

NEIMME/John/2 Transcript

[John-2-front cover]

No.2

Views & Estimates

(J Johnson)

1738 – 1786

Wallsend & Hebburn

Coal Co. Ltd

[John-2-front cover inside]

Shelf 4

The Johnson Clln

Shelf 4 Vol 2

John/2

[John-2-p0a]

Blank

[John-2-0b Index]

A Andrews Houses St Anthony's 40-123	F Flatworth 36 Flatts 55-118	L Lanchester Moor 6 Lumley 30.31.32	Q
B Bedlington 13 Brenckley 15 ¹⁶ – 35 ³⁶	G Gateshead Fell 24.25.26 Gateshead Park 141	M Marleyhill 143	R
C Cowpan 116 Crawcrook 119.120.121	H Heaton 4.11.129.130 Halbeath 55-60	N	S Sheriff Hill 146
D Dollar 95- 96.97.98.99.100.101.102. 103.104.105	I Jesmond 3	O	T Folios Throckley 27-44
E	K Kenton 18	P Pittference 47 -110 Pelston Common 118 – 53 Pontoppike 125.126.127.128	U

[John-2-0c Index]

W Willington 17 Winlaton 22 Washington 26-37=93=125 Wallsend 33.34 Whitehaven 54.55	Y
X	Z

[John-2-1]

A View of Beckley & Andrews house

Collierys at Sr James Clavering's Entry

Memorandum this fifth day of Feb^y 1738/9

Well whose names are hereunto subscribed have viewed Anderson House Colliery belonging to Sir James Clavering of Green Croft Baronet & finds two Pits sunk to the Hutton Seam one of these Pits has wrought one Thousand Tens of which Quantity there are Two Hundred Tons lying at the Pit above ground, the other pit is lately sunk and has not wrought half a Tonn. We find the workings regular the seam of Coal 2 yards high very Good Coal and hopeful to continue so.....

Mr Bowes's water Course from Northbanks Colliery goes through this Colliery but the working of this and Northbanks are so opened one into the other that Mr Bowes's water course cannot be stopped without a very great expence.

The water course from this Colliery goes through Beckly Colliery about 400 yards thro' Beckley lane belonging to Tanfield, about 300 y^{ds} and thro Mr Claverings Colliery about 600 yards and goes out at the day about 150 yards south east of Mr Claverings Dwelling house, this water course is very good and sufficient to save for level to work one half of the colliery or more

The most effectual way of winning the remainder will be (of this & Beckley Collierys by a drift

[John-2-2]

From a Coal pit upon Hedley Common belonging to S^r Hen^y Liddell and partners which Drift may be brought into the South East part of this Colliery.

The whole estate of Andrews House according to our Opinions will produce Eight Thousand Tens^{=70000/5820} of Coals at one hundred and Twenty Tens^{=380,000 Tens} to an acre^{about 70 acres}. (Stone Dykes and Outsets excepted) over and above the one thousand Tens already wrought for which Sir Henry Liddell and Partners who has a Convenient Waggonway and Way leave to the river Tyne and a water course very reasonable may very well afford to pay unto Sir James Clavering thirty shillings a Ten for this Colliery and Way leave and oblige themselves to work and lead One Thousand Tens Yearly Beckley Quantity Inclosed ...

We have likewise viewed Beckley Colliery belong=ing to S^r James Clavering Aforesaid and finds it almost wrought out both whole, [?] and Pillars except three Pits in which are some Pillars left Viz the plain pit, The Delight Pit and the north Pit, which three pits according to our opinion will produce Two Hundred Tens of Coals and more we likewise find about four acres of Ground next the Bobjin house unwrought which lyes under the Level of the present Water Course and will produce 500 Tens of Coals We likewise find several pillars of Coal left standing to support the present watercourse which may produce about 40 Tens of Coals.

Therefore this Colliery according to our opinion will produce between seven & eight hundred Tens excluding some pillars of Coal we believe may be

[John-2-3]

Torn page – only left hand side of page

Got in the remainder of the old Pits
we cannot see at this time there are
Coals upon bank here....

Lord Windsors & Water course
Colliery goes thro this Colliery but
opened into Barnes Close, and a
so that the watercourse cannot
our hands

Signed

A view of Jesmond Colliery
=ing Mr Coulson Dwelling House

We whose names are
this day received the chance Pit
East part of the Lady Pit working
and finds that no shale or [?]
to damage Mr Coulsons Dwelling
Mr Whit & Mr Ridley have been
stowing and Pillering the [?]
waist and also a part of the
waist to prevent any damage to
or first brought by working
Coulsons resolutions Pit....

We likewise have lined
Chance Pit workings under and beyond
Dwelling house where we find the
of Coal at or about 5 yards thick and
or thereabouts which was sufficient for
roof & Bordrooms of the Colliery and
prevent any shake or [? burst] of the Ground
or crack the said house provided a

[John-2-4]

Torn page – only right hand side of page

which we believe was occasioned
[?] or Pillars in Mr Coulsons
Pit ..

John Legge
W^m Newton
W^m Dryden
Mick Humble
George Humble

(Heaton Colliery)

are hereunto subscribed have
[?] the 11th of Feb 1744/5
on the fourth Engine Pit & viewed
of & found the same regular, and
feeders of water to come from
We went through from the work=
Pit to the workings of the Dyke
water there standing about 40
Dyke Pit shaft but did not per=
water which might be the cause
to that Height which now is
roof at the Dyke pit Shaft. At
pit we would observe or hear
but from when it may come or what
an form no Judgment. We also viewed
gines at Heaton which we found all
all in good Condition except the South

[John-2-5]

A View of Lanchester Moor Colliery

Viewed Lanchester moor Colliery Feb 12th 1744 5 in the upper seam of coal called the upper main coal wherein are six Pits already sunk & wrought in that part of the moor adjoining Shieldrow & Pea Sands and finds the same to be regularly wrought at 9 yards to a Winning (Viz) the Bords 4 yds wide o& the walls or Pillars 5^{yds} in thickness the height of the thickness of coal 4 feet, 10 inches.

The Coal in the best part of the of the 2 Water Pits is much altered for the worse occasioned by a rise Dyke therein which lyes about N^o & S^o and hath done great damage to the coal on the West side thereof there being one hundred & fifty Y^{ds} wrought and Drifted in bad Coal and left of in the same to the west of the said rise Dyke in order to try the Coal yet I am of opinion, in case the Drifting were continued one or two Hundred yards further to the west, would meet with better coal.

There is one Pit more to sink and work on the east side of the rise Dyke which may produce one Thousand Tens of good Coals & the walls or Pillars of Coal in the before mentioned six pits may produce 3 Thousand Tens more.

There is another seam of Coal which lyes about 15 Fathoms Deeper under the present working seam of about 5 f^t High as appears by the borings made therein called the Hard Coal seam which I think will be better than the present working seam and may be won by Drifting

[John-2-7]

In the Brass Thill Coal from a Pit lately sunk in Beamish south Moor Colliery.

According to the course of Collierys in this Neighbourhood there are several other seams of Coal below the Hard Coal seam before mentioned (Viz) the Brass Thill Coal of 4½ f^t high at 9 T^m below the Hard Coal the Hutton Seam alias Tanf^d moor seam of 2 y^{ds} High at 27 [?] below the brass Thill and the under main Coal of 4 f^t High at 6 [?] below the Hutton Seam the Brass Thill & under main Coal are Inferior to the Hutton Seam. In case the Hutton seam alias Tanfield moor Seam be in this part of the Moor Next Shieldrow and Pea Lands will be very deep and Chargeable to winn and work but may be won and wrought in that part of the moor next to and adjoining Collierly and Pontop Coll=ierlys and according to my opion upwards of Tenn Thousand Tens of good coals may be had in that part of the moor by a Drift or Winning from Collierly Colliery and would not cost above 2.2^d a Waggon leading to Hen^y Liddell and partners Staiths if a Waggon way leave could be had over Tanfield moor the Leading from the present working Pits in Lanchester moor cost Two shillings p Waggon.

According to the prices or rents paid for Collierys in the river Tyne S^t Hen^y Liddell and partners may very well afford to pay 15^s p Tenn for Lanchester moor Colliery accounting 22 Waggons to a Tenn 19 Bolls to a Waggon & thirty six Galls (Winechester Measure) to a Boll and be obliged to pay for six hundred Tens

[John-2-8]

yearly (if the hard Coal seam prove well) to be wrought & gotten in that part of the Colliery where they now work next to and adjoining Shieldrow and Pea Lands and likewise pay Six hundred Tens more yearly to be wrought and gotten in that part of the Colliery next to and adjoining Collierly and Pontop Collierys in case they can have a Waggonway leave over Tanfield moor, together will be 900 £ a year the rent now paid as I am informed.

But provided the hard Coal seam should not prove well and a Waggonway leave over Tanfield moor cannot be had at present the present working seam below the rise Dyke will last above 7 years at 600 Tens a year and that part to the West of said Rise Dyke may last 3 or 4 years more at the that rate of working and in that time it is likely this Colliery may be won by a Drift from Bush=Blades Colliery in another part thereof and a Waggon=way leave got on Easy terms from that part of the moor so as to lead at 2.6^d p Waggon.

As the Boundery of Lanchester moor is very extensive and contains a great quantity of acres of Land and many good seam of Coal therein and pretty well situated for getting of the water by the help of neighbour=ing Collierys and will not cost above 2/6^d Leading per Waggon, to the river Tyne at almost the furthest extent of the boundary it is my opinion it should not be let under Fifteen shillings

a Tenn & 5 or 6 Hundred Pounds a year the yearly Rent and that Sir Henry Liddell & Partners are the properest Tenants for the same their Waggonways being Convenient for Leading from almost any part of the Colliery.

[John-2-9]

The Lessor should have proper Clauses inserted in the lease as that the Lessee may be obliged to win the Colliery Effectually to work regularly at 9 Y^{ds} or more (if required) to a winning the Bords not to exceed 4 yards and to have a wall or pillar of coal of the full thickness of 5 Y^{ds} or more between each Bord the Pillar length to be 25 Yards no pillars to be wrought that may endanger or damage the water courses and air Courses or any part thereof or any of the Pits or shaft which must be kept open & well Timbred and left so at the End of the Term the Lessees and their agents to do no Negligent act which Occasion the loss of Coal or may Endanger the Drowning or, Fireing the sail Colliery or any part thereof to leave unwrought next to and ad=joining the Boundary of any or all Neighbouring Collierys. A Barrier or warren of whole Coal of sixty yards in Thick=ness(if required) to prevent water Courses air Courses &c from and to other Collierys.

To Give nor make any outstroke or Drift to or into any other Colliery without consent of the Lessor, the Lessor to have Liberty for his Agent Viewer to Decend the Pits and Shafts at any time by the Gins and ropes of the Lessees in Order to view the workings and to asscend by the same there are many other things relating the Lessor in Letting which cannot Conveniently be inserted in this paper.

S^r, The above relating the letting of Lanchester moor Colliery I attended at Darlington wth according to Mr Edens desire whose Death which gave me great concern/ is the Occasion of giving Youth is Trouble as I live near Lanchester moor, am willing to view the Colliery at any time and give you my opinion. And am Sir your M^{ost}[?] Serv^t (W^m Newton)

Darlington Feb 21st 1744/5

P.S. I live at Burnopfield head Tanf^d moor a little way from Newcastle and will take care of the Collierys as a receiver until I hear further.

To Peter Gifford Esq^r at Chillington near Wolverhampton Staffordshire by London

[John-2-10]

We whose names are hereunto subscribed have this Day viewed Heaton and Byker Collierys and find the present Engines at Heaton are in good order yet from the great Quantity of water they are not capable of Drawing the feeders which will require at least another Fire Engine to contend with the same. The Quantities of Coal [?] in Heaton Waste cannot be wrought until the waste be drawn out (except some small Quantity in the fourth Engine Pit and that only in small quantities annu=ally; We are therefore of opinion that the profits will not be equal to the Extraordinary Expencc attending his surcharge of water. The Lane Pit at Byker stands upon a Downcast Dyke to the north of seven Fathoms where an Engine may be erected to draw that [?] for winning about 30 Acres of Coal which is all that we apprehend can be got S^o & Wst of the Thistle pit Dykes but as we are of opinion that the Feeders of Heaton will Communicate with that winning then all the present feeder of Heaton as well as the water in the old Waste N^o of the Jane Pit Dyke in Heaton and Byker must be drawn out and delivered into Byker Waste south of the Jane Dyke and so to Denthole engines which will so overcharge these Engines that at Least 2 Engines more there to draw these Feeders to great expence that is our opinions the Colliery cannot to profit, at the east corner of Heaton near Bykerhill seam

the properest place to make winning but is our opinions out of the 30 Acres above mentioned near Ten

[John-2-11]

acres must be left as a Barrier betwixt it and Heaton and Byker old waste so consequently only 20 acres or thereabouts will remain to be wrought by this winning a quantity so small that it cannot defray the Expence of draw^g water not less than 70 F^{ms} as it will require at least 4 Fire Eng^s upon the whole it is our opinions that the Colliery of Heaton is unavoidably Overcharged with water & cannot any shape be won wrought & Carried on to Profit

April 15th 1745
Signed by

Tho^s Rowling
W^m Leason
Jn^o Legge
W^m ^{Newton}

H^m Hepple
Amos Barnes
Nick^{ls} Walton
H^m Drydon

We whose names are under have this Day viewed Heaton & Byker Collierys & finds the present Engines at Heaton in good order & draw a great quantity of water at the same time are not capable of drawing the feeders which will require at least another Fire Engine to draw out the water before the Coal remaining can be wrought (except some small quantity in the [?] Engine Pit. And therefore are of opinion that the profit will not be equal to the ex=traordinary Expence attending the Charge & as we fin the Jane Pit at Byker stands upon a Downcast Dyke to the N^o of [?] would only win about 30 acres of Coal which is all that can be got to the S^o & Wst of the Thistle pit Dykes but as we are of opinion that the feeders of Heaton will communicate with that winning not only the Feeders but also the water in the old Waste to the North of the Jane Pit in Heaton & Byker Collieries must be drawn out and delivered into Byker Waste to the S^o of the Jane pit Dyke will go to Denthole Engines which will so overcharge these Engines that at

[John-2-12]

least two Engines more Must be erected there to draw these feeders which will be so great an Expence that in our opinion the Colliery cannot work to profit. At the south Corner of Bykerhill we think is the properest place to make Winning to obtain all the Coal that can be got above the Thistle Pit Dykes but its our opinions that out of 30 Acres above mentioned about 10 Acres must be left for a Barrier betwixt it & Heaton old waste so that only 20 Acres or thereabouts can be wrought by this winning which will produce so small a Quantity that it will not defray the expence of Winning; the water will be to draw about 70 Fa^s & as it will require upon the whole at least four Fire Engines it is our opinions the expence will so great that Heaton Colliery cannot in any way be won, wrought or Carried on to profit. As Witness our hands the first day of May 1745.

Signed by

Tho^s Stokoe
Jn^o Smurfitt
Civ^d Smith
George Cloughton
W^m Hutchinson

W^m Daghish
Ra. Unthank
Jn^o Seaton
Jn^o Daghish
Rich^d Peck

[John-2-13]

No^v 28th 1778

At the request of Mr Hen^y Flower We have viewed and Examined the present state & situation of Bedling=ton Colliery.

We find there has been a Borehold bored by Mess^{rs} Rawlings at a considerable distance west from the present Staith where a stone is fix'd in this hole there was only one seam of Coal 2 feet 9 Inches high which lay at 50 Fam^s Depth which appears to us from the situation of the ground in the said Colliery that the main Coal in the said Hole does lye regularly as the said seam should have been expected near the surface.

There is also a second hole Bored by the Rawlings above half a mile further to the west and at the Deepness of 38 Fa^s they got in the main coal 2 Y^{ds} high with 2 small Bands in it and these two Holes are that has been bored by the Rawlings.

Find that there has been several other Boreholes Bored to the north & West from Rawlings 2^d Hole about three hund^d & sixteen yards & in Deepness Thirty six, Fathoms two feet the main Coal found in perfection the same as in the last Hole.

Find at a great distance from the last hole further to the north west several Pits have been wrought in the main Coal particularly a Pit call the Green Letch which is upwards of a mile and Half distance, the rise of Colliery which we are Credibly informed had the main coal 2 yd^s High with the same bands aforesaid & at the Deepness of nineteen fathoms one yard from the surface.

We also viewed many Drifts Barings and Pits sunk to the main Coal & from the best information by examining several. Persons who have formerly

[John-2-14]

[?] in the said Colliery and who have been concerned in several Borings find the main Coal lyes regularly to the North west of Rawlings second borehole to the afores^d Pit.

Also find that an upper seam of Coal has formerly been wrought which lyes thirty six Fathoms above the main Coal and regular from the last mentioned Hole to a draw well near to Mr Potts House in Miln Bank Farm where the Coal is sunk through.

We have seriously considered the present state and situation of the said Colliery and do recomend a tryal bore hole to be bored to the main Coal at One hundred and Fifty yards east from the said draw well near Mr Potts House in Miln Bank Farm and at Thirty yards clear from the Bank Top to the north the said hole will be in a Direct south line from Rawlings 2^d Hole &c if the said tryal Hole proves successfull there will be a great Descent to the river. We therefore recommend the Engine Pit to be sunk on the said Borehole.

We also give it as our opinion that this place will be sufficient to the Depth of Colliery for the present winning as it appears to us that it will winn a very large field of Coals on the success of this

said Tryal Hole to be bored we have agreeable to the request given the Annexed Estimates of the Expençe of winning & working &c the said Bedlington Colliery.

[John-2-15]

May 15th 1738/9

Having this day Viewed Brenckly Colliery Belonging to M^{rs} Sanderson & M^{rs} Bigge and finds here as followeth.

The last working Pits in Brenckley Colliery are all standing full of water that I could not get into them to view them nor cannot be loosed by the present Level which has been brought up for the use of the said Colliery and in my opinion will not be got loosed without the seasons be very Dry the stone being so open that it lets in all the day water, and the Coal that is to work out of the said Colliery being under the level which must be lifted to the old Level by pumps which is call the Borehole Pit where the water that comes from Mr Whites Colliery comes into Mr Whites People having made a communication out of the old workings of Brenckley Coll^y into Mr Whites Liberty and so Conveys the water thro' the same to the Borehole Pit, and then it comes of at that level [?] has been wrought up for the working of Brenckley Colliery where Mr White has no liberty without the consent of M^{rs} Sanderson & M^{rs} Bigge, therefore it is my opinion, without Mr White make a valuable consideration to M^{rs} Sanderson & M^{rs} Bigge for that water Course, it is their power to stop it up & drown up Mr Whites Colliery at their pleasure which may be done at a very little Expençe as Witness my hand.

Signed A.B

N.B. The Colliery is wrought with a seven Peck[?] in=cluding all expences at above 18^d P score, the Coals sells for 16^d p [?] and there may be resting at Two Pits 600 [?]

[John-2-16]

April 5th 1749

Having this day Viewed Brenckley Coll^y Belonging to Thos Bigge Esq^r and Mr Grace Sanderson 7 now Tenanted by Thos Shopworth and finds that the [?] Thos Sopwith has opened the old water Course and continued it within 15 y^{ds} of a Pit that he has now sunk to the main cola which he says he will set to work betwixt this & may lay first and so continue his level to the Pit Shaft w^{ch} when finished is all that is required of him in his Lease and where he is now work=ing Is to the East of the main Coal Pit in an upper Seam that comes on as the bank rises and is now at or about three fathoms deep the Dimensions of the seam is as followeth

	Yds	ft	In
Coal	0.2	6	
Metal	0.1	0	
Course	0.0	10	
Coal	0.4	4	

So that in the best of my opinion He has wrought out of this seam of Coal & the main Coal which is now lyeing at Bank about 1,000 Fothers of Coal but would advise them to put down a Borehole from the Bottom of the Pit sunk to the seam 4ft 4 ins to try the main mail for in my opinion is arise Dyke

betwixt hem & if so it will win a Great Quantity of Coal and get clear of the old workings and make her a lasty Colliery by this present winning the Above is my opinion as witness my hand... A.B.

And I likewise Viewed the said Colliery on the 9th June 1749 & finds that he had set the main Coal Pit to work & the working were all standing in a fair and regular manner & wrought above 30 y^{ds} from the shaft & also finds the feeders of water in that seam very small but he had done nothing in Carrying up the Level which if he had would have laid this pit dry and it is my opinion that from the 5th of April to the 9th of June that he disposed of about 300 Fothers of Coals. Witness my Hand.. 300 Fothers at 1/6^d [?] to £22.10.0^d Signed A.B.

[John-2-17]

Willington Coll^y 13th May 1776

We have been down, Viewed & carefully considered the state of this Colliery as to Deepness, Height & Hardness of Coal and other matters relating thereto, and we recommend that the winnings be made at 14 y^{ds} that 10 y^{ds} be left of that to a pillar & 4 yards to be taken for a Bord and the Pillars to be made 20 y^{ds} Long and the headways to be drove at most no more than 6 y^{ds} and that the stoppings are to be made of Brick where they are to stand for any considerable Time.

We have also been down the Orphan Pit in Shiremoor Coll^y and we find the Coals so far as he has been tried so full of Dykes & Hitches that it is very difficult for us to form any true Judgement what is proper to be done, but from what we can Judge from opening That has been made and the Deepness the Coal lays, we think that no less than 11 y^{ds} should be won to a pillar & Bord & 4 y^{ds} of that taken and 7 yards left and the Pillars be won 20 yards long & the Headways be no more than 2 yards the Colliery at willington & the orphan Pit in Shiremoor having no great openings yet made, makes it very difficult to say what is proper to be done, but when the Collieries is more open possibly it may be right to alter the above recommendation for the present the above is our opinion.

Signed by

James Bell Ant ^y Waters John Allen W ^m Dodds

[John-2-18]

Kenton Colliery 16th Oct 1776

This Colly has been won and wrought many years before the memory of any man now living an in Various seams of Coal found in it the uppermost of which is called the stone Coal, is about 32 In^s Thick is mostly wro^t and lays from 3 or 4 Fam^s so about 40 Fams Deep. the next seam of Coal is about 4½ feet Thick is called the main Coal & very extensive workings have been made in it these workings are on the Northside of a very large Dyke that runs through the Estate in S^oEst direction as laid down on the annexed plan & is a downcast to the north of upwards of 80 Fathoms there has been some workings on the south side of the above ment^d Dyke near the S^oEst Corner of what is calld East Kenton (for the Estates Distinguished by the name of Est & Wst. Otherwise Blacketts & Lilburns

About 500 Acres in west Kenton is wrought in main coal Seam & about 60 Acres in East Kenton is also wrought in that seam, and there appears yet to work of main Coal on the north side of the Dyke in the tow Kentons about 460 Acres and in the stone Coal there may yet be to work on the N^o Side of the s^d Dyke and that may be worth working 250 acres. On the S^o side of the Benwell main Coal about 240 acres, and on the same of the Dyke of Beaumont seam & also Denton Coll^y low main Coal in each about 270 Acres.

Quantity of Coal yet to work at East & West Kenton allowing /4 to be lost in pillars & also by the Dyke.

460 Acres of main Coal on the north side of the Dyke Height or the Thickness	}	Tenns 47000
250 Acres of stone Coal on the N ^o side of the Dyke Height		Ft Ins 2 10 16000
240 D ^o of the Benwell M. Coal on the S ^o	D ^o D ^o	4 0 21000
270 D ^o of the Beaumont seam on the S ^o	D ^o D ^o	3 6 20000
270 D ^o of the Denton low main Coal	D ^o D ^o	3 0 18000
		Tenns 122000

Note a Tenn of Coals is about 33 London Chaldrons

Note that the Quantity of the Newbiggin stone coal which is supposed to be mostly whole on the N^o Side of the Dyke in Kenton is not in the above Calculation as it has not been much tried in this Estate?

If a Tyne level drift were drove from the said river thro Benwell into Kenton near slaty ford and a way leave secured to the river Thro Benwell, I think there would be no difficulty in letting the Colly at 3 or perhaps £400 a year Certain rent & 15^s or 16^s at Tenn for Overleading

[John-2-21]

	Tens
Of the Kenton Stone Coal	3060
Of the Kenton Main Coal	8832
Of the Benwell D ^o D ^o	8296
Of the Denton low D ^o D ^o	9752
Of the Beaument Seam	<u>11342</u>
In all	41342
Deducted /4 supposed to be lost in pillars	<u>10320</u>
Total produce	<u>31602</u>

I have not made any Acco^t of the Newbiggin Tens which has not been much Tried in Kenton Estates although a considerable quantity may probably be got out of Her.

This Colliery is somewhat disagreeable Circum=stanced about as their many Old drown'd Wastes in and about her. But she may be put into a better State by obtaining way leaves & water Courses Over & thro Ben=well or East Denton Estates any further assistance that I can render Mrs Montague or you, you may Command From your Humble Serveant.

