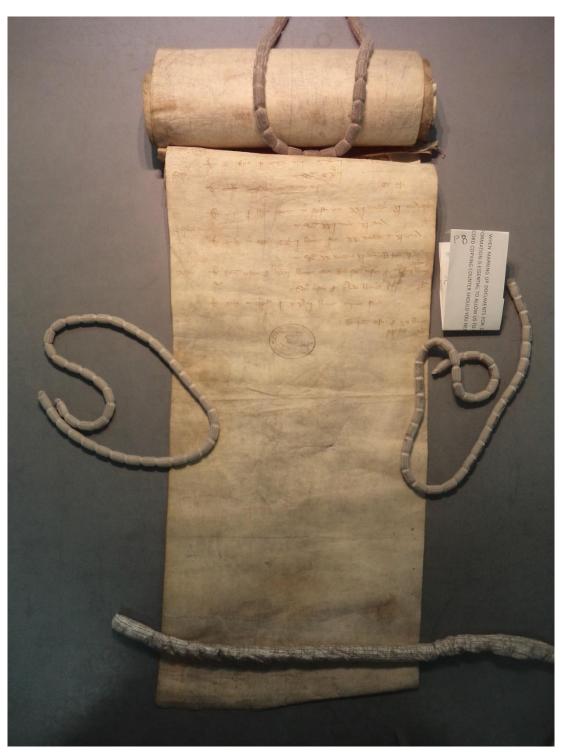
[Endorsed.]

[Endorsed]

 $Teudele.\ Compotus\ Thome\ Sprynget\ custodis\ ibidem\ anno\ xxviij^0.$

Tudeley. Composed [by] Thomas Springet keeper in the same place in the year 1354

1354 Back Page (PRO E101/485/11)



Rebuilding inventory 1343 (PRO SC 6/891/7)

In two carpenters hired for 22 days for doing carpentry of the works at Tudeley, taking 7d a day

12s 10d
In making 1400 feet of board for the roofing of the said works, at 5d a hundred

5s 10d
In two men making laths and stanchions for the same, one day

5d
In 3800 nails for the same at 2½d a hundred

7s 11d
In 1500 prignails for the walls of the said works

10½d
In carrying the timber for the same

8d
In [under]pinning and plastering the walls, in all

1s 6d
In hooks and rings [for gates/door-hangings] for the said works

4d

Tudeley Works Lease 1354

Lease for three years from 29th September 1354 at £13 6s 8d, 20 October 1354

Elizabeth de Bourg, Lady de Clare, to Richard Colpeper

The fabrica (works) of Tudeley in Southfrith

Richard Colpeper to have sufficient wood for making 50 dozen of charcoal (carbona), and that by the view and livery of the chamberlain of Southfrith for the time being, by a tally to be made between them.

Richard Colpeper to have orston for 300 blooms which he will dig at his own cost and shall be the subject of a tally by the chamberlain as for the wood

Richard Colpeper to have by estimation 12 cartloads of burning-wood (elyngwode) by the livery of the said chamberlain

Elizabeth de Bourg will maintain and make the building of the works at her own costs during the term

There are delivered to Richard Colpeper at the works, at his taking it,

Two pairs of bellows (13s 4d),

An axe for splitting (scindendo) iron (3d),

An andiron (angire) (8d),

Two tuyeres (12d),

A hammer (1d),

A sieve (1d),

A pair of tongs (loves) (2s 6d)

Two troughs for bringing in stones (1d)

A lock with a key (3d)

All of which Richard Colpeper will return at the end of the term or satisfy Elizabeth de Bourg for their price at her choice

Given at Bardfield (Essex).

Appendix B

Primary Roffey data

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Appendix B1: Place-name Survey of the Roffey Landscape

Roffey Tithe Map Records 1st February 1844 – Tithe Maps and Apportionment courtesy of West Sussex Record Office References for field-name interpretations:

Parish, W.D. (1875) A Dictionary of the Sussex Dialect - Collection of Provincialisms in use in the County of Sussex. Farncombe & CO, Lewes. Field, John. (1993) A History of English Field-Names. Harlow: Longman Group UK Limited.

| Occupier | Ref No. | Name / Description | State of Cultivation | Measure | Measure | Measure | Landholder | Interpretation of fieldname |
|----------------|---------|--------------------|----------------------|---------|---------|---------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | Acres | R | Р | | |
| James Worsford | 3022 | Roughey Mead | Arable | 6 | 2 | 31 | Duke of Norfolk | Rough meadow, however in this instance is likely to relate to its position within the settlement of Roffey. Roughey is an earlier variant on the spelling of Roffey which was still in existent within the Parish in the 19 th Century, such as Roughey Street. It might indicate that the junction of Brook Lane and Crawley Road was a central point in the settlement for this field to get its name. 'Mead' is an abbreviation of meadow and would indicate that in the past this area was uncultivated land. |
| James Worsford | 3021 | Hopkins Lag | Pasture | 6 | 1 | 2 | Duke of Norfolk | Hopkins: A probable reference to a former owner or tenant of the field (see Hopkins Barn Field below). Lag or leg: Sussex dialect 'A long narrow marshy meadow, usually by the side of a stream'. (Parish 1875: 67). |
| James Worsford | 3034 | Railey Field | Arable | 4 | 2 | 6 | Duke of Norfolk | Probably referring to the owner or holder of the field. |
| Thomas Tyler | 3033 | Pasture | Pasture | 2 | 0 | 39 | Robert Aldridge | Self-explanatory |
| Thomas Tyler | 3032 | Pasture | Pasture | 0 | 0 | 28 | Robert Aldridge | Self-explanatory |
| James Worsford | 3039 | One Acre | Pasture | 0 | 3 | 36 | Duke of Norfolk | Acre: 'piece of land having an area of one acre' (Field 1972: 2). |

| Occupier | Ref No. | Name / Description | State of Cultivation | Measure | Measure | Measure | Landholder | Interpretation of fieldname |
|----------------|---------|--------------------|----------------------|---------|---------|---------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | Acres | R | P | | |
| James Worsford | 3038 | Tod Field | Arable | 3 | 0 | 14 | Duke of Norfolk | Possibly a corruption of 'Toad' 'Land on which toads were found' (Field 1972: 235). Or possibly a field belonging to someone by the name of Tod. Note: Tod field is immediately south of Channels Brook stream which would support the former interpretation. |
| James Worsford | 3040 | Lower Root Field | Arable | 2 | 2 | 32 | Duke of Norfolk | A probable reference to the growing of root crops within this field, located below Upper Root Field (see below). |
| James Kempshaw | 3037 | Pasture | Mead | 2 | 1 | 30 | William Sharpe | Self-explanatory |
| Peter Pickett | 3036 | No name given | Pasture | 1 | 1 | 26 | James Waller ESQ | N/A |
| James Worsford | 3035 | Long Lag | Pasture | 1 | 2 | 19 | Duke of Norfolk | Lag or leg: Sussex dialect 'A long narrow marshy meadow, usually by the side of a stream'. (Parish 1875: 67). |
| Peter Pickett | 3041 | No name given | Pasture | 0 | 3 | 37 | James Waller ESQ | N/A |
| Peter Pickett | 3042 | Cottage and Garden | NA | 1 | 0 | 1 | James Waller ESQ | N/A |
| Peter Pickett | 3045 | The Muttons | Pasture | 1 | 0 | 13 | James Waller ESQ | Likely to refer to the shape of the fields. Names elsewhere include 'Leg of Mutton' (Devon) 'fanciful names for triangular pieces of land' (Field 1972: 124). |
| James Worsford | 3043 | Wattle Meadow | Arable | 3 | 0 | 29 | Duke of Norfolk | Similar to 'Wattledge' in Wiltshire meaning 'ridged land on which woad was grown'. (Field 1972: 249). Wattle Meadow: Meadow where woad was grown. Or in Sussex dialect a 'wattle' was a hurdle (Parish 1875: 129). |
| James Worsford | 3046 | The Greatick | Arable | 2 | 1 | 15 | Duke of Norfolk | Possibly a corruption of 'Gratten' a Sussex word for stubble field (Parish 1875: 50). |

| Occupier | Ref No. | Name / Description | State of Cultivation | Measure Acres | Measure R | Measure P | Landholder | Interpretation of fieldname |
|-----------------|---------|--------------------|----------------------|------------------|--------------|--------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Peter Pickett | 3047 | The Muttons (x2) | Mead | 1 | 1 | 24 | James Waller ESQ | Likely to refer to the shape of the fields. Names elsewhere include 'Leg of Mutton' (Devon) 'fanciful names for triangular pieces of land' (Field 1972: 124). |
| James Worsford | 3048 | Lower West Mead | Arable and Pasture | 2 | 3 | 10 | Duke of Norfolk | Reference to the location of a meadow to the lower West – below Upper West Mead field (see below). |
| Railway Company | 3007a | Arable | - | 1 | 0 | 37 | Railway Company | Self-explanatory |
| Joseph Mabbott | 3020 | Cottage and Garden | - | 0 | 1 | 9 | David Lovegrove | Self-explanatory |
| Peter Pickett | 3030 | No name given | - | 0 | 3 | 26 | James Waller ESQ | N/A |
| James Worsford | 3029 | Upper Root Field | Arable | 3 | 0 | 35 | Duke of Norfolk | A probable reference to the growing of root crops within this field, located above Lower Root Field (see above). |
| James Worsford | 3028 | Middle Mead | Arable | 3 | 2 | 39 | Duke of Norfolk | Possibly a corruption of the Sussex term 'Middling' meaning 'tolerably well' thus describing the quality of the field (Parish 1875: 74). Alternately the name describes the fields position in relation to other fields – in this case it is in the middle of a strip of land. |
| James Worsford | 3027 | Spring Field | Arable | 3 | 2 | 16 | Duke of Norfolk | 'Land adjoining, or containing, a wood' Or 'land adjoining, or containing, a well or the source of a stream' (Field 1972: 215). |
| James Worsford | 3026 | Brakey Field | Arable | 6 | 0 | 20 | Duke of Norfolk | Brake: Sussex dialect for the common fern (<i>Pteris aquilina</i>) 'brakes' ferns. (Parish 1875: 21). A field dominated by ferns |
| John Walder | 3007 | Land Ditch | Arable | 1 | 3 | 4 | Benjamin Hall | Ditch: 'Land with, or near, a drainage channel' (Field 1972: 63-64). |
| John Walder | 3006 | Lag | Pasture | 0 | 3 | 29 | Benjamin Hall | Lag or leg: Sussex dialect 'A long narrow marshy meadow, usually by the side of a stream'. (Parish 1875: 67). |

| Occupier | Ref No. | Name / Description | State of Cultivation | Measure Acres | Measure R | Measure P | Landholder | Interpretation of fieldname |
|----------------|---------|--------------------|----------------------|------------------|--------------|--------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| John Walder | 3005 | Homestead | - | 0 | 1 | 21 | Benjamin Hall | N/A |
| John Walder | 3003/4 | Behind house | Pasture | 2 | 2 | 20 | Benjamin Hall | Field behind Parsons Farmhouse. |
| James Worsford | 3035a | Long Lag | Pasture | 1 | 0 | 39 | Duke of Norfolk | Long: 'land of greater length than fields nearby' (Field 1972: 129). Lag or leg: Sussex dialect 'A long narrow marshy meadow, usually by the side of a stream'. (Parish 1875: 67). |
| William Sharpe | 3000 | Welchmans Field | Arable | 3 | 3 | 38 | William Sharpe | Welchman is a variation on 'Welshman' and therefore this name probably relates to a former occupier either by the name of Welchman or who was from Wales. On the 1891 Census for Sussex, there were no individuals by the name of Welchman recorded in Sussex, and only one in Surrey (www.ancestry.co.uk – accessed 10/05/21). Therefore this name is likely to refer to an owner or occupier who was from Wales. |
| William Sharpe | 2999 | Welchmans Field | Arable | 2 | 3 | 21 | William Sharpe | See above. |
| John Walder | 2996 | Barn Field | Pasture | 4 | 0 | 17 | Edward Jenden | 'land by, or containing, a barn' (Field 1972: 14). In this instance 'Cow Barn' is located to the north of the field. |
| William Sharpe | 2998 | No name given | Arable | 3 | 2 | 13 | William Sharpe | N/A |
| John Walder | 2994 | Great Meadow | Mead | 6 | 3 | 6 | Edward Jenden | A large area of meadow land. |
| John Walder | 2995 | Buildings and Yard | - | 0 | 2 | 13 | Edward Jenden | Self-explanatory |
| William Sharpe | 2997 | Pasture | Mead | 2 | 1 | 39 | William Sharpe | Self-explanatory |

| Occupier | Ref No. | Name / Description | State of Cultivation | Measure | Measure | Measure | Landholder | Interpretation of fieldname |
|-------------|---------|--------------------|----------------------|---------|---------|---------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | Acres | R | P | | |
| John Walder | 2992 | Milk Plat | Arable | 2 | 2 | 18 | Edward Jenden | Milk: 'Land by building where cows were milked' (Field 1972: 138). Plat: 'small piece of ground' (Field 1972: 169). Small piece of land on or adjacent to where cows were milked. Cow Barn is situated in the field immediately south of Milk Plat. |
| John Walder | 2993 | Middle Field | Arable | 3 | 1 | 23 | Edward Jenden | Possibly a corruption of the Sussex term 'Middling' meaning 'tolerably well' thus describing the quality of the field (Parish 1875: 74). |
| John Walder | 2989 | Further Field | Arable | 5 | 2 | 17 | Edward Jenden | Relating to the distance of the field |
| John Walder | 2991 | Nine bars field | Arable | 3 | 2 | 29 | Edward Jenden | Nine: 'Land containing the nine named features' (Field 1972: 149) Bars: Likely to refer to 'land on which hard barley was grown' (Field 1972: 12) Or in Sussex dialect 'Bar way – A fieldgate, made of bars or rails so fitted as to draw out from the posts' (Parish 1875: 16). |
| John Walder | 2990 | Holland Field | Arable | 3 | 0 | 32 | Edward Jenden | Possibly a corruption of 'Hocklands' meaning 'Hock-shaped (hook-shaped) pieces of meadow land. Sussex dialect with Anglo Saxon origins (Parish 1875: 56). Or Land belonging to someone by the name of Holland. Or remote land. |

| Occupier | Ref No. | Name / Description | State of Cultivation | Measure | Measure | Measure | Landholder | Interpretation of fieldname |
|----------------|---------|---------------------|----------------------|---------|---------|---------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | Acres | R | P | | |
| James Worsford | 3049 | Rathurst | Arable | 6 | 2 | 4 | Duke of Norfolk | Rat: similar names include 'Rats Castle' which means 'land adjoining a derelict building' (Field 1972: 180). Hurst: 'land by a copse' (Field 1972: 112). Rathurst: Derelict or unmanaged copse. |
| James Worsford | 3050 | Upper West Mead | Arable | 5 | 1 | 21 | Duke of Norfolk | Reference to the location of a meadow to the upper West – above Lower West Mead field (see above). |
| James Worsford | 3064 | Acre Plat | Arable | 1 | 0 | 22 | Duke of Norfolk | Acre: 'piece of land having an area of one acre' (Field 1972: 2). Plat: 'small piece of ground' (Field 1972: 169). |
| James Pichard | 2987 | Long Field | Arable | 4 | 2 | 28 | Duke of Norfolk | Long: 'land of greater length than fields nearby' (Field 1972: 129). |
| John Walder | 2940 | Long Lag | Pasture | 2 | 0 | 23 | Benjamin Hall | Long: 'land of greater length than fields nearby' (Field 1972: 129). Lag or leg: Sussex dialect 'A long narrow marshy meadow, usually by the side of a stream'. (Parish 1875: 67). |
| James Worsford | 3019 | Leman Garden | Pasture | 3 | 0 | 28 | Duke of Norfolk | Leman: Similar examples are found as 'Lemon' e.g. Lemon Doles (Notts), Lemon Field (Surrey) and Lemon Head (West Riding of Yorkshire) and is possibly 'land with artificial watercourses) and derives from the Middle English 'Leme'. (Field 1972: 124). Garden: 'Land used for horticulture' (Field 1972: 86) |
| James Worsford | 3010 | Crooked Cinder Lane | Arable | 3 | 0 | 1 | Duke of Norfolk | Crooked: Bent or twisted – probably referring to the shape of the field. Cinder: 'Land on which cinders or slag are spread or heaped' (Field 1972: 45) |

| Occupier | Ref No. | Name / Description | State of Cultivation | Measure | Measure | Measure | Landholder | Interpretation of fieldname |
|----------------|---------|--------------------|----------------------|---------|---------|---------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | Acres | R | P | | |
| James Worsford | 3011 | Leg | Pasture | 2 | 1 | 4 | Duke of Norfolk | Lag or leg: Sussex dialect 'A long narrow marshy meadow, usually by the side of a stream'. (Parish 1875: 67). Or 'Land with one or more leg-like projections' (Field 1972: 124) |
| James Worsford | 3017 | Wide Cinder Hams | Arable | 5 | 1 | 34 | Duke of Norfolk | Wide: 'broad piece of land' or 'land by a broad topographical feature' (Field 1972: 254-255) Cinder: 'Land on which cinders or slag are spread or heaped' (Field 1972: 45) Ham: 'enclosure, land beside a river' (Field 1972: 96) |
| James Worsford | 3024 | Hopkins Barn Field | Arable | 5 | 0 | 30 | Duke of Norfolk | Field with a barn belonging to a person called Hopkins (see Hopkins Lag above). |
| T Tyler | 3025 | Pasture | Arable | 3 | 3 | 3 | R Aldridge | Self-explanatory |
| James Worsford | 2146 | The Lawns | Arable | 6 | 3 | 7 | Duke of Norfolk | 'Grass ground' or 'arable strips' (Field 1972: 123) Note: The Lawns is immediately south of Roffey Place and may suggest this area was once gardens. |
| James Worsford | 2145 | High Wood Field | Arable | 3 | 1 | 24 | Duke of Norfolk | 'Land either in a high position relative to a parish' or 'land at an elevated position than a second field' (Field 1972: 103) In this case it is likely to refer to the fields position close to 'High Wood' or that it was created through the clearing of 'High Wood'. |
| James Worsford | 2149 | Brick Wall Field | Pasture | 7 | 1 | 12 | Duke of Norfolk | May relate ton its proximity to Roughey Place to the north of the field. |
| D Lovegrove | 2153 | Cowstall Mead | Mead | 3 | 1 | 12 | Duke of Norfolk | Meadow in which cows were kept. (Field 1972: 55). |

| Occupier | Ref No. | Name / Description | State of Cultivation | Measure | Measure | Measure | Landholder | Interpretation of fieldname |
|----------------|---------|--------------------|----------------------|---------|---------|---------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | Acres | R | P | | |
| James Worsford | 2151 | Pound Croft | Arable | 2 | 3 | 4 | Duke of Norfolk | Pound: 'Land by an enclosure for stray animals' (Field 1972: 173). Croft: a small rented farm. A pound is shown on the 19 th century Ordnance Survey map of the field in the north-east corner, adjacent to the Crawley - Horsham road. |
| D Lovegrove | 2152 | Sopers Plat | Pasture | 2 | 1 | 33 | Duke of Norfolk | Sopers: Could derive from 'sops' meaning 'boggy land' (Field 1972: 210) Or soapmaker Or ownership name (Ancestry accessed 08/05/21) Plat: 'small piece of ground' (Field 1972: 169). |
| D Lovegrove | 2142 | Rough Field | Arable | 4 | 2 | 33 | Duke of Norfolk | Rough ground, referring to terrain. |
| James Worsford | 2143 | Saw Pit Field | Arable | 4 | 0 | 16 | Duke of Norfolk | 'Land near, or containing, a sawpit' (Field 1972: 193). |
| D Lovegrove | 2141 | Forest Field | Arable | 6 | 0 | 27 | Duke of Norfolk | 'Land adjoining a forest' (Field 1972: 81). |
| Mrs Lovegrove | 2154 | House Field | Arable | 1 | 3 | 3 | Mrs Lovegrove | 'Land near or containing a house or houses' (Field 1972: 110). |
| D Lovegrove | 2158 | Middle Field | Arable | 4 | 0 | 16 | Duke of Norfolk | Possibly a corruption of the Sussex term 'Middling' meaning 'tolerably well' thus describing the quality of the field (Parish 1875: 74). |
| D Lovegrove | 2157 | Calves Leg | Pasture | 3 | 1 | 36 | Duke of Norfolk | While this could be reference to 'land on which calves were kept' (Field 1972: 81), it is more likely a reference to the shape of the field (See The Muttons). |

