# Appendix 1: Legislation

## A1.1. Commonwealth Legislation

*Aboriginal and Torres Strait Islander Heritage Protection Act 1984*

The Aboriginal and Torres Strait Islander Heritage Protection Act 1984 was enacted at a Federal level to preserve and protect areas (particularly sacred sites) and objects of particular significance to Aboriginal Australians from damage or desecration. Steps necessary for the protection of a threatened place are outlined in a gazetted Ministerial Declaration (Sections 9 and 10). This can include the preclusion of development.

As well as providing protection to areas, it can also protect objects by Declaration, in particular Aboriginal skeletal remains (Section 12). Although this is a Federal Act, it can be invoked on a State level if the State is unwilling or unable to provide protection for such sites or objects.

*Environment Protection and Biodiversity Conservation Act 1999*

The Environment Protection and Biodiversity Conservation Act 1999 provides for the protection of natural and cultural heritage places. The Act establishes (amongst other things) a National Heritage List (NHL) and a Commonwealth Heritage List (CHL). Places on the NHL are of natural or cultural significance at a national level and can be in public or private ownership. The CHL is limited to places owned or occupied by the Commonwealth which are of heritage significance for certain specified reasons.

Places listed on the NHL are considered to be of State and local heritage value, even if State or local various heritage lists do not specifically include them.

The heritage values of places on the NHL or the CHL are protected under the terms of the EPBC Act. The Act requires that the Minister administering the EPBC Act assess any action which has, will have, or is likely to have, a significant impact on the heritage values of a listed place. The approval (or rejection) follows the referral of the matter by the relevant agency's Minister.

*Native Title Act 1993*

The Native Title Act 1993 provides recognition and protection for native title. The Act established the National Native Title Tribunal to administer native title claims to rights and interests over lands and waters by Aboriginal people. The Tribunal also administers the future act processes that attract the right to negotiate under the Native Title Act 1993.

The Act also provides for Indigenous Land Use Agreements (ILUA). An ILUA is an agreement between a native title group and others about the use and management of land and waters. ILUAs were introduced as a result of amendments to the Native Title Act in 1998. They allow people to negotiate flexible, pragmatic agreements to suit their particular circumstances.

An ILUA can be negotiated over areas where native title has, or has not yet, been determined. They can be part of a native title determination, or settled separately from a native title claim.

An ILUA can be negotiated and registered whether there is a native title claim over the area or not.

## A1.2. NSW State Legislation

Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment Act 1979 (EP&A Act) requires that environmental and heritage impacts are considered by consent authorities prior to granting development approvals. The relevant sections of the EP&A Act are:

- Part 3A: A single assessment and approval system for major development and infrastructure projects [note that Part 3A has now been repealed and replaced with Part 4 (Division 4.1)].
- Part 4: Development that requires consent under consideration of environmental planning instruments.
- Part 5: An assessment process for activities undertaken by Public Authorities and for developments that do not require development consent but an approval under another mechanism.

Where Project Approval is to be determined under Part 4 (Division 4.1) of the Act, further approvals under the National Parks and Wildlife Act 1974, are not required. In those instances, management of Aboriginal heritage follows the applicable Aboriginal assessment guidelines (the Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation, July 2005) and any relevant statement of commitments included in the Development Approval.

*National Parks and Wildlife Act 1974*

The National Parks and Wildlife Act 1974 (NPW Act) provides blanket protection for Aboriginal objects (material evidence of Indigenous occupation) and Aboriginal places (areas of cultural significance to the Aboriginal community) across NSW. An Aboriginal object is defined as:

> *... any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.*

An Aboriginal place is any place declared to be an Aboriginal place by the Minister for the Environment, under Section 84 of the Act.

It is an offence to disturb Aboriginal objects or places without a permit authorised by the Director-General of the Office of Environment and Heritage. In addition, anyone who discovers an Aboriginal object is obliged to report the discovery to OEH.

The operation of the NPW Act is administered by OEH. With regard to the assessment of Aboriginal cultural heritage, OEH has endorsed the following guidelines:

- Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (2010).
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (2010).
- Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010).
- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (2011).

*Aboriginal Land Rights Act 1983*

The Aboriginal Land Rights Act 1983 allows for the transfer of ownership to a Local Aboriginal Land Council of vacant Crown land not required for an essential purpose or for residential land. These lands are then managed and maintained by the Local Aboriginal Land Council.

# Appendix 2: Aboriginal Consultation

# Appendix 2-1. Aboriginal consultation log

SYD18198 Notification Log
Light Horse Interchange Business Hub

| Agency | Contact | Date | Description | Extent contact |
|---|---|---|---|---|
| **Pre-Notification** | | | | |
| Blacktown City Council | - | 2018-10-11 | Requested details of any Aboriginal organisations or individuals who may be interested in the project. | Alan Williams |
| Deerubbin Local Aboriginal Land Council | Steve Randall | | | |
| Greater Sydney Local Land Services | - | | | |
| NTSCorp | George Tonna | | | |
| Office of Environment and Heritage | Susan Harrison | | | |
| National Native Title Tribunal | - | | Submitted register search request. | Alan Williams |
| Office of the Registrar, *Aboriginal Land Rights Act 1983* | - | 2018-01-09 | Submitted register search request. | |
| Greater Sydney Local Land Services | Margaret Bottrell | 2018-10-12 | Provided a response indicating we should liaise with OEH. | Alan Williams |
| OEH | Barry Gunther | 2018-10-16 | Provided a comprehensive list of stakeholders for the Sydney region | Alan Williams |
| Office of the Registrar, *Aboriginal Land Rights Act 1983* | Tyson Towney | 2018-10-16 | Undertook search and identified no claims within the study area. | Alan Williams |
| National Native Title Tribunal | - | 2018-10-16 | Advised that the land was freehold and could not be subject to a land claim; and that Native Title were seeking to extricate themselves from the OEH process. | Alan Williams |
| Blacktown City Council | Sue Galt | 2018-10-26 | Provided a letter advising to contact OEH | Alan Williams |
| **Notification** | | | | |
| Butucarbin Aboriginal Corporation | Jennifer Beale | 2018-11-02 | Notification sent enquiring of interest in project. | Georgia Burnett |
| Dhinawan-Dhigaraa Culture & Heritage Pty Ltd | Ricky Fields, Athol Smith | | | |
| Didge Ngunawal Clan | Lillie Carroll, Paul Boyd | | | |
| Ginninderra Aboriginal Corporation | Steven Johnson, Krystle Carroll | | | |
| Gunjeewong Cultural Heritage Aboriginal Corporation | Cherie Carroll Turrise | | | |
| Kawul Cultural Services | Vicky Slater | | | |
| Pemulwuy CHTS | Pemulwuy Johnson | | | |
| Rane Consulting | Tony Williams | | | |
| Wurrumay Consultancy | Kerrie Slater | 2018-11-02 | Notification sent enquiring of interest in project. | Georgia Burnett |
| Amanda Hickey Cultural Services | Amanda Hickey | | | |
| - | Anthony Williams | | | |

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| Badu | Karia Lea Bond | | | |
| Bidjawong Aboriginal Corporation | James Carroll | | | |
| Darug Aboriginal Cultural Heritage Assessments | Gordon Morton | | | |
| Darug Custodian Aboriginal Corporation | Justine Coplin | | | |
| Darug Tribal Aboriginal Corporation | - | | | |
| Deerubbin Local Aboriginal Land Council | Steve Randall | | | |
| - | Des Dyer | | | |
| Goobah Developments | Basil Smith | | | |
| HSB Consultants | Patricia Hampton | | | |
| Merrigam Indigenous Corporation | Shaun Carroll | | | |
| Minnamunnung | Aaron Broad | | | |
| Murra Bidgee Mullangari Aboriginal Corporation | Darleen Johnson | | | |
| - | Phil Kahn | | | |
| Tocomwall | Scott Franks | | | |
| Widescope Indigenous Group | Steven Hickey, Donna Hickey | | | |
| Wullung | Lee-Roy James Boota | | | |
| Barking Owl Aboriginal Corporation | Jody Kulakowski | | | |
| Biamanga | Seli Storer | | | |
| Bilinga Cultural Heritage Technical Services | Robert Brown | | | |
| Callendulla | Corey Smith | | | |
| Corroboree Aboriginal Corporation | Steve Johnson | | | |
| Darug Boorooberongal Elders Aboriginal Corportation | Gordon Workman | | | |
| Darug Land Observations | Jamie Workman, Anna Workman | | | |
| Dharug | Andrew Bond | 2018-11-02 | Notification sent enquiring of interest in project. | Georgia Burnett |
| DJMD Consultancy | Darren Duncan | | | |
| Gulaga | Wendy Smith | | | |
| Gunyuu | Kylie Ann Bell | | | |
| Gunyuu Cultural Heritage Technical Services | Darlene Hoskins-McKenzie | | | |
| Jerringong | Joanne Anne Stewart | | | |
| Munyunga | Kaya Dawn Bell | | | |
| Munyunga Cultural Heritage Technical Services | Suzannah McKenzie | | | |

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| Muragadi Heritage Indigenous Corporation | Jesse Johnson | | | |
| Murramarang | Roxanne Smith | | | |
| Murrumbul | Mark Henry | | | |
| Murrumbul Cultural Heritage Technical Services | Levi McKenzie-Kirkbright | | | |
| Nerrigundah | Newtown Carriage | | | |
| Nudagurri | Newtown Carriage | | | |
| Thauaira | Shane Carriage | | | |
| Thoorga Nura | John Carriage | | | |
| Wailwan Aboriginal Group | Philip Boney | | | |
| Walbunja | Hika Te Kowhal | | | |
| Walgalu | Ronald Stewart | | | |
| Warragil Cultural Services | Aaron Slater | | | |
| Wingikara | Hayley Bell | | | |
| Wingikara Cultural Heritage Technical Services | Wandai Kirkbright | | | |
| Yerramurra | Robert Parson | | | |
| Yulay Cultural Services | Arika Jalmaki | | | |
| Muragadi Heritage Indigenous Corporation | Jesse Johnson | 2018-11-14 | Posted letter returned to sender. LB provided recent email address; emailed. | Georgia Burnett |
| Murra Bidgee Mullangari Aboriginal Corporation | Darleene Johnson | 2018-12-13 | Another project noted problems with email provided by OEH. Emailed personal address. | Georgia Burnett |
| **Registrations of Interest Received** | | | | |
| Microsoft Outlook Delivery Service | - | 2018-11-02 | Received bounce back email to state that the addresses provided were invalid and that the emails sent could not be delivered:<br>Nudagurri<br>Bilinga CHTS<br>Gunyuu CHTS<br>Munyunga CHTS<br>Murrumbul CHTS<br>Nerrigundah<br>Wingikara CHTS<br>Darug Boorooberongal Elders Aboriginal Corporation<br>No other contact details were provided for (1) to | Georgia Burnett |

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| | | | (7), and for (8) a notification was sent via Post. | |
| Waliwan Aboriginal Group | Phil Boney | 2018-11-02 | Registered interest in the project. Provided CoC and insurance details. | Georgia Burnett<br>Alan Williams |
| Didge Ngunawal Clan | Lilly Carr | 2018-11-02 | Registered interest in the project. | Georgia Burnett<br>Alan Williams |
| Barraby Cultural Service | Lee Field | 2018-11-05 | Registered interest in the project. Provided CoC and insurance details. | Georgia Burnett<br>Alan Williams |
| Darug Custodian Aboriginal Corporation | Justine Coplin | 2018-11-05 | Registered interest in the project. Provided CoC and insurance details. | Georgia Burnett<br>Alan Williams |
| Yarrandaali Cultural Services | Bo Field | 2018-11-05 | Registered interest in the project. Provided CoC and insurance details. | Georgia Burnett<br>Alan Williams |
| Yulay Cultural Services | Arika Jalomaki | 2018-11-05 | Registered interest in the project. Provided CoC and insurance details. | Georgia Burnett<br>Alan Williams |
| Corroboree Aboriginal Corporation | Marilyn Carroll-Johnson | 2018-11-05 | Registered interest in the project. | Georgia Burnett<br>Alan Williams |
| Aboriginal Archaeology Service | Andrew Williams | 2018-11-06 | Registered interest in the project. Provided CoC and insurance details. | Georgia Burnett<br>Alan Williams |
| Darug Boorooberongal Elders Aboriginal Corporation | Gordon Workman | 2018-11-06 | Registered interest in the project. | Georgia Burnett<br>Alan Williams |
| Kamilaroi-Yankuntjatjara Working Group | Phil Khan | 2018-11-06 | Phoned AW to discuss registration. | Georgia Burnett<br>Alan Williams |
| Widescope | Steven Hickey | 2018-11-07 | Registered interest in the project. | Georgia Burnett<br>Alan Williams |
| Darug Land Observations | Anna Workman | 2018-11-07 | Registered interest in the project. | Georgia Burnett<br>Alan Williams |
| Darug Tribal Aboriginal Corporation | Dirk Schmitt | 2018-11-07 | Registered interest in the project. | Georgia Burnett<br>Alan Williams |
| Kamilaroi Yankuntjatjara Working Group | Phil Kahn | 2018-11-07 | Registered interest in the project. Provided CoC and insurance details. | Georgia Burnett<br>Alan Williams |
| Darug Aboriginal Land Care | Des Dyer | 2018-11-10 | Registered interest in the project. | Georgia Burnett<br>Alan Williams |
| Barking Owl Aboriginal Corporation | Jody Kulakowski | 2018-11-14 | Registered interest in the project. | Georgia Burnett<br>Alan Williams |
| A1 Indigenous Services | Carolyn Hickey | 2018-11-18 | Registered interest in the project | Georgia Burnett<br>Alan Williams |
| Butucarbin Aboriginal Corporation | Jennifer Beale | 2018-11-19 | Registered interest in the project. Provided CoC and insurance details. | Georgia Burnett<br>Alan Williams |

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| Muragadi Heritage Indigenous Corporation | Jesse Johnson | 2018-11-20 | Registered interest in the project. Provided CoC and insurance details. Noted transcribing error for original PO Box bounce. | Georgia Burnett<br>Alan Williams |
| Kawaul Cultural Services | Vicky Slater | 2018-11-20 | Registered interest in the project | Georgia Burnett<br>Alan Williams |
| Kawaul Cultural Services | Vicky Slater | 2018-11-27 | Phone call to discuss project schedule. Expressed recommendation that only local stakeholders be involved in the project. | Georgia Burnett |
| Murra Bidgee Mullangari Aboriginal Corporation | Darleene Johnson | 2018-12-13 | Registered interest in project. | Georgia Burnett |
| **Post-Notification Information Submission to LALC and OEH** | | | | |
| Deerubbin LALC | Steve Randall | 2019-01-08 | Sent letter notifying the LALC of the Registered Aboriginal Parties for the project, in accordance with Section 4.1.6 of the consultation requirements. Also provided with a copy of the project notification letter and advertisement. | Laressa Barry |
| OEH; GS ACH Division | Susan Harrison | 2019-01-08 | Sent letter notifying OEH of the Registered Aboriginal Parties for the project, in accordance with Section 4.1.6 of the consultation requirements. Also provided with a copy of the project notification letter and advertisement. | Laressa Barry |
| **ACHAR Field Survey Methodology** | | | | |
| Wailwan Aboriginal Group | Phil Boney | 2018-12-14 | Emailed proposed archaeological survey and test excavation methodology. Requested feedback by 16 January 2019. | Laressa Barry |
| Didge Ngunawal Clan | Lilly Carroll | | | |
| Barraby Cultural Services | Lee Field | | | |
| Darug Custodian Aboriginal Corporation | Justine Coplin | | | |
| Yarrandaali Cultural Services | Bo Field | | | |
| Yulay Cultural Services | Arika Jalomaki | | | |
| Corroboree Aboriginal Corporation | Marilyn Carroll-Johnson | | | |
| Aboriginal Archaeology Service Inc. | Andrew Williams | | | |
| Darug Boorooberongal Elders Aboriginal Corporation | Gordon Workman | | | |
| Kamilaroi-Yankuntjatjara Working Group | Phil Khan | | | |
| Widescope Indigenous Group | Steven Hickey | | | |
| Darug Land Observations | Anna Workman | | | |
| Darug Tribal Aboriginal Corporation | Dirk Schmitt | | | |

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| Darug Aboriginal Land Care | Des Dyer | | | |
| Wurrumay Consultancy | Kerrie Slater | | | |
| Barking Owl Aboriginal Corporation | Jody Kulakowski | | | |
| A1 Indigenous Services | Carolyn Hickey | | | |
| Butucarbin Aboriginal Corporation | Jennifer Beale | | | |
| Muragadi Heritage Indigenous Corporation | Jesse Johnson | | | |
| Kawul Cultural Services | Vicky Slater | | | |
| Deerubbin LALC | Steve Randall | 2019-01-07 | E-mailed to seek interest in the project since no response had been received; and provided methodology still out for comment. | Alan Williams |
| Aboriginal Archaeology Service Incorporated | Andrew Williams | 2018-12-15 | Provided letter response in support of the ACHAR methodology, and prefers that any recovered artefacts are either (1) displayed in a museum, local library or government building, or (2) reburied in close proximity to the area. | Laressa Barry |
| A1 Indigenous Services | Carolyn Hickey | 2018-12-16 | Provided email response to reconfirm registration of interest and indicate an interest in being involved in fieldwork, but did not provide any feedback on the ACHAR methodology. | Laressa Barry |
| Barking Owl Aboriginal Corporation | Jody Kulakowski | 2018-12-18 | Emailed to say they agreed with the proposed methodology and had no further recommendations or comments. Thank you sent 2018-12-19. | Tom Sapienza |
| Barraby Cultural Services | Lee Field | 2018-12-19 | Provided brief email response in support of the ACHAR methodology and indicated an interest to be involved in the fieldwork. | Laressa Barry |
| Yurrandaali Cultural Services | Bo Field | 2018-12-19 | Provided brief email response in support of the ACHAR methodology and indicated an interest to be involved in the fieldwork. | Laressa Barry |
| Yulay Cultural Services | Arika Jalomaki | 2018-12-19 | Provided brief email response in support of the ACHAR methodology and indicated an interest to be involved in the fieldwork. | Laressa Barry |
| Corroboree Aboriginal Corporation | Marilyn Carroll-Johnson | 2018-12-19 | Provided a brief email response in support of the ACHAR methodology. | Laressa Barry |
| Darug Custodian Aboriginal Corporation | Justine Coplin | 2018-12-23 | Provided letter response in support of assessment methodology. | Laressa Barry |
| Darug Aboriginal Landcare Incorporated | Des Dyer | 2018-12-26 | Provided a brief email response in support of the | Laressa Barry |

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| | | | ACHAR methodology. | |
| Kamilaroi-Yankuntjatjara Working Group | Phil Khan | 2018-12-31 | Provided a brief email response in support of the ACHAR methodology. | Laressa Barry |
| Widescope Indigenous Group | Steven Hickey | 2019-01-07 | Provided a brief email response in support of the ACHAR methodology. | Laressa Barry |
| Darug Land Observations | Anna O' Hara | 2019-01-16 | Provided a brief email response in support of the ACHAR methodology. | Tom Sapienza |
| **Archaeological Survey** | | | | |
| All RAPs | - | 8.1.19 | Invitation to attend a site inspection. Widescope, Kamilaroi Yankuntjatjara Working Group, Aboriginal Archaeology Service and Deerubbin Local Aboriginal Land Council invited on a paid basis. | Alan Williams |
| Kawul Cultural Services | Vicky Slater | 8.1.19 | Indicated that her ancestry was local to the area, and disappointed at not being involved in the paid involvement of the site investigation. | Alan Williams |
| Darug Boorooberongal Elders Aboriginal Corporation | Gordon Workman | 8.1.19 | (Phone call) Indicated that he was dissatisfied at not being involved in the paid involvement of the site investigation. | Alan Williams |
| Didge Ngunawal Clan | Lilly Carroll | 8.1.19 | Sought to attend the site work on a voluntary basis. | Alan Williams |
| Corroboree Aboriginal Corporation | Marilyn Carroll-Johnson | 8.1.19 | Indicated that they could not participate in the field program unless paid. | Alan Williams |
| Widescope | Steven Hickey | 8.1.19 | Will attend the site inspection | Megan Sheppard Brennand |
| Kamilaroi Yankuntjatjara Working Group | Philip Khan | 8.1.18 | Marbuck Khan will attend the site inspection | Megan Sheppard Brennand |
| Darug Custodian Aboriginal Corporation | Justine Coplin | 8.1.18 | Sought clarification on why DCAC were not involved. AW responded that a smaller selection of RAPs was necessary due to numbers, but other opportunities may eventuate. | Alan Williams |
| Muragadi Heritage Indigenous Corporation | Rebecca | 9.1.18 | Declined to attend on a voluntary basis. | Alan Williams |
| Deerubbin Local Aboriginal Land Council | Steve Randall | 11.1.19 | Sent a follow up email asking if they would like to attend the Site inspection on a paid basis | Megan Sheppard Brennand |
| Aboriginal Archaeology Service | Andrew Williams | 11.1.19 | Sent a follow up email asking if they would like to attend the | Megan Sheppard Brennand |

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| | | | Site inspection on a paid basis | |
| Darug Aboriginal Landcare Inc | Ricky Fields | 11.1.19 | Advised that they were sending a representative | Alan Williams |
| Butucarbin Cultural Heritage Assessments | Lowanna Gibson | 15.1.19 | Advised she was sending a representative | Alan Williams |
| Kamilaroi-Yankuntjatjara Working Group, Widescope Indigenous Group, Deerubbin Local Aboriginal Land Council, Butucarbin Aboriginal Corporation | Various | 17.1.19 | Survey undertaken at the Lighthorse Business Hub site | Megan Sheppard Brennand |
| **Distribution of post-survey ACHAR for Feedback and Review** | | | | |
| All RAPs | Various | 27.02.2019 | Provided with draft ACHAR report and appendices for review and comments. | Laressa Barry |
| | Microsoft Outlook Delivery Notification Service | 27.02.2019 | Received error message notification from Outlook Delivery Service, stating that “a communication failure occurred during the delivery of this message”, and that the mailbox was unavailable”. | Laressa Barry |
| Wailwan Aboriginal Group | Phil Boney | 27.02.2019 | Distributed draft ACHAR and Appendices to Wailwan Aboriginal Group via FTP (WeTransfer). | Laressa Barry |
| WeTransfer FTP service | | 27.02.2019 | Received error message notification from WeTransfer to state that the email address was unavailable. | Laressa Barry |
| Wailwan Aboriginal Group | Phil Boney | 27.02.2019 | Phoned Phil to discuss delivery of report, but no answer. Left voicemail message for Phil to call the Extent Heritage Office. | Laressa Barry |
| Muragadi Heritage Indigenous Corporation | Anthony Johnson | 01.03.2019 | Muragadi reviewed the ACHAR and appendices and endorsed the report recommendations. | Laressa Barry |
| Didge Ngunawal Clan | Lilly Carroll | 04.03.2019 | Requested that Extent update its contact details for Didge Ngunawal Clan, but provided no comment on the ACHAR. | Laressa Barry |
| Darug Land Observations | Anna O’Hara | 06.03.2019 | DLO reviewed and provided support for the recommendations contained within the ACHAR. They recommended that artefacts be reburied on country, and indicated an interest in participating in any fieldwork. | Laressa Barry |
| Darug Tribal Aboriginal Corporation | John Reilly | 12.03.2019 | DTAC provided a brief response in support of the report recommendations. They requested to be advised of any further updates to the project. | Laressa Barry |
| Barraby Cultural Services | Lee Field | 13.03.2019 | Barraby provided a brief response in support of the | Laressa Barry |

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| | | | report recommendations and wish to be kept informed of all stages of the project. | |
| Kamilaroi Yankuntjatjara Working Group | Stefeanie Khan | 15.03.2019 | KYWG provided a brief response in support of the report recommendations. | Laressa Barry |
| All RAPs | Various | 25.03.2019 | Provided a follow-up reminder of the impending finalisation of the report, and requested that any further comments or feedback be sent through prior to Wednesday 27 March 2019. | Laressa Barry |
| Yurrandaali Cultural Services | Bo Field | 25.03.2019 | Yurrandaali provided a brief response in support of the report recommendations, and requested that the client continue to consult with Yurrandaali as the project progresses. | Laressa Barry |
| Yulay Cultural Services | Arika Jalomaki | 25.03.2019 | Yulay provided a brief response in support of the report recommendations, and requested that the client continue to consult with Yulay as the project progresses. | Laressa Barry |
| Didge Ngunawal Clan | Paul Boyd | 25.03.2019 | DNC provided a brief response in support of the report recommendations. | Laressa Barry |
| Darug Costodian Aboriginal Corporation | Justine Coplin | 27.03.2019 | DCAC provided a response to the draft ACHAR. Justine provided some background information on the group and their interest in Darug heritage, and on the significance of archaeological sites to the Darug community. She indicated that there were some issues with consultation as presently undertaken under the OEH guidelines.<br>Justine advised that DCAC had reviewed the draft ACHAR and support the recommendations set out in the report. | Laressa Barry |
| Wailwan Aboriginal Group | Phil Boney | 17.04.2019 | Returned phone call from February and apologised for not calling sooner. Supplied Extent with correct contact details, as our project details were incorrect.<br>Apologised for the inconvenience, and redistributed draft ACHAR and appendices to Phil for his review. Iterated that any comments received now would be incorporated into final ACHAR post-testing. | Laressa Barry |

| ACHAR Test Excavation Methodology | | | | |
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| All RAPs | Various | 17.04.2019 | Provided with test excavation methodology letter, for review and comments. Feedback requested by 10 May | Laressa Barry |
| Corroboree Aboriginal Corporation | Marilyn Carroll-Johnson | 17.04.2019 | Responded in support of test excavation methodology, seeing no issues with the project plans. Advised that it was likely that the area was used by Aboriginal people in the past, and likely that artefacts would be found during excavations. Recommended that any artefacts found be reburied on Country (on site), or stored with the LALC, possibly at Parramatta Jail. | Laressa Barry |
| Kamilaroi Yankuntjatjara Working Group | Stefeanie Khan | 18.04.2019 | Stef provided a brief response in support of the test excavation methodology | Laressa Barry |
| Widescope Indigenous Group | Steven Hickey | 19.04.2019 | Steven provided a brief response in support of the test excavation methodology. | Laressa Barry |
| Wailwan Aboriginal Group | Phil Boney | 22.04.2019 | Phil provided a brief response in support of the test excavation methodology. | Laressa Barry |
| Barking Owl Aboriginal Corporation | Jody Kulakowski | 23.04.2019 | The Members of the Barking Owl Aboriginal Corporation provided a brief response in support of the test excavation methodology. | Laressa Barry |
| Barraby Cultural Services | Lee Field | 23.04.2019 | Lee provided a brief response in support of the test excavation methodology, and indicated his availability for and interest in participating in test excavation. | Laressa Barry |
| Yurrandaali Cultural Services | Bo Field | 24.04.2019 | Bo provided a brief response in support of the test excavation methodology, and indicated his availability for and interest in participating in test excavation. | Laressa Barry |
| Yulay Cultural Services | Arika Jalomaki | | Arika provided a brief response in support of the test excavation methodology, and indicated his availability for and interest in participating in test excavation. | Laressa Barry |
| Muragadi | Anthony Johnson | 01.05.2019 | Anthony provided a brief response in support of the test excavation methodology. | Laressa Barry |
| A1 Indigenous Services | Carolyn Hickey | 05.05.2019 | Carolyn provided a brief response in support of the test excavation methodology. | Laressa Barry |

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| Butucarbin Aboriginal Corporation | Lowanna Gibson | 10.05.2019 | Lowanna provided a letter response in general support of the test excavation methodology, but raised concerns about the nature of RAP selection for participation in the excavation. | Laressa Barry |
| **Test Excavations** | | | | |
| Widescope, Kamilaroi-Yankuntjatjara Working Group, Deerubbin Local Aboriginal Land Council, Darug Custodian Aboriginal Coporation, Darug Land Observations, Darug Tribal Aboriginal Corporation | Various | 06.05.2019 | Organised preparations regarding fieldwork to commence Monday 13 May and conclude Friday 7 May. | Georgia Burnett |
| Butucarbin Aboriginal Corporation | Lowanna Gibson | 03.05.2019 | Lowanna provided an additional email to support the letters received on 10 May, which highlighted the organisations general support of the test excavation methodology, but raised concerns about the nature of RAP selection for participation in the excavation, and also issues with consultancy rates. | Georgia Burnett |
| Butucarbin Aboriginal Corporation | Lowanna Gibson | 05.07.2019 | Laressa emailed in response to two letters, one regarding positive support for the test excavation methodology and one regarding consulting rates. Laressa outlined the nature of the assessment methodology review period, the organisations acceptance of the subcontractor rates, and the Extent Heritage policies for consultation and stakeholder engagement, indicating that while Extent may provide advice to the proponent, the decision for which RAP groups to engaged was at the discretion of the proponent. | Laressa Barry |
| **Post Excavation ACHAR** | | | | |
| All RAPs | Various | 21.11.2019 | Coral emailed all registered RAPs with the draft post-excavation ACHAR for review and comment. Review period ends 19 December 2019. | Coral Hardwick |
| All RAPs | Various | 9.12.2019 | Megan emailed all registered RAPs to remind them that the draft post- excavation ACHAR review period ends 19 December 2019. | Megan Sheppard Brennand |
| Butucarbin Aboriginal Corporation | Lowanna Gibson | 10.12.2019 | Requested a new link to download document. | Coral Hardwick |
| Butucarbin Aboriginal Corporation | Lowanna Gibson | 11.12.2019 | Sent new link to download document. | Georgia Burnett |

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|---|---|---|---|---|
| Kamilaroi Yankuntjatjara Working Group | Stefeanie Khan | 11.12.2019 | Agreed and supported recommendations made in the ACHAR. Noted the area as highly significant to Aboriginal people as it is a desirable camping spot with plenty of resources; also, that the names of the creeks would have had traditional names that are now lost; and, recommended the artefacts recovered be stored at the Deerubbin LALC. | Georgia Burnett<br>Megan Sheppard Brennand |
| Darug Custodian Aboriginal Corporation | Justine Coplin | 12.12.19 | Requested a new copy of the ACHAR, which was provided. | Georgia Burnett |
| All RAPs | Various | 18.12.2019 | Megan emailed all registered RAPs to remind them that the draft post- excavation ACHAR review period ends 19 December 2019. | Megan Sheppard Brennand |
| Widescope | Steven Hickey | 19.12.2019 | Steven replied via email supporting the recommendations made in the ACHAR. | Megan Sheppard Brennand |

## Appendix 2-2. List of identified Aboriginal stakeholders.

The following Aboriginal stakeholder groups and individuals were identified as potentially having interest in the project:

Aboriginal Archaeology Service
Amanda Hickey Cultural Services
Badu
Barking Owl Aboriginal Corporation
Biamanga
Bidjawong Aboriginal Corporation
Bilinga Cultural Heritage Technical Services
Butucarbin Aboriginal Corporation
Callendulla
Corroboree Aboriginal Corporation
Darug Aboriginal Cultural Heritage Assessments
Darug Aboriginal Land Care
Darug Boorooberongal Elders Aboriginal Corporation
Darug Custodian Aboriginal Corporation
Darug Land Observations
Darug Tribal Aboriginal Corportation
Deerubbin Local Aboriginal Land Council
Dharug
Dhinawan-Dhigaraa Culture & Heritage Pty Ltd
Dige Ngunawal Clan
DJMD Consultancy
Ginninderra Aboriginal Corporation
Goobah Developments
Gulaga
Gunjeewong Cultural Heritage Aboriginal Corporation
Gunyuu
Gunyuu Cultural Heritage Technical Services
HSB Consultants
Jerringong
Kamilaroi-Yankuntjatjara Working Group
Kawul Cultural Services
Merrigam Indigenous Corporation
Minnamunnung
Munyunga
Munyunga Cultural Heritage Technical Services
Muragadi Heritage Indigenous Corporation
Murra Bidgee Mullangari Aboriginal Corporation
Murramarang
Murrumbul
Murrumbul Cultural Heritage Technical Services

Nerrigundah
Nudagurri
Pemulwuy CHTS
Rane Consulting
Thauaira
Thoorga Nura
Tocomwall
Wailwan Aboriginal Group
Walbunja
Walgalu
Wallung
Warragil Cultural Services
Widescope Indigenous Group
Wingikara
Wingikara Cultural Heritage Technical Services
Wurrumay Consultancy
Yerramurra
Yulay Cultural Services

# Appendix 2-3. List of registered Aboriginal parties for the project

The following Aboriginal stakeholder groups registered their interest in the project:

A1 Indigenous Services
Aboriginal Archaeology Service
Barking Owl Aboriginal Corporation
Barraby Cultural Services
Butucarbin Aboriginal Corporation
Corroboree Aboriginal Corporation
Darug Aboriginal Land Care
Darug Boorooberongal Elders Aboriginal Corporation
Darug Custodian Aboriginal Coporation
Darug Land Observations
Darug Tribal Aboriginal Corporation
Deerubbin Local Aboriginal Land Council
Didge Ngunawal Clan
Kamilaroi-Yankuntjatjara Working Group
Kawaul Cultural Services
Muragadi Heritage Indigenous Corporation
Wailwan Aboriginal Group
Widescope
Wurrumay Consultancy
Yarrandaali Cultural Services
Yulay Cultural Services

# Appendix 2-4. Pre-Notification Documentation Sent and Received

EXTENT HERITAGE ADVISORS

2 August 2018

**Attn: NAME**
**AGENCY / DEPARTMENT**
ADDRESS LINE 1
ADDRESS LINE 2

**Re: Request for Information on Aboriginal Stakeholders for an Aboriginal Cultural Heritage Assessment of Lighthorse Interchange Business Hub, Eastern Creek, NSW**

Dear Sir/Madam,

Extent Heritage Pty Ltd has been engaged by the Western Sydney Parklands Trust (the proponent) to undertake an Aboriginal Cultural Heritage Assessment (ACHAR) in advance of proposed development of the Lighthorse Interchange Business Hub. The hub encompasses 165 Wallgrove Road, and 475 Ferrers Road, Eastern Creek, NSW (Lot 5 DP804051; Lot 10 DP 1061237).

