

# CFA Archaeology Ltd

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*Geophysical Survey*

**Greenburn OCES  
Braehead Farm Extension  
New Cumnock, East Ayrshire**

**Archaeological Evaluation**

**Report No. 1927**

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This document has been prepared in accordance with CFA Archaeology Ltd standard operating procedures.

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Braehead Farm Extension  
New Cumnock, East Ayrshire**

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## **1. INTRODUCTION**

### **1.1 General**

This report presents the results of an archaeological evaluation undertaken by CFA Archaeology Ltd (CFA) in July 2011 at Greenburn Opencast Coal Extraction Site (Braehead Farm Extension), near New Cumnock, East Ayrshire (NGR: NS 5758 1319 centred) (Fig. 1). The work was commissioned by KIER Mining.

A Written Scheme of Investigation (WSI) dated 10 June 2011 covering this programme of works was produced by CFA on behalf of KIER Mining. This WSI was designed to meet the requirements of the West of Scotland Archaeology Service (WoSAS).

### **1.2 Background**

Planning consent (Ref No. 10/0491/PP) has been granted for the recovery of coal using surface mining techniques at Braehead Farm, near New Cumnock. The planning consent was subject to a condition requiring a programme of archaeological mitigation. Phase 1 of this programme of works involves a phased trial trench evaluation and a watching brief during the excavation of watercourse realignment and flood plain creation works on the River Nith, to enable infrastructure development in advance of developing the rest of the site. This report covers trial trench evaluation undertaken prior to groundworks for the haul road and for Detention Ponds BD2 and BD3. Future work undertaken relating to this programme of works will appear under separate cover.

A cultural heritage study undertaken by CFA for the Environmental Statement (ES) identified twenty cultural heritage sites within the proposed development area. The majority of these relate to post-medieval agricultural activity. None of these sites were affected by the trial trenching undertaken during this part of the programme of works.

This part of the programme of works involved the evaluation of five proposed development areas (Area 1 – Area 5) situated within close proximity to Braehead Farm. Areas 1 – 3 relate to the line of the haul road and Areas 4 and 5 relate to Detention Ponds BD2 and BD3 respectively. These areas were located within improved and semi-improved agricultural land. Parts of Area 3 and Area 4 were situated on the flood plain of the River Nith. The area evaluated for Detention Pond BD3 (Area 5) was extended by 5500m<sup>2</sup> during the course of fieldwork at the request of KIER Mining.

No previous invasive archaeological fieldwork is known to have taken place within any of the proposed development areas prior to this evaluation.

### **1.3 Objectives**

The objectives of the wider programme of works were to enable infrastructure development in advance of developing the rest of the site by;

- Carrying out phased trial trenching evaluations within defined areas.

- Undertaking a watching brief during the excavation of watercourse realignment and flood plain creation works on the River Nith.
- Producing report(s) outlining the results of the work and any further work that is required to mitigate the effects of the development.

The more specific objectives of this evaluation were:

- To establish the presence/ absence, extent, condition, character, quality and date of any archaeological features or deposits within the proposed development areas.
- To establish their vulnerability to the proposed development.
- To propose further mitigation measures as appropriate.

## **2. WORKING METHODS**

### **2.1 General**

CFA Archaeology Ltd follows the Institute for Archaeologists' Code of Conduct, Standards and Guidance.

### **2.2 Evaluation**

A total of forty-four trenches were excavated within Area 1 – Area 5, amounting to 2260m<sup>2</sup> (5.4% of the total area evaluated). A breakdown of each area is contained in Appendix 3 and a summary of the trenches excavated is contained in Appendix 4.

Topsoil and modern overburden were removed by a tracked 360° mechanical excavator equipped with a smooth-bladed ditching bucket. All groundbreaking work was carried out under constant archaeological supervision. Any further excavation required to fulfil the objectives of the evaluation was carried out by hand.

All excavation and on-site recording was carried out according to standard CFA procedures, principally by drawing, by photography and by completing standard CFA record forms.