| Occupier | Ref No. | Name / Description | State of Cultivation | Measure Acres | Measure R | Measure P | Landholder | Interpretation of fieldname |
|----------------|---------|--------------------|----------------------|------------------|--------------|--------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| D Lovegrove | 2156 | Hovel Field | Arable | 3 | 0 | 24 | Duke of Norfolk | 'Land containing a shed for implements or a framework on which a stack is built' (Field 1972: 110). Or a 'A conical building enclosing a kiln' 'roofed passage vent for smoke' (mid-14th century) (lexico.com, etymonline.com 8/4/22) |
| D Lovegrove | 2155 | Orchard | Orchard | 0 | 3 | 25 | Duke of Norfolk | Location of an orchard |
| James Hammond | 3014 | Pasture | Mead | 2 | 1 | 22 | Sarah Hammond | Self-explanatory |
| James Worsford | 3009 | Brook Field | Arable | 4 | 1 | 12 | Duke of Norfolk | 'Land beside a stream' (Field 1972: 31). |
| James Kempshaw | 2272 | Pasture | Mead | 1 | 2 | 38 | William Sharpe | Self-explanatory |
| D Lovegrove | 2271 | Kiln Plat | Arable | 1 | 3 | 38 | Duke of Norfolk | Kiln: 'Land on which a kiln was situated – usually for brick-making or limeburning' (Field 1972: 117). Plat: 'small piece of ground' (Field 1972: 169). |
| James Kempshaw | 2276 | Meadow | Mead | 4 | 0 | 13 | William Sharpe | Self-explanatory |
| D Lovegrove | 2269 | Elliots Mead | Mead | 4 | 3 | 26 | Duke of Norfolk | The name Elliots is likely to date from the 15 th century when a tenement called Elyottes, is recorded at Roffey in 1481. In this year William Est and Thomas Agas released their right to their lands and tenements at Roughey to the Bishop of Ely and others. This included Elyottes, Cokhuntys grove, Hethelonde and Segrymes. Mead: 'meadow' (Parish 1875: 74). |
| D Lovegrove | 2270 | Alder Mead | Pasture | 7 | 0 | 14 | Duke of Norfolk | Mead: 'meadow' (Parish 1875: 74). |

| Occupier | Ref No. | Name / Description | State of Cultivation | Measure | Measure | Measure | Landholder | Interpretation of fieldname |
|-------------|---------|----------------------------|----------------------|---------|---------|---------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | Acres | R | P | | |
| D Lovegrove | 2268a | Part of Bakehouse Field | Arable | 5 | 1 | 25 | Duke of Norfolk | A bakehouse was a building used for the preparation and baking of bread. It is also possible that this was once two words – Bake meaning 'pared and burnt land' (Field 1972: 10), and house referring to a structure once present in the field. Therefore a house that had burnt down. The term bakehouse dates from c.1400 and later evolved into bakery. (etymonline.com 8/4/22). |
| D Lovegrove | 2268 | Part of Bakehouse | Arable | 6 | 3 | 38 | Duke of Norfolk | See above |
| D Lovegrove | 2267 | Three Cornered Field | Arable | 1 | 3 | 6 | Duke of Norfolk | 'Triangular piece of land' (Field 1972: 230-231). |
| D Lovegrove | 2283 | Horse Pasture | Arable | 8 | 1 | 18 | Duke of Norfolk | 'Land on which horses were kept or pastured' (Field 1972: 109). |
| Extra Names | | | | | | | | |
| | | Cow Lane | | | | | | Land on which cows were kept (Field 1972: 55) |

1851 Census Records on the occupiers

James Worsfold – Was living at Roffey Place Farm in 1851 and aged 40 (Held 150 acres in 1861)

David Lovegrove (aged 39) – Occupied New House Farm and farmed 140 acres (Held 185 acres by 1861 and 213 in 1871)

Thomas Tyler (aged 72) – Occupied Clovers Farm held 5 acres

Peter Pickett (aged 82) – Occupied 53 Roughey – Formally a shopkeeper

William Pickett (aged 76) – Occupied Little Clovers Farm - a farmer of 16 acres

James Kempshaw (aged 36) – Agricultural labourer at Budds Farm. There was also another James Kempshaw (aged 40) at Budds Farm

James Kempshall /w? – Little Kings Farm – farmer of 11 acres.

Details from Ancestry

Appendix B2: Summary of archaeological landscape features identified at Roffey

The Reconnaissance survey took place during Summer 2020 and examined the immediate landscape around the study site at Cherry Tree Field and the wider environment of St Leonards Forest to the south, Channels Brook to the north Wide Cinder Hams field and Brook Lane on the western side along with the continuation of Channels Brook and the land to the east. At the time, findings were recorded both photographically and within a field notebook. The table below provides a summary of features identified. Certain features were not accessible on the ground or were only visible on the Lidar or historic maps, but have also been recorded here.

Zone 1

| Ref. | Grid Reference | Feature Type | Visible on lidar | Description |
|------|----------------|---------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 001 | TQ 20657 33439 | Slag scatter | no | A distribution of slag a few meters from the western boundary of Cherry Tree field. Samples were an average of 5-10cm in size and were at the greatest density closer to the hedge line, gradually decreasing in quantity further east. These had been exposed during ploughing of the field. |
| 002 | TQ 20657 33439 | Field bank and associated ditch | no | Running along the western boundary of Cherry Tree field, dividing it from Brook Lane. The bank runs on a north-south axis for 28m. The southern end has been truncated by the widening of the A264 road and replaced at this end by a wooden fence. The bank lies on the eastern side, forming the boundary of the field, while the ditch is on the western side running along the perimeter of Brook Lane. |
| 003 | TQ 20657 33439 | Slag find | no | Two large fragments of slag were recovered from the ditch at the southern end of the Cherry Tree field western boundary. One of these was retained for |

| | | | | analysis and weighed 4800g. There were other samples of slag also present within this boundary. |
|-----|----------------|-----------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 004 | TQ 20657 33439 | Field hedge | | Atop the bank on the western boundary of the field sits an ancient hedge that runs for 28m. Again, this has been truncated at the southern end with the extension of the road. A survey of this revealed 5 species of hedgerow plants to be present which included, ash, dog rose, common hawthorn, holly and hazel suggesting an approximate age of 500 years. |
| 005 | TQ 20657 33439 | Platform | yes | At the southwestern corner of the field, where the density of slag is present, traces of a platform can be seen, extending for approximately 45x60m and defined on the northern and eastern sides by slight banks that descend into the natural northerly slope of the field. Much of this area is covered by quantities of slag that increases in density to the west and the boundary of the field. |
| 006 | TQ 20971 33519 | Slag scatter | no | There is slag scattered along the southern boundary of Cherry Tree field, however there is a higher density, which appears to be the nucleus of this distribution to the east of the field gate leading out onto the Crawley Road. The fragments are however the slag is a smaller size than the western end 3-4cm. It is likely that this is associated with the ironworking site discovered as part of the road widening of the Crawley Road in the 1980s. |
| 007 | TQ 20971 33519 | Pottery scatter | no | Located in the same area as 005 slag scatter, a range of pottery sherds were recovered on the southern boundary. While some were of 17^{th} - 18^{th} century date a majority were medieval c. 13^{th} – 14^{th} century that included types such as Graffham ware and Surrey White wares. |

| 800 | TQ 21101 33596 | Platform | yes | Situated on the southern boundary of the field, adjacent to the high densities |
|-----|----------------|-----------------|-----|----------------------------------------------------------------------------------------|
| | | | | of slag and pottery sherds were recovered. This extended along the boundary |
| | | | | for 65m and extended into the field for approximately 10m at which point the |
| | | | | gradient of the slope decreased to the centre of the field. |
| 009 | TQ 20982 33605 | Scatter of iron | no | Central to the southern boundary of the field, there was a scatter of ore |
| | | ore | | bearing minerals. The field overall was quite stoney, however it is noteworthy |
| | | | | that ore was located here, either representing a natural seam disturbed by |
| | | | | ploughing or brought to the site. Fragments of this ore were around 5-10 cm in |
| | | | | size. |
| 010 | TQ 20997 33530 | Platform – site | no | A slight platform is present on a ridge of higher ground on the southern |
| | | of iron school | | boundary of Cherry Tree field. This corresponds to the site of a tin school / |
| | | | | church that was built in 19th century and existed until the construction of a |
| | | | | new church in Roffey. It disappears from the OS Maps by the 1930s. This area |
| | | | | also has fragments of 19 th century stoneware, glazed ware and bottle glass |
| | | | | along with the occasional brick. |
| 011 | TQ 21101 33596 | Slag scatter | no | A second high density slag scatter was present on the far south eastern corner |
| | | | | of the field. Fragments vary in size. |
| 012 | TQ 21130 33724 | Platform | no | A possible platform is present in the woodland on the eastern boundary of the |
| | | | | field. This extends for approximately 40x20m. It is surrounded by a field bank |
| | | | | and ditch. A badger set revealed a fragment of pottery. Further work is need |
| | | | | here. |
| 013 | TQ 21062 33783 | Slag scatter | no | Traces of slag are present on the north east corner of the field, however at far |
| | | | | less density. The fragments are also smaller in size. |
| | | | | |

| 014 | TQ210336 | Find spot | no | 16 th / 17 th century salt glazed pot base found to the east of the field. |
|-----|----------------|-----------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 015 | TQ 20982 33770 | Ponds | yes | A series of two ponds were located along a now removed n-s field boundary. Part of this field boundary still remains at the northern end and is where the ponds are located. The northern pond is fed by the Channels Brook stream that flows east to west. These ponds appear to have been re-dug in more recent years based on comparison between the early OS maps. |
| 016 | TQ 21042 33643 | Extinct field boundary | yes | The remains of a ditch survives as an earthwork running north south through Cherry Tree field. On the northern end it joins a small copse of trees that surround the ponds. As one of these ponds is elongated, it appears to respect the course of this boundary and perhaps indicates that at one point the entire boundary was water filled. The surviving ditch runs on a N-S trajectory for 135m. This boundary appears on the 1838 Tithe map of the field and the later Ordinance Survey maps until the 1930s. It is clear that the entirety of Cherry Tree field was once a series of smaller parcels of land but that by the 1970s had become a single field. This field boundary is the most obvious earthwork attesting to the subdivision of the field. |
| 017 | TQ209335 | Gravel quarry earthworks | yes | The 1870 OS map shows a gravel quarry having existed in the field in the 19 th century, north east of the school. This had fallen out of use by the 1890s. Part of the eastern end of this was still visible as an earthwork cutting the natural slope of the field. Traces of slag are present either side of it and its creation may have disturbed ironworking evidence that once stood here. |

| 018 | TQ 20787 33594 | Ore and no |) | To the northern side of Cherry Tree field, a large area of c.3.8ha was scattered |
|-----|----------------|-----------------------------|----|----------------------------------------------------------------------------------|
| | | sandstone | | with sandstone / ironstone rocks, some <10cm in size. While this geological |
| | | scatter | | material was present across the field it had a greater density to the north, and |
| | | | | particularly in the north western corner. There were however few finds of slag |
| | | | | or pottery in this area. |
| 019 | TQ208335 | Possible ye | 2S | To the north west of the quarry a slight depression is present that runs to the |
| | | boundary | | railway line. This appears to follow a field boundary that is shown here on the |
| | | earthwork / | | Tithe map and pre 1930s OS maps. At its southern end, it joins the western |
| | | extension of the | | end of the quarry earthwork, perhaps suggesting a later extension to the |
| | | gravel quarry | | quarry, not shown on the OS maps. |
| | 1 | | | Zone 2 |
| 020 | TQ 20626 33440 | Brook Lane | | Running on a n-s alignment on the west side of Cherry Tree Field and east side |
| | | | | of Leman Garden there is Brook Lane. The first 95 meters is metalled and leads |
| | | | | to two cottages on the eastern side. The next 70m of the track is unmetalled |
| | | | | and forms a sunken track with 2.6 - 3m high banks on either side. The lane |
| | | | | then crosses the railway line and continues for 20m as a footpath before |
| | | | | becoming metalled again at Sunnybrook Farm for 77m before reaching |
| | | | | Wimland Road. |
| 021 | TQ 20586 33716 | Cow Lane (Northern section) | | A track that runs north of the railway line on an east west alignment. It starts |
| | | | | just north of Sunnybrook Farm (formally Parsons Farm) and runs 395m east to |
| | | | | the railway line, before following the northern side of the railway for 190m. |
| | | | | Today the track survives as a footpath around the southern edge of the field |
| | | | | here, however there were traces of a terrace cut into the natural southern |
| | J | | | |

| | | | gradient slope of the land, suggestive of the former course of the track. The |
|-----|----------------|---------|-------------------------------------------------------------------------------------------|
| | | | field here slopes southwards to Channells Brook Stream, which runs on the |
| | | | 1870 OS map the lane is shown as tree lined but these trees had disappeared |
| | | | by 1890. By the 1970s the track does not appear as an established route, just |
| | | | surviving as a bridleway. The bridleway continues om the western side of the |
| | | | road and eventually reaches Bush Lane. |
| 022 | TQ 20970 33832 | Railway | The railway was constructed before 1840 and runs along the northern |
| | | | boundary of Cherry Tree Field. The walkover survey showed that heavy |
| | | | engineering had taken place in order to construct the line that follows a NE- |
| | | | SW alignment. At Cherry Tree Field, an embankment had been created to raise |
| | | | the railway up above the level of the field, however at Lemans Garden to the |
| | | | west, the line formed a cutting and was lower than the field level. At some |
| | | | point the Channells Brook stream has clearly been piped so that it can flow |
| | | | from the southern to northern side of the railway embankment and continue |
| | | | its route west. Clearly to construct this railway would have required |
| | | | considerable earth movement and landscaping and this may have impacted |
| | | | upon the survival of archaeology in this area, particularly around the stream |
| | | | that may have been an important component in ironworking in this area. Cow |
| | | | Lane that runs to the northern side of the railway, deviates south and crosses |
| | | | the railway. While the railway will have affected the track where the two |
| | | | meet, it's construction does not appear to have affected its original route and |
| | | | in the early years of the railway, the OS maps of the second half of the 19 th |
| | | | Century show that Cow Lane was still a established routeway. |
| | | | |

| 023 | TQ 21093 33788 | Cow Lane (Southern section) | At TQ210338 Cow Lane makes a southern detour and crosses the railway into |
|-----|----------------|-----------------------------|---------------------------------------------------------------------------------|
| | | | a small copse of trees. Channells Brook flows along the southern boundary of |
| | | | the copse and Cow Lane, that exists here as an unmetalled footpath runs for |
| | | | 57m meters before crossing a modern footbridge over the stream, which is |
| | | | situated on the north east corner of Cherry Tree field. To the south of |
| | | | Channells Brook, the lane runs parallel with the eastern boundary of Cherry |
| | | | Tree field. |
| 024 | TQ 21048 33849 | Copse of Trees | Immediately south of the railway line is a small copse of trees. The footpath |
| | | | forming Cow Lane's south western course runs trough the centre of the copse. |
| | | | The field to the east of the copse is called 'The Muttons' (3047) on the 1844 |
| | | | Tithe Map, while the field to the west, which today is a small meadow running |
| | | | between the railway and Channels Brook had no name, but was adjacent to |
| | | | 'Long Lag' and was perhaps once part of this. The southern boundary of the |
| | | | copse is defined by Channells Brook, however the Ordnance Survey map of |
| | | | 1870 shows it continuing south and forming a verge either side of Cow Lane. |
| | | | Slag was present alongside the boundary of the railway in the copse and also |
| | | | within the stream channel in the south. |
| 025 | TQ 21028 33863 | Find spot (slag) | Two fragments of slag were present within the Cow Lane copse alongside the |
| | | | railway line One was large and the other medium. Both appeared to have |
| | | | fragments of calcined flint inclusions. There position close to the railway may |
| | | | indicate that they were deposited during the construction of the railway. |
| 026 | TQ 20912 33723 | Channells Brook stream | |

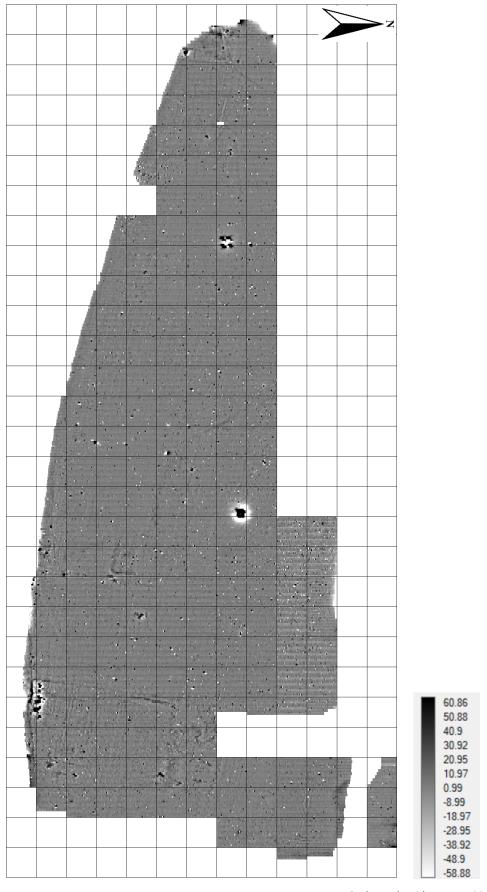
| 027 | TQ 21061 33823 | Slag scatter | Under the footbridge there were large fragments of slag (c.30cm in size) lying |
|-----|----------------|--------------|----------------------------------------------------------------------------------|
| | | | on the stream bed. These extended a few meters east up the stream and |
| | | | continued to the west. While it was not clear where their immediate source |
| | | | was and although there were some fragments within the stream bank it was |
| | | | not certain that this was their primary source, but it is likely they were being |
| | | | eroded out of the stream bank a short distance east in the copse of trees here. |
| | | | Their size and density at this point would imply they had not travelled far from |
| | | | their source, and it is possible that the construction of the recent footbridge |
| | | | had disturbed them. As the stream flows east to west, it is unlikely that they |
| | | | travelled from the west where Cherry Tree Field and the ironworking evidence |
| | | | here is located. It therefore implies that their source is within or near this |
| | | | copse. |
| 028 | TQ 21101 33780 | Trackway | Following the eastern boundary of Cherry Tree field, Cow Lane continues |
| | | | south from Channells Brook. The land here is divided into small paddocks and |
| | | | the presence of ditch and bank earthworks either side of the footpath imply |
| | | | that more recent cultivation has not taken place. A ditch and bank delineate |
| | | | the footpath either side of this track, with ditches on the inside and banks on |
| | | | the outer boundary (check this is the right way round). The width between the |
| | | | two interior ditches is 10m wide which is wider than the present footpath. A |
| | | | more recent fence is positioned between the ditches, with the original eastern |
| | | | track boundary now remaining within the paddocks. The ditches are relatively |
| | | | shallow and have become infilled, while sections of the bank have eroded |
| | | | away. Remains of a hedge are also present on the top of parts of the eastern |

| | | | bank, where it remains, while the western track boundary still retains an |
|-----|----------------|------------------------------|-----------------------------------------------------------------------------------|
| | | | overgrown hedge, and an active boundary for Cherry Tree Field. |
| 029 | TQ 21202 33675 | Historic building | The Cherry Tree Inn stands at TQ 21202 33675 adjacent to the old route of the |
| | | | A264, prior to its widening and diversion. The building is timber framed and |
| | | | has been dated to the 16 th century. |
| 030 | TQ206332 | Historic building | Roffey Place |
| 031 | TQ 21377 33532 | Hammer pond | Rookfield Pond – A large oval pond with irregular eastern side located within |
| | | | Faygate Forest. A large retaining bank is present on its northern end, while |
| | | | Rookfield Gill feeds into the pond on its southern end. Its length from north to |
| | | | south is approximately 177m and its width (east to west) at the widest point is |
| | | | approximately 42m. It is possible that the Rookfield Gill was diverted when the |
| | | | pond was excavated and may have originally flowed through Cherry Tree Field. |
| 032 | TQ 21758 33775 | Pond | Dabson Gill Pond – located 400m north-east of Rookfield Pond, Dabsongill is of |
| | | | a smaller size at approximately 42m x 24m. It is trapezoidal in shape with a |
| | | | bank on the northern side while the Dabson Gill feeds the pond on the |
| | | | southern side. |
| | | | Zone 3 |
| 033 | TQ 22089 32425 | Minepits, St Leonards Forest | They are located at TQ 22089 32425, 250 meters south from Forest Road, |
| | | | which runs east west through St Leonard's Forest. They extend over an area of |
| | | | approximately 14 acres on the edge of the forest where on the western side a |
| | | | 36 acre field has been cleared from the forest in the past. Forest clearance had |
| | | | also occurred on the eastern side of the forest , 200m from the Minepits by |
| | | | the 1870s. Generally, the pits to the west (fig.3.40 (a)) were of a greater depth |