Signed W^m Brown

[John-2-22]

Winlaton Colliery 23rd May 1778

This Coll^y is situated on the banks of the river Tyne bounded by the River Darwent in the S^o & East sides, and on the N^o by the river Tyne and by [?stello] Ground Lease on the west side its well known there are three seams of Coal in this Coll^y and that very large quantity of Coal, have bee wrought out of her at that the has been won at several times and at various places, it is very uncertain what quantity of coal may remain yet to be wro^{gt}, hence it becomes absolutely necessary to make some Borings in order (as much as possible) to ascertain the quantity of Coal yet to work, it is also pretty well know that these coals are not very proper for the London or Coast trade, but only for the oversea Trade or Saltpans or Glass houses. Trade consequently not of the greatest value, the following appears to me to be fair terms for the letting of this Colliery viz

Certain rent work or not work £300 p ann. Liberty to work 500 Tens a year for the said 300£ 12^s a Tenn for overworking in each years liberty to make up shorts. The Tenn to be and contain 440 Bolls of 36 Gall^s each. To pay for what Coals is wrought or Led... Term 35 or 45 years.

Lessee to have a Power to Determine on expending £2000 or at the end of every seven years.

Lessee to pay no Certain rent for the first two years but to pay 12^s p. Tenn for what Coals he works or leads in the said Two years. Every matter and thing to cease at the end of the first year is such borings as Lessee may do not prove satis=factory he giving Lessor a copy of such Borings.

Lessee to have way leave & staith Room and power to make Both Lessor & Lessee to submit to all usual & necessary Covinants in Colliery Lease.

Signed W^m Brown

[John-2-23]

Scheme for working and Vending the Coals of this Coll ^y work ^g	
& laying the Coals on Bank p Tenn	3.5.0
Rent say	0.12.0
Leading, Hay & waggons, say 2 miles	0.15.0
First sum expended say £4000 one hald at 10 & one half at 5 p Ch on 600 Tens a year	0.10.0
Keeping the Fire Engine say £300 a year on 600 Tens	0.10.0
Agency say £200 a year, about	0.7.0
Staith expences	0.5.0
Way leave & unforeseen expences (say) Or about 7 ^s 6 ^d p Chald ⁿ	0.6.0
Fittage 1''6	
Owners Wagg 3½ £0.8.9½ ^d	
Oversea Coals now sells at 12 ^s p Chaldron	

Newburn & Walbottle £5.10.0 p Ten upon the staith

Willington 24 May 1778

Mr Bainbridge
Sir

With this you will receive my Tho^{ts} on Terms Proper for the taking Winlato Collieries, also and Esti^mate of what the Coals may be laid on the staith, at best such Estimates are very vague as the Length of Leading is uncertain but from what appears to me in similar cir^cumstances these Coals should not cost more laid on the Staith than I have Estimated.

I am Sir

your most Obed^t Hble Serv^t

Signed per W^m Brown

[John-2-24]

Gateshead Fell Coll^y 18 July 1782

Questⁿ 1[?] You are requested to examine & report the state and Condition of the Engine, Pits, Watercourses, Barroways & Waggonways Underground.

Ans^s 1[?] We have carefully examined the state & Condition of the fire Engine and recommend the spare Boiler to be fix^d on the N^o side of the Engine [?] followth a Pipe to communicate from it to the receiver & another Pipe to communicate to the Boiler adjoining it constructed in such a manner so as to admit of the steam being stopped off or plugd up occasionally (as described) to the agents or Engine Wrights at the Coll^y That any one of the Boilers may be cleaned or repaired as necessity required without stopping the Engine.

Quⁿ 2^d The Cheapest & best method of putting the Coals?

Ans^r 2^d from the present situation of the Coll^y various ways of putting the Coals underg^d must be practised in the different seams of Coal. However we recommend at present to put the Coals to a crane & from thence to the shaft by a Waggonway when the distance exceed two hundred yards, And untill the workings exceed 200 yards from the shaft (in our opinion) Putting the Coals by Barrowmen a the usual Price is the Cheapest & Best.

Quⁿ 3^d Where would you advise to curve in the several seams of Coal so as to clean them slates and stony coals and what Breadth would you advise to drive the [?] so as to make the roundest & Best Coals?

Ans^r 3^d We recommend Diff^t ways of Working the Diff^t seams of coal. First in the Low main Coal, we advise kirving in that part commonly called the ground Coal. In the five quarter Coal, we think the present method of Kirving by the bottom the best. But in the yard Coal seam we recommend

[John-2-25]

by all means to the Kerve in the middle which is by much the tenderest part of the Coal particular care being taken that all the Kervings & other small Coals in the seams be stowed under=ground which will be a means of Freeing them from slates & stones, - With respect to the breadth of the

Bords, we are clearly of opinion the greater breadth they are driven; the better for working round Coals but in order to work the Pillars to advantage would not advise them to exceed 4 or 4½ yards.

Ans^r 4th In our opinion Either the yard or five Quarter Coal will do for the London Market mix'd with the Low main Coal in equal proportions, if wro^t as before described but at present we recommend the yard Coal seam to be tried with the Low main Coal seam.

Quⁿ 4th Whither the yard or five quarter Coal seam is better to mix with the Low main Coal seam, and in what place first to sink the proposed only to work Two Seams?

Ans^r The best method of Corning soonest at the upper main Coal seam, and in what place to sink the first pit whether to continue the stone Drift, or Drift from the sinking Pit.

We recommend the main Engine Level Drift to be continued from the face where it now stands, untill the same cut the [?] of the six quarter Coal seam, and from thence a true water Level towards the Lough Pit and from the nearest point (in the said water level) a Drift to be continued in the seam to the said Pit.

We also recommend to begin to sink the Lough Pit Imme=diately to the six quarter Coal, and during the time of sinking a Drift (for the use of barroway & water Course) to be drove thro' the Dyke commonly called the Ten Fathom Dyke so as to cutt the upper main Coal on the Dip side Therefof.

This appears to us not the most effectual way to win (at once) all the upper main Coal on the Dip side of the Dyke but as we are Apprehensive that going thro' the said Dyke more Eastwards will be attended with more risque of meeting

[John-2-26]

with feeders of water from its being nearer the old drowned Waists. And further it appears to us that the seam will be won in much less time than by any other means and would be attended with less expence at first. We therefore advise the aforesaid method to be put in execution with all convenient speed.

Copy

Signed { Ch^r Bedlington
Geo Johnson

September 30th 1782

At the request of the Lessors & Lessees of Washington new Colliery, have examined the state and situation of said Colliery in order to give our opinion respecting the propriety of working the pillars and after such consideration once fully convinced it is the Interests of both parties to make the attempt immediately in the north working of the first Pit 2 pillars westward from the north Double headways after having first close pillared or stowed wth stones and Rubbish the first Pillar west in all the Bords in the headways above mentioned and also the second Bord north of the present

mothergate so far West as the pillars may be wrought in Order to prevent as much as may be a Creep or Thurst from Damaging the remaining part of the Colliery Air Courses, Water Courses &c

Signed by { Geo Johnson
C^r Bedlington

[John-2-27]

June 29th 1784 At the request of the Honourable Com=missioners and Goverers of Greenwich Hospital by Mess^{rs} Walton & Turner went this day and viewed Throckley Colliery in order to give our opinion respecting her present situation.

We Carefully perused a Plan delivered to us by Mess^{rs} Walton & Turner and also the Coll^y Plan belonging to the Lessees; We then preambulated the Grounds examined several old Pits enquired particularly into their situation as the Depth extent of workings &c Minutes of each parti=cular as follows.

Went to the nymph Pit upon Throckley Fell and found sunk to the splint Coal Depth 33 Fam^s this seam is all wrought here, as well as the Merchantable Coal in the main Coal seam. The Engine seam is thrown out by the rise of the Colliery to the S^o East of this Pit and the main and splint about 150 yards to the N^o West.

Success Pit N^o East from said Nymph Pit thirty three Fathoms to the splint and all wrought the main and Coal nor Merchantable.

Union Pit Twenty Fathoms to the splint Coal and all wrought, no main Coal at this pit.

These Pits & several others were won by virtue of the old water level which was brought up 7 cut the main Coal seam near the meadow Pit on the [?] side of a Four Fathom Dyke & the splint seam at the Day hole Pit on the Deep side of said Dyke all the Coal in all the seams That was found Merchantable on the Dep side of said Dyke to a Down=cast Dyke one hundred yards N^o of the union Pit of twelve Fathoms to the north is wrought Both in the whole & broken except a small piece of the splint Coal to the Deep of the water level and lying against the four Fathom Dyke which could not become at

[John-2-28]

At the Distance of six hundred yards No East from union Pit. A Pit called ward is sunk to the splint Coal at the Depth of Twenty two Fathoms and is now Working. The Main Coal is found at this Pit the Depth of seven Fathoms and Tolerable good but the cover is so bad as to render the working of it Impracticable. This being an entire new Winning having no communication what=ever with the old Workings to the Dip are obliged to draw their water to bank which they do by Tubs. Quantity each about four Hundred & thirty Gallon Tubs.

Xenia Pit about one hundred & twenty yards distance from the ward, Fourteen Fathoms deep to splint Coal and now working. As these pits are sunk close by the East Boundary and the splint Coal thrown out at the Distance of one hundred & fifty yards N West from Xenia Pit by an upcast Trouble very little Coal will be obtained by this winning.

There appears to be about 15 acres of splint to the Dip of said winning down towards the dyke at Union Pit. A Borehole has been put down Two hundred yards S^o west from said ward Pit and the splint Coal found at the Depth of Twenty nine Fathoms very Good, the main Coal at the Depth of Twelve Fa^{ms} but the cover very bad and therefore supposed not to be workable.

Went to maria Pit sun kin a field call east Liggar. this Pit is now working in the main coal seam, depth to said Coal Fifty three Fa^{ms} which is all wrought out in this pit as in the main Coal except six Acres?

Tarlton Pit is sunk 12 Fam^s below the Engine seam to a stone Drift which was brought from the Engine water Level in Main Coal and Continued to the full Deep through the said Tarlton Pit with an Intention of Winning the Engine seam below the Turnpike road

[John-2-29]

or at the distance of about Two hundred & Fifty yards from said pit but was carried no further than 120 yards? The reason of signed for stopping this Drift was their finding the Coal in the Tarlton not so good as expected towards that Quarter & from the probability of the Drift not being finished in time to work the Coal during the present Lease?

This Pit is now working in the Engine seam and their appears to be about four acres to yet?

Tarlton Pit to Engine Seam 216 Fathoms. Engine Pit to the Engine seam forty seven Fam^s and to the main Coal Sixty two Fam^s, a sump being put down four Fam^s below said seam, and Tyne level cutting the said Pit Two Fam^s above the Engine seam, Oblidges them to Draw the water Twenty one Fam^s with an Engine whose dimensions are as follows – Cylinder 60 Inches Diameter — Pumps Eighteen Inches Diameter, Two Boiler each fifteen feet Diamt^r this Engine goes about 12 or 14 hours Each Day.

The main Coal and Engine Seams are wrought at this Pit the Coal unwro^t appears to us be as follows.....

	Acres	Tenns
Main Coal	5	} 1120
Engine Seam	4	
Splint Coal	7	
Pillers very uncertain	14	<u>280</u>
		<u>1400</u>

So that not above Two years Coal can be had from the present winnings provided Ten thousand Chaldrons of Merchan-table Coals be wrought annually.

July 26th went down the Tarlton Pit and Examined the workings in the Eng^e seam & finds their Work^{gs} Carr^d Forw^d very regularly at Ten y^{ds} to the winning (Viz) Bords 4 yds Pillars 6 yds Thick and Length about twenty six yards

[John-2-29a]

full Dip of Coll^y near S^o & Depth about one yard in Twelve Thickness of the seam at the face of the bords measuring from Thill upwards?

	Ft	In ^s
Good Coal	2	8
Band		2
Top or Foul Coal	<u> </u>	<u>8</u>
	3	<u> </u>
		6

Went down the Maria Pit to Examine the main Coal seam Dip of Colliery hereabout S East 1 yard in Ten Winnings Ten yards Pillars in Length, Twenty six yards the work^e in this Pit are also very regularly & Properly carried in.

Height of seam at face of bords as follows measuring from Thill upwards

	Ft	In ^s
Good Coal	1	0
Kirving	0	9
Good Coal	<u>1</u>	<u>3</u>
	3	<u> </u>
		0

Went down Ward & Xenia Pits and examined the work^{gs} and found them all very regular the Coal appears very good.

Height from Thill

Splint Coal	0	6
Good D ^o	2	10
Splint	<u> </u>	<u>2</u>
	3	<u> </u>
		6

Upon the whole it appears to us that the Lessees have wrought the Coll^y very properly and that there is no Coal to be got by the present winnings than we have already mentioned and are of Opinion a new winning ought to be made as soon as possible & would recommend the same to be don at the present Engine Pit by sinking down to the splint Coal which lies 18 Fam^s below the main Coal w^{ch} in all probability would win as follows

		Acres
Signed	{ Geo Johnson { T Ramsey	Splint Coal 110
		Main D ^o 20
		Eng ^e Seam <u>40</u>
		<u>170</u>

[John-2-30]

A view of Lumley Coll^y Belonging to the right Hon^{ble} Richard Earl Scarbrough (John Cole Lessee) 27th Aug^t 1782.

At the request of the right Hon^{ble} Richard Earl Scarbrough (by Mr Basset) Lessor & Mr John Cole Lessee of Lumley Coll^y have taken into consideration the following queries..

Questⁿ 1st What state the Coll^y and also as to the appearance of Foul air, Wither the one or the other will impede the working of Coal by an undertaken; and what number of scores may be wrought daily situated as both Pits are at this time.

Ans^r 1st Went down 2 & 3 Pits and examined the workings thereof and observed in several places in 3 Pit considerable feeder issuing from the roof or thill, which over laid both Engines and put an Entire stop to the workings for a considerable time, but is now so much reduced as to be kept by the Large Engine, with the assistance of the small one going part of each day.

We also went to a Large fall in 3 Pit where we were in=formed a Considerable feeder of water of water came from, but is now much abatement, and frequently very great quantities of sulphur=ous matter is discharged from some crack or Crevices in the same place which has much impeded the working of the said Coll^y. The Information we had from the Lessees Overman Tho^s Allinson & John Henderson so that althou we saw no appearing of foul air when we were down (owing we sup-pose to the clearness of the atmosphere which always promotes a free circulation of air underground (we have no reason to doubt the testimoney of the said Overman we are of opinion that if a sufficient number of [?Hewsters] & Barrowmen could be had

[John-2-31]

that 40 Score of 16 [?Peck] Corves might be wrought Daily.

Query 2^d the Gentlemen on the behalf of the Lessor & Lessee will please to read over the artivles of agreement & Report, their opinion in writing, whither the stops made to the working of the Coal at different times fall on the Lessor or Lessee or on Both and in what proportion.

Ans^r 2^d We have read over the articles of agreement entered into for working the Coll^y and are clearly of Opinion that all the stops made to the working of Coal occasioned by fire (according the the 6th article) that exceed 20 days together falls on the Lessor & we are further of opinion that all stops which impedes the working of the Coll^y Exceeding the space of twenty Days from the above said Clause provided every means be made use of by the Lessee to prevent the same ought likewise to fall on the Lessor but all stops of what kind so ever not exceed the time specified appears to us to fall on the Lessee.

Quesⁿ 3^d If the quantity of 13,000 Chaldⁿ can be wrought in present situation of the Coll^y Yearly proportioning a certain number of scores of Coals to be wro^t daily and the said quantity is not wro^t & laid on Bank on whom does this Difficiency And from what does it arise.

Ans^r 3^d We observed in answer to Query first that if a sufficient number of hands could be obtained (which we apprehend at this time are not to be got) that 40 Scores might be daily wrought & reckoning 48 weeks to the year & five days to the week would make at that rate upwards of 13,000 Chaldⁿ annually of ship Coals Exclusive of Engines workmens Firecoals &c but we apprehend from the number of Men & Boys now employed & making allowance for the stops that may unavoidably be occasioned by the foul air and

[John-2-32]

other unforeseen Accidents that not more than 30 Score daily can be wrought. Now as about 4000 Chaldrons have only be ship^d and we do not believe above 400 Chaldrons more can be wro^t from this time to the end of the year (allowing for a great number of men to be hired at the Binding) still there appears to be a Difficiency of 5000 Chldrons.

We have also set forth in our answer to Query first that the working of the Colliery has been greatly impeded by foul air & have examined particularly into that matter and appears that no less than Two months have been lost by that cause, which Mr Cole, Could not prevent nor forsee, and that after using his outmost Endeavours to put & keep the Colliery in a workable condition still frequent stops were occasioned by discharges of foul air from the fall before mentioned which made the workmen so refractory as to make it necessary to discharge the most unruly of them in order to intimate the rest, and we have reason to believe it had the desired effect as it appears that the rest have wrought more regularly & constantly than Here before?

[?Infine] it appears to us that M^r Cole (Considering all situations has done his outmost to raise the greatest quantity of Coals, yet never the less as the Colliery is now capable of working at the rate of 13,000 Chaldrons a year the Dificiency of a short Quantity ought not fall upon Lord Scarbrough Except what are short by unavoidably stops.

Signed per { G. Johnson
R. Smith
W^m Gibson

[John-2-33]

We Samuel Barass, George Johnson & W^m King Viewers of Collieries (the said same Barrass being appointed by the worshipfull The Dean & Chapter of Durham, the said George Johnson by the Lessees of the said Dean & Chapter of the Houses or Tenants of Wallsend or the major part of them residing within the said Township of wallend & the said W^m King by W^m Russell Esq^r have this day viewed the workings & water levels of wallsend Coll^y now working by the said W^m Russell ought to be at Liberty to sink a Coal Pit within the distance of Two hundred yards from any Dwelling house in the Town of Wallsend afores^d and we have duly considered the nature of the present winning and and the water levels of the said Colliery and other relative circum=stances, and upon such view & Consideration we are Clearly of opinion & to adjudge & certify that the said W^m Russell ought to be permitted to sink a coal Pit at the place where he has begun to sink at the distance of one hundred & thirty five yards west from the Dwelling house of Matt Waters Esq^r in Wallend afores^d and that were the said W^m Russell in the working of the said Colliery.

And we further certify that it appears to us that the s^d Pit proposed & intended to be sunk by the s^d W^m Russell in the place aforesaid ought in the regular course of working the s^d Coll^y according to the present winn^e & water level ought to have been sunk and made in or near the middle the s^d Town of wallsend & that he's proposal to sink the same at the place first above mentioned has been so made for the purpose of preventing any inconvenience or annoyance to the Inhabitants of s^d town afores^d as far the working & Carrying on the s^d Coll^y would permit. Witness our hands at wallend the day of 1783. Signed by { W^m King
Sam Barrass

[John-2-34]

At the request of the Lessee of the worshipfull the Dean & Chapter of the Houses or Tenants in Wallsend or the magor part of them residing within the said Township of wallsend have this Day perambulated the Ground at and about said Town Examind the plan and Course of water levels of Wallsend Coll^y now work=ing by W^m Russell Esq^r under the Lease from said Dean & Chapter for the purpose of enabling me to Judge whether the s^d W^m Russell ought to be at Liberty to sink a Coal Pit within the Distance of 200 yards from any Dwelling House in the Town of Wallsend aforesaid & have duly considered the nature of the present win=ning & the water Levels of the said Coll^y and the other relative Circumstances and upon such view of Consideration am Clearly of opinion and adjudge & Certify that the said W^m Russell is under no absolute necessity of sinking a Pit at the Place where he has begun to sink at the distance 135 yards west from the dwelling house of Matt. Waters Esq^r in Wallsend aforesaid as he may work the very same quantity of Coals at the distance of 200 yards from said Dwelling House to the west but nev=ertheless I am fully convince that if the said W^m Russell, should be oblig'd to sink a Pit at the distance of 200 yards from said Dwelling House or at

any greater distance Than the said 135 yards the same would be attended with some extraordinary Expence & Trouble to the said W^m Russell in the Working of the s^d Colliery.

The Expence attending such an alteration the loss of time & Difference of putting supposing said Pit to go ten years and work annually Ten Thousand Chaldrons might possibly amo^t to four thousand Pounds.

Signed George Johnson

[John-2-35]

Sir According to your request I went last week to Brenkley and Examined your Estate.

I found that a great number of Pits have been sunk to the two seams Mentioned by Mr Barnes & his Views.

These Pits are all now fill'd up, they appear to have wro^t chiefly by virtue of two levels, one considerably below the other.

The High level has undoubtfully been driven first & after the Coal won by it has been all wrought than the second or Low Level has been brought up from a field Call'd west moor Colseand continued eastward into Pit Close, for the purpose of winning s^d Coal further to Dip. These levels are so much injured, by their running together and filling up the staples that they serve no purpose in making a new winning in their present situation. The expence attending the opening the Lowmost would in all probability Equal that of driving a new one.

It appears to me that place is by no means the most Eligible for a winning as it is not only a great deal to the rise of the Coll^y I am of opinion intend only to sink to the upper seam at the above place which coal I am made to understand is much inferior to the main Coal. I am of opinion Sire you ought to let the Colliery provided the following Terms can be obtained.

Term five years Certain rent p. ann 25£ to pay sixpence for every fother 1000 fothers annually. To be allowed to make upshort during the Term. Lessee shall have it in his power to determine the Lease upon giving 6 months notice.

Lessee to pay for all damage ground as may be fixed by Indifferent persons. And at the end or sooner to determination of the Lease to dill up all the Pits, Lead of all

[John-2-36]

Pit rubbish so as the grounds may be Tillageable. Lessee to give security for performance of covenants, all other usual and necessary Covenants to be inserted in the Lease.

Signed ... George Johnson

July 7, 1784 At the desire of the Mess^{rs} Errington & ward we have this day viewed High Flatworth Coll^y for the purpose of answering the following Queres.

Quer^y 1st You will examine the state of the Fire Engine & how far you think it sufficient to draw awny extraordinary feeds of water. Qu^y 2^d How far you think it right and expedient to work the Pillars to the dip of this Colliery (that is to say) from the Maria Pit shaft towards the Engine Pit.

Qu^y 3^d By working the Pillars is there a probability of strain=ing the downcast Dyke so as to set any of the old waste water into the present workings.

Quer^y 4th You will also examine the situation of the present work=ings and if you think it adviseable to sink a new Pit and at what Place.

Ans^r to 1st We have Examined into the state & Condition of the Fire Engine at Orphan Pit & find her in good repair and the said Eng. can draw the present feeder on the Course of 14 Hours each Day and are of opinion that the said Engine is Capable of Drawing a Considerable quantity more than she does at present and give a sufficient time for repairing &c.

Ans^r 2^d After examining the state of this Colliery from the Maria Pit down towards the Engine Pit we are of opinion it is the Interests of Lessor & Lessees to work the Pillars immediately and would reccommend beginning as near the Engine Pit as the drowned wastes allow.

[John-2-37]

Ans^r 3^d We are under no apprehension of any injury being done to the Orphan Pit dyke by a Creep or thurst it being in our opinion sufficiently secured against both by the Barriers and Bulks of Coal left on all sides, consequently there is no Danger from the old Waste water, but would advise for the security of the Maria Pit shaft, to pillar or stow up all the workings for at least 40 yards around the said shaft Except the barroways & air Courses.

Ans^r 4th W examined the workings underg^d on General & particularly those on the Rob^t Pit we also examined a Dip Dyke to the N^o & East which cuts of all the B^{ds} N.W. & East from said Pit this Dyke is set down east from said shaft and Driven 60 yards in bad Coal would reccommend to have this drift push'd forward with all convenient speed in order to try the state of the Coal on the N^o & East of said Dip Dyke; we next examined the workings to the Dip of said Pit and are clearly of opinion from the state of the Colliery in that quarter that a new Pit is highly necessary and would advise sinking one to the N^o East end of the Lough where a post is put down for that purpose.

Signed { George Johnson
Rob^t Smith
Ew^d Brown

Doctor Scott being desirious to have our opinion of the propriety of granting certain way leaves through his estate at usworth from Washington Coll^y belong to W^m Russell Esq^r also of granting to him a Lease of His Coal Mines lying and being under the said Estate and the Terms he ought to except from Mr Russell for the way leaves & Coll^y separately.

[John-2-38]

We have carefully examined the situation of Doctor Scotts Estate at usworth and find the same to the boundred on the S^o by the grounds belonging to Capt Shaw, on the East by Wagon Blakney on the N^o by M^{rs} Blagdon N.W. by Capt Redhead and on the west by M^{rs} Wilson. The

Common or Waste Grounds Extending from the Extremity of Doctor Scotts Estate to the west near Birtly fell we apprehend the Doctor is Tenant in Common wth several other Freeholders in the Township?

We have also examined the adjoining Estates especially those which appeared to us most likely for taking a wagonway over, which are thro' Capt Shaw Wagon Blakney and M^{rs} Blagdons Grounds, or across the Common into M^r Wilson estate but we are clearly of opinion Either of these ways will be attended with considerable more expence than thro' Dr Scotts Estate in Completing, Upholding & leading of the Coals. We are clearly of opinion that Doctor Scotts Grounds has greatly the preference to any other for a Waggonway from Washington Coll^y towards the river Tyne & are of opinion that the Doctor is fairly En=^titled to the following Terms, and that it would be improper to accept of Less.