The stratification of all excavated areas was recorded whether or not significant archaeological deposits were identified.

Trench positions were surveyed using industry standard electronic surveying equipment and all trenches were backfilled.

### 3. ARCHAEOLOGICAL RESULTS

#### 3.1 Trial Trenches (Fig. 1)

Numbers in bold refer to contexts, a full list of which are contained in Appendix 2. A summary of the trenches excavated is contained in Appendix 4.

Due to the location of overhead cables, a steep embankment, and a large drainage ditch, it was not possible to place any trial trenches within the southern part of Area 2.

No trial trenching was carried out to the south of the fence line within Area 3 at the request of KIER mining because it was not possible to gain access to this field, and because it was thought that the line of the haul road would not extend beyond the fence line.

The deposits throughout the proposed development areas predominantly consisted of 0.2m to 0.4m of grey-brown silt topsoil (**001**) overlying orange-brown sandy clay natural (**002**) (Fig. 3). Deeper topsoil deposits (Fig. 2) of up to 0.7m overlying river gravels were encountered within the Trenches (20, 21, 22, 23, 43 and 44) situated on the flood plain of the River Nith.

Within Area 5, all of the trenches with the exception of 43 and 44 contained mixed reddish-brown sandy silt (**003**) with a depth of up to 0.4m, sandwiched between the topsoil (**001**) and natural subsoil (**002**). The deepest deposits were encountered within Trench 38, and consisted of 0.3m of topsoil, 0.4m of mixed reddish-brown sandy-clay and 0.5m of peat (**004**) overlying natural subsoil (**002**). Peat was also present within Trench 39, but was not identified anywhere else within the proposed development areas.

Field drains of the ceramic cylinder type and rubble stone type were identified throughout the majority of the area evaluated, with them only being absent from the well-draining ground on the floodplain of the River Nith. This indicates a degree of recent agricultural improvement within the area.

No features, deposits or artefacts of archaeological significance were identified.

#### 4. CONCLUSIONS

An archaeological evaluation was carried out at Greenburn Opencast Coal Extraction Site (Braehead Farm Extension), near New Cumnock in advance of groundworks for a haul road and two detention ponds. This evaluation represents part of a wider programme of works designed to mitigate the effects of the extraction site on the cultural heritage features within the area. Trial trenching did not identify any features, deposits or artefacts of archaeological significance.

CFA does not recommend any further archaeological work in relation to the trial trenching evaluation covered by this report. However, mitigation measures are still required within the wider coal extraction area in accordance with the WSI. The final decision on any mitigation measures lies with WoSAS.

The project archive, comprising all CFA record sheets, maps and reports, will be deposited with the National Monuments Record of Scotland (NMRS) and copies of reports will be lodged with the WoSAS Sites and Monuments Record.

On completion of the mitigation works laid down within the WSI, a summary statement will be submitted for publication in *Discovery and Excavation in Scotland* and will also be reported on through *OASIS Scotland*.