| | | | than those to the east (b), some being a deep as 2.5m compared to 0.5m for |
|-----|----------------|-----------------|----------------------------------------------------------------------------------|
| | | | those of shallower depth. The minepits generally decreased in size and depth |
| | | | the further east (downslope) and this difference is clear on the LiDAR image. It |
| | | | is possible that those at the top of the ridge required deeper excavations to |
| | | | reach the underlying seams of ore and it is plausible that the ploughed-out pits |
| | | | further west also being downslope of this ridge were shallow too, making this |
| | | | land easier to cultivate, unlike the deeper counterparts at. Alternatively, this |
| | | | may represent changes in excavation practice, conscious effort to backfill |
| | | | these pits, or infill from hill-wash. Many of the westerly pits have large banks |
| | | | of spoil around their outer edges, often forming a curvilinear mound around |
| | | | half of their outer edges, whereas those in the far east show less evidence of |
| | | | spoil deposits. |
| 034 | TQ 22081 32287 | Minepits tracks | A trackway runs on a NE-SW alignment through the centre of the group of |
| | | | minepits, starting from Forest Road and terminating in the south of the |
| | | | forest at Highbirch Gate, one of the entrances to the forest, where four |
| | | | other tracks intersect. The minepits are distributed either side of this track |
| | | | and the track does not appear to bisect any of the pits, even before it |
| | | | became a more permanent (likely metalled) route by the 1890s. This respect |
| | | | of the track is something that is clearly seen in the LiDAR images of the |
| | | | forest. The 1870's OS map also shows this track formed a boundary at this |
| | | | date |
| 035 | TQ 21999 32258 | Linear pit | linear channel runs on a N-E/S-W trajectory for approximately110m, beginning |
| | | | at the NS trackway in the east and becomes the boundary of the western field |
| | 1 | 1 | |

| | | 1 | |
|-----|----------------|--------------------|---------------------------------------------------------------------------------|
| | | | after 60m (fig. 3.40; m). The channel is 6.2m in width with adjacent 2.8m wide |
| | | | low banks on both sides. It has a roughly V-shaped profile to a depth of 1.6m, |
| | | | however, slumping of the outer banks means its original depth and |
| | | | morphology are altered . The highest density of minepits falls to the north of |
| | | | the channel, however there were 6 minepits of larger size, southeast of it, |
| | | | whose spoil heaps had considerably infilled this section of the earthwork for a |
| | | | stretch of 30m and demonstrated that the channel pre-dated the adjacent |
| | | | minepits. Minepits to the southwest of the channel were smaller and |
| | | | shallower and respected its course. Its purpose as a boundary ditch, sunken |
| | | | track or quarry is difficult to determine |
| 036 | | Moated site | Identified on historic maps but not ground truthed |
| 037 | TQ221320 | St Leonards Forest | |
| 038 | TQ 21706 29276 | Pond | Hawkins Pond. Large pond located to the south of St Leonards Forest. It |
| | | | extends for a length of approximately 1000m and is around 80m in width. It is |
| | | | fed by Frenchbridge Gill to the north. This pond was associated with St |
| | | | Leonards Lower Forge, to the south at TQ213291 (Hodgkinson 2008, 145). |
| 039 | TQ 22123 29100 | Pond | Hammer Pond. Associated names include Hammerhill Wood and Cinderbank |
| | | | Copse. Located 380m southeast of Hawkins Pond. The pond extends to a |
| | | | length of approximately 815m with a width of approximately 85m. It is fed by |
| | | | Newstead Gill to the north. This pond was associated with St Leonards Upper |
| | | | Forge to the south at TQ219289 (Hodgkinson 2008, 145). |
| L | l | | L |

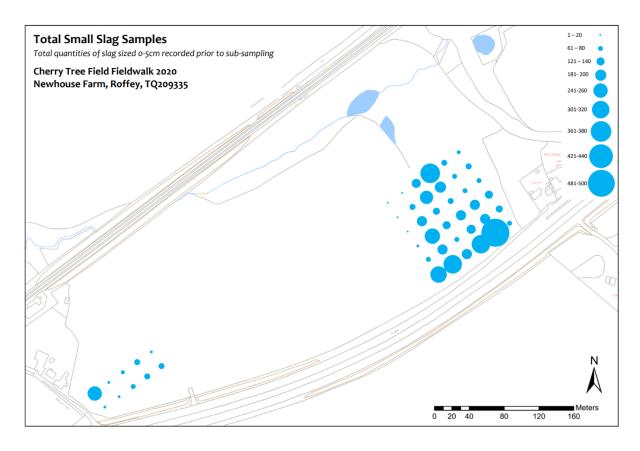
Appendix B3: Roffey Magnetometry raw data plot

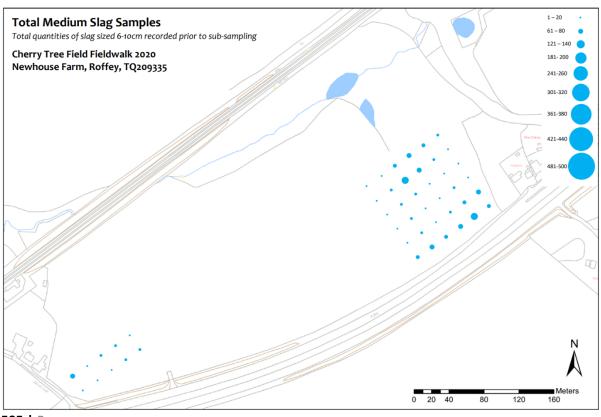


Scale: each grid square = 20m

Appendix B4: Fieldwalking Distribution Maps

Appendix B4.1: Grid Fieldwalk



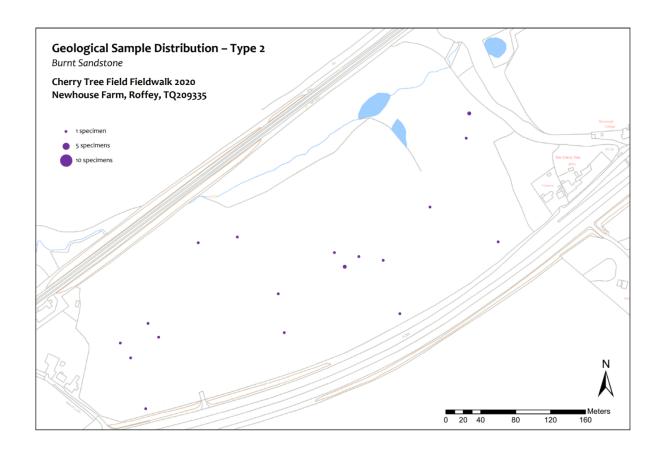


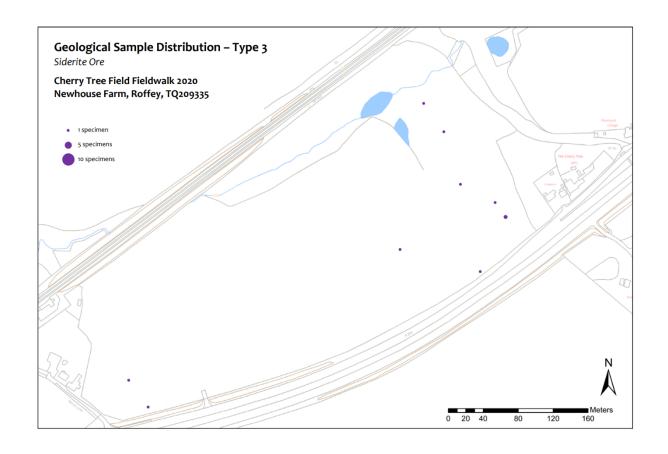


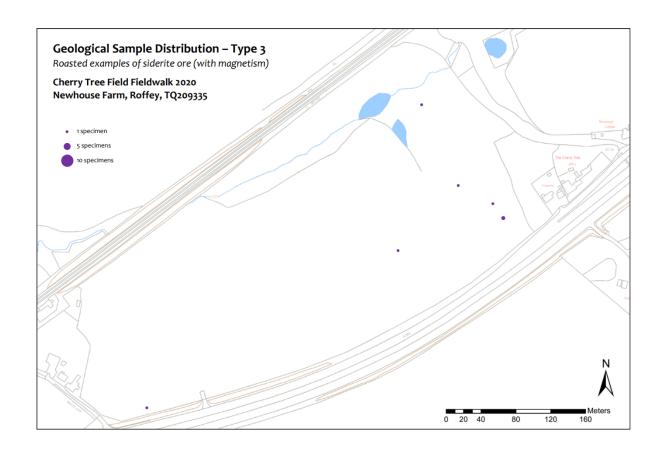


Appendix B4.2: Transect Fieldwalk

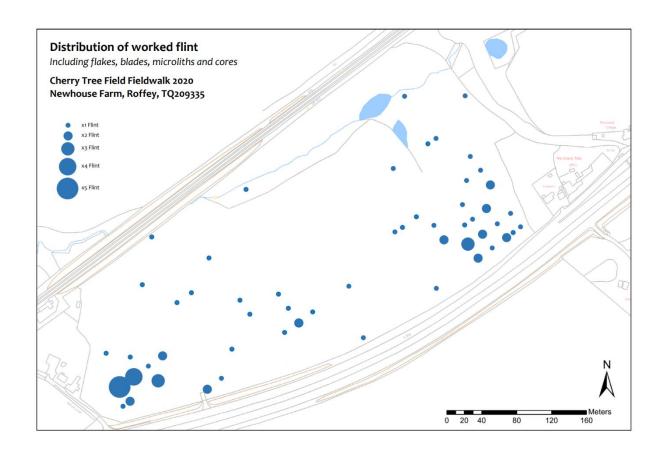












Appendix B5: Macromorphological Analysis

Appendix B5.1: Technological Classification Scheme – Roffey 2020

Slag

This classification scheme applies the same categories of analysis as those used on the Exmoor Iron Project by Juleff (2016). It has been adapted to the slag and geological types present at Roffey.

| Slag Type Number | Slag Type | Corresponding type from Exmoor Classification Scheme (Juleff 2016/4/28) | Description |
|---------------------|------------------------------|-------------------------------------------------------------------------------------|-------------|
| Type 1 | Furnace slag undiagnostic | Furnace Slag (iif) | |
| Type 2 | Tap slag | Tap slag (ia and ib) | |
| Type 3 | Rod-shape | Furnace drain slag, rod-shape (vik) | |

| Type 4 | Furnace slag base | Furnace slag, uncertain base (iie) | |
|--------|---------------------------------------------------------------------------------|---------------------------------------|--|
| Type 5 | Furnace residues (vitrified refractory material and furnace lining) | Furnace residues (viip or viir) | |
| Type 6 | Concave convex furnace slag base | Furnace slag, uncertain base (iie) | |
| Type 7 | Dense crystalline glass furnace slag base | Furnace slag, uncertain base (iie) | |

| Type 8 | Glass slag | Furnace residues (viip or viir) | |
|---------|---------------------------------------------------------------------------------|------------------------------------|--|
| Type 9 | Furnace slag undiagnostic, low density and high in charcoal inclusions | Furnace Slag (iif) | |
| Type 10 | High density iron rich slag (possibly consolidation slag) | | |

Note: Where high levels of surface rust (<70%) were present on samples, these were classified by type but with the addition of 'WR' (With Rust).

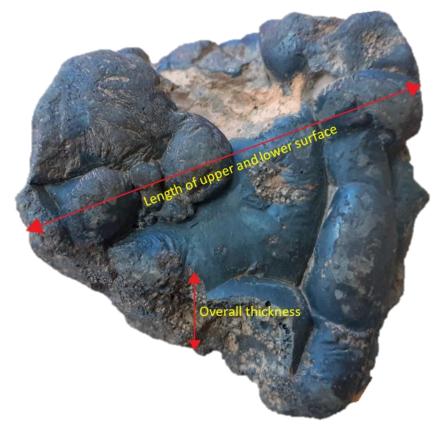
Shape

| Plano Concave | |
|----------------|--|
| Plano | |
| Plano Convex | |
| Convex | |
| Concave Convex | |
| Elongated | |
| Amorphous | |

| Slag and geological samples can be placed into one of these size categories. Those greater than large are classed as extra-large. Small (5cm²) | Medium (10cm²) |
|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| | Large (15cm²) |

Size of sample

The samples should be grouped into small, medium and large using the size chart above. Within each size group the smallest, medium and largest sample should be selected, and their upper and lower surfaces measured along with their width.



The upper and lower surface of the slag is measured at the longest point, along with the thickness of the sample, again at the thickest point.

Density

| High | Moderate | Low | Very Low |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| \$3333 \$3333 \$3333 | | | • |
| Very low porosity and often heavier in weight, occasionally with a crystalline structure. | A moderate to high porosity with more visible broken air pockets and lighter in weight. | High porosity with much of the surface covered by broken air pockets. Light in weight. | Often large broken air bubbles, high porosity and very light in weight. |

Porosity Proportion

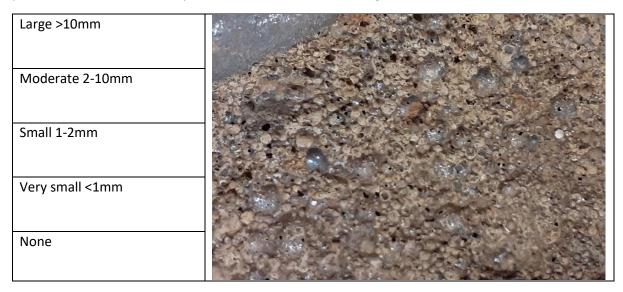
Based on the total coverage of air pockets visible on the surface of the slag sample.

| Very High >60% coverage | High 40-60% coverage |
|--------------------------|----------------------|
| Moderate 20-40% coverage | Low 20% coverage |

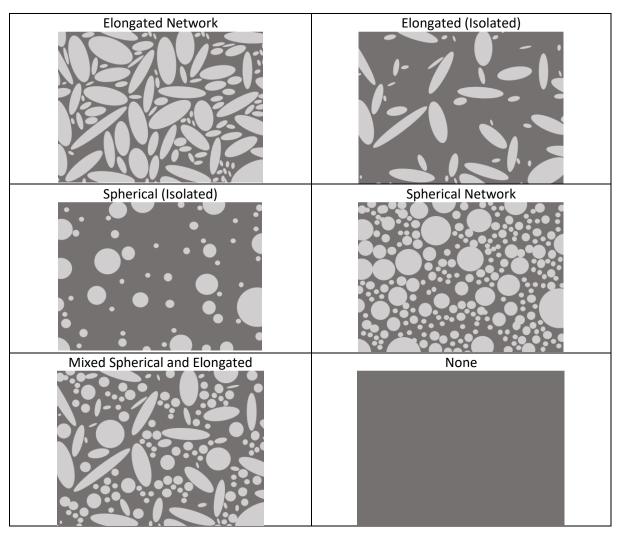
| Very Low 5% coverage | None |
|----------------------|------|
|----------------------|------|

Porosity size

A measurement of the average porosity size of the sample. Many samples have a variety of sizes present, however if for example the dominant surface coverage is sized 2-10mm, it is recorded as this.

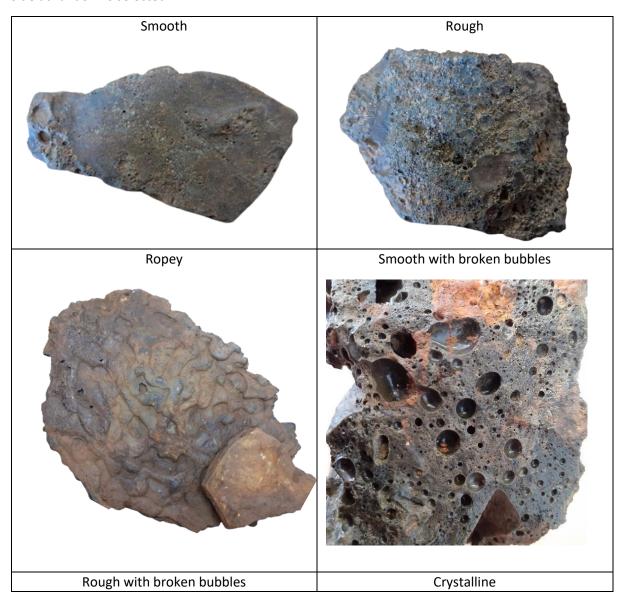


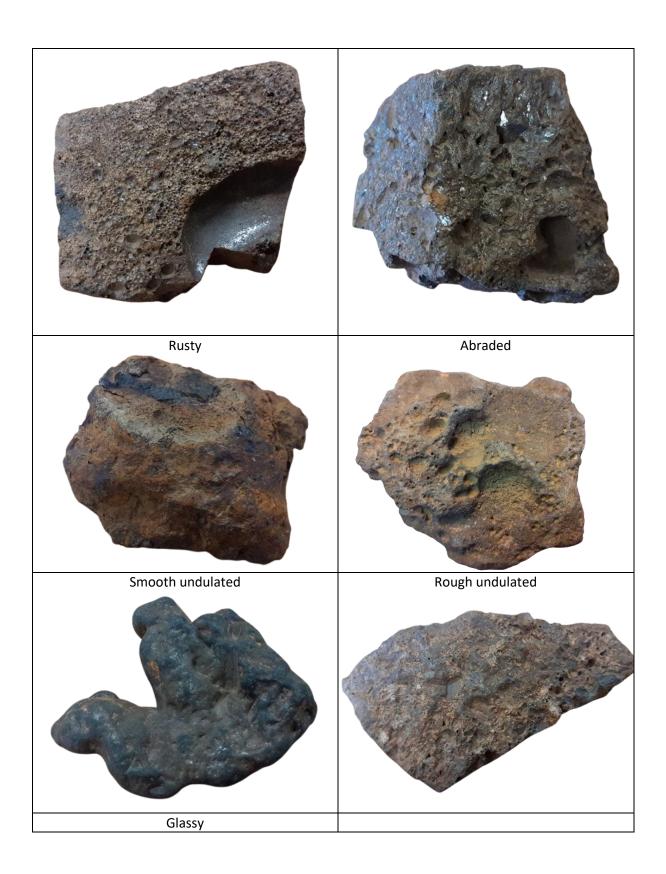
Porosity Shape

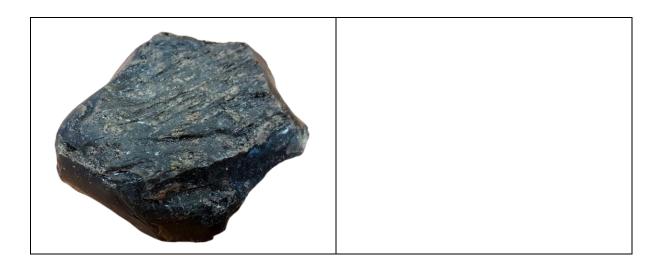


Surface Texture

A record of the upper surface of the slag. In the case of the tap slag, this is the ropey side with tendrils, and for bases, it is the opposite to the side with a rough or smooth undulated impression. For Type 1 furnace slag, it may not be possible to determine the upper surface from the lower, in which case a side at random is selected.