Signed { George Johnson
C^r Bedlington

Lease 21 years or more determinable at the end of the first three years or at the end of any three years during the Term on giving 12 months notice. Certain Rent 120£ p Ann. or 800 Tens & 3^s p Tenn for any Greater Quantity.

Lessees to pay all reasonable damages for spoil of ground also all Cesses & Taxes. Way leave hereby granted, must be confined to Washington Colliery (being the coal already demised to

[John-2-39]

M^r Russell) M^r Russells freehold & Doctor Scots.

Doctor Scott to reserve power to admit any other person to lead Coals over his Estate and down M^r Russells waggon way paying a [?] for said way &c

Colliery

Term the same as way leave Certain rent 200£ p ann. for the first three years £300 the three following years & 400£ p Ann. during the residue of the Term whither Coals be wro^t or not upper main Coal Tentale rent 25/. & 20/. p Ten for all other seams of Coal each Tenn to & Consist of 440 Bolls.

Damage & spoil of ground the same as above Doctor Scott to have 50 Fothers of Coals yearly without paying any thing for the same, all usual and necessary Covenants to be inserted for winning and working the colliery &c.

Signed { C^r Bedlington
George Johnson

Doctor Scott

Way leave Lease 51 Years, Certain rent 50£ for 500 Tens at 2^s p Ten for overworking. Coll^y Lease the same Term no Certain rent first 3 years, 3 next years £200 p ann. & the residue £300 to be clear at the end of 6 years on giving 3 months notice or any time after on 12 months. Tentale rent 20/ p Tenn for upper main and 15/ p Tenn for the other seams of 440 Bolls, no way leave rent for doctor Scott own Coals over his own Estate. Damage and spoil of ground at 40/ p acre the certain rent of

way leave to commence at Breaking ground and to be clear on 12 months notice after levelling Ground. To be allowed to make up shorts & to have out-strokes from Doctor Scotts Colliery to the adjoining ones.

to have liberty to carry over Coals he now has or may hereafter have.

[John-2-40]

Dr Scott to have 50 Fothers of Coals annually when His own Colliery is Working.

Signed { George Johnson
Cr Bedlington

St Anthony's Colliery 16th Augst 1784

Gentlemen

you are desired to Examine & Report the state of the Creep near the Farewell Pit shaft.

Ans^r 1st We have examined the state of this Colliery in the Farewell Pit and observe a Creep upon th Pillars at forty yards from the shaft we presume it is occasioned by the walls being left insufficient to sup=port the roof on the N^o & West part formerly wrought by Matthew Ridley Esq. and since reduced by Waggonways crosscutting the s^d walls. we had no access to inspect the old work=ings but most of us have at various other Times & are informed that no pillars have been wrought in that part of the Colliery since. Therefore we can wth certainty say the creep is occasioned by the above reasons.

Qu^y 2^d You will please to examine what has been done to secure the said Farewell shaft against the creep by pillaring, walling &c and whether in your opinion the same be sufficient, and if not to point out further what ought to be done to secure the same.

Ans^r 2^d The Farewell Pit being secured for 50 yards on every side thereof by filling up the Bordrooms, Holings, Waggonways, we are of opinion it is sufficient to support the shaft, but if it proves the Contrary it is as effectual done as the nature and situation of the Colliery will admit.

Qu^y 3^d In order to secure the wagonway Leading down to walker

[John-2-41]

Coal we are pillaring and stowing up the Bords to the South of the same query how many of the said Bords ought to be pill=ared and stowed up.

Ans^r 3^d We reccommend that 2 Bords & also the Holing on each side of the wagonway leading from the Farewell Pit to Walker Coal be fill'd up with all Expidition from the shaft to Walker Boundary should that prove ineffectual some other mode of securing the same must then be taken.

Qu^y 4th In case the creep should become general and of consequence destroy the said waggon way leading down to walker Coal, what would you recommend to be done in order to enable us to work the said Coal.

Ans^r 4th An answer to this query requires mature consideration as it of material consequence to the parties, in the first place we presume there remains unwrought in Walker & St anthony's 6000 Tens of Coals in the whole Mine, whatever may be got in the Pillars is uncertain – in the next place we consider the expence of putting the Coals to the Farewell & Nightingale Pits Cutting thro' the Creep &c which we apprehend will be very Considerable. This method of working the said Coal compared with a new winning is the question, but as said before it being of such consequence to the Parties concerned the situation of the ground should be carefully examined the Different Levels & Depths taken into consideration what quantity of materials are upon the Premises their value & use insuch winning, Necessary Borings to try if there are any Quicksands and at what Depth the quantity of water which in all probability will be to draw

[John-2-42]

before we can point out with any degree of certainty our fixed opinion.

Qu^y 5th If the stowing of the bords should appear to you to be ineffec=tual would you recommend to attempt to bring a fall in any part of the Colliery in order to stop the Creep.

Ans^r 5th Provided stowing up the bord rooms has not the Desired effect we are confident attempting to bring a Thurst by working the Pillars will not, we rather think it will have a bad effect y Encouraging the Creep. Therefore we desire it may not be attempted.

Qu^y 6th You will be informed what has & what has intended to be done to prevent the Creep, Injuring the Nightingale & Engine Pits please to give your opinion respecting that matter.

Ans^r 6th We have been informed what is intended to be done at the Nightingale & Eng. Pits which we approve& recommend for the security of the Colliery in General & Particularly to those shafts and the whole Coal laying to the S^o & East that eight Bordrooms & Holings therein may be filled up with all speed beginning on the West side adjoining a Barrier of whole Coal and proceeding from thence easwards so far as the Drowned Waste will admit of, if that can be effected before the Creep advances thus far we apprehend it will stop it and consequently save the said Pits.

Signed

Ant^y Waters
Ew^d Brown
Chr^r Bedlington
Geo. Johnson
Jn^o Donnison
Jn^o Robson
Tho^s Barnes
Jn^o Plumber

[John-2-43]

1st Sept^r 1784

At the request of Mess^{rs} Bell & Brown went this day & viewed Throckly Coll^y in order to give my opinion respecting the present situation; and how far it may be adviseable to Endeavour to take the same to Lease again for the Terms of Years & upon what conditions I carefully perused the Coll^y Plans perambulated the Grounds Examined the old & workings Pits enquired par=^ticularly into their situation as to Depth extent of workings &c and find that there is very little more whole Coal to be got by the present winnings. A New winning at the present Engine Pit to the splint Coal which Lays at the Depth of 80 Fam^s from the surface or 18 Fam^s below the Main Coal would (wth the addition of what now remains unwrought in all probability win as follows)

Splint Coal	110 Acres
Main D ^o	20
Eng. Seam	<u>40</u> 170

The above 170 Acres reckoning 70 Tens p Acre & supposing 800 Tens to be wrought ann^{ly} would last about 15 years. It appears from Mr Browns Estimates which I think very just that this winning will not exceed £1200 & that the Coals would not cost more (including every possible expence) than 12^s p Chald^r I am therefore clearly of opinion especially when the situation of the Coll^y is considered the pits being all sunk to the Main Coal, with stock & materials already to Carry the work forward tha the Coll^y ought if possible to be retaken if ever the rent of 15 p Ten is obliged to be given which is supposed in the Estimate referd to but will recom=^mend to offer no more than the old Rent provided the Duke of Northumberland gives assurance that he will not interfere.

I am of opinion also that the Lease ought to be for 21 years with Liberty of Determining at the end of 3 years or any 3 years afterwards.

Signed George Johnson

[John-2-44]

St Anthons Colliery 27th 1784

At the request of the Lessors and Lessees of this Colliery we have Considered the state & situation thereof, and find the Creep has advanced from the North west part into the East to a Drowned Waste which has forc'd the water into the present workings, in the Nightingale Pit and prevented Coals being wrought in order to put the Colliery into a working state, we recommend that the Trials be made to make a Barroway thro' the Creep from the Farewell Pit shaft.. to the N^o & east in the most open & convenient way and to begin to work the Pillars, at same time to make a Tryal to the South & West; but previous to the working Coals we advise that the foul waste in walker Colliery, also the wastes this Colliery be aired as effectually as the situation of the same will admit in order to prevent any foulness coming from thence.

The [?Venture] Pit which is now ridded 50 Fam^s we reccommend to be continued night & day with all Expedition, & then to make a Barroway to the West to a Dyke to win the Coal there: the Quantity remaining we Estimate (exclusive of a Barrier of 40 yards to be left against Byker Waste) to 1400 Tens in the whole Mine provided the Coal be in perfection.

It is uncertain what time it will require to Execute the business, therefore the number of Men & Horses that may be wanted in uncertain, but at present we think that there ought not to be more than 20 Underground Horses, 30 Men and 20 Lads.

Signed { Ant^y Waters
Jn^o Donnison
C^r Bedlington
Rob^t Smith
George Greene

[John-2-45]

Heads of agreement entered into by M^r Feather=ston haugh & Co for working Gen^l Lambton Coll^{ys} at Harra=ton Lambton Barnmoor & Lumley for 5 years certain from Jan^y 1st 1785.

Undertakers to win work & draw to bank all such quantities of Coals out of the Main Coal & Hutton Seams at the different Collieries above recited and out of such pits and from such parts of the said Seams as they shall from time to time be directed & ordered by Gen^l Lambton or where he shall appoint.

Undertakers also agree to Kirve & work the different seams of Coal & to stow such quantity of Coal and to do every other matter & thing touching and [?] the fair and regular working & conducting of the Coll^{ys} as the Gen^l shall direct.

Undertakers to keep the Fire Engines, Waggonways & Waggons, Guns &c above ground. All waggonways & Barroways underground wth the waggons, Rollys, Trams Sledges and all other Coll^y stock that is now or shall be made use of in good & sufficient repair together with the Air courses & water Courses, and all the old & Present work=ing Pit shafts.

Undertakers to sink one Pit at Harraton The main Coal seam to sink the A Pit at Burne Moore to the Hutton Seam and a new Pitto the Low main Coal those Pits wth all such other Pits as may be in the Opinion of two Viewers be necessary to sbe sunk when & so soon as requested by Gen^l Lambton, and to do all other work and to be at all the

[John-2-46]

Expence whatsoever & wheresoever that shall attend the working & carrying on the said Coll^{ys} (Except as herein after excepted) Gen^l Lambton paying or Causing to be paid such price per Chaldⁿ for all Coals wrought & led to the Staiths & Trunks as follows...

	s	d
Harraton Coll ^y	8.0	
Lambton D ^o	8.9	
Burnmoor D ^o	7.8	
Lumley D ^o	7.9	

Undertakers to be paid (every 14 Days) at the rate of 15^s p Score of 20 Peck Corfs each score 21 Corves for all Coals drawn to bank. The Accounts to be settled Every half year for the quantity of Coals Led (viz) on the 24 of June & the 21st Day of December in each year of s^d Term. & the shorts to be then paid up Gen^l at the end of the first year to have it in his power of redu=cing the above privs if the same in the opinion of two Viewers one to be chosen by each Party be too high.

Undertakers to take all the stock & materials belonging to the different Coll^{ys} at a fair valuation & deliver the same up at the end of the Term, upon a fair valuation to be made by two or four persons Indifferently chosen & the Difference of value to the present valuation to be paid or received as shall then appear. The following is a recital of the par=ticulars which the undertakers are not to be at the expence of referred to on the other side as Exceptions.

Leading the Coals from the Pits to the Staiths and trunks staith expences, Lord Scarbrough, Rent at Lumley

[John-2-47]

opening out the air & water courses if insisted upon by his Lord=ship Building Engines for drawing water from the Mines (if wanted) & keeping the superannuated poor at Lambton*.

Undertakers to have the Houses they now occupy without paying any rent for the same.
 Undertakers not to be paid for the Coals used by Gen^l Lambton, Themselves Workmen & Fire Engines.

Undertakers to give sufficient security for performance of Covenants usual & necessary Covenants to be inserted on both sides.

* and paying the premium upon Coals sold at London also all expences and allowance to Fitters.

A View of [?Pitferrance] & Balmule Colliery belonging to Mess^{rs} Atkinsons 23^d May 1783.

At the request of Mess^{rs} Atkinsons & Clayton I waited upon them at Limekilns, in Scotland, to view [?Pitferrance] Colliery in Order to give my opinion respecting her present situation, What quantity of coals is unwrought, what may be wrought & at what p Chaldⁿ to facilitate this business it was desired of me by the s^d Gentlemen carefull to peruse a Journal & report of a survey of this Coal & Coalfield of [?Pitferrance] made by Mess^{rs} Reed Lauree & Rain, at the request of the Honb^{le} Board fo Customs & also a view of Mr John Wrights.

I have accordingly on the 25th read over the views and made such remarks as were necessary previous to my going upon the Ground on the 27^{ty} and 28th event in Company with

[John-2-48]

I particularly examined the state & Condition of theses Pits I also perambulated the state of Pittferrance and also that of Bal=mule hence I Collected and made all the remarks I possibly could upon the whole. I then proceeded to compare these said remarks with the views above mentioned and after a minute examination of Circumstances am of opinion as follows...

That the situation of the Colliery is such as to admit of working six thousand Chald^{ns} annually for three years without occa=sioning much more expence in working & Driving Drifts except in the Main Level which should be continued. I am further of opinion from the above Gentlemans views as well as from my own observation of the Pits and surface & Plan that supposing Ten thousand Chaldrons to be vended annually there is no less than 60 years Coal in Pitterrence Coll^y even after large allowances are made for Coal that may be lost or not vendable as will appear from following surveys taken from Mess^{rs} Riddle &c which tentively agree with.

Total acres in Each particular Seam...

1 st	In the 5 foot Seam								
	In Cha ^s Pit &c	28	}	Acres	Chald				
	In the Dean D ^o &c	52				232 at	1800 p	Chaldrons	
	In the Catch D ^o	6							18560
	In the Backmoor	80							
	In Berry Law	66							
2 ^d	Total acres in the 2 foot seam								
	In Cha ^s Pitt	28	}	Acres					
	In Dean D ^o	52				237 at	750 p	177750	
	In Catch D ^o	11							
	In Backmoor	80							
	In the Berry Law	66							
			Carried over		363350				

[John-2-49]

		Am ^t Chald ^{ns} bro ^t	363350
	Amo ^t of 5 & 2 foot Seams	469	
3 ^{dly}	Total Ac ^s 4 foot seam		
	In the Charle Pit	28	} 233 at 1500 p 349500
	In the Dean Pit	52	
	In the Catch Pit	7	
	In the Back Moor	80	
	In the Berry Law	66	
	Total	<u>702</u>	<u>712850</u>

With regard to the Working and laying the Coals upon the staith including all expence I am Convinced the duty Free Coal cannot cost more than 14^s6^d p Chaldⁿ the London and Coast Coal even from Balmule Ten shillings p Chald.

Home Consumption of weight Coals from Orchard 11^s/p D^o

And From stone at 6^s/6^d p Ton.

The above will appear from the following Estimate of Expence of the free Duty Coal.

The average Price of working wearing Draw ^s	}	£ s d
waters &c Pittference Coals p Newcastle Chald ⁿ include ^s		
all expences in making the Coals fit for the Waggons		0. 6. 0
Leading said Coals p Chald ⁿ		0. 1. 6
Upholding Waggonway		0. 0. 7
D ^o Waggons		0. 0. 3½
Driving main Levels sinking Pits & all incidental Charges		0. 0. 8
Engine Keeping & upholding		0. 0. 5
Agency & Rent		0. 4. 1
Staith & ship expence Exclusive of agency		0. 0. 6
Way leave & Damage of Grounds		0. 0. 3½
Lay more for Incidents		0. 0. 2
Total expence of Pitterrance Coals p Chaldron	£	0.14.6

[John-2-50]

Estimate of the Expence of working the Iron Stone p Ton in	£ s d
=cluding all expence laying upon Bank	0.3. 6
Leading & Waggons	0. 1. 3
Rent	0. 0. 6
Ship Charges and Freight	<u>0. 1. 3</u>
Total Expences of Iron Stone p Ton	<u>0. 6. 6</u>

Consequently if the Free duty Coal be sola at Twenty two Shillings there will neat profit of senen shillings p Chaldⁿ likewise supposing the London Coast Coal upon an average sell at Twelve shillings p Chaldⁿ will yield a Profit of three shillings p Chaldron.

An if the Home consumption of weight Coals sell at Eighteen shillings p Chaldⁿ as I understand they do the profits arising from them will be seven shillings p Chaldron and Ironstone at nine shillings & sixpence will produce Three shillings p Ton Profit.

Then stating the vend of free duty Coal at 6000	}	£	s	d
Chaldrons annually at seven shillings and sixpence Profit		2250	0	0
London & Coast Coal from Balmule 2000 Chald ^{ns}	}			
at Two shillings p Chald ⁿ Profit		200	0	0
Home Consumption of weight Coall 500 D ^o at	}			
seven shillings p Chald ⁿ Profit		170	0	0
Iron Stone 2000 Tons at 3/ p Ton profit				<u>300</u>
Total Profit p Ann		£		<u>2920</u>

From all that I could learn respecting Balmule Colliery both from my own observation as well as from the Acco^{ts} of Mess^{rs} Reed, Lawrie, & Wright who all agree in thinking it the best and most extensive field of Genuine sea Coal that has been discovered in Scotland it appears to me to be an Object deserving the most serious attention of the Proprietors I had

[John-2-51]

the opportunity of seeing some of this Coal at Rose bank which Looks exceeding well and makes a good Cynder therefore have no doubt their answering The London and Coast Trade provided Care be taken to work them large upon the whole I am Clearly of opinion that pittference Coll^y with the addition of Balmule is very valuable if properly managed no unforeseen accidents happen and the vend as proposed. Signed Per George Johnson

Flatts Feb^y 17th 1785

17th Dec^r 1777 Lease renewed from the Lord Bishop of Durham to Rob^t Shafts Esq^r of all his Coal mines under Certain Commons in the manor of Chester for the Term of years..

23^d May 1771 Leasefrom Sir Sidney meadows and others of their respective shares & Interests in the above said Commons which was then the 17 Dec^r 1770 to M^{rs} Tenison & Partn^{res} from the 23^d May 1771 or 18 years

Sir Sydney Meadows Share is	5/24 parts
M ^{rs} Montague	5/24
M ^r Liddle now Sir Henry	<u>2/24</u>
	12/24
M ^{rs} Tenison & partners	12/24

30th May 1772 Lease from the Lord Bishop of Durham to Edward Montague Esq^r of all his Coal mines under all his [?] &c in the manor of Chester to hold from the making thereof for the natural lives of Sir Ra Milbanke B^t, Rob^t Shafts Son of Rob^t Shafts & Moris Robinson son of Matt. Robinson

[John-2-52]

M^{rs} Montague and M^r Archdeacons shares or Interests in said Lease is 3/8 parts, M^{rs} Jenison & Part^s 5/8 Parts.

Lease from said Montague & others for there shares 3/8 parts of the Said Lease.

Certain Rent paid M^{rs} Montague & others for their Shares 250 £p Ann. for each Lease with Liberty of making up shorts.

For the main Coal seam	18 ^s /p Ten
Five quarter Coal seam	13.4 p D ^o
The Ten to be	418 Bolls

Feb^y 1785 Wayleave Lease

		Yearly Rents £	Years to go
Commencement	W ^m Lowes Esq ^r for year to year and may be easily avoided	40	
1 st May 1785	From Tho ^s Hasswell Term 41 years	30	37
22 ^d No ^v 1770	From the Proprietors of J Hutton & others Picktree &c Term 38 years	84	24
24 th Dec ^r 1769	From M ^r W ^m Lambton Esq ^r Term 31 years	280	16
12 th May 1769	From R ^a Carr Esq ^r 21 years	158.2	5
24 th Dec ^r 1778	From [?] Esq ^r 31 D ^o	150	25
		£ 742.2	

[John-2-53]

Lease for years Pelton Common 1785

Coal mines on the rise or East side of a 14 F^m Dyke 130 Acres to the North & North Wes from the Board Ling Pit including what may be got at the Brow Pit.
5 G^r Coal h^t of the seam 3^{ft} 6^{ins} 180^{tens} p Acre 1400

Much refuse being this Seam and attended with a bad roof &c a second working may be thought Improper therefore allow 1/3 for Waste or thereabouts		4600	9400
Main Coal seam			
100 Acres 4 ^{ft} 6 ^{ins} 130 ^{Tens} p acre		13,000	
74 for Waste		3,250	9,750
Main Coal between the 14 ^{f^m} Dep Dyke to West and the rise Dykes near The Nab Pit seam 4 ^{ft} 4 ⁱⁿ 130 ^{Tens} p Acre 40 Acres		5,200	
74 for Waste		1,300	3,900
The 5 G ^r Coal above s ^d Seam apart of which Was brought not found in the best perfection say Only Main Coal unwro ^t to the west of the rise Dykes adjoining L ^o Moor &c			1,000
The Nab & Hill Pits			
30 Acres height 4 ^{ft} 4 ^{ins} 130		3,900	
74 for Waste		975	2,925
This got by virtue of a stone Drift from Brow Pit, Tens			26,975

[John-2-54]

Having been called upon to give our opinion what steps are properest to put out the Fire in the Duke Pit Whitehaven and also a to prevent a General Explosion.

We are of opinion that the safest & most effectual method to put the fire out will be suffer the water to rise 6 Fathoms above the Entrance of the stone Drift and to remain Six Months before it be drawn out again.

And to guard as much as possible against a General Explosion we recommend that the stop stapple Pit in Duke Pit rise be opened that the [?] Pit top be covered & then Pedley & Parker Pit Aires will play wth the Duke Pit, as soon as this passage is Cleared her to open the first or Second Brick thirls in Duke Pit N^o Endgate facing the up back Leading to the staple Pit and Close the stern Endgate between this part and the Pit this will oblige the Air to pass thro the Dip workings & thro Scotts and to the Duke Pit by opening the stern inback Doors provided the colliery feeds produced in the Inbanks to the Dip of scotts end have stopp'd the air passage the Innermost Hole which we are afraid will be the Case but at the range from Scotts and between the Inbanks are only made with Deals and are told that none of the Thirls in those two ranges are straight we hope a quantity of air will pass thro Scotts and Dyke sufficient to sweep away all the Inflammable air within its reach to duke Pit and we recommend that the door in the Frames or the stop adjoining at the middle Diping head be opened before Scotts end be roofed with water to keep up a free circulation till the water Comes near the middle Dip Frames & then we think it will be right to

[John-2-55]

stack the Stop in the Duke Pit Endgate to continue a circulation till the Eye of Duke Pit is Closed.

Memorial Alex^r Thompson into Sampson Coysgaine Lloyd Esq^r Proprieter of the Coal Halbeath

Sir Since Al^r W^m Browns visitation of Halbeath Colliery which was the 26th of June last, the following Operations have been at the said Colliery agreeable to his opinion & advice, both for a ascertaining the Quantity of Coal in the Sands of Halbeath still to work, and for pre=paring the works at the Fire Engine for more extensive Workings so soon as the Waggonway is ready.

1st There is a Borehole set down a little below the [?Cushie Crag] near the Colliers Houses which found the five foot Coal at 26½ Fathoms (Down) below the surface of good Quality and free of stone or any other Trouble as far as we could judge by the Boring Rods in that said Borehole there was found 3½ feet Coal a Rough [?foul] Coal, the same as on the S^o Side of the Dyke, and also a Twenty Inch Coal and what of it was got up by the Boreing Rods, was tryed in the Forge Fire and made a very fine Cynder coking altogether without any ashes coming from it it is proposed when the season of the year will permit to sump a small Pit on the [?] of this Coal to try is quality with more Certainty all these Coals in this Bore being found to lay regular and at their proper distances free of Hitches or any Troubles we could discover, & very little water. I did not think it proper to Bore down to the splint Coal to save expence, as in all this Country if one or two of the Coals next the Surface are

[John-2-56]

are found regular and distinct we think we are sure of all the rest below, and for my own Part Inever saw it fail. It appears to me from this Tryal Bore and from the Course of the Crop Washings that

there is a very large Field of Both Five foot & splint Coal w^{till} to work, and I hope a good deal of it will be got Level free by virtue of a stone level now [?corveing] for that purpose.

2^{dly} The next Tryall Bore was made in a Pit Called the Sampson Pit about 25 Fa^{ms} to the N^o East from the Engine where it is reported the great upcast Dyke lays, this Pit was Sumped by M^r Wright to the Rock head & then Bored down to a Certain Distance, & it is said they did not find the five foot Coal at the Distance from the Surface where it should have been found but as these reports was only Traditions to me & no Journal of this left upon record nor any certain account what=ever of what they met with in this Bore & as it was proposed and agreed upon to sump the Engine to a Certain Distance and to work a Stone Mine a Deeping to gain all the Coal on the South Side of the Dyke, I could not in Justice to my Employers proceed to these operations till I were certain where the Dyke was or if there was any Coal below this Pit I therefore set to work and Bored this pit to the Deepness of above 29 Fathoms including what was bored formerly and found no Coal where as the splint Coal should have been found at this Pit at 26 Fathoms from the sur=face allowing the Coal to dip one Fathom which is more then the Common Dip this being the Case I gave up the Bore and are now Drawing the Timber out of this Pit, which will be if use about the Colliery, much more than the Expen=ce of Draw=ing one out.