The land in question is within the Blacktown Local Government Area, and the proposed development will involve subdivision and then re-development of the land. Specific design and development activities are yet to be determined, but would likely include bulk earthworks, stormwater, lead-in services, environmental works, vehicle access points and pedestrian/ cycle links with landscaping.

The proponent's contact details are:

Mr Luke Wilson, C/- Western Sydney Parklands Trust
PO Box 3064
Parramatta NSW 2124
(T) 02 9895 7500
(E) Luke.Wilson@wspt.nsw.gov.au

In accordance with the NSW Office of Environment and Heritage's (OEH) *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010,* I am writing to you to seek information on relevant Aboriginal individuals and/or communities that you are aware of, who may hold cultural knowledge for the area relevant to determining the significance of Aboriginal objects and/or places. It would be appreciated if you could provide this information to at the Sydney address below or by email to awilliams@extent.com.au

Please don't hesitate to contact me on (02) 9555 4000 if you have any queries or concerns.

Yours sincerely,

**Dr Alan Williams FSA MAACAI**
**Associate Director | Extent Heritage**

Office of Environment & Heritage

Our reference: Doc18/771559

Dr Alan Williams
Associate Director
Extent heritage Advisors
3/73 Union Street
Pyrmont NSW

Dear Alan,

Thank you for your letter dated 11th October 2018 to the Office of Environment and Heritage (OEH) regarding obtaining a list of the Aboriginal stakeholders that may have an interest in the proposed development for the Lighthorse Interchange Business Hub, 165 Wallgrove Road and part of 475 Ferrers Road, Eastern Creek, NSW.

Please find attached the list of Aboriginal stakeholders known to OEH that may have an interest in the project.

As the Department of Planning and Environment is the approval authority for this project, the consultation process should be in accordance with the relevant guidelines as stipulated by the Department of Planning and Environment.

If you wish to discuss any of the above matter further please email gs.ach@environment.nsw.gov.au.

Yours sincerely

16/10/2018

**Amy Dumbrell**
**Acting Senior Team Leader Planning**
**Greater Sydney Branch**
**Communities and Greater Sydney Division**

PO Box 644 Parramatta NSW 2124
Level 2, 10 Valentine Avenue Parramatta NSW 2150
Tel: (02) 9995 5477
ABN 30 841 387 271
www.environment.nsw.gov.au

Blacktown City Council
Growing with Pride

Our file no: 145-537-1
C18/5827

19 October 2018

Luke Wilson
c/-Western Sydney Parklands Trust

awilliams@extent.com.au

Dear Sir,

**Request for Relevant Aboriginal Stakeholders Information for Aboriginal Cultural Heritage Assessment of Lighthorse Interchange Business Hub, Eastern Creek**

Thank you for your letter dated 11 October 2018 regarding Aboriginal stakeholders contact details relevant to the above.

The NSW Office of Environment and Heritage (OEH) has advised us that their consultation list for this purpose is confidential and may only be obtained on a project by project basis from officers of the OEH.

Please contact Fran Scully of the Office of Environment and Heritage Regulatory Group on 9995 6830 for further assistance.

Yours faithfully,

Trevor Taylor
Manager Development Policy and Regulation

**Council Chambers** • 62 Flushcombe Road • Blacktown NSW 2148
**Telephone:** (02) 9839 6000 • **Facsimile:** (02) 9831-1961 • DX 8117 Blacktown
**Email:** council@blacktown.nsw.gov.au • **Website:** www.blacktown.nsw.gov.au
**All correspondence to:** The General Manager • PO Box 63 • Blacktown NSW 2148

# REQUEST FOR SEARCH OF LAND CLAIM REGISTER

OFFICE OF THE REGISTRAR
ABORIGINAL LAND RIGHTS ACT 1983 (NSW)

11-13 Mansfield Street
Glebe NSW 2037
PO Box 112, Glebe NSW 2037
P. 02 9562 6327 F. 02 9562 6350

**Please print all details clearly using block letters**

Full name of person requesting search: *(name for correspondence)*

Alan Williams

Name of company: Extent Heritage Pty Ltd

Postal address: 3/73 Union Street, Pyrmont, NSW 2009

Telephone number: 0428 810 150 Fax number: 02 9555 7005

Land identifiers:
(lot, dp, reserve number –
not crown plan number or vol id)

Lot 5 DP804051; Lot 10 DP 1061237

Parish name: Prospect

County name: Cumberland

**To assist the office in assigning priorities, please answer the following:**

1) Purpose for which information is required:

Seeking information of Aboriginal stakeholders to consult with as part of an Aboriginal Cultural Heritage Assessment for the proposed Lots.

2) If urgent consideration is required, reason for urgency:

Signature, position and date:

Alan Williams

**Please note:**

1. Searches are completed within 5 working days and returned by ordinary mail.
2. The register covers only crown land.
3. All information is required including a name for correspondence before the search will be completed.
4. The person to whom correspondence is addressed must sign the form.

March 2009

OFFICE OF THE REGISTRAR
ABORIGINAL LAND RIGHTS ACT 1983 (NSW)

18 October 2018

Dr. Alan Williams
Associate Director
Extent Heritage Pty Ltd
3/73 Union Street
PYRMONT NSW 2009

***Via email:*** awilliams@extent.com.au

Dear Alan,

**Request – Search for Aboriginal Land Claims**

I refer to your request dated 11 October 2018, to search the Register of Aboriginal Land Claims database (**the Register**) in relation to lands described by you as Lot 5 DP 804051 and Lot 10 DP 1061237 in the Parish of Field of Prospect, County of Cumberland.

I have searched the Register and the properties above do not appear as being affected by an Aboriginal Land Claim, pursuant to sections 36 or 37 of the *Aboriginal Land Rights Act 1983.*

Please contact our office on (02) 8633 1266 if you require further assistance.

Yours sincerely,

**Tysan Towney**
Administration Officer
Office of the Registrar, ALRA

***Please Note***:
*1. Search requests should not be made over privately owned land. Crown Land is the only land in NSW that is likely to be affected by an ALC under the Aboriginal Land Rights Act. If an ALC has been made over privately owned land it would be refused as soon as this is known.*

*2. Land across NSW with older land descriptors such as "portion, REF & TSR" have been allotted new descriptors over the last 10 years & many of these now have "Lot & DP" numbers. The ORALRA database lists the land descriptor at lodgement & may not include an updated land descriptor. If this may affect the land that you've described, we advise that you contact the Aboriginal Land Claims Investigation Unit on (02) 6883 3396.*

Address: Level 3, 2 – 10 Wentworth Street, PARRAMATTA NSW 2150
Post: P.O Box 5068, PARRAMATTA NSW 2124
Phone: 02 8633 1266

To Alan Williams,

**RE: Request for Information on Aboriginal Stakeholders for an Aboriginal Cultural Heritage Assessment of Lighthorse Interchange Business Hub, Eastern.**

Thank you for your letter dated 11 October 2018, requesting assistance with identifying Aboriginal stakeholder groups or persons who may have an interest in your project area.

Greater Sydney Local Land Services (GS LLS) acknowledges that Local Land Services have been listed in *Section 4.1.2 (g)* of the*Aboriginal cultural heritage consultation requirements for proponents 2010,* under *Part 6, National Parks and Wildlife Act 1974* as a source of information to obtain the "names of Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal *objects* and/or *places*".

GS LLS is a partner with many Aboriginal communities in the region on many natural resource management (NRM) projects. However, GS LLS is not the primary source for contacting or managing contact lists for Aboriginal communities or persons that may inform or provide comment on planning issues. GS LLS considers cultural heritage issues that relate to land-use planning in general and only considers culture and heritage issues in the context of NRM.

We strongly recommend that you make contact with the Office of Environment and Heritage (OEH), Cultural Heritage Division, for all-inclusive contact lists of persons and organisations that may assist with your investigation.

**Note:** Hawkesbury Nepean Catchment Management Authority (HNCMA) no longer exists. All work previously carried out by HNCMA in now delivered by Greater Sydney Local Land Services (GS LLS).

Regards,

--

**Margaret Bottrell** Senior Strategic Land Services Officer
(Aboriginal Communities)
Greater Sydney Local Land Service
Level 4, 2-6 Station Street Penrith
PO Box 4515 Penrith Westfields NSW 2750
T: 02 47242111
E:margaret.bottrell@lls.nsw.gov.au
W: http://www.lls.nsw.gov.au

National Native Title Tribunal

# Request for Search of Tribunal Registers

***mandatory fields are marked with an asterisk**

## 1. Your details*

| | |
|---|---|
| NAME: | Alan Williams |
| POSITION: | Associate Director |
| COMPANY/ORGANISATION: | Extent Heritage Pty Ltd |
| POSTAL ADDRESS: | 3/73 Union Street, Pyrmont |
| TELEPHONE: | (02) 9555 4000 |
| EMAIL: | awilliams@extent.com.au |
| YOUR REFERENCE: | SYD18198 |
| DATE OF REQUEST: | 11.10.18 |

## 2. Reason for your request - please complete either Part A OR Part B*

**Part A** - Are you a party to a native title proceeding? ☐ Yes ☐ No

Please provide Federal Court/Tribunal file number/or application name:

**OR**

**Part B** - Do you need to identify existing native title interests to comply with the *Native Title Act 1993* (Cth) or other State/Territory legislation? ☐ Yes ☐ No

Please provide brief details of these obligations here: National Parks and Wildlife Act 1974 community consultation

## 3. Identify the area to be searched - please complete either Part A OR Part B*

**Part A - Mining tenure**

Tenement ref/s:

State/Territory:

**OR**

**Part B - Other tenure type**

☐ Crown Land, crown reserve

☐ Agricultural/pastoral lease

☐ Freehold (privately owned)**

| | |
|---|---|
| State/Territory: | NSW |
| Local Government Area: | Blacktown LGA |

## 4. Description (please provide as many details as possible)

Provide any additional details to describe the area, including attaching maps with landmarks clearly shown.

| | |
|---|---|
| Lot and plan details: | Lot 5 DP804051; Lot 10 DP 1061237 |
| Property name: | |
| Pastoral Lease number or name: | |
| County: | Cumberland |
| Parish: | Prospect |
| Town: | Eastern Creek |
| Section: | |
| Hundred: | |
| Northern Territory Portion: | |

## 5. Submit your request

| NNTT Office | Search jurisdiction | Email address | Fax |
|---|---|---|---|
| Perth | WA searches | waenquiries@nntt.gov.au | (08) 9425 1193 |
| Melbourne | VIC, TAS searches<br>SA, NT searches | vicandtasenquiries@nntt.gov.au<br>sa_and_ntenquiries@nntt.gov.au | (03) 9606 0680<br>(03) 9606 0680 |
| Sydney | NSW, ACT searches | nswenquiries@nntt.gov.au | (02) 9227 4030 |
| Brisbane | QLD searches | qldenquiries@nntt.gov.au | (07) 3307 5050 |

**Or post to**: National Native Title Tribunal, GPO Box 9973 (Perth 6848, Melbourne 3001, Sydney 2001, Brisbane 4001)

- There is no charge for conducting searches of the Tribunal's databases.
- Timeframe for providing results is generally 3-5 business days.
- Register and schedule extracts, plus map attachments will be provided with your results. Technical coordinates may be omitted.

## Did you know?

**Native Title Vision (NTV)** is the National Native Title Tribunal's free online visualisation, mapping and query tool. All that is needed to use NTV is a computer connected to the internet, a current web browser and an NTV user account. NTV puts you in the driver's seat in exploring native title and brings together:
- a geospatial view of the Tribunal's registers and databases
- overlays of administrative regions, non-freehold land parcels and resouces tenure.

To obtain a NTV user account visit the Geospatial section on our website.

## **Native title & freehold tenure

Under the *Native Title Act 1993* (Cth), the valid grant of a freehold estate (other than certain types of Aboriginal and Torres Strait Islander land) on or before 23 December 1996 is known as a 'previous exclusive possession act'. This means that native title has been extinguished over the area.

The Tribunal is not the custodian of the data for freehold estates. To determine whether a particular parcel of land is freehold land, you may wish to seek such information from the relevant state/territory government custodian.

**Native title search –** *NSW Freehold Parcels – Lot 5 on DP804051 and Lot 10 on DP 1061237*
**Your ref:** *SYD18198-* **Our ref:** *SR4991*

**Change of e-mail address for Geospatial Searches**
Please ensure that from 14th August 2018 your search requests are forwarded to GeospatialSearch@NNTT.gov.au with a ***completed search request form***. The form is available from the Tribunal's website at this address: http://www.nntt.gov.au/News-and-Publications/Pages/Forms.aspx

**Dear** Alan Williams,

Thank you for your search request received on 11 October 2018 in relation to the above areas.

**Please note:** Records held by the National Native Title Tribunal as at 16 October 2018 indicate that the identified parcels appear to be freehold, and freehold tenure extinguishes native title.
The National Native Title Tribunal does not hold data sets for freehold tenure; consequently, we **cannot** conduct searches over freehold. For confirmation of freehold data, please contact the NSW Land and Property Information office or seek independent legal advice.

For further information, please visit our website.

***Cultural Heritage Searches in NSW***
The National Native Title Tribunal (the Tribunal) has undertaken steps to remove itself from the formal list of sources for information about indigenous groups in development areas. The existence or otherwise of native title is quite separate to any matters relating to Aboriginal cultural heritage. Information on native title claims, native title determinations and Indigenous Land Use Agreements is available on the Tribunal's website.

Interested parties are invited to use Native Title Vision (NTV) the Tribunal's online mapping system to discover native title matters in their area of interest. Access to NTV is available at http://www.nntt.gov.au/assistance/Geospatial/Pages/NTV.aspx
Training and self-help documents are available on the NTV web page under "Training and help documents". For additional assistance or general advice on NTV please contact GeospatialSearch@NNTT.gov.au

Additional information can be extracted from the Registers available at http://www.nntt.gov.au/searchRegApps/Pages/default.aspx

If you have any further queries, please do not hesitate to contact us on the free call number 1800 640 501.

Regards,

**Geospatial Searches**
**National Native Title Tribunal | Perth**
Email: GeospatialSearch@nntt.gov.au | **www.nntt.gov.au**
***Shared country, shared future***

# Appendix 2-5. Notification Documentation Sent and Registrations Received

EXTENT HERITAGE ADVISORS

2 August 2018

**Attn: NAME**
**ORGANISATION**
Address1
Address2
email@email.com

**Re: Aboriginal Cultural Heritage Assessment for Lighthorse Interchange Business Hub, Eastern Creek, NSW – Notification of Project Proposal.**

Dear FIRSTNAME,

In accordance with the NSW Office of Environment and Heritage's (OEH) (formerly NSW Department of Environment, Climate Change and Water (DECCW)) *Aboriginal Cultural Heritage Consultation Requirements for Proponents, 2010*, I am writing to notify you that we have been engaged by Western Sydney Parklands Trust (the proponent) to undertake an Aboriginal Cultural Heritage Assessment (ACHAR) as part of a State Significant Development of the Lighthorse Interchange Business Hub. The hub encompasses part of 165 Wallgrove Road, and part of 475 Ferrers Road, Eastern Creek, NSW (Lot 5 DP804051; Lot 10 DP 1061237) (**Figure 1**).

The land in question is within the Blacktown Local Government Area, and the proposed development will involve subdivision and then re-development of the land. Specific design and development activities are yet to be determined, but would likely include bulk earthworks, estate stormwater, lead-in services, environmental works, access, estate landscaping and conceptual built form.

The proponent's contact details are:

Mr Luke Wilson, C/- Western Sydney Parklands Trust
PO Box 3064
Parramatta NSW 2124
(T) 02 9895 7500
(E) Luke.Wilson@wspt.nsw.gov.au

Extent will be undertaking the assessment in accordance with the relevant OEH *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* guidelines. An important part of the assessment will be Aboriginal community consultation that aims to identify the Aboriginal cultural heritage within the study area, including the cultural values and places of importance to the Aboriginal community. The purpose of the consultation is to assist the proponent in preparing the ACHA for the study area, and if necessary to assist OEH in considering the assessment and any Aboriginal Heritage Impact Permit (AHIP) application.

We are inviting registrations from Aboriginal individuals and/or organisations who may hold relevant cultural knowledge for determining the Aboriginal cultural heritage of the area, and who wish to be involved in the community consultation process. If you or your organisation is interested in being part of the consultation process, please provide a registration of interest to Alan Williams at the Sydney address below or by email to awilliams@extent.com.au

Registrations are requested by **19 November 2018**.

Please don't hesitate to contact me on (02) 9555 4000 if you have any queries or concerns.

Yours sincerely,

**Dr Alan Williams FSA MAACAI**
**Associate Director | Extent Heritage**

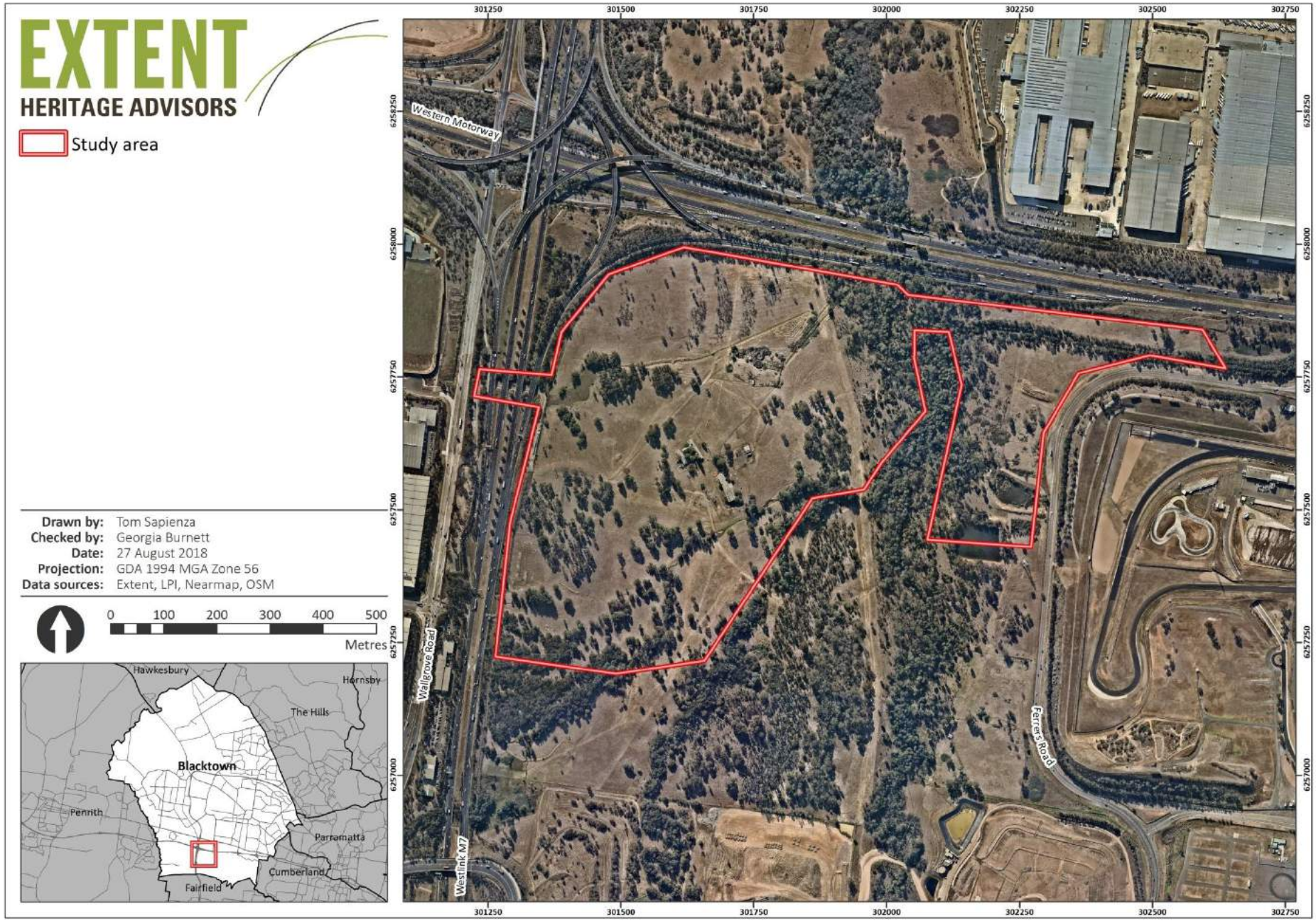


***Figure 1. The study area.***

## Megan Sheppard Brennand

**From:** Caza X <cazadirect@live.com>
**Sent:** Sunday, 18 November 2018 5:12 PM
**To:** Dr Alan Williams
**Subject:** lighthorse interchange business hub

# A1

**Indigenous Services**
Contact: Carolyn
M: 0411650057
E: Cazadirect@live.com
A: 10 Marie Pitt Place, Glenmore Park, NSW 2745
ABN: 20 616 970 327

Hi Alan,
A1 would like to register for consultation and an field work for this project.
I hold cultural knowledge and connection to this area.
Thank you
Carolyn Hickey

**A**boriginal **A**rchaeology **S**ervice
**INC**: 1400988
2/24 Goodwin Street Narrabeen NSW
Mobile: 0456 399 687
Email: aas.info@bigpond.com

Aboriginal Archaeology Service INC.
Darug Traditional Owners

**6th November 2018**

**Extent Heritage Pty Ltd**

**Attention: Alan Williams / Georgia Burnett**

**Registration for consultation for ACHA for Lighthorse Interchange Business Hub, Eastern Creek NSW.**

Aboriginal Archaeology Service is seeking *involvement* in all consultation meetings and fieldwork for the above-mentioned project, as we are registered traditional owners of the area. AAS immediate family has lived in the area from 1897 and retains local and oral history on behalf of its first nation people. We have no objection to our information being provided to the Office of Environment and Heritage and the Local Aboriginal Land Council.

AAS can assist with input that can be incorporated into a written assessment of cultural values of the area. We are also able to provide fit staff to assist with work that may involve physical labour. We can provide our schedule of rates and copies of relevant certificates of currency for business insurances on request.

All correspondence should be emailed to AAS.info@bigpond.com . The nominated contact person is myself and I would like to be involved in any fieldwork.

The area is an important part of our culture and valued by our family.

Yours truly

Andrew Williams

**BUTUCARBIN ABORIGINAL CORPORATION**
PO Box E18, Emerton NSW 2770
28 Pringle Road, Hebersham NSW 2770
Ph: 9832 7167 Fax: 9832 7263
koori@ozemail.com.au
ABN: 83 535 742 276

19th November, 2018

To whom it may concern,

Butucarbin Aboriginal Corporation wishes to register its interest to participate in the Aboriginal community consultation (at all stages) for the proposed development of the Lighthouse Interchange Business Hub. We would prefer that our details are not released to the Deerubbin LALC.

**Background information**
Butucarbin Aboriginal Corporation is a successful not for profit community organisation that was established in 1993 to provide Community Development, Education and Training to organisations and individuals in the Blacktown and Penrith LGA's of Western Sydney. The organisation has won many awards for outstanding service delivery over the past 23 years. The latest being our Executive Officer Jennifer Beale being a finalist in the 2014 NSW Australian of the Year awards.

Due to the changes in funding, for Aboriginal organisations and for Butucarbin to continue the service that they have been providing, the organisation has developed an Aboriginal Cultural Heritage Assessment business. All profits go back into the organisation to provide services to the community. Ultimately, as community workers we believe it is our duty to involve the Aboriginal community of Western Sydney in this work, as it enables the community to learn about cultural heritage and also enables archaeologists to gain different perspectives of Aboriginal Culture.

**Consultation and Field Work**
We recently participated in the Western Sydney Airport (WSA) EIS Aboriginal cultural heritage field program and Mt Gilead cultural test excavation and sieving program. Our workers were on time, professional and participated in all tasks set for them. Our cultural team advisor is Uncle Dave Whitton who is a highly respected and well-known elder throughout NSW. We believe it is of the utmost importance that the cultural heritage skills and knowledge are passed on to our younger Aboriginal generations. Mt Druitt has the largest urban Aboriginal population in Australia and one of the worst unemployment rates.

**Our Team**
Our team is highly skilled and has over ten years' experience in cultural heritage assessment field work. Currently, our team consists of several skilled field officers and two archaeology majors from the University of Sydney, one of which has a completed degree and also worked as a graduate archaeologist. We ensure there is diversity amongst our workers in that we do not discriminate against gender and age. In fact, we strongly encourage the employment of individuals of all ages as it is essential to gain insight into cultural heritage from varying age groups.

In conclusion, we have had a rich contemporary cultural connection to the Western Sydney Area since the NSW Government's 1970 Resettlement Program. A number of significant, contemporary cultural sites, such as community based organisations, have been established in Western Sydney since the early 1970's. We look forward to being involved in the process and appreciate the invitation to do so.

If you require further information, we have attached our flyer and web page www.butucarbin.org.au and we are also on Facebook. We would appreciate the opportunity to tender for any Aboriginal cultural heritage assessments you may have coming up in the future. You can contact Jennifer Beale on 0409924409.

Yours Sincerely,

Jennifer Beale
Executive Officer
November 19th, 2018

Yours Sincerely,

Jennifer Beale
CEO

Barraby Cultural Services
ABN: 65 112 720 796
11 Waterhouse Place
Airds NSW 2560
M: 0423 906 606
E: barrabyculturalservices@gmail.com

5/11/2018

Alan Williams
Extent Heritage Pty Ltd
3/73 Union Street
Pyrmont NSW 2009

**Re: I am writing in regards to Express my Interest to register for consultation -Aboriginal Cultural Heritage Assessment for Lighthorse Interchange Business Hub, Eastern Creek, NSW**

Barraby Cultural Services is an Aboriginal owned company and have actively participated in the Protection of Aboriginal Cultural Heritage throughout the Sydney Basin Regions and South Coast Regions.

I on behalf of Barraby Cultural Services wish to provide you my organisation's registration of interest.

- I have completed all the tasks as directed and meet the physical labour and all the requirements listed below:

  **Transects* **Wet and dry seiving* **White Card*
  **Monitoring* **Science excavation* **Artefacts analysis*

- Barraby Cultural Services wishes to be involved in all aspects of this project such as any upcoming Consultation Meetings, heritage identification, assessment and management and Fieldwork.

- Attached are our Certificates of Currency for your records.

I have great pride in my culture and I acknowledge the lands that I live and work on and I pay my respects to the elders past and present.
I am a active member within the Campbelltown, Liverpool and South Coast Aboriginal Communities.

Should you wish to provide further information, please do not hesitate to contact me via email barrabyculturalservices@gmail.com or on 0423 906 606

Kind Regards

Lee Field

# YULAY CULTURAL SERVICES

**ABN: 20 192 216 560**
**15 Rowley place, Airds NSW 2560**
**Phone: 0411 048 794 Email: yulayculturalservices@gmail.com**

5th November 2018

Alan Williams
Extent Heritage Pty Ltd
3/73 Union Street
Pyrmont NSW 2009

**RE: I am writing in regards to Express my Interest to register for consultation for ACHA - Lighthorse Interchange Business Hub, Eastern Creek, NSW**

Yulay Cultural Services is an Aboriginal owned company and I have been working within Aboriginal Heritage Work for over 8 years.

I on behalf of Yulay Cultural Services wishes to be involved in all aspects of this project,
such as any upcoming Consultation Meetings, heritage identification, assessment and management and Fieldwork.

I have completed all the tasks as directed and meet the physical labour and all the requirements listed below

- Transects
- Science excavation
- Artefacts analysis
- Wet and dry seiving
- Monitoring
- White Card – On request
- Experience in Aboriginal Cultural Heritage in Aboriginal Archaeology
- RMS on the Hunter Expressway ( 15-18 months )
- Various Mines in the Hunter Region
- Local Sydney Basin - Western Sydney / South Western Sydney Regions
- Mt Gillard Project
- Western Sydney Airport
- RMS – M12
- Casual Sites Officer – Tharawal Aboriginal Land Council

I have great pride in my culture and I acknowledge the lands that I live and work on and I pay my respects to the elders past and present and I am a active member within the Campbelltown and Blacktown Aboriginal Communities.

If you require any further information regarding this letter please don't hesitate in contacting me via email or phone number above, or the following references.

Name: Andrew Costello
Company: SNR Archaeologist Jacob Pty Ltd
Phone: 0458 325 345

Name: Vanessa Hardy
Company: Archaeologis
Virtus Heritage Pty Ltd
Phone: 02 6676 4354

Kind Regards

Arika Jalomaki

5 November 2018

Extent -Heritage Advisors

Dear Alan

Re: Aboriginal Registration for Community Consultation—Lighthorse Interchange Business Hub Eastern Creek Industrial Estate

We wish to register our expression of interest on all levels. Our corporation Corroboree Aboriginal Corporation holds cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) in the Eastern Creek region, and surrounding areas. We have lived in and around the area, and as Aboriginal people we therefore connect thru the land, thru our history, thru our heritage our families our stories. Please register our interest in the process of community consultation regarding the proposed activity. In line with OEH's consultation guidelines (Section 3.3.1), as we are Aboriginal people who can provide information for 'decision making'. We recognise our responsibilities and obligation to protect and conserve our traditional culture and heritage and we care for our traditional lands. We continue to maintain a deep respect for our ancestral belief system, traditions and customs. We have the trust of our community, the knowledge and the understanding. We have consulted with numerous archaeologists on many a project. We have a proven knowledge of identifying the significant artefacts to enable preservation of our culture and heritage.

We hereby register for all aspects of consultation, etc. in writing , please provide in writing. This statement is clarifying that we wish to be involved in future Aboriginal community consultation and that we shall assist with the assessment of cultural significance. We can assist in all aspects i.e. Identifying artefacts, pits, digging, sifting, carting, etc. We address all the OEH's requirements for registration as stated above. We have all the necessary insurances and safety gear.

We register an interest in the project and request our details not be forwarded to OEH and the Local Aboriginal Land Council (LALC). We specify that we do not want our details released or published. We look forward to your earliest response to acknowledge receipt of our interest as stakeholders in all aspects

Yours sincerely

Marilyn Carroll Johnson

Environment & Heritage

# Darug Aboriginal Land Care

**(Uncle Des Dyer)**

**18a Perigee Close**
**Doonside 2767NSW**
**ABN 71 301 006 047**

Alan Williams
Archaeologist
Extent Heritage Advisors
3/73 Union Street
Pyrmont 2009
NSW

Re: Business Hub Eastern Creek.

Dear Alan,

Darug Aboriginal Land care / Uncle Des Dyer. Have no objections to the planned development.

The Darug Aboriginal Land care would like to **register** for this project and be consulted and take part in survey and test excavations. This project falls within the Darug land.

**We are Traditional Owner**, our members have lived on Darug land for most of their lives and worked in the area. We have responsibility to look after the plants, creeks and rivers on Darug land. We have been doing Cultural Heritage Assessments for over 20 year and still do today.

Our members are family and have lived in the area, we consult with them by Email and phone.
We would like to take part in any field survey and test excavations. Attend any meetings.

**We have over 20years experience and all our works have White cards**
**Our preferred method of communication is by Email.**

**Our Site Officer Ricky Fields**

**Mobile 0402942572.**
**Email  fields.r@outlook.com**

**For all Survey test excavation and salvage works please contact him for all work matters.**
**please contact him**

We agree and understand you can give our contacted details to others.

The area is an important part of our culture and valued by the community as most of the people that lived there were Darug. We can provide cultural knowledge during the survey.
**Our preferred option to receive the project information is by E-mail.**

Thank you
Kind regards
Des Dyer. Manager.
Darug Elder
Email  desmond4552@hotmail.com
Mobile 0408360814

# DARUG BOOROOBEROGAL ELDERS ABORIGINAL CORPORATION

ICN: 8890 ABN: 76 170 262 247
E-mail: boorooberongal@outlook.com
Address: PO Box 14 Doonside NSW 2767
Phone: 0415 663 763

6/11/2018

TO**: Dr Alan Williams**
Extent Heritage Advisors

**RE: Lighthorse Interchange Business Hub Eastern Creek NSW**

Notification and Registration of ALL Darug Aboriginal Interests

Please be advice that Darug Boorooberongal Elders Aboriginal Corporation (DBEAC) is seeking to be involved in any and all consultation meetings and field work.

This office specialises in Darug Aboriginal and community consultation. The membership comprises of traditional owners from the area in question who retain strong story, song lines, oral history and continued contact. We have a continued spiritual connection to Darug nation territories. We would also like to state, that we do not except or support any person or organisation that are NOT from the DARUG Nation to have input on the project area.

Please also be advised that this Aboriginal organisation does not do volunteer work or attend unpaid meetings. I hope that you advise your client of this, so that, this group will not be discriminated against and refused paid field work.

We will be delighted to discuss this project with you in the near future.
Please do not hesitate to send all correspondence should be emailed to our email boorooberongal@outlook.com.

**Yours faithfully**

**Uncle**
**Gordon Workman**
**Darug Elder**

**Sites Officer**

DARUG LAND
OBSERVATIONS PTY LTD
ABN 27 602 765 453

EMAIL: DARUGLANDOBSERVATIONS@GMAIL.COM
PO BOX 173 ULLADULLA NSW 2539
MOBILE: 0413 687 279

7th November, 2018

Alan Williams
Extent Heritage Pty Ltd
3/73 Union Street
PYRMONT NSW 2009

**Notification and Registration of ALL Aboriginal Interests**

RE: LIGHTHORSE INTERCHANGE BUSINESS HUB – LOT 5 DP 804051 & LOT 10 DP 1061237; PART OF 165 WALLGROVE ROAD & PART OF 475 FERRERS ROAD, EASTERN CREEK
Aboriginal Cultural Heritage Assessment

Dear Alan,

Please be advised that Darug Land Observations Pty Ltd is seeking to be involved in any and all consultation meetings and fieldwork.