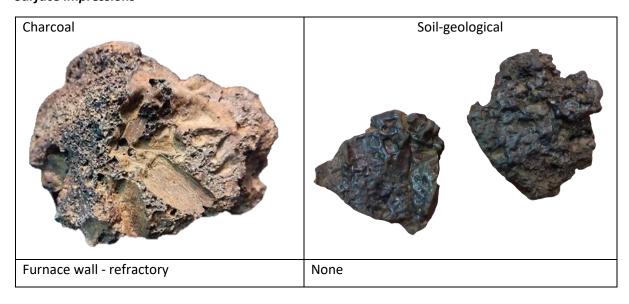


Colour

In many cases a combination of colours will be applicable, such as 'black-metallic'

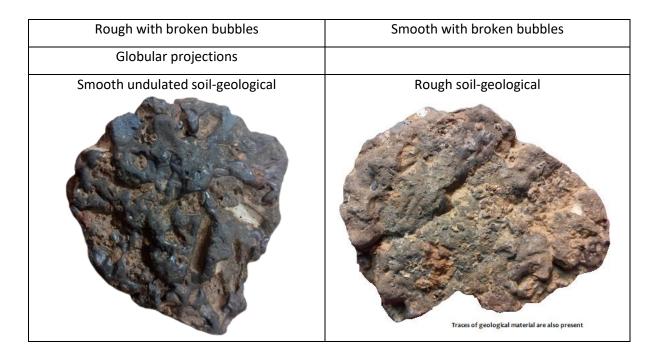
| Black | Light grey | Dark grey |
|--------------|--------------|-------------------|
| Light brown | Dark brown | Metallic |
| Glassy green | Glassy black | Glassy blue/green |
| Grey-brown | Black-brown | Purple |

Surface impressions



Underside texture (see above for examples)

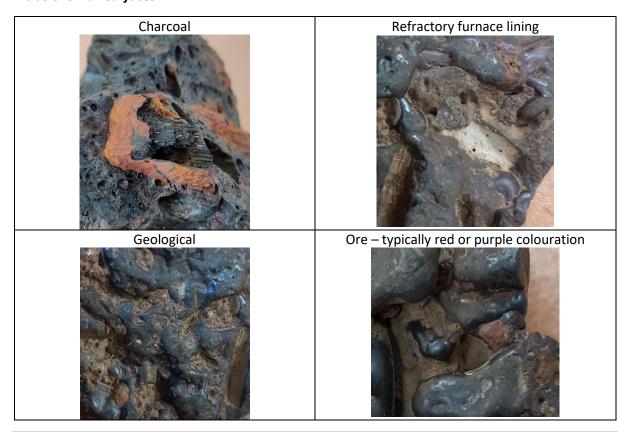
| Smooth | Rough |
|------------------|-------------|
| Smooth undulated | Crystalline |



Underside impressions – (see above photographs)

| Charcoal | Refractory (furnace wall) |
|-----------------|---------------------------|
| Soil-geological | None |

Inclusions – all surfaces



| Rust inclusions | Stone |
|-------------------------------|----------------|
| Fire cracked (calcined) flint | Slag spheroids |

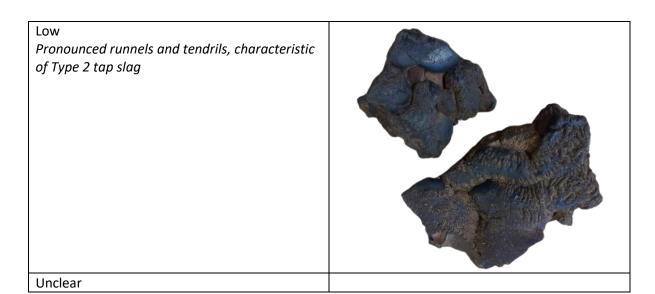
Magnetism

Magnetism is measured using a 25mm diameter neodymium clamping magnet (20kg pull). Generally, a highly magnetic sample can be fully lifted by a magnet, without any support. A medium magnetic sample exhibits a strong enough attraction to hold the magnet, while a low magnetic sample issues a low-level pull for the magnet. Some samples are only magnetic in isolated areas and are therefore measured on the same scale but recorded as 'isolated areas'.

| High | Medium | Low |
|---------------------|-----------------------|--------------------|
| High isolated areas | Medium isolated areas | Low isolated areas |
| Non-magnetic | | |

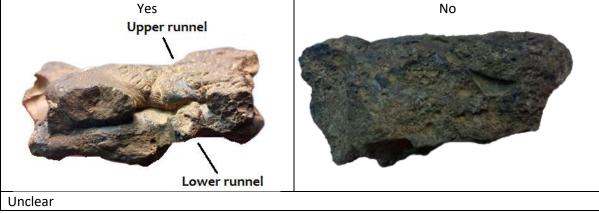
Viscosity

| High No evidence of runnels | |
|------------------------------------------------------------------|--|
| Moderate Slight evidence of runnels or viscous underside texture | |



Multiple flow episodes

This is particularly applicable to type 2 (tap slag) where traces of runnels are present. If the runnels overlap other runnels, it is possible that multiple flow episodes have taken place.



Degree of fracture

Total – all surfaces

There are no identifiable surfaces left on the slag sample, either caused by abrasion from the action of ploughing or heavy fracture. Type 1 slag often falls into this category.



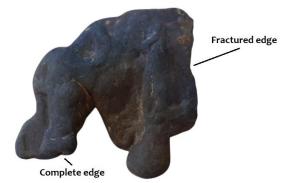
Partial – all edges

The upper and lower surface is present; however, all edges are fractured. In the example to the right, none of the tendrils are complete and have been fractured, however the upper and lower surface of the slag is complete.



Partial – some edges

In this instance most of the edges are intact, along with the upper and lower surface. Only one edge is fractured. This is often present on Type 2 tap slag, where the ends of tendrils have fractured from a larger slag flow.



Complete – edges intact

While rare in the instance of fieldwalking material, some slag has complete edges, often where a drip of slag has occurred.



Geological Material

| Type 1 | Ironstone or sandstone: with iron inclusions and often featuring iron staining | |
|--------|----------------------------------------------------------------------------------------------------------------------------------------|----------------|
| Type 2 | Burnt sandstone: Red discolouration to fine grained sandstone, indicative of burning, however natural discolouration is also possible. | Type 2 (84) |
| Type 3 | Iron ore – some roasted with a magnetism | Type 3 (84) |
| Type 4 | Sandstone | Tire II (1991) |
| Type 5 | Conglomerate sandstone | |

Seam or nodule

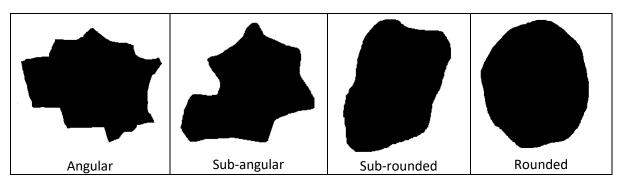
Seam
plano samples that have fractured as part of a
seam – thus partially fractured.

Nodule amorphous sample, fractured on all edges





Shape



Size



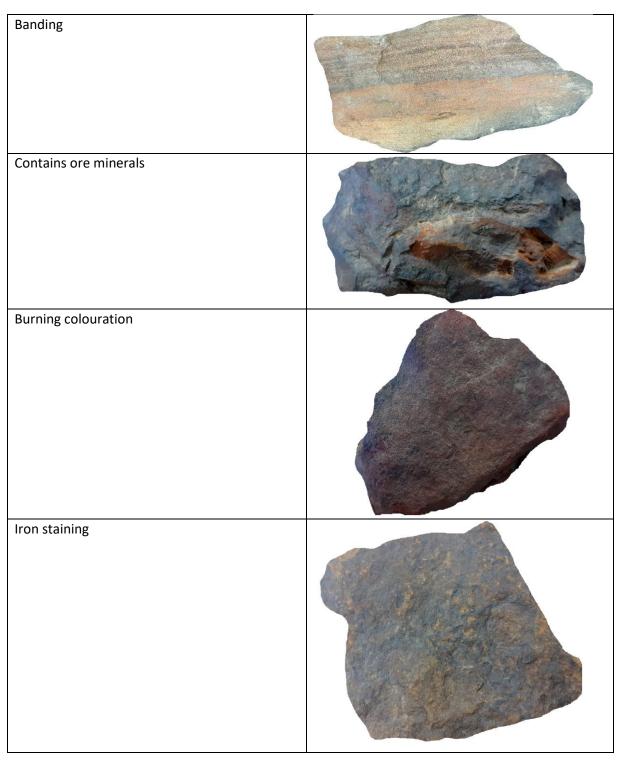
Colour

| Light brown | Dark brown | Metallic | Black |
|-------------|---------------|--------------|-------|
| Purple | Yellow orange | Yellow brown | Red |

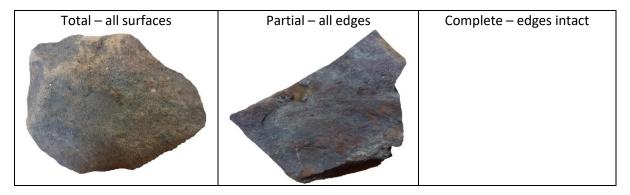
Grain Size

| Coarse (large) >5mm | Moderate >2-5mm | Fine >2mm | Homogeneous |
|---------------------|-----------------|-----------|-------------|
| | | | |

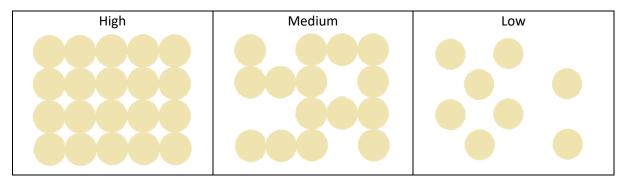
Other Features



Fracture



Density



Degree of magnetism

(using the same magnetism as the slag samples)

| High | Medium | Low | None magnetic |
|---------------|-----------------|--------------|---------------|
| High Isolated | Medium Isolated | Low Isolated | |

Appendix B5.2: Summary data for macromorphological analysis of slag samples recovered from the Grid Fieldwalk 2020

| | | the G | oria Fielaw | aik 2020 | | | | | | | |
|------------------------------|---------------|--------------|--------------|-------------------|-----------------|---------------|--------------|--------------|-----------|------------|-----------|
| Slag ty | pe totals | I | | | | | | | | | |
| Grid | Type 1 | Type 1(WR) | Type 2 | Type 3 | | Type 5 | TOTAL | | | | |
| Overall Total | 640 | | | 17 | 391 | 57 | | | | | |
| Eastern Grid Western Grid | 462 178 | | | 15 2 | 288 103 | 45 12 | | | | | |
| S | Size | l | | | | | | | | | |
| TOTAL | Total small | Small weight | Total medium | Medium weight | Total large | Large weight | No Data | | | | |
| Type 1 Type 1(WR) | 292 31 | | | 49433 9614 | 18 8 | 11588 5236 | | | | | |
| Type 1(WK) | 267 | | | 15495 | 0 | 0 | | | | | |
| Type 3 | 8 | | | 1306 | 0 | 0 | | | | | |
| Type 4 Type 5 | 147 26 | | | 34446 4199 | 14 4 | 8443 2631 | | | | | |
| Eastern Grid | | Small weight | Total medium | Medium weight | - | Large weight | No Data | | | | |
| Type 1 Type 1 (WR) | 192 17 | | | 38423 8003 | 16 8 | 10451 5236 | | | | | |
| Type 2 | 189 | 7958 | 83 | 10645 | 0 | 0 | | | | | |
| Type 3 | 7 | | | 964 | 4.4 | 0442 | | | | | |
| Type 4 Type 5 | 105 19 | | | 25827 3771 | 14 4 | 8443 2631 | | | | | |
| Western Grid | Total small | Small weight | Total medium | Medium weight | Total large | Large weight | No data | | | | |
| Type 1 | 100 | | | 11010 | 2 | 1137 | | | | | |
| Type 1 (WR) Type 2 | 14 78 | | | 1611 4850 | 0 | 0 | | | | | |
| Type 3 | 1 | 101 | 1 | 342 | | | | | | | |
| Type 4 Type 5 | 42 7 | | | 8619 428 | 0 | 0 | | | | | |
| | | | | | | | | | | | |
| | Shape | | l | | | | | | | | |
| Slag Type Type 1 | Plano concave | • | Plano 80 | Concave convex 39 | Plano convex 23 | Convex 15 | Single rod 1 | Multiple rod | Elongated | Total 6 | 640 |
| Type 1 (WR) | 0 | | | 7 | 6 | 2 | | | ı | 0 | 97 |
| Type 2 | 4 | | | 24 | 26 | 9 | | 17 | | 12 | 389 |
| Type 3 Type 4 | 0 | | | 0 66 | 0 65 | 0 29 | | 1 0 | | 1 21 | 17 391 |
| Type 5 | 1 | | | 5 | 1 | 1 | | 0 | | 1 | 57 |
| Eastern Grid | Plano concave | • | Plano | Concave convex 20 | Plano convex | Convex | Single rod | Multiple rod | Elongated | Total | |
| Type 1 Type 1 (WR) | 0 | | | 5 | 4 | 11 2 | | 0 |) | 0 | 462 72 |
| Type 2 | 3 | | | 17 | 15 | 4 | | 9 | | 7 | 272 |
| Type 3 Type 4 | 0 | | | 0 61 | 0 41 | 0 21 | | | | 1 13 | 15 288 |
| Type 5 | 1 | | | 4 | 0 | 1 | | | | 1 | 45 |
| Western Grid | Plano concave | Amorphous | Plano | Concave convex | Plano convex | Convex | Single rod | Multiple rod | Elongated | Total | |
| Type 1 | 0 | | | 19 | 4 | 4 | | | | 2 | 178 |
| Type 1 (WR) Type 2 | 0 | | | 2 7 | 2 11 | 0 5 | | 0 | | 0 5 | 25 117 |
| Type 3 | 0 | | | 0 | 0 | 0 | | | | 0 | 2 |
| Type 4 Type 5 | 1 0 | | | 5 1 | 24 1 | 8 | | 0 | | 8 | 103 12 |
| | | | _ | | | | | | | | |
| | Density | | l | | | | | | | | |
| Slag Type Type 1 | High 49 | Moderate 251 | Low 324 | Very low 15 | No data | Total 640 | | | | | |
| Type 1 (WR) | 12 | | | 0 | 0 | 97 | | | | | |
| Type 2 | 326 | | | 0 | 0 | 389 | | | | | |
| Type 3 Type 4 | 7 148 | | | 0 | 0 | 17 391 | | | | | |
| Type 5 | 8 | | | 1 | 0 | 57 | | | | | |
| Eastern Grid | High | Moderate | Low | Very low | | Total | | | | | |
| Type 1 Type 1 (WR) | 29 4 | | | 12 0 | | 462 72 | | | | | |
| Type 1 (WK) | 222 | | | 0 | 0 | 272 | | | | | |
| Туре 3 | 6 | | | 0 | 0 | 15 | | | | | |
| Type 4 Type 5 | 97 6 | | | 3 | 1 0 | 288 45 | | | | | |
| Western Grid | - | Moderate | Low | Very low | | Total | | | | | |
| Type 1 | 20 | | | 3 | 0 | 178 | | | | | |
| Type 1 (WR) Type 2 | 8 104 | | | 0 | 0 | 25 117 | | | | | |
| Type 3 | 1 | | 0 | 0 | 0 | 2 | | | | | |
| Type 4 | 51 | | | 0 | 1 | 103 | | | | | |
| Type 5 | 2 | 5 | 4 | 1 | 0 | 12 | | | | | |

| Porosity | Proportion | | | | | |
|------------------|--------------|-----------------|-------------------|-------------------|-----------------------|-------------|
| Slag type | Very high | High | Moderate | Low | Very low None | . No data |
| ype 1 | 34 | 1 173 | 98 | 17 | 3 | |
| ype 1 (WR) | 1 | 5 24 | 29 | 16 | 10 | 2 |
| ype 2 | | 4 27 | 113 | 135 | 104 | 6 |
| ype 3 | | 2 6 | 9 | | 0 | 0 |
| ype 4 | 4 | | | | 12 | 0 |
| | | | | | | |
| ype 5 | | 3 10 | 15 | 19 | 10 | 0 |
| astern Grid | Very high | High | Moderate | Low | Very low None | |
| ype 1 | 25 | | | | 3 | |
| ype 1 (WR) | 1 | 5 20 | 27 | 6 | 4 | 0 |
| vpe 2 | | 4 19 | 78 | 90 | 77 | 4 |
| ,. ype 3 | | 2 5 | 8 | | 0 | 0 |
| | 3 | | | | 10 | 0 |
| ype 4 | | | | | | |
| /pe 5 | | 2 10 | 9 | 14 | 10 | 0 |
| estern Grid | Very high | High | Moderate | Low | Very low None | No data |
| /pe 1 | 8 | 5 55 | 33 | 4 | 0 | |
| ,. ype 1 (WR) | | 1 4 | | | 6 | 2 |
| | |) 8 | | | 27 | 2 |
| ype 2 | | | | | | |
| ype 3 | |) 1 | | | 0 | 0 |
| ype 4 | | 3 17 | 43 | 38 | 2 | 0 |
| ype 5 | | 1 0 | 6 | 5 | 0 | 0 |
| | Done de Ch | | | | | |
| | Porosity Sha | pe | | | | |
| lag Type | None | Spherical | • | | Mixed sphe-elor No da | |
| ype 1 | | 26 | 122 | 55 | 436 | 1 64 |
| ype 1 (WR) | | 2 30 | 15 | 31 | 19 | 0 9 |
| | 1 | | | | 48 | |
| ype 2 | 10 |) 121 | | | | |
| ype 3 | | | 6 | | 10 | 1 |
| ype 4 | |) 43 | 93 | 91 | 163 | 1 39 |
| ,pe 5 | |) 12 | . 5 | 28 | 12 | 0 5 |
| astern Grid | None | Spherical | Spherical network | Mixed spher-elong | Mixed sphe-elor No da | ata Total |
| ype 1 | | 20 | • | 36 | 308 | 1 46 |
| • • | | | | | | |
| ype 1 (WR) | | 27 | | | 9 | 7 |
| ype 2 | | 5 91 | . 23 | 100 | 35 | 17 27 |
| уре 3 | | | 5 | 1 | 9 | 1 |
| ype 4 | | 22 | . 75 | 59 | 132 | 28 |
| | | | | | | |
| ype 5 | | 10 | 5 | 22 | 8 | 4 |
| estern Grid | None | Spherical | Spherical network | Mixed spher-elong | Mixed sphe-elor No da | ata Total |
| ype 1 | |) 6 | 25 | 19 | 128 | 0 17 |
| | | | | | | |
| ype 1 (WR) | | 2 3 | | | 10 | 0 2 |
| ype 2 | | 4 30 | 23 | 47 | 13 | 0 11 |
| ype 3 | | | 1 | 0 | 1 | |
| _ | |) 21 | | | 31 | 1 10 |
| ype 4 ype 5 | |) 2 | | | 4 | 0 1 |
| ,,, | | | • | · · | 7 | , i |
| | Porosity Siz | | | | | |
| ag type | Large (>10) | Moderate (2-10) | | Very Small (<1) | None No da | |
| /pe 1 | 3 | 7 348 | 237 | 18 | 0 | 0 64 |
| ype 1 (WR) | | 5 43 | 32 | 14 | 2 | 1 9 |
| ype 2 | 2 | | | | 10 | 0 38 |
| | | | | | 0 | |
| ype 3 | | | | | U | |
| ype 4 | 5 | | | | | 1 39 |
| ype 5 | | 1 28 | 24 | 4 | 0 | 0 5 |
| astern Grid | Large (>10) | Moderate (2-10) | | Very Small (<1) | None No da | |
| ype 1 | 3 | 3 258 | 155 | 16 | 0 | 0 46 |
| ype 1 (WR) | | 5 33 | 22 | 11 | 0 | 1 7 |
| ype 2 | 1 | | | | 6 | 0 27 |
| | | | | | 0 | |
| ype 3 | | | | | U | |
| ype 4 ype 5 | 3 | 7 145 1 20 | | | 0 | 1 28 0 4 |
| | | | | | | |
| | Large (>10) | Moderate (2-10) | | Very Small (<1) | None No da | |
| ype 1 | | 1 90 | | | 0 | 17 |
| ype 1 (WR) | |) 10 | 10 | 3 | 2 | 0 2 |
| ype 2 | | 5 53 | | 14 | 4 | 0 11 |
| ype 3 | |) 2 | | | 0 | 0 |
| | | | | | U | |
| ype 4 | 1 | | | | | 0 10 |
| Гуре 5 | |) 8 | | | 0 | 0 1 |