## APPENDIX 1: Photographic Register

*Digital*

| Shot | Description             | From | Conditions |
|------|-------------------------|------|------------|
| 1    | Trench 1, general shot  | NW   | Sun        |
| 2    | Trench 2, general shot  | N    | Overcast   |
| 3    | Trench 3, general shot  | N    | Overcast   |
| 4    | Trench 4, general shot  | NW   | Overcast   |
| 5    | Trench 5, general shot  | W    | Overcast   |
| 6    | Trench 6, general shot  | W    | Overcast   |
| 7    | Trench 7, general shot  | E    | Overcast   |
| 8    | Trench 8, general shot  | W    | Overcast   |
| 9    | Trench 9, general shot  | S    | Overcast   |
| 10   | Trench 10, general shot | N    | Overcast   |
| 11   | Trench 11, general shot | NW   | Overcast   |
| 12   | Trench 12, general shot | NE   | Overcast   |
| 13   | Trench 13, general shot | NW   | Overcast   |
| 14   | Trench 14, general shot | NW   | Overcast   |
| 15   | Trench 15, general shot | NW   | Overcast   |
| 16   | Trench 16, general shot | SSW  | Overcast   |
| 17   | Trench 17, general shot | S    | Overcast   |
| 18   | Trench 18, general shot | NE   | Overcast   |
| 19   | Trench 19, general shot | S    | Overcast   |
| 20   | Trench 20, general shot | NE   | Overcast   |
| 21   | Trench 21, general shot | N    | Overcast   |
| 22   | Trench 22, general shot | N    | Overcast   |
| 23   | Trench 23, general shot | N    | Overcast   |
| 24   | Trench 24, general shot | NE   | Overcast   |
| 25   | Trench 25, general shot | N    | Overcast   |
| 26   | Trench 26, general shot | S    | Overcast   |
| 27   | Trench 27, general shot | NE   | Overcast   |
| 28   | Trench 28, general shot | E    | Overcast   |
| 29   | Trench 29, general shot | E    | Overcast   |
| 30   | Trench 30, general shot | S    | Overcast   |
| 31   | Trench 31, general shot | S    | Overcast   |
| 32   | Trench 32, general shot | SW   | Overcast   |
| 33   | Trench 33, general shot | W    | Overcast   |
| 34   | Trench 34, general shot | S    | Overcast   |
| 35   | Trench 35, general shot | S    | Overcast   |
| 36   | Trench 36, general shot | W    | Overcast   |
| 37   | Trench 37, general shot | WSW  | Overcast   |
| 38   | Trench 38, general shot | SW   | Sun        |
| 39   | Trench 39, general shot | E    | Overcast   |
| 40   | Trench 40, general shot | SE   | Overcast   |
| 41   | Trench 41, general shot | SW   | Sun        |
| 42   | Trench 42, general shot | S    | Sun        |
| 43   | Trench 43, general shot | NE   | Sun        |
| 44   | Trench 44, general shot | NE   | Sun        |



*Colour Slide Film 1*

| <b>Shot</b> | <b>Description</b>      | <b>From</b> | <b>Conditions</b> |
|-------------|-------------------------|-------------|-------------------|
| 1-2         | Trench 1, general shot  | NW          | Sun               |
| 3-4         | Trench 2, general shot  | N           | Overcast          |
| 5-6         | Trench 3, general shot  | N           | Overcast          |
| 7-8         | Trench 4, general shot  | NW          | Overcast          |
| 9-10        | Trench 5, general shot  | W           | Overcast          |
| 11-12       | Trench 6, general shot  | W           | Overcast          |
| 13-14       | Trench 7, general shot  | E           | Overcast          |
| 15-16       | Trench 8, general shot  | W           | Overcast          |
| 17-18       | Trench 9, general shot  | S           | Overcast          |
| 19-20       | Trench 10, general shot | N           | Overcast          |
| 21-22       | Trench 11, general shot | NW          | Overcast          |
| 23-24       | Trench 12, general shot | NE          | Overcast          |
| 25-26       | Trench 13, general shot | NW          | Overcast          |
| 27-28       | Trench 14, general shot | NW          | Overcast          |
| 29-30       | Trench 15, general shot | NW          | Overcast          |
| 31-32       | Trench 16, general shot | SSW         | Overcast          |
| 33-34       | Trench 17, general shot | S           | Overcast          |
| 35-36       | Trench 18, general shot | NE          | Overcast          |
| 37-38       | Trench 19, general shot | S           | Overcast          |