3^{dly} I next propose according to M^r Browns opinion

[John-2-57]

to make some Tryal Bores upon the Top or North side of Chushie Craigs where I expect to discover large seams of Coal that will be got level free for many years, by the Present Stone Level after Considering it deliberately I think this is a more certain Method then by dabling & working into the Crop washings of the different seams although a little of this may be necessary Boring will discover the exact thickness and distance from each of these seams which is proper to be known.

4^{thly} since M^r Browns visitation the stone level is wrought forward about 36 Fa^{ms} & found the Dyke in the said Level at the bottom of the air Pit, on the level near the Waggon way North East from the Engine Pit when the Dyke was discovered the Metals raised pretty suddenly but are now beginning to flatten and come to their regular Dip & Course.

5^{thly} The Engine has got a new Beam sometime ago and we are just now Putting in a small Tryle of Pumps into the Engine Pit for the Drawing the water of the five foot Coal up to the place where the engine discharges her water this [?] of Pumps is just 15½ Fathoms Long that is done in order to keep the Engine betwixt the five foot and splint Coal. As it is proposed to widen the Engine Pit upon the Three sides, about five or six Fathoms above the splint Coal in Order to making her fit for Drawing Coals out of her, which will save the expence of sinking a [?] Pit for a good time and will throw the [?] Pit upon the east side of the Engine at a much greater distance

[John-2-58]

than otherwise it would do were the Engine Pit not to be widened putting in a Pile of small Pumps to the five foot Coal will be no great Expen=ce as there was an old Barrell at the work that answers that purpose, and the rest are [?] Pumps, this Pyle of Pumps will lesson the Quantity of water in the Pit bottom more than 1/3 which will enable us to sump the Engine Pit & work the Stone Mine at less Expen=ce having much less water to Draw from the Bottom.

6^{thly} So Soon as this Pyle of Pumps is put into the five foot Coal which will be in a few Days, it is proposed to begin to widen the Engine Pit immediately with the old Pumps as they will not answer for sinking the Succession being rent and almost good for nothing and to put in the new Pumps and then sump the Engine Pit about seven Fa^{ms} Deeper, and a stone mine wrought from that

Depth. I think will Dry all the Coal on the south side of the Dyke so soon as the stone mine at the Bottom of the Engine Pit is wrought a Deeping at a proper Distance, to begin a Coal mine or drown'd parallel, or Directly above the stone mine for opening up the Coal to the Deep of the Engine, And to bore down upon the stone mine at proper distances for carrying of the water either then to go into the Expence of doing it with Slop Pumps, this will open up the whole field of splint Coal from Dip to Crop or old Level of all the splint Coal on the South Side of the Dyke to be drained by the Present Engine.

7^{thly} So soon as the splint Coal is wrought to the west opposite to a Pit near the Lodge with a Gin upon it call'd

[John-2-59]

Cornelius Pit there I would propose to work a Coal Mine or Downset a Deeping of said Pit to near the Dyke; & if the Coal to the Dip is found to be of good Quality and will answer for Exportation , To Bore down upon the Splint Coal Waste which will come of all the Water from this Coal to be drawn by the Engine, this will be done at the Fiftyeth part of Expence of that proposed by M^r Wright by working a stone Mine from the engine pit to drain this Coal to the Pit and will answer the purpose every bit as well and the same Pits that answers to work the splint Will answer to work the five foot Coal to the Deep, then you will say then there is no use for the small Pyle of Pumps in the five foot Coal, no matter the Expence is full able to Draw all the water from the Bottom the Principal use of the Pyle of Pumps in the five foot Coal, is in time of widening and sumping the Engine Pit & working the stone and Coal Mine to the Dip of the Expence which be of great Advantaghe by lessning the water at the Pit bottom in time of these operations, This is as distinct an Account of the works as I can give you at Present of what is already done, & I intend to be done & begs you will shew it to M^r Brown if you have an oppertunity of seeing him, if not to send him a Copy of it and it will be very kind if he finds me wrong in any article to send me his opinion and advice you have seen the Waggonwayso lately yourself that I need not Trouble you on that subject at Present you shall have a particular acc^t from time to time how it goes on.

Alex^r Thompson

Halbeath Coll^y 20th Nov^r 1780

[John-2-60]

Halbeath Coll^y in Fife N^o Britain 3^d & 4th of May 1779

At the request of the M^r John Wright of Dumferline we have viewed, Examined & Considered the state and situation of this Coll^y so far as it can be examined, we observe that there is a fire Engine upon the Colliery but that Engine has not been wrought or used for some time consequently the Coll^y is full of water so that we could not get into the workings therefore we had sundry people particularly M^r Adam Anderson the former proprietor that had seen wro^t in & known the Colliery when last going, such people as we had & examined uniformly agree that the seams of Coal in this Colliery (of which there are no less than Eleven) And together as are said to be 43 feet in thickness & are of a very Quality and preferable to the general run of Coals in this Country we find there may be a very large Tract of Coal in these respect=ive Seams laid Dry by a Drift or Drain to be driven from the low Grounds there or rather to be begun in a Drift in the Grounds of a M^r Black adjoining this Coll^y which is a lower Level than any part of the Grounds in which this Coll^y is & so to be carry'd on in a N^o East direction to the Dip of Coll^y upon a Plain or equal to the Horizon or true water Level in stone or Coal from seam to seam untill it cut all the seams to the Northward, which Drain will be ab^t

1000 yards in Length & may cost if the strata and metal are Hard 1000 £ & if soft less than half that sum. we earnestly re=commend to procure leave of M^r Black to begin it in his Estate, & so to be carried as said above as it will undoubtedly Lay dry a very large Tract of Coal in all the seams that at a

[John-2-61]

very extensive rate of working(for Instance 700 or 800 Tens yearly for at least 50 years to come & when the coals are wrought away that lays above the said intended Level by sinking a Pit and erecting an Engine to raise the Water 20 Fam^s into the said Drain more than 50 y^s consumption of Coal may be laid Dry, & when all these quantities happens to be wro^t away a very large quantity may be won to the Dip by sinking the Engine Deeper It appears to us at present to be right to put the Fire Engine into repair & work the Coal into the S^o West side of a great Dyke said to be there & indeed untill the intended drain be got into 2 or 3 of the seams of Coal on the N^o Side of the s^d Dyke & so to be driven forward with all convenient speed untill it cutts the uppermost Seam of all to the North=ward where it will be about 25 Fam^s & the Coal works may be going on the same time by which means the Coll^y will be clear of the expence of the Fire Engine after the Coal on the S^o west side of the Dyke happens to be wrought a way, We earnestly reccommend that two Boreholes be bored, one about 200 yards north from the Engine & another about 400 yards on the same direction to try how the seams of Coal streak to the northward, and these borings to be made before the Intended Drain be begun, As to the expence of winning the Colliery & lay^g a Waggonway to the river with Cutts Batteries, Wagg^s Staith, Harbour & other necessaries to compleat and make the Coll^y a Current going Coll^y we think it may require about 4000 £ M^r Wright who has been long in the Country and who is very well acquainted with the Coals in it, is much more conversed

[John-2-62]

with the rates or prices of Working, Leading & putting the Coals on bord the ships than we are, but from this report and also the reports of other People that we have examined & Enquired as we think the Coals may be laid on Bord the ships for about 8^{sh}. The great Coal 7th the [?Cheivs] 7 5th the small p Newcastle Chald^r reckoning interest for the 1st sum Expended and all other expence whatever. We have viewd and Examined the Tracks that a wagonway may be carried & find the length of leading will be about 4 English Miles and although there is a possibility of going to 3 Different places to ship the Coals at, (Viz) at St Marieth Hope, St Davids & Insver=skethy yet on examining the Country thro which the Waggonway may be laid, we prefer the Harbour of Inverskeathy to either of the other Places & think the surface of the ground upon that tract to Inverskeathy to be the most Elligible & least Expensive way for the Waggons road to be made at Inverskeathy there is a Piece of ground joining the Pier said to belong to Coll. Archbold Carnball on which there are some old salpans & old Buildings and places for salt pans. & as there will doubtless be small Coals in the work^g of this Colliery such must be disposed on to the best advantage it therefore may be right for the Company to purchase the said Piece of Ground to Errect pans or other Buildings upon as to the spott from which the Coals must be shipped & vended it may be either from the South and of the Present Pier, or from a Place near the East ness, but M^r Wright having seen & being well acquainted with the Harbours on the Forth can Judge better than we of the properest place to Erect the Staith at – upon the whole

[John-2-63]

we are of opinion (all circumstances considered) that the Coll^y being fairly set a going and manag'd properly will not on the vent of 750 or 800 Tens a year leave a Clear profit of not less than between 2500 or 3000 £ a year.

[?Lampson ?] Lloyd Esq^r

Boness 10th June 1780

Having considered with some attention papers you sent to me on the 7th [?] and having seen your Coll^y at Halbeath with the Waggon road forming from it to the Harbour of Inverkeithing, and having also seen into the Correspondence between your Company & the Town Council of the Borough of Inverkeithing the method pro=posed for improving the Harbour & for shipping your Coals I am of opinion that you ought not to calculate your Vend of Great Coals at more than 10,000 Tens a year and I am too of opinion that the [?] will be excellent if as the present working & selling prices in this Country your Clear one shilling a Ten on that vend the materials being upheld, but without Charging the works with Interest of the Original outlay or expence of fitting. Gain on 10,000 Tens of great Coals at 1/ is £500 a year it is not very propable that you can ship small coals with advantage Coals indeed have of late been brought 3 or 4 miles over Land& ship^d in this Firth for the London Market but besides that the advantage of this Trade is not yet very well ascertained, it will suffice to suppose that any gain you

[John-2-64]

may make by shipping small Coals may be required to make good the before calculated £500.

N.B. London Traders generally require a greater Depth of water than you are likely to have in Inverkeithing Harbour and it will by no means answer t send out your Coals to be ship'd in the Roadstead.

10,000 Tens of great Coals yearly supposing your splint seam to yield one half great Coals will not be turn'd out with fewer than 60 Colliers, and it is no easy matter to collect & keep together such a number of good Pitmen.

10,000 Tens of great Coals yearly will at times give your shippers so much business as they can well over take for at other times 3 or 4 weeks will elapse without any demand. this alternate demand, & no demand renders it necessary that a capacious Staith or Yard be provided near the ship=ing of the Coals for the Waggons must lead Coals every favourable day, therefore being many days in the year so bad that they can=not Travel, and the road will often be in so drenched a state that is very imprudent to allow them to Travel.

Your splint Coal seams the only Coal absolutely to be depended upon for yielding great Coals ere your Present Engine Pit sunk 3 Fam^s and a Cross mine run to cut the splint Coal in the manner projected by M^r Wright this would not give you more than one years work or 10,000 Tens of great Coals in carrying on Halbeath Colliery no time should therefore be lost in pushing forward the deeper level to win the seams on the North side of a great Dyke & as this may be done by a Fire Engine in half the time it can be done otherwise, it seems

[John-2-65]

your interest to abandon the present winning & to remove your Fire Engine to the new winning rather than throw away money & time on deepening your present Eng. Pit.

By sinking your Engine pit on the new Pit 30 F^s below your new level & draining to that depth the splint Coal you will require 14 years to work it off at 10,000 Tens p year great Coals and the air Pits on the Deep Level will discover the whole of the 11 seams on the N^o Side of the great Dyke except the two uppermost by which discovery you will Judge the propriety of producing that deep Level lay on its intersection wth the splint Coal.

The waggon road should also be finished with all convenient speed. & as I observe that there are many windings in this road occasion'd probably because the ground thro which the road would have gone straight could not be had) care should be taken that through every Winding the Loaded Waggon should have descent & indeed the Loaded Waggon should in every part of the road descend where this Practicable at any moderate expence.

With regards to the money that may have expen=ded on the Halbeath Colliery, since your purchase of it in Feb^y 1779 my opinion is that Mr Wrights Calculation of 3/^s a yard for compleating the road over favourable Ground is a just Calculation Mr Wright makes the Length of the road 7500 yds which at 3/^s/p Amounts to £1125.

M ^r Wrights Estimates the expence of working Cutts & Batteries	£400		
I imagine this Expence including the expence of Bridges & Geers will not amo ^t to less than	875.0.0	}	
of which	£2000.0.0	}	

[John-2-66]

	£	S	d
One half may yet be to expent therefore there may be expended on this waggon road	1000	0	0
M ^r Wrights Estimates repairing the Engine & Pumps, & Engine Pit at 150£ & drawing out the water at 32£ it seems to me that this work must cost about	300	0	0
Since you purchased Halbeath Coll ^y there has been ab ^t 62 Fam ^s of the deep Level droven towards the North or new winning, Mr Wrights Estimates the driving of this Level at 20 ^s / a Fam. but with the air Pits I do not imagine that these 62 Fam ^s of level have have cost less than	200	0	0
7 or 8 Houses have been built which may have cost	120	0	0
The Gin & Machinery on the Pit next of the Engine may have cost	40	0	0
The said water Pit the Pit north of the Engine & other Trial Pits	100	0	0
Utenils for Forming the Waggon Road Balast Waggons & &c	200	0	0

Writing leases & agency since February 1779 perhaps	}	300	0	0
Purchase Money of Clerks Black Level		80	0	0
	£	2340	0	0

Expence of obtaining way leaves
Total Expedenture £

and there may yet be to expend before the Coll^y can be said to properly fitted

[John-2-67]

For completing the waggon Road		1000	0	0
For Lengthening the piece deepening the harbour & Build ^s Staiths or Coal yards	}	500	0	0
For 12 new Waggon ^s with Ironshod for Wheels at 20£ each	}	240	0	0
For continuing the new Level untill it Cutt into the splint Coal ab ^t 234 y ^{ds} at 120 p	}	234	0	0
For 2 Air Pits at this distance about 13 Fam ^s each at 60/ boring included	}	78	0	0
For Sinking an Engine Pit 30 Fam ^s below the said new Level near its intersect ⁿ with the splint Coal where the earths surface shall be most favourable, the whole depth of this Pit may be ab ^t 42 Fam ^s @ 10£= p		£ 420		
For removing thither the Engine & purchasing other necessary additional Machinery	}	400		
For driving a Level from the bottom of said Engine Pit NE untill it cut into the splint Seam 300 ^{yds} 30 ^s p yard	}	450		
For 3 Air Pits at this distance at 50 Fam ^s each which will answer as Coal Pits these may cost Boring &c included 4£ p Fathom	}	600	1870	0 0
			<u>3922</u>	<u>0 0</u>
		Carr ^d Forw ^d £		

[John-2-68]

		Brought Forward	3922	0	0
For Building 40 Coll ^s Houses at 12 £ each			480	0	0
For 2 Additional Gins with their apparatus			80	0	0
For 2 Pair Gin ropes to D ^o £18 p			36	0	0
			4518	0	0
Agency & Incidents			482	0	0
		£	<u>5000</u>	<u>0</u>	<u>0</u>

N.B Nothing is put into this Estimate for stables & Horses because it is proposed that the Ginning & Waggoning can be Let out to undertakers.

Lampson Coyngurn Lloyd Esquire

Boness 15 June 1780

Sir

I wrote you the 11th Ins^t & I am not since favoured with any of yours, M^r Adam Anderson was with me on Tuesday and yesterday & has delivered a distinct written Report of the 14 Seams of Coal in the S^o part of Habeath Estate. It appears from M^r Anderson rep^t that note of these seams are of the rich flaking sort, but that besides the splint seam N^o 4 there are two of them (Viz) N^o8 & 11 Seams which produce excellent great Coals of a sufficient Hardness for shipping.

That the new Level now driving Northward will drain so much of the 4th 8th & 11th seams as will last 12 years at 10,000 Tens of great Coals yearly reckoning /4 of these seams to remain in Pillars & /2 of the residue to turn out great Coals.

Were these seams drained 20 Fam^s below the said new Level, this additional draining would produce

[John-2-69]

42 years additional Work at the said rate of 10,000 Tens of great Coals yearly therefore the Engine Raising her water 2 Fams^s & delivering it into the new Level will give you 54 years Coal to work of the N^o 4, 8 & 11 Seams at the rate of 10,000 Tens of great Coals yearly.

By now erecting a Fire Engine on the new winning this winning as I observed in my last, will be much sooner compleated & there will at least be 450 yds of less Myneing then there would be were the Level free coal first wrought off and then an Engine erected for winning the deeper Coal.

M^r Adam Anderson seems an Intelligent Man and has he has been an eye witness of the whole of the 14 seams I think you may have great dependance on his report & you will from this & from my last letter be enable to form some Judgement of the proper method of winning & of the produce of Halbeath Colliery. (I am &c

Signed John Greive)

Lampson Coys gurne Lloyd Esq^r

Boness 18th June 1780

Sir

I am favoured with yours of 16th Ins^t I shall by Tuesday next by Boness Carrier return the Book & Papers relating to Halbeath Colliery.

Annexed is a note of the Particulars of my Calcula=tions of the Cost of a Ten of Halbeath Colliery Coals shipped in the Harbour of Inverkeithing I should hope that you would dispose of as many Chew Coals to land sale, & perhaps to London as will Clear the expence of a Fire Engine, for if your work areto be carried on expediciously & extensively a Fire

[John-2-70]

Engine is not to be dispensed without you sell your Coals at present for 6^s/a Ton we sell ours here for 6^s8^d and as your great Coals are equally good you are taken 8^d a Ton less than you ought to do. (The

Following is an Estimate of the cost of one ton of Halbeath Great Coals ship'd in the Harbour of Inverkeithy

	£	s	d
To Colliers for Hewing and Bearing to Bottom	0	1	8
Oversman Latemein Bottomer, Pitwood &c	0	0	10
[?Linning] if the Engine Pit be 20 fam ^s deeper than C.B Level			2½
Banking & sledging out			1½
Trimming and pileing on the Bank		1	
	0.2.11		
Fillling the Waggons on the Coal Hill			1
Leading 3 ^d p Tone p mile 4 miles		1	
Employing the Waggons & Housing the Coals into holds of Vessels	}		2
Upholding Waggons & Ways ½ p Ton p mile			6
Sinking Pits, boring & running Mynes sup= posing the Engine Level 20 Fam ^s deeper than Clarks Blacks, Level	}		2½
Upholding Tubs & Gins & Ginripes (Fixed Expences £600 Viz)		4	11½
Ground Ocupied w th by the Coll ^y & Wag road Agency & Incidentis	£50		
Fire Engine will Cost if she have ab ^t 12 hours work out of 24	250		
	}		
	<u>300</u>		
	<u>£600</u>		
Reckoing the Produce of 10,000 Tens annually Carr ^d Forward	£	6	2½

[John-2-71]

Bro ^t Forward		6	2
When Coals are staithed there will be an additional expence of employing the Waggons piling the Coals up & wheeling to the vessels	}		2
		6	4
But if there be no Fire Engine there falls to be deducted from this Estimate (Viz)			
£300 a year for upholding the Eng at 7 ^d p Ton			
From the Article of [?Linning]	1	D ^o	
From the Article of Sinking	<u>1</u>	D ^o	
And where the Coals is not steathed there falls to be deducted the articles of staithing	}		
		0	9
		5	7
		0	2
		<u>5</u>	<u>5</u>
To Rent or Royalty	}		
To Interest of sunk Money	}		

Halbeath Colliery June 26th 1780

This day I have viewed examined & considered present state of this Colliery & I find that there has been little done towards raising a Quantity of coals since I was on the spot in May 1779. The Fire Engine has been repaired and is now in a Tolerable Con-dition except the main Beam & Spring Beams & the Pumps which (I am told) is very bad but I see that are new ones ready to put in, the Power of the Engine at 7 lb to the Inch on the Peston is = to 7126 lb and she is now loaded with only 2682 lb therefore she is able to draw near three times the quantity of water she now draws, It was recommended to sink the present Engine Pit 5 or 6 Fam^s Deeper than she is now sunk at least so deep as to win all the Coal that lays on the S^o side of a great Dyke said to be and to run N.W & S^oE^t about 80 or 100 yds

[John-2-72}

to the North of the Engine, such going deeper was to win Coal to serve the demand till a stone Level were drove from the low Grounds there but no such sinking has been made, the stone level has been begun & is now going very well & properly to Dip of Colliery its face is now about 160 yards Eastw^d from Engine but it has not yet cut the great Dyke said to be there, but if it is continued as it ought to be it will prove where the said Dyke is matter absolutely neces=sary to be known.

I went down into the seam of Coal now working call'd the splint Coal & finds her to be 3^{ft} 9^{lns} thick but a present the quantity to get out of her is inconsederable till the above mentioned sinking be made. It appears to me the less that is wrought the better till the waggon road be made for I find the best Coals costs in the article of working & leading only exclusive of sinking & drifting, Wear & Tear, Fire Engine Coll^y Rent &c no less than 3^s8^d p Ton & only sells at the ships for about 5^s by the Tradition of the Country there are 11 seams of Coal in this Colliery all of which will be won at a certain Deepness by the stone level now driving & to the Northward on the Top of the Hill at about 27 Fam^s deep but there is no real certainty of these seams being there from any discoveries yet made therefore when I was on the spot in May 1779 I strongly re-commended Borings to be made in order to prove the certainty of these seams being there, their Deepness & Thickness but no such borings have yet been made nor is the Coll^y at all known as it to have bee before such large sums of Money had been expended on it as appears to have been laid out.

I viewed a Coll^y at East Baldrbridge or Cham=berfield situated about a mile & half to the N^o West from this

[John-2-73]

Coll^y the seams appears to be the same as at Halbeath and from what I saw are full as good or better than these and are now working water free and a very great Tract of more Coal may be laid dry by bringing up a Level from the low ground there & such Level would not Cost much money as it would not be a long way to have all the Coals indeed would be to lead a Mile & half further than Halbeath.

As to the intended Waggon road I viewed it from the Fire Engine to the harbour of Inverskeathy there is about 3192 yards already laid & about 4648 yards yet to lay. The ground over which it is to go is in many places very regular 7 many great Cutts and Batteries are made and now making & indeed it will require both money & time more to compleat it nor can I perhaps any man with any degree of certainty say what it may yet cost particularly as the Way it is to go to & near the Harbour is not yet fixed.

The Waggon road as it is now designed wth regards to ascent & descent with when made be very eligible indeed some saving might have been made in the Cutts and Batteries with regard to deepness & Height but these not very considerable.

As to the Idea of Leading the Coals of Halbeath Colliery to & down Sir Rob^t and Waggonroad to the river it would no doubt but the most considerable Cutts and Batteries with rega^d to the deepness & Heights of the new waggon road & expences at Inverkeithy will the most considerable

[John-2-74]

Cutts and Batteries would been necessary before it turned to go to the Sir Rob^t Road & the Length of Lead would been 2 Miles longer than the road to Inverkeathy and Sir Rob^t would no doubt expect pay for the making & keeping his road there=fore it would been imprudent to agone to it.

The following appears to me necessary to be done , viz to continue the stone level to the full dip of Coll^y for at least 400 yards further then it now is in which case it will cutt & discover the great upcast Dyke to the north & will lay a quan=tity of Coal dry if the seams is there as expected that will last at a considerable rate of working for many years with=out working the Fire Engine.

To endeavour to drive a drift in the splint Coal to the Dip of the Engine in order to find where the Dyke is.

To sink the Engine Pit 6,7,or 8 Fathoms deeper (as the Dyke may be found to lay) which when done will Lay the whole of the Coal Dry that is on the S^o Side of the great Dyke which may last at a considerable rate of working till the stone level be got so far to the Northward as to admit of the Chief of the working to be there and the Engine to be laid in.

The Comp^y to get [?possest] of the Coll^y at East Bald=bridge if possible to bare to 200 yards still more north & if a third it to be on the Top of the Hill near an old Pit mark and know to M^r Thompson where the stone Level will cutt the stratas of Coal or stone at about 27 Fa^s Deep.

to get the Waggon road finish'd with all Convenient speed & particularly to resolve and fix on the Way it is to

[John-2-75]

go by the [Miln] of Inverskeathy to the Staith here.

To purchase the old Salt pans at Inverkeathy in order to consume the Pan Wood that will necessarily be made.

To make proper erections to accomodate the workmen &c.

the whole yet to be done to make the Colliery compleat will not cost less than 15 or 16,00£.

A survey of Inverkeithing Harbour & report of its present state & some proposed improvements for the more commodious shipping of Coals.