Degree of Fracture

| Slag Type | Total - all surfac Partia | al - all edges | Partial - some edg | Complete - edges int No | o data Total | |
|--------------|---------------------------|----------------|--------------------|-------------------------|--------------|-----|
| Type 1 | 489 | 135 | 14 | 2 | | 640 |
| Type 1 (WR) | 88 | 7 | 1 | 1 | | 97 |
| Type 2 | | 212 | 175 | 2 | | 389 |
| Type 3 | | 3 | 14 | | | 17 |
| Type 4 | 5 | 327 | 58 | 1 | | 391 |
| Type 5 | 38 | 19 | 0 | 0 | | 57 |
| | | | | | | |
| Eastern Grid | Total - all surfac Partia | al - all edges | Partial - some edg | Complete - edges int No | o data Total | |
| Type 1 | 341 | 105 | 14 | 2 | | 462 |
| Type 1 (WR) | 67 | 4 | 1 | 0 | | 72 |
| Type 2 | 0 | 160 | 111 | 1 | | 272 |
| Type 3 | | 3 | 12 | | | 15 |
| Type 4 | 5 | 236 | 46 | 1 | 0 | 288 |
| Type 5 | 30 | 15 | 0 | 0 | 0 | 45 |
| | | | | | | |
| Western Grid | Total - all surfac Partia | al - all edges | Partial - some edg | Complete - edges int No | o data Total | |
| Type 1 | 148 | 30 | 0 | 0 | | 178 |
| Type 1 (WR) | 21 | 3 | 0 | 1 | | 25 |
| Type 2 | 0 | 52 | 64 | 1 | | 117 |
| Type 3 | | 0 | 2 | | | 2 |
| Type 4 | 0 | 91 | 12 | 0 | 0 | 103 |
| Type 5 | 8 | 4 | 0 | 0 | 0 | 12 |
| | | | | | | |

Multiple Flow Episodes

| Slag Type | Yes | No | Unclear | r Total | |
|--------------|-----|-----|---------|---------|-----|
| Type 1 | | 11 | 588 | 41 | 640 |
| Type 1 (WR) | | 1 | 93 | 3 | 97 |
| Type 2 | | 134 | 255 | 0 | 389 |
| Type 3 | | 1 | 15 | 1 | 17 |
| Type 4 | | 21 | 370 | 0 | 391 |
| Type 5 | | 1 | 55 | 1 | 57 |
| | | | | | |
| Eastern Grid | Yes | No | Unclear | r Total | |
| Type 1 | | 11 | 427 | 24 | 462 |
| Type 1 (WR) | | 1 | 68 | 3 | 72 |
| Type 2 | | 91 | 181 | 0 | 272 |
| Type 3 | | 1 | 13 | 1 | 15 |
| Type 4 | | 20 | 268 | 0 | 288 |
| Type 5 | | 1 | 43 | 1 | 45 |
| | | | | | |
| Western Grid | Yes | No | Unclear | r | |
| Type 1 | | 0 | 161 | 17 | 178 |
| Type 1 (WR) | | 0 | 25 | 0 | 25 |
| Type 2 | | 43 | 74 | 0 | 117 |
| Type 3 | | 0 | 2 | 0 | 2 |
| Type 4 | | 1 | 102 | 0 | 103 |
| Type 5 | | 0 | 12 | 0 | 12 |
| | | | | | |

Viscosity

| Slag Type | High | Moderate | Low | Unclear | No data | Total | |
|--------------|------|----------|-----|---------|---------|-------|-----|
| Type 1 | | 482 | 144 | 14 | 0 | 0 | 640 |
| Type 1 (WR) | | 91 | 6 | 0 | 0 | 0 | 97 |
| Type 2 | | 12 | 1 | 376 | 0 | 0 | 389 |
| Type 3 | | 2 | 12 | 3 | 0 | 0 | 17 |
| Type 4 | | 173 | 141 | 77 | 0 | 0 | 391 |
| Type 5 | | 52 | 4 | 1 | 0 | 0 | 57 |
| Eastern Grid | High | Moderate | Low | Unclear | No data | Total | |
| Type 1 | | 335 | 115 | 12 | 0 | 0 | 462 |
| Type 1 (WR) | | 66 | 6 | 0 | 0 | 0 | 72 |
| Type 2 | | 12 | 1 | 259 | 0 | 0 | 272 |
| Type 3 | | 1 | 11 | 3 | 0 | 0 | 15 |
| Type 4 | | 116 | 112 | 60 | 0 | 0 | 288 |
| Type 5 | | 42 | 2 | 1 | 0 | 0 | 45 |
| Western Grid | High | Moderate | Low | Unclear | No data | Total | |
| Type 1 | | 147 | 29 | 2 | 0 | 0 | 178 |
| Type 1 (WR) | | 25 | 0 | 0 | 0 | 0 | 25 |
| Type 2 | | 0 | 0 | 117 | 0 | 0 | 117 |
| Type 3 | | 1 | 1 | 0 | 0 | 0 | 2 |
| Type 4 | | 57 | 29 | 17 | 0 | 0 | 103 |
| Type 5 | | 10 | 2 | 0 | 0 | 0 | 12 |

| Magı | netism | | | | | | | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------|---------------------|
| ag Type | High | | High (isolated) | Moderate | Moderate (isolated) | Low | Low (isolated) | Non-magnetic | No Data | Total | |
| /pe 1 | | 15 | 84 | | 126 | | 137 | 131 | 1 | 640 | |
| /pe 1 (WR) | | 39 | 16 | | 15 | | 9 | 1 | 0 | 97 | |
| pe 2 | | 16 | 60 | | 115 | | 53 | 35 | 0 | 389 | |
| pe 3 | | 0 4 | 1 56 | | 1 68 | | 5 77 | 3 74 | 0 | 17 391 | |
| rpe 4 rpe 5 | | 7 | | | 7 | | 10 | 6 | 0 | 57 | |
| stern Grid | High | | High (isolated) | Moderate | Moderate (isolated) | Low | Low (isolated) | Non-magnetic | No Data | Total | |
| pe 1 | 6 | 14 | 51 | | 98 | | 85 | 96 | 1 | 462 | |
| pe 1 (WR) | | 24 | 10 | 9 | 13 | 8 | 7 | 1 | 0 | 72 | |
| pe 2 | | 15 | 39 | | 66 | 43 | 41 | 24 | 0 | 272 | |
| pe 3 | | 0 | | | 1 | | 3 | 3 | 0 | 15 | |
| pe 4 pe 5 | | 4 7 | 37 15 | | 47 6 | | 55 6 | 53 4 | 0 | 288 45 | |
| | | • | | | | | | | | | |
| estern Grid pe 1 | High | 1 | High (isolated) | Moderate 8 | Moderate (isolated) 28 | | Low (isolated) 52 | Non-magnetic 35 | No Data 0 | Total 178 | |
| pe 1 pe 1 (WR) | | 15 | | | 20 | | 2 | 0 | 0 | 25 | |
| pe 2 | | 1 | | | 49 | | 12 | 11 | 0 | 117 | |
| pe 3 | | 0 | | | 0 | | 2 | 0 | 0 | 2 | |
| pe 4 | | 0 | 19 | | 21 | | 22 | 21 | 0 | 103 | |
| pe 5 | | 0 | | | 1 | | 4 | 2 | 0 | 12 | |
| Surface In | npressions | | | | | | | | | | |
| ag Type | Charcoal | | Soil-geological | Furnace wall refra | Ore / geological | Soil geo refrac | Geo, ore and refrac | None | Total | | |
| pe 1 | | 128 | 0 0 | | , 6 | 0-1- | | 503 | 640 | | |
| pe 1 (WR) | | 28 | 0 | 0 | 0 | 0 | 0 | 69 | 97 | | |
| rpe 2 | | 8 | 25 | 0 | 4 | | 0 | 352 | 389 | | |
| pe 3 | | 4 | | | | | | 13 | 17 | | |
| pe 4 | | 29 | 13 | 3 | 1 | 0 | 0 | 345 | 391 | | |
| pe 5 | | 0 | 0 | 1 | 0 | 0 | 0 | 56 | 57 | | |
| stern Grid | Charcoal | | Soil-geological | Furnace wall refra | Ore / geological | Soil geo refrac | Geo, ore and refrac | None | Total | | |
| /pe 1 | | 115 | | | | | | 340 | 462 | | |
| pe 1 (WR) | | 21 | 0 | | 0 | | 0 | 51 | 72 | | |
| rpe 2 | | 4 | 24 | 0 | 4 | | 0 | 240 | 272 | | |
| /pe 3 | | 4 | 0 | 2 | 4 | | | 11 | 15 | | |
| /pe 4 /pe 5 | | 28 0 | 9 | | 1 0 | | 0 | 248 44 | 288 45 | | |
| estern Grid | Charasal | | Cail analasisal | Frances well refer | Out / made sized | Cail and refuse | | Nana | Tatal | | |
| pe 1 | Charcoai | 13 | Soil-geological 0 | Furnace wall refra | Ore / geological | Soil geo reirac | Geo, ore and refrac | 163 | Total 178 | | |
| pe 1 (WR) | | 7 | 0 | | 0 | 0 | 0 | 18 | 25 | | |
| /pe 2 (1111, | | 4 | | | 0 | | 0 | 112 | 117 | | |
| /pe 3 | | 0 | | ŭ | · · | | ŭ | 2 | 2 | | |
| /pe 4 | | 1 | | 1 | 0 | 0 | 0 | 97 | 103 | | |
| /pe 5 | | 0 | | | 0 | | 0 | 12 | 12 | | |
| | | | | _ | | | | | | | |
| U | nderside Im | pres | sions | | | | | | | | |
| | 01 1 | | Soil-geological | Furnace wall | Charcoal and soil ged | | Soil-geo & refrac 0 | Soil-geo, refrac | None 537 | No data | Total 6 |
| | Charcoal | 77 | 10 | | 0 | | U | U | | | 0 |
| pe 1 | Charcoal | 77 9 | 18 0 | | n | | n | n | ** | | 3 |
| pe 1 pe 1 (WR) | Charcoal | 77 9 53 | 0 | 0 | 0 59 | 0 | 0 | 0 | 88 144 | | |
| pe 1 pe 1 (WR) pe 2 | Charcoal | 9 | 0 131 | 0 | | 0 | | | | | |
| pe 1 pe 1 (WR) pe 2 pe 3 | Charcoal | 9 53 | 0 131 1 | 0 | 59 | 0 2 0 | 0 | 0 | 144 | 1 | |
| rpe 1 rpe 1 (WR) rpe 2 rpe 3 rpe 4 | Charcoal | 9 53 0 | 0 131 1 119 | 0 | 59 0 | 0 2 0 | 0 | 0 0 | 144 16 | 1 1 | 3 |
| rpe 1 rpe 1 (WR) rpe 2 rpe 3 rpe 4 rpe 5 | Charcoal | 9 53 0 42 1 | 0 131 1 119 Soil-geological | 0 0 2 2 Furnace wall | 59 0 54 Charcoal and soil geo | 0 2 0 0 | 0 0 5 Soil-geo & refrac | 0 0 3 Soil-geo, refrac | 144 16 165 53 None | | 3 Total |
| pe 1 pe 1 (WR) pe 2 pe 3 pe 4 pe 5 stern Grid pe 1 | | 9 53 0 42 1 | 0 131 1 119 Soil-geological | 0 2 2 Furnace wall | 59 0 54 Charcoal and soil geo 4 | 0 2 0 0 | 0 0 5 Soil-geo & refrac 0 | 0 0 3 Soil-geo, refrac 0 | 144 16 165 53 None | 1 | Total 4 |
| pe 1 pe 1 (WR) pe 2 pe 3 pe 4 pe 5 stern Grid pe 1 pe 1 (WR) | | 9 53 0 42 1 60 7 | 0 131 1 119 Soil-geological 14 0 | 0 0 2 2 2 Furnace wall 0 | 59 0 54 Charcoal and soil ged 4 0 | 0 2 0 0 0 | 0 5 Soil-geo & refrac 0 0 | 0 0 3 Soil-geo, refrac 0 0 | 144 16 165 53 None 384 65 | 1 | Total 4 |
| pe 1 pe 1 (WR) pe 2 pe 3 pe 4 pe 5 stern Grid pe 1 pe 1 (WR) | | 9 53 0 42 1 60 7 29 | 0 131 1 119 Soil-geological 14 0 105 | 0 0 2 2 2 Furnace wall 0 | 59 0 54 Charcoal and soil ged 4 0 43 | 0 2 0 0 • Geo, ore and ref | 0 0 5 Soil-geo & refrac 0 0 | 0 0 3 Soil-geo, refrac 0 0 | 144 16 165 53 None 384 65 93 | 1 | Total 4 |
| pe 1 pe 1 (WR) pe 2 pe 3 pe 4 pe 5 stern Grid pe 1 pe 1 (WR) pe 2 pe 3 | | 9 53 0 42 1 60 7 29 0 | 0 131 1 119 Soil-geological 14 0 105 | 0 2 2 2 Furnace wall 0 0 | 59 0 54 Charcoal and soil ged 4 0 43 0 | 0 2 0 0 : Geo, ore and ref 0 2 | 0 0 5 Soil-geo & refrac 0 0 0 | 0 0 3 Soil-geo, refrac 0 0 0 | 144 16 165 53 None 384 65 93 14 | 1 No data | Total 4 |
| pe 1 pe 1 (WR) pe 2 pe 3 pe 4 pe 5 stern Grid pe 1 pe 1 (WR) pe 2 pe 3 pe 4 | | 9 53 0 42 1 60 7 29 | 0 131 1 119 Soil-geological 14 0 105 | 0 2 2 2 Furnace wall 0 0 | 59 0 54 Charcoal and soil ged 4 0 43 | 0 2 0 0 : Geo, ore and ref 0 2 | 0 0 5 Soil-geo & refrac 0 0 | 0 0 3 Soil-geo, refrac 0 0 | 144 16 165 53 None 384 65 93 | 1 | Total 4 |
| pe 1 pe 1 (WR) pe 2 pe 3 pe 4 pe 5 stern Grid pe 1 pe 1 (WR) pe 2 pe 3 pe 4 | Charcoal | 9 53 0 42 1 60 7 29 0 29 | 0 131 1 119 Soil-geological 14 0 105 1 85 | 0 0 2 2 2 Furnace wall 0 0 0 2 2 2 | 59 0 54 Charcoal and soil ged 4 0 43 0 35 | 0 2 0 0 • Geo, ore and ref 0 2 0 0 | 0 0 5 Soil-geo & refrac 0 0 0 0 5 | 0 0 3 Soil-geo, refrac 0 0 0 0 3 | 144 16 165 53 None 384 65 93 14 128 42 | No data | Total 4 |
| pe 1 pe 1 (WR) pe 2 pe 3 pe 4 pe 5 stern Grid pe 1 pe 1 (WR) pe 2 pe 3 pe 4 pe 5 estern Grid | Charcoal | 9 53 0 42 1 60 7 29 0 | 0 131 1 119 Soil-geological 14 0 105 1 85 Soil-geological | 0 2 2 2 Furnace wall 0 0 2 2 2 Furnace wall | 59 0 54 Charcoal and soil geo 4 0 43 0 35 Charcoal and soil geo | 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0 0 5 5 Soil-geo & refrac 0 0 0 5 5 5 5 5 5 Soil-geo & refrac 5 5 5 5 Soil-geo & refrac 6 6 7 5 5 5 6 7 5 6 7 5 6 7 5 6 7 5 7 5 | Soil-geo, refrac 0 0 0 3 Soil-geo, refrac 3 Soil-geo, refrac | 144 16 165 53 None 384 65 93 14 128 42 | No data | Total 2 |
| rpe 1 rpe 1 (WR) rpe 2 rpe 3 rpe 4 rpe 5 restern Grid rpe 1 rpe 1 (WR) rpe 2 rpe 3 rpe 4 rpe 5 restern Grid rpe 1 rpe 1 (WR) rpe 2 rpe 3 rpe 4 rpe 5 | Charcoal | 9 53 0 42 1 1 60 7 29 0 29 0 | 0 131 1 119 Soil-geological 14 0 105 1 85 Soil-geological | Furnace wall 0 0 2 2 Furnace wall 0 2 2 Furnace wall | 59 0 54 Charcoal and soil ged 4 0 43 0 35 Charcoal and soil ged | 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0 0 5 5 Soil-geo & refrac 0 0 0 5 5 5 5 5 5 5 Soil-geo & refrac 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Soil-geo, refrac 0 0 0 3 Soil-geo, refrac 0 0 3 Soil-geo, refrac 0 | 144 16 165 53 None 384 65 93 14 128 42 None | No data | Total 2 Total 1 |
| rpe 1 rpe 1 (WR) rpe 2 rpe 3 rpe 4 rpe 5 restern Grid rpe 1 rpe 1 (WR) rpe 2 rpe 3 rpe 4 rpe 5 restern Grid rpe 1 rpe 1 (WR) rpe 2 rpe 3 rpe 4 rpe 5 | Charcoal | 9 53 0 42 1 60 7 29 0 | 0 131 1 119 Soil-geological 14 0 105 1 85 Soil-geological 4 0 | 0 2 2 2 Furnace wall 0 2 2 2 Furnace wall 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 59 0 54 Charcoal and soil gee 4 0 43 0 35 Charcoal and soil gee 4 | 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0 0 5 5 Soil-geo & refrac 0 0 0 5 5 5 5 5 5 Soil-geo & refrac 5 5 5 5 Soil-geo & refrac 6 6 7 5 5 5 6 7 5 6 7 5 6 7 5 6 7 5 7 5 | Soil-geo, refrac 0 0 0 3 Soil-geo, refrac 3 Soil-geo, refrac | 144 16 165 53 None 384 65 93 14 128 42 None | No data | Total 4 2 2 Total 1 |
| ag Type //pe 1 //pe 1 (WR) //pe 2 //pe 3 //pe 4 //pe 5 astern Grid //pe 1 (WR) //pe 2 //pe 3 //pe 4 //pe 5 //sestern Grid //pe 1 //pe 1 //pe 1 //pe 1 //pe 1 //pe 3 | Charcoal | 9 53 0 42 1 60 7 29 0 29 0 | 0 131 1 119 Soil-geological 14 0 105 1 85 Soil-geological 4 0 26 | 0 2 2 2 Furnace wall 0 2 2 2 Furnace wall 0 0 0 2 0 2 2 0 0 0 0 0 0 0 0 0 0 0 0 | 59 0 54 Charcoal and soil ged 4 0 43 0 35 Charcoal and soil ged | 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0 0 5 5 Soil-geo & refrac 0 0 0 5 5 5 5 5 5 5 5 5 5 5 5 5 6 5 6 6 6 6 | Soil-geo, refrac 0 0 0 3 Soil-geo, refrac 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 144 16 165 53 None 384 65 93 14 128 42 None | No data | Total 4 |
| ype 1 ype 1 (WR) ype 2 ype 3 ype 4 ype 5 astern Grid ype 1 ype 1 (WR) ype 2 ype 3 ype 4 ype 5 festern Grid ype 1 ype 1 (WR) ype 2 ype 3 ype 4 ype 5 | Charcoal | 9 53 0 42 1 60 7 29 0 29 0 | 0 131 1 119 Soil-geological 14 0 105 1 85 Soil-geological 4 0 26 0 0 | 0 2 2 2 Furnace wall 0 2 2 2 Furnace wall 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 59 0 54 Charcoal and soil gee 4 0 35 Charcoal and soil gee 4 0 | 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0 0 5 5 Soil-geo & refrac 0 0 0 5 5 Soil-geo & refrac 0 0 0 0 0 5 5 Soil-geo & refrac 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0 0 3 Soil-geo, refrac 0 0 3 Soil-geo, refrac 0 0 | 144 16 165 53 None 384 65 93 14 128 42 None 153 23 | No data | Total 4 2 2 Total 1 |