This office specialises in Aboriginal and community consultations, and has a membership that comprises of Traditional owners from the area in question. Those retain strong story, song lines, oral history and continued contact.

We would also like to state that we do not accept or support any person or organisation that are NOT from the DARUG Nation that comments regarding the said area.

Please also be advised that this Aboriginal organisation does not do volunteer work or attend unpaid meetings. I hope that you advise your client of this so that, 'This Group', will not be discriminated against and refused paid fieldwork. DLO's rate is $440 half day (less than 4 hours) and $880 per day (flat rate), including GST.

All correspondence should be emailed to: daruglandobservations@gmail.com and any further consultation during this project can be directed to Anna on mobile 0413 687 279.

Yours sincerely,

Anna O'Hara
Darug Land Observations Pty Ltd

Jamie Workman

DARUG CUSTODIAN
ABORIGINAL
CORPORATION

PO BOX 81 WINDSOR 2756
PHONE: 0245775181 FAX: 0245775098
MOBILE: 0415770163 Leanne Watson
0414962766 Justine Coplin
EMAIL: mulgokiwi@bigpond.com / justinecoplin@optusnet.com.au

**Attention** Extent

**Subject**: Lighthorse Interchange Business Hub Heritage Study

Dear Georgia

Our group is a non- profit organisation that has been active for over forty years in Western Sydney, we are a Darug community group with over three hundred members. The main aim in our constitution is the care of Darug sites, places, wildlife and to promote our culture and provide education on the Darug history.

The Eastern Creek area is an area that our group has a vast knowledge of, we have worked and lived in for many years, this area is significant to the Darug people due to the connection of sites and the continued occupation. Our group has been involved in all previous assessments and works in this area as a traditional owner Darug group for the past 40 plus years.

Therefore we would like to register our interest for full consultation and involvement in the above project area.

Please contact us with all further enquiries on the above contacts.

Regards

Justine Coplin

# Archaeological Project - Expression of Interest

Darug Research
& Information Centre
71 Seven Hills Rd South,
Seven Hills, NSW, 2147
Ph (02) 9622-4081

Darug Tribal Aboriginal Corporation
ICN: 2734
PO Box 441
Blacktown, NSW, 2148
Ph | 02 9622 4081
Email: darug_tribal@live.com.au

07/11/2018

Alan Williams
Extent Heritage
Unit 3/73 Union Street
Pyrmont NSW
awilliams@extent.com.au

**RE – Aboriginal Cultural Heritage Assessment for Lighthorse Interchange Business Hub, Eastern Creek, NSW - Notification of Project Proposal.**

Dear Alan,

On behalf of the Board of Darug Tribal Aboriginal Corporation, I would like to thank you for the invitation to participate in the above-mentioned project.

The Darug Tribal Aboriginal Corporation, on behalf the Board and its Members, do hereby request to be included in all activities regarding this project, including any future correspondence there from arising.

Correspondence arising should be addressed to the Archaeological Coordinator, Mr. John Reilly and may be provided by post to the above PO Box address, or via e-mail to the above e-mail address. John may be contacted directly via Mobile at: (04) 0233-4123 or a message may be left on the answering machine in the DTAC Office via (02) 9622-4081.

On site consulting, and other services can be provided as required. The standard rate for such services is $100 excluding GST per hour ($110 per hour including GST).

The Corporation is a Not for Profit entity, and as such, all net income, following payment of wages to archaeological workers, derived from our participation in any project, goes toward supporting our Members, being the Traditional Owners of Darug land, the protection and preservation of Darug places and sites, the education of the wider community about the Darug people, their history, heritage and culture, and the functioning of the Corporation and its' services.

Sincerely,

Dirk Schmitt
Accountant to Darug Tribal Aboriginal Corporation

## Megan Sheppard Brennand

**From:** lilly carroll <didgengunawalclan@yahoo.com.au>
**Sent:** Friday, 2 November 2018 3:48 PM
**To:** Georgia Burnett
**Subject:** Re: Lighthorse Interchange Business Hub Heritage Study - Invitation to Register

Hi Georgia,

DNC would like to register an interest into Lighthorse Interchangechange business Project,

Kind regards
Paul Boyd & Lilly Carr
Directors DNC

Sent from Yahoo Mail for iPhone

On Friday, November 2, 2018, 2:21 pm, Georgia Burnett <gburnett@extent.com.au> wrote:

Dear Lillie and Paul,

On behalf of Western Sydney Parklands Trust, Extent is beginning work on an Aboriginal cultural heritage assessment as part of a State Significant Development of the Lighthorse Interchange Business Hub. The hub encompasses part of 165 Wallgrove Road, and part of 475 Ferrers Road, Eastern Creek, NSW (Lot 5 DP804051; Lot 10 DP 1061237). As part of the process, we are following the OEH community consultation requirements.

At this stage, I am enquiring to see if you would like to be involved in the project. Please see the attached letter for more detail. I would appreciate a response by COB Monday **19 November 2018**.

The following are questions and notes that would help us greatly with project management and communication, so if you are able to answer any of them or provide the information in your response, that would be very much appreciated!

COMMUNICATION INFORMATION

To assist me with communicating project information effectively could you please provide the following information:

- A clear identification of the organisation registering an interest in the project.
- Your preferred method of communication with Extent and the proponent during consultation for this project, including a nominated contact person and contact details.

- Comment on the level of consultation and/or project involvement you require. Do you wish to attend any meetings? Do you wish to be involved in any fieldwork? Do you simply want a copy of the final report?
- If you wish to be involved in any meetings or fieldwork, please ensure we have current copies of your public liability, workers compensation and professional indemnity (if available) insurances as soon as possible.

PASSING ON YOUR DETAILS TO OEH AND DEERRUBBIN LALC

As part of the consultation process we are obliged to provide the contact details of organisations and individuals who register an interest to the Office of Environment and Heritage and Deerrubbin Local Aboriginal Land Council, unless instructed otherwise. Please advise us if you do not wish this to occur.

ADDITIONAL QUESTIONS TO HELP US

Please also consider the following questions, but note that these issues can also be discussed over the course of the project:

- Guidance on the protocols, sensitivity, use and/or distribution of any cultural information that you provide to Extent and the proponent as part of this project.
- Identification of any Aboriginal objects or places of cultural significance that you are aware of within or in the vicinity of the proposed activity area.
- Please note that registration of interest will not necessarily lead to participation in fieldwork. Participants will be engaged by the client on the basis of experience, cultural knowledge, appropriate insurances and our personnel requirements.

If you have any queries or concerns, please don't hesitate to contact me on (02) 9555 4000.

Kind regards,

Georgia

**Georgia Burnett**
Research Assistant
T 02 9555 4000
gburnett@extent.com.au
extent.com.au
Connect with us on:

Kamilaroi Yankuntjatjara Working Group
Phillip Khan - Principal
78 Forbes Street, Emu Plains NSW 2750
Mobile 043 4545 982 Emil philipkhan.acn@live.com.au

Extent Heritage
Att: Allan Williams
Unit 3/73 Union Street
Pyrmont NSW 2009

Dear Allan, 9th November 2018

Thankyou for your ad in the Daily Telegraph to be involved in Cultural Heritage Assessment at Lighthorse Interchange at Eastern Creek NSW & that you are inviting Aboriginal organisations to register, if they wish to be involved in the community consultation process.

As a Senior Aboriginal person for the past 40yrs, i actively participate in the Protection of the Aboriginal Cultural Heritage throughout the Sydney Basin , and particularly throughout Western Sydney, on behalf of Kamilaroi Yankuntjatjara Working Group, i wish to provide to you my organisations' registration of interest.

**Information in my registration of Interest:**

I am a Senior Aboriginal and Principal of the Kamilaroi Yankuntjatjara Working Group, I prefer communicating by, Mail, telephone or email
My contact details are:
Phillip Khan - Principal
78 Forbes Street, Emu Plains NSW 2750
Mobile 043 4545 982 Emil philipkhan.acn@live.com.au
alternatively you can also discuss any matters with Stefeanie via email philipkhan.acn@live.com.au

I wish to be involved and participate in all levels of consultation/project involvement. I wish to attend all meetings, and, participate in available field work; and would receive a copy of the report.

A copy of Kamilaroi Yankuntjatjara Working Group's - GIO Public Liability Insurance & GIO Workers Compensation Certificate is attached.

Should you wish me to provide further information, please do not hesitate to contact me on 0434545982.

Yours Sincerely
Pollowan Phillip Khan

## Megan Sheppard Brennand

**From:** Vicki Slater <Vicki.slater@hotmail.com>
**Sent:** Tuesday, 20 November 2018 4:05 PM
**To:** Georgia Burnett
**Subject:** Re: EOI -Lighthorse Interchange Business Hub Heritage Study - Invitation to Register

Dear Georgia

Kawul Cultural Services / Wurrumay Consultants would like to register an interest for the above project.

Over 20 years Experienced site officers with Connection to country Black Kitty Colebee from C1800. Hunter Valley Mining Companies and Sydney Basins.

We live within the project area. ( Don't live out of the Sydney Areas )
Current Insurances
Dedicated to the protection of our culture.

Kind Regards

Vicky Slater Manager KCS
Kerry Slater Behalf of Wurrumay Consultants

---

**From:** Georgia Burnett <gburnett@extent.com.au>
**Sent:** Friday, 2 November 2018 3:20 AM
**To:** vicki.slater@hotmail.com
**Subject:** Lighthorse Interchange Business Hub Heritage Study - Invitation to Register

Dear Vicky,

On behalf of Western Sydney Parklands Trust, Extent is beginning work on an Aboriginal cultural heritage assessment as part of a State Significant Development of the Lighthorse Interchange Business Hub. The hub encompasses part of 165 Wallgrove Road, and part of 475 Ferrers Road, Eastern Creek, NSW (Lot 5 DP804051; Lot 10 DP 1061237). As part of the process, we are following the OEH community consultation requirements.

At this stage, I am enquiring to see if you would like to be involved in the project. Please see the attached letter for more detail. I would appreciate a response by COB Monday **19 November 2018**.

The following are questions and notes that would help us greatly with project management and communication, so if you are able to answer any of them or provide the information in your response, that would be very much appreciated!

<u>COMMUNICATION INFORMATION</u>

To assist me with communicating project information effectively could you please provide the following information:

- A clear identification of the organisation registering an interest in the project.
- Your preferred method of communication with Extent and the proponent during consultation for this project, including a nominated contact person and contact details.

- Comment on the level of consultation and/or project involvement you require. Do you wish to attend any meetings? Do you wish to be involved in any fieldwork? Do you simply want a copy of the final report?
- If you wish to be involved in any meetings or fieldwork, please ensure we have current copies of your public liability, workers compensation and professional indemnity (if available) insurances as soon as possible.

PASSING ON YOUR DETAILS TO OEH AND DEERRUBBIN LALC

As part of the consultation process we are obliged to provide the contact details of organisations and individuals who register an interest to the Office of Environment and Heritage and Deerrubbin Local Aboriginal Land Council, unless instructed otherwise. Please advise us if you do not wish this to occur.

ADDITIONAL QUESTIONS TO HELP US

Please also consider the following questions, but note that these issues can also be discussed over the course of the project:

- Guidance on the protocols, sensitivity, use and/or distribution of any cultural information that you provide to Extent and the proponent as part of this project.
- Identification of any Aboriginal objects or places of cultural significance that you are aware of within or in the vicinity of the proposed activity area.
- Please note that registration of interest will not necessarily lead to participation in fieldwork. Participants will be engaged by the client on the basis of experience, cultural knowledge, appropriate insurances and our personnel requirements.

If you have any queries or concerns, please don't hesitate to contact me on (02) 9555 4000.

Kind regards,
Georgia

**Georgia Burnett**
Research Assistant
T 02 9555 4000
gburnett@extent.com.au
extent.com.au
Connect with us on:

Virus-free. www.avg.com

## Megan Sheppard Brennand

**From:** kerrie slater <wurrumay@hotmail.com>
**Sent:** Monday, 12 November 2018 9:07 AM
**To:** Georgia Burnett
**Subject:** Re: Lighthorse Interchange Business Hub Heritage Study - Invitation to Register

Thanks Georgia will be submitting an interest.

Kerry

---

**From:** Georgia Burnett <gburnett@extent.com.au>
**Sent:** Friday, 2 November 2018 2:21 PM
**To:** wurrumay@hotmail.com
**Subject:** Lighthorse Interchange Business Hub Heritage Study - Invitation to Register

Dear Kerrie,

On behalf of Western Sydney Parklands Trust, Extent is beginning work on an Aboriginal cultural heritage assessment as part of a State Significant Development of the Lighthorse Interchange Business Hub. The hub encompasses part of 165 Wallgrove Road, and part of 475 Ferrers Road, Eastern Creek, NSW (Lot 5 DP804051; Lot 10 DP 1061237). As part of the process, we are following the OEH community consultation requirements.

At this stage, I am enquiring to see if you would like to be involved in the project. Please see the attached letter for more detail. I would appreciate a response by COB Monday **19 November 2018**.

The following are questions and notes that would help us greatly with project management and communication, so if you are able to answer any of them or provide the information in your response, that would be very much appreciated!

COMMUNICATION INFORMATION

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- If you wish to be involved in any meetings or fieldwork, please ensure we have current copies of your public liability, workers compensation and professional indemnity (if available) insurances as soon as possible.

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- Please note that registration of interest will not necessarily lead to participation in fieldwork. Participants will be engaged by the client on the basis of experience, cultural knowledge, appropriate insurances and our personnel requirements.

If you have any queries or concerns, please don't hesitate to contact me on (02) 9555 4000.

Kind regards,
Georgia

**Georgia Burnett**
Research Assistant
T 02 9555 4000
gburnett@extent.com.au
extent.com.au
Connect with us on:

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## Megan Sheppard Brennand

**From:** Muragadi <muragadi@yahoo.com.au>
**Sent:** Tuesday, 20 November 2018 11:38 AM
**To:** Georgia Burnett
**Subject:** RE: Lighthorse Interchange Business Hub Heritage Study - Invitation to Register
**Attachments:** muragaid workers compensation insurance 2019.pdf; muragadi public liability 2019pdf.pdf

Hi Georgia,
We would like to be involved in this project, I don't understand why our address is wrong, I have just spoken with OEH and its 5 Hession road on their list. We would like to be involved in all aspects of the project i.e meetings, fieldwork etc
Kind regards
Jesse

---

**From:** Georgia Burnett [mailto:gburnett@extent.com.au]
**Sent:** Wednesday, 14 November 2018 10:42 AM
**To:** muragadi@yahoo.com.au
**Subject:** Lighthorse Interchange Business Hub Heritage Study - Invitation to Register

Dear Jessie,

I tried to send you this invitation to register to the PO Box listed by on the OEH registered, and it bounced as undeliverable. Please let me know if you need a hard copy of the letter sent again to updated address. Otherwise, please find below further information on the project, as well as the attached letter:

On behalf of Western Sydney Parklands Trust, Extent is beginning work on an Aboriginal cultural heritage assessment as part of a State Significant Development of the Lighthorse Interchange Business Hub. The hub encompasses part of 165 Wallgrove Road, and part of 475 Ferrers Road, Eastern Creek, NSW (Lot 5 DP804051; Lot 10 DP 1061237). As part of the process, we are following the OEH community consultation requirements.

At this stage, I am enquiring to see if you would like to be involved in the project. Please see the attached letter for more detail. I would appreciate a response by COB Monday **19 November 2018**.

The following are questions and notes that would help us greatly with project management and communication, so if you are able to answer any of them or provide the information in your response, that would be very much appreciated!

COMMUNICATION INFORMATION

To assist me with communicating project information effectively could you please provide the following information:

- A clear identification of the organisation registering an interest in the project.
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- Comment on the level of consultation and/or project involvement you require. Do you wish to attend any meetings? Do you wish to be involved in any fieldwork? Do you simply want a copy of the final report?
- If you wish to be involved in any meetings or fieldwork, please ensure we have current copies of your public liability, workers compensation and professional indemnity (if available) insurances as soon as possible.

PASSING ON YOUR DETAILS TO OEH AND DEERRUBBIN LALC

As part of the consultation process we are obliged to provide the contact details of organisations and individuals who register an interest to the Office of Environment and Heritage and Deerrubbin Local Aboriginal Land Council, unless instructed otherwise. Please advise us if you do not wish this to occur.

ADDITIONAL QUESTIONS TO HELP US

Please also consider the following questions, but note that these issues can also be discussed over the course of the project:

- Guidance on the protocols, sensitivity, use and/or distribution of any cultural information that you provide to Extent and the proponent as part of this project.
- Identification of any Aboriginal objects or places of cultural significance that you are aware of within or in the vicinity of the proposed activity area.
- Please note that registration of interest will not necessarily lead to participation in fieldwork. Participants will be engaged by the client on the basis of experience, cultural knowledge, appropriate insurances and our personnel requirements.

If you have any queries or concerns, please don't hesitate to contact me on (02) 9555 4000.

Kind regards,
Georgia

**Georgia Burnett**
Research Assistant
T 02 9555 4000
gburnett@extent.com.au
extent.com.au
Connect with us on:

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HERITAGE ADVISORS
TO AUSTRALIA AND
THE ASIA PACIFIC
SYDNEY | MELBOURNE | BRISBANE | PERTH

## Megan Sheppard Brennand

**From:** Darleen Johnson <darleenj@y7mail.com>
**Sent:** Thursday, 13 December 2018 3:10 PM
**To:** Georgia Burnett
**Subject:** Re: Lighthorse Business Hub - Invitation to register

Hi Georgia
Thank u very much can u please register us for this project
Thanks
Darleen

Sent from my iPhone

On 13 Dec 2018, at 9:38 am, Georgia Burnett <gburnett@extent.com.au> wrote:

> Hi Darleene,
>
> I am emailing you regarding a project which is currently ongoing – we originally sent the documentation to your email address, but Alistair has mentioned that that email address has had problems recently, and provided me with your personal email address. In case you hadn't received this invitation to register for this project, I thought I'd send the notification along in case.
>
> If you wish to register, please let me know.
>
> Kind regards,
> Georgia
>
> **Georgia Burnett**
> Research Assistant
> T 02 9555 4000
> gburnett@extent.com.au
> extent.com.au
> Connect with us on:
>
> <FB_423c721a-4cd0-481a-91f8-780e9f111549.png> <LinkedIn_ebc4f2a1-55e1-4efe-8f0e-103053dbb87b.png>
> <christmasgreetingsemail(005)_cfce7c99-c4df-47ae-87d6-6d010235d6c1.jpg>
>
> <Murra Bidgee Mullangari AC_Notification - Lighthorse Interchange Business Hub.pdf>

## Megan Sheppard Brennand

**From:** Phillip Boney <waarlan12@outlook.com>
**Sent:** Friday, 2 November 2018 3:02 PM
**To:** Georgia Burnett
**Subject:** Re: Lighthorse Interchange Business Hub Heritage Study - Invitation to Register
**Attachments:** OA26204109_CONFIRMATION_1_1.PDF

Hi Georgia,

My name is Phil Boney. My RAP group name is Wailwan Aboriginal Group, my contact details are as followed:

Email: Waarlan12@outlook.com
Mobile: 0436483210

I would like to be involved entirely on all bases of this project: fieldwork/excavation/ meetings and so forth. Also I have attended my public liability and workers compensation insurances. With respects if successful I look forward to working with you on this project. Thankfully yours, Phil Boney

Get Outlook for iOS

---

**From:** Georgia Burnett <gburnett@extent.com.au>
**Sent:** Friday, November 2, 2018 2:20:21 PM
**To:** waarlan12@outlook.com
**Subject:** Lighthorse Interchange Business Hub Heritage Study - Invitation to Register

Dear Philip,

On behalf of Western Sydney Parklands Trust, Extent is beginning work on an Aboriginal cultural heritage assessment as part of a State Significant Development of the Lighthorse Interchange Business Hub. The hub encompasses part of 165 Wallgrove Road, and part of 475 Ferrers Road, Eastern Creek, NSW (Lot 5 DP804051; Lot 10 DP 1061237). As part of the process, we are following the OEH community consultation requirements.

At this stage, I am enquiring to see if you would like to be involved in the project. Please see the attached letter for more detail. I would appreciate a response by COB Monday **19 November 2018**.

The following are questions and notes that would help us greatly with project management and communication, so if you are able to answer any of them or provide the information in your response, that would be very much appreciated!

COMMUNICATION INFORMATION

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PASSING ON YOUR DETAILS TO OEH AND DEERRUBBIN LALC

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ADDITIONAL QUESTIONS TO HELP US

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- Please note that registration of interest will not necessarily lead to participation in fieldwork. Participants will be engaged by the client on the basis of experience, cultural knowledge, appropriate insurances and our personnel requirements.

If you have any queries or concerns, please don't hesitate to contact me on (02) 9555 4000.

Kind regards,
Georgia

**Georgia Burnett**
Research Assistant
T 02 9555 4000
gburnett@extent.com.au
extent.com.au
Connect with us on:

EXTENT
HERITAGE ADVISORS
TO AUSTRALIA AND
THE ASIA PACIFIC
SYDNEY | MELBOURNE | BRISBANE | PERTH

## Megan Sheppard Brennand

**From:** WIDESCOPE . <widescope.group@live.com>
**Sent:** Wednesday, 7 November 2018 11:16 AM
**To:** Dr Alan Williams
**Subject:** EOI: Registration Aboriginal Cultural Heritage Assessment Lighthorse Interchange Business Hub Eastern Creek

Hi Alan,

Could you please register my interest in the Aboriginal Cultural heritage assessment for the Lighthorse Interchange Hub Eastern Creek, NSW

I am a recognised indigenous cultural knowledge holder. I hold knowledge relevant in determining the significance of Aboriginal objects and places. I hold a cultural connection to Eastern Creek and surrounding areas.

My preferred Method of contact is Via Email: widescope.group@live.com or Mob 0425230693
Admin 0425232056

My level of involvement: I would like to attend Community Consultation meetings and to be considered for field survey works.

Regards
Steven Hickey

**Yurrandaali Cultural Services**
ABN: 52 618 794 088
11 Waterhouse Place
Airds NSW 2560
T: 0457 546 643
E: yurrandaali_cs@hotmail.com

5/11/2018

Alan Williams
Extent Heritage Pty Ltd
3/73 Union Street
Pyrmont NSW 2009

**Re: I am writing in regards to Express my Interest to register for consultation - Aboriginal Cultural Heritage Assessment for Lighthorse Interchange Business Hub, Eastern Creek, NSW**

Yurrandaali Cultural Services is an Aboriginal owned company and we have been working with Aboriginal Cultural Heritage Work for over 10 years throughout the South Coast and Sydney Basin Regions.

Yurrandaali Cultural Services would like to express our registration of interest for this project.

1. Yurrandaali Cultural Services wishes to be involved in all aspects of this project such as any upcoming Consultation Meetings, heritage identification, assessment and management and Fieldwork.

2. Attached are our Certificates of Curreny for your records.

3. I have completed all the tasks as directed and meet the physical labour and all the requirements listed below

- Transects
- Science excavation
- Artefacts analysis
- Wet and dry seiving
- Monitoring
- White Card –
- Experience in Aboriginal Cultural Heritage in Aboriginal Archaeology

I have great pride in my culture and I acknowledge the lands that I live and work on and I pay my respects to the elders past and present.
I am a active member within the Campbelltown & South Coast Aboriginal Communities.

Kind Regards

Bo Field

EXTENT

HERITAGE ADVISORS
TO AUSTRALIA AND
THE ASIA PACIFIC
Incorporating AHMS and Futurepast

8 January 2019

**Office of Environment and Heritage**

PO Box 644
Parramatta NSW 2124

Attention: **Susan Harrison** (Senior Team Leader Planning Greater Sydney)

## Aboriginal Cultural Heritage Assessment Report for the Lighthorse Interchange Business Hub: Registered Aboriginal Parties

Dear Susan,

On behalf of Western Sydney Parklands Trust, Extent Heritage is preparing an Aboriginal Cultural Heritage Assessment Report for the Lighthorse Interchange Business Hub at 165 Wallgrove Road and 475 Ferrers Road, Eastern Creek, NSW. While the project is being assessed as a State Significant Development (SSD 9667), the project SEARs require that an Aboriginal Cultural Heritage Assessment Report (ACHAR) be prepared in accordance with the Office of Environment and Heritage guidelines. As part of the ACHAR, we are following the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010).

I am writing to provide you with a list of the Registered Aboriginal Parties (RAPs) for the project, in accordance with Section 4.1.6 of the requirements:

1. Deerubbin Local Aboriginal Land Council
2. A1 Indigenous Services
3. Aboriginal Archaeology Service
4. Barking Owl Aboriginal Corporation
5. Barraby Cultural Services
6. Butucarbin Aboriginal Corporation
7. Corroboree Aboriginal Corporation
8. Darug Aboriginal Land Care
9. Darug Boorooberongal Elders Aboriginal Corporation
10. Darug Custodian Aboriginal Coporation
11. Darug Land Observations
12. Darug Tribal Aboriginal Corporation



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info@extent.com.au
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3/73 Union Street
Pyrmont
P 02 9555 4000

MELBOURNE
13/240 Sydney Road
Coburg
P 03 9388 0622

BRISBANE
Level 7, 757 Ann Street
Fortitude Valley
P 07 3667 8881

PERTH
312 Onslow Road
Shenton Park
P 08 9381 5206

13. Didge Ngunawal Clan
14. Kamilaroi-Yankuntjatjara Working Group
15. Kawaul Cultural Services
16. Muragadi Heritage Indigenous Corporation
17. Wailwan Aboriginal Group
18. Widescope Indigenous Group
19. Wurrumay Consultancy
20. Yarrandaali Cultural Services
21. Yulay Cultural Services

Enclosed also are a copy of the notification that was distributed to potential stakeholders, and a copy of the advertisement that was published in *The Blacktown Advocate*.

Please don't hesitate to contact me on (02) 9555 4000 if you have any queries or concerns.

Yours sincerely,

**Laressa Barry**
**Heritage Advisor | Extent Heritage**

EXTENT HERITAGE ADVISORS

2 November 2018

**Attn: Amanda Hickey**
**Amanda Hickey Cultural Services**
41 Dempsey Street
Emu Heights NSW 2750

**Re: Aboriginal Cultural Heritage Assessment for Lighthorse Interchange Business Hub, Eastern Creek, NSW – Notification of Project Proposal.**

Dear Amanda,

In accordance with the NSW Office of Environment and Heritage's (OEH) (formerly NSW Department of Environment, Climate Change and Water (DECCW)) *Aboriginal Cultural Heritage Consultation Requirements for Proponents, 2010*, I am writing to notify you that we have been engaged by Western Sydney Parklands Trust (the proponent) to undertake an Aboriginal Cultural Heritage Assessment (ACHAR) as part of a State Significant Development of the Lighthorse Interchange Business Hub. The hub encompasses part of 165 Wallgrove Road, and part of 475 Ferrers Road, Eastern Creek, NSW (Lot 5 DP804051; Lot 10 DP 1061237) (**Figure 1**).

The land in question is within the Blacktown Local Government Area, and the proposed development will involve subdivision and then re-development of the land. Specific design and development activities are yet to be determined, but would likely include bulk earthworks, estate stormwater, lead-in services, environmental works, access, estate landscaping and conceptual built form.

The proponent's contact details are:

Mr Luke Wilson, C/- Western Sydney Parklands Trust
PO Box 3064
Parramatta NSW 2124
(T) 02 9895 7500
(E) Luke.Wilson@wspt.nsw.gov.au

Extent will be undertaking the assessment in accordance with the relevant OEH *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* guidelines. An important part of the assessment will be Aboriginal community consultation that aims to identify the Aboriginal cultural heritage within the study area, including the cultural values and places of importance to the Aboriginal community. The purpose of the consultation is to assist the proponent in preparing the ACHA for the study area, and if necessary to assist OEH in considering the assessment and any Aboriginal Heritage Impact Permit (AHIP) application.

We are inviting registrations from Aboriginal individuals and/or organisations who may hold relevant cultural knowledge for determining the Aboriginal cultural heritage of the area, and who wish to be involved in the community consultation process. If you or your organisation is interested in being part of the consultation process, please provide a registration of interest to Alan Williams at the Sydney address below or by email to awilliams@extent.com.au

Registrations are requested by **19 November 2018**.

Please don't hesitate to contact me on (02) 9555 4000 if you have any queries or concerns.

Yours sincerely,

**Dr Alan Williams FSA MAACAI**
**Associate Director | Extent Heritage**

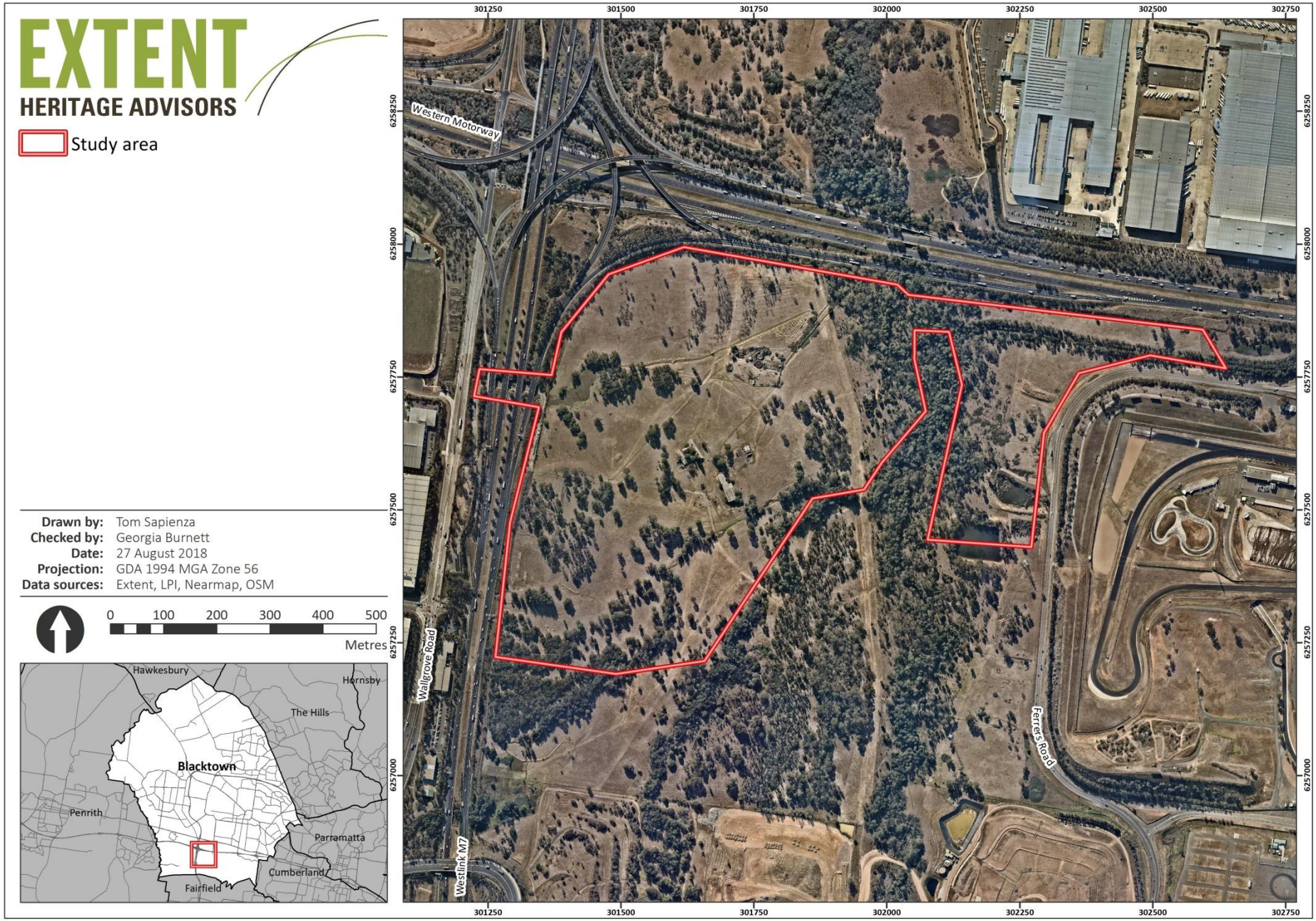


***Figure 1. The study area.***

EXTENT

HERITAGE ADVISORS
TO AUSTRALIA AND
THE ASIA PACIFIC
Incorporating AHMS and Futurepast

8 January 2019

**Deerubbin Local Aboriginal Land Council**

Level 1, Suite 3, 291-295 High Street
Penrith NSW 2750

Attention: **Steven Randall**

## Aboriginal Cultural Heritage Assessment Report for the Lighthorse Interchange Business Hub: Registered Aboriginal Parties

Dear Steven,

On behalf of Western Sydney Parklands Trust, Extent Heritage is preparing an Aboriginal Cultural Heritage Assessment Report for the Lighthorse Interchange Business Hub at 165 Wallgrove Road and 475 Ferrers Road, Eastern Creek, NSW. While the project is being assessed as a State Significant Development (SSD 9667), the project SEARs require that an Aboriginal Cultural Heritage Assessment Report (ACHAR) be prepared in accordance with the Office of Environment and Heritage guidelines. As part of the ACHAR, we are following the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010).