The Harbour or Pier of Inverkeithing lies in the Bottom of a small Bay about half a mile long from the North to South & something more from East to West its en=trance being ab^t 200 yards

wide betwixt two points call'd the East ness & West Ness, it is wholly surrounded by very high Land which shelter it from every storm so that ships lye perfectly safe at the Pier at Common stream Tides the depth of water at Pier does not exceed ten feet though at ex=traordinary Tides, they may have 11 or 12 Feet, but no more than 10 f^t can be depended upon, From the Entrance between the East & West Ness up to the Pier the Passage for ships is up the Channel of the Burn which is very crooked & in general not above 40 feet Wide 7 having neither [?palls] or Buoys for a direction renders it a difficult passage for ships which draw nearly the full depth of water as they could certainly get agreed by deviating over so little from the Tract of the Burnor Chan=nel is a hard Clay mix'd wth stones w^{ch} Seams to be the natural bed or Bottom of the Harbour, but on each side of the Channel for a Considerable space this natural Bottom is covered with

[John-2-76]

mud from 2 to 3 feet Deep with some few large stones amongst it which if a ship was to ground upon might be of very bad consequence to her. I have taken the Levels down the Channel of the Burn for the length of 500 yds in order to discover the descent of the Bottom & consequently the Depth of Water at different places in the Channel and allowing the Height of Common stream Tides as before mention^d to be 10 f^t I find that from 100 yards from the Pier head there will be 3 f^t 9 Ins of level or 13 f^t 9 Depth of water at 380 yds from the Pier head which is a little below the Black rock there is 5 f^t 6^{is} of level or 15 f^t 6^{is} depth of water from this last place to low water mark without the entrance as ab^t 250 yards & little or no level to be obtained for further particulars see the Plan of inverkeithing harbour annexed From observations made at the Harbour. I find that a ship of 100 Tons draws 10 f^t water & is therefore the largest Vessel that can safely take in a full Loaden but as most of the ships belonging to the Eng=lish Markets are of a Larger [?Burthen] & a greater draught of water than above mentioned they cannot take in their full Loadings at the Pier but would have to take in a Part at the Ness or the roads in proportion to the size of the Vessel, w^{ch} must be sent out to them by stops or Leighters. A Vessel of 200 Tons burthen which as a medium size will draw when loaden 12½ feet of water therefore to render the present shipping place essentially usefull for the shipping of coal it should be deepened to 13f^t at least to common stream Tides that is to make a 3f^t more depth of water than there is at present. And this can only be effected by going so far down the Channel of the Burn so as to obtain level sufficient for bringing up a Cut of that depth. It is

[John-2-77]

before observed that at 380 yards from the Pier Head there is 4 f^t 9^{Ins} of Level, which seems to be a very place to begin to Cut at because it will cut of a large crook in the burn & would allow the Bottom of the Channel a Decent of about 1 f^t 9^{Ins} from the Pier head to that place which is very necessary for giving the water of the Burn a sufficient volacity for washing away the mud that they may gather in it every Tide. The Channel or Burn being at present only 40 feet Wide is much too narrow as there is not room for a Ship to Turn. Therefore the proposed Cutt sh^d be at ab^t 100 feet Wide, by which alteration 13 feet Dept of water will be obtain'ed at the present ship^e place.

The expence of making this Cut I compute as follows.

Estimate of making this Cut in Inverkeithing harbour to deepen the Present shipping Place 3 feet Length

of Cut from the Crook of the Burn Mark A in the Plan to the Pier head is 380yds mean breadth 338 ^{yds} & mean depth 2 ^{ft} /4 ^{Ins} makes solid content 984 2 yds of Clay at 4 ^d p	}	£	s	d
		164	0	8
Cutting 7 removing the mud which lies above the Clay Length 380 yds mean breadth 20 yds and main Depth 2 ^{ft} makes solid Contents 5066 ^{yds} at 2 ^d p	}	42	4	4
Cutting up the side of the Pier f ^m Pier head the Wag gonway Length 175 yds mean breath 30 yds & mean depth 1 yard makes solid Con ^t of Clay 5250 yds at 4 ^d	}	87	10	0
Cutting and removing the mud in said space Length 175 yds mean breadth 15 yards & mean Depth 2 feet makes solid Content 1750 yds at 2 ^d p yard	}	14	11	8
		£ 308	6	8

[John-2-78]

off the before mentioned Cut be only made 66ft wide instead of 100 F ^t as proposed then the expence will be less in proportion or nearly	}	£	s	d
		200	0	0

The Coal fold on the shore of Inverkeithing is much too small for holding a Quantity of Coals sufficient for an extensive sale & the ground where it stands is so much confined by roads & buildings that it will be difficult to get in enlarged. The following method is the only that occurs to me. see the Plan of Inverkeithing shore ABCDE shews the walls of the present Cold Fold which at D is 20 feet from the Waggonway & C, 25 feet from the Waggon-way. The Waggonway been in every part 10 feet from the edge of the Quay the wall BC is distinct from the C^{os} timber Hill at a mean 23 feet these spaces by the side of the Fold wall at present used as a Cart road to the Pier & building yards, But if Liberty Could be obtained from the town Council of Inverkeithing for enclosing this cart Road it would enlarge the fold to double its present size as it contains at present 600 Square yards, that is by removing the wall from A to A from B to B from C to C from D to D & from E to e would contain 1200^{Sq yds} but as this will cut the present Cartroad there would be a necessity of allowing Carts to pass along 7 over the Waggonway^x in going to & from the Pier^x which might be done wth very little prejudice of it was covered wth cast from Rails.

But whether the above method of enlarging the Fold take place or not it is very necessary to have some contrivance of a more expeditious method of shipping the Coals & this will undoubtedly be best done by a spout, but from the low situation of the Waggonway & the small room at the shore & Fold a proper Height for a spout will be difficult

[John-2-79]

to be had. the Whole Breadth of a ship of 200 Tons is ab^t 21 feet and when light she will lye with her Gunwales 5 feet above the level of the Quay & about 2 feet from the edge of the Quay from whence I find that the perpendicular height of the spout would have to be 25 feet. The only method to procure this height appears to me to be the following (Viz) to begin where the Waggonway lands upon the edge of the Quay & give it a moderate ascent to the Fold wall corner marked E in the Plan from whence I would cut out a sufficient Breadth for a Waggonway along the Braeface at the foot of M^r Foulis's yard giving it an ascent of 1 yd in 5 which in that length would raise it 21^f when near the

Corner Marked A in the Plan, or instead of Cutting the Plan or Breadth of Waggonway the brae face perhaps it will be more convenient to carry it up this sloping Road upon Geers within the Fold close by the braeface in which case their may be drop Holes or spouts to drops the Coals down into the Fold without the Trouble of employing the waggons by hand. As no horse would be able to draw a waggon up an ascent of 1 In % by this natural power I would fix a small Gin in the Corner of M^r Foulis yard marked G in the plan of 7 feet Dia^r wth a start of 18 f^t long which will enable one Horse up a Waggon by means of having a Gin rope fix'd to it & by having the Counter Ballance of the empty Waggon going down against the full one coming up. When by either of these roads proposed, the full Waggon is got to the head of the ascent marked F in the Plan, I will propose a Twinrail there from whence I would carry a Range of Geers upon

[John-2-80]

upon a Level past the fold corner C to the edge of the Quay Mark^d H where there should be a spout for shipping the Coals 7 as this spout is of sufficient Height for loading a ship of 200 Tons, it will consequently serve all lesser ships or Keels, and having thus obtained your height for one spout of the Trade requires more by means of a Turnrail near this spout other geers and spouts may be carried along the Quay both to the right & left this spout Branch upon Geers from F to H coming a Cross the very widest part of th Coal Fold 7 near the middle of it will answer remarkably well for shutting down the Coals, by which means the fold may be nearly fill'd when required without any expence as at present the Waggons cost 2^d each unloading I should hve observed that when the Waggonmen comes with a full Waggon to the ascent he must loose of his horse and take him up to the to draw up his own Waggon.

Estimate of making the sloping road Geers 7 spout	
12 pair of Geers from E to F planks rails &c 2£	24.0.0
A Gin 7 feet at 30 ^s £10 10 ^s Ropers 1 [£] 10 ^s Turnrail 1 [£] 10 ^s	13.10.0
12 Pair of Geers from F to H plnaks rails &c compleat at 3 [£] .3 ^s .0 ^d }	37.16.0
A spout fitting up plates and all compleat	5.0.0
Ginway cutting out & other incidents about	<u>5.0.0</u>
£	<u>85.6.0</u>

The method of shipping the Coals out out of the Fold when it is necessary to do so will be best done by small Waggons to be fill'd and pushed forward by the men each ships with having a streight piece road in the Fold as HIKL.

I have to observe in addition to what is said 3 Pages

[John-2-81]

Back at ⊕ in the Margin that if it be found incommodious to all the Carts to come along or cross the Waggonway this may be remedied by removing the Waggon Way ab^t 8 feet nearer to the edge of the Key & in order to have sufficient room to deliver the coals, a flooring of Planks supported by uprights and Bearers from one to another, for the Breath of 4 feet may be laid along the edge or Front of the Quay by this means the Carts would have a road of 7 feet wide exclusive of the Wagonway evenwhen the Wall was removed to where I proposed.

As the Coals for the salt pans are at present deliv'd by the Waggons at the east Fold & from thence led by Carts to the salt Pans which is attended with an expence of 4^d p Waggon. this may be

more commodiously done by Length=eing the branch of the Waggonway from the east Pans to the Fold by which they be delivered at once without any additional expence.

The expence of laying the flooring of Planks before mention'd with [?Palls] or Posts, Nails & workmanship may be 12£ or 14£. If the before proposed Cut is carr'd into execution it will be material to have a resorvoir of water to clean it every Tide, for which purpose the burn will answer very well either summer or Winter & the Wag=gonway comeing across it in the manner represented in the Plan will serve for one side of a Damn Dyke so that nothing will be wanted to compleat it but a moated wall of Clay & stone & two sluices which may be completed for about £35 [?]

[John-2-82]

It will also be necessary to have 3 Palls or Posts for warping out the ships at high water the expence of which & fixing them will be about £10 S^g.

March 29th 1795 A view of the Halbeath Coll^y in County of Fife

the Estate of Halbeath contains ab^t 500 Acres of surface in which are several seams of Coal having a General & Regular dip to the Northeast by [?Northn] A great Dyke rims though this Estate in a Distinctive of [?] which is nearly the water level [?] & throws the Coal up to the northeast, this Dyke cuts of about 30 Acres of the southwest part of the estate, in which space there are two seams of coal which have been won by the present Fire Engine, the uppermost seam about 13 Fathoms deep is 4^{ft} 2^{ln} thick of Clean Coal & is all wrought except about 5 acres & the under seams about 23 Fathom deep is wholly wrought out so that the Fire Engine where it now stands can be of very little more use, The extent of Surface on the northeast side of Dike is ab^t 470 Acres in which Tract of ground there have been Ten seams of Coal discovered, partly by boring & partly by dome ancient workings near their outburst & there is a Great reason to believe that there are other seams beyond these. The following is an account off each of these seams beginning with the uppermost, collected from Tryals lately made of some of them and from a written Acct. of the [?] and workings of them of [?]

1 st the uppermost seam at present known is 5 ^{ft} thick	} 5 ^{Ft} 6 ^{Ins}
Viz) Splint Coal next the roof 1 ^{ft} 6 ^{ls} Parrot of Coal 1 ^{ft} 0 ⁱⁿ	
& Cherry Coal 2 ^{ft} 0 ^{Ins} is an excellent burning Coal and works large the Roof is a good Firestone & the pavement Blaes	

[John-2-83]

	Ft	Ins
Bro ^t Forw ^d	5	0
2 ^d Seam lies 6/2 Fam ^s below the last as a strong Cher-ry Coal, works large & burns well has a strong blue roof & Pavement	3	0
3 ^d Seam lies 7/2 Fam ^s below the last is partly splint & partly Cherry coal works large and is a fine burning Coal, & has a roof of Freestone Bands	5	0
4 th Seam is 7½ Fam ^s below the last is an excellent Coal, for smiths use but does not work large it has a roof of Blaes & Transtone Bands & a blue pavement	2	6
5 th Seam is 2/2 Fam ^s deeper than the last is mostly fine splint, works very large and burns exceedingly well it has a strong white post roof and soft brown mental pavement	3	0
6 th Seam 5 Fam ^s below the last, is 9 feet thick in all (Viz) 4 feet of splint & Cherry coal next the pavement the roof is a strong brown post & pavem ^t same it works very large burns well & makes good Cinders	8	0
7 th Seam is 20 Fam ^s below the last is a Tender rich Coal but works small [?] strongly in the fire & is a good Smiths Coal the Roof is blaes, pavem ^t blaes	2	0
8 th Seam is 4½ Fam ^s below the last, is one Third splint & the rest Cherry Coal works large & is a good Coal for domestic use it has a strong bl.. Roof and pavem ^t	3	6
Carr ^d over	32	0

[John-2-84]

	F ^t	Ins
Bro ^t over	32	0
9 th Seam is 9/2 Fam ^s below the last is partley splint and partly Cherry Coal, it works ab ^t 1½ large Coals ¼ Chews & ¼ Small it is an excellent burning Coal for either house use or Manufactures the Roof is 2F ^t of blaes & white post above the pavem ^t white post	4	2
10 th Seam is 10 Fam ^s below the last it is mostly a fine splint Coal works more than ½ large Coal & the rest chews & small it is [?esteemed] the best seam in the Coll ^y the roof is strong blaes & the pavement Gray Post	3	8
So that from the upper to the under seam is 73 Fam ^s & the thickness of all the seams together	39	10

These seams dip regularly N.E by N^o as beforement^d about 1 yard perpendicular in 4½ of Horizontal Length. A small part of some of them have been wrought in any years since near the surface by virtue of a shallow surface level to the Depth of 3 or 4 Fam^s. But within 6 years past Mr Lloyd has purchased the liberty of a deep surface level from M^r Black whos Colliery lies on the S^o of

Halbeath and he has drove it up through the splint 10th seam & forw^d to the 9th Seam where it now stands & wins that seam at the Depth of 12 Fam^s & by carying it forward 550 yards to the full depth it will crosscut & win all the other seams at a greater depth on acco^t of the Ground rising to the North by carrying the Level of which I find the most of them will be drained to the depth of 24 or 25 Fam^s by this surface Level. I examined the state of the Fire Engine now working

{John-2-85}

which I find as follows, the Cylinder 10f^t long and 36 In^s Diameter pretty good, The working beam 24 feet long allmost new, 2 Cisterns very good the Boiler 12f^t Dia^r hald wore. The Jack head pumps of Cast Iron very good the working barrell in the pit is 9½ In^s Diam^r & ab^t 3 Fam^s of Cast iron suction Pumps all very Good but the pumps above the working barrell being of Wood are quite decayed & Cannot be removed, all the Ironwork ab^t the Engine is very indifferent & likewise the Cylind^r Beams and other Time works so that upon the whole of the Engine was to be removed it would a very considerable consideration.

I measured and Exam^d the Waggonway from the Pits to the harbour the Length 4 Miles 100 yards I find it all in the very best condition, with bye stands for the Waggons in every place necessary it is only laid wth single Fir Rails & fir Sleepers at 14 Inches Distance from each other & is very sufficiently ballasted. There is 14 Wagg^s in good working order, but only 10 Constantly working at present & 3 or 4 Ballast Waggons, they go twice a day from the Pits to the Harbour in Winter & thrice in summer & has 18 p Waggon for driving the Wagg Carries betwixt 41 & 42 Cwt of Coals, so that 4 Waggons make 3 Chaldron Newcastle Measure or 24 Waggons make a Tenn.

I find there are two salt pans at the Harbour one of them quite new the other ab^t 3 years old but in very good repair the quantity of salt they produce is 80 Bushels per week each pan and they use ab^t 8 Waggons of small Coals each pan p week.

[John-2-86]

I examined the Harbour & finds it very safe and Conven=ient for shipping, but there is not a sufficient depth of water for large ships to load the [?Pier], there being only 11 feet depth at common sprong Tides, & from 7 to 8 feet at neap Tides, but there are two methods of obtaining a greater depth of water 1st by deepning the Channell from the point at the entrance up to the pier, which would give 4 feet more Water or by removing the shipping place from the present pier to that point at the entrance where there is 15 feet of Water, I beleive either of these operations will cost about 500£ but the 2nd Method appears to be the most eligible of the two. The Harbour dues & shore Rent are very moderate being only 3^s6^d for every ship=load with Coals whether large or small. There is also a very good house & Garden for the staithman which is the property of M^r Lloyd.

I examined into the Number & condition of houses belonging to the Coll^y Agent & 32 Houses for Colliers & other workmen, all of which are in very good repair. There are also some small pieces of Ground in sundry places upon the side of the waggonway, belonging to M^r Lloyd which will be very useful to build other Houses upon when necessary. I do not find that M^r Lloyd has any ground farm'd for the use of the Colliery nor keeps any horses.

I have endeavoured to put a value upon the stock at the Coll^y Waggonway & Harbour in order to judge what it would be worth to a purchaser (Viz) Contin^d

[John-2-87]

The Fire Engine & materials	£		£
	250	Bro ^t Forward	1700
Agent House at Coll ^y	100	Sledges Shovels Trams Corves &c	20
20 Colliers houses cov ^d	200	14 Coal Waggons at 6£ p	84
w th Tiles at 10£			
12 Cov ^d w th Thatch at 5£	60	4 Ballast at 3 p	12
7000 yards of Waggonway	1050	2 Salt pans & materials at 100£	200
including Branches			
Byeways &c at 3 ^s p			
2 Coal Gins, Ropes &c Ch ^s	40	Salt Storehouse & materials	24
		Agents House & Garden at	60
Carr ^d over	1700	the shore	
			£ 2100

In this Estimate of the stock I have put no value upon the Coll^y or Seams of Coal which is M^r Lloyds freehold property which he purchased ab^t the year 1779 for the sum of 800£ nor have I put any value of sundry parcels of Ground he purchased for the Wag^g: Way to the am^t of 300£ or upwards nor upon the Level which he purchased and has now drove up to the ninth seam a the expence of 500£ and upwards besides the Cutts, banks & bridges of the Wag: Way & Repairs of the Pier which would cost above 2000 £ so that the valuation is entirely of the moveable stock & Buildings.

I am informed that the sea sale at present is ab^t 5000 Waggons of great Coals 2000 Wagg^s of Chews & 2000 of small which entirely into the North Country & it is thought if double the quantity of great Coals was wrought it could be sold to these markets without having recourse to London or other English Markets. I observe that a porportionable quan=tity of Chews would not be vended to those North Country

[John-2-88]

Markets. The Selling price at the Harbour when put free on Board the ships is at present 5^s10^d p Ton great Coal 4^s10^d p Ton & at 3^s/p Ton small, which is equal in Newcastle measure to great Coal 16^sp Chal^r 12^s4^½^d p Chal^r & smalls 8^s3^d p Chal^r.

Having considered the state of this Coll^y as represented above I am of opinion that a new winning is necessary to be made immediately or before any considerable Quantity of coals can be wrought to profit, the best of effecting which will be to carry forw^d the present surface level from where it now stands untill it crosscut & win all the Ten seams to that depth which will be from 12 to 24 Fam^s deep & there can be no doubt of the different Coals being in perfection at those depth, because where the level has already crosscut the tenth & 9th Seams only at 12 Fam^s deep they are perfectly good. The whole length of this water level drift will be ab^t 550 yards which I compute may be finished in 2 years or some less time 7 may cost £1 p y^d exclusive of sinking Pits which pits will all serve for Coal Pits upon different seams and after it happens in a course of years that all the coal is wrought which can be won by this level it will then be of very great use as an offtake drift for an Engine and intercepting and carrying of all surface water from above.

In the plan & section of the seams will be seen the Length & Breadth & number of acres w^{ch} this level will win in each seam accounting upon a medium of all the seams of Coal 39^f 10^{ns} thick and that thickness will produce 1100 Tens p Acre or in all 24750 Tens.

[John-2-88a]

Acco^t of the Quantity of Coal produced by one Scotts acre of 6250 Square yards, allowing $\frac{1}{4}$ to be lost in working allowing the Waggons to be 41 $\frac{1}{4}$ Cwt & 24 Wagg^s or 17 Ch^s to a Ten.

No of Seams	Height of seams	Wag= gons p Acre	New castle Chald.	Tens of 24 Wag. p Acre	No of seams	Thick ness seams	Tens of 20 Ch ^r p Acre	Wagg ^s p Acre	N.Castle Chald.	Tens of 24 Waggons p Acre	
	Ft Ins						Ft Ins				
1 st	5.0	7032	3409	2556	140	6	8.0	11251	5400	4086	220
2	3.0	4219	2025	1532	84	7	2.0	2813	1350	1023	51
3	5.0	7032	3409	2556	140	8	3.6	4922	2362	1787	96
4	2.6	3516	1687	1278	70	9	4.2	5860	2812	2128	115
5	3.0	4219	2025	1532	84	10	3.8	5157	2474	1872	100
						Total	39.10	56021	23852	20350	1106

the ninth and tenth seams now working produce $\frac{2}{3}$ ^{ds} or $\frac{3}{4}$ ^{ths} great Coal the remainder being Chews and small but in my calculation I shall suppose the great Coal to be $\frac{1}{2}$, the Chews $\frac{1}{4}$ & Small $\frac{1}{4}$. As the North Country demand at present takes off about 400 Tens p annum & may be increased to 600 I think the Vend to London & the English Coast may be computed at 600 Tens more but however I shall only estimate the whole vent at 1000 Tens p Annum.

Estimate of win ^g Coll ^y	£	s	d
Driving the stone Drift to win all the 10 Seams 550 yards at 1£ p y ^d	550	0	0
Sinking 5 Pits for the Level & for Coal work 20 each at a [?mein] at 1 [£] 10 ^s p Fam	150	0	0
Laying a Branch of Waggonway to new Winning	100	0	0
Makin 10 New Coal Waggons at 10£ p	100	0	0
Making Pitts ready Timber, Iron & Incidents	100	0	0
Deepning the Harbour or else Building New Quay	500	0	0
Total Charge to be expended in 2 years	1500	0	0

[John-2-89]

the above sum is only to be expended as the Winning advances so that the first it may require 800£ but as the work of the Colliery in its present mode will be producing profit. I think a Capital of 500£ will be sufficient to begin with for Carrying on everything.

Estimate of working the Colliery at 1000 Tens p year		s	d
Hewing with an 18 Peck Corf p Score 3/4 putting p score 1 ^s 6 ^d		4	10
Headways, Brattishes, Road Cuttin &c 6 ^d , Draw ^s 9 ^d , Sld ^s 4½ ^d		1	7½
Corving 4½ ^d Nailing 2 ^d , Gin & Ropes 2 ^d , Smith & Wrights 3 ^d			11½
Propes, Deals, Nails, Sleds, Shovels &c 10 ^d Undertaker Greives & Incidents 6 ^d }		1	4
Sinking and Drifting			7
Per Score	0	9	4
Then 10 Score will be a Ten which at 9 ^s 4 ^d p xx is p Ten	4	13	4
Leading 1 ^s 4 ^d p Wagg: 24 to a Ten	1	12	0
Keeping the Way & Waggon 6 p Waggon	0	12	0
Wayleave rent, Shoredues & repairs of Pier &c	0	2	6
Agents Salaries 150£ p Ann: Repairs of House &c	50 [£]	4	0
Filling the Waggon emptying them at the shore & Shipping 6 ^d p Waggon }		12	0
Interest of 2000 £ sunk in the purchase of 1500£ in Winn ^s at 10£ p Cent £350 }		7	0
Contingents, Interest of dead stock and Bank stock &c		2	0
	8	4	10
In one Ten there are 24 Waggon which sells as follows			
12 Waggon of Great Coals at 11 ^s 8 ^d £7.0.0			
6 D ^o of Chews at 9/. 2.14.0			
6 D ^o of Small at 6 1.16.0			
Profits p Ton £	3	5	2
	11	10	0
Gain on 1000 Tens	3258.0.0		

[John-2-90]

After all the Coal is wrought out that can be obtained by virtue of the water Level Drift a second Winning may be made by a Fire Engine at any depth that may be judged proper and the water delivered into the Drift & by driving a stone drift from the Bottom of the Engine Pit to Cross Cutt all the seams a new Tract of Coal will be won in each seam proportion'd to the depth of the Engine Pit.

(Signed) John Wright

M^r A Andersons Report

M^r Grieves Queries 5th June 1780 left with M^r Parkin to be resolved by M^r Adam Anderson. Query 3^d How far do these Coal seams stretch in the Halbeath Estate. 4th Can M^r Anderson describe the thickness of Qualities of all these different seams from his own knowledge of them; or from authentic report.

Ans^r 13th June 1780 The respondent M^r Anderson does from his own knowledge suggest what follows as an answer to both these queries at once so far as he can recollect in consistence wth truth.

1st Seam This seam is very fine splint Coal and of good quality about 3½ feet thick and stretches through Halbeath Grounds from ab^t N.W to S^o East as all the aftermentioned Seams do about 220 Fam^s.