Inclusions (% of the total for each slag type)

| Total | | | | | | | | | |
|--------------|-------|------|------------|------|--------------|---------------|------|------------------------|--------|
| | Ore % | | Charcoal % | | Refractory % | Iron / rust % | | No inclusions % Sample | e size |
| Type 1 | | 3.6 | | 4.5 | 9.5 | | 31.6 | 57.2 | 640 |
| Type 1 (WR) | | 2.1 | | 21.7 | 25.8 | | 53.6 | 12.4 | 97 |
| Type 2 | | 31.4 | | 4.4 | 25.5 | | 17 | 42.9 | 389 |
| Type 3 | | 17.7 | | 0 | 5.9 | | 47.1 | 29.4 | 17 |
| Type 4 | | 28.1 | | 3.1 | 16.1 | | 23.8 | 44.8 | 391 |
| Type 5 | | 1.8 | | 1.8 | 96.5 | | 63.2 | 1.8 | 57 |
| Eastern Grid | | | | | | | | | |
| | Ore % | | Charcoal % | | Refractory % | Iron / rust % | | No inclusions % Sample | e size |
| Type 1 | | 3.7 | | 5.8 | 11 | | 34 | 53.5 | 462 |
| Type 1 (WR) | | 2.8 | | 25 | 31.9 | | 43.1 | 12.5 | 72 |
| Type 2 | | 34.2 | | 0.7 | 31.3 | | 19.9 | 38.6 | 272 |
| Type 3 | | 13.3 | | 0 | 6.7 | | 46.7 | 33.3 | 15 |
| Type 4 | | 27.4 | | 3.8 | 17.7 | | 23.6 | 43.4 | 288 |
| Type 5 | | 2.2 | | 2.2 | 97.8 | | 66.7 | 2.2 | 45 |
| Western Grid | | | | | | | | | |
| | Ore % | | Charcoal % | | Refractory % | Iron / rust % | | No inclusions % Sample | e size |
| Type 1 | | 3.4 | | 1.1 | 5.6 | | 25.3 | 66.9 | 178 |
| Type 1 (WR) | | 0 | | 12 | 8 | | 84 | 12 | 25 |
| Type 2 | | 24.8 | | 12.8 | 12 | | 10.3 | 53 | 117 |
| Туре 3 | | 50 | | 0 | 0 | | 50 | 0 | 2 |
| Type 4 | | 30.1 | | 1 | 11.7 | | 24.3 | 48.5 | 103 |
| Type 5 | | 0 | | 0 | 91.7 | | 50 | 0 | 12 |
| •• | | | | | | | | | |

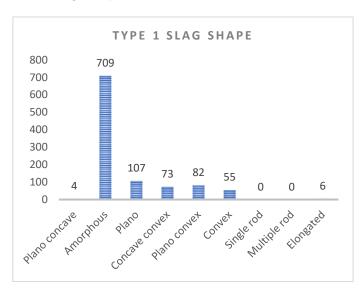
Appendix 5.3: Total counts and weights of slag per grid square

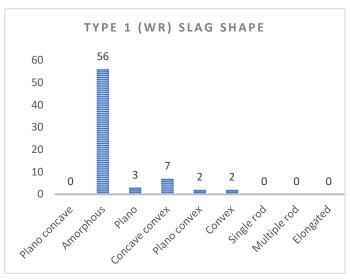
| | Type 1 S | Slag | | Type 1 (WF | R Slag) | l | Type 2 S | lag | | Type 3 S | lag | | Type 4 S | lag | l | Type 5 S | lag |
|----------|----------|--------|----------|------------|----------|----------|----------|----------|----------|----------|---------|----------|----------|--------|----------|----------|--------|
| Grid | Count | Weight | Grid | Count | Weight | Grid | Count | Weight | Grid | Count | Weight | Grid | Count | Weight | Grid | Count | Weight |
| | 22 | 3022 | 5 | 2 | 822 | 5 | 5 | 211 | 5 | 5 | 678 | 5 | 17 | 2587 | 5 | 1 | 76 |
| i | 23 | 3789 | 6 | 3 | 790 | 6 | 11 | 782 | 6 | 0 | 0 | 6 | 11 | 2540 | 6 | 4 | 581 |
| • | 16 | 1379 | 7 | 0 | 0 | 7 | 14 | 1071 | 7 | 0 | 0 | 7 | 10 | 2222 | 7 | 1 | 110 |
| 3 | 29 | 4574 | 8 | 0 | 0 | 8 | 14 | 1140 | 8 | 0 | 0 | 8 | 4 | 1035 | 8 | 1 | 585 |
| 9 | 46 | 5735 | 9 | 0 | 0 | 9 | 31 | 2255 | 9 | 1 | 49 | 9 | 12 | 1347 | 9 | 2 | 365 |
| 10 | 15 | 1603 | 10 | 1 | 543 | 10 | 5 | 90 | 10 | 1 | 71 | 10 | 3 | 164 | 10 | 1 | 123 |
| 20 | 6 | 622 | 20 | 0 | 0 | 20 | 3 | 162 | 20 | 0 | 0 | 20 | 9 | 834 | 20 | 0 | 0 |
| 21 | 11 | 2923 | 21 | 1 | 98 | 21 | 6 | 463 | 21 | 0 | 0 | 21 | 13 | 3371 | 21 | 0 | 0 |
| 22 | 11 | 722 | 22 | 1 | 322 | 22 | 0 | 0 | 22 | 0 | 0 | 22 | 6 | 540 | 22 | 0 | 0 |
| 23 | 14 | 1795 | 23 | 0 | 0 | 23 | 6 | 428 | 23 | 0 | 0 | 23 | 5 | 647 | 23 | 0 | 0 |
| 24 | 8 | 766 | 24 | 0 | 0 | 24 | 12 | 1258 | 24 | 2 | 118 | 24 | 8 | 853 | 24 | 0 | 0 |
| 25 | 9 | 565 | 25 | 1 | 61 | 25 | 7 | 663 | 25 | 0 | 0 | 25 | 4 | 577 | 25 | 3 | 181 |
| 38 | 10 | 1637 | 38 | 0 | 0 | 38 | 2 | 234 | 38 | 1 | 41 | 38 | 0 | 0 | 38 | 1 | 43 |
| 39 | 21 | 2323 | 39 | 3 | 926 | 39 | 11 | 971 | 39 | 0 | 0 | 39 | 11 | 1006 | 39 | 2 | 55 |
| 10 | 10 | 1006 | 40 | 1 | 579 | 40 | 12 | 1122 | 40 | 0 | 0 | 40 | 4 | 470 | 40 | 1 | 64 |
| 11 | 7 | 747 | 41 | 0 | 0 | 41 | 7 | 275 | 41 | 0 | 0 | 41 | 6 | 633 | 41 | 0 | 0 |
| 12 | 14 | 907 | 42 | 0 | 0 | 42 | 24 | 816 | 42 | 0 | 0 | 42 | 10 | 1030 | 42 | 0 | 0 |
| 13 | 8 | 572 | 43 | 0 | 0 | 43 | 7 | 223 | 43 | 0 | 0 | 43 | 2 | 128 | 43 | 3 | 115 |
| 9 | 5 | 675 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 2 | 189 | 59 | 0 | 0 |
| 60 | 14 | 1495 | 60 | 1 | 263 | 60 | 5 | 392 | 60 | 0 | 0 | 60 | 7 | 946 | 60 | 0 | 0 |
| 1 | 9 | 1124 | 61 | 1 | 130 | 61 | 6 | 369 | 61 | 0 | 0 | 61 | 9 | 1207 | 61 | 2 | 298 |
| 2 | 5 | 364 | 62 | 0 | 0 | 62 | 7 | 286 | 62 | 1 | 105 | 62 | 10 | 659 | 62 | 1 | 302 |
| 3 | 7 | 1212 | 63 | 0 | 0 | 63 | 5 | 188 | 63 | 0 | 0 | 63 | 6 | 458 | 63 | 0 | 0 |
| 54 | 3 | 493 | 64 | 1 | 760 | 64 | 6 | 417 | 64 | 1 | 78 | 64 | 5 | 375 | 64 | 2 | 724 |
| 32 | 10 | 860 | 82 | 4 | 340 | 82 | 0 | 0 | 82 | 0 | 0 | 82 | 7 | 410 | 82 | 1 | 38 |
| 33 | 10 | 835 | 83 | 1 | 409 | 83 | 5 | 242 | 83 | 0 | 0 | 83 | 8 | 1393 | 83 | 0 | 0 |
| 34 | 24 | 1918 | 84 | 3 | 831 | 84 | 9 | 400 | 84 | 0 | 0 | 84 | 6 16 | 2945 | 84 | 3 | 822 |
| 35 | 17 | 4188 | 85 | 3 | 513 | 85 | 6 | 349 | 85 | 0 | 0 | 85 | 10 | 1946 | 85 | 0 | 0 |
| | | | | | | | | | | | | | | | | | |
| 36 | 11 | 1496 | 86 87 | 6 | 1435 | 86 87 | 4 9 | 214 | 86 87 | 0 | 0 | 86 87 | 4 | 340 | 86 87 | 2 5 | 254 |
| 37 38 | 14 | 1248 | 88 | 1 5 | 60 | | | 707 | 88 | 0 | | 88 | 14 | 1407 | | | 299 |
| | 21 | 2054 | | | 608 | 88 | 10 | 485 | | | 0 | | 12 | 941 | 88 | 1 | 31 |
| 88a | 6 | 914 | 88a | 0 | 0 | 88a | 5 9 | 129 | 88a | 0 | 0 | 88a | 10 | 1330 | 88a | 0 | 0 |
| 89 | 17 | 1042 | 89 | 4 | 234 | 89 | | 491 | 89 | 0 | 0 | 89 | 11 | 1175 | 89 | 2 | 107 |
| 0 | 11 | 1919 | 90 | 3 | 241 | 90 | 13 | 946 | 90 | 1 | 342 | 90 | 9 | 1338 | 90 | 3 | 183 |
| 1 | 49 | 3005 | 91 | 4 | 458 | 91 | 20 | 864 | 91 | 0 | 0 | 91 | 27 | 2052 | 91 | 0 | 0 |
| .07 | 2 | 305 | 107 | 10 | 622 | 107 | 0 | 0 | 107 | 0 | 0 | 107 | 2 | 190 | 107 | 5 | 1234 |
| .08 | 4 | 891 | 108 | 3 | 400 | 108 | 2 | 204 | 108 | 0 | 0 | 108 | 6 | 1192 | 108 | 1 | 320 |
| .09 | 11 | 1575 | 109 | 9 | 1895 | 109 | 10 | 796 | 109 | 1 | 65 | 109 | 5 | 922 | 109 | 0 | 0 |
| .10 | 12 | 1449 | 110 | 8 | 1395 | 110 | 8 | 957 | 110 | 1 | 29 | 110 | 17 | 1742 | 110 | 0 | 0 |
| 11 | 16 | 2266 | 111 | 4 | 594 | 111 | 9 | 739 | 111 | 1 | 75 | 111 | 12 | 1755 | 111 | 0 | 0 |
| 12 | 8 | 741 | 112 | 4 | 363 | 112 | 4 | 179 | 112 | 0 | 0 | 112 | 13 | 1213 | 112 | 3 | 485 |
| 14 | 29 | 3759 | 114 | 0 | 0 | 114 | 35 | 3436 | 114 | 0 | 0 | 114 | 0 | 0 | 114 | 1 | 76 |
| 15 | 8 | 344 | 115 | 3 | 272 | 115 | 5 | 493 | 115 | 1 | 101 | 115 | 6 | 763 | 115 | 2 | 242 |
| 16 | 8 | 660 | 116 | 1 | 82 | 116 | 8 | 545 | 116 | 0 | 0 | 116 | 11 | 1546 | 116 | 0 | 0 |
| 17 | 13 | 1642 | 117 | 3 | 443 | 117 | 7 | 350 | 117 | 0 | 0 | 117 | 10 | 988 | 117 | 1 | 21 |
| 18 | 16 | 1248 | 118 | 2 | 163 | 118 | 5 | 139 | 118 | 0 | 0 | 118 | 7 | 626 | 118 | 2 | 53 |
| OTAL | 640 | 74409 | TOTAL | 9 | 97 16652 | TOTAL | 38 | 39 26481 | TOTAL | | 17 1752 | TOTAL | 39 | 50032 | TOTAL | | 77 |

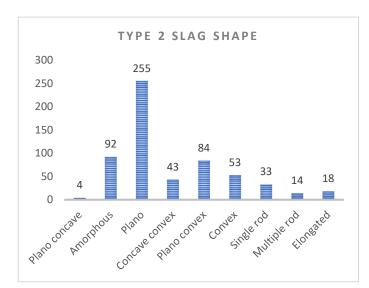
Appendix B5.4: Macromorphological analysis of Transect slag samples

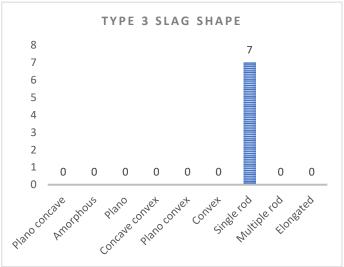
Data not discussed in the thesis but presented here for reference. Scale records overall count

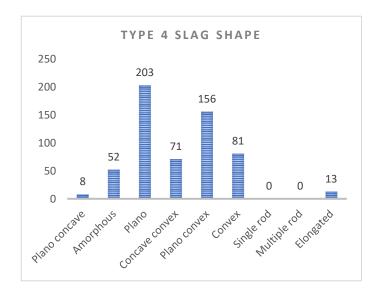
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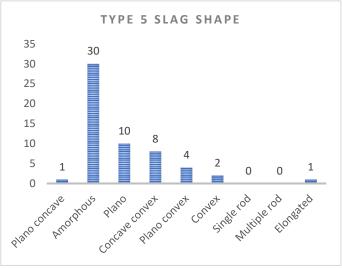




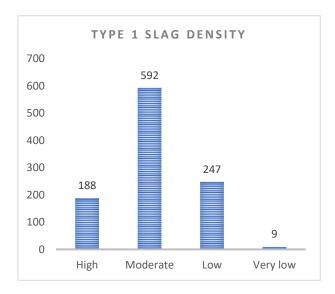


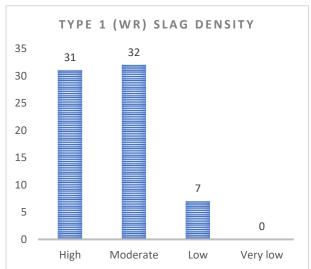


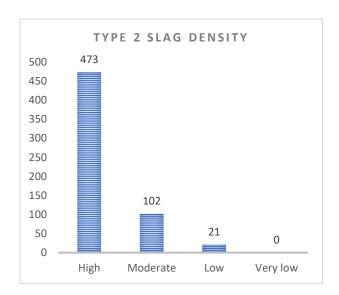


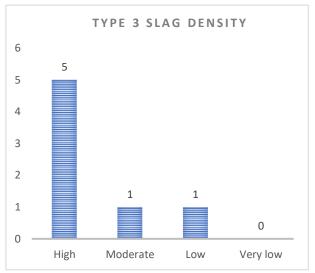


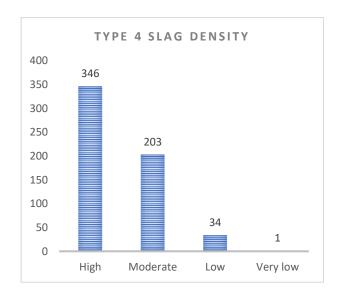
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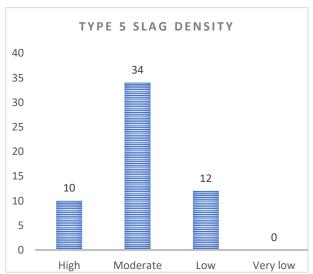




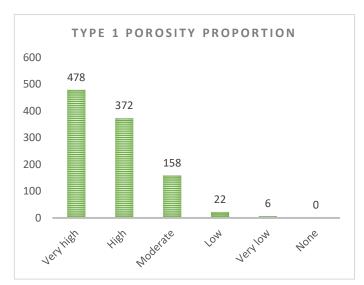


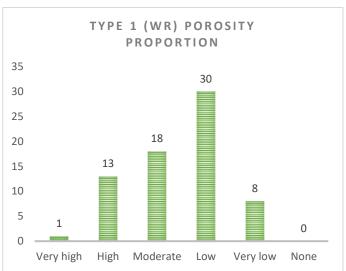


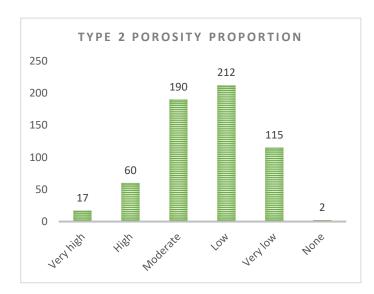


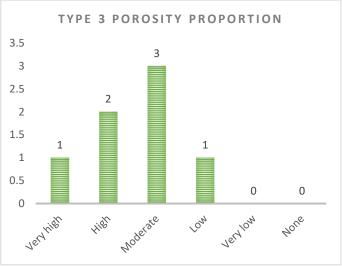


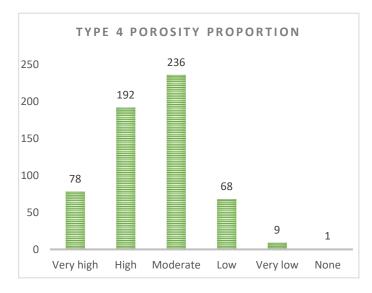
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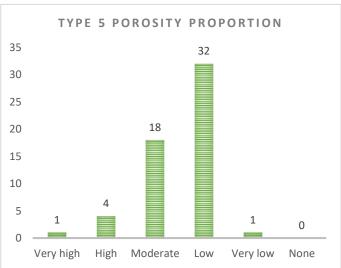




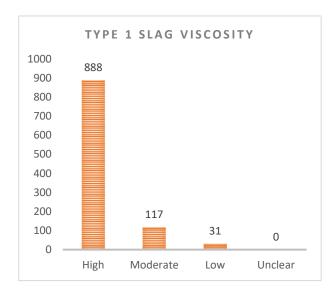


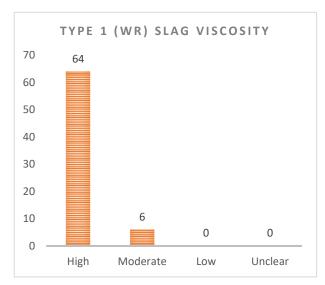


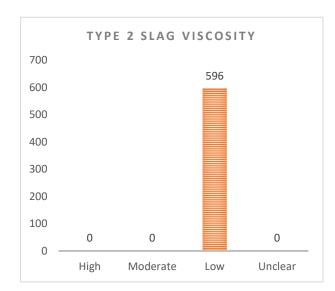


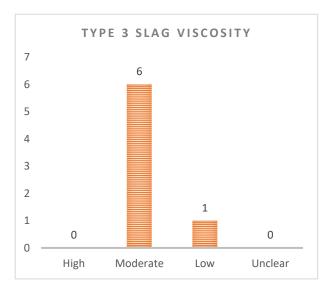


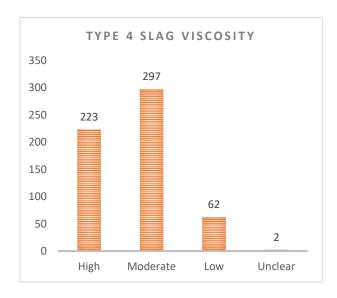
Viscosity

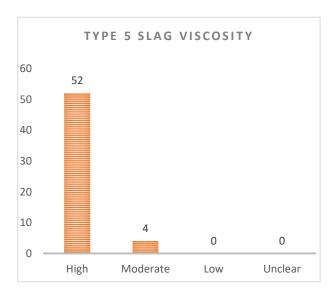




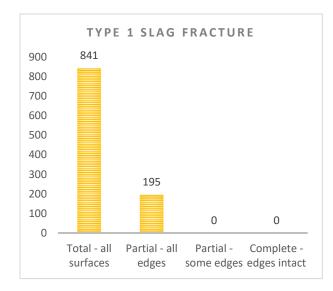


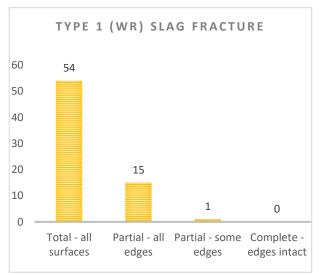


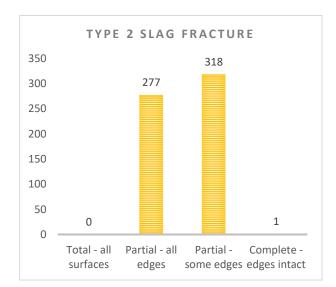


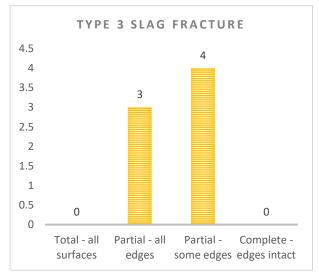


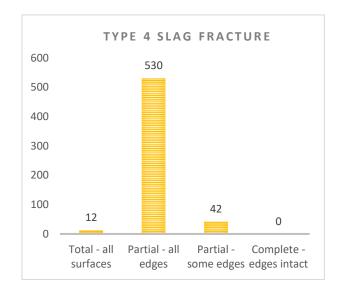
Fracture

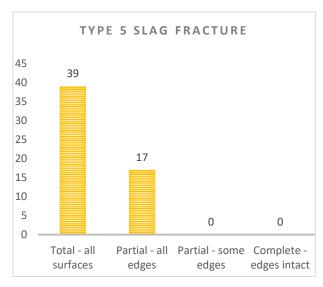












Appendix B6: The Iron Church at Roffey

Dorothea Hurst described the church in 1889 as 'This part of the parish being a long distance from any church, a small iron one was erected on a piece of ground given for this purpose by the Duke of Norfolk. This building cost about £200, which was generously subscribed by a few individuals, and is capable of containing about ninety persons. It was opened by a full church service on Easter Sunday, 1856. It is now used as a school.' (Hurst 1889: 147)

This quote is important as it confirms that the structure was made of iron, corrugated iron being a common material for small, prefabricated churches and chapels built at this time as the population grew during the latter part of the 19th Century. They are often referred to as 'tin tabernacles' or 'iron churches' and were generally intended to be temporary structures until a more permanent church was build (Weald and Downland website accessed 27/01/22). They a commonly painted green. It is still shown on the 1910 OS map, however, appears to have been demolished by the 1930s.