I am writing to provide you with a list of the Registered Aboriginal Parties (RAPs) for the project, in accordance with Section 4.1.6 of the requirements:

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3. Aboriginal Archaeology Service
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5. Barraby Cultural Services
6. Butucarbin Aboriginal Corporation
7. Corroboree Aboriginal Corporation
8. Darug Aboriginal Land Care
9. Darug Boorooberongal Elders Aboriginal Corporation
10. Darug Custodian Aboriginal Coporation
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12. Darug Tribal Aboriginal Corporation



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312 Onslow Road
Shenton Park
P 08 9381 5206

13. Didge Ngunawal Clan
14. Kamilaroi-Yankuntjatjara Working Group
15. Kawaul Cultural Services
16. Muragadi Heritage Indigenous Corporation
17. Wailwan Aboriginal Group
18. Widescope Indigenous Group
19. Wurrumay Consultancy
20. Yarrandaali Cultural Services
21. Yulay Cultural Services

Enclosed also are a copy of the notification that was distributed to potential stakeholders, and a copy of the advertisement that was published in *The Blacktown Advocate*.

Please don't hesitate to contact me on (02) 9555 4000 if you have any queries or concerns.

Yours sincerely,

**Laressa Barry**
**Heritage Advisor | Extent Heritage**

# Appendix 2-6. Notification Documentation – Newspaper Advert

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St Marys 9673 1528

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web: royalasians.com.au

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# NOTICE BOARD

## General Notices

**Notice of Aboriginal Cultural Heritage Assessment and Invitation for Registrations of Interest - Lighthorse Interchange Business Hub, Eastern Creek, NSW.**

Western Sydney Parklands Trust is proposing to undertake an Aboriginal Cultural Heritage Assessment as part of a State Significant Development Application for the proposed Lighthorse Interchange Business Hub (Part Lot 5 DP804051; Part Lot 10 DP 1061237), Eastern Creek, NSW. Contact details for the proponent are: Mr Luke Wilson, C/- Western Sydney Parklands Trust, PO Box 3064, Parramatta NSW 2124.

Registrations are invited from Aboriginal individuals and organisations who hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places in the area, and who wish to be involved in the consultation process.

The consultation may be used to prepare an Aboriginal Heritage Impact Permit or equivalent, if required, and to assist OEH in consideration and determination of the AHIP application.

Registrations of interest should be provided by no later than **19 November 2018** to Alan Williams at Extent Heritage Pty Ltd by:
Email: awilliams@extent.com.au
Phone: (02) 9555 4000
Fax: (02) 9555 7005
Post: 3/73 Union St, Pyrmont, NSW, 2009

The Management Committee of the Pat Zikan Reserve is holding its **Annual General Meeting**
Saturday 17th November 2018 at 9:45am on the Reserve, Flushcombe Rd, Blacktown
New members and visitors Welcome
For more information please contact the secretary on: 0425 235 050

## Legal Notices

**WITNESSES SOUGHT**
Would anyone who has any information about or who has witnessed an accident involving 5 cars on the M4 Motorway, Prospect NSW 2148 at approximately 5:30pm on 27 June 2018 please contact: Iain Miller at Shanahan Tudhope Lawyers on (02) 9262 2888 or email: iainmiller@stlaw.com.au.

# DEATHS & FUNERALS

## Deaths

**Graham, Gordon**
LIFE MEMBER RSL Australia, passed away in Peace on the 1st November, 2018.
The funeral will be on Thursday 8th November at 0930 in the Guardian Chapel, Blacktown.
Missed by all his mates.
RIP

## Deaths

AGX124
**GRAHAM, Gordon.**
**November 1, 2018**
**Of Seven Hills**

Much loved father and father-in-law of Gordon & Lorelle, Kevin & Tracey. Treasured Grandpa and Great-Grandpa of his family.

**Aged 91 years**

Family and friends of **GORDON** are invited to attend his funeral service to be held in its entirety in the Guardian Funerals Chapel, First Avenue, Blacktown tomorrow, Wednesday, November 8th, 2018 commencing at 9.30 a.m.

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# careers

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Interested candidates should forward their resume to krys@bergerpiepers.com.au
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- $50k + Super.
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Located in Kings Park, Top Idea has been running for 17 years and selling a leading brand of quality gutter guard.
Full training provided.
If you are good at getting things done, ultra reliable, you know you get along with just about anyone and looking for a stable long-term position, email me now at: idealproducts@gmail.com

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We are looking for a friendly, reliable, honest and hard working individual to join our team. Must have experience in construction industry and have White Card and Drivers Licence.
Contact 0414 684 358




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11.05.2018 17:24 NewsCorp Australia – Tearsheet

# Appendix 2-7. Presentation of Information/Assessment Methodology Sent and Any Feedback Received

EXTENT
HERITAGE ADVISORS
TO AUSTRALIA AND
THE ASIA PACIFIC

**7 December 2018**

[Company]
[Address]
[City State Postcode]

Attention: [Name]

# Re: Lighthorse Interchange Business Hub, Eastern Creek, NSW (SSD 9667) - Proposed Aboriginal Cultural Heritage Assessment Report Methodology

Dear [Name]

Thank you for your registration of interest in the Aboriginal Cultural Heritage Assessment Report (ACHAR) for the proposed Lighthorse Interchange Business Hub, at part of Lot 5 DP 804051 and Lot 10 DP 1061237 in the Blacktown Local Government Area (**Figure 1**). Your interest in the project has been formally registered in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*.

Attached is the proposed methodology for the project, which includes an archaeological survey and test excavations. I would like to invite you to review the methodology and provide any comments you may have by DATE.

If you have any questions, please do not hesitate to contact me on (02) 9555 4000, or by email at tsapienza@extent.com.au.

Kind Regards

**Tom Sapienza**
**Heritage Advisor | Extent Heritage**

## Contact Details

This letter has been prepared by Extent Heritage Pty Ltd (Extent) on behalf of Western Sydney Parklands Trust (the proponent). The proponent's contact details are:

Mr Luke Wilson
C/- Western Sydney Parklands Trust
PO Box 3064
Parramatta NSW 2124
T: 02 9895 7500

## Background

Western Sydney Parklands Trust propose to undertake development on property within parts of Lot 5 DP 804051 and Lot 10 DP 1061237, which encompasses 165 Wallgrove Road, and 475 Ferrers Road, Eastern Creek, NSW. The proposed development has been classified as State Significant Development (SSD) (SSD 9667). The development would involve subdivision of the land and construction of bulk earthworks, stormwater infrastructure, environmental controls, vehicular access, footpaths and landscaping. Notably, the development proposes to redirect part of Eskdale Creek, a 2$^{nd}$ order tributary of Eastern Creek. Areas of proposed development are shown in **Figure 2**.

Sites in the vicinity of the study area are dominated by low-density artefact scatters and/or isolated finds. Site appears to have lower artefact densities than elsewhere in the Cumberland Plain. These assemblages tend to be dominated by silcrete, and are strongly indicative of a late Holocene (5-0ka) visitation and/or occupation of the region, but chert, quartz, tuff and mudstone are also present. A number of materials types not local to the area have been identified in the study area by previous investigations, suggesting transportation of artefacts. Artefact densities are generally lower closer to the local waterways (likely due to scouring effects based on regional archaeological models that suggest greater artefact densities should be present), but become increasingly dense and more significant with elevation.

A complete list of the Aboriginal sites in, and immediately adjacent to, the study area can be found in **Table 1**, and a map of the sites is shown in **Figure 3**. In 1985, Kohen undertook surveys for Aboriginal sites in the Blacktown area and registered two sites in the current study area (AHIMS #45-5-0453 and #45-5-0469). In 1989, Crew surveyed the eastern bank of Eastern Creek, and located one site within the current study area (AHIMS #45-5-0756) and one immediately adjacent to the current study area (AHIMS #45-5-0751). In 1996, Brayshaw identified one site (AHIMS #45-5-1066) immediately adjacent to the current study area.

In 1999, Navin Officer identified two isolated artefacts (AHIMS #45-5-2564 and #45-5-2565) within the current study area, and one Potential Archaeological Deposit (PAD) that encompasses Eastern Creek, Reedy Creek and Erskdale Creek. The PAD was not registered

on AHIMS, and the associated report was not lodged with the Office of Environment and Heritage (OEH). The reason for this is not known.

As part of the present development, Extent has been engaged to facilitate the Aboriginal heritage process, and will be synthesising the existing assessments in the area and preparing an ACHAR in accordance with current OEH guidelines. The ACHAR will assess the potential impact of any future development, and will develop relevant management and mitigation measures to be incorporated into the development consent.

**Table 1. Archaeological sites in and immediately adjacent to the development area.**

| AHIMS SITE ID | SITE NAME | SITE FEATURE |
|---|---|---|
| 45-5-0751 | EC11 (Eastern Creek) | Artefact scatter |
| 45-5-0756 | EC6 (Eastern Creek) | Artefact scatter |
| 45-5-1066 | Eastern Creek 1 EC 1 | Artefact scatter |
| 45-5-2564 | IF1 | Isolated artefact |
| 45-5-2565 | IF2 | Isolated artefact |
| 45-5-3264 | WSP 17 | Artefact scatter |
| - | PAD | Potential artefact deposit |

## Proposed Assessment Methodology

While an SSD project, the SEARs require that an Aboriginal Cultural Heritage Assessment Report (ACHAR) be prepared in accordance with the Office of Environment and Heritage guidelines:

- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011);
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010);
- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010)
- *Draft Guidelines for Aboriginal Cultural Impact Assessment and Community Consultation* (DPI 2005)

Development of the ACHAR will be in two stages – with the first stage involving an archaeological survey and subsequent reporting to meet SSD submission as part of the Environmental Impact Statement (EIS) in February 2019. This will be followed by archaeological test excavation and revision of the ACHAR in light of the results of the test excavation, shortly thereafter, if required.

The initial ACHAR will include the following tasks:

- Aboriginal community consultation;
- Archaeological survey;

- Preparation of the ACHAR, which incorporates Aboriginal consultation and any cultural information provided, outlines the findings of the archaeological survey, and makes recommendations for the future management of Aboriginal heritage sites and/or objects that may be present within the proposed study area; and
- If sites are identified, submissions of site recordings for registration on OEH's AHIMS database.

The subsequent ACHAR will include the following tasks:

- Archaeological test excavation, if required;
- Revision of the existing ACHAR to incorporate the findings of the test excavation program, updated Aboriginal consultation and cultural information, Aboriginal heritage impact assessment, and further recommendations for the management of Aboriginal cultural heritage and archaeological sites present in the study area; and
- Updated site card information following from the test excavation.

Further details regarding the archaeological survey and test excavation are provided below. These components of the work would be undertaken in conjunction with representatives of the Registered Aboriginal Parties (RAPs) based on selective commercial engagements determined by the client.

## Archaeological Survey Methodology

We propose to undertake an archaeological survey in accordance with the requirements of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010). The survey will aim to identify any visible Aboriginal objects (material traces and evidence of Aboriginal land), as well as identify those areas where it can be inferred that, although not visible, material traces or evidence of Aboriginal land use have a likelihood of being present under the ground surface (PADs). The survey will serve as a ground truthing exercise, to inform the testing program, if required.

The survey strategy will include:

- Inspection of a sample of the landforms that will potentially be impacted;
- Placing a proportionate emphasis on those landforms deemed to have archaeological potential;
- Pedestrian survey of pre-determined transects;
- Taking representative photographs of survey units and landforms where informative;
- Recording landform and general soil information for each survey unit;
- Recording the land surface and vegetation conditions encountered during the survey (accounting as appropriate for things like vegetation, rock outcrops, coarse fragments, etc.), and how these impact on the visibility of objects;
- Recording any Aboriginal objects observed during the survey; and

- Recording of spatial information suitable for mapping according to Code requirements and the calculation of survey coverage.

The archaeological survey is designed to sample the study area in a systematic manner by targeting areas of ground surface visibility and including a representative sample of all landforms. Any areas of ground exposure will be examined for archaeological evidence such as stone artefacts, charcoal and shell. Ground surfaces and cut-and-fill features will also be examined to determine the degree of soil disturbance, erosion and potential for subsurface archaeological deposits.

## Archaeological Test Excavation Methodology

Depending on the outcomes of the archaeological survey, Extent proposes to undertake an archaeological test excavation program that reflects the development design and the archaeological sensitivity of the study area. The aim of the test excavation will be to determine the subsurface nature and extent of the Aboriginal heritage resource within the area.

Archaeological test excavation would be implemented in broad accordance with Requirements 16 and 17 of DECCW's *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW*. Specifically, they will follow the following general methodology:

- Placement of test excavation units on a systematic grid across areas of archaeological interest.
- Manual excavation using hand tools.
- Individual test excavation units of 50cm x 50cm size. Test excavation units may be combined and excavated as necessary to understand the site characteristics.
- Excavation will occur in 10cm spits or according to stratigraphy (whichever is smallest).
- Excavation to continue to the base of the identified Aboriginal object-bearing soil(s) and below, sufficient to confirm that the underlying soil(s) is/are culturally sterile.
- Sieving of all excavated material through a 5mm sieve.
- Photographic and scale-drawn records of the excavations.

Extent proposes to excavate an initial grid of 0.25m$^2$ test pits at systematic intervals across the study area, with the grid interval to be based proportionately upon areas of very high, high, moderate and low archaeological potential, and subject to the outcomes of the archaeological survey (***Figure 4***). However, this strategy has been based on desktop research only, and may prove unsuitable following from the survey, or due to information that only becomes clear once on site. In such a situation, the Excavation Director may revise the shape and size of the grid, and/or alter the locations of the test pits, in consultation with the Aboriginal stakeholders on site.

All excavations would continue until basal clays are exposed, or culturally sterile units identified (being defined as three consecutive spits without cultural material). Should significant cultural materials be identified, and time permits, additional excavation will be undertaken. This may consist of excavation of additional test pits in gaps in the grids, and/or expanding the test pit found to contain the highest artefact density in order to further characterise the deposit.

All material would be sieved through a 5mm mesh. All excavations would be recorded in accordance with the Code, including scale drawings, photographs, written descriptions, etc.

## Timeframes

Extent Heritage proposes the following indicative timeframes for the project:

- Distribution of this document to Registered Aboriginal Parties: **mid December 2018.**
- End of review period for the proposed methodology: **mid January 2019.**
- Field survey to be undertaken: **mid to late January 2019.**
- Distribution of draft ACHAR to Registered Aboriginal Parties for review: **mid February 2019.**
- Archaeological test excavation (if required): **March 2019.**
- Distribution of the draft ACHAR (post-testing) to Registered Aboriginal Parties for review (if required): **May 2019.**

## Information Sought

Extent Heritage would appreciate your feedback on the methodology proposed above for the investigation and assessment of the study area.

In returning your answers, please include the following where appropriate:

- Any protocols that you would like adopted during the project;
- Identification of any Aboriginal objects of cultural significance and/or importance that you are aware of within the activity area, and how you wish them to be dealt with during the project;
- Identification of any places of cultural significance and/or importance that you are aware of within the activity area, and how you wish them to be dealt with during the project;
- Guidance on the protocols, sensitivity, use and/or distribution of any cultural information that you provide to Extent Heritage;
- Whether you require any further information prior to Extent Heritage proceeding with the project.

We also direct you to Extent's policy and procedures on Aboriginal engagement, which will be provided with this document. It is important that you understand that Extent Heritage will compile

and forward information for review by the proponent, but we do not decide who will be involved in fieldwork in any paid capacity.

If you would like to arrange for any elders or other community members to be able to visit the site during the work, please let us know.

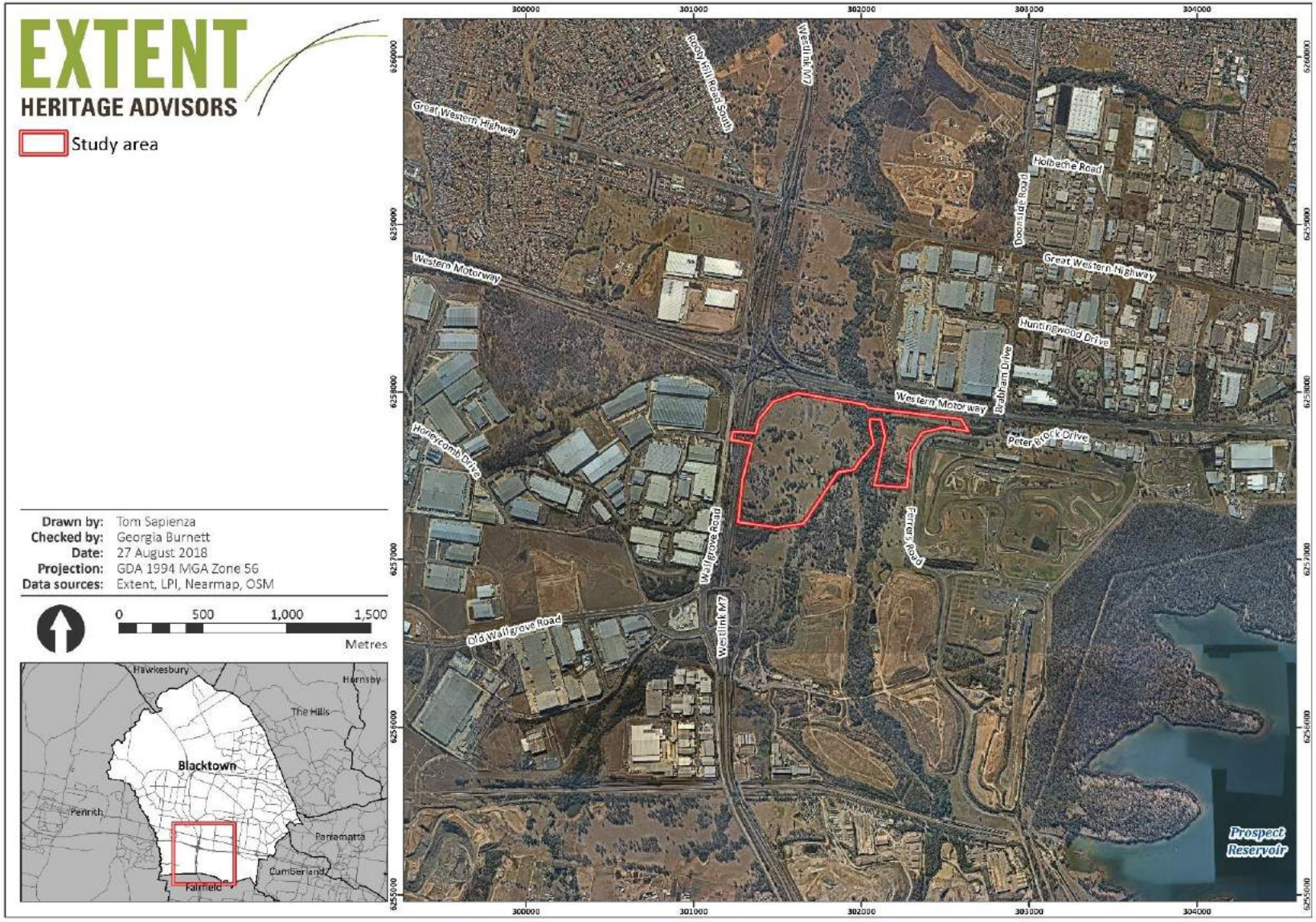


***Figure 1. Lighthorse Business Hub study area.***

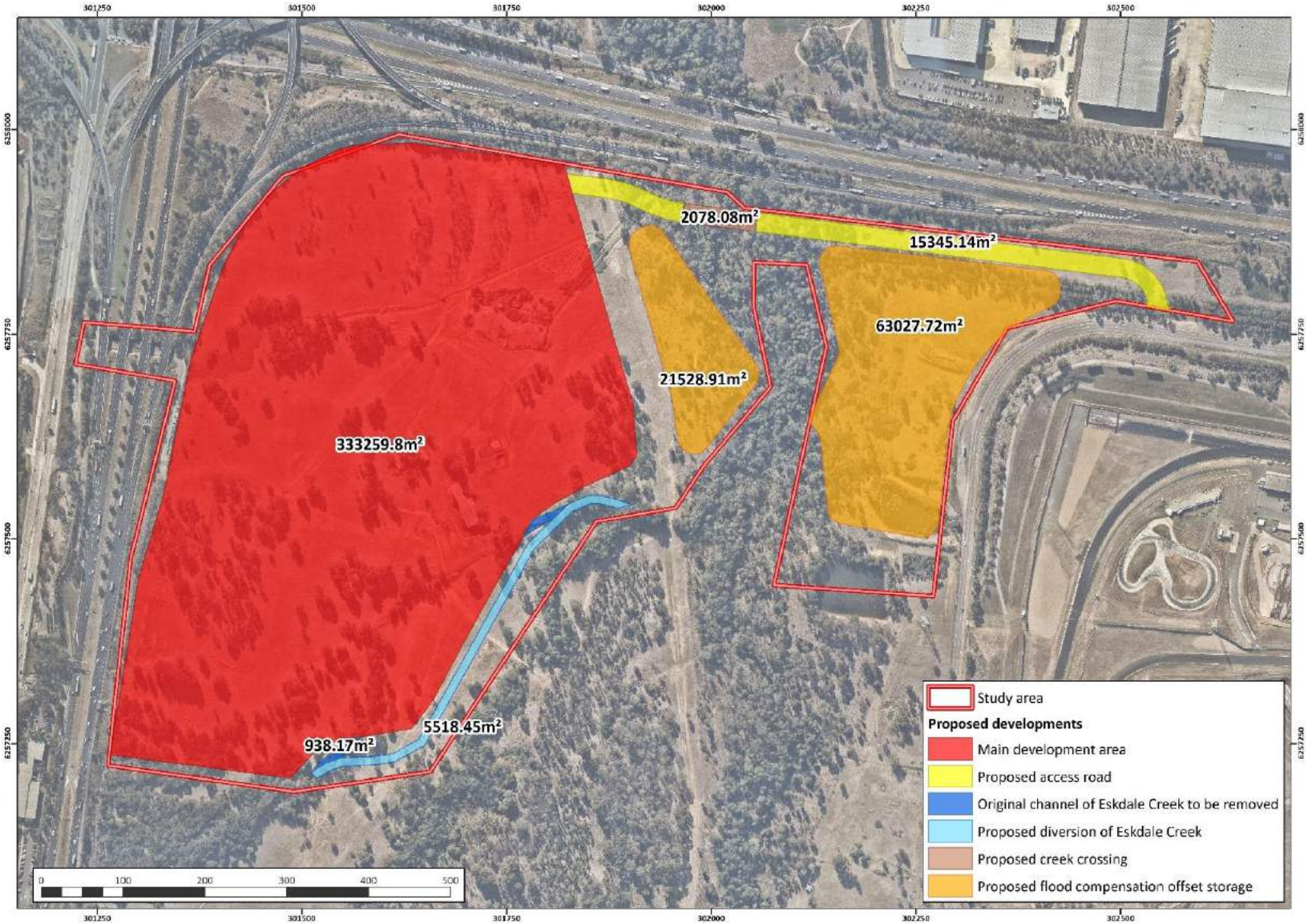


***Figure 2. Areas proposed for development within the study area. Note the proposed flood compensation offset storage areas (in orange) are currently under consideration and may be subject to revision or removal.***

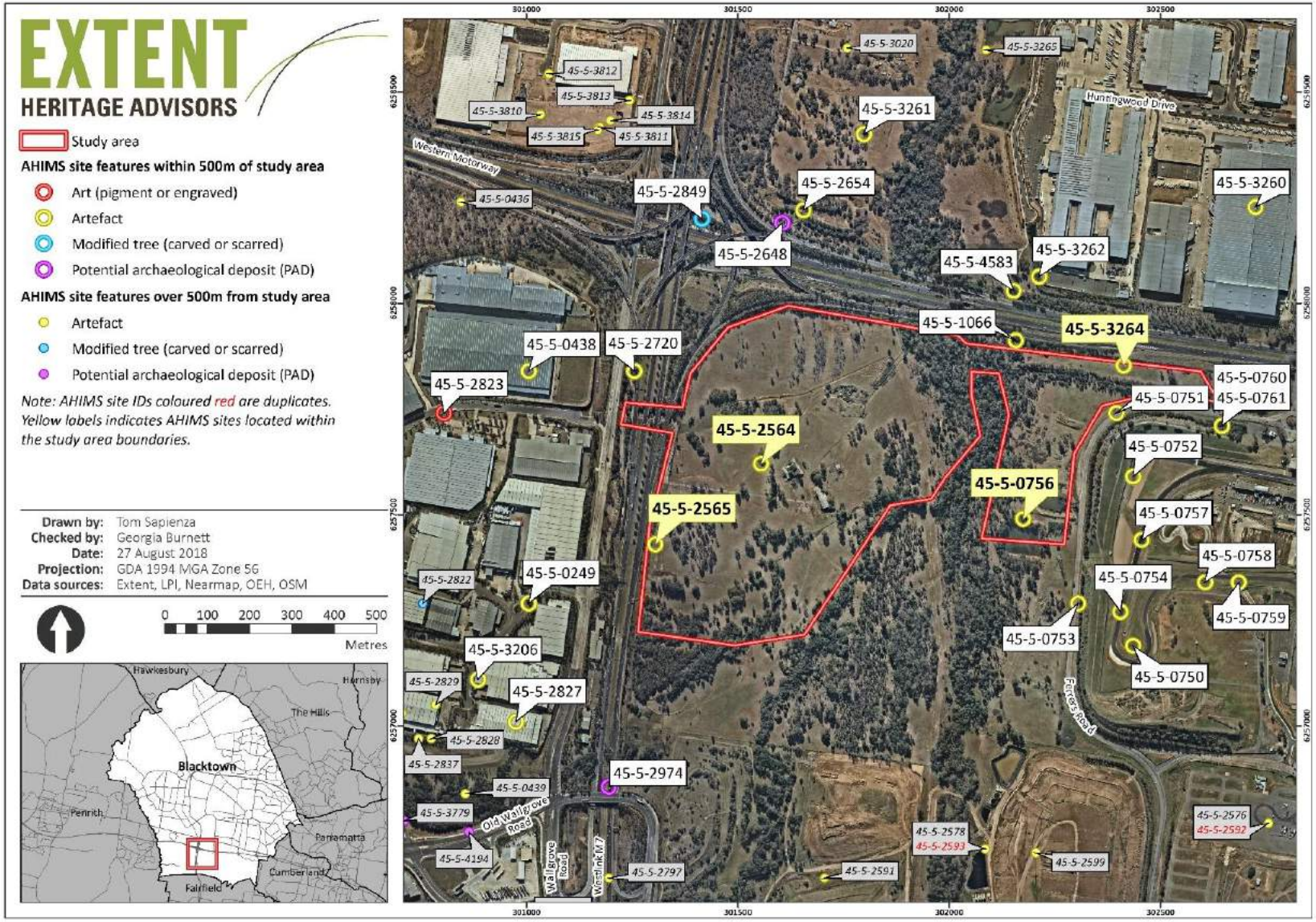


***Figure 3. Registered Aboriginal sites in and within 500m of the study area.***

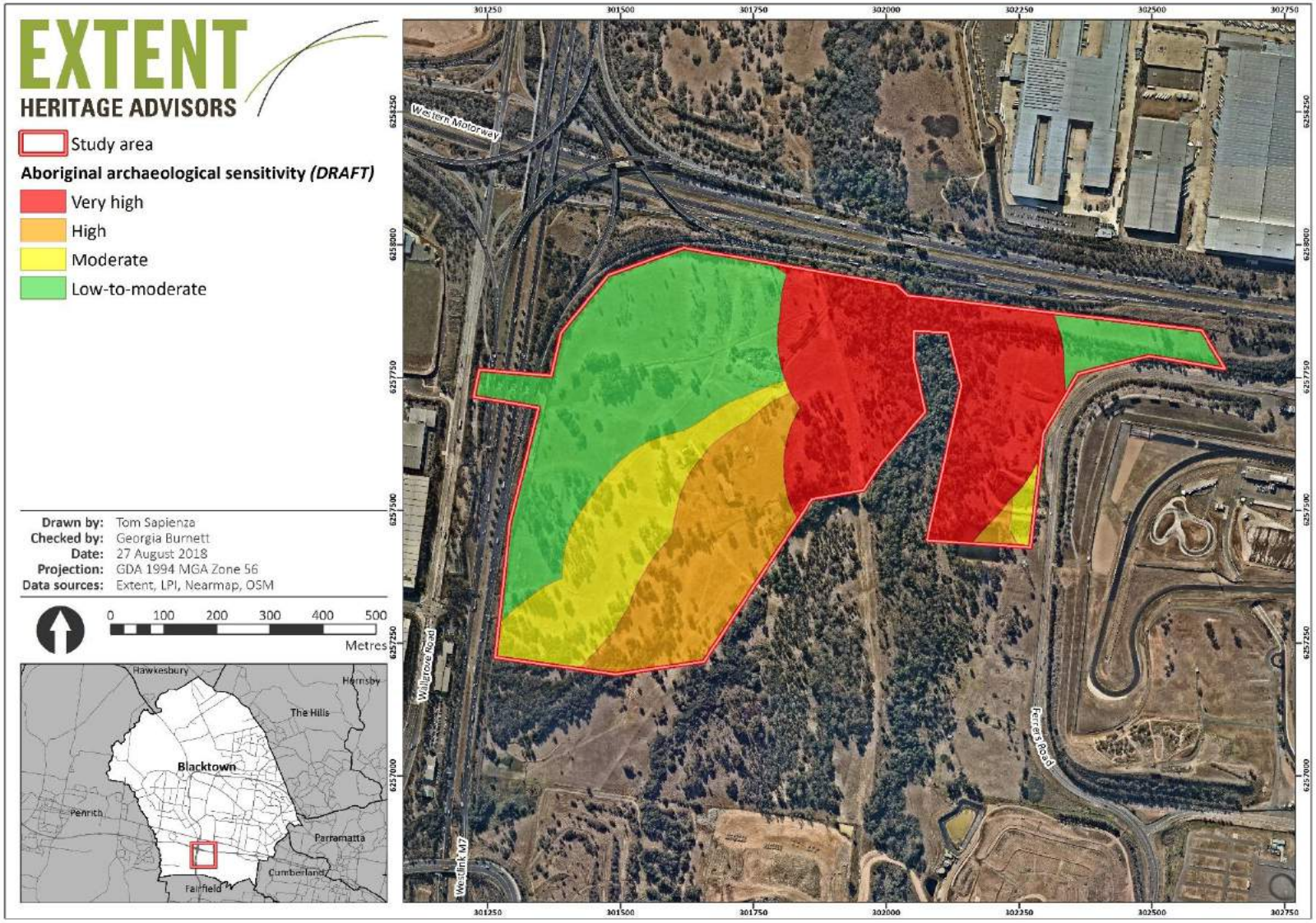


***Figure 4. Areas of Aboriginal archaeological potential based on desktop research. These areas would be further refined upon completion of the archaeological survey and would be used to inform the archaeological test excavation program, if required.***

## Laressa Barry

**From:** Caza X <cazadirect@live.com>
**Sent:** Sunday, 16 December 2018 2:26 PM
**To:** Laressa Barry
**Subject:** Re: Lighthorse Interchange Business Hub, Eastern Creek - ACHAR Methodology

# A1

**Indigenous Services**
Contact: Carolyn
M: 0411650057
E: Cazadirect@live.com
A: 10 Marie Pitt Place, Glenmore Park, NSW 2745
ABN: 20 616 970 327

Hi
A1 would like to register for consultation and an field work for this project.
I am a traditional owner and hold cultural knowledge and connection to this area
Thank you
Carolyn Hickey

---

**From:** Laressa Barry <lbarry@extent.com.au>
**Sent:** Friday, 14 December 2018 1:52 PM
**To:** Carolyn .H
**Subject:** Lighthorse Interchange Business Hub, Eastern Creek - ACHAR Methodology

Dear Carolyn
Thank you for your registration of interest in the Aboriginal cultural heritage assessment of land for the proposed Lighthorse Interchange Business Hub, located at Eastern Creek NSW. The project is currently seeking SSD approval (SSD 9667), and the Proponent, Western Sydney Parklands Trust, is preparing an EIS for these works. Whilst an SSD process, the assessment is being undertaken in accordance with standard OEH guidelines.

Therefore, please find attached a methodology letter for the archaeological survey of the study area, to be undertaken in mid January 2019. At this stage, the ACHAR will be finalised following from the completion of the archaeological survey in February 2019, in order to meet WSPT's SSD submission requirements.

Dependent upon the outcomes of the survey, archaeological test excavation may be required at a later stage, to investigate the sub-surface potential of the study area.

I would appreciate if you could please review the attached methodology documents and provide any feedback or comments to either myself or my colleague Tom Sapienza, **by no later than 16 January 2019**.

Thank you in advance for your assistance with this, and should you have any questions please let me know.
Kind regards,
Laressa
**Laressa Barry** | BA (Hons)
Heritage Advisor/Archaeologist
T 02 9555 4000

**A**boriginal **A**rchaeology **S**ervice
**INC**: 1400988
2/24 Goodwin St Narrabeen
Mobile: 0456 399 687
Email: aas.info@bigpond.com

Aboriginal Archaeology Service INC.
Darug Traditional Owners

**15th December 2018**

**Extent Heritage Advisors Pty Ltd**

**Attention: Tom Sapienza / Laressa Barry**

## Re: Lighthorse Interchange Business Hub, Eastern Creek NSW (SSD 9667) – Proposed Aboriginal Cultural Heritage Assessment Report Methodology

A.A.S agrees with the recommendations as documented by Extent Heritage Advisors Pty Ltd. AAS would like to see any artefacts collected displayed for all to see in the museum, local library or local government building or reburied in close proximity of the area.

Aboriginal Archaeology Service is seeking *involvement* in all consultation meetings and fieldwork for the above-mentioned project, as we are registered traditional owners of the area. AAS immediate family has lived in the area from 1897 and retains local and oral history on behalf of its first nation people. We have no objection to our information being provided to the Office of Environment and Heritage and the Local Aboriginal Land Council.