*Colour Slide Film 2*

| <b>Shot</b> | <b>Description</b>      | <b>From</b> | <b>Conditions</b> |
|-------------|-------------------------|-------------|-------------------|
| 1-2         | Trench 20, general shot | NE          | Overcast          |
| 3-4         | Trench 21, general shot | N           | Overcast          |
| 5-6         | Trench 22, general shot | N           | Overcast          |
| 7-8         | Trench 23, general shot | N           | Overcast          |
| 9-10        | Trench 24, general shot | NE          | Overcast          |
| 11-12       | Trench 25, general shot | N           | Overcast          |
| 13-14       | Trench 26, general shot | S           | Overcast          |
| 15-16       | Trench 27, general shot | NE          | Overcast          |
| 17-18       | Trench 28, general shot | E           | Overcast          |
| 19-20       | Trench 29, general shot | E           | Overcast          |
| 21-22       | Trench 30, general shot | S           | Overcast          |
| 23-24       | Trench 31, general shot | S           | Overcast          |
| 25-26       | Trench 32, general shot | SW          | Overcast          |
| 27-28       | Trench 33, general shot | W           | Overcast          |
| 29-30       | Trench 34, general shot | S           | Overcast          |
| 31-32       | Trench 35, general shot | S           | Overcast          |
| 33-34       | Trench 36, general shot | W           | Overcast          |
| 35-36       | Trench 37, general shot | WSW         | Overcast          |
| 37-38       | Trench 38, general shot | SW          | Sun               |

*Colour Slide Film 3*

| <b>Shot</b> | <b>Description</b>      | <b>From</b> | <b>Conditions</b> |
|-------------|-------------------------|-------------|-------------------|
| 1-2         | Trench 39, general shot | E           | Overcast          |
| 3-4         | Trench 40, general shot | SE          | Overcast          |
| 5-6         | Trench 41, general shot | SW          | Sun               |
| 7-8         | Trench 42, general shot | S           | Sun               |
| 9-10        | Trench 43, general shot | NE          | Sun               |
| 11-12       | Trench 44, general shot | NE          | Sun               |

## APPENDIX 2: Context Register

| Context No. | Area | Trench | Description  |
|-------------|------|--------|--|
| 001         | All  | All    | Topsoil (mid grey-brown silt)  |
| 002         | All  | All    | Natural subsoil (orange-brown sandy gravel/grey clay/red-brown and grey river gravels) |
| 003         | 5    | 32-42  | Reddish brown sandy silt subsoil   |
| 004         | 5    | 38, 39 | Peat   |

## APPENDIX 3: Summary of Evaluation Areas

| Area No | Area Size             | Area of trial trenching | % Evaluated |
|---------|-----------------------|-------------------------|-------------|
| 1       | 4600m <sup>2</sup>    | 232m <sup>2</sup>       | 5           |
| 2       | 3639m <sup>2</sup>    | 183m <sup>2</sup>       | 5           |
| 3       | 6004.5m <sup>2</sup>  | 351m <sup>2</sup>       | 5.8         |
| 4       | 13406.9m <sup>2</sup> | 720m <sup>2</sup>       | 5.4         |
| 5       | 14192.4m <sup>2</sup> | 774m <sup>2</sup>       | 5.5         |
| Total   | 41824.8               | 2260                    | 5.4         |