[John-2-91]

2^d Seam. This seam is also of very good quality being partly splint but mostly Cherry Coal is about 3ft 8^lns & stretches about 237 Fam^s

The above 3 Seam are on the S^o of the Upeast Dyke of about 40 Fam^s to the North which divides the Colliery into two parts.

3^d Seam This seam is still entire⁷ has never yet been wro^t is about 3 feet Thick of good Quality and is mostly of the Cherry kind it stretches about 294 Fam^s.

4th This seam is commonly reckoned to be of equal quality & thickness wth the 1st seam and stretches about 420 Fathoms.

5th This seam is always reckoned to be of the same quality & Thickness wth the 2^d seam & stretches about 460 Fam^s.

Ft In ^s	1.0
splint	1.0
Cherry coal	1.0
hard splint	0.6
soft Coal	3.6
Total	

6th This seam is about 3½ Feet thick whereof about a foot is a splint at Top & the rest Cherry Coal & stretches about 520 Fam^s

7th Seam is also about 3½ Feet thick none of it is yet wro^t it appears to be of the splint kind & the rest of the Cherry kind it stretches about 530 Fam^s

8th Seam This Seam is commonly call'd the 8 foot Coal it is divided into two seams by a stratum of stone about 18 Inches or 2 foot thick each of these seams are ab^t 3 ft thick & appears to be a strong splint kind, This coals stretches about 750 Fathoms.

9th This seam appears to be mostly of the cherry kind, is only about 4 Feet thick.

10th This Seam which is 2½ feet thick and also of the cherry kind is only about 4 feet above the last mentioned seam. They seam both to be of good quality & have been wrought by a shall Level run from low ground on the North side

[John-2-92]

of them but these seems to have been little of them wrought by the 4th old Level mentioned above brought from the Burn and they stretch about 660 Fathoms.

11th This seam is a hard splint Coal mostly of good quality about 5 feet Thick & stretches about 670 Fam^s

12th This seam is yet quite entire none of it having been wrought is about 4 feet Thick partly splint and part Cherry Coal it stretches ab^t 740 Fathoms

13th This seam is mostly of the Cherry kind and about 4 feet thick or rather more it stretches ab^t 700 Fam^s little of it has been wrought

14th This seam is about 5 feet thick partly splint Coal, partly parrot & partly Cherry Coal and stretches also about 700 Fam^s this seem has never yet been wro^t, all the Coals above mentioned being of good quality make excellent fuel, burn well and are very saleable.

Signed Adam Anderson

I M^r Anderson say that there is not any caking or smithy Coal in the estate of Halbeath.

Perpendicular heights of the old Level above Clerk Black Level

	Fam	yd	ft	Ins	
No 1 Level	3	0	2	3	relieved No1 & 2 Seams
No 2	4	0	1	9	4 & 5 D ^o
No 3	4	1	2	9	8 & 6 D ^o
No 4	7	0	0	3	9 10 & 11 D ^o
No 5	14	0	1	9	13 D ^o
None wrought of No 7, No 12 & 14					

[John-2-93]

Remarks upon the Lease of Coalmines under the Glebe Land in the Parish of Washington the Rev^d M^r Wilson to M^r Shaftoe & Partn^{rs}. Lease commencing Feb^y 9th 1775 and Term 21 Years.

The Lessees have a right to make any number of out strokes into the Glebe Land four feet wide through the Bulk Barrier or warren of the Coal that is agreed to be left.

Lessees has liberty to draw the Coals up any Pit or Pits in any adjoining Coll^y provided they do not draw any other Coals up the same Pit or Pits that day.

Certain rent 100£ p Annum upon 200 Tens each Ten 22 Waggons of 20 Bolls each = 440 Bolls.

Lessees has a right to make the Waggons of any dimensions on giving 20 Days notice of such their intention to Lessor.

Lessees has liberty of making up shorts in any year of the Term.

Lessor has a right to demand the quantity of Coals wrought & Vended each month and to examine the staith Man & overmans Books &c &c.

Lessor has a right to measure the Waggons whenever he pleases & if they be found overlarge such waggon to be supposed to have carried over measure for one Mont & to be paid for accordingly.

The barrier of Coal to be left 10 yards against all other Collierys or Coal Mines.

Lessees not to be allowed to make any outstrokes

[John-2-94]

into any adjoining Colliery from the said demised Coll^y without the Consent of Lessor.

Lessees not to stow above 1/20th part of Coals underg^d if they do to pay for the same at 10^s p Ten & the Quantity to be estimated by two [?]

Lessor allowed 10 Waggons of the Best Coals without paying for them.

In all Pits where there are any works (Viz) whole Coal or Pillars at the end or sooner determination of the Term such pits to be left sufficiently Timbered &c and the Levels, Drifts, &c underg^d to be left open & in good order.

Lessees to be allowed 6 Months to lead away the Coals and materials.

Lessees to be allowed Coals gratis for such Fire Engine or Engines as are erected upon the Glebe Colliery & provided such fire Engine or Engines Erected upon the Glebe Colliery Draws the water from any adjoining Colliery the Coals consumed by said Fire Engine or Engine to be paid for in proportion the Quantity wrought out of the said Collieries.

[John-2-95]

Dollar March 5th 1785

A survey and report of the present state of Dollar Colliery & am of opinion upon it by John Wright.

The Boundaries of the Coal &c let by the Duke of Argyle to M^r Fishwick & Part^{rs} are very extensive being about 6 Miles in Length from East to West and about 3 Miles broad in general from North to South. The Coal of Dollar is situated about 2 Miles from the West end of this Boundary near the Town of Dollar and lies very convenient for a Landsale being adjacent to some of the greatest roads which pass through the Country particularly a high road which comes over the Hills from the North Country which is very populous and produces a gr^t demand for Coals at all times of the year except a part of seed time & harvest.

this Coll^y has been anciently wrought but no great extent it was won by a Level drove from a burn call'd Kelly burn as described in the Plan which runs in a S^oWest direction to Devon river the Level has been an opencast for the Length of 202 Y^{ds} and by the time it enter a Close mine has Crosscut three seams and by going Forward a Closemine for 150 yards further to the N^oEast has won a fourth seam all of which seams dip N^oE^t 1 yard in then & from the appear=ance of old Pits on the surface which I measured there only seams to be about 16 Acres wrought by this old level in=cluding all the four Seams for they have confined the sinking of their Pits to the parts next to the old Level and Burnside where the Coal was easiest come at & where it was

[John-2-96]

deeper Sinking they have avoided Working. In the plan the boulder line of the old Workings as also the old Level is shaded yellow which includes the above mentioned space of 16 acres.

From the Head of the said old Level Workings I measured up the Burnside to the present Pit which lies N.E. at 400 y^{ds} distance as appears by the Plan. I observe at the Crook of the Burn Marked A about 150 yards from the old wastings there is the appearance of a Dyke which crosses the Burn and alters the Dip of the [?metals] from N.East to N.West all the way up the burn. I also find at 400 yards N.East from the present Coal Pit therein is the appearance of another Dyke marked B in the Plan w^{ch} runs in a S^oWest direction and seems to thro' down the metals N^oW but how much cannot be known but this Dyke can be of no prejudice to the present winning as it will be 150 y^{ds} to the full dip of the Level Room in the nearest part and runs nearly in the same course so that they never can meet. the present Coal is won by a Level brought of Kell Burn at a place mark C in the Plan the Pit is 7 Fa^s Deep to the under Coal which is 3^{ft} 8^{ins} Thick wth a Blea or Black metal Roof 7 feet Thick next to which black metal is the upper Seam a good hard Coal 3 ft Thick and equal to the under Seam in quality with wth a white stone roof. This bed of Bleas lying betwixt the seams is [?] next the Crop or outburst but Turns stronger

[John -2 - 97]

to the dip so as to stand pretty well with props. the under seam is only wro^t at present the uper one remaining quite whole. The Coal dips 1 y^d in [?] directly N.W^t & consequently rises Southeast so

that as they Ground gradually rises that way also they will very soon gain a considerable breast of Coal, though at present it is little more than 30 yards from the Crop to the dip. The Coal is of a very quality works large and is much approved off by the County people and though rather superior to Blairengone the old established Colliery so that if a sufficient quantity of Coals are wrought which I see nothing to prevent there can be no doubt of a considerable sale.

The proportion of the produce of the Different Kinds of Coal from this seam by the present Method of work^s is not quite one half great Coal about $\frac{1}{4}$ Chew Coal & $\frac{1}{4}$ Small Coal, but when the workings get to a greater depth with a better Cover and especially when the upper seam comes to be wro^t along with under seam I have no doubt but the produce of great Coal will be two thirds of the whole. The sale is supposed at a moderate computation to take of in a year 30 Thousand load of great Coal, Twenty thousand load of Chews and ab^t the sam quan=tity of small Coals. I find that one Man and a Bearer works & lays above Ground p Day 6 load of Great Coals, 4 of Chews, & 4 of small so that to raise the above yearly quantity of Coal would require 20 Men & as many Bearers. And from these prem=ises I make the following Estimate of one years work of this Coal supposing it wrought by bearer in the present method

[John-2-98]

	£	s	d	
Raising 30 tho ^s load of great at 4 ^d p	500	0	0	
20 D ^o load of Chews at 2 ^d p	166	13	4	
20 D ^o of Small at 1 ^d p	83	6	8	750.0.0
On cast cutting Road, setting thro				30
Troubles ridding falls driving level Rooms				
&c				
Sinking, Drifting, Propwood &c				30
Interest of £600 expended or to be expended at 10£ p Cwt				60
Rent 1/7 of 1500£				<u>214</u>
				1084
Grieve, Overman, & Incidents				<u>50</u>
Total Yearly Charge				<u>1134</u>
To sell as follows				
30 Thousand load of great Coals at 8 ^d			£	1000
20 D ^o D ^o of Chews at 4 ^d				333.6.8
20 D ^o D ^o of Small at 2 ^d				<u>166.13.4</u>
Total produce				1500.0.0
Deduct that charge				<u>1134</u>
Dollar Coal gain p year				366

If the quantity to be wrought as above stated should fall short the profit will be proportionably less or if the quan=tity be greater the profits will be more & I am of opinion that when the method of working as hereafter mentioned is properly established the Colliers price of working may be considerably reduced which will so far {?assist} the profits.

The present Method of working in the Under seam is to leave Pillars or Stoops of 8 or 9 feet long & from 8 to 9 feet thick taking the Rooms & Throughers from 6 to 9 feet or so wide as can be taken with one row of Props so as not to bring down

[John-2-99]

the Bed of Bleas betwixt the two seams of Coal yet notwithstanding all the Care taken they sometimes come down to the upper Coal. By this method the upper seam must be wrought by itself quite independent of the under seam, but I would beg leave to recommend the following Method of working both seams at the same time as considerably cheaper & certain produce more great Coals in both which is a great advantage as they are the most profitable (Viz) to leave the stoops in the under seam only 3 or 4 Feet thick & to make no throughers or thirlings in them for 20 yards or more if not absolutely necessary for Air or for turning a road. The Rooms to be drove 12 feet wide or as much more as can be got by setting two rows of Props in them then when one quarter or some good space of the under seam is wrought out in this manner let the Whole of the Props if possible be drawn out by which means the bed of Bleas betwixt the two Coals will undoubtedly fall & leave the upper Coal standing, so that when it comes to be wrought there will be no kirvings to make in its rooms and but seldom any sheering as the end Cutter will for the most part let it off. By this means no small Coals and but very few chews will be made in the work^s as it will come down chiefly great Coal. The expence of making the road for either Bearers or Horses by this method will be trifling as the fallen Bleas will fill up the vacant room below within one or 2 feet of the upper Coal Pavement & as the roof is a hard white stone there is no danger of its falling.

I have before observed that the Quantity of Coals necessary to be wrought will require 20 Men and as many

[John-2-100]

Bearers at present there are only 8 men work^s but several more could be employed if there were houses for their accommodation which there is not at present nor any to be hired for Rent now as houses must of necessity be built for the Colliers if they are erected on the dukes Ground, they will fall to be his property at the end of the lease. I therefore advise as the most prudent method to purchase a piece of Ground to build upon because whenever the determination of the lease happens, the ground will certainly be in a more improved state & sell for more than it cost besides the value of the Houses. and I find that houses are a very marketable Commodity at Dollar as there is a security of them Whenever it happens that the present Coal is wrought out or cutt of by Dykes then there are two methods for gaining a new field of Coal the one of w^{ch} may be adopted (Viz) either to rid up and compleat the old Level before described or to erect a Water Wheel on the Mill Pit which is near the waterside 40 y^{ds} to the Dip of the present Pit & is said to be sunk down to the present Coal but is now standing full of water. If the former method be adopted it may cost ab^t £100 to rid up & make the old Level secure & to sink a new Pit and to make it ready Coalwork.

If the other method is though proper to be adopted at 15 feet water level, Pumps and other necessary work for making the Pit ready may cost £60 upwards but

[John-2-101]

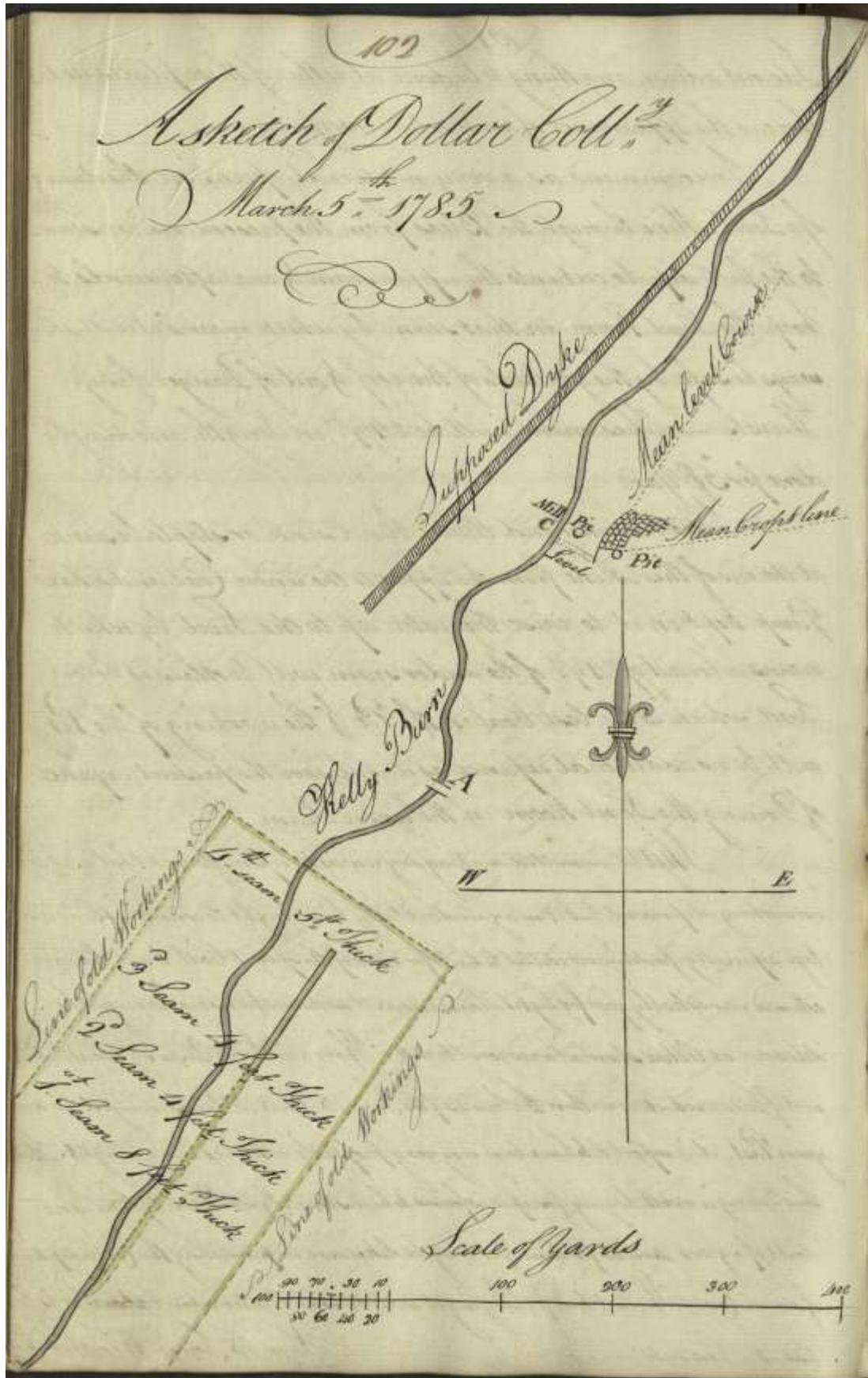
I do not advise anything to be done at either of these places untill there is the appearance of an absolute necessity.

I recommend as a very material operation the driving of a Level Mine through the Bleas from the present under seam to the full dip to cut into the upper seam & ever afterwards to keep the Level Room in that seam by which means it will allways be safe by the goodness of the roof & out of Danger of any [?Thursts] This mine will be 24 y^{ds} in Length and may be done for 5^s p yard.

I also recommend that a blink sink or staple be sunk at the end o this Mine from the upper to the under Coal and a hand Pump kept in it to raise the water up to the level by which means a breast of 25y^{ds} of the under seam will be obtained below level which is the best Coal in the Pit & the working of the pit will be no additional expence as it will save the present expence of Driving the level Room in the under Seam.

I have omitted making any remarks upon Mollock Coal as it is not working at present but may undoubtedly be wrought to considerable advantage especially if a demand could be had for some of the splint Coal to [?sed] they are esteemed remarkably good for light Houses as well as domestic use and might be delivered at Alloa Shore at a reasonable rate. There is a Lime Quarry about 2 miles east of Dollar which is within the bounds of the Lease, but has not been wrought for some years Past. it is reported to have been very very profitable when it was wrought. I think this Quarry is worth trying for if it is found to be a stone of good Quality there is no doubt of a great demand for lime & it may be likewise in promoting the Consumption of small Coal. The best time for Trying it will be next Winter when labour is to be had a Low rate. (Signed John Wright)

[Jonh-2-102]



[John-2-103]

An Examination of the present state and Value of Mellock and Dollar Coal June 7th 1785.

There is one seam of Coal in this Colliery 3^{ft}9^{ins} high with a strong white stone roof which seem has been wro^t by a level from the low Grounds for many years past and may last 2 y^s longer by this level at the rate of 8 Mens Working but by an agreement betwixt the duke of argyle and Lord Alvas. The Duke is to have liberty of a Branch from his Level which not above 30 yards from Killock Marsh, & which branch may be communicated at a small expence to loose a great number of years working in Mellock. However the most advisable manner of proceeding for the present undertakers, I reccommend to be to use the present Level first so long as it can be usefull. This may be accomplished in two or three Weeks to make room for 8 Men and according to the best information to be got 8 Men will turn out 500 Load of Chews & 125 Load of great Coal p Week the expence and profit of which in all appearance will be as follows

		£	s	d	
Selling price of 500 Load of Chews	at 4 ^d	8	6	8	Gain p Week
Working Price of D ^o	at 2 ^d	4	3	4	4.3.4
Selling Price of 125 Load of great	at 8 ^d	4	3	4	
Working Price of D ^o	at 4 ^d	<u>2</u>	<u>1</u>	<u>8</u>	<u>2.1.8</u>
	Gain P week				£6.5.0
For the first two years one half of the whole rent may be allowed on this Coal which is 10 ^s p Week and for oncost 5 ^s p Week					<u>0.15.0</u>
	Neat gain p Week				<u>5.10.0</u>

[Jonh-2-104]

Dollar Coal/ This Coll^y by information and appearances has been won long since by a Level from Kelly burn bro^t from the southward & a part of it wro^t by virtue of this level there appear to be 4 Seams the upperm^t of which a cherry Coal five feet thick dipping to the NoEst ab^t 1 in 7. There appears to be more of this Coal wro^t than any of the others it is four Fam^s Deep from the surface. The 2^d is the four feet Coal 3 y^{ds} deeper being a splint at the Top & bottom, & having 1 foot of Smithy Coal in the middle & not much of this seam is wro^t. the 3rd seam is three yards deeper a fine strong splint four feet thick with a good blea roof and but little of wrought. The 4th seam is 5 yd^s deeper being 8^{ft} thick altogether having four feet of strong splint next the roof & two bands 1 Inch thick of stone this is fine workable saleable Coal.

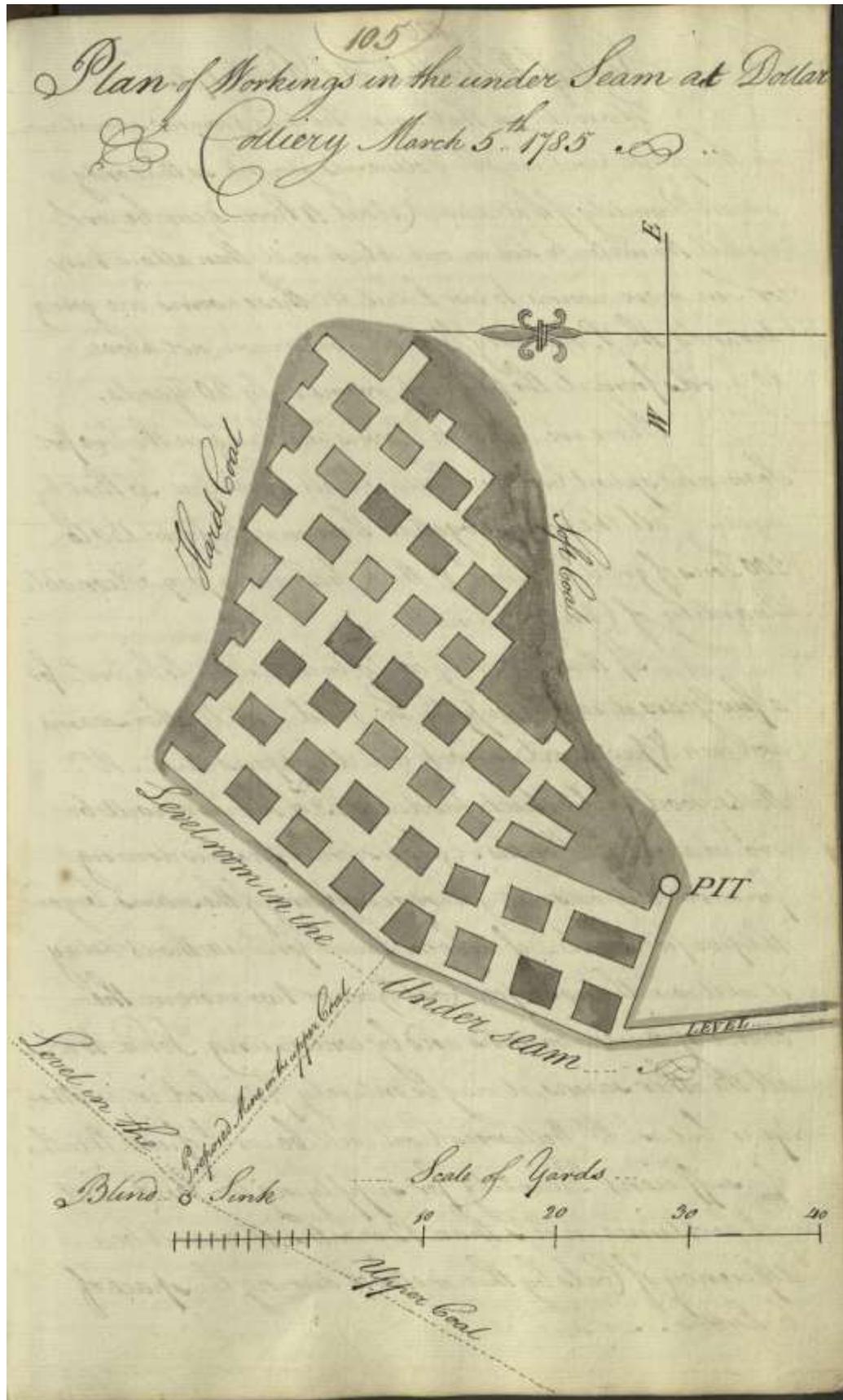
The Level from all appearances has only been drove forw^d to the 2^d seam in the stone & from thence forw^d some length in the Coal. It is pretty much fill'd up but being a good deal of it opencast may be rid out & made passable for 20 or 25 £ sterling and when that is done the fourth & 3^d seam may be set to work immediately, & from the information of old Colliers there may be a sale for 16 Colliers but to make it upon a medium they may be

estimated at 12 Men) 12 Men will work p W 750	£	s	d	
load of Chews which sell at 4 ^d p Load	12	10	0	
Working price of D ^d at 2 ^d p	6	5	0	=6.5.0
12 Men will also work 250 Load of great w ^{ch} sell	8	6	8	
at 8 ^d p Load				
Working Price of D ^o at 4 ^d p	4	3	4	<u>4.3.4</u>
				10.8.4
Deduct Rent and on costs upon this Coal p				<u>1.8.4</u>
Week				<u>£9.0.0</u>

upon the whole it appears to me a very beneficial undertaking although to the quantity of sale should not be quite so much as above stated. And as Mellock Coal may be so easily got to work it will very much diminish the expence of the Level ridding at Dollar if not quite clear the whole.