AAS can assist with input that can be incorporated into a written assessment of cultural values of the area. We are also able to provide fit staff to assist with work that may involve physical labour. We can provide our schedule of rates and copies of relevant certificates of currency for business insurances on request.

All correspondence should be emailed to AAS.info@bigpond.com and. The area is an important part of our culture and valued by our family.

Yours truly

## Laressa Barry

**From:** lee field <barrabyculturalservices@gmail.com>
**Sent:** Wednesday, 19 December 2018 12:35 PM
**To:** Laressa Barry
**Subject:** Re: Lighthorse Interchange Business Hub, Eastern Creek - ACHAR Methodology
**Attachments:** FB_423c721a-4cd0-481a-91f8-780e9f111549.png

Dear Laressa

Barraby Cultural Services supports the methodology for this project.
We would like to be considered in the Archaeology survey of this project and test excavations if required.

Kind Regards
Lee Field

On Fri, 14 Dec. 2018, 1:45 pm Laressa Barry <lbarry@extent.com.au wrote:

> Dear Lee
>
> Thank you for your registration of interest in the Aboriginal cultural heritage assessment of land for the proposed Lighthorse Interchange Business Hub, located at Eastern Creek NSW. The project is currently seeking SSD approval (SSD 9667), and the Proponent, Western Sydney Parklands Trust, is preparing an EIS for these works. Whilst an SSD process, the assessment is being undertaken in accordance with standard OEH guidelines.
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>
> Dependent upon the outcomes of the survey, archaeological test excavation may be required at a later stage, to investigate the sub-surface potential of the study area.
>
> I would appreciate if you could please review the attached methodology documents and provide any feedback or comments to either myself or my colleague Tom Sapienza, **by no later than 16 January 2019**.
>
> Thank you in advance for your assistance with this, and should you have any questions please let me know.
>
> Kind regards,
>
> Laressa
>
> **Laressa Barry** | BA (Hons)
> Heritage Advisor/Archaeologist
> T 02 9555 4000
> lbarry@extent.com.au
> extent.com.au

## Laressa Barry

**From:** arika jalomaki <yulayculturalservices@gmail.com>
**Sent:** Wednesday, 19 December 2018 12:37 PM
**To:** Laressa Barry
**Subject:** Re: Lighthorse Interchange Business Hub, Eastern Creek - ACHAR Methodology

Dear Laressa

Yulay Cultural Services supports the methodology for this project and would like to be considered for the archaeology survey and possible test excavations if necessary.

Kind Regards
Arika Jalomaki

On Friday, December 14, 2018, Laressa Barry <lbarry@extent.com.au> wrote:

> Dear Arika
>
> Thank you for your registration of interest in the Aboriginal cultural heritage assessment of land for the proposed Lighthorse Interchange Business Hub, located at Eastern Creek NSW. The project is currently seeking SSD approval (SSD 9667), and the Proponent, Western Sydney Parklands Trust, is preparing an EIS for these works. Whilst an SSD process, the assessment is being undertaken in accordance with standard OEH guidelines.
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>
> Thank you in advance for your assistance with this, and should you have any questions please let me know.
>
> Kind regards,
>
> Laressa
>
> **Laressa Barry** | BA (Hons)
> Heritage Advisor/Archaeologist
> T 02 9555 4000
> lbarry@extent.com.au
> extent.com.au
> Connect with us on:

## Tom Sapienza

**From:** Barking Owl Aboriginal Corporation <barkingowlcorp@gmail.com>
**Sent:** Tuesday, 18 December 2018 20:29
**To:** Tom Sapienza
**Subject:** RAP Response ACHA Methodology RE: proposed Lighthorse Interchange Eastern Creek NSW.

Dear Tom,

Myself and the members of Barking Owl Aboriginal Corporation have agreed and are satisfied with the methodology RE: Proposed Lighthorse Interchange Eastern Creek NSW, and have no further comments or recommendations.

Kind regards

Jody Kulakowski
Director

Barking Owl
Aboriginal Corporation
(BOAC)

•

## Laressa Barry

**From:** WIDESCOPE . <widescope.group@live.com>
**Sent:** Monday, 7 January 2019 11:55 AM
**To:** Laressa Barry
**Subject:** RE: Lighthorse Interchange Business Hub, Eastern Creek - ACHAR Methodology

Hi Laressa

I have reviewed and support Lighthorse Interchange Business Hub, Eastern Creek - ACHAR Methodology

Regards
Steven Hickey

---

**From:** Laressa Barry <lbarry@extent.com.au>
**Sent:** Friday, December 14, 2018 1:48:18 PM
**To:** WIDESCOPE .
**Subject:** Lighthorse Interchange Business Hub, Eastern Creek - ACHAR Methodology

Dear Steven
Thank you for your registration of interest in the Aboriginal cultural heritage assessment of land for the proposed Lighthorse Interchange Business Hub, located at Eastern Creek NSW. The project is currently seeking SSD approval (SSD 9667), and the Proponent, Western Sydney Parklands Trust, is preparing an EIS for these works. Whilst an SSD process, the assessment is being undertaken in accordance with standard OEH guidelines.

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Dependent upon the outcomes of the survey, archaeological test excavation may be required at a later stage, to investigate the sub-surface potential of the study area.

I would appreciate if you could please review the attached methodology documents and provide any feedback or comments to either myself or my colleague Tom Sapienza, **by no later than 16 January 2019**.

Thank you in advance for your assistance with this, and should you have any questions please let me know.
Kind regards,
Laressa

**Laressa Barry** | BA (Hons)
Heritage Advisor/Archaeologist
T 02 9555 4000
lbarry@extent.com.au
extent.com.au
Connect with us on:

## Laressa Barry

**From:** Marilyn Carroll-Johnson <corroboreecorp@bigpond.com>
**Sent:** Wednesday, 19 December 2018 7:01 PM
**To:** Laressa Barry
**Subject:** Re: Lighthorse Interchange Business Hub, Eastern Creek - ACHAR Methodology

Hi Laressa
We agree with the methodology. Thanks

Kind regards
Marilyn Carroll-Johnson
Director CAC

On 14 Dec 2018, at 1:46 pm, Laressa Barry <lbarry@extent.com.au> wrote:

> Dear Marilyn
> Thank you for your registration of interest in the Aboriginal cultural heritage assessment of land for the proposed Lighthorse Interchange Business Hub, located at Eastern Creek NSW. The project is currently seeking SSD approval (SSD 9667), and the Proponent, Western Sydney Parklands Trust, is preparing an EIS for these works. Whilst an SSD process, the assessment is being undertaken in accordance with standard OEH guidelines.
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>
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>
> Thank you in advance for your assistance with this, and should you have any questions please let me know.
> Kind regards,
> Laressa
>
> **Laressa Barry** | BA (Hons)
> Heritage Advisor/Archaeologist
> T 02 9555 4000
> lbarry@extent.com.au
> extent.com.au
> Connect with us on:
> <FB_423c721a-4cd0-481a-91f8-780e9f111549.png> <LinkedIn_ebc4f2a1-55e1-4efe-8f0e-103053dbb87b.png> <Insta_64ba6810-999a-4a57-a859-66d10d805618.png>
> <christmasgreetingsemail(005)_cfce7c99-c4df-47ae-87d6-6d010235d6c1.jpg>
>
> <SYD18198 Lighthorse Interchange ACHAR Methodology - Corroboree.pdf>

## Laressa Barry

**From:** desmond dyer <desmond4552@hotmail.com>
**Sent:** Wednesday, 26 December 2018 2:37 PM
**To:** Laressa Barry
**Subject:** Re: Lighthorse Interchange Business Hub, Eastern Creek - ACHAR Methodology

Hi Laressa,

The Darug Aboriginal Land care, has read your report and we agree
with your recommendations and Methodology
Kind regards
Des

---

**From:** Laressa Barry <lbarry@extent.com.au>
**Sent:** Friday, 14 December 2018 1:49 PM
**To:** desmond dyer
**Subject:** Lighthorse Interchange Business Hub, Eastern Creek - ACHAR Methodology

Dear Des
Thank you for your registration of interest in the Aboriginal cultural heritage assessment of land for the proposed Lighthorse Interchange Business Hub, located at Eastern Creek NSW. The project is currently seeking SSD approval (SSD 9667), and the Proponent, Western Sydney Parklands Trust, is preparing an EIS for these works. Whilst an SSD process, the assessment is being undertaken in accordance with standard OEH guidelines.

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Dependent upon the outcomes of the survey, archaeological test excavation may be required at a later stage, to investigate the sub-surface potential of the study area.

I would appreciate if you could please review the attached methodology documents and provide any feedback or comments to either myself or my colleague Tom Sapienza, **by no later than 16 January 2019**.

Thank you in advance for your assistance with this, and should you have any questions please let me know.
Kind regards,
Laressa

**Laressa Barry** | BA (Hons)
Heritage Advisor/Archaeologist
T 02 9555 4000
lbarry@extent.com.au
extent.com.au
Connect with us on:

EXTENT
HERITAGE ADVISORS
TO AUSTRALIA AND
THE ASIA PACIFIC

Wishing you a very happy festive season

Our offices will be closed from 21 December 2018 and
will reopen on 2 January 2019

SYDNEY | MELBOURNE | BRISBANE | PERTH
extent.com.au

## Laressa Barry

**From:** philip khan <philipkhan.acn@live.com.au>
**Sent:** Monday, 31 December 2018 12:08 PM
**To:** Laressa Barry
**Subject:** RE: Lighthorse Interchange Business Hub, Eastern Creek - ACHAR Methodology

Hi Larissa,

Hope you are well & wishing your a Happy New Year!

I have read the methodology regarding the survey of the area proposed to be under taken in mid January 2019 and am looking forward to be working with you on this project.

Regards
Stefeanie

Kamilaroi Yankuntjatjara Working Group
Aboriginal Cultural Heritage Surveys, Lawn Mowing & Fencing
ABN 33 979 702 507
**Not registered for GST**
78 Forbes Street, Emu Plains NSW 2750
Mobile: 0434545982
Email: philipkhan.acn@live.com.au

Sent from Mail for Windows 10

---

**From:** Laressa Barry <lbarry@extent.com.au>
**Sent:** Friday, December 14, 2018 1:47:57 PM
**To:** philipkhan.acn@live.com.au
**Subject:** Lighthorse Interchange Business Hub, Eastern Creek - ACHAR Methodology

Dear Phil
Thank you for your registration of interest in the Aboriginal cultural heritage assessment of land for the proposed Lighthorse Interchange Business Hub, located at Eastern Creek NSW. The project is currently seeking SSD approval (SSD 9667), and the Proponent, Western Sydney Parklands Trust, is preparing an EIS for these works. Whilst an SSD process, the assessment is being undertaken in accordance with standard OEH guidelines.

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Dependent upon the outcomes of the survey, archaeological test excavation may be required at a later stage, to investigate the sub-surface potential of the study area.

I would appreciate if you could please review the attached methodology documents and provide any feedback or comments to either myself or my colleague Tom Sapienza, **by no later than 16 January 2019**.

Thank you in advance for your assistance with this, and should you have any questions please let me know.
Kind regards,
Laressa

DARUG CUSTODIAN
ABORIGINAL
CORPORATION

PO BOX 81 WINDSOR 2756
PHONE: 0245775181 FAX: 0245775098
MOBILE: 0415770163 Leanne Watson
0414962766 Justine Coplin
EMAIL: mulgokiwi@bigpond.com / justinecoplin@optusnet.com.au

**Attention:** Extent

**Subject**: Lighthorse Interchange Business Hub, Eastern Creek

Dear Laressa

Our group is a non- profit organisation that has been active for over forty years in Western Sydney, we are a Darug community group with over three hundred members. The main aim in our constitution is the care of Darug sites, places, wildlife and to promote our culture and provide education on the Darug history.

Our group promotes Darug Culture and works on numerous projects that are culturally based as a proud and diverse group. It has been discussed by our group and with many consultants and researches that our history is generic and is usually from an early colonists perspective or solely based on archaeology and sites. These histories are adequate but they lack the people's stories and parts of important events and connections of the Darug people and also other Aboriginal people that now call this area home and have done so for numerous generations.

This area is significant to the Darug people due to the evidence of continued occupation, within close proximity to this project site there is a complex of significant sites.

Landscapes and landforms are significant to us for the information that they hold and the connection to Darug people. Aboriginal people (Darug) had a complex lifestyle that was based on respect and belonging to the land, all aspects of life and survival did not impact on

the land but helped to care for and conserve land and the sustenance that the land provided. As Darug people moved through the land there were no impacts left, although there was evidence of movement and lifestyle, the people moved through areas with knowledge of their areas

and followed signs that were left in the landscape. Darug people knew which areas were not to be entered and respected the areas that were sacred.

Knowledge of culture, lifestyle and lore have been part of Darug people's lives for thousands of years, this was passed down to the next generations and this started with birth and continued for a lifetime. Darug people spent a lifetime learning and as people grew older they passed through stages of knowledge, elders became elders with the learning of stages of knowledge not by their age, being an elder is part of the kinship system this was a very complicated system based on respect.

Darug sites are all connected, our country has a complex of sites that hold our heritage and past history, evidence of the Darug lifestyle and occupation are all across our country, due to the rapid development of Sydney many of our sites have been destroyed, our sites are thousands of years old and within the short period of time that Australia has been developed pre contact our sites have disappeared.

The *Aboriginal cultural heritage consultation requirements for proponents* Section 4.1.8 refers to "Aboriginal organisations representing Aboriginal people who hold cultural knowledge". Recent consultation meetings have revealed that many of these Aboriginal organisations and individuals do not hold cultural knowledge of the Western Sydney area. The increasing involvement of such parties in cultural heritage management means that genuine local Aboriginal organisations are unable to properly care for our cultural heritage.

Many Aboriginal organisations listed in the OEH response letter do not contribute to the Aboriginal community of Western Sydney. Individuals listed in the OEH response letter do not represent the community and while they may be consulted with, should not be employed for their own personal financial benefit.

Our organisation is committed to providing benefits back to our local Aboriginal community through such measures as funding the local Aboriginal juniors' touch football team, painting classes for the local children and donating money to various charities. Employment in cultural heritage activities is source of income that organisations such as ours can use to contribute to beneficial activities and support within the community.

Darug custodian Aboriginal Corporation's site officers have knowledge of Darug land, Darug Culture,Oral histories, landforms, sites, Darug history, wildlife, flora and legislative requirements. We have worked with consultants and developers for many years in Western

Sydney (Darug Land) for conservation, site works, developments and interpretation/education strategie

Darug Custodian Aboriginal Corporation have received and reviewed the report for Lighthorse Interchange Business Hub, Eastern Creek.

We support the recommendations set out in this report.

Please contact us with all further enquiries on the above contacts.

Regards

Justine Coplin

## Laressa Barry

**From:** Bo Field <yurrandaali_cs@hotmail.com>
**Sent:** Wednesday, 19 December 2018 12:36 PM
**To:** Laressa Barry
**Subject:** Re: Lighthorse Interchange Business Hub, Eastern Creek - ACHAR Methodology

Dear Laressa

Yurrandaali Cultural Services supports the methodology for this project and would like to be considered for the Archaeology survey and test excavations if required.

Many thanks
Bo Field

On 14 Dec. 2018 1:46 pm, Laressa Barry <lbarry@extent.com.au> wrote:

> Dear Bo
>
> Thank you for your registration of interest in the Aboriginal cultural heritage assessment of land for the proposed Lighthorse Interchange Business Hub, located at Eastern Creek NSW. The project is currently seeking SSD approval (SSD 9667), and the Proponent, Western Sydney Parklands Trust, is preparing an EIS for these works. Whilst an SSD process, the assessment is being undertaken in accordance with standard OEH guidelines.
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> Dependent upon the outcomes of the survey, archaeological test excavation may be required at a later stage, to investigate the sub-surface potential of the study area.
>
> I would appreciate if you could please review the attached methodology documents and provide any feedback or comments to either myself or my colleague Tom Sapienza, **by no later than 16 January 2019**.
>
> Thank you in advance for your assistance with this, and should you have any questions please let me know.
>
> Kind regards,
>
> Laressa
>
> **Laressa Barry** | BA (Hons)
> Heritage Advisor/Archaeologist
> T 02 9555 4000
> lbarry@extent.com.au
> extent.com.au
> Connect with us on:

**BUTUCARBIN ABORIGINAL CORPORATION**
PO Box E18, Emerton NSW 2770
28 Pringle Road, Hebersham NSW 2770
Ph: 9832 7167 Fax: 9832 7263
**koori@ozemail.com.au**
ABN: 83 535 742 276

18th January 2019

To whom it may concern,
Re: methodology

Firstly, I would like to extend my apologies for the delayed email I understand, delayed responses are an issue however, I work part time and unfortunately have not been in the office until today and also have not had much access to work emails as a result of higher management being on holiday leave.

In principle, Butucarbin endorses the proposed methodology. I do believe it is essential to inform RAP's when and they will be employed for site walkover and excavation. Ultimately, this should be included in the timeline. This is important as RAP's may need to re-organise prior commitments.

Yesterday, myself and Jack Gibson attended the site inspection on a voluntary basis. Unfortunately, we could only stay for two hours as we had a meeting to attend. However, if we would have known how long the activity would be, we would have re-arranged our prior commitment. Overall, it was an enjoyable process and we would have liked to stay longer. We agreed, the ground has been majorly disturbed as a result of dairy farming and other human activity. However, the proposed excavation land is near a waterway and ultimately, waterways are a significant resource to Indigenous people in previous times. If there is an opportunity for further work, Butucarbin employees would be more than happy to participate.

Yours Sincerely,

Lowanna Gibson
Project Manager for Butucarbin Cultural Heritage Assessments
B.A Archaeology/Anthropology USYD
Juris Doctor Candidate UTS

# Appendix 2-8. Report Review – Feedback Received

**Laressa Barry**

**From:** WeTransfer <noreply@wetransfer.com>
**Sent:** Wednesday, 27 February 2019 12:10 PM
**To:** Laressa Barry
**Subject:** There was a problem sending your files

# Oops, something went wrong

The people below didn't receive your transfer. It seems like the address you entered didn't work.

warrlan12@outlook.com

Get your files

Check out our help center for more information, or get in touch with our support team.

## Recipients

warrlan12@outlook.com

## 2 files

SYD18198 Lighthorse Business Hub - Appendices-compressed.pdf
SYD18198 Lighthorse Business Hub Draft ACHAR Feb19.pdf

## Message

Hi Phil,

Thank you for your registration and involvement in the Aboriginal Cultural Heritage Assessment of the proposed Light Horse Interchange Business Hub at Eastern Creek, NSW.

Please find a link to download Extent Heritage's draft ACHAR and appendices, for your review.

I would greatly appreciate if you could please review the report and provide any feedback or comments by no later than 27 March 2019.

Please direct your feedback to me via post (Laressa Barry, Extent Heritage Pty Ltd, Level 3, 73 Union Street, Pyrmont NSW 2009), via phone (0295554000) or via email (LBarry@extent.com.au).

Thank you in advance for your assistance with this, and should you have any questions please let me know.

Kind regards,

Laressa

To make sure our emails arrive, please add noreply@wetransfer.com to your contacts.

About WeTransfer · Help · Legal

## Laressa Barry

**From:** Laressa Barry
**Sent:** Wednesday, 27 February 2019 11:51 AM
**To:** warrlan12@outlook.com; didgengunawalclan@yahoo.com.au; barrabyculturalservices@gmail.com; justinecoplin@optusnet.com.au; yurrandaali_cs@hotmail.com; yulayculturalservices@gmail.com; corroboreecorp@bigpond.com; aas.info@bigpond.com; boorooberongal@outlook.com; philipkhan.acn@live.com.au; widescope.group@live.com; daruglandobservations@gmail.com; darug_tribal@live.com.au; desmond4552@hotmail.com; wurrumay@hotmail.com; barkingowlcorp@gmail.com; cazadirect@live.com; koori@ozemail.com.au; muragadi@yahoo.com.au; vicki.slater@hotmail.com; srandall@deerubbin.org.au
**Cc:** Luke Wilson; Dr Alan Williams
**Subject:** RE: Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review (email 2 of 2)
**Attachments:** SYD18198 Lighthorse Business Hub - Appendices-compressed.pdf

Dear Stakeholders,
As per the email below, please find attached the Light Horse Interchange Business Hub ACHAR appendices.
Kind regards,
Laressa

**Laressa Barry** | BA (Hons)
Heritage Advisor/Archaeologist
T 02 9555 4000
lbarry@extent.com.au
extent.com.au
Connect with us on:

---

**From:** Laressa Barry
**Sent:** Wednesday, 27 February 2019 11:49 AM
**To:** 'warrlan12@outlook.com' <warrlan12@outlook.com>; 'didgengunawalclan@yahoo.com.au' <didgengunawalclan@yahoo.com.au>; 'barrabyculturalservices@gmail.com' <barrabyculturalservices@gmail.com>; 'justinecoplin@optusnet.com.au' <justinecoplin@optusnet.com.au>; 'yurrandaali_cs@hotmail.com' <yurrandaali_cs@hotmail.com>; 'yulayculturalservices@gmail.com' <yulayculturalservices@gmail.com>; 'corroboreecorp@bigpond.com' <corroboreecorp@bigpond.com>; 'aas.info@bigpond.com' <aas.info@bigpond.com>; 'boorooberongal@outlook.com' <boorooberongal@outlook.com>; 'philipkhan.acn@live.com.au' <philipkhan.acn@live.com.au>; 'widescope.group@live.com' <widescope.group@live.com>; 'daruglandobservations@gmail.com' <daruglandobservations@gmail.com>; 'darug_tribal@live.com.au' <darug_tribal@live.com.au>; 'desmond4552@hotmail.com' <desmond4552@hotmail.com>; 'wurrumay@hotmail.com' <wurrumay@hotmail.com>;

'barkingowlcorp@gmail.com' <barkingowlcorp@gmail.com>; 'cazadirect@live.com' <cazadirect@live.com>; 'koori@ozemail.com.au' <koori@ozemail.com.au>; 'muragadi@yahoo.com.au' <muragadi@yahoo.com.au>; 'vicki.slater@hotmail.com' <vicki.slater@hotmail.com>; 'srandall@deerubbin.org.au' <srandall@deerubbin.org.au>
**Cc:** 'Luke Wilson' <Luke.Wilson@wspt.nsw.gov.au>; Dr Alan Williams <awilliams@extent.com.au>
**Subject:** Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review (email 1 of 2)

Dear Stakeholders,

Thank you for your registration and involvement in the Aboriginal Cultural Heritage Assessment of the proposed Light Horse Interchange Business Hub at Eastern Creek, NSW. As you would be aware, the project is currently seeking SSD approval (SSD 9667), and the Proponent, Western Sydney Parklands Trust, is preparing an EIS for these works. Whilst an SSD process, the assessment is being undertaken in accordance with standard OEH guidelines.

Please find attached a copy of the draft ACHAR, for your input and review (I will shortly be sending through a second email containing the report appendices, which are too large to send via email). If you have any problems downloading the report or appendices, please let me know and I will distribute these documents via other methods.

I would greatly appreciate if you could please review the attached ACHAR and provide any feedback or comments at your earliest convenience, but by no later than **27 March 2019**.

Please direct your feedback to me via any of the following methods:

**Post:** Laressa Barry
Extent Heritage Pty Ltd
Level 3, 73 Union Street
Pyrmont NSW 2009
**Phone:** (02) 9555 4000
**Email:** LBarry@extent.com.au

Thank you in advance for your assistance with this, and should you have any questions please let me know.
Kind regards,
Laressa

## Laressa Barry

**From:** Microsoft Outlook
**To:** warrlan12@outlook.com
**Sent:** Wednesday, 27 February 2019 11:54 AM
**Subject:** Undeliverable: Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review

### DB5EUR03FT028.mail.protection.outlook.com rejected your message to the following email addresses:

warrlan12@outlook.com (warrlan12@outlook.com)
A communication failure occurred during the delivery of this message. Please try to resend the message later. If the problem continues, contact your email admin.

**DB5EUR03FT028.mail.protection.outlook.com gave this error:**
**Requested action not taken: mailbox unavailable.**

**Diagnostic information for administrators:**

Generating server: MEAPR01MB5047.ausprd01.prod.outlook.com

warrlan12@outlook.com
DB5EUR03FT028.mail.protection.outlook.com
Remote Server returned '550 5.5.0 Requested action not taken: mailbox unavailable.'

Original message headers:


```
DKIM-Signature: v=1; a=rsa-sha256; c=relaxed/relaxed;
 d=extentheritageorg.onmicrosoft.com; s=selector1-extent-com-au;
 h=From:Date:Subject:Message-ID:Content-Type:MIME-Version:X-MS-Exchange-SenderADCheck;
 bh=BJokV0PKGghAXzInXxljEiXIuGA1IVt9zwddC56szbg=;

b=O19wZzrkmTgKma4YufSVQm/KDyiA96p8r8D7B9ACaFo4eF+9I3U51UyQbDKZTRRmdjOPy9OvU2Sl1GZqVeiC
q8vtRwli9XuyOUj4TuTp4eBQl2JWRL7b34irQ0WIyg4DAW2X3qHu8ojw3LXgFPji1hvTGM7rGLVD8GPF/P4kuQ
I=
Received: from SYBPR01CA0110.ausprd01.prod.outlook.com (2603:10c6:10:1::26) by
 MEAPR01MB5047.ausprd01.prod.outlook.com (2603:10c6:220:14::14) with Microsoft
 SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384) id
 15.20.1643.14; Wed, 27 Feb 2019 00:53:32 +0000
Received: from ME1AUS01FT003.eop-AUS01.prod.protection.outlook.com
 (2a01:111:f400:7eb4::209) by SYBPR01CA0110.outlook.office365.com
 (2603:10c6:10:1::26) with Microsoft SMTP Server (version=TLS1_2,
 cipher=TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384) id 15.20.1643.15 via Frontend
 Transport; Wed, 27 Feb 2019 00:53:32 +0000
Authentication-Results: spf=fail (sender IP is 40.126.245.16)
 smtp.mailfrom=extent.com.au; outlook.com; dkim=none (message not signed)
 header.d=none;outlook.com; dmarc=none action=none header.from=extent.com.au;
Received-SPF: Fail (protection.outlook.com: domain of extent.com.au does not
 designate 40.126.245.16 as permitted sender) receiver=protection.outlook.com;
 client-ip=40.126.245.16; helo=au-emailsignatures-cloud.codetwo.com;
Received: from au-emailsignatures-cloud.codetwo.com (40.126.245.16) by
```

**Laressa Barry**

**From:** WeTransfer <noreply@wetransfer.com>
**Sent:** Wednesday, 27 February 2019 12:06 PM
**To:** Laressa Barry
**Subject:** Your files were sent successfully to warrlan12@outlook.com

# Files sent to warrlan12@outlook.com

2 files, 17.2 MB in total · Will be deleted on 27 March, 2019

Thanks for using WeTransfer. We'll email you a confirmation as soon as your files have been downloaded.

## Recipients

warrlan12@outlook.com

## Download link

https://we.tl/t-sVWHTssY3m

## 2 files

SYD18198 Lighthorse Business Hub - Appendices-compressed.pdf
SYD18198 Lighthorse Business Hub Draft ACHAR Feb19.pdf

## Message

Hi Phil,

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Please find a link to download Extent Heritage's draft ACHAR and appendices, for your review.

I would greatly appreciate if you could please review the report and provide any feedback or comments by no later than 27 March 2019.

Please direct your feedback to me via post (Laressa Barry, Extent Heritage Pty Ltd, Level 3, 73 Union Street, Pyrmont NSW 2009), via phone (0295554000) or via email (LBarry@extent.com.au).

Thank you in advance for your assistance with this, and should you have any questions please let me know.
Kind regards,
Laressa

To make sure our emails arrive, please add noreply@wetransfer.com to your contacts.

Sent by extentheritage.wetransfer.com

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## Laressa Barry

**From:** Muragadi <muragadi@yahoo.com.au>
**Sent:** Friday, 1 March 2019 1:42 PM
**To:** Laressa Barry
**Subject:** RE: Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review (email 1 of 2)

Hi Laressa,
I have read the project information and ACHAR for the above project, I endorse the recommendations made by Extent Heritage, please feel free to contact me if you require further details.
Thanks
Anthony
0418970389

---

**From:** Laressa Barry [mailto:lbarry@extent.com.au]
**Sent:** Wednesday, 27 February 2019 11:49 AM
**To:** warrlan12@outlook.com; didgengunawalclan@yahoo.com.au; barrabyculturalservices@gmail.com; justinecoplin@optusnet.com.au; yurrandaali_cs@hotmail.com; yulayculturalservices@gmail.com; corroboreecorp@bigpond.com; aas.info@bigpond.com; boorooberongal@outlook.com; philipkhan.acn@live.com.au; widescope.group@live.com; daruglandobservations@gmail.com; darug_tribal@live.com.au; desmond4552@hotmail.com; wurrumay@hotmail.com; barkingowlcorp@gmail.com; cazadirect@live.com; koori@ozemail.com.au; muragadi@yahoo.com.au; vicki.slater@hotmail.com; srandall@deerubbin.org.au
**Cc:** Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>; Dr Alan Williams <awilliams@extent.com.au>
**Subject:** Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review (email 1 of 2)

Dear Stakeholders,

Thank you for your registration and involvement in the Aboriginal Cultural Heritage Assessment of the proposed Light Horse Interchange Business Hub at Eastern Creek, NSW. As you would be aware, the project is currently seeking SSD approval (SSD 9667), and the Proponent, Western Sydney Parklands Trust, is preparing an EIS for these works. Whilst an SSD process, the assessment is being undertaken in accordance with standard OEH guidelines.

Please find attached a copy of the draft ACHAR, for your input and review (I will shortly be sending through a second email containing the report appendices, which are too large to send via email). If you have any problems downloading the report or appendices, please let me know and I will distribute these documents via other methods.

I would greatly appreciate if you could please review the attached ACHAR and provide any feedback or comments at your earliest convenience, but by no later than **27 March 2019**.

Please direct your feedback to me via any of the following methods:

**Post:** Laressa Barry
Extent Heritage Pty Ltd
Level 3, 73 Union Street
Pyrmont NSW 2009
**Phone:** (02) 9555 4000
**Email:** LBarry@extent.com.au

Thank you in advance for your assistance with this, and should you have any questions please let me know.
Kind regards,
Laressa

## Laressa Berehowyj

**From:** arika jalomaki <yulayculturalservices@gmail.com>
**Sent:** Monday, 25 March 2019 12:58 PM
**To:** Laressa Barry
**Subject:** Re: Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review (REMINDER)
**Attachments:** image001.png

Dear Laressa

I have read and support the report for Light Horse Interchange Business Hub, Eastern Creek NSW.
We wish to be updated in all aspects of the project.

Many Thanks
Arika
Yulay Cultural Services

On Mon, 25 Mar. 2019, 12:50 pm Laressa Barry, <lbarry@extent.com.au> wrote:

> Dear Stakeholders,
>
> To those of you who have already responded, thank you for your feedback on Extent's draft ACHAR for the Light Horse Business Hub at Eastern Creek.
>
> The consultation period ends this coming Wednesday the 27th March, so if you have not already done so I invite you to please review the document and provide any feedback, if you so wish.
>
> Thank you again for your involvement in the project and we look forward to working with you in the future.
>
> Kind regards,
>
> Laressa
>
> **Laressa Barry** | BA (Hons)
> Heritage Advisor/Archaeologist
> T 02 9555 4000
> lbarry@extent.com.au
> extent.com.au
> Connect with us on:

**From:** Laressa Barry
**Sent:** Wednesday, 27 February 2019 11:49 AM
**To:** warrlan12@outlook.com; didgengunawalclan@yahoo.com.au; barrabyculturalservices@gmail.com; justinecoplin@optusnet.com.au; yurrandaali_cs@hotmail.com; yulayculturalservices@gmail.com; corroboreecorp@bigpond.com; aas.info@bigpond.com; boorooberongal@outlook.com; philipkhan.acn@live.com.au; widescope.group@live.com; daruglandobservations@gmail.com; darug_tribal@live.com.au; desmond4552@hotmail.com; wurrumay@hotmail.com; barkingowlcorp@gmail.com; cazadirect@live.com; koori@ozemail.com.au; muragadi@yahoo.com.au; vicki.slater@hotmail.com; srandall@deerubbin.org.au
**Cc:** Luke Wilson; Dr Alan Williams
**Subject:** Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review (email 1 of 2)

Dear Stakeholders,

Thank you for your registration and involvement in the Aboriginal Cultural Heritage Assessment of the proposed Light Horse Interchange Business Hub at Eastern Creek, NSW. As you would be aware, the project is currently seeking SSD approval (SSD 9667), and the Proponent, Western Sydney Parklands Trust, is preparing an EIS for these works. Whilst an SSD process, the assessment is being undertaken in accordance with standard OEH guidelines.

Please find attached a copy of the draft ACHAR, for your input and review (I will shortly be sending through a second email containing the report appendices, which are too large to send via email). If you have any problems downloading the report or appendices, please let me know and I will distribute these documents via other methods.

I would greatly appreciate if you could please review the attached ACHAR and provide any feedback or comments at your earliest convenience, but by no later than **27 March 2019**.

Please direct your feedback to me via any of the following methods:

**Post:** Laressa Barry

Extent Heritage Pty Ltd

Level 3, 73 Union Street

Pyrmont NSW 2009

**Phone:** (02) 9555 4000

**Email:** LBarry@extent.com.au

Thank you in advance for your assistance with this, and should you have any questions please let me know.