Appendix C

Primary Tudeley data

| Appendix C1: Reconnaissance Survey Database | 630 |
|-----------------------------------------------------------------|-----|
| Appendix C2: Raw Magnetometer survey data of Tudeley Ironworks | 643 |
| Appendix C3: Elemental composition of slag samples from Tudeley | 644 |

Appendix C1: Reconnaissance Survey Database – Tudeley Nature Reserve. Summer 2019

| Date and Location number | Grid Ref | Site Type | Approximate Area | Landscape Setting | Description | Site Condition | In Situ assemblages? | Samples Collected? |
|--------------------------------|----------|-----------------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| 2608191 | TQ620448 | Bank and ditch | Ditch = 2m (W) Bank = 1.4m (W) | Ancient woodland of mainly coppiced hazel close to the bank of the Devils Gill | A curvilinear bank and ditch running north-south along the western bank of the Devils Gill stream. The bank is on the east side between the stream and the ditch and at certain points are traces of a laid hedge of hazel and field maple on top of the bank. The stream winds at a lower elevation to the bank and ditch. The ditch depth is 0.45m approximately. | The bank is heavily eroded and has been completely flattened in places. The ditch is also considerably infilled and very shallow in places. The hedge that was atop the bank has disappeared in many places. | Remains of hop hoops along the boundary suggesting the field to the west (prior to the planting of woodland at this point) was once a hop garden. | No |
| 2608192 | TQ620448 | Findspot | N/A | Bottom of a steep sided gill, within the stream bed | In the bottom of the stream bed of the Devils Gill, fragments of iron slag were identified. These varied in size from 8-16cm. Large fragments of sandstone were also exposed and possibly thin seams of ore. | The slag had potentially eroded from a site further upstream and washed here, or the slag had been dumped. Likely however that the slag does not represent an in-situ assemblage. | No | Yes – bag 001 X3 slags X1 sandstone |
| 2608193 | TQ620447 | Bay on bend of stream | | Set on the western bank of the Devils Gill. The surrounding woodland is coppice with a mixture of hazel and ash. | A possible pond bay on the west bank of the Devils Gill stream. Possibly deliberately created or an extinct meander of the stream, where the stream has been trenched. The stream flows on the eastern side. The banks are curved to form a crescent and slope down from the ground surface for 6m. The bay floor is flat, however a slight depression suggests the remains of the silted up stream channel. Established ash trees grow within the base of the bay. The bottom of the bay is damp, indicating that at certain times of the year it is flooded. The stream here is approximately 1.6m wide and has iron mineral deposits evident within the water. | Mature trees growing within the base of the bay and signs of waterlogging at certain times of the year. | Possible fragments of iron ore were recovered from the stream base | Yes – bag 006. X2 fragments of ore |

| 2608194 | TQ620447 | Ditch and bank | Ditch 1.5m Bank 1.6m | Eastern bank of the Devils Gill | Ditch and bank on the east side of the Devils Gill. The bank is on the western side of the ditch, between the stream and forms part of the scarp slope made by the Devils Gill. On top of the bank are the remains of coppiced trees (ash?), with coppice stumps still present. The ditch and bank appear to continue north but terminate at this point upon reaching an east-west aligned bank and ditch (2608195) | Ditch is substantially silted up and the bank shows signs of erosion. | Scatters of small sized slag. | Yes – 002 x1 slag |
|----------------|----------|---------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| 2608195 | TQ620447 | Ditch and bank | Ditch = 1.2m (W) Bank = 1.5m (W) & 1.4m depth | Eastern bank of the Devils Gill stream, within ancient woodland of oak and coppiced hazel. | The bank forms the southern side of the ditch to the north, It runs on an east west alignment, from the corner of the field/woodland boundary to the east, to the edge of the stream. It appears to cut through the bank and ditch that runs n-s along the east bank of the stream (2608194). There are the remains of coppiced trees atop the bank. | Less erosion present compared to 2608194. This ditch remains at a greater depth, however there are still traces of erosion and in places the ditch has become infilled. | Fragments of slag were recovered – the bottom of the ditch contained larger samples. | Yes – bag 003. X2 slags |
| 2608196 (a) | TQ620447 | Channel / tributary rill (mouth) | Mouth of rill with a width of 3.6m and depth of 1.2m | The confluence of the tributary stream and the Devils Gill stream. the rill enters the stream on its eastern bank | Record of the mouth of the tributary rill / channel that joins the Devils Gill at this point. The rill mouth contains high quantities of slag, with some quite large fragments in excess of 15cm. It is possible that this has washed down from further east along the rill or deliberately dumped at this point. | Likely erosion of slag from further along the rill / channel | No – however slag found which has likely been eroded from the bank further along the channel. The large size of the slag (<15cm) might suggest it has not eroded from far, however it may represent the outcome of years of water movement. | Yes – bag 004 – X2 slag samples |
| 2608196 (b) | TQ620447 | Channel / tributary rill (channel) | Width = 4.6m Depth = 1.7m | Located on the eastern bank of the Devils Gill running on an east west | A steep sided channel with a roughly regular width of 4.6m and a depth of 1.7m, which decreases to 1.2m at the confluence with the stream. The banks have a steep gradient and are almost vertical in places, however the gradient becomes shallower further west as it reaches the stream. Much of the middle section has shallower gradient banks. | The channel was not waterlogged at the time of survey, however, is partially under water during the winter months. | Considerable quantities of slag are present in the channel bottom, however far less | Yes – bag 005 x2 pottery 009 - slag |

| | | | | alignment before reaching the stream. Ash and hazel grow along its banks. | | Sections of the banks have been eroded by animal movement. | compared to the eastern end where a slag heap appears to be being eroded from the banks. Two sherds of pottery were recovered dating to the ****. | |
|---------|----------|------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| 2908192 | TQ620447 | Slag heap | See geophysical results | Located at the upper section of the tributary rill or channel that runs east west before meeting the Devils Gill Stream. | Slag is visible protruding from the north and south banks of the channel. The channel is 1.5m wide and it is clear there has been a build-up of soil on top of this heap. The slag is at a higher level on the north bank to that of the south bank, suggesting a gradient to the slag heap. Channel Cut Natural Slag Deposit Slag Deposit | Slag heap has been heavily eroded by the tributary rill / channel and the action of water. The channel cuts through the centre of it. | Yes- slag is protruding from the north and south bank. Likely to have been the source of the pottery observed in 2608196 | Yes – bag 010 |
| 2708191 | TQ620447 | Pit – probable saw pit | 4.4m x 2.2m | Set within ancient, coppiced woodland which included hazel and ash. Old coppice stools are visible. Several oaks are also present | A rectangular pit with graduating sides that reaches a central depth of 0.8m. It is 5.5m from the tributary rill / channel to the north and is situated on a triangular spur of land between the channel and the stream. The overall shape is rectangular, however the slumped sides has given it a more oral or cigar shaped appearance. The southern and eastern banks are deeper at 80cm (S), 70cm (E), 50cm (N) and 10cm (W), which reflects how it has been dug into the natural slope. It is likely that this is the pit observed by both Straker and Tebbutt. | The pit is heavily infilled and is today filled with tree debris. The sides have been heavily eroded and were likely once vertical. | Some small fragments of slag and possible iron ore. | Yes – bag 007 – slag and iron ore. |

| | | | | Seek 9 - Pit - Reg = 2708191 5.6 (mass) 8.5 (mass) | | | |
|---------|----------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------|
| 2708192 | TQ620447 | Collection of rock | Eastern bank of the Devils Gill, 1.2 m SW of the pit at 2708191 | A group of stone that appears to be limestone and formed as slabs, representing the thin seams in which they originate. There are x4 visible on the surface and are of a metallic grey colour. They appear to be tumbling into the stream, but possibly represent a dump alongside the pit which is in proximity. It is possible that when the pit was dug, they were excavated and left here. | Heavily overgrown and partially buried. Excavation would be required to uncover their full extent. | Limestone dump – maybe excavated for a flux, or when the pit was dug through natural geology. | No - stones left in situ. |
| 2708193 | TQ619446 | Surface find – gun flint | Recovered from the bank of an inside bend of the Devils Gill, on top of the bank. Surrounding trees are largely coppice and the stream is a little way to the west. | Worked flint fragment recovered from the surface. Found 8.4m west of the stream and 7.5m from the meander to the south. A gun flint of probably 18 th or 19 th century date. | N/A | Gun flint retained | Yes |
| 2708194 | TQ620447 | Iron ore | Located within the Devils Gill stream channel | Fragment of probable iron ore – possibly eroded out of the side of the stream bank as seams are present further to the south. It is a large fragment and its presence would suggest a natural attribute for siting an ironworks here. | Artefact eroded from the stream bank | No | Yes – bag 016 |

| 2908191 | TQ620447 | Pottery | | Recovered | Pitcher handle and body sherd of pottery, dated to c.1350- | The sherd is not | No – probably | Yes - |
|---------|----------|-----------|-------------|------------------|-----------------------------------------------------------------------|-------------------------|------------------|-----------|
| | | sherds | | from the bed | 1450 and c. 1250-1400 found in the tributary stream | particularly abraded, | eroded from the | |
| | | | | of the | (2608196) amongst the slag that is deposited here. They | so likely eroded from | slag heap at | |
| | | | | tributary | were less than a meter apart but from different vessels. | the slag heap in | 2908192 | |
| | | | | stream | They are likely to have eroded from the slag heap which is | recent years. | | |
| | | | | | 7.5m to the east. | | | |
| 2908193 | TQ620446 | Routeway/ | | Set within a | An overgrown trackway that has been terraced into the | Overgrown and now | No | No |
| | | track | | plantation of | natural slope of the woodland so that it is flat. Coppiced | disused. | | |
| | | | | coppiced trees | trees are present on either side. The track is 4m wide and | | | |
| | | | | – area | approximately 10m into the wood from the south. This track | | | |
| | | | | surrounded by | is shown on the 19 th century Ordnance Survey maps running | | | |
| | | | | coppice | east-west before turning north towards the Tudeley site. | | | |
| | | | | stumps. | While it still appears to do this, it is heavy overgrown. | | | |
| 2908194 | | slag | | Single slag | Found on the woodland floor, not far from track 2908193. | Slag find possibly as a | Slag was loose | Yes – bag |
| | | | | find within | No other fragments were found, but may have been | result of erosion. | on the grounds | 011 |
| | | | | coppiced | disturbed from another location nearby. The slope of the | | surface, so may | |
| | | | | maple | land at this point is slightly plateaued, possibly representing | | not be in situ. | |
| | | | | | quarrying activity or deliberate terracing. | | | |
| 2908195 | TQ620447 | Platform | | Inside bend of | A possible platform located at the top of a bank on a bend of | Coppiced hazel now | No – no evidence | No |
| | | | | the Devils Gill | the Devils Gill. The ground is level and to the east, there is a | covers the platform | of charcoal | |
| | | | | | slight bank suggesting the area was deliberately flattened to | | | |
| | | | | | form a platform, terracing into the natural slope of the bank. | | | |
| | | | | | The bank curves around the platform to define its proximity | | | |
| | | | | | on the north and east sides. The bank terminates on the | | | |
| | | | | | edge of the stream. There was no evidence of slag, however | | | |
| | | | | | it was close to Straker's proposed site of Tudeley. | | | |
| 0209191 | | slag | | Base of the | A single fragment of slag was found in the base of the | N/A | Probably eroded | Yes – bag |
| | | | | Devils Gill | channel at Rushpit Wood in the Devils Gill stream. No other | | from a deposit | 012 |
| | | | | stream to the | fragments were found and it was possibly washed from | | further south | |
| | | | | east of | further downstream to the south. | | downstream. | |
| | | | | Rushpit Wood | | | | |
| 0209192 | TQ619443 | Pits – | 37x40 paces | Set on the | A series of pits and gullies within the woodland at this point. | Overgrown with | No | Yes – bag |
| | | possible | | east bank of | Some are caused by deviations in the woodland track that | many pits infilled by | | 013, |
| | | minepits | | the Devils Gill, | runs through here. The west facing slope has been | tree debris | | fragment |
| | | | | close to the | excavated into, with pits of various shapes either oval or | | | of tile. |
| | | | | bend of the | elongated channels. It could be that these are the remains of | | | |
| | | | | trackway | minepits used to extract iron ore. These pits are clearly | | | |
| | | | | through Boys | visible on the lidar images of the woods, but less easy to | | | |
| | | | | Wood | distinguish on the ground. | | | |

| 0209193 | TQ620443 | Pit – probable saw pit | 5.8m x 3.2m | (2908193). Woodland dominated by coppiced hazel Boys Wood – set within the heart of the coppiced wood. The area appears | Small deep pit of an oval shape. 3.2m wide, 0.7m in depth and 5.8m in length. The spoil that was dug from the pit was dumped to the western side, building up the ground here on a west sloping bank that slopes towards the Devils Gill. The pits central position within the coppiced woodland and its size and shape would suggest it served as a sawpit. The | Some coppiced trees have grown into the banks of the pit on the north and west sides. The pit is infilled with branches | No | No |
|----------|----------|-------------------------------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----|
| | | | | to be a coppiced plantation. | coppice around it appears to have been deliberately planted. The pit appears on Lidar images of the wood. | and leaf debris. | | |
| 0209194 | TQ621444 | Large pit – probably a marlpit, however could also have been used for ore. | 36 paces x 41 paces | Set within ancient woodland comprising oaks, coppiced hazel and ash trees. The stream is further away to the west. | A large pit, very similar to those in Nightingale Wood to the east. The pit is roughly circular in shape with many trees, including oaks, growing on its banks and within it. The bottom of the pit is saturated with water, suggesting that at times of the year it is filled with water. On its eastern side, a small 1m wide channel enters the pit, perhaps acting as an overflow for water into the northern field ditch, or representing an entrance into the quarry. The northern and eastern sides have a more gentle gradient compared to the south and west – the sides gently slope to the centre of the pit. This pit appears on the Lidar image of the wood. | Clearly dug many years ago and now overgrown by trees. | No | No |
| 0209195 | TQ621444 | Small pit | 6.3m x 6.3m | Located to the east of a larger pit (0209194) and surrounded by coppiced hazel and ancient oak trees. | A small circular pit 6.3m x6.3m of a relatively even size. The sides slope inwards, however may have been vertical in the past. Coppice hazel trees now grow on the outer banks. It has a depth of 74cm. The western banks are at a shallower gradient to the north, east and southern banks – the southern, being the deepest. | The pit is infilled with tree debris and it would appear its banks have eroded over time. | No | No |
| 03091991 | TQ620447 | Platform | 85 paces long by 21 | Located on the west bank of the Devils Gill opposite the tributary | A large flat platform enclosed by a bank and ditch to the west (2608191) and the Devils Gill to the east. While to the north, the bank and ditch 2608191 are in close proximity to the West bank of the stream, at this point, the boundary diverts west to enclose the flat section of bank, before | Some erosion by burrowing animals and a number of ask trees have grown on the platform. | No evidence of slag was present, however traces of dark earth may suggest | No |

| | | | | rill / channel. Relatively clear of vegetation, with fewer trees and some nettles | diverting east again in the south to follow once more the west bank of the Devils Gill. | | charcoal was produced here. | |
|---------|----------|----------------------------------------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| 0309192 | TQ619446 | Stream bank quarry – siderite ore seam | 5.3m x 4.8m | Old Furze Field: East bank of the Devils Gill, south of the Tudeley site | A rectangular quarry cut into the eastern bank of the Devils Gill. It stands 1m above the bed of the stream channel. It cuts into the vertical bank of the stream channel, extending back for 5.3m and along 4.8m of the bank. It has a depth from the top of the stream bank of 2.8m. On the opposite bank of the stream, to the west, a thin seam od siderite ore is present within the natural clay. This seam is 3cm in thickness, and sections had been eroded where they lay fractured within the stream bed. It is likely that it was this seam that was being excavated on the eastern bank having been identified in the deep stream channel cut. The quarry stands higher than the base of the stream, reflecting the need to only excavate as far as the level of the ore. | Some natural erosion, and while the banks remain vertical, some slumping has occurred. | Yes – ore protruding from the western bank. | Yes – sample of the seam of ore that had been eroded from the stream bank and lay within the channel. |
| 0309193 | TQ620446 | Pits – probable mine pits | | Old Furze Field: Located a short distance east of the Devils Gill and quarry cut 0309192, and south of the Tudeley site. Landscape dominated by the ancient woodland formally known as Smithy Wood. | A series of 4 circular pits on a roughly linear alignment running east-west either side of the woodland trackway (2908193). The pit on the west side of the track is deeper, but appears to have been disturbed by movement along the track. The 3 on the eastern side are smaller and cut into the natural west facing slope. | The shallowness would suggest they have infilled over time. The gentle gradient of their sides may suggest slumping and it is possible that they were once vertical. The largest pit appears to have been disturbed by movement along the trackway. | A fragment of iron ore was found alongside pit 4 and suggests these may have been minepits. | Yes – bag 014 |

| 0309194 | TQ620446 | Trackway | | Centre of the woodland surrounded predominantly by ancient oak trees. The Devils Gill is west of the track | Linear east-west trackway running through Old Furze Field (formally Smithy Wood), starting from the north corner of Boys Wood (probably marking once the boundary between the two woods). It eventually joins the north south trackway, that heads North to the Tudeley site (2908193). The track is at a raised elevation and flanked by a ditch either side. A series of oak trees grow along the edge of the track and some of these are growing on the track itself. The track appears on Lidar images of the wood. | Overgrown and no longer in use as a track or boundary. The ditches have become infilled and are therefore shallow in depth. | No | No |
|---------|----------|----------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| 0309195 | | Pottery | | Woodland – base of an oak tree | Fragment of orange high fired pottery base and side sherd. It was found at the base of an oak tree amongst the roots, along a possible track east of the Tudeley site. The sherd dates to the 19 th century. The track it was found on does not appear to be ancient and has more modern wheel ruts present – but possibly from a cart? | N/A | 19 th century pottery sherd | Yes – bag 015 |
| 0309196 | TQ620447 | Slag | | Channel base of channel / tributary rill, close to the Confluence with the Devils Gill | Large dark black fragment of slag, possibly part of a furnace bottom. Located in the base of the tributary rill / channel that runs east-west before joining the Devils Gill (2608196). Its size would suggest that it has not moved any great distance from its original position and it is much larger than the majority of slag present within the channel. | Unlikely to be in situ and has been eroded from the bank of the channel. It is unlikely to have moved far from its original position. | Yes - slag | No |
| 1309191 | TQ616440 | Pits | Western pit 9m x 7.2m depth of 1.4m Eastern pit 5.5m x 6.4 m and depth 1.5m | Located in a dense fir plantation on a spur of land between the confluence of two streams (one of which is the Devils Gill). | Two pits are cut into the steep west facing bank on a spur of land between the Devils Gill and a secondary tributary stream. They run parallel east to west an intercut one another. The western pit is closest to the tributary stream channel which is 1m away. While no ore samples were found, there was numerous fragments of sandstone in and around the two pits along with several small fragments of slag (1309192) on a north south footpath that traverses between the two streams and on the eastern side of the western pit. | Some disturbance to the grounds surface from tree throws where trees growing in and around the pits have fallen. | Fragments of sandstone, but no obvious pieces of iron ore. Several small slag samples in the footpath to the east. | No – see 1309192 for slag samples. |

| | | | | Tributary stream Pits | | | |
|---------|----------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| 1309192 | TQ616440 | Slag | Located in a dense fir plantation on a spur of land between the confluence of two streams (The slag is on the east bank of the western tributary channel | Two fragments of slag were discovered adjacent to the western pit 1309191. They may be associated with the pits or been moved from the nearby vicinity. X2 slag | Slag was partially buried, but visible from the surface. | The slag was probably not in situ, but likely originated from nearby, such as the Devils Gill bloomery to the south. | Yes – bag 017 |
| 1309193 | TQ616440 | Slag | Located alongside the footpath adjacent to the eastern edge of the pits (1309191). The footpath traverses between the confluence of the Devils Gill and a | Two samples of slag were found on the footpath. One piece was glassy in morphology and both samples are small in size. They are adjacent to the pit features (1309191) a few meters away. | Possibly in-situ surface deposits | Nearly slag would suggest the slag originated close by. | Yes – bag 018 x2 slag collected. |

| 1309194 | TQ616440 | Slag scatter | | tributary stream Located on the western bank of the eastern confluence (the Devils Gill) | 5 pieces of slag were located in the east facing bank of the western bank of the Devils Gill. They were covered by moss and tree debris, and found over an area of 1.5m2. It is highly likely that there is further slag deposits that remain buried here. 3 fragments were large <10cm. There was no slag found in the stream. The overgrown bank meant not all of it could be explored for further samples. It would appear to represent a tumble of slag into the stream, over a steep bank. | Overgrown bank likely to be covering further deposits of slag. | Yes – possibly representing a tumble of slag into the stream channel. | Yes – bag 019 (x2) x5 samples. |
|---------|----------|----------------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------|
| 1309195 | TQ616440 | Slag heap – 'The Devils Gill Bloomery' | 20 x 22 paces | Located between the Devils Gill and a tributary stream on a spur of land. The surrounding woodland is mainly coppiced hazel, with some silver birch. The site sits on a gently sloping east facing bank, that slopes to the western bank of the Devils Gill. | A relatively large spread of surface slag of various sizes from >1cm - 10cm. These cover a protruding section of bank, which may form a slag heap that from successive tipping, has built up. Tree throws have revealed further buried slag deposits. Possibly the slag was deposits from above the bank, or pushed up against it. The slag shows no evidence of having been eroded by the stream and no slag was recovered from the stream channel. This was the site of the Devils Gill bloomery that was first recorded by WIRG in 1979. Slag heap | Erosion to the slag heap from three throws that have exposed underlying slag. | Yes – slag, vitrified furnace lining and possible roasted ore. | Yes – bag 020 |