## APPENDIX 4: Summary of Excavation Results

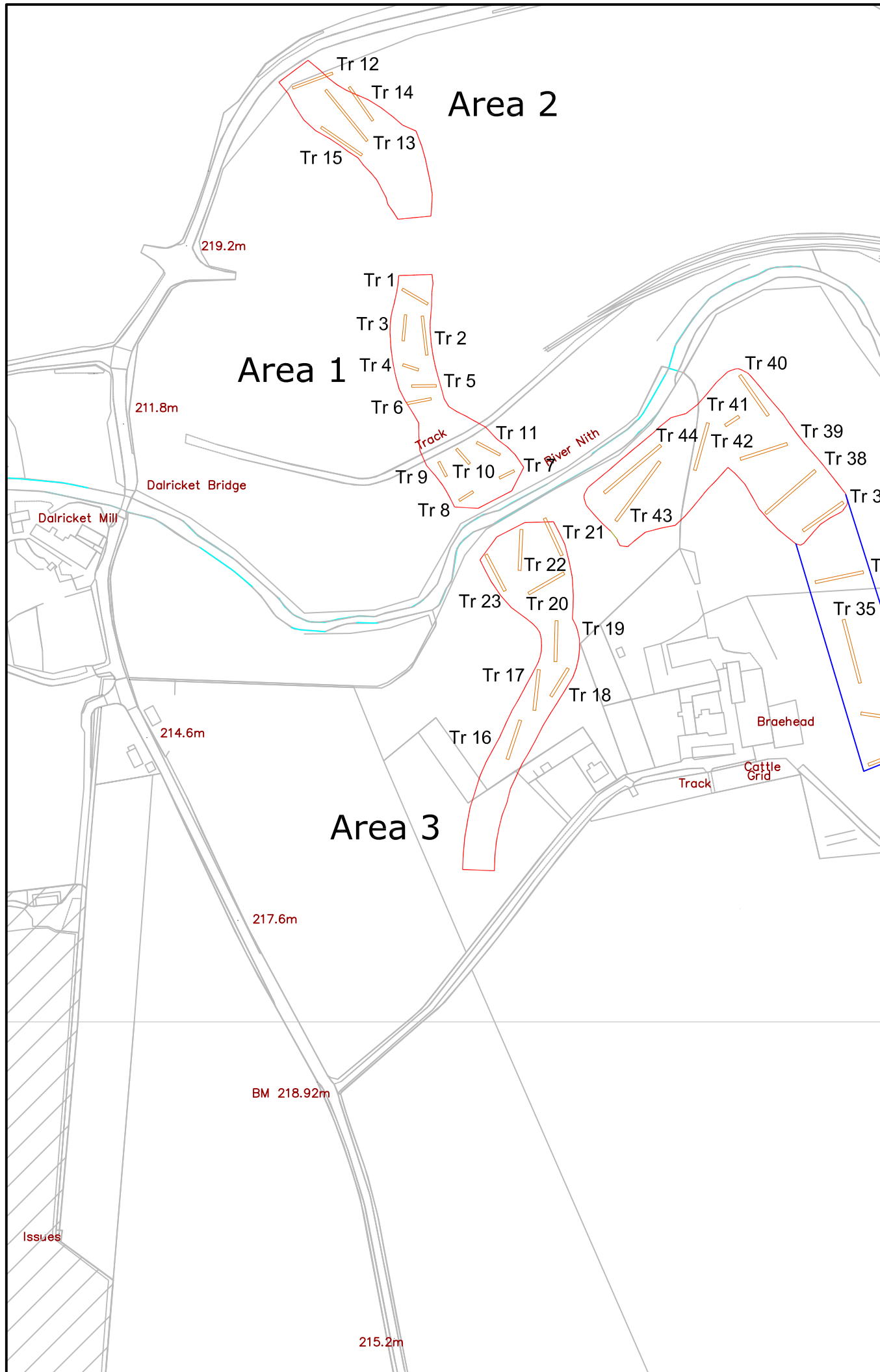
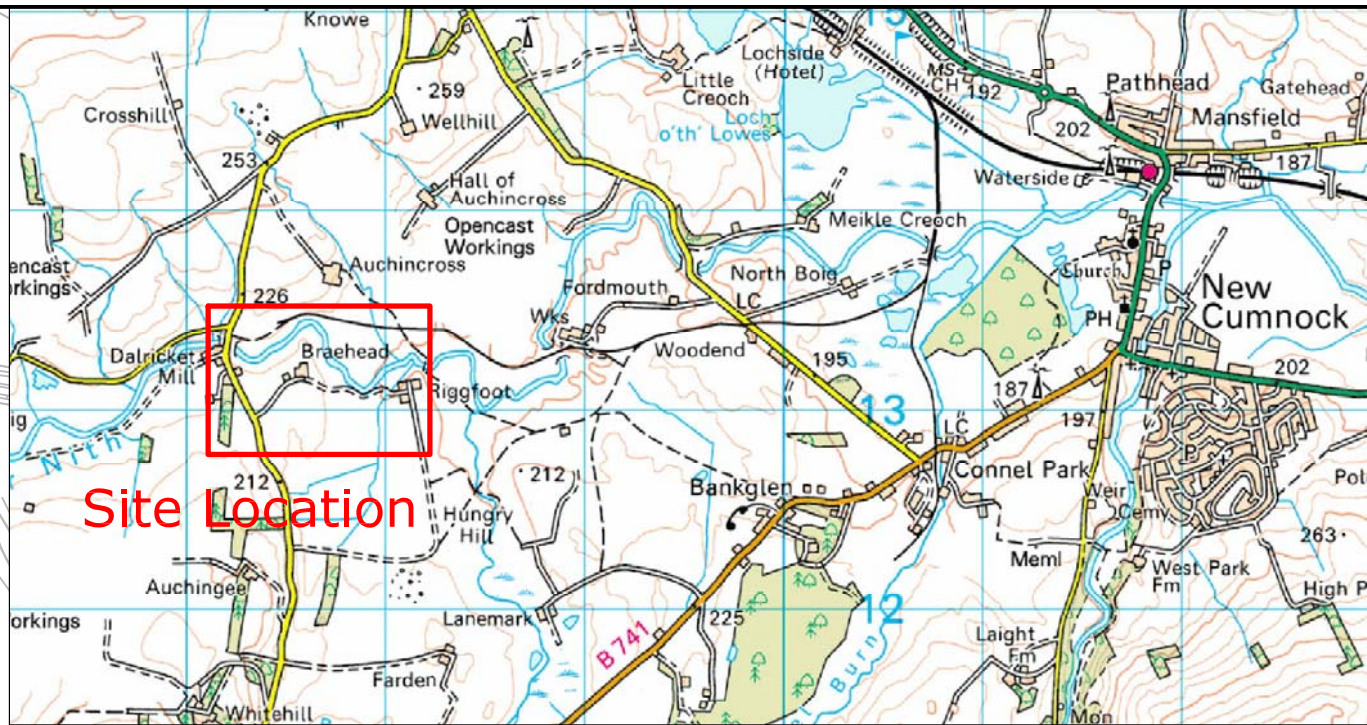
| Trench No. | Area No. | Size (m) | Depth of Deposits (m) | Features       |
|------------|----------|----------|-----------------------|----------------|
| 1          | 1        | 18 x 1.5 | 0.3 – 0.4             | 3 field drains |
| 2          | 1        | 24 x 1.5 | 0.3 – 0.4             | 3 field drains |
| 3          | 1        | 16 x 1.5 | 0.3 – 0.4             | N/A            |
| 4          | 1        | 10 x 1.5 | 0.3 – 0.4             | N/A            |
| 5          | 1        | 15 x 1.5 | 0.3 – 0.4             | 3 field drains |
| 6          | 1        | 15 x 1.5 | 0.3 – 0.4             | 3 field drains |
| 7          | 1        | 10 x 1.5 | 0.3 – 0.4             | 1 field drain  |
| 8          | 1        | 10 x 1.5 | 0.3 – 0.4             | N/A            |
| 9          | 1        | 10 x 1.5 | 0.3 – 0.4             | N/A            |
| 10         | 1        | 12 x 1.5 | 0.3 – 0.4             | N/A            |
| 11         | 1        | 16 x 1.5 | 0.3 – 0.4             | 2 field drains |
| 12         | 2        | 26 x 1.5 | 0.2 – 0.3             | 6 field drains |
| 13         | 2        | 40 x 1.5 | 0.2 – 0.3             | 6 field drains |
| 14         | 2        | 25 x 1.5 | 0.2 – 0.3             | 2 field drains |