Kind regards,

Laressa

**Laressa Barry** | BA (Hons)
Heritage Advisor/Archaeologist
T 02 9555 4000
lbarry@extent.com.au
extent.com.au
Connect with us on:

DARUG LAND
OBSERVATIONS PTY LTD
ABN 27 602 765 453

EMAIL: DARUGLANDOBSERVATIONS@GMAIL.COM
PO BOX 173 ULLADULLA NSW 2539
MOBILE: 0413 687 279

6th March, 2019

Laressa Barry
Extent Heritage Pty Ltd
3/73 Union Street
PYRMONT NSW 2009

Dear Laressa,

**RE: PROPOSED LIGHT HORSE INTERCHANGE BUSINESS HUB, PART OF LOT 5 DP 804057 & LOT 10 DP 1061237, 165 WALLGROVE ROAD & 475 FERRERS ROAD, EASTERN CREEK**

Aboriginal Cultural Heritage Assessment

Darug Land Observations Pty Ltd (DLO) has reviewed the draft Aboriginal Cultural Heritage Assessment, and supports the methodology for the proposed redevelopment of industrial and light industrial land use activities, of part of Lot 5 DP 804057 & part of Lot 10 DP 1061237, within the Light Horse Interchange Business Hub, located at 165 Wallgrove Road and 475 Ferrers Road, in Eastern Creek.

In relation to the long-term storage of recovered artefacts, if any, we strongly believe recovered artefacts should be re-buried on Country (the study area).

Furthermore, DLO would like to be involved in the site survey, archaeological test excavations and/or any other form of works to be carried out on the site.

Look forward to working with you on this project.

Yours sincerely,

Jamie Workman
Darug Land Observations Pty Ltd

Uncle Gordon Workman
Darug Elder

## Laressa Berehowyj

**From:** philip khan <philipkhan.acn@live.com.au>
**Sent:** Friday, 15 March 2019 4:46 PM
**To:** Laressa Barry
**Subject:** RE: Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review (email 2 of 2)

Hi Laressa,

Thank you for sending through your assessment report regarding Light Horse Interchange Business Hub, Eastern Creek (SSD9667) & I agree & support all your recommendations.

Kind Regards
Stefeanie

Kamilaroi Yankuntjatjara Working Group
Aboriginal Cultural Heritage Surveys, Lawn Mowing & Fencing
ABN 33 979 702 507
**Not registered for GST**
78 Forbes Street, Emu Plains NSW 2750
Mobile: 0434545982
Email: philipkhan.acn@live.com.au

Sent from Mail for Windows 10

---

**From:** Laressa Barry <lbarry@extent.com.au>
**Sent:** Wednesday, February 27, 2019 11:51:09 AM
**To:** warrlan12@outlook.com; didgengunawalclan@yahoo.com.au; barrabyculturalservices@gmail.com; justinecoplin@optusnet.com.au; yurrandaali_cs@hotmail.com; yulayculturalservices@gmail.com; corroboreecorp@bigpond.com; aas.info@bigpond.com; boorooberongal@outlook.com; philipkhan.acn@live.com.au; widescope.group@live.com; daruglandobservations@gmail.com; darug_tribal@live.com.au; desmond4552@hotmail.com; wurrumay@hotmail.com; barkingowlcorp@gmail.com; cazadirect@live.com; koori@ozemail.com.au; muragadi@yahoo.com.au; vicki.slater@hotmail.com; srandall@deerubbin.org.au
**Cc:** Luke Wilson; Dr Alan Williams
**Subject:** RE: Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review (email 2 of 2)

Dear Stakeholders,
As per the email below, please find attached the Light Horse Interchange Business Hub ACHAR appendices.
Kind regards,
Laressa

**Laressa Barry** | BA (Hons)
Heritage Advisor/Archaeologist
T 02 9555 4000
lbarry@extent.com.au
extent.com.au
Connect with us on:

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HERITAGE ADVISORS
TO AUSTRALIA AND
THE ASIA PACIFIC

SYDNEY | MELBOURNE | BRISBANE | PERTH

**From:** Laressa Barry
**Sent:** Wednesday, 27 February 2019 11:49 AM
**To:** 'warrlan12@outlook.com' <warrlan12@outlook.com>; 'didgengunawalclan@yahoo.com.au' <didgengunawalclan@yahoo.com.au>; 'barrabyculturalservices@gmail.com' <barrabyculturalservices@gmail.com>; 'justinecoplin@optusnet.com.au' <justinecoplin@optusnet.com.au>; 'yurrandaali_cs@hotmail.com' <yurrandaali_cs@hotmail.com>; 'yulayculturalservices@gmail.com' <yulayculturalservices@gmail.com>; 'corroboreecorp@bigpond.com' <corroboreecorp@bigpond.com>; 'aas.info@bigpond.com' <aas.info@bigpond.com>; 'boorooberongal@outlook.com' <boorooberongal@outlook.com>; 'philipkhan.acn@live.com.au' <philipkhan.acn@live.com.au>; 'widescope.group@live.com' <widescope.group@live.com>; 'daruglandobservations@gmail.com' <daruglandobservations@gmail.com>; 'darug_tribal@live.com.au' <darug_tribal@live.com.au>; 'desmond4552@hotmail.com' <desmond4552@hotmail.com>; 'wurrumay@hotmail.com' <wurrumay@hotmail.com>; 'barkingowlcorp@gmail.com' <barkingowlcorp@gmail.com>; 'cazadirect@live.com' <cazadirect@live.com>; 'koori@ozemail.com.au' <koori@ozemail.com.au>; 'muragadi@yahoo.com.au' <muragadi@yahoo.com.au>; 'vicki.slater@hotmail.com' <vicki.slater@hotmail.com>; 'srandall@deerubbin.org.au' <srandall@deerubbin.org.au>
**Cc:** 'Luke Wilson' <Luke.Wilson@wspt.nsw.gov.au>; Dr Alan Williams <awilliams@extent.com.au>
**Subject:** Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review (email 1 of 2)

Dear Stakeholders,

Thank you for your registration and involvement in the Aboriginal Cultural Heritage Assessment of the proposed Light Horse Interchange Business Hub at Eastern Creek, NSW. As you would be aware, the project is currently seeking SSD approval (SSD 9667), and the Proponent, Western Sydney Parklands Trust, is preparing an EIS for these works. Whilst an SSD process, the assessment is being undertaken in accordance with standard OEH guidelines.

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I would greatly appreciate if you could please review the attached ACHAR and provide any feedback or comments at your earliest convenience, but by no later than **27 March 2019**.

Please direct your feedback to me via any of the following methods:

**Post:** Laressa Barry
Extent Heritage Pty Ltd
Level 3, 73 Union Street
Pyrmont NSW 2009
**Phone:** (02) 9555 4000
**Email:** LBarry@extent.com.au

Thank you in advance for your assistance with this, and should you have any questions please let me know.
Kind regards,
Laressa

## Laressa Barry

**From:** lee field <barrabyculturalservices@gmail.com>
**Sent:** Wednesday, 13 March 2019 3:13 PM
**To:** Laressa Barry
**Subject:** Re: Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review (email 2 of 2)

Dear Laressa,

Barraby supports the Draft Report associated with the Project at Light Horse Interchange Business Hub, Eastern Creek and wish to be kept informed of all stages of the project.

Many Thanks
Lee Field

On Wed, Feb 27, 2019 at 11:51 AM Laressa Barry <lbarry@extent.com.au> wrote:

> Dear Stakeholders,
>
> As per the email below, please find attached the Light Horse Interchange Business Hub ACHAR appendices.
>
> Kind regards,
>
> Laressa
>
> **Laressa Barry** | BA (Hons)
> Heritage Advisor/Archaeologist
> T 02 9555 4000
> lbarry@extent.com.au
> extent.com.au
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>
> EXTENT
> HERITAGE ADVISORS
> TO AUSTRALIA AND
> THE ASIA PACIFIC
>
> SYDNEY | MELBOURNE | BRISBANE | PERTH
>
> **From:** Laressa Barry
> **Sent:** Wednesday, 27 February 2019 11:49 AM
> **To:** 'warrlan12@outlook.com' <warrlan12@outlook.com>; 'didgengunawalclan@yahoo.com.au' <didgengunawalclan@yahoo.com.au>; 'barrabyculturalservices@gmail.com' <barrabyculturalservices@gmail.com>; 'justinecoplin@optusnet.com.au' <justinecoplin@optusnet.com.au>; 'yurrandaali_cs@hotmail.com' <yurrandaali_cs@hotmail.com>; 'yulayculturalservices@gmail.com' <yulayculturalservices@gmail.com>; 'corroboreecorp@bigpond.com' <corroboreecorp@bigpond.com>; 'aas.info@bigpond.com' <aas.info@bigpond.com>; 'boorooberongal@outlook.com'

<boorooberongal@outlook.com>; 'philipkhan.acn@live.com.au' <philipkhan.acn@live.com.au>; 'widescope.group@live.com' <widescope.group@live.com>; 'daruglandobservations@gmail.com' <daruglandobservations@gmail.com>; 'darug_tribal@live.com.au' <darug_tribal@live.com.au>; 'desmond4552@hotmail.com' <desmond4552@hotmail.com>; 'wurrumay@hotmail.com' <wurrumay@hotmail.com>; 'barkingowlcorp@gmail.com' <barkingowlcorp@gmail.com>; 'cazadirect@live.com' <cazadirect@live.com>; 'koori@ozemail.com.au' <koori@ozemail.com.au>; 'muragadi@yahoo.com.au' <muragadi@yahoo.com.au>; 'vicki.slater@hotmail.com' <vicki.slater@hotmail.com>; 'srandall@deerubbin.org.au' <srandall@deerubbin.org.au>
**Cc:** 'Luke Wilson' <Luke.Wilson@wspt.nsw.gov.au>; Dr Alan Williams <awilliams@extent.com.au>
**Subject:** Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review (email 1 of 2)

Dear Stakeholders,

Thank you for your registration and involvement in the Aboriginal Cultural Heritage Assessment of the proposed Light Horse Interchange Business Hub at Eastern Creek, NSW. As you would be aware, the project is currently seeking SSD approval (SSD 9667), and the Proponent, Western Sydney Parklands Trust, is preparing an EIS for these works. Whilst an SSD process, the assessment is being undertaken in accordance with standard OEH guidelines.

Please find attached a copy of the draft ACHAR, for your input and review (I will shortly be sending through a second email containing the report appendices, which are too large to send via email). If you have any problems downloading the report or appendices, please let me know and I will distribute these documents via other methods.

I would greatly appreciate if you could please review the attached ACHAR and provide any feedback or comments at your earliest convenience, but by no later than **27 March 2019**.

Please direct your feedback to me via any of the following methods:

**Post:** Laressa Barry

Extent Heritage Pty Ltd

Level 3, 73 Union Street

Pyrmont NSW 2009

**Phone:** (02) 9555 4000

**Email:** LBarry@extent.com.au

Thank you in advance for your assistance with this, and should you have any questions please let me know.

## Laressa Barry

**From:** John Reilly <jmreilly228@gmail.com>
**Sent:** Tuesday, 12 March 2019 12:04 PM
**To:** Laressa Barry
**Subject:** Light Horse Interchange

All looks fine.
Please advise further updates.
Kind Regards
John Reilly
Director DNAC (DTAC).

## Laressa Berehowyj

**From:** Laressa Barry
**Sent:** Monday, 25 March 2019 12:50 PM
**To:** warrlan12@outlook.com; didgengunawalclan@yahoo.com.au; barrabyculturalservices@gmail.com; justinecoplin@optusnet.com.au; yurrandaali_cs@hotmail.com; yulayculturalservices@gmail.com; corroboreecorp@bigpond.com; aas.info@bigpond.com; boorooberongal@outlook.com; philipkhan.acn@live.com.au; widescope.group@live.com; daruglandobservations@gmail.com; darug_tribal@live.com.au; desmond4552@hotmail.com; wurrumay@hotmail.com; barkingowlcorp@gmail.com; cazadirect@live.com; koori@ozemail.com.au; muragadi@yahoo.com.au; vicki.slater@hotmail.com; srandall@deerubbin.org.au
**Cc:** Luke Wilson; Dr Alan Williams
**Subject:** RE: Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review (REMINDER)

Dear Stakeholders,
To those of you who have already responded, thank you for your feedback on Extent's draft ACHAR for the Light Horse Business Hub at Eastern Creek.

The consultation period ends this coming Wednesday the 27th March, so if you have not already done so I invite you to please review the document and provide any feedback, if you so wish.

Thank you again for your involvement in the project and we look forward to working with you in the future.
Kind regards,
Laressa

**Laressa Barry** | BA (Hons)
Heritage Advisor/Archaeologist
T 02 9555 4000
lbarry@extent.com.au
extent.com.au
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**From:** Laressa Barry
**Sent:** Wednesday, 27 February 2019 11:49 AM
**To:** warrlan12@outlook.com; didgengunawalclan@yahoo.com.au; barrabyculturalservices@gmail.com; justinecoplin@optusnet.com.au; yurrandaali_cs@hotmail.com; yulayculturalservices@gmail.com; corroboreecorp@bigpond.com; aas.info@bigpond.com; boorooberongal@outlook.com; philipkhan.acn@live.com.au; widescope.group@live.com; daruglandobservations@gmail.com; darug_tribal@live.com.au; desmond4552@hotmail.com; wurrumay@hotmail.com; barkingowlcorp@gmail.com; cazadirect@live.com; koori@ozemail.com.au; muragadi@yahoo.com.au; vicki.slater@hotmail.com; srandall@deerubbin.org.au

**Cc:** Luke Wilson; Dr Alan Williams
**Subject:** Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review (email 1 of 2)

Dear Stakeholders,

Thank you for your registration and involvement in the Aboriginal Cultural Heritage Assessment of the proposed Light Horse Interchange Business Hub at Eastern Creek, NSW. As you would be aware, the project is currently seeking SSD approval (SSD 9667), and the Proponent, Western Sydney Parklands Trust, is preparing an EIS for these works. Whilst an SSD process, the assessment is being undertaken in accordance with standard OEH guidelines.

Please find attached a copy of the draft ACHAR, for your input and review (I will shortly be sending through a second email containing the report appendices, which are too large to send via email). If you have any problems downloading the report or appendices, please let me know and I will distribute these documents via other methods.

I would greatly appreciate if you could please review the attached ACHAR and provide any feedback or comments at your earliest convenience, but by no later than **27 March 2019**.

Please direct your feedback to me via any of the following methods:

**Post:** Laressa Barry
Extent Heritage Pty Ltd
Level 3, 73 Union Street
Pyrmont NSW 2009
**Phone:** (02) 9555 4000
**Email:** LBarry@extent.com.au

Thank you in advance for your assistance with this, and should you have any questions please let me know.
Kind regards,
Laressa

**Laressa Barry** | BA (Hons)
Heritage Advisor/Archaeologist
T 02 9555 4000
lbarry@extent.com.au
extent.com.au
Connect with us on:

## Laressa Berehowyj

**From:** Bo Field <yurrandaali_cs@hotmail.com>
**Sent:** Monday, 25 March 2019 12:54 PM
**To:** Laressa Barry
**Subject:** Re: RE: Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review (REMINDER)

Dear Laressa

I have read and agree with the ACHAR for this project. Yurrandaali would like to be updated as the project progresses.

Many Thanks
Bo

On 25 Mar. 2019 at 12:50 pm, <Laressa Barry> wrote:

Dear Stakeholders,
To those of you who have already responded, thank you for your feedback on Extent's draft ACHAR for the Light Horse Business Hub at Eastern Creek.

The consultation period ends this coming Wednesday the 27th March, so if you have not already done so I invite you to please review the document and provide any feedback, if you so wish.

Thank you again for your involvement in the project and we look forward to working with you in the future.
Kind regards,
Laressa

**Laressa Barry** | BA (Hons)
Heritage Advisor/Archaeologist
T 02 9555 4000
lbarry@extent.com.au
extent.com.au
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**From:** Laressa Barry
**Sent:** Wednesday, 27 February 2019 11:49 AM
**To:** warrlan12@outlook.com; didgengunawalclan@yahoo.com.au; barrabyculturalservices@gmail.com; justinecoplin@optusnet.com.au; yurrandaali_cs@hotmail.com; yulayculturalservices@gmail.com; corroboreecorp@bigpond.com; aas.info@bigpond.com;

boorooberongal@outlook.com; philipkhan.acn@live.com.au; widescope.group@live.com; daruglandobservations@gmail.com; darug_tribal@live.com.au; desmond4552@hotmail.com; wurrumay@hotmail.com; barkingowlcorp@gmail.com; cazadirect@live.com; koori@ozemail.com.au; muragadi@yahoo.com.au; vicki.slater@hotmail.com; srandall@deerubbin.org.au
**Cc:** Luke Wilson; Dr Alan Williams
**Subject:** Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review (email 1 of 2)

Dear Stakeholders,

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Please find attached a copy of the draft ACHAR, for your input and review (I will shortly be sending through a second email containing the report appendices, which are too large to send via email). If you have any problems downloading the report or appendices, please let me know and I will distribute these documents via other methods.

I would greatly appreciate if you could please review the attached ACHAR and provide any feedback or comments at your earliest convenience, but by no later than **27 March 2019**.

Please direct your feedback to me via any of the following methods:

**Post:** Laressa Barry
Extent Heritage Pty Ltd
Level 3, 73 Union Street
Pyrmont NSW 2009
**Phone:** (02) 9555 4000
**Email:** LBarry@extent.com.au

Thank you in advance for your assistance with this, and should you have any questions please let me know.
Kind regards,
Laressa

**Laressa Barry** | BA (Hons)
Heritage Advisor/Archaeologist
T 02 9555 4000
lbarry@extent.com.au
extent.com.au
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## Laressa Berehowyj

**From:** lilly carroll <didgengunawalclan@yahoo.com.au>
**Sent:** Monday, 25 March 2019 2:24 PM
**To:** Laressa Barry
**Subject:** Re: Light Horse Interchange Business Hub, Eastern Creek, NSW ACHAR - Report review (REMINDER)

Hi Laredo's,

DNC is happy with the Lighthorse Business ACHAR,

Kind regards
Paul Boyd
Director for DNC
Sent from Yahoo Mail for iPhone

On Monday, March 25, 2019, 12:50 pm, Laressa Barry <lbarry@extent.com.au> wrote:

> Dear Stakeholders,
>
> To those of you who have already responded, thank you for your feedback on Extent's draft ACHAR for the Light Horse Business Hub at Eastern Creek.
>
> The consultation period ends this coming Wednesday the 27th March, so if you have not already done so I invite you to please review the document and provide any feedback, if you so wish.
>
> Thank you again for your involvement in the project and we look forward to working with you in the future.
>
> Kind regards,
>
> Laressa

**Laressa Barry** | BA (Hons)
Heritage Advisor/Archaeologist
T 02 9555 4000
lbarry@extent.com.au
extent.com.au
Connect with us on:

| | |
|---|---|
| **From:** | Laressa Barry |
| **To:** | Coral Hardwick |
| **Subject:** | FW: Consultancy rates |
| **Date:** | Tuesday, 10 September 2019 10:33:15 AM |
| **Attachments:** | Advice to clients.pdf<br>Company Policy.pdf<br>FB_423c721a-4cd0-481a-91f8-780e9f111549.png<br>LinkedIn_ebc4f2a1-55e1-4efe-8f0e-103053dbb87b.png<br>Insta_64ba6810-999a-4a57-a859-66d10d805618.png<br>sig_37019455-de5a-4a03-8171-04afff4d061f.png |

---

Laressa Barry | BA (Hons)
Senior Heritage Advisor
T 02 9555 4000
lbarry@extent.com.au
extent.com.au

---

**From:** Laressa Barry <lbarry@extent.com.au>
**Sent:** Friday, 5 July 2019 5:33 PM
**To:** Butucarbin Heritage <butuheritage@gmail.com>; Georgia Burnett <gburnett@extent.com.au>
**Cc:** Dr Alan Williams <awilliams@extent.com.au>
**Subject:** RE: Consultancy rates

Dear Lowanna,

Thank you for your organisation's involvement in the Light Horse Interchange Business Hub project to date, and for your positive feedback regarding the test excavation methodology (dated 10th May 2019). We were somewhat surprised to receive the second letter on consulting rates (dated 3rd May 2019), following your organisation's acceptance of the subcontractor rates, terms and conditions, and participation in the excavations. In response, we provide some clarification below on the input our company has with the proponent for the RAP engagement process.

In relation to your first letter, we highlight that discussions are undertaken with RAPs during the assessment methodology review period. As such, many of the selected participants for test excavation (including your organisation) are aware of the imminent work probably 1-2 weeks prior to the fieldwork being initiated, rather than the two days indicated. Of course, we wait for the comment period to expire in the event of unexpected input or significant issues, but more commonly we find that such information is received promptly in the process, and planning for the fieldwork can occur during the comment phase – as was the case here.

With regards to your queries regarding stakeholder engagement, Extent Heritage has defined policies in place for Aboriginal and Torres Strait Islander consultation and advice to proponents on stakeholder engagement, which I have attached for your reference. However, the decision about whether or not to employ Registered Aboriginal Parties (RAPs), how many and which ones is at the discretion of the proponent. Extent may provide *advice* to the proponent (where sought) to assist them in their decision-making process, but ultimately the decision is made by them. On this particular occasion, the proponent selected RAPs based on a rotating rostering

system of their own, since they are involved in multiple large-scale projects across western Sydney. It is also likely that your voluntary participation in earlier stages may have played a role in their selection process.

As for your letter regarding the daily rate for RAP participation in fieldwork, we note your frustration. In this instance, the proponent sought competitive rates as part of the paid engagement of the fieldwork (noting OEH's guidelines require consultation, not paid participation).

We take note of your schedule of rates and disbursement costs moving forward into future projects.

Thank you,
Laressa

Laressa Barry | BA (Hons)
Senior Heritage Advisor
T 02 9555 4000
lbarry@extent.com.au
extent.com.au
Connect with us on:

**From:** Butucarbin Heritage <butuheritage@gmail.com>
**Sent:** Wednesday, 3 July 2019 3:27 PM
**To:** Georgia Burnett <gburnett@extent.com.au>; Laressa Barry <lbarry@extent.com.au>
**Cc:** Dr Alan Williams <awilliams@extent.com.au>
**Subject:** Consultancy rates

To whom it may concern.
Please see attached documents in relation to issues concerning consultancy rates and the methodology for the Lighthorse Interchange Project.

Regards,
--
Lowanna Gibson
Project Manager for Butucarbin Cultural Heritage Assessments
B.A Archaeology/Anthropology USYD
Juris Doctor Candidate UTS

# Appendix 2-9. Post excavation Report Review – Feedback Received

**From:** WIDESCOPE . <widescope.group@live.com>
**Sent:** Thursday, 19 December 2019 7:19 PM
**To:** Megan Sheppard Brennand
**Subject:** RE: Light Horse Interchange Business Hub Draft Post-Excavation ACHAR

Hi Megan

Thank you I support Light Horse Interchange Business Hub Draft Post-Excavation ACHA
Regards
Steven Hickey

---

**From:** Megan Sheppard Brennand
**Sent:** Wednesday, 18 December 2019 3:00 PM
**To:** Phillip Boney; lilly carroll; barrabyculturalservices@gmail.com; justinecoplin@optusnet.com.au; yurrandaali_cs@hotmail.com; yulayculturalservices@gmail.com; aas.info@bigpond.com; boorooberongal@outlook.com; philip khan; WIDESCOPE .; Darug Land Observations; darug_tribal@live.com.au; desmond dyer; wurrumay@hotmail.com; barkingowlcorp@gmail.com; Caza X; koori@ozemail.com.au; muragadi@yahoo.com.au; vicki.slater@hotmail.com; Steve Randall
**Cc:** Georgia Burnett
**Subject:** RE: Light Horse Interchange Business Hub Draft Post-Excavation ACHAR

Hi All,

This email is another quick reminder that the review period for the Light Horse Interchange Business Hub Draft Post-Excavation ACHAR ends **tomorrow** - **19 December 2019**. If you wish to provide input and/or comment, please can you do so by COB tomorrow. Once comments have been received, the document will be modified and finalised.

Kind regards,
Megan

**Megan Sheppard Brennand**
Heritage Advisor
T 02 9555 4000
msbrennand@extent.com.au
extent.com.au

---

**From:** Megan Sheppard Brennand <msbrennand@extent.com.au>
**Sent:** Monday, 9 December 2019 3:56 PM
**To:** Phillip Boney <Waarlan12@outlook.com>; lilly carroll <didgengunawalclan@yahoo.com.au>; barrabyculturalservices@gmail.com; justinecoplin@optusnet.com.au; yurrandaali_cs@hotmail.com; yulayculturalservices@gmail.com; aas.info@bigpond.com; boorooberongal@outlook.com; philip khan <philipkhan.acn@live.com.au>; WIDESCOPE . <widescope.group@live.com>; Darug Land Observations <daruglandobservations@gmail.com>; darug_tribal@live.com.au; desmond dyer <desmond4552@hotmail.com>; wurrumay@hotmail.com; barkingowlcorp@gmail.com; Caza X <cazadirect@live.com>; koori@ozemail.com.au; muragadi@yahoo.com.au; vicki.slater@hotmail.com; Steve Randall <SRandall@deerubbin.org.au>
**Cc:** Georgia Burnett <gburnett@extent.com.au>
**Subject:** RE: Light Horse Interchange Business Hub Draft Post-Excavation ACHAR

Hi All,

This email is a reminder that the review period for the Light Horse Interchange Business Hub Draft Post-Excavation ACHAR ends on **19 December 2019**. If you wish to provide input and/or comment, please can you do so by this date. Once comments have been received, the document will be modified and finalised. Please let myself or Georgia Burnett know if you require another link to the report.

Kind regards,
Megan

**Megan Sheppard Brennand**
Heritage Advisor
T 02 9555 4000
msbrennand@extent.com.au
extent.com.au
Connect with us on:

**From:** Coral Hardwick <chardwick@extent.com.au>
**Sent:** Thursday, 21 November 2019 1:49 PM
**Cc:** Laressa Barry <lbarry@extent.com.au>; Megan Sheppard Brennand <msbrennand@extent.com.au>; Georgia Burnett <gburnett@extent.com.au>
**Subject:** Light Horse Interchange Business Hub Draft Post-Excavation ACHAR

Dear All,

Thank you for your ongoing involvement in the Aboriginal heritage assessment for the proposed Light Horse Interchange Business Hub. As you will be aware, the Aboriginal Cultural Heritage Assessment (ACHA) report for this project was drafted in February this year which presented the results of field survey. Following this ACHAR, it was recommended that further testing be conducted across the study area, and this report presents the results of on-site test excavations. The test excavations demonstrated the presence of two source-bordering alluvial terraces along Eskdale and Eastern Creek, within which discrete ~100m$^2$ patches formed key locales of Aboriginal visitation and occupation over the last 4,000 years. The nature of the cultural assemblage suggests intense but short-lived occupation, with a focus on the exploitation of locally available stone resources for artefact and tool production. Certain raw lithic material improvement strategies, in the form of heat treatment, were also employed on site and both sites are considered of high archaeological significance.

In contrast, the remainder of the study area is dominated by a low-density distribution of cultural material (<10 artefacts) in the form of small artefact scatter sites and isolated artefacts (several of which have been previously registered on the AHIMS database), and ultimately reflects an ephemeral or transient use of the wider area in the past. Such sites have limited research potential (typically restricted to only the technological attributes of the artefact assemblage), limited stratigraphic integrity, and are representative of other sites in the south western Cumberland Plain; and as such are considered of low archaeological significance.

A review of the proposed development design indicates that considerable impacts would occur to the Eskdale Creek alluvial terrace landform and the low-density background scatter present within the site. This would include impacts to 100% of the Eskdale Creek terrace landform and more generally, impacts to a large portion of the low density background scatter present across much of the rest of the study area. A management strategy and recommendations to address these impacts has been provided, which includes archaeological salvage of up to 100m$^2$ of the Eskdale Creek alluvial terrace deposit, in the vicinity of TP151.

Please find the link below to the draft ACHA report and appendices for your review and input. The link is live for a week, please let me know if you need another one sent. If you wish to provide input and/or comment, please can you do so by the **19 December 2019**. Once comments have been received, the document will be modified and finalised.

https://we.tl/t-BJ8lORFmDc

Cheers,
Coral Hardwick

**Coral Hardwick** | BA (Hons), MRes (Macquarie University)
Heritage Advisor
T 02 9555 4000 | M 0436 333 686
chardwick@extent.com.au
extent.com.au
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THE ASIA PACIFIC

SYDNEY | MELBOURNE | BRISBANE | PERTH

**From:** Megan Sheppard Brennand
**Sent:** Wednesday, 11 December 2019 2:49 PM
**To:** Georgia Burnett
**Subject:** Fwd: Light Horse interchange business hub - ACHAR

Get Outlook for iOS

**Megan Sheppard Brennand**
Heritage Advisor
T 02 9555 4000
msbrennand@extent.com.au
extent.com.au
Connect with us on:

---

**From:** philip khan <philipkhan.acn@live.com.au>
**Sent:** Wednesday, December 11, 2019 1:05:38 PM
**To:** Megan Sheppard Brennand <msbrennand@extent.com.au>
**Subject:** Light Horse interchange business hub - ACHAR

Hi Megan,

Thank you for your ACHAR report regarding the Light Horse interchange business hub, I agree and support your recommendations and would also like to add,

- This area is highly significant to the Aboriginal People as there are multiply creek lines running through it. In the past our people would have camped near the creek line as there would have been plenty of bush tucker due to reptiles, kangaroos and birdlife being in the area.
- The names of the creek lines are now Erskin, Redy & Eastern Creek, back in the old days our families would have created their own names for this area and there could be burial grounds.
- If artefacts are located on site, I recommend they are stored at The Deerubbin LC.

Kind Regards
Stef

**Kamilaroi Yankuntjatjara Working Group**
Aboriginal Cultural Heritage Surveys, Lawn Mowing & Fencing
ABN 33 979 702 507
**Not registered for GST**
78 Forbes Street, Emu Plains NSW 2750
Mobile: 0434545982
Email: philipkhan.acn@live.com.au

# Appendix 3: Archaeological Background

# A3-1. Site Type Information

Aboriginal Sites

Aboriginal sites are classified in a number of ways. At the most basic level, sites are recorded as 'closed sites' or 'open sites'. Closed sites are associated with rock shelters, and include other evidence of Aboriginal occupation that may be present, such as accumulated cultural deposit within the shelter ('potential archaeological deposit' or PAD), faunal remains (animal bone or shell), and rock art on the shelter walls (paintings or engravings). Open sites are broadly defined, and encompass all other types of Aboriginal sites identified where there is no rock shelter. The most common types of open sites found in NSW include artefacts, which can occur almost anywhere in the landscape, grinding grooves, rock art across formations, culturally modified trees, and shell deposits (middens) (OEH 2012:7). The presence or absence of stone artefacts is often a defining factor, although it is worth pointing out that almost any site is likely to have at least some associated artefacts, as discard or loss of this most ubiquitous and practically indestructible marker of Aboriginal archaeology is likely to have occurred anywhere that Aboriginal people stopped or gathered for any length of time.

Any one site (or close group of linked sites described as a 'site complex') can contain several different site features. For example, a shelter may have art on the walls, artefacts on the floor surface or outside the shelter, and be predicted to contain faunal remains and further artefacts in the accumulated deposit inside.

A description of terms used to describe different site features is provided in **Table 1**. Other features or types of Aboriginal cultural sites that do not necessarily leave physical evidence may exist or have once existed in the study area however such sites have not previously been recorded reflecting the archaeological focus of the past studies and the loss of traditional knowledge of such places in this area. Similarly there may be places of contemporary significance to Aboriginal people in the precincts and this will require consultation with the Aboriginal community to identify such places.

Table 1: A4-2-1 Aboriginal site feature definitions (OEH 2012:4-5)

| Site Feature | Definition |
|---|---|
| Artefact | Objects such as stone tools, and associated flaked material, spears, manuports, grindstones, discarded stone flakes, modified glass or shell demonstrating evidence of use of the area by Aboriginal people. |
| Potential Archaeological Deposit (PAD) | An area where Aboriginal objects may occur below the ground surface. The term 'potential archaeological deposit' was first applied in Sydney regional archaeology in the 1980s, and referred to rock shelters that were large enough and with enough accumulated deposit to allow archaeologists to presume that subsurface cultural material was highly likely to be present. Since then it has come to include open sites where the same prediction can be made. |
| Modified Tree (Carved or Scarred) | Trees which show the marks of modification as a result of cutting of bark from the trunk for use in the production of shields, canoes, boomerangs, burials shrouds, for medicinal purposes, foot holds etc., or alternately intentional carving of the heartwood of the tree to form a permanent marker to indicate ceremonial use/significance of a nearby area, again these carvings may also act as territorial or burial markers. |

| | |
|---|---|
| Stone Quarry | Usually a source of good quality stone which is quarried and used for the production of stone tools |
| Burial | A traditional or contemporary (post-contact) burial of an Aboriginal person, which may occur outside designated cemeteries and may not be marked, e.g. in caves, marked by stone cairns, in sand areas, along creek banks etc. |

Stone Artefacts

Aboriginal stone artefacts are an important source of archaeological information because stone is preserved for long periods of time whereas organic materials such as bone, shell, wood and plant fibres often decay. Stone artefacts provide valuable information about technology, economy, cultural change through time and settlement patterning. Stone has also been used for 'relative' dating of sites where direct methods such as radiocarbon dating cannot be applied. A technological sequence for stone artefacts for the region was first described in the late 1940s by Fred McCarthy and has since been refined over time by Hiscock and Attenbrow (Hiscock and Attenbrow 1998, 2005) into the 'Eastern Regional Sequence':

- Capertian – is distinguished by large uniface pebble tools, core tools, horse-hoof cores, scrapers and hammerstones. Backed artefacts occasionally present. Generally dates to before 5,000 years BP.
- Early Bondaian – Aspects of the Capertian assemblage continue, but backed artefacts and ground-edged artefacts increase. Artefacts during this period were predominantly made from fine-grained siliceous stone such as silcrete and tuff. Generally dated from 5,000 BP to 2,800 BP.
- Middle Bondaian – Characterised by backed artefacts, particularly Bondi Points and ground-edged artefacts. Artefacts made from siliceous materials, however quartz becomes more frequent. Generally dated from 2,800 BP to 1,600 BP.
- Late Bondaian – characterised by bipolar technology, eloueras, ground-edged artefacts, and bone and shell artefacts. Bondi points are virtually absent and artefacts are predominantly made from Quartz. Generally dated from 1,600 BP to European contact.