(Signed) John Wright

[John -2-105]



[John-2-106]

State of Halbeath Coll^y Dec^r 1785

The water in the Engine Pit has drowned several rooms in the splint Coal in M^r Wellwoods ground, so that only a small quantity of that seam (about 4 Rooms) can be wro^t untill the water be drawn out which will then allow nine or Ten more rooms to work but all these rooms are going towards the Boundary & upon a medium not above 80 yards from it the four Crop rooms only 20 yards.

There are about 6 Rooms working in the five foot Seam and splint Coal in Halbeath all Level free so that by means of all the rooms together there may be from 150 to 200 Tons of great Coal wro^t p Week besides a proportionable Quantity of Chews & small.

If this quantity could be continued to be wro^t for a few years it would supply the Vend untill other seams were won & prepared to work but it happens that M^r Wellwood Coal which produces 2/3^{ds} of the vend will wro^t in about 6 Months. The stone Mine is driving forward but has not yet reached any of the seams beyond the five feet Coal.. if it be continue forw^d without delay it will win the eight fee Coal & one or two more in the course of twelve months and by continuing Forw^d to win all the other seams, it may be entirely finished in another year but as M^r Wellwoods Coal will be wro^t of in 6 Months of a sufficient Quantity for supplying the Vend will not be obtained in less than 12 months there will be a deficiency of Coals by this method during the space of 6 Months.

[John-2-107]

I compute that this stone Mine may Cost £500 in all & that it will win 20 years Coal ... but even allowing that it should not quite so much, there seems an absolute necessity for driving it forward to cross cutt all the seams before any engine be erected for a new Winning because most of these seams have been formerly wro^t a little at the Crop & occasioned a multitude of [?sitten] holes which admit great quantities of surface water without a possibility of Keeping it out all of which would descend to the new Engine in wet weather if not taken off by the stone Mine and occasion both a great Engine in drawing & frequent stoppages of the work which is allways a loss & expence. If the present engine was removed to make a new winning at the foot of the Greasy Craigs the Pit would be ab^t 11 Fam^s deep to the stone mine where the water will be delivered & 31 Fam^s Deeper to the splint Coal making 42 Fam^s in all, this winning may be completed for Coal work in 18 months and will Cost at least 1500 £ besides the materials from the old Engine it will gain 60 Acres of splint Coal & about half as much of the five feet seam which will afford together about 20 years working.

As this winning will take 18 Months and M^r Wellwoods Coal will be wro^t of in 6 Months there will be a Considerable diminution of the Vend for the space of a year before the new winning can be compleated as the Coal at present Level free in Halbeath will not afford one third of what is necessary untill that time so that in consequence a number of the Colliers, Bearers, and Wag=gondrivers must be dismissed for want of employment and this small quantity will be attended with the expence

[John-2-108]

Way leave, rents Way keeping and many other Charges the same as a large quantity.

But when the winning is sunk to the Coal and set to work it will not be completed until the same Mine is drove across all the seams to keep the surface Water from descending to the Engine which as before observed will cost £500 so that this new Winning may be said to Cost £2000 before all be completed.

And when every thing is done in the best manner the Coals will never be wrought so cheap as they are at present by 6^d or 8^d p Ton on Acco^t of the Depth of the Pits y^e expence of the Engine & the additional expence of Horses instead of Bearers.

Upon the whole the method of winning by the stone drift seems greatly preferable to that of winning by the Engine for the following amongst other reasons.

1st The time of winning will be shorter

2^d The expence winning will be £1500 less

3^d The Quantity of Coal to be won will be as much & will constantly supply as large a Vend and as long as the other, 4th The expence of working & raising the Coals will be less & consequently the profits move by 5^d or 8^d p Ton.

5th The stone drift will try all the seams & experimentally prove which will be the most advantageous to win at any future period

6th The money necessary for Winning by the stone drift

[John-2-109]

will only be expended gradually out of the Profits but for a new Engine it will require a large sum at once much more than the Profits which may be an inconvenience the only difficulty is to provide a sufficiently of Coal to supply the vend from the time M^r Wellwoods is finished until the Coal in Halbeath be ready for work & the best remedy seems to be for to make a Temporary agreement with M^r Mowbray for as much of his Coal as there may occasion for to work by the present Engine during that time which in all probability may be done upon the same terms as M^r Wellwoods Agreement.

It has been supposed by a certain Person that the eight feet Coal & some of the other seams will not be so good as the splint Coal seam.. but in opposition to this I have two facts to support my opinion the one is founded upon actual trial which I made at the Crop or outburst of every seam by which I was convince of their good Quality and fitness for Trade and the other is Sir John Hendersons Coll^y nearly adjoining which is working these seam seams at present by which he commands the greatest trade of any Colliery upon the [?] especially to London I therefore I depend upon Facts as a surer guide than suppositions.

[John-2-110]

Description of the Coll^y of [?Pitferrance] August 1777

The Colliery of [?Pittferrance] contains three workable seams of Coal the upper of five foot seam lies at various depths is generally 4ft 10In: thick including a slaty bank of 3 feet in the middle. The under part of this seam does not produce very large Coals but is of a good quality cakes well in the fire & is esteemed a good smith Coal.

The upper part is splinty works all Large & makes a pleasant fire but does not cake so well nor last so long in the fire as the other..

The second seam lies 3½ Fam^s below the last is 2 feet thick a Clean rich coal works generally small cakes strongly on the Fire makes good Cinders and is esteemed the best smith Coal on the Forth.

The 3^d Seam lies 3½ Fam^s below the last is call the four feet seam generally 3^{ft} 8^{ins} thick a clean splinty Coal works large and burns very well but does not cake strongly to the fire. These are all the seams which have been wro^t in this Coll^y tho it is probable that there may be others below which are no yet discovered for want of boring.

The Dip is very irregular being at some place North west than North & afterward N East and so proceeding round to the East & S^o East.

The quantity of the Dip is also various being at some place 1 yard in three and at others not more than 1 yard in 15. These variations are caused by the great number of Dykes Hitches and Troubles which intersect these seams and it is owing to the same cause that the Coal is elevated to the

[John-2-111]

surface & Crops out to the East the West & Norwest of the present Colliery.

The most ancient workings in this Coll^y were near the crop or outburst on the west and Northwest parts where a Water level for draining the Coal Could be obtained without difficulty, but these old workings not being extended much to the dip the Coal was of consequence tender and wro^t small in all the seams and similar methods were afterwards pursued in obtaining some Pits at the Crop in the S^o East part towards orchard boundary but the workings been likewise at a very considerable depth produced only the smallest kind of Coals.

After working away what could be got by those & other temporary Schemes a more effectual winning was made by a water level drift brought up from the low Grounds near Pittferrance House which won the West part of the Colliery many fam^s below all the former Winnings but in Carrying forw^d this Drift to the eastward a great downcast Dyke was with near the Pit N^o 11 in Plan which is stopped them from proceeding forward to win the Coal lying on the Eastward of this Dyke.

After all the Coal was wrought which was thought proper by virtue of this Drift a Pitt was sunk N^o 16 and a Wind Mill erected to win about 12 Acres of Coal in the Plan Coloured red and marked N^o 4 Lying on a Swelly or Trough by raising the water up to a Branch brought of the main Drift but the mill not having a sufficient power the Winning was last, about this time a right was obtained to communicate a Drift from richard Coll^y which won some Coal to the Dip of the former Workings in east part of

[John-2-112]

Pittferrance (at Pits N^o 2 & 5 & c which Coal the Owner was working in 1771 when the present Lessees entered to the Colliery.

In all or the greatest part of the old Wastes the Pillars were left very substantial and several Barriers of Coal left adjoining to Dyke Hitches so that several Pitts were accessible w^{ch} had been wro^t 100 years before, From these Pillars and Barriers of Coal the Lessee have raised large Quantities of Coals and are yet working at them. They also contin^d the last mentioned Drift (brought from Orchard) by which and working under Level they obtained several Pitts in the East part of the Coll^y & lastly having erected an Engine on the old Mill Pit they won and are now working the 12 Acres of Coal before mentioned to be lying in a swelly.

Explanation of the Plan

Pittferrance Coll^y is coloured yellow and Red

The part Coloured yellow shews the extent of the workings in all the tree seams upon a medium both to the Dip and rise from the beginning of the Coll^y the present time the whole Coal being all wro^t in this space & the greatest part of the Pillars.

The Whole yellow space contains 175 Acres.

The medium Crop line on the S^o and the same on the west are the Bounds of the Waste to the rise or Crop w^{ch} are as near the surface as the Coal was workable; The part marked foul Coal at the Crop containing 36 Acres is so mixed with stone as to be utterly unsaleable it may therefore be accounted as worked.

The workings to the Dip are bounded by the Medium dip line adjoining the whole Coal in one part & by two large

[John-2-113]

Dykes in the other is delineated in the Plan.

The Dykes are described by double Lines shaded wth Black & the quantity of their elevation or depression written upon y^e Plan. The old Pitts wro^t before the present Lessees entrance are distinguished by a yellow spot.

The small arrow on the medium Dip line and at the red space N^o 4 point to the Dip of the Coal & shews how the Dip Varies.... The Double Dotted line shaded with Green represents the Waggonway from the Different Pitts & also the Cart road from the Balmule thro Pittferrance untill it joins the Waggonway at Dumfermline road from whence it goes by the Waggonways to the Harbour..

The Double Line shaded with Blue shews the water level Drift from near Pittferrance House up to the Colliery with the Branches which go off it. The Lessees are now driving it Forwards to win a Part of the whole Coal N^o 2.

The Pitts wro^t by the Lessees since their entrance are distinguished by a Green spott and are numbered in the Plan as follows

- N^o 1 The Moor Pitt lies 2 yards from orchard Bound^y reported to have wro^t Coal out of the orchard which were sold duty free
- N^o 2 The Quarry have reported to wro^t & sold in the same manner
- N^o 3 The S^o East Pit D^o D^o
- 4 The Lodge Pit
- 55 The old & new Green Pits
- 6 The Bearing Pit
- 7 The John Pit
- 8 The Old Elizabeth Pit
- 9 The new D^o D^o

[John-2-114]

- N^o 10 The Francis Pitt now working
- 11 The Charles Pit now working
- 12 The [?] & 12 the middle Pit & a little in 5ft seam by lessee
- 13 The Robert Pit
- 14 The Hedge Pit now working
- 15 The Bagg Pit
- 16 The Engine Pit
- 17 The Chance Pit now working
- 18 The Kestock Pit
- 19 A Sinking Pit

The Pitt marked N^o 2 an Orchard Coll^y was wro^t in the 2ft & 4ft Seams by the lessees & the Coals led down the same Waggonways and shipp'd at the same harbour & reported to be sold Duty free.

The whole Coal is coloured Red.

The park marked whole Coal N^o 2 contains 72 Acres it is all whole except abo^t 1 Acre wro^t by the Moor Pit A, A, Two Trial Pits to search for the Coal it was met wth a 14 Fam^s deep in the Southermost Pit.

The Part marked whole Coal N^o 2 contains 55 Acres lying to the Dip of the old workings.

The Part marked whole Coal N^o 3 contains 160 Acres. The Lessees are Boring for this Coal at F with an Intention to win it by a Fire Engine... it is found in perfection and has been anciently wro^t by the Pitts marked E within Pitt=connochie boundary and Dips to the Boundary Eastward N^o 5 Contains 10 Acres 6 Acres of the four feet seam is wro^t the other 4 Acres being under level is unwrought. The 2 feet

[John-2-115]

seam is wholly wrought... The five foot seam is above level & all whole except a little wro^t at the two Pits N^o 12, It remains un=wrought because it is a hard Course Coal unfit for exportation

D A Small part anciently wrought in Pittchonnochie where the Coal Dips South.

A B two annexations to pitferrance Colliery on the North by w^{ch} the Boundary is extended to Dumfeline road instead of the old one described in the Plan.

C Another annexation to Pitferrance on the other side (East)

Contents of the Plan

Pitferrance Colliery wrought wholly out in all the three seams except some pillars & Barriers colours yellow }	Ac ^s 175
Foul Coal at the Crop not saleable	<u>36</u>
Total Wrought	<u>211</u>

Whole Coal in all the Three seams	at N ^o 1	72
	at N ^o 2	55
	at N ^o 3	160
	at N ^o 4	8
	at N ^o 5 equivalent to	<u>6</u>
		<u>301</u>
Pitchonnochie claimed to be duty free being a part of the ancient family Estate }		282
Pitferrance parks claimed to be duty free for the same reason		283
The annexion A, B & C		<u>15</u>
	Duty Free whole Coal	<u>881</u>
Pitchonnoches is not claimed to be duty free containing		443
Orchard is not claimed to be duty free containing		<u>203</u>
	Acres	<u>646</u>

Whole Contents of the Plan 1738 Acres

[John-2-116]

Rec.^d Sir

Agreeable to your desire I have examined your Estate at Cowpon which is bounded on the S^o by Sir Matt. White ridley, on the West by Lord Dalaval, M^r Hannah, & M^r Sidneys Grounds & on the N^o & East by the river Blyth. I have also paid particular attention to a Boring made by Mess^{rs} Tho^s & George Rawlings on the N^o East part of this Estate to the Depth of upwards of 100 Fam^s in which there appears to be there workable seams of Coal
the first is a seam 39 In^s thick & lies at the depth of 58 Fam^s..
the secon is 52 D^o D^o D^o of 91 D^o
the third & lowest is 36 In^s thick D^o D^o of 101 & 1 y^d
to the thill of the Coal.

These seams appear to be all Clean, entirely free from all bands & other refuse, & their Quality the same as Placy seams, and those found by boring at Bedlington from the situation of the Country the Depth at each place &c I have not the least doubt of their being the very same seams of Coal. There appears to be 700 Acres of Coal to work in each seam exclusive of that part which lays at Cowpon & all Barriers & Bulks of Coal &c which at a very moderate computation will produce as follows,

	Tens
First seam or 39 In. Coal	42,000
Second D ^o or 52 In. Coal	45,500
Third D ^o or 36 In. Coal	38,000
	Tens 125500

This quantity of 125500 Tens w^d take about 180 years in workings supporting 700 Tens to be wro^t Annually but

[John-2-117]

but as there is little probability of the Third seam ever been won from the great Depth and Thinness of the seam I shall only make the estimate on the Quantity of Coal produced by the first & second seams which appear as before to be 87500 Tens which at 700 Tens annually would last 125 years & admitt-ing the Colliery lets at 12^s p Ten w^d make (in that time) £52500 or 420£ p Annum.

In order to find the properest place for a staith I went in a Boat at High water from a place called Low Houses (having previously examined the shore at water & found it good) & looks the Depths of the river every twenty or thirty yards down to Sir Matt white Ridleys Quay at Blyth & find there is as much or rather more water opposite Low Houses & down the Channel than Sir Matt has at his Loading spouts therefore there cannot be a doubt of that place being the best for a shout or staith.

I have carefully considered the advantages and Disadvantages that may probable attend the Colliery & am of opinion that more than 12 Shillings p Ten each Ten 418 Bolls & 200 £ a year certain rent ought not to be expected provided the Lessee is obliged to win the Coll^y ab^t 90 Fam^s Deep..

I am Sir

August 6th 1785

Your Ob^t Hble Serv^t

To the Rev^d M^r Croft

York

George Johnson

[John-2-118]

1785

Pelton Common Coll^y

	Fam ^s	ft	In ^s
Depth of the Brow Pit to the main Coal	27	0	0
Dip of Colliery to the level of stone Drift	2	0	0
Decent of Gro ^d f ^m the Haz ^d to the Brow Pit	<u>16</u>	<u>1</u>	<u>11</u>
	Fam ^s <u>45</u>	<u>1</u>	<u>11</u>
Depth of the Haz ^d Pit to the Main Coal 25.1.0			
Downcast Dyke to the West f ^m D ^o Pit 14.0.0	<u>39</u>	<u>1</u>	<u>0</u>
To Stone Drift under seam of the M ⁿ Coal on the Dip side of the Dyke to the West of the Haz ^d Pit }	<u>6</u>	<u>0</u>	<u>11</u>
Depth of the Brow Pit to the Main Coal	27	0	0
Dip of Coll ^y to the Level of stone Drift	2	0	0
Descent of Gro ^d prosperous to the Brow	<u>17</u>	<u>1</u>	<u>11</u>
	<u>46</u>	<u>1</u>	<u>11</u>
Depth of the prosperoust to the 5/Quarter Coal 25.3.0			
From the 5/4 to the Main Coal say <u>10.0.0</u> =	<u>35</u>	<u>3</u>	<u>0</u>
Stone Drift under level of the prosperous Pit. Fam ^s	10	4	11

the stone Drift is drove f^f the Brow Pit waste nearly 5 Hundred yards to loose the main Coal on the Dip side of the 14 Fam Dyke to the west which Drift is 40 yards through the said Dyke and

Bord at the face upwards 3 F^m & found the Coal, therefore have drove a Drift in a slope direction 1 yard in 4 yards up to the said Coal which has the appearance of the 5/4 Coal which is by no means satis=factory... As the Drift is drove water level am of opinion there is a rise Dyke to the West & before the said stone drift.

[John-2-119]

which has not as yet been discovered or an uncommon use of Coll^y which must be the Case when compared with the surface Level see the other side

Q^y 1st Whether to continue the Stone Drift

Q^y 2^d Whether it is not adviseable to Drive Coal Drifts where the slope Drift has cut the Coal in order to discover if there is a rise Dyke before the stone drift or extreeme rise of the Colliery.

Rev^d Sir

I was honoured wth your favours of the 4th & 6th Ins^t .. in due course of Post and also your plan by the diligence which I am much obliged to you for as it will save me a great deal of trouble. Met M^r Watson agreeable to your desire last Saturday and went with him on Tuesday to Crowcroke & viewed your Estate & Colliery there & particularly the Hor=shees and Towns fields which appears to be the properest place in your Estate for a Winning as it is to the deep of the Coll^y

M^r Edington intends erecting the Engine in Harshees on Townsfields provided the rials by Boring &c prove favourable.

M^r Byrons Coal lays from Harshees ab^t South which is to the rise of the Colliery from the intended place of winning consequently M^r Edington can either win or work M^r Byrons by virtue of the Engine in the Coll^y or by erecting an Engine in his own Colliery, but by no means win & work any part of the Harshees or Townsfields by such

[John-2-120]

Engine.

M^r Edington seams unwillingto give up the names of his partners but I beleive the fact is he has not finally settled with any but be that as it may I don't see that keeping his partners names a secret militates all all against you as he is willing to make the necessary Trials at this expence and when that is done he will either bring forward Par^{r^s} agreeable to you or give secu=rity for performance of Covenants.

My agreement with M^r Edington (if your approved of it) was 200£ certain rent for 266 Tens, 336 Bolls which you will find Sir make up as near as may be the sum of 200 £ at 15/p Ten each Ten consisting of 550 Bolls and 15/p Ten for all surplus Coals.

I expect to see some Gentlemen ab^t Cowpen Colliery next week if they come forward properly shall write you immediately M^r Edington wishes to have the articles done Saturday week.

From someBoringsof M^r Edingtons & the best information I could obtain from different persons who have wro^t in Collieries near Crawcrock I am of opinion the following seams of Coal will be found in your Estate there

1st Seam which lays at the Depth of ab^t 10 Fam^s is called the Highmain was generally from five to six feet in thickness of an excellent quality but is all wro^t except what lays to the east of great Dip Dyke w^{ch} nobody living I apprehend knows

[John-2-121]

anything about. I have advised M^r Edington to bore to the east of it in the Harshees or Townsfields in order to find how much it has thrown this seam down probably by this means a quantity of this fine Coal may be found in your liberty but at present can say nothing as to the quantity therefore shall not bring it into my estimate.

The 2nd Seam of Coal lays at 18 Fam^s from the surface and is supposed to be 32Inches in thickness this seam is of very good Quality and known by the name of the stone Coal.

The 3rd or 5/4 Coal seam lays at 24 Fam^s from the surface is expected to be about four feet thick and of a good Quality.

The fourth or Brockwell seam of Coal said to be thirty eight In^s thick lays at the depth of thirty six Fam^s from surface is of a very good Quality and is the Lowermost seam know in that neighbourhood.

la^s Musgrave Esq^r

Sir

I have examined the state of the present working of Washington Colliery (called Russels, w^{ch} is as follows

Went down and viewed first the C Pit measured many of the walls, Bords and Pillars and found them in a general way all pretty regular, Winnings 12 yards(Viz) 8 Yds to the wall & 4 to the Bord and 27 yards in length to the Pillar after examining the above workings in C Pit went thro' to the E Pit measuring as before in C Pit found the workings rather

[John-2-122]

irregular several being short of 8 yards thick others more & many Bords above 4 yards wide which they ought no to have been according to present plan of working said Coll^y which is at 12 yards to a Winning as above mentioned but am nevertheless of opinion that the Coll^y is no way injured yet by the irregularities.

I am convinced from the present state of the Colliery that a second Working can never be made but with great hazard would therefore recommend as soon as any part of the Colliery can be wro^t from the Boundary in the whole Coal to reduce the winnings to 9 yards but would by no means advise them to have them less than 12 yards untill that can be done.

I could not get down into the Engine Pit workings with a Candle want of air but am informed the Engine Pit is sunk to the Maudlin Coal and that a water level Drift has been taken from near the Engine Pit and carried a considerable distance to the full dip of Coll^y which is done we apprehend not only for the purpose of Winning a tract of Coal to the Dip of the present water=level in the main Coal but also to win M^r Russells own Coal under his freehold.

I am Sir

Byker April 22^d, 1786 Your Obed^t Hble Serv^t

George Johnson

[John-2-123]

S^t Anthony's Coll^y 16th, 1782

Querys

1st Would S^t Anthons Colliery be at all endangered by boun=dering of the Coal lying against the Birdnest Pit Waste in Old Byker supposing the said Waist should be holed into by [?boverods] at eight yards before the face of the Bounder Drift.

2^d What Barrier ought to be against the west Boundary of S^t Anthonys Colliery Estate adjoining the said Bird Nest Pit or at what distance from the said Boundary ought the Bounder Drift to be Driven.

Ans^r 1st & 2^d Queries July 17th we reccommend a Barrier of whole Coal to be left against the Bird Nest Pit Waste in old Byker Colliery at least 80 yards & that a drift be drove parallel thereto with the Boreholes at least 10 yds before the face of the Drift at all times at Present we think it not adviseable to work any Coal there untill all the whole Coal be wrought out to the Dip and east from the present Fire Engine (as described upon the Plan) There appears a piece of whole Coal unwrought to the westward from the S^o Fire Eng= we are opinion may be wrought with safety but previous to this we recommend a Tryal Drift may be drove by boring ass described above.

Query 3^d What would be the next effectual way of securing the Farewell Pit shaft to prevent the Creep effecting the same

Ans^r There appears to us a Creep upon the Colliery at about 140 yards ° West from the Farewell Pit occasioned by several small Dykes & Troubles in order to prevent the Farewell Pit from being effected by the Creep we recommend

[John-2-124]

the workings at the said shafts be filled up close wth stones and Rubbish at least 40 yards on every side thereof: also that a stone wall & Pillars of stone be made in the working near the shat only leaving necessary openings for the purpose of Barroways Air Courses & water Courses for working the remaining part of the Pillars in the said Pit

Query 4 A creep being upon the rise part of Colliery what should be done to prevent the same from damaging the remaining part.

Ans^r There has been great pains taken and at much expence to fill up the bord Rooms & Headways to prevent the Creep ~~to prevent the Creep~~ from damaging the remaining part of the pillars but we are not clear of opinion it will have the de=sired effect

Query 5th Would it be the Lessor & Lessees Interest to work any part of the Pillars at present & where would be the most proper place to being at

Ans^r We have Carefully considered the state & situation of this Colliery as to working the Pillars we recommend immediatly to being to N^o East from the Farewell Pit adjoining 2 Dykes in the Place marked out this day. It is certainly the interests of both Lessors & Lessees to work the pillars in order to obtain the greater quantity of Coal as the longer they remain unwrought will unavoidably reduce both quantity & Quality. We reccomend two narrow Bords to be fill'd up with stones and rubbish from the face of s^d Bords adjoining the Dyke Westward so far as the Pillars are wrought to prevent the Creep damaging

[John-2-125]

the remaining part thereof. Also care must be taken to secure the Nightingale Pit & Engine Pit in the same way so described for securing the Farewell Pit. We also are of opinion that a Barrier of whole Coal of 40 yards be left on each side of the under Level stone Drift to secure the water & Air Courses to the Fire Engine for the use of working the remaining part of the Coll^y to the East

Signed by

Anthony Waters
Peter Donnison
Christ^r Bedlington
W^m Gibson
Ew^d Brown
In^s Robson
Tho^s Barnes

Pontoppike Coll^y

At the request of Walter smith Esq^r by M^r Brad=shaw, went down and Examined the workings of the Machine & Pike Pits, also the Moor & East Pits, Machine & Pike pits are working in the Hutton seam which lays at the Depth of sixty three Fam^s or thereabouts & is generally from six to six and a half Feet high is a Coal of good quality rather Tender & has a ban in the middle from tow to four Inches thick the Machine Pit is wro^t 8 yards to a Winning (Viz) 4 yards to the bord & 4 to the wall. But in order to strengthen the Wall, the Bords are only made from two to three yards wide for

3 yds for turning off & the same before they come to the Holing or end of the Pillar which is 40 yards in Length the headways for the same reason

[Jonh-2-126]

have a Bind^s of Coal left six or eight Inches thick against the Roof, the Band in this Pit is 4 In^s Thick.