| 15         | 2        | 30 x 1.5 | 0.3 – 0.4             | 7 field drains |
| 16         | 3        | 25 x 1.8 | 0.3                   | 2 field drains |
| 17         | 3        | 25 x 1.8 | 0.4                   | N/A            |
| 18         | 3        | 20 x 1.8 | 0.3                   | N/A            |
| 19         | 3        | 25 x 1.8 | 0.3                   | N/A            |
| 20         | 3        | 25 x 1.8 | 0.4                   | N/A            |
| 21         | 3        | 25 x 1.8 | 0.6                   | N/A            |
| 22         | 3        | 25 x 1.8 | 0.5                   | N/A            |
| 23         | 3        | 25 x 1.8 | 0.7                   | N/A            |
| 24         | 4        | 50 x 1.8 | 0.2                   | 9 field drains |
| 25         | 4        | 50 x 1.8 | 0.3                   | 9 field drains |
| 26         | 4        | 50 x 1.8 | 0.2                   | N/A            |
| 27         | 4        | 50 x 1.8 | 0.2                   | 1 field drain  |
| 28         | 4        | 50 x 1.8 | 0.2                   | 1 field drain  |
| 29         | 4        | 50 x 1.8 | 0.2                   | 2 field drains |
| 30         | 4        | 50 x 1.8 | 0.2                   | 6 field drains |
| 31         | 4        | 50 x 1.8 | 0.2                   | 4 field drains |