Survivability of the Archaeological Record

The following observations can be made about the nature and survivability of the archaeological record across the Cumberland subregion:

- Archaeological material is often found in areas of sub-surface exposure, such as those caused by erosion.
- Surface evidence (or the absence of surface evidence) does not necessarily indicate the potential, nature or density of sub-surface material. Extensive excavations have shown that areas with no surface evidence often contain sub-surface deposits buried beneath current ground surfaces (JMCHM 2001; Kohen 1984).
- Due to the limitations of surface surveys, test excavation is often required to establish the nature and density of archaeological material.

- Aboriginal cultural material is more likely to survive in areas that contain remnant portions of the pre-European soil profile, in contrast to landforms that have been impacted by historical or recent disturbances.
- The potential for survival of any archaeological sites will largely depend on the degree of past disturbance.
- Past disturbance to the soil profile can be due to European activity such as clearing, ploughing, grazing, and urban development and/or due to environmental factors such as flooding events, erosion and colluvial movement. These activities may disturb, erode or remove the natural soil profile completely.
- Aboriginal stone artefacts are more likely to survive because stone is preserved for long periods of time whereas organic materials such as bone, shell, wood and plant fibres decay.
- A major impact of more than 200 years of post-contact settlement on Aboriginal sites would have been the destruction of carved and scarred trees, which would have been removed as part of clearing for agricultural activities and the construction of infrastructure such as buildings and roads. However, there is some potential for culturally modified trees to survive in areas where there are stands of remnant native vegetation.

## A3-2. AHIMS Sites

A copy of the AHIMS search and Site Cards are provided in the subsequent pages.

# AHIMS Web Services (AWS)

## Extensive search - Site list report

Your Ref/PO Number : SYD18198

Client Service ID : 358029

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status | SiteFeatures | SiteTypes | Reports |
|---|---|---|---|---|---|---|---|---|---|---|
| 45-5-2576 | EC2 | AGD | 56 | 302650 | 6256580 | Open site | Valid | Artefact : - | Open Camp Site | 98435 |
| Contact | | Recorders | Kerry Navin,Mr.Kelvin Officer | | | | | Permits | 1382 | |
| 45-5-2577 | EC4 | AGD | 56 | 302250 | 6256320 | Open site | Valid | Artefact : - | Open Camp Site | 98435 |
| Contact | | Recorders | Mr.Kelvin Officer | | | | | Permits | | |
| 45-5-2578 | EC3 | AGD | 56 | 301980 | 6256520 | Open site | Valid | Artefact : - | Open Camp Site | 98435 |
| Contact | | Recorders | Mr.Kelvin Officer | | | | | Permits | | |
| 45-5-2580 | EC6 | AGD | 56 | 302480 | 6256280 | Open site | Valid | Artefact : - | Isolated Find | 98435 |
| Contact | | Recorders | Mr.Kelvin Officer | | | | | Permits | 1444 | |
| 45-5-2581 | EC7 | AGD | 56 | 302700 | 6256150 | Open site | Valid | Artefact : - | Open Camp Site | 98435 |
| Contact | | Recorders | Mr.Kelvin Officer | | | | | Permits | 1382 | |
| 45-5-2564 | IF1 | AGD | 56 | 301450 | 6257430 | Open site | Valid | Artefact : - | Isolated Find | 98435 |
| Contact | | Recorders | Kerry Navin,Mr.Kelvin Officer | | | | | Permits | | |
| 45-5-2565 | IF2 | AGD | 56 | 301200 | 6257240 | Open site | Valid | Artefact : - | Isolated Find | 98435 |
| Contact | | Recorders | Kerry Navin,Mr.Kelvin Officer | | | | | Permits | | |
| 45-5-1066 | Eastern Creek 1 EC 1 | GDA | 56 | 302157 | 6257912 | Open site | Destroyed | Artefact : - | Open Camp Site | 3694,98435 |
| Contact | | Recorders | Helen Brayshaw,Ms.Laila Haglund,Kelleher Nightingale Consulting Pty Ltd,Miss.Kri | | | | | Permits | 4001 | |
| 45-5-0436 | Eastern Creek W3 | AGD | 56 | 300740 | 6258050 | Open site | Valid | Artefact : - | Open Camp Site | 1018,98435 |
| Contact | | Recorders | Doctor.Susan Mcintyre-Tamwoy | | | | | Permits | | |
| 45-5-0438 | Eastern Creek W2 | AGD | 56 | 300900 | 6257650 | Open site | Valid | Artefact : - | Open Camp Site | 1018,98435 |
| Contact | | Recorders | Doctor.Susan Mcintyre-Tamwoy | | | | | Permits | 2569 | |
| 45-5-0439 | Eastern Creek W1 | AGD | 56 | 300750 | 6256650 | Open site | Valid | Artefact : - | Open Camp Site | 1018,98435 |
| Contact | | Recorders | Doctor.Susan Mcintyre-Tamwoy | | | | | Permits | | |
| 45-5-0249 | Wallgrove Wallgrove Road | AGD | 56 | 300900 | 6257100 | Open site | Valid | Artefact : - | Open Camp Site | 367,1018,98435,98444,98677 |
| Contact | | Recorders | Ms.Laila Haglund | | | | | Permits | 1573,1609 | |
| 45-5-0741 | WDD1 | AGD | 56 | 301840 | 6255920 | Open site | Valid | Artefact : - | Open Camp Site | 98435 |
| Contact | | Recorders | Margrit Koettig | | | | | Permits | | |
| 45-5-0743 | WDD3 | AGD | 56 | 301650 | 6255750 | Open site | Valid | Artefact : - | Open Camp Site | 1501,1530,98435 |
| Contact | | Recorders | Margrit Koettig | | | | | Permits | | |
| 45-5-0750 | EC12 (Eastern Creek) | AGD | 56 | 302330 | 6257000 | Open site | Valid | Artefact : - | Open Camp Site | 1644,1646,1814,98435 |
| Contact | | Recorders | Elizabeth Rich,Laura-Jane Smith | | | | | Permits | 131 | |
| 45-5-0751 | EC11 (Eastern Creek) | AGD | 56 | 302290 | 6257550 | Open site | Destroyed | Artefact : - | Open Camp Site | 1644,1646,1814,98435 |
| Contact | | Recorders | Elizabeth Rich,Laura-Jane Smith | | | | | Permits | 131 | |

**Report generated by AHIMS Web Service on 17/07/2018 for Alan Williams for the following area at Lot : 10, DP:DP1061237 with a Buffer of 1000 meters. Additional Info : Development of ACHA for SSD project. Number of Aboriginal sites and Aboriginal objects found is 72**

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# AHIMS Web Services (AWS)

## Extensive search - Site list report

Your Ref/PO Number : SYD18198

Client Service ID : 358029

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status | SiteFeatures | SiteTypes | Reports |
|---|---|---|---|---|---|---|---|---|---|---|
| 45-5-0752 | EC10 (Eastern Creek) | AGD | 56 | 302330 | 6257400 | Open site | Valid | Artefact : - | Open Camp Site | 1644,1646,1814,98435 |
| | **Contact** | **Recorders** | Elizabeth Rich,Laura-Jane Smith | | | | | **Permits** | 131 | |
| 45-5-0753 | EC9 (Eastern Creek) | AGD | 56 | 302200 | 6257100 | Open site | Valid | Artefact : - | Open Camp Site | 1644,1814,98435 |
| | **Contact** | **Recorders** | Elizabeth Rich,Mr.David Crew | | | | | **Permits** | | |
| 45-5-0756 | EC6 (Eastern Creek) | AGD | 56 | 302070 | 6257300 | Open site | Valid | Artefact : - | Open Camp Site | 1644,98435 |
| | **Contact** | **Recorders** | Elizabeth Rich,S Lalor,Mr.David Crew | | | | | **Permits** | | |
| 45-5-0757 | EC5 (Eastern Creek) | AGD | 56 | 302350 | 6257250 | Open site | Valid | Artefact : - | Open Camp Site | 1644,98435 |
| | **Contact** | **Recorders** | Elizabeth Rich,S Lalor,Mr.David Crew | | | | | **Permits** | | |
| 45-5-0758 | EC4 (Eastern Creek) | AGD | 56 | 302500 | 6257150 | Open site | Valid | Artefact : - | Open Camp Site | 1644,98435 |
| | **Contact** | **Recorders** | Elizabeth Rich,S Lalor,Mr.David Crew | | | | | **Permits** | | |
| 45-5-0588 | Blacktown Southwest 1 Eastern Creek | AGD | 56 | 300330 | 6256700 | Open site | Valid | Artefact : - | Open Camp Site | 98435 |
| | **Contact** | **Recorders** | Jim Kohen | | | | | **Permits** | 4218 | |
| 45-5-0759 | EC3 (Eastern Creek) | AGD | 56 | 302580 | 6257150 | Open site | Valid | Artefact : - | Open Camp Site | 1644,98435 |
| | **Contact** | **Recorders** | Elizabeth Rich,S Lalor,Mr.David Crew | | | | | **Permits** | | |
| 45-5-0760 | EC2 (Eastern Creek) | AGD | 56 | 302540 | 6257520 | Open site | Valid | Artefact : - | Open Camp Site | 1644,98435 |
| | **Contact** | **Recorders** | D Drew,Elizabeth Rich,S Lalor | | | | | **Permits** | | |
| 45-5-2614 | Eastern Creek 9 | AGD | 56 | 301890 | 6256000 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | | |
| 45-5-2648 | Eastern Creek PAD 20 | AGD | 56 | 301500 | 6258000 | Open site | Destroyed | Potential Archaeological Deposit (PAD) : - | | 103782 |
| | **Contact** | **Recorders** | Australian Museum Consulting (AM Consulting) | | | | | **Permits** | 1317,1566 | |
| 45-5-2591 | EC1 | AGD | 56 | 301600 | 6256450 | Open site | Valid | Artefact : - | | |
| | **Contact** John Gallard | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | | |
| 45-5-2592 | EC2 (Duplicate copy see 45-5-2576) | AGD | 56 | 302650 | 6256580 | Open site | Valid | Artefact : - | | |
| | **Contact** Colin Gale | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | | |
| 45-5-2593 | EC3 (Duplicate copy of 45-5-2578) | AGD | 56 | 301980 | 6256520 | Open site | Valid | Artefact : - | | |
| | **Contact** Colin Gale | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | | |
| 45-5-2594 | EC4 (Duplicate copy of 45-5-2577) | AGD | 56 | 302250 | 6256320 | Open site | Valid | Artefact : - | | |
| | **Contact** John Gallard | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | | |
| 45-5-2595 | EC5 (Duplicate copy of 45-5-2579) | AGD | 56 | 302350 | 6256300 | Open site | Valid | Artefact : - | | |
| | **Contact** John Gallard | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | 1444 | |
| 45-5-2596 | EC6 (Duplicate copy of 45-5-2580) | AGD | 56 | 302480 | 6256280 | Open site | Valid | Artefact : - | | |
| | **Contact** John Gallard | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | | |

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# AHIMS Web Services (AWS)

## Extensive search - Site list report

Your Ref/PO Number : SYD18198

Client Service ID : 358029

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status | SiteFeatures | SiteTypes | Reports |
|---|---|---|---|---|---|---|---|---|---|---|
| 45-5-2597 | EC7 (Duplicate copy of 45-5-2581) | AGD | 56 | 302700 | 6256150 | Open site | Valid | Artefact : - | | |
| | **Contact** Colin Gale | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | | |
| 45-5-2599 | WSRA 1 | AGD | 56 | 302100 | 6256510 | Open site | Valid | Artefact : - | | |
| | **Contact** John Gallard | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | | |
| 45-5-2601 | IF1 | AGD | 56 | 302290 | 6256350 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | | |
| 45-5-2797 | WSO-OS-8 | AGD | 56 | 301090 | 6256450 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Mrs.Robynne Mills | | | | | **Permits** | 1398 | |
| 45-5-2836 | IF:7 | AGD | 56 | 300600 | 6256840 | Open site | Valid | Artefact : - | | 4599,98444,100449 |
| | **Contact** | **Recorders** | Dominic Steele Archaeological Consulting | | | | | **Permits** | 1573,1609,2470 | |
| 45-5-2837 | IF:8 | AGD | 56 | 300640 | 6256780 | Open site | Valid | Artefact : - | | 4599,100449 |
| | **Contact** | **Recorders** | Dominic Steele Archaeological Consulting | | | | | **Permits** | 2470 | |
| 45-5-2654 | PL-05-1 | AGD | 56 | 301550 | 6258030 | Open site | Destroyed | Artefact : - | | |
| | **Contact** | **Recorders** | Central West Archaeological and Heritage Services Pty Ltd | | | | | **Permits** | | |
| 45-5-2822 | WBP 1 | AGD | 56 | 300650 | 6257100 | Open site | Valid | Modified Tree (Carved or Scarred) : - | | 98444 |
| | **Contact** | **Recorders** | Dominic Steele Archaeological Consulting | | | | | **Permits** | 1573,1609 | |
| 45-5-2823 | AWL 8 | AGD | 56 | 300700 | 6257550 | Open site | Valid | Art (Pigment or Engraved) : - | | 98444 |
| | **Contact** | **Recorders** | Dominic Steele Archaeological Consulting | | | | | **Permits** | 1573,1609 | |
| 45-5-2827 | AWL 4 | AGD | 56 | 300870 | 6256820 | Open site | Valid | Artefact : - | | 4599,98444 |
| | **Contact** | **Recorders** | Dominic Steele Archaeological Consulting | | | | | **Permits** | 1573,1609 | |
| 45-5-2828 | AWL 6 | AGD | 56 | 300670 | 6256780 | Open site | Valid | Artefact : - | | 4599,98444,100449 |
| | **Contact** | **Recorders** | Dominic Steele Archaeological Consulting | | | | | **Permits** | 1573,1609,2470 | |
| 45-5-2829 | AWL 7 | AGD | 56 | 300680 | 6256860 | Open site | Valid | Artefact : - | | 4599,98444,100449 |
| | **Contact** | **Recorders** | Dominic Steele Archaeological Consulting | | | | | **Permits** | 1573,1609,2470 | |
| 45-5-2849 | SO-ST 2 (A, B, C, D & E) | AGD | 56 | 301310 | 6258010 | Open site | Destroyed | Modified Tree (Carved or Scarred) : - | | 4015,98084 |
| | **Contact** | **Recorders** | Australian Museum Consulting (AM Consulting),Megan Mebberson | | | | | **Permits** | 1597 | |
| 45-5-2974 | Lucan Park PAD | AGD | 56 | 301090 | 6256666 | Open site | Valid | Potential Archaeological Deposit (PAD) : - | | |
| | **Contact** | **Recorders** | Megan Mebberson | | | | | **Permits** | 1941 | |

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# AHIMS Web Services (AWS)

## Extensive search - Site list report

Your Ref/PO Number : SYD18198

Client Service ID : 358029

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status | SiteFeatures | SiteTypes | Reports |
|---|---|---|---|---|---|---|---|---|---|---|
| 45-5-2985 | Austral 3 | AGD | 56 | 300770 | 6256000 | Open site | Valid | Artefact : 1 | | |
| Contact | | Recorders | Doctor.Jo McDonald | | | | | Permits | 1994 | |
| 45-5-3020 | EC_AMBS_04 | AGD | 56 | 301654 | 6258414 | Open site | Valid | Artefact : - | | |
| Contact | | Recorders | Matthew Kelleher | | | | | Permits | 2150 | |
| 45-5-3206 | ISF11 | AGD | 56 | 300780 | 6256920 | Open site | Valid | Artefact : - | | |
| Contact | | Recorders | Jo McDonald Cultural Heritage Management see GML | | | | | Permits | | |
| 45-5-3260 | WSP 13 | GDA | 56 | 302724 | 6258228 | Open site | Valid | Artefact : 1 | | 100103 |
| Contact | S Scanlon | Recorders | Jo McDonald Cultural Heritage Management see GML | | | | | Permits | | |
| 45-5-3261 | WSP 14 | GDA | 56 | 301798 | 6258400 | Open site | Valid | Artefact : 1 | | 100103 |
| Contact | S Scanlon | Recorders | Jo McDonald Cultural Heritage Management see GML | | | | | Permits | | |
| 45-5-3262 | WSP 15 | GDA | 56 | 302212 | 6258063 | Open site | Valid | Artefact : - | | 100103 |
| Contact | S Scanlon | Recorders | Jo McDonald Cultural Heritage Management see GML | | | | | Permits | | |
| 45-5-3264 | WSP 17 | GDA | 56 | 302412 | 6257853 | Open site | Valid | Artefact : 1 | | 100103 |
| Contact | S Scanlon | Recorders | Jo McDonald Cultural Heritage Management see GML | | | | | Permits | | |
| 45-5-3265 | WSP 18 | GDA | 56 | 302087 | 6258599 | Open site | Valid | Artefact : 1 | | 100103 |
| Contact | S Scanlon | Recorders | Jo McDonald Cultural Heritage Management see GML | | | | | Permits | | |
| 45-5-2720 | PAD-OS-8 | AGD | 56 | 301150 | 6257650 | Open site | Destroyed | Artefact : - | | |
| Contact | | Recorders | Mrs.Robynne Mills | | | | | Permits | | |
| 45-5-2579 | EC5 | AGD | 56 | 302350 | 6256300 | Open site | Valid | Artefact : - | Isolated Find | 98435 |
| Contact | | Recorders | Mr.Kelvin Officer | | | | | Permits | | |
| 45-5-0761 | EC1 (Eastern Creek) | AGD | 56 | 302540 | 6257520 | Open site | Valid | Artefact : - | Open Camp Site | 1644,98435 |
| Contact | | Recorders | Elizabeth Rich,S Lalor,Mr.David Crew | | | | | Permits | 131 | |
| 45-5-3434 | Parramatta SWC PAD | AGD | 56 | 300320 | 6256325 | Open site | Valid | Potential Archaeological Deposit (PAD) : 1 | | |
| Contact | | Recorders | Heritage Concepts | | | | | Permits | 2965,2966 | |
| 45-5-0754 | EC8 (Eastern Creek) | AGD | 56 | 302300 | 6257080 | Open site | Valid | Artefact : - | Open Camp Site | 1644,1814,98435 |
| Contact | | Recorders | Elizabeth Rich,S Lalor,Mr.David Crew | | | | | Permits | | |
| 45-5-0755 | EC7 (Eastern Creek) | AGD | 56 | 302750 | 6257000 | Open site | Valid | Artefact : - | Open Camp Site | 1644,98435 |
| Contact | | Recorders | Elizabeth Rich,S Lalor,Mr.David Crew | | | | | Permits | | |
| 45-5-3779 | Link Road PAD | GDA | 56 | 300711 | 6256775 | Open site | Valid | Potential Archaeological Deposit (PAD) : - | | |
| Contact | | Recorders | Mr.Oliver Brown | | | | | Permits | 3206 | |
| 45-5-3810 | Q1 (Prospect) | GDA | 56 | 301032 | 6258446 | Open site | Valid | Artefact : 1 | | 101797 |

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# AHIMS Web Services (AWS)

## Extensive search - Site list report

Your Ref/PO Number : SYD18198

Client Service ID : 358029

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status | SiteFeatures | SiteTypes | Reports |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Contact** | **Recorders** | Jo McDonald Cultural Heritage Management see GML | | | | | **Permits** | | |
| 45-5-3811 | Q2 (Prospect) | GDA | 56 | 301173 | 6258417 | Open site | Valid | Artefact : 1 | | 101797 |
| | **Contact** | **Recorders** | Jo McDonald Cultural Heritage Management see GML | | | | | **Permits** | | |
| 45-5-3812 | Q3 (Prospect) | GDA | 56 | 301053 | 6258543 | Open site | Valid | Artefact : 1 | | 101797 |
| | **Contact** | **Recorders** | Jo McDonald Cultural Heritage Management see GML | | | | | **Permits** | | |
| 45-5-3813 | Q4 (Prospect) | GDA | 56 | 301243 | 6258480 | Open site | Valid | Artefact : 1 | | 101797 |
| | **Contact** | **Recorders** | Jo McDonald Cultural Heritage Management see GML,Kelleher Nightingale Consulti | | | | | **Permits** | | |
| 45-5-3814 | Q5 (Prospect) | GDA | 56 | 301198 | 6258432 | Open site | Valid | Artefact : 1 | | 101797 |
| | **Contact** | **Recorders** | Jo McDonald Cultural Heritage Management see GML,Kelleher Nightingale Consulti | | | | | **Permits** | | |
| 45-5-3815 | Q6 (Prospect) | GDA | 56 | 301168 | 6258410 | Open site | Valid | Artefact : 1 | | 101797 |
| | **Contact** | **Recorders** | Jo McDonald Cultural Heritage Management see GML,Kelleher Nightingale Consulti | | | | | **Permits** | | |
| 45-5-2600 | WSRA 2 | AGD | 56 | 302090 | 6255900 | Open site | Valid | Artefact : - | | |
| | **Contact** Colin Gale | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | | |
| 45-5-4284 | Erskine Park Link Road 2 | GDA | 56 | 301017 | 6256543 | Open site | Valid | Artefact : 1 | | |
| | **Contact** | **Recorders** | Doctor.Alan Williams | | | | | **Permits** | 3625 | |
| 45-5-4194 | CONSERVATION AREA PAD | GDA | 56 | 300863 | 6256750 | Open site | Valid | Potential Archaeological Deposit (PAD) : 1 | | |
| | **Contact** | **Recorders** | Doctor.Alan Williams | | | | | **Permits** | 3625 | |
| 45-5-4583 | M4-02 Eastern Creek | GDA | 56 | 302152 | 6258029 | Open site | Destroyed | Artefact : - | | |
| | **Contact** | **Recorders** | Helen Brayshaw,Kelleher Nightingale Consulting Pty Ltd,Miss.Kristen Taylor | | | | | **Permits** | 4001 | |
| 45-5-4726 | Lot 40 PAD | GDA | 56 | 300521 | 6257112 | Open site | Valid | Potential Archaeological Deposit (PAD) : -, Artefact : - | | |
| | **Contact** | **Recorders** | GML Heritage Pty Ltd + Context - Surry Hills,Doctor.Tim Owen,Doctor.Tim Owen | | | | | **Permits** | 4136 | |

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[✓] New recording [ ] Additional Info

# National Parks and Wildlife Service

Box 1967, Hurstville NSW 2220. Tel: (02) 9585 6444

Standard Site Recording Form Revised 5/88

45-5-2564

NPWS Code

1:250,000 map sheet: Sydney

AMG Grid reference (Full reference - please include leading digits): 250K 301450 mE (25K) 250K 6257430 mN (5/6, 25K)

Scale of map used for grid reference (Please use largest scale available): [✓] 25K, 50K (preferred) [ ] 100K [ ] 250K

1:25K, 50K, 100K map name: Prospect

HEAD OFFICE USE ONLY:

NPWS Site no: 45-5-2564

Site types:

Accessioned by: Date:

Data entered by: Date: 26/7/00

Owner/Manager:

Address:

Site name: IF 1

Locality/property name: Eastern Creek

NPWS District:

Region: Sydney

Reason for investigation

possible expansion of Eastern Creek Waste depot

Portion no:

Parish:

Photos taken? no

How many attached?

How to get to the site (refer to permanent features, give best approach to site eg. from above, below, along cliff (Draw diagram on separate sheet)

see attached map

Other sites in locality? yes

Are sites in NPWS Register? yes

Site Types include: artefact scatters

Have artefacts been removed from site? unknown When? -

By whom? Deposited where? -

Is site important to local Aborigines?

Give contact(s) name(s) + address(es)

Contacted for this recording? No

(Attach additional information separately) If not, why not?

Verbal/written reference sources (including full title of accompanying report) NPWS Report Catalogue #

Proposed Expansion of Eastern Creek Regional Waste Depot Preliminary Archaeological Assessment

Checklist surface visibility, damage/disturbance/ threat to site

Condition of site

Recommendations for management & protection (attach separate sheet if necessary)

refer report

Site recorded by:

Address/institution: NAVIN OFFICER HERITAGE CONSULTANTS 102 JERVOIS ST DEAKIN ACT 2600

Date: October 1999

0

# 5. FIELD INSPECTION RESULTS

### 5.1 Aboriginal Sites

Two isolated finds were recorded within the boundaries of the subject site. These finds comprise a red-brown silcrete flake exposed in a dirt track cutting just west of the ex-RAAF transmitting station (IF1) and a white chert flake on the eroded edge of a minor drainage line in the area's west (IF2) (Figure 3). No mature trees bearing scars of Aboriginal origin are evident in the area.

While this assessment may be said to be accurate in terms of Aboriginal scarred trees, the extremely low levels of ground surface visibility encountered in the area must be viewed as a highly limiting factor in the identification of any potential stone artefact scatter sites in the area.

Subsequently, the mostly negative survey results in this respect should not be viewed as an accurate reflection of artefact scatter site occurrence in the area.

### 5.2 Potential Archaeological Deposit (PAD)

The alluvial flats and creek corridors occurring in the southeast section of the study area and the alluvial flats along the length of Eastern Creek within the study area are considered to be archaeologically sensitive landform zones (Figure 4). Previous archaeological work on the Cumberland Plain and in other regions provides universal evidence of the very high potential for such landforms to exhibit the greatest localised concentrations of subsurface archaeological material. While the Reedy and Eastern Creek corridors fall within the boundaries of the protective buffer zones of the proposed development, the intervening alluvial flats and banks of at least two minor creek lines containing water holes would be directly threatened by any northward expansion of the waste depot.

### 5.3 Surface Visibility

Conditions of surface visibility at the time of field survey were extremely poor with a thick grassy cover being evident across practically all landscape surfaces. A minimal quantity of satisfactory exposure was encountered at only a few locations including patches of narrow linear soil surface along the gas pipeline route and the eroded fringes of some minor drainage lines in the western part of the study area. In all, archaeological exposure in the subject site at the time of survey may be said to have been negligible.

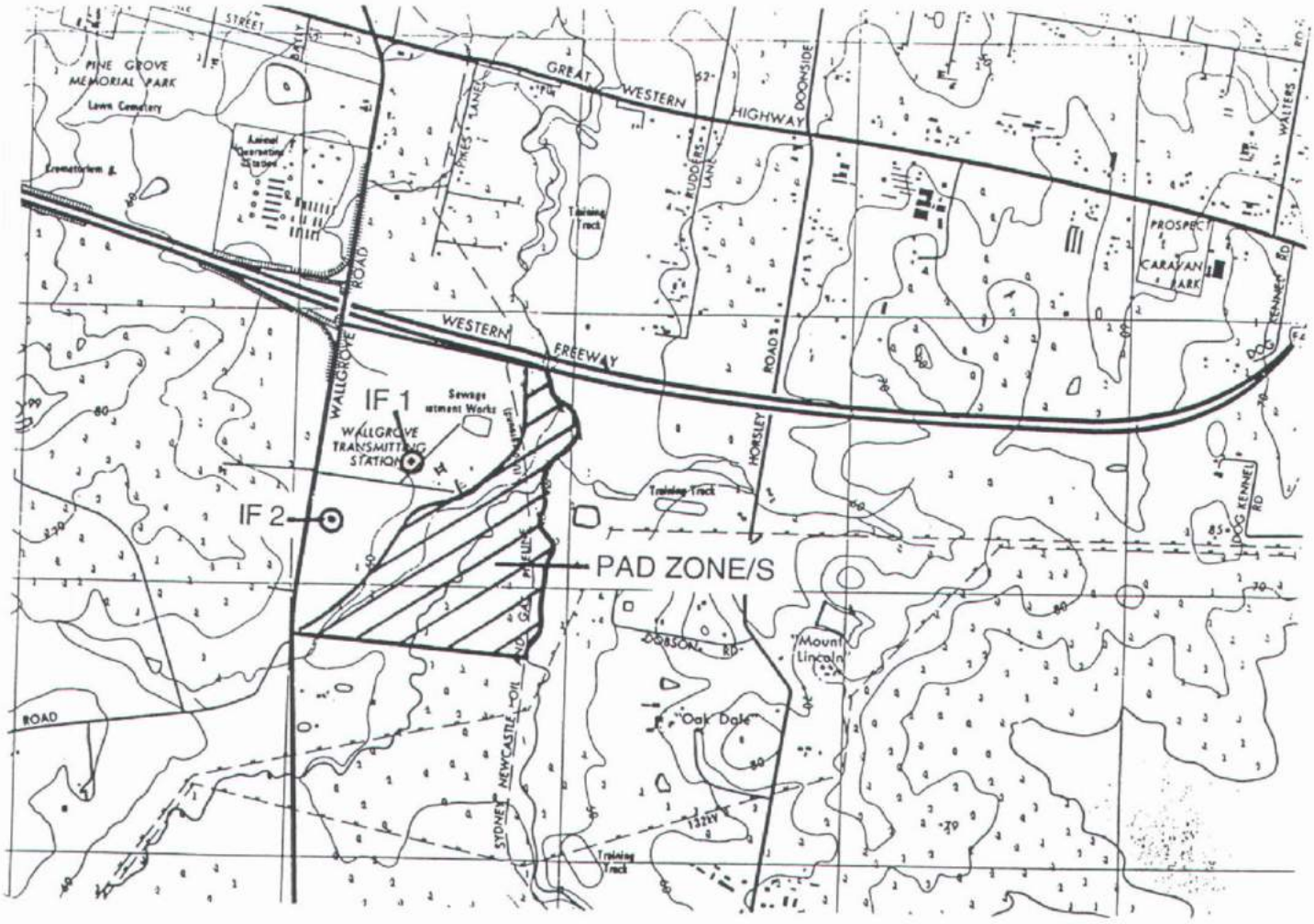



**Figure 4** The study area - showing location of isolated finds and area of Potential Archaeological Deposit (PAD) identified in the course of field survey (Prospect 1:25000 2nd Edition)

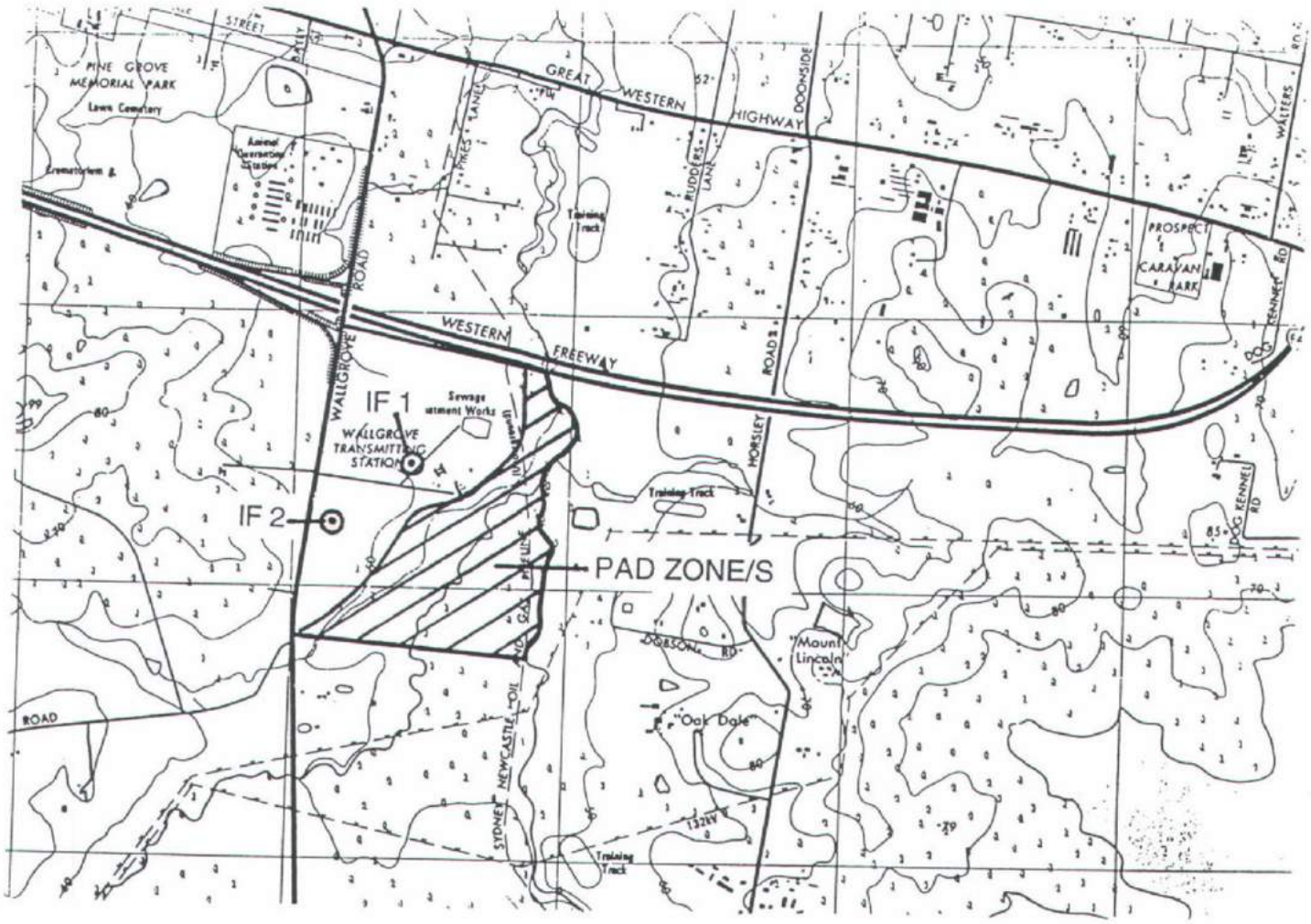



**Figure 4** The study area - showing location of isolated finds and area of Potential Archaeological Deposit (PAD) identified in the course of field survey (Prospect 1:25000 2nd Edition)

[✓] New recording [ ] Additional Info

# National Parks and Wildlife Service

Box 1967, Hurstville NSW 2220. Tel: (02) 9585 6444

Standard Site Recording Form Revised 5/88

45-5-2565

NPWS Code

1:250,000 map sheet: Sydney

AMG Grid reference (Full reference - please include leading digits): 250K 301200 mE (25K) 250K 6257240 mN (5/6, 25K)

Scale of map used for grid reference (Please use largest scale available): [✓] 25K, 50K (preferred) [ ] 100K [ ] 250K

1:25K, 50K, 100K map name: Prospect

HEAD OFFICE USE ONLY:

NPWS Site no: 45-5-2565

Site types:

Accessioned by: Date:

Data entered by: Date: 26/7/00

Owner/Manager:

Address:

Site name: IF 2k

Locality/property name: Eastern Creek

NPWS District:

Region: Sydney

Reason for investigation

possible expansion of Eastern Creek Waste depot

Portion no:

Parish:

Photos taken? no

How many attached?