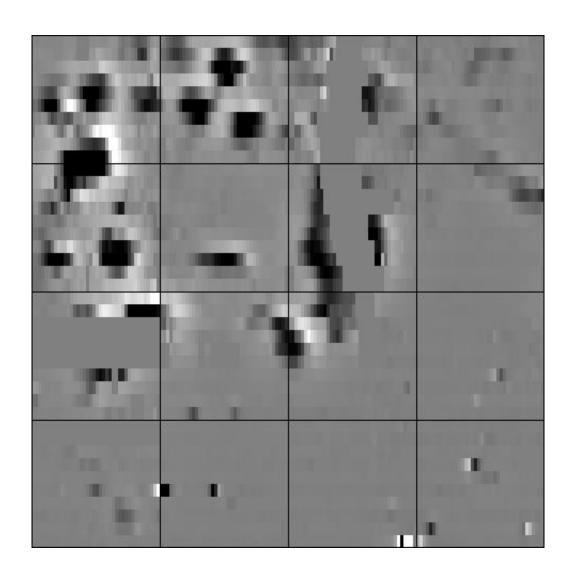
| 2009191 | TQ616440 | Platform | 6.3m x 9.6m | Located within woodland of hazel, silver birch and oak on the west bank of the Devils Gill | A small level platform adjacent to the slag heap (1309195) on the west. The site lies at an elevated position to the stream, but down slope of the slag heap. While it could be a natural platform, slag fragments and potential ore may suggest a human use for the site. | Several tree throws have disturbed the land to the edges of the platform and burrowing animals have excavated the bank and slag heap to the west. | Possible iron ore and slag fragments on the surface, however these may represent tumble from the slag heap or disturbance from burrowing animals. | Yes – bag 021 – iron ore and slag fragments |
|---------|----------|--------------------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| 2007192 | TQ616440 | Stream bank quarry | 17 x 13 paces | West bank of the eastern confluence of the Devils Gill stream | The stream bank appears to be heavily eroded at this point, possibly through excavation into the bank to locate seams of iron ore, as seen at 0309192 to the north. Ore fragments were found in the stream bed here. Two gullies are also present here at 1m wide and may have been deliberately dug or formed naturally, probably at a later date. | Possible erosion by the stream and the construction of two 1m wide gullies. | Fragments of iron ore within the stream and a possible fragment of furnace lining. Probably eroded from the stream bank. | Yes – bag 022. X2 ore fragments and piece of possible furnace lining. |
| 2009193 | TQ617440 | Woodland track | 100m in length, 1.2m wide banks either side. | Located in coppice woodland, east of the Devils Gill stream | Woodland track running on an east-west axis through Brakeybank Wood on the east side of the stream. It is ***m wide and bounded by a low bank either side which are 1.2m wide. It reaches the east side of the Devils Gill on the opposite bank to the bloomery site 1309195. There is a point where the path forks, with a route to the southwest reaching the stream further to the south. Overall, the track runs on a linear trajectory. | The path does not appear on OS maps of the wood, suggesting that it is no longer in use. | NA | NA |
| 2009194 | TQ617440 | Charcoal platform | 6m x 4.5m | Located on the east bank of the Devils Gill, alongside an east-west trackway (2009193) | A terraced platform into the natural west facing slope of the woodland, which forms a kidney shaped terrace. The ground comprises dark soil and fragments of charcoal are present. There are references to charcoal being produced within the woods here as later as the 20 th century, however later charcoal production was made in drums, some of which are present in the south. It is possible that this platform is an earlier date. | Covered by leaf mould and brush wood | Samples of charcoal are visible when kicking the ground. | Yes – bag 023 x2 charcoal samples. |

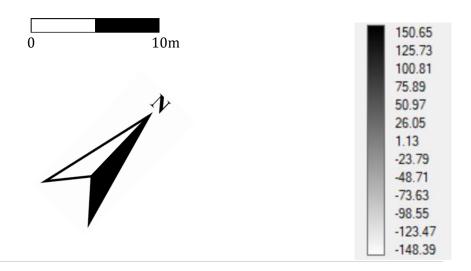
| | | | | | Charan Dylam | | | |
|---------|----------|------------------------------|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|
| 2810191 | | Pit – possible saw pit | | Located in Boys Wood, down slope towards the Devils Gill Stream, to the east of the North South Trackway. | An elongated pit 8ft long and 3ft wide and around 1ft deep. It is heavily infilled and is likely to have been much deeper. The pit is cigar shaped and similar in form to 0209195 in the centre of Boys Wood, although of a shallower depth. There is also no evidence of a bank of spoil as recorded in pit 0209195. | Appears to have been heavily filled in since its abandonment, although the shape is still apparent. | No | No |
| 1706181 | TQ615440 | Devils Gill Minepits | Most pits were around 5m in diameter and about 1m in depth | located at TQ 615 440 on a spit of land where a second stream joins the Devils Gill. | Found during the walkover survey on 17/06/18, these form the largest density of minepits within the Tudeley landscape. The minepits are located at TQ 615 440 on a spit of land where a second stream joins the Devils Gill. The minepits cover the eastern bank of the western stream and resemble small craters scattered in amongst the woodland. The pits are situated around 25 metres away from the Devils Gill bloomery site. Geologically the minepits are lie an area of the Wadhurst Clay and Tunbridge Wells Sand, where iron ore can be found as clay ironstone, occurring in bands (Hodgkinson 2008, 10-11). It is likely that the stream at this point exposed one of these iron seams which meant it was a favourable location to extract the iron ore. Approximately 27 individual 'shaft' minepits were observed, however a detailed survey is likely to reveal more. Most were around 5 metres in diameter and about 1 metre in depth. Several were slightly smaller while others larger. There was no systematic placing of each individual shaft and | Many were probably infilled after use, however as the soil has settled and slumped, the craters have become visible. More recent tree planting has covered the area. | No | No |

| to the second se | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| several of the pits intersected in as many as three pits in one | |
| instance. These minepits resemble similar examples at other | |
| Wealden sites, such as at Tugmore Shaw in Hartfield and at | |
| Sharpthorne, where radiocarbon dating showed that the | |
| minepits here dated from late 12th and 13th centuries | |
| (Hodgkinson 12-13). Hodgkinson suggests that the system of | |
| using shafts to extract ore was more favoured in the Middle | |
| Ages as a way of preserving agricultural land than in the | |
| Roman period, where larger quarries were used (Hodgkinson | |
| 2008, 12-13). It is therefore plausible that the Devils Gill | |
| minepits are of a medieval date rather than Roman. The | |
| minepits at Tudeley are also visible on LiDAR images of the | |
| woods, taken by the High Weald AONB, and stand out as a | |
| cluster of circular depressions. | |
| The shafts would have been excavated down to the iron | |
| seam and then backfilled with the spoil from the next shaft. | |
| Over time as the ground settled, a small crater appeared, | |
| which in many cases at the Devils Gill, were around 1 m | |
| deep. Ore during the medieval period was called 'mine' | |
| which led to the term 'minepit' being used (Hodgkinson | |
| 2008, 12-13). | |

Appendix C2: Magnetometer survey of the site of Tudeley Ironworks

Raw data plot 6th – 7th March 2020





Appendix C3: Elemental composition of slag samples from Tudeley Ironworks from pXRF analysis

| | | TUD 001 | TUD 002 | TUD 003 | TUD 004 | TUD 005 | TUD 006 | TUD 007 | TUD 008 | TUD 009 | TUD 010 | TUD 011 T | UD 012 | TUD 013 | TUD 014 | TUD 015 | TUD 016 | TUD 017 | TUD 018 | TUD 019 | TUD 020 |
|----|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-----------|-----------|-----------|-----------|------------|------------|-----------|-------------|-----------|-------------|------------|
| | Min | 4301 | 5070 | 2116 | 3674 | 8734 | 9943 | 5292 | 6069 | 13287 | 0 | 0 | 0 | 0 | 0 | 2157 | 0 | 0 | 0 | 0 | 0 |
| | Max | 32097 | 30067 | 24838 | 48764 | 33461 | 35218 | 90865 | 121831 | 91130 | 3735 | 2056 | 2743 | 3128 | 11757 | 11205 | 4560 | 8134 | 14767 | 12108 | 2133 |
| Ca | Mean | 18138 | 17686 | 10260 | 25466 | 20066 | 22502 | 38361 | 62943 | 37147 | 1480 | 1106 | 1034 | 1330 | 3464 | 5346 | 2206 | 2476 | 2302 | 4828 | 1444 |
| | SD | 9422 | 9273 | 8562 | 18766 | 6716 | 7957 | 27662 | 46647 | 25818 | 1056 | 809 | 925 | 1083 | 3507 | 3308 | 1383 | 2423 | 4774 | 4226 | 831 |
| | CV | 0.519 | 0.524 | 0.834 | 0.737 | 0.335 | 0.354 | 0.721 | 0.741 | 0.695 | 0.714 | 0.731 | 0.895 | 0.814 | 1.012 | 0.619 | 0.627 | 0.978 | 2.074 | 0.875 | 0.575 |
| | | 670 | 560 | 420 | 5.00 | 4400 | 622 | 201 | • | 1016 | | • | | | | 420 | | • | | | 45 |
| | Min | 670 | 560 | 438 | 568 | | 623 | 901 | 74.03 | 1046 | 0 | 0 | 0 | 0 | 0 | 120 | 0 | | 0 | 0 | 45 |
| Ti | Max Mean | 2545 1369 | 2586 1174 | 7565 2190 | 5161 1483 | 3571 2211 | 4151 1231 | 6693 2198 | 7182 1705 | 6827 3467 | 173 32 | 34 7 | 404 69 | 244 70 | 567 210 | 593 328 | 221 28 | 1275 281 | 418 57 | 1063 425 | 594 316 |
| 11 | SD | 715 | 546 | 2097 | 1349 | 825 | 1048 | 1783 | 1970 | 1956 | 52 58 | 14 | 123 | 102 | 210 | 152 | 70 | 416 | 135 | 423 | 215 |
| | CV | 0.522 | 0.466 | 0.957 | 0.910 | 0.373 | 0.851 | 0.811 | 1.156 | 0.564 | 1.835 | 2.108 | 1.796 | 1.467 | 1.036 | 0.464 | 2.541 | 1.480 | 2.392 | 0.949 | 0.683 |
| | CV | 0.322 | 0.400 | 0.557 | 0.510 | 0.575 | 0.031 | 0.011 | 1.150 | 0.504 | 1.055 | 2.100 | 1.750 | 1.407 | 1.030 | 0.404 | 2.541 | 1.400 | 2.552 | 0.545 | 0.003 |
| | Min | 3564 | 3815 | 3627 | 3685 | 4539 | 3771 | 4806 | 4380 | 5167 | 254 | 498 | 192 | 173 | 192 | 1393 | 116 | 70 | 0 | 381 | 1382 |
| | Max | 26579 | 14072 | 31061 | 18487 | 13694 | 29834 | 30991 | 25266 | 21494 | 6716 | 2788 | 8817 | 4261 | 3465 | 11708 | | 62359 | 2417 | 10147 | 20394 |
| Mn | Mean | 16733 | 8352 | 9465 | 10400 | 9412 | 12726 | 15033 | 15466 | 10679 | 1895 | 1037 | 1560 | 1028 | 1337 | 5802 | 612 | 13744 | 544 | 3661 | 9111 |
| | SD | 8091 | 4228 | 8559 | 3968 | 2833 | 9242 | 8685 | 6759 | 5700 | 1961 | 651 | 2614 | 1231 | 1042 | 2917 | 475 | 19407 | 798 | 3575 | 7156 |
| | CV | 0.484 | 0.506 | 0.904 | 0.382 | 0.301 | 0.726 | 0.578 | 0.437 | 0.534 | 1.035 | 0.628 | 1.675 | 1.197 | 0.779 | 0.503 | 0.775 | 1.412 | 1.468 | 0.976 | 0.785 |
| | | | | | | | | | | | | | | | | | | | | | |
| | Min | 81916 | 137507 | 50358 | 77514 | 201717 | 105120 | 113807 | 102654 | 108008 | 9191 | 6419 | 5154 | 2666 | 4913 | 17383 | 6594 | 6469 | 2146 | 6547 | 10000 |
| | Max | 284707 | 410321 | 323726 | 176504 | 352882 | 258639 | 311283 | 207271 | 291405 | 84239 | 26424 | 58712 | 46399 | 51982 | 87961 | 43907 | 163352 | 33275 | 217708 | 81492 |
| Fe | Mean | 177789 | 229357 | 190737 | 113195 | 286602 | 162359 | 216147 | 142243 | 213084 | 26287 | 12940 | 21982 | 15165 | 27678 | 53320 | 16662 | 41412 | 10001 | 78999 | 42612 |
| | SD | 70364 | 88607 | 103072 | 32049 | 42136 | 47061 | 64235 | 36654 | 61730 | 22391 | 5729 | 16088 | 15634 | 18020 | 23286 | 11368 | 50677 | 8889 | 65367 | 28388 |
| | CV | 0.396 | 0.386 | 0.540 | 0.283 | 0.147 | 0.290 | 0.297 | 0.258 | 0.290 | 0.852 | 0.443 | 0.732 | 1.031 | 0.651 | 0.437 | 0.682 | 1.224 | 0.889 | 0.827 | 0.666 |
| | Min | 0 | | 0 | | | 0 | | | 0 | 0 | | | | | 0 | | 0 | | | 0 |
| | Max | 93 | | 32 | | | 161 | | | 66 | 3 | | | | | 40 | | 136 | | | 18 |
| Ni | Mean | 43 | | 3 | | | 16 | | | 7 | 0 | | | | | 4 | | 27 | | | 4 |
| | SD | 43 | | 10 | | | 51 | | | 21 | 1 | | | | | 12 | | 47 | | | 8 |
| | CV | 1.008 | | 3.162 | | | 3.162 | | | 3.162 | 3.162 | | | | | 3.162 | | 1.720 | | | 2.236 |
| | | | | | | | | | | | | | | | | | | | | | |
| | Min | 0 | | | 0 | | 0 | 0 | 0 | 0 | | | | | | | | | | | |
| | Max | 8 | | | 182 | | 68 | 65 | 516 | 101 | | | | | | | | | | | |
| Sr | Mean | 1 | | | 72 | | 11 | 17 | 221 | 30 | | | | | | | | | | | |
| | SD | 2 | | | 75 | | 24 | 23 | 209 | 42 | | | | | | | | | | | |
| | CV | 3.101 | | | 1.051 | | 2.176 | 1.320 | 0.947 | 1.397 | | | | | | | | | | | |
| | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Max | 49 | 85 | 81 | 72 | | 15 | 69 | 118 | 73 | 26 | 41 | 9 | 51 | 45 | 52 | 17 | 73 | 1 | 51 | 32 |
| Sb | Mean | 12 | 19 | 14 | 22 | 23 | 3 | 17 | 25 | 13 | 3 | 8 | 1 | 51 | 8 | 13 | 3 | 17 | 0 | 16 | 6 |
| 30 | SD | 20 | 28 | 29 | 27 | 37 | 7 | 28 | 40 | 28 | 8 | 13 | 3 | 16 | 17 | 17 | 6 | | 0 | 21 | 14 |
| | CV | 1.663 | 1.438 | 2.159 | 1.268 | 1.615 | 2.095 | 1.675 | 1.580 | 2.121 | 3.162 | 1.712 | 2.401 | 3.004 | 2.129 | 1.308 | 2.213 | 1.530 | 3.162 | 1.308 | 2.236 |
| | | | | | | | | | | | | | | | | | | | | | |
| | | _ | 12 | 17 | 20 | 0 | 17 | 0 | 15 | 14 | 34 | 37 | 37 | 36 | 43 | 37 | 46 | 0 | 40 | 33 | 35 |
| | Min | 0 | 13 | 17 | 20 | U | 1, | | | | | | | | | | | | | 33 | |
| | Min Max | 0 35 | 43 | 40 | 35 | 32 | 40 | 52 | 43 | 36 | 50 | 39 | 42 | 41 | 49 | 50 | 50 | 47 | 48 | 49 | 47 |
| Ta | | | | | | | | | | | 50 45 | 39 38 | 42 39 | 41 39 | 49 47 | 50 44 | 50 47 | 47 38 | | | 47 42 |
| Та | Max | 35 | 43 | 40 | 35 | 32 | 40 | 52 | 43 | 36 | | | | | | | | | 48 | 49 | |

| | Min | 0 | 5 | 1 | 0 | 18 | 0 | 0 | 0 | 0 | 0 |
|----|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Max | 45 | 73 | 87 | 22 | 90 | 35 | 46 | 78 | 224 | 131 |
| Pb | Mean | 21 | 37 | 45 | 5 | 55 | 9 | 15 | 30 | 53 | 13 |
| | SD | 17 | 21 | 30 | 9 | 28 | 14 | 19 | 33 | 65 | 41 |
| | CV | 0.803 | 0.580 | 0.653 | 1.776 | 0.502 | 1.639 | 1.239 | 1.124 | 1.217 | 3.162 |
| | | | | | | | | | | | |
| | Min | | | | | 0 | | 0 | 0 | 0 | |
| | Max | | | | | 13 | | 53 | 39 | 18 | |
| Nb | Mean | | | | | 1 | | 8 | 11 | 2 | |
| | SD | | | | | 4 | | 17 | 15 | 6 | |
| | CV | | | | | 3.162 | | 2.247 | 1.339 | 3.162 | |

Elements:

Ca = Calcium

Ti = Titanium

Mn = Manganese

Fe = Iron Ni = Nickel

Sr = Strontium

Sb = Antimony Ta = Tantalum

Pb = Lead

Nb = Niobium

Data recorded as Parts Per Million (PPM)

| 0 | 0 | 0 |
|-------|-------|-------|
| 145 | 18 | 41 |
| 18 | 3 | 14 |
| 46 | 6 | 19 |
| 2.523 | 2.218 | 1.394 |

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