As the Band in the Middle of this seam would make Coal work very foul if a second working was att=empted it is intend by the above method to take at the first Working all that can be safely got.

The Pike Pit is working in said Hutton seam the Height & Quality of the Coal much the same as at Machine Pit but the band much thinner seldom exceed=ing two Inches thick, As the Lessees intend here to have a second working they have made the winning 12 yards (Viz) 8 yards to the Wall & 4 to the Bord & length of the Pillar 40 yards.

In the above Pits/Machine & Pike or stowed or left underground ab^t 1/9 or 1/10 part of the Coals.

The east pit is working in the Hard Coal or W^t main seam which lays at the depth of Thirty six Fam^s of a pretty good quality this seam is wro^t in the long way that is they take all the Coal away sup=porting the Roof at the face or Front of the working with Timber but draw or take it out again as they carry their working. forw^d stowing behind them at the same time all the small or Kirving Coals w^{ch} appear to be ab^t 1/6 of the whole.

The Moor Pit is also working in the hard Coal seam but differs very much from from the East pit the Coal being much stronger here but not of so fine a Quality the Height of the Coal is Five Feet three Inches. this seam

[John-2-127]

is wro^t at 7 ½ yards to a Winning (Viz) Bords 4 ½ yards in Breadth Pillars 3 yds in thickness & 30 yds in length but to strengthen the Pillars the Bords of 3 yards at each end are only made 3 yards Wide.

the Quantity of Coals left underg^d in this Pit appear to be about 1/10 part

Examined the main water level & found the same in good repair the face of said Level is carried into Machine Pit Workings & Intended to be Continued for=ward untill it cutt the boundary which will be near fines house. This water level in all probability will effectually win all the Coal under this estate except ab^t 40 acres in the S^o East Corner notwithstanding there is a large Dip Trouble in the west part of it which runs nearly parallel to the water Level. the rise of the Colliery from water Level to the s^d Dyke being in=considerably more than the Dyke throws down.

The Pike pit on the Dip side of said Dyke and was won by virtue of Deep levels from stobb pit, there is also found a rise Dyke running parallel to the Dip one which by drifting through to the Dip it is expected will win another Pit to the Dip of said Pike Pit.

Having described the situation of the Colliery & the particular method of working each pit, with the quantity of small Coals left underg^d I beg leave to give my opinion of the whole & first I am perfectly satisfied of the present method of working at the Different Pits

[John-2-128]

being the most regular as well as the most advantage=ous to the Lessor & Lessees that the nature of the seams will admit of. As to the small Coals left underground can be no judge how far the Lessees may or may not have a right to do so, not being acquainted with the particular observations in their lease but I am con=vinced that by doing so they are enable to Vend a great=er quantity than they otherwise could do provided the small now were brought to Bank and sold along wth the best Coals. And as to selling such a quantity of small Coals in that Country is impossible, but am of opinion that there is a part of the small Coals consumed by the Fire Engine for the use of Drawing the Coals which ought to be paid for, but this again depends upon the Lease, but I thought proper to take notice of it you as it is usual for the Lessees to pay for all Coals consumed as above atho' not for those made use of for Drawing water.

Byker May 13th

1786

Geo: Johnson

[John-2-129]

Sir

Agreeable to your requests I have maturely considered your Queries relative to Heaton Colliery and in order that I might answer them as fully as possible have examined several views and Plans made of that Coll^y in 1745 (when working) two of which views I here subjoin for your inspection.

View of Heaton Coll^y Feb^y 11th 1745/5

We went down the fourth Engine Pit and viewed the workings thereof and found the same regular & did not observe any feeders of water to come from the North or West we went thro from the workings of the fourth Engine to the workings of the Dyke Pit and found the water their standing ab^t 40 yards West of the Dyke Pit shaft but did not perceive any feeders of water which might be the cause of the water rising to that Height which now is within 2 f^t of the roof at the Dyke Pit shaft.

At the Dyke Pit we could observe or hear the falling of water but from whence it may Come or what quantity we can form no Judgement. We also Viewed the three Engines at Heaton w^{ch} we found all going & all in good Condition except the S^o Engine which wants a boiler repaired and as we perceive one repairing for that purpose we cannot see when that Boiler is put in that the Engine cannot be in better repair notwith=standing which it seems to be doubtfull whether the present

[John-2-130]

Engine will be able to keep the water as low as it is now. It is our opinion that all has been done and is doing that is possible, to keep down this water to prevent the Colliery from drowning and that at rate of 1200 £ p Annum upon so [?mall] a quantity as about 14 Tens of Coals p Week which is near 40 Shillings p Ten in the Present condition of the Colliery there are no other Pits can be set onto work but the fourth Engine Pit which we are of opinion will not yield more than about 100 Tens of Coals which is all that, that Colliery will yield in the present situation.

Ric^d Peck
Amo^s Barnes
I. Rawling
W^m Newton
Signed per W^m Drydon
Tho^s Stokoe
Ra Unthank
Ino Leaton

[John-2-131]

Observations and opinions wth respect to a new winning under the Thistle pit Dyke at Heaton to Win the Spanish Closes.

1st It is our observations that all the Coal except some few Walls and the Barrier between Heaton Jesmond which could be got by the late new winning at Heaton has been wro^t and taken away.

2^d That no Winning can be made upon the old Waste on any part of the Colliery under the Thistle Pit Dyke but what must be exposed to all the Feeders which the Engines at Heaton have been over burthened with and consequently that no Winning can be made upon the said Waste by so great an overcharge of Water.

3^d That if any winning is attempted in any other part of the said Dyke so as to Win the spanish Closes it must be to the deep of the East part of the Thistle Pit workings where the Coal will lay upwards of 90 Fam^s Deep to the demon=strate which the following facts we are ready to make appear

	Fam ^s	Feet	ins
That the Thistle Pitis in the Deepness	75	4	0
Deep of Colliery to a Downcast Dyke	2	3	0
And that first Dyke is a down Cast	5	0	0
	Fam ^s 83	1	0

Now supposing a Pit to be sunk at the Dyke the Coal would be 83^{Fam} 1^{feet} from the Earths surface and as to the east of that another Dyke was met wth a dipper Also that with the Dip

[John-2-132]

of Colliery to a convenient place of Winning cannot be supposed to be less than 90 Fam^s but may much exceed it as any person skill'd in Collieries must acknowledge and therefore it is our opinions next to impossible to compleat a Winning at this place at any expence however to do it so as to

reimburse the undertaker and so Work the Colliery to Profit We are very Confident it is impossible not only from the Quantity of Water at so great a Depth but from the Hazard of fire w^{ch} will attend the same as Witness our Hands this 23^d of May 1745

signed	{	Nicholas Walton	Rich ^d Peck
		Amo ^s Barnes	Geo. Claughton
		Ew ^d Smith	W ^m Drydon

I have perambulated Heaton Grounds, and find that the whole Coal is bounded on the North by the drowned Waste of Long Benton Colliery on the West by old Heaton, & Jesmond Drowned Wastes, on the S^o by Walker Hill and Walker Collieries, an on the East by Walker & Little Benton.

I have also paid particular attention to the present state of walker Hill, & Walker Collieries wth the Deepness of the Pits adjoining said Estate of Heaton, and am of opinion from their Depths which is at the Gosforth Pit in Walker Hill 85 Fam^s and at a place of about 400 yards North

[John-2-133]

from said Pit where another Pit is intended to be sunk supposed to be 87 Fathoms.

As the Gosforth & the intended Pit at Walker are at the Deep of Heaton & as the surface of the Grounds doent appear to rise more than the Coal is supposed to do, the Depth of the Pits in the Spanish Closes cannot in my opinion (after Deducting 1 Fa^m for a Rise Trouble to the West of said intended Pit) exceed 86 Fam^s.

The above mentioned Gentleman who estimated the Depth at 90 Fam^s at a proper place for Winning the Spanish Closes; supposed the Coal to deep 1 yard in Twenty which most certainly is the general Deep in this Neighbourhood but from the Depth of walker Pits it appears it cannot be so much in this particular part or there must be some rise Trouble to the East 9as yet undiscovered) betwixt the said places having fixed the Depth of the Winning to the best of my Judgement in the spanish closes shall next endeavour to shew the quantity of Coal that may probably be obtained by such winning.

First there appears from the Plans, I have examined to be about 515 Acres of whole Coal left including the Spanish Closes as follows

	Acres
Whole Coal below thistle pit Dyke	480
D ^o above D ^o D ^o	35
	515
Deduct from a Barrier (Viz) 100 yds in breadth against the Drowned Wastes and 50 yds against every other part	80
	Acres to Work 435

[John-2-134]

But as it impossible exactly to determine how far the working thro the Thistle & Plain Pit Dykes are intended I would Estimate the whole quantity at 400^{Ac^s} which at 60 Tens p Acre in the first working makes 24,000 Tens, and at 11,00 Tens to be wrought annually will last 22 years. The Broken Mine is very uncertain but Probably 20 Tens p Acre may be got which upon 400 Acres will produce 8000 Tens and at the same rate of working as above the Colliery will continue seven years longer so that the whole Coal & broken in Heaton Estate according to this statement will be Totally wrought out in 29 years.

I now proceed to give you an Estimate of the expence that may attend the winning of the above Coal & laying the same on Bord of ships &c p Chaldⁿ but would first beg leave to observe that it is supposed by this Estimate of Winning that no extraordinary obstacles are to meet with and that the same shall be made by one Fire Engine wth Cylinder of 72^{Ins} Diameter and the whole to be completed in 2 ½ years.

Estimate of the Expence of Winn^g Heaton Colliery

Erecting Engine Houses for two Engines on Fire Eng: =ine w th pumps &c Compleat	£ 2100
Sinking Eng: Pit w th an Eng: 86 Fam ^s 11 f ^t Diam ^r with a Brattish down the middle including Tubbing, back water finding all Timber, Deals, Iron, Coals, &c	3805
Carr ^d Forward	5905

[John-2-135]

	£
	Bro ^t Forward 5905
Making an opencast for Eng. Delivery Drift making conduits, Leading Materials, during the Winning and Sundry Jobbing Work	} 750
Erecting 2 Fire Engines after Eng. Pit is sunk Sink Coal Pit 7 f ^t Diam ^r 86 Fam ^s Deep finding all Timber, Tubbing, Boring, &c	} 1450
Drift ^g twixt Engine & Coal Pit say 100 y ^{ds} of stone & Coal Drifts Levels, for standage of Water at the Bott= om underg ^d opening out the Pit by Drifting &c keep =ing the Fire Engine during this time with all necessary attendance	} 548
Two Machines for Drawing Coals compleat	2000
Four Gins	160
Laying 2 Miles of Waggonway including sidings & Branches. Three Keel Births of staith w th ongate & offgate &c &c	} 1560
20 Underg ^d Horses w th Trapping, Stables &c	260
16 Waggons 7 Horses	400
Sinking Geer underg ^d Mauls Wedges and all other underg ^d Materials	} 250
Staith & off putters Houses, Offices Granaries stables Agents and workmans Houses &c Agency during the Winning	} 2000 300

Binding Pitmen the first year with sundry
Contingencies

	400
£	17083

[John-2-136]

Estimate of the Expencc of Working Heaton Colliery

quantity Annually wro ^t 20000 Chaldron		s	“	d
Hewing p Score with a 20 Peck Corf		2	“	3
Putting		2	“	0
Overman & Deputies wages, Propping Brattishing laying, Barroways ridding stones in working Cutt ^g sumps Pump ^g water Oil Wick & Candles Lamp & Lamplight ^{ts}	}	“	“	9
Onsetting		“	“	1 ¼
Driving headways, Holing Wads, wet Dble & narrow Work Turning & laying out Bords Water Levels and other Drifts setting over Hitches & Troubles	}	“	“	10
Sinking & Keeping Pit Shafts in repair		“	“	4
Trap Door Keepers, attending Fire Lamps Under ground, Building Stoppings, including Bricks Lime & shift Work in the Waste &c	}	“	“	6
Planks, Deals, Props, Barroway stuff, Brattish & other Timber Except for Wagg ⁿ Ways Underground	}	1	“	0
Smith work (including Iron) sharpening, Sledge, Shoes, Trams, Wagg ^s & Wagg ⁿ Way Plates, Mauls Wedges shovels, Irons, Hook & Chains, Trace	}	“	“	3
Chains underg ^d Corf Bows & nails for every purpose Wright work including Timber, Deals for Wag ^{ns} & waggonways, Sledges, Trams, Shovel Boards Maul Shafts and [?flamesticks]	}	“	“	2
Carr ^d Forw ^d		8	2	¼

[John-2-137]

		s	“	d
Bro ^t Forw ^d		8	“	¼
Drawing the Coals w th machines		1	“	8
Banking, Including Man & Horse			“	4 ½
Corving exclusive of Corf Bows		“	“	4
Nailing, Shoveling, screens, shovels, snaps & Barrows		“	“	4
Ropes		“	“	3 ½
Bind ^g & removing Pitmen, their Fire Coal &c		“	“	8
Viewers & agents salaries			“	6
Surgery, & subsistence to sick & maimed Pitmen during their illness	}	“	“	1 ½
Contingencies unforeseen		“	“	4 ¼
p Score		12	“	10
Which will be p Chaldron		6	“	1 ¾
Fire Engines		1	“	0

Leading upon an Average	“	“	9
Waggon way & Wagg ^{ns} Including every thing	“	“	3 ½
Rents at 30 ^s / p Ten (440 Bolls to a Ten)	1	“	6
Way leave rent & staith room at 4 ^s /p Ten w th all other	“	“	2 ¼
Taxes & Cesses &c			
Damage of Ground	“	“	1 ½
Loss by small Coals	“	“	7
Repairing Buildings including materials with leading for every purpose	“	“	1 ½
	Carr ^d For ^d	<u>10</u>	<u>“ 8 ½</u>

[John-2-138]

		s	d
	Bro ^t Forw ^d	10	“ 8 ½
Staith Charge Including Materials Staithm ⁿ			
Offputter, Turnrail, Wailers, Trimmers, shovels, Barrows, Repairing & upholding staith and spouts		“	“ 3
To replace the sum laid out in Winning £17000 at 10 p Cent p Annum		1	“ 8 ¼
[?Fittage] & Owners Wages		1	“ 3 ½
P Chald ⁿ exclusive of [?] at London		13	“ 11 ¼

Having given the Depth & expence of a Winning in the Spanish Closes the Quantity of Coal to be obtained thereby & the expence of laying them on Board of ship shall now endeavour to answer your last Query (Viz) the Elegibility of such an undertaking, by shewing the advantages and Disadvantages that may attend the same

1st Then it appears that 400 Acres or 32000 Tens of Coals may be obtained by the Winn^s which at 15 £ 11s 8^d p Ten reckoning 440 Bolls to a Ten is

	£	s	d
	498666	“13”	4

2^{ndy} That 32000 of Coals laying on Bord of ship will cost 12[£] 16^s 8^d p 410666 “13 “4

3^{dly} suppose the premiums at London cost 1^s/Chaldⁿ or 18^s/4^d p- 29333 “6 “8 Ten upon the Whole quantity

Profits	£	<u>440000</u>	“ “ “
		<u>58666</u>	<u>“13 “4</u>

[John-2-139]

Again from this Estimate it appears that y^e Winning cannot be expected to cost less than 17000£ and take less time than 2 ½ years to compleat the same but may possibly Cost a much sum and take a longer time in doing the same.

2^{ndly} That over and above the risk that attends the winning and working of all Collieries, especially deep Firey Collieries, there is that of being surrounded on North, & West, and probably in a few years on the South also, by very extensive drowned Wastes in which parts when the Colliery were working were found prodigious feeders of water.

From these considerations the Gentlemen who made the views at Heaton were unanimously of opinion that it was impossible to Win & work the remaing part of that Coal to profit, I grant at that time it was very natural in them to infer from the quantity of water met with in Long Benton & heaton Collieries, that as large or larger feeders would be found in Winning the Spanish closes where the depth was expected to be much greater but experience has convinced us that this does not allways follow for Instance Walker Colliery has much less water than either Long Benton or Heaton but altho the Pits are Deeper, and Willington at the Depth of 121 Fam^s has much less water than Walker.

I am therefore of opinion (with all Deference to these

[John-2- 140]

Gentlemens great abilities) that it is not impossible to winn and Work that Colliery to considerable profit provided the price of Coal Continue as estimated, (Viz) at 17^s/[Chaldⁿ with respect to the Haz^d of Winning I think it no more than what would probably attend one of the same Depth in Walker as to the Winning of the Coal against the Drowned Waste above mentioned there is most certainly a considerable risk but not more than has attended to the work^g of Byker against Heaton Waste but the risk would be considerably Lessened if in the work^g of this Colliery care be taken to leave a Barrier of 30 or 40 yards against the Thistle or Plain Pit Dykes which are already not through from Heaton in several places and also instead of 100 y^{ds} of Barrier against the old Drowned Wastes leave 400 yd^s or 150 Acres Extra untill the other parts are wholly wr^{ot} out.

This precaution would in all probability effectually secure 18 years Coal which wth the remaining 150 Acres (wth all the Haz^d that can attend the working of it) make the undertaking appear to me the Eligible one?

N.B. The above 150 Acres or 300 y^{ds} in Breadth against the Wastes is exclusive of the Barrier of 100 yards.

Byker July 3^d, 1786 Signed by George Johnson

[John-2-141]

At M^r Dungells the George Inn Gatesh^d

18th Sept^r 1786 present M^r Johnson, M^r Bedlⁿ

M^r Donnison, & N. Walton

A meeting being had at this place the 24th Augst last present M^r Ellison, M^r Leyburn, M^r Johnson, I Donnison, & N^s Walton and a Plan of the workings of Gateshead Park Colliery near to the Mansion house & Office, being produced by In^o Donnison at appeared that the antient Workings had been extended to very near the said Mansion House & the Winnings been only each 7 yards, the Pillars of Coal Left to support the roof, were only 3 y^{ds} & a hafe in Bredth & it was the opinion of M^r Johnson, 7 N. Walton, that those pillars would Waste by being exposed to the air, so it was to be feared they would give way, and endanger the said House and Offices, but more especially as it appeared by the s^d Plan that the Lessees of Gateshead Park Colliery had lately wro^t the Coal under a part of the offices contrary to the covenant in the Lease of the s^d Colliery. It was therefore recommended by M^r Johnson & M^r Walton that the several Bord Rooms of the old work^{es} & one old Headways near to the Mansion House & Offices should be effectually fill'd up wth stone and that the expence thereof should be equally between the Lessors & Lessees of the Colliery or that the whole should be paid by the Lessors and that the Lessees should at their own Expence & charge fill up wth stone all the Late workings

[John-2-142]

or Board Rooms made by them contrary to the Covenant in their Lease. But M^r Johnson & M^r Walton being of opinion that the fitting up of the late Workings or Board rooms might be dispenced wth they recommended to M^r Ellison to give that up, on Condition that the Lessees ag^d to join in the Expence of fitting up the old Workings as before mentioned which M^r Ellison agreed to. A plan was therefore delivered to M^r Layburn, together with a computation of the Expence of filling up the old Workings as aforesaid; and he was desired to lay the same before the Part^{rs} for their concurrence And M^r Walston having receiv^d a Letter from M^r Huntley one of the Lessees of the said Colliery upon the 15th Instant Inclosing the resolution of him & his part^{rs} on this subject dated 14th Ins^t We accordingly met this day and agree in opinion that it is necessary to fill up the old workings or Board Rooms but not the Headways before mentioned & that the expence thereof shall be paid Jointley between the Lessors & Lessees of the said Colliery & to be executed effectually in the manner following. That is to say. All those several Board Rooms coloured wth red in a Plan Signed by us this day to be filled up at every ten feet from the whole Whole Coal a Pillar of Post stone to be made of four feet thick and the remaining 6 Feet to be fill'd close up to the roof wth common Metal stone or Rubbish that the end of

[John-2-143]

each of the Bords on the East side of the Headways a Pillar of stone be made of Wrought Common Astlers & laid in Morter & Lime Cross the Bords of four Feet thick and that the like pillars of 4 feet thick be made across the Bords adjoining the Headways on the west side thereof wth Astlers laid in Morter & Lime as aforesaid to be fill'd up behind towards the West as before mentioned.

Signed {
Nichol^s Walton
Ch^r Bedlington
George Johnson
Jn^o Donnison

Marley Hill & North Banks Coll^y

13th Jan^y 1778 p W^m Brown

In these Collieries there has been very considerable workings made in the uppermost seam of coal which lays very [?] and on the Top of the Hill only and is called in that part of the Country the Hard Coal seam the Extend of here is not very much, little of it is left unwrought.

The 2nd Seam is Call'd the Brass Thill is more than 4 feet thick has a bad roof and will not admit of more that ab^t 3 feet thick to be got, there is a Considerable quantity of this Coal yet to work.

The 3rd Seam is Call'd the Hutton Seam is about 6 feet thick & has been wro^t been wro^t for more than 100 yards

[Jon-2-144]

past a great part of this Seam of Coal gone, yet from this Tradition of the People on the spot who has been in these old works there are very good Pillars & some whole Coal Left unwrought in some places; This is the Famous Tanfield Moor seam.

The 4th Seam is call'd the main Coal seam & about 3 f 9 In^s Thick & the quantity of it yet to work is very consid=erable; It is generally thought to be the best sort of oversea Coal in the County and is now wrought Water free by virtue of a Level drove out of Andrews House Colliery into this Estate it is said and wth great appearance of Truth.

There is a 5th Seam in this Estate about 6 feet Thick, that lays at about 25 Fam^s below the main Coal but I do not find it has been sunk to or Indeed Cored to in this Estate & the adjoining Estates to the West

It would be very proper to have Plans of this Colliery in each seam in order to shew the parts wro^t and what is unwrought together wth the mode of Working.

At present only the low main Coal and Brass Thill is work^g the former for oversea & the Latter for Land rate saltpan, & Glass houses.

The Low main Coal is off a Tender quality, & easy to be wrot nor is she Deep to Draw, From the best discoveries I can make, she does not Deserve more than 2[£]12^s6^d p Ten of 418 Bolls, to sink work & lay the Coals on bank.

[John-2-145]

The Brass thill Coal lies very Ebb consequently it easy sunk to & easy Drawn but from the badness of the roof and other circumstances I think she may deserve much the same Price p Ten for Work[£] in the main Coal.

As to myself I am much against Letting Coll^y to be wrot. by Tentale, such undertakers seldom or never consult the Interest of their Employers they seldom work the Colliery. Fairly nor will they be brought to work quantities to sute the Demand of it happens to be more at one Time and less at another.

The Duke of Northumberlands Colliery at Walbottle is a striking instance of the impropriety of letting Coll^y to be wrot by the Ten.

A Calculation for working Marley Hill Colliery &c

	s	d	
Hewing p Score	1	1	
Putting at a mean	1	0	
Overman	0	4	
Levells	0	3	
Props & Deals	0	3	
Smith & Wright	0	2	
Ropes & Gins	0	2	
Nailing *c	0	2	
Corving 2 ½ & Banking 2 ½	0	5	
Drawing	0	10	
Sink & Drifting	0	2	
	<hr/>	<hr/>	
	4	10	
Unforseen Expences	0	2	£ s d
	<hr/>	<hr/>	
	5	0	or 2 10 6 per Ten

[John-2-146]

Gentlemen

Sheriff Hill Coll^y Augst 1786

At the request of of the Lessees of this Colliery you are to inspect and examine the state and Condition of the Engines and machines for Drawing Coals upon the Fann & edge Pitts and give your opinion what alteration should be made to make the said machines capable of drawing as many Coals and in the same time as is customary for machines to do for pitts of the like Depths

{ M^r Geo Johnson }
{ M^r In^s Buddle }

I am Gentlemen

Your Hble Serv^t

Report

George Green

In Compliance with the above request, we have carefully examined and Considered the state of the Engine and machines above refere'd to and find that the present application of the water drawn at the Fann Pit Engine to the machine at the edge Pit is by no means adequate give the proper and effec=tive operation to the same for the purpose of drawing Coals. We have also considered the several modes that might be adopted for that purpose, and in consequence of such investiga=tion we are opinion that the most eligible step to be taken both wth regard to the subsequent state of the Colliery and the present expence will be to erect an Engine at the edge Pitt of powers proportioned to the drawing of such quantities of Coals at the said Pitt as may be deserved by the Lessees of the said Colliery.

A Copy Signed

{ George Johnson }
{ In^o Buddle }