How to get to the site (refer to permanent features, give best approach to site eg. from above, below, along cliff (Draw diagram on separate sheet)

see attached map

Other sites in locality? yes

Are sites in NPWS Register? yes

Site Types include: artefact scatters

Have artefacts been removed from site? unknown When? –

By whom? Deposited where? –

Is site important to local Aborigines?

Give contact(s) name(s) + address(es)

Contacted for this recording? No

(Attach additional information separately) If not, why not?

Verbal/written reference sources (including full title of accompanying report) NPWS Report Catalogue #

Proposed Expansion of Eastern Creek Regional Waste Depot Preliminary Archaeological Assessment

Checklist surface visibility, damage/disturbance/threat to site

Condition of site

Recommendations for management & protection (attach separate sheet if necessary)

see report

Site recorded by:

Address/institution: NAVIN OFFICER
HERITAGE CONSULTANTS
102 JERVOIS ST
DEAKIN ACT 2600

Date: October 1999

# 5. FIELD INSPECTION RESULTS

### 5.1 Aboriginal Sites

Two isolated finds were recorded within the boundaries of the subject site. These finds comprise a red-brown silcrete flake exposed in a dirt track cutting just west of the ex-RAAF transmitting station (IF1) and a white chert flake on the eroded edge of a minor drainage line in the area's west (IF2) (Figure 3). No mature trees bearing scars of Aboriginal origin are evident in the area.

While this assessment may be said to be accurate in terms of Aboriginal scarred trees, the extremely low levels of ground surface visibility encountered in the area must be viewed as a highly limiting factor in the identification of any potential stone artefact scatter sites in the area.

Subsequently, the mostly negative survey results in this respect should not be viewed as an accurate reflection of artefact scatter site occurrence in the area.

### 5.2 Potential Archaeological Deposit (PAD)

The alluvial flats and creek corridors occurring in the southeast section of the study area and the alluvial flats along the length of Eastern Creek within the study area are considered to be archaeologically sensitive landform zones (Figure 4). Previous archaeological work on the Cumberland Plain and in other regions provides universal evidence of the very high potential for such landforms to exhibit the greatest localised concentrations of subsurface archaeological material. While the Reedy and Eastern Creek corridors fall within the boundaries of the protective buffer zones of the proposed development, the intervening alluvial flats and banks of at least two minor creek lines containing water holes would be directly threatened by any northward expansion of the waste depot.

### 5.3 Surface Visibility

Conditions of surface visibility at the time of field survey were extremely poor with a thick grassy cover being evident across practically all landscape surfaces. A minimal quantity of satisfactory exposure was encountered at only a few locations including patches of narrow linear soil surface along the gas pipeline route and the eroded fringes of some minor drainage lines in the western part of the study area. In all, archaeological exposure in the subject site at the time of survey may be said to have been negligible.

# Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional information ☐

| SITE IDENTIFICATION | | | |
|---|---|---|---|
| Site name | WSP 17 | NPWS Site Number | 45-5-3264 |
| Owner/manager | | | |
| Owner Address | | | |

| LOCATION | | | | | |
|---|---|---|---|---|---|
| Location | Western Sydney Parklands, Doonside | | | | |
| How to get to the site | Enter off Great Western Highway, site beyond gate at end of Rudders Lane. | | | | |
| 1:250,000 map name | | | | NPWS map code | |
| AMG Zone | 56 | AMG Easting | 302412 | AMG Northing | 6257853 |
| Method for grid reference | | Map scale (if method = map) | | Map name | |
| NPWS District Name (see map) | | | | NPWS Zone (see map) | |
| Portion no. | | | | Parish | |

Prospect

| SITE DESCRIPTION | | | |
|---|---|---|---|
| Site type(s) | Open artefact scatter | Site type code (NPWS use only) | |
| Description of site and contents<br>CHECKLIST: eg. length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock.<br>DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types.<br>ART: area of decorated surface, motifs, colours, wet/dry pigment, engraving technique, no. of figures, sizes, patination.<br>BURIALS: number & condition of bone, position, age, sex, associated artefacts.<br>TREES: number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth.<br>QUARRIES: rock type, debris, recognisable artefacts, percentage quarried | Area c. 20 x 20m on and along dirt track through property used for grazing horses. Property at end of Rudders Lane and immediately adjacent to M4, at southern extent of study area.<br><br>3 x silcrete flakes<br>3 x silcrete fragments<br>1 x silcrete flake(c.30m closer to E creek)<br>1 x silcrete fragment (c.30m closer to E creek)<br><br>Area to W and E of scatter quite disturbed - orange and yellow clay dumped on surface, ploughing, horses grazing and dug out dams. Eastern Creek c. 200m W. Vegetatin is mostly regeneration pines and gums along M7 closer to BArbham Rd. and typical creek vegetation at Eastern Creek.<br><br>**Attach photographs and sketches, eg. plan & section of shelter.**<br>**Do NOT dig, disturb or damage site or contents.** | | |

| Version: June 1998 | Data entered by: Jsdronles | Date entered: 8/11/06 |
|---|---|---|

# Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

## SITE ENVIRONMENT

| | | | | | |
|---|---|---|---|---|---|
| **Land form** | Hill slope | **Aspect** | | **Slope** | |
| **Mark position of the site** | | | | | |
| **Local rock type** | | **Land use/effect** | | | |
| **Distance from drinking water** | c. 200m (W of E Creek) | **Source** | | | |
| **Resource zone (eg. estuarine, river, forest)** | Eastern Creek | **Vegetation** | Regeneration pines and gums along M4 | | |
| **Edible plants** | | **Faunal resources (include shellfish)** | . | | |
| **Other exploitable resources (eg. ochre)** | | | | | |
| **Are there other sites in the locality** | | **Are they in the Sites Register** | | **Other site types include** | |

## SITE MANAGEMENT

| | | | |
|---|---|---|---|
| **Site condition** | Poor | Along dirt track through property used for grazing horses | |
| **Management recommendations** | | | |
| **Have artefacts been removed from site** | No | **When** | |
| **By whom** | | **Deposited at** | |
| **Consent applied for** | ☐ | **Consent issued** | ☐ |
| **Date of issue** | | **Consent number** | |

## SITE INSPECTION AND RECORDING

| | | | |
|---|---|---|---|
| **Reason for investigation** | | | |
| **Were local Aborigines contacted or present for the recording** | ☐ Not contacted<br>☒ Contacted and present<br>☐ Contacted but not present | **Names and addresses** | Anthony Hunter<br>Deerubbin LALC |
| **Is the site important to local Aborigines** | | | |
| **Verbal/written reference sources** | | **ASR report number(s) (or title)** | C-<br>C- |
| **Photographs taken** | | **No. of Photos attached** | |
| **Site recorded by** | Amy Stevens | **Date of recording** | 19th September, 2005 |
| **Address/institution** | Jo McDonald Cultural Heritage Management Pty Ltd<br>77 Justin Street, Lilyfield, NSW 2040 | | |

| | | |
|---|---|---|
| Version: June 1998 | Data entered by: | Date entered: |

CONSENT TO DESTROY #214

[✓] New recording [ ] Additional Info

# National Parks and Wildlife Service

Box 1967, Hurstville NSW 2220. Tel: (02) 585 6444

Standard Site Recording Form Revised 5/88

45-5-0756

NPWS Code

1:250,000 map sheet: SYDNEY

AMG Grid reference (Full reference - please include leading digits): 250K 302070 mE (25K); 250K 6257300 mN (5/6, 25K)

Scale of map used for grid reference (Please use largest scale available): [✓] 25K, 50K (preferred) [ ] 100K [ ] 250K

1:25K, 50K, 100K map name: PROSPECT

HEAD OFFICE USE ONLY:

NPWS Site no: 45-5-756

Site types: OPEN

Accessioned by: RCH Date: 15.12.89

Data entered by: RCH Date: 15.12.89

Owner/Manager: NSW GOVT

Address: PREMIER'S DEPT

Site name: EC 6

Locality/property name: EASTERN CREEK

NPWS District: SOUTH-MET

Region: CENTRAL

Reason for investigation

Aboriginal Site Survey of proposed Sydney International Grand Prix Circuit

Portion no:

Parish: Prospect

Photos taken?

How many attached?

How to get to the site (refer to permanent features, give best approach to site eg. from above, below, along cliff. (Draw diagram on separate sheet.) Travel south along Hornsby Road from Great Western Highway Continue south for 850m from Pt overpass. Turn west on Dobson Road and follow to end. Site is north from gate about 175m and 150m west of that point on dam walls

Other sites in locality? YES

Are sites in NPWS Register? YES

Site Types include: Scarred Tree, open

Have artefacts been removed from site? ?

By whom?

When?

Deposited where?

Is site important to local Aborigines? YES

Give contact(s) name(s) + address(es)

DARUK LALC
MT DRUITT RD
MT DRUITT

Contacted for this recording? YES

(Attach additional information separately) If not, why not?

Verbal/written reference sources (including full title of accompanying report).

C-1644 NPWS Report Catalogue #

Archaeological Survey of Proposed Sydney International Grand Prix Circuit

Checklist: surface visibility, damage/disturbance/threat to site

Condition of site: Totally destroyed by the construction of the dam walls. Artefacts are all that are left

Recommendations for management & protection (attach separate sheet if necessary):

Collection

Site recorded by: Drew Erich, S Lester

Address/institution: 69 Sunset St Tempe, Darug LALC

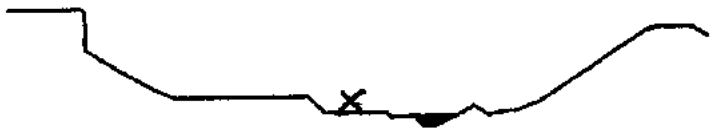
Date: 13/11/89

X

**SITE POSITION & ENVIRONMENT** | OFFICE USE ONLY: NPWS site no:

1. Land form a. beach/hill slope/ridge top, etc: Creek Flat b. site aspect: West? c. slope: <10%

d. mark on diagram provided *or* on your own sketch the position of the site:



e. Describe briefly: Located on Creek flats now developed as Dams

f. Local rock type: Wianamatta Shale g. Land use/effect: Rural / Destroyed

2. Distance from drinking water: 150m Source: Eastern Creek

3. Resource Zone associated with site (estuarine, riverine, forest etc): Riverine

4. Vegetation: Dense woodland along Creek

5. Edible plants noted: —

6. Faunal resources (include shellfish): —

7. Other exploitable resources (river pebbles, ochre, etc): Extraction Sites Erskine Park & Plumpton

Site type: Open.

CHECKLIST TO HELP: length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock. DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types. ART: area of surface decorated, motifs, colours, wet, dry pigment, technique of engraving, no. of figures, sizes, patination. BURIALS: number & condition of bone, position, age, sex, associated artefacts. TREES: number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth. QUARRIES: rock type, debris, recognisable artefacts, percentage quarried. OTHER SITES EG. structures (fish traps, stone arrangements, bora rings, mia mias), mythological sites, rock holes, engraved groove channels, contact sites (missions massacres cemeteries) as appropriate

**DESCRIPTION OF SITE & CONTENTS.**

Note state of preservation of site & contents. Do NOT dig, disturb, damage site or contents.

35 Artefacts located on 2 dam walls. — the north wall of southern dam and south wall of northern dam. Possible Manufacturing Site Artefacts recorded are.

1. Red Silcrete Fine grained Flake - Broad Platform with Cortex & use wear 30×20×10 mm
2. Red Silcrete F/g Flake - Focal Platform - 35% cortex
3. Red Silcrete Amorphous Flake Piece 28×20×9 mm
4. Orange Silcrete Flake - Broad platform 22×14×7 mm
5. Weathered Salmon Silcrete Amorphous Flake piece 35×21×7 mm
6. Red Mottled Silcrete Flake Broad Platform - 32×19×12 mm
7. Dark Red Silcrete - Medium Grained Amorphous Flake Piece
8. Dark Red Silcrete Laminate Flakepiece 30×23×5 36×17×12
9. Dark Red Silcrete (Red) Amorphous Flake 31×20×8 40% cortex on 2 Surfaces
10. Buff Indurated Mudstone/Chert? Broken Flake 25×22×7
11. Mottled Chert Flake - Focal Platform 20×20×6 Step fracture on Dorsal & platform
12. White/Brown Mottled Silcrete Frag - 19×11×5
13. Red Silcrete Flake with Focal Platform 16×9×4
14. Mottled Red/White Silcrete Laminate Focal Platform 10×12×3
15. Dark Red Silcrete Flake with Focal Platform 13×12×2
16. Red Silcrete Flake with Focal Platform 17×11×2
17. Red/Brown Laminate Flake Piece 17×9×6
18. Red/Grey Silcrete Flake Piece - Platform missing 15×20×5
19. Grey/Dark Red Silcrete Amorphous Flake Piece 18×9×9
20. Brown Silcrete Laminate Flake piece 15×12×2
21. Brown Silcrete Backed Blade 22×8×3 - asymetrical, unused Backing from front to back
22. Red Silcrete Flake - unmodified 40×35×20

1-22 Found on north wall of Southern Mound

Attach sketches etc. eg. plan & section of shelter, show relation between site contents, indicate north, show scale.

Attach annotated photos (stereo where useful) showing scale, particularly for art sites.

EC6

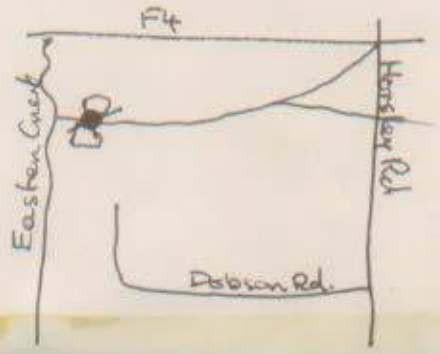
Artefacts (23-35) located over a distance of 15m along the top of Southern wall of Northern Dam

23 - Red fine grain Silcrete Flake with Focal Platform 15×16×6
24 - Red/Brown Chert Flake 15×12×2
25 - Milky Quartz Amorphous Flake Piece 11×6×4
26 - Red Silcrete Amorphous Flake Piece 8×8×5
27 - Red Silcrete Amorphous Flake Piece 9×7×5
28 - Grey Silcrete Flake with broad Platform 13×14×4 - broken distally
29 - Red Silcrete Flake with Focal Platform 15×18×4
30 - Grey Silcrete Flake with Focal Platform 17×15×5
31 - Red Silcrete Flake with Focal Platform 10×12×2
32 Red Silcrete Lamolate Flake piece - <10mm
33 Red Silcrete Lamolate Flake piece - < 10mm
34 Red Silcrete Amorphous Flake piece < 10mm
35 Black Chert Flake with Focal Platform 21×15×4 Pebble Cortex dorsal & platform - 40%

N.B - All measurements are mm

Strong likelihood of additional artefacts being located by a more detailed investigation

Location



View of EC6. - Northern wall of Southern Dam.

0

[✓] New recording [ ] Additional Info

# National Parks and Wildlife Service

Box 1967, Hurstville NSW 2220. Tel: (02) 585 6444

Standard Site Recording Form Revised 5/88

45-5-1066

1:250,000 map sheet: SYDNEY NPWS Code 14,5

AMG Grid reference (Full reference - please include leading digits): 250K 30206 mE (25K); 250K 6257750 mN (5/6, 25K)

Scale of map used for grid reference (Please use largest scale available): [✓] 25K, 50K (preferred) [ ] 100K [ ] 250K

1:25K, ~~50K, 100K~~ map name: PROSPECT

HEAD OFFICE USE ONLY:

NPWS Site no: 45-5-~~1027~~ 1066

Site types: Open Composite.

Accessioned by: MW Date: 12-2-97

Data entered by: Date:

Owner/Manager: RTA

Address: 81 Flushcombe Rd Blacktown

Site name: Eastern Creek 1 Locality/property name: Prospect

NPWS District: North Met. Region: Sydney Zone

Reason for investigation: M4 Motorway Upgrade

Portion no: Road Reserve Blacktown City Council

Parish:

Photos taken? See report

How many attached?

How to get to the site (refer to permanent features, give best approach to site eg. from above, below, along cliff. (Draw diagram on separate sheet.)

Site is on M4 road reserve 80-160 metres east of Eastern Creek bridge, south of noise barrier fence, south of west bound carriageway.

Other sites in locality? Yes Site Types include: Open Sites

Are sites in NPWS Register? Y

Have artefacts been removed from site? No When?

By whom? Deposited where?

Is site important to local Aborigines? Luke Hickey + Tony Randall

Give contact(s) name(s) + address(es) Darug LALC PO Box V184 Mt Druitt Village 2770

Contacted for this recording? Y

(Attach additional information separately) If not, why not?

Verbal/written reference sources (including full title of accompanying report): M4 Upgrade Archaeological Survey for Aboriginal Sites H Brayshaw + L Haglund August 1996

NPWS Report Catalogue #: E-3694

Checklist: surface visibility, damage/disturbance/threat to site

Condition of site: Largely disturbed but may retain basal part of A horizon in small area.

Recommendations for management & protection (attach separate sheet if necessary): Consent to Destroy with monitoring

Site recorded by: H. Brayshaw + L. Haglund Date: 5/8/96

Address/institution: 51 Thompson St Drummoyne 2047

**SITE POSITION & ENVIRONMENT** | **OFFICE USE ONLY: NPWS site no:**

1. Land form a. beach/hill slope/ridge top, etc: creek bank, flood plain b. site aspect: c. slope:

d. mark on diagram provided *or* on your own sketch the position of the site: e. Describe briefly:

See below

f. Local rock type: Cumberland Plain Shales g. Land use/effect: - road + bridge building

2. Distance from drinking water: <100m Source: Eastern Creek

3. Resource Zone associated with site (estuarine, riverine, forest etc): creek/woodland

4. Vegetation: Cumberland Plain woodland

5. Edible plants noted:

6. Faunal resources (include shellfish):

7. Other exploitable resources (river pebbles, ochre, etc):

Site type:

Open Site

CHECKLIST TO HELP: length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock.

DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types.

ART: area of surface decorated, motifs, colours, wet, dry pigment, technique of engraving, no. of figures, sizes, patination.

BURIALS: number & condition of bone, position, age, sex, associated artefacts.

TREES: number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth.

QUARRIES: rock type, debris, recognisable artefacts, percentage quarried.

OTHER SITES EG. structures (fish traps, stone arrangements, bora rings, mia mias), mythological sites, rock holes, engraved groove channels, contact sites (missions massacres cemeteries) as appropriate

**DESCRIPTION OF SITE & CONTENTS.**

Note state of preservation of site & contents. Do NOT dig, disturb, damage site or contents.

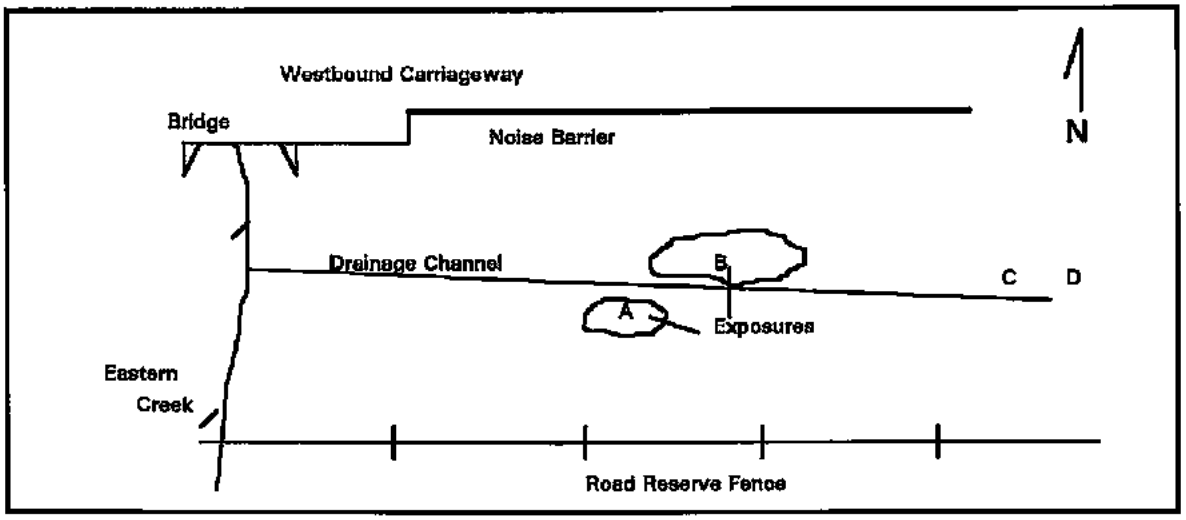
**1 Eastern Creek 1**

South of westbound carriageway. From 80 to 160 metres east of the Eastern Creek bridge, south of the noise barrier fence, 11 artefacts were recorded, 9 of silcrete, one of chert and one of indurated mudstone. Nine of the artefacts were in two exposures either side of an artificial drainage line and the others were 40 and 50 metres further east. Unit A sediments were barely present in the southern [5x2 metre] exposure and in the northern exposure these sediments were only about 2 cm deep. The area to the south of the drainage line, which has been modified, is indicated in aerial photographs taken at the time this bridge was being constructed to have been disturbed. The situation north of the drainage line is not clear, but given the proximity of the raised approach to the bridge it is unlikely that significant undisturbed cultural deposits remain. As in the area of concern the basal part of the A-horizon seemed to be retained, though possibly somewhat disturbed, there is some potential for this to retain an accumulation of stone artefacts.

Attach sketches etc. eg. plan & section of shelter, show relation between site contents, indicate north, show scale.

Attach annotated photos (stereo where useful) showing scale, particularly for art sites.

45-5-1066




Eastern Creek 1 Sketch Plan
[Not to Scale]



0

# Aboriginal Site Impact Recording Form

**AHIMS Registrar**
**PO Box 1967, Hurstville 2220 NSW**

1 This form must be completed following impacts to AHIMS sites that are:
   a) a result of test excavation carried out in accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW*
   b) authorised by an Aboriginal Heritage Impact Permit (AHIP) issued by the Office of Environment and Heritage (OEH)
   c) undertaken for the purpose of complying with Director General's Requirements issued by the Department of Planning and Infrastructure (DP&I) for:
      - State Significant Development (SSD - Part 4),
      - State Significant Infrastructure (SSI - Part 5.1), or
      - A Major Project (Part 3A - now repealed) under the *Environmental Planning and Assessment Act 1979 (EP&A Act)*, or
   d) authorised by a SSD/SSI/Part 3A consent/approval under the EP&A Act.
2 Completed forms must be submitted to the AHIMS Registrar (www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm).
3 This form is intended to complement (not replace) the AHIMS Site Recording Form. Where there is a need to provide detailed information about the nature of a site, use the AHIMS Site Recording Form.
4 This form does not replace the need to submit reports to OEH (as a condition of an AHIP or SSD/SSI/Part 3A consent/approval) This form must be submitted in addition to any reports.

**AHIMS site ID:** 45-5-1066 **Date recorded:** 06-10-2017

| Site impact authorisation (select one) | Reference numbers, dates |
|---|---|
| ☐ Archaeological Code (The impacts to this site were the result of test excavation carried out in accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW.*) | Date OEH was notified (under requirement 15c of the Code): <br> OEH Regional office notified: |
| ☒ AHIP (The impacts to this site were authorised by an AHIP.) | AHIP number: C0002113 <br> Date issued/signed: 2016-09-05 <br> AHIMS permit ID/number: 4001 |
| ☐ SSD/SSI/Part 3A application (The impacts to this site were undertaken for the purposes of complying with Director General's Requirements issued by the DP&I <br> ☐ SSD/SSI/Part 3A approved project (The impacts to this site were authorised by a consent/approval under Parts 4/5.1/3A of the EP&A Act.) | Project number: <br> Date Director General's Requirements issued: <br> or <br> Date of project approval: |

## Site status following impacts:

☐ Not a site (The investigations concluded that this is not a site.)

☐ Valid site (The investigations confirmed that this is an Aboriginal site.)

☐ Partially destroyed (The site was partially destroyed following authorised impacts; a portion of the site remains in situ.)

☒ Destroyed (The site was completely destroyed following authorised impacts.)

## Site Location Information:

**Site name:** Eastern Creek 1 EC 1

**Easting:** 302157 **Northing:** 6257912 **Coordinates must be in GDA (MGA)**

**Horizontal Accuracy (m):** 0

**Zone:** 56 **Location method:** Non-Differential GPS

## Recorder Information:

(The person responsible for the completion and submission of this form)

| Title | Surname | First name |
|---|---|---|
| Ms. | Taylor | Kristen |

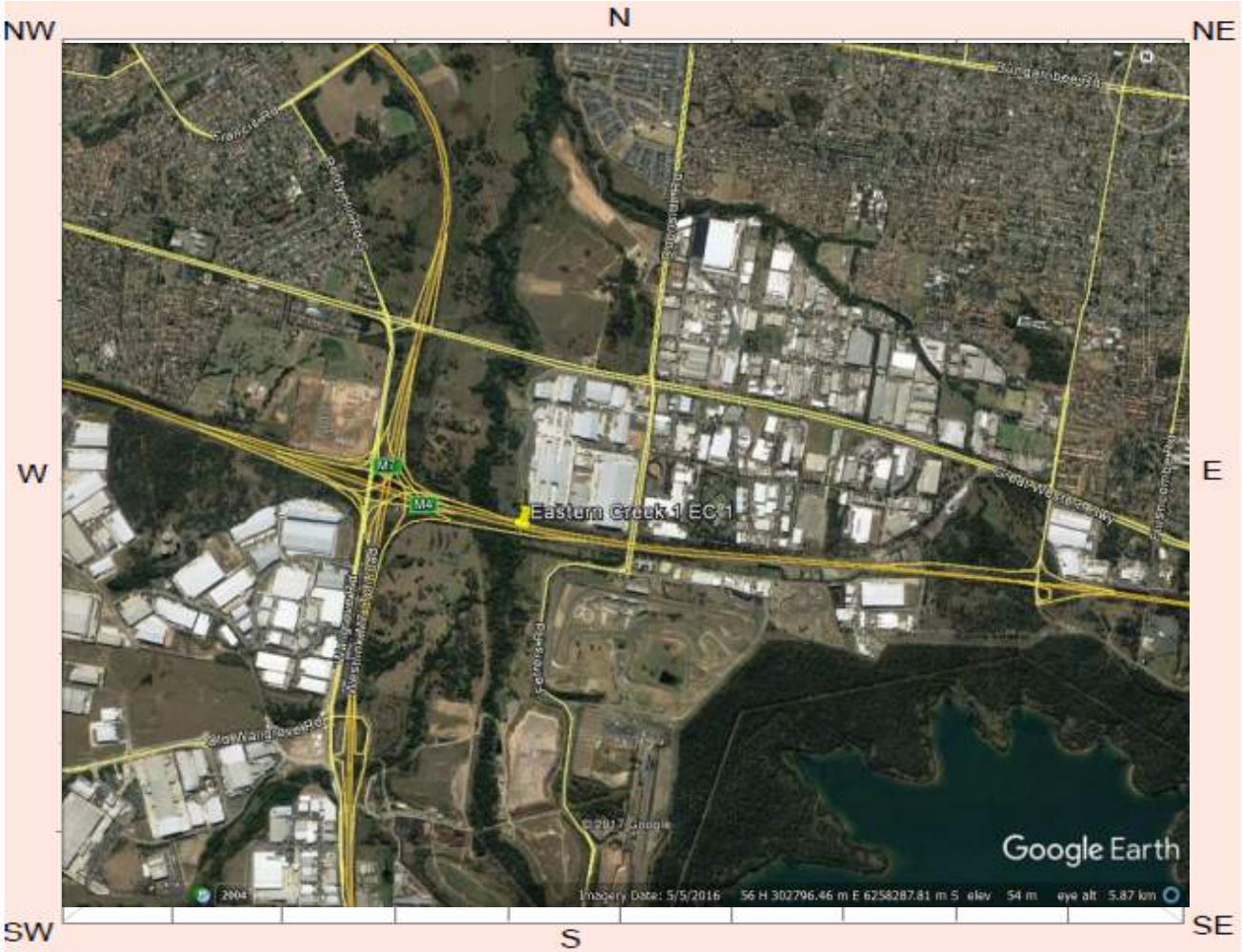
**Organisation:** Kelleher Nightingale Consulting Pty Ltd

**Address:** Level 10, Bligh St, Sydney NSW 2000

**Phone:** 0292325373 **E-mail:** kristen.taylor@knconsult.com.au

## Location map

Clearly demarcate the original AHIMS site boundary, show the boundaries of impacted areas and the areas where the site remains in situ. Display map coordinates.



## Site contents information

**open/closed site:** Open

**Site condition:** Disturbed

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) |
|---|---|---|---|
| 1. Artefact | 11 | 75 | 50 |

Scarred Trees

| Scar Depth (cm) | Regrowth (cm) | Scar Length (cm) | Scar Width (cm) |
|---|---|---|---|
| | | | |

Scar shape: Tree Species:

Description:

Eleven artefacts were identified during a survey conducted by Brayshaw and Haglund in 1996 which included nine silcrete, one chert and one indurated mudstone artefacts.

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) |
|---|---|---|---|
| 2. | | | |

Scarred Trees

| Scar Depth (cm) | Regrowth (cm) | Scar Length (cm) | Scar Width (cm) |
|---|---|---|---|
| | | | |

Scar shape: Tree Species:

Description:

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) |
|---|---|---|---|
| 3. | | | |

Scarred Trees

| Scar Depth (cm) | Regrowth (cm) | Scar Length (cm) | Scar Width (cm) |
|---|---|---|---|
| | | | |

Scar shape: Tree Species:

Description:

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) |
|---|---|---|---|
| 4. | | | |

Scarred Trees

| Scar Depth (cm) | Regrowth (cm) | Scar Length (cm) | Scar Width (cm) |
|---|---|---|---|
| | | | |

Scar shape: Tree Species:

Description:

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) |
|---|---|---|---|
| 5. | | | |

Scarred Trees

| Scar Depth (cm) | Regrowth (cm) | Scar Length (cm) | Scar Width (cm) |
|---|---|---|---|
| | | | |

Scar shape: Tree Species:

Description:

Other Site Info:

The site was located approximately 80 meters north of Eastern Creek, on a small south facing slope. There were a number of disturbances on the site including past land use and the portion of the site within the M4 corridor was heavily affected by exit ramp construction and verge modification.

## Methodology and results

Summary of the methodology and results of the activity or works undertaken through the authorised impacts, as relevant to the AHIMS site

In accordance with the conditions of AHIP # C0002113, site Eastern Creek 1 EC 1 has been completely impacted by upgrade works for the M4 Western Motorway.

## Management recommendations

Summary of any management recommendations for the AHIMS site

None, as the site has been completely impacted.

## Post-investigation significance

Discuss if the scientific/archaeological or cultural significance of the site has changed in light of the results of the investigations or works conducted at the site.

The site had been disturbed by past land use and the portion within the project area was affected by construction activities, considered to have been highly disturbed. In accordance with AHIP# C0002113, the site has since been completely been impacted.

## Additional comments

## Site photographs

Include photographs of the authorised impacts activity, as relevant to the AHIMS site. Please keep photo size to a maximum of 200 kb.

Description: Image of 45-5-1066 oriented west.

Description: Aerial image of 45-5-1066.

Description:

Description:

# Aboriginal Site Recording Form

**AHIMS Registrar**
**PO Box 1967, Hurstville 2220 NSW**

**AHIMS site ID:** 45-5-5183 **Date recorded:** 07-02-2019

## Site Location Information

**Site name:** LIBH AS1

**Easting:** 301494 **Northing:** 6257538 **Coordinates must be in GDA (MGA)**

**Horizontal Accuracy (m):** 5

**Zone:** 56 **Location method:** Non-Differential GPS

## Recorder Information

(The person responsible for the completion and submission of this form)

| Title | Surname | First name |
|---|---|---|
| Mrs. | Barry | Laressa |

**Organisation:** AHMS

**Address:** 3/73 Union St Pyrmont NSW 2009

**Phone:** 0295554000 **E-mail:** lberehowyj@ahms.com.au

## Site Context Information

**Land Form Pattern:** Rolling Hills **Land Use:** Pastoral/Grazing