| <b>Trench No.</b> | <b>Area No.</b> | <b>Size (m)</b> | <b>Depth of Deposits (m)</b> | <b>Features</b> |
|-------------------|-----------------|-----------------|------------------------------|-----------------|
| 32                | 5               | 30 x 1.8        | 0.4                          | 4 field drains  |
| 33                | 5               | 30 x 1.8        | 0.5                          | 3 field drains  |
| 34                | 5               | 40 x 1.8        | 0.4                          | 2 field drains  |
| 35                | 5               | 40 x 1.8        | 0.4                          | 1 field drain   |
| 36                | 5               | 30 x 1.8        | 0.5                          | 3 field drains  |
| 37                | 5               | 30 x 1.8        | 0.4                          | 3 field drains  |
| 38                | 5               | 40 x 1.8        | 0.6 – 1.2                    | 3 field drains  |
| 39                | 5               | 30 x 1.8        | 0.3 – 1.1                    | 4 field drains  |
| 40                | 5               | 30 x 1.8        | 0.4 – 0.7                    | 2 field drains  |
| 41                | 5               | 10 x 1.8        | 0.4                          | N/A             |
| 42                | 5               | 30 x 1.8        | 0.4                          | 2 field drains  |
| 43                | 5               | 45 x 1.8        | 0.6                          | N/A             |
| 44                | 5               | 45 x 1.8        | 0.6                          | N/A             |



Key:

- Evaluation area
- Additional area undertaken during fieldwork



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Fig. No: 1      Revision: A

Title:  
**Location Map and Trench Plan**

Project:  
**Greenburn OCES  
Braehead Farm  
Extension; New  
Cumnock; East Ayrshire**

Client:  
**KIER Mining Group**

Scale at A3:  
**1:3000**


Drawn by: SW      Checked: LW      Report No: 1927



Fig. 2: Trench 20 from NE



Fig. 3: Trench 29 from E

|              |          |   |           |   |         |                   |   |          |    |            |      |
|--------------|----------|---|-----------|---|---------|-------------------|---|----------|----|------------|------|
| Key:         | Fig. No: | 2-3   | Revision: | A | Client: | KIER Mining Group |  <b>CFA</b><br>CFA ARCHAEOLOGY LTD<br>The Old Engine House<br>Eskmillis Park<br>Musselburgh<br>East Lothian, EH21 7PQ<br>t: 0131 273 4380<br>f: 0131 273 4381<br>e: info@cfa-archaeology.co.uk<br>w: www.cfa-archaeology.co.uk |          |    |            |      |
|              | Title:   |   |           |   |         |                   |   |          |    |            |      |
| Scale at A4: | Project: | Greenburn OCES Braehead Farm Extension;<br>New Cumnock; East Ayrshire |           |   |         | Drawn by:         | SW  | Checked: | LW | Report No: | 1927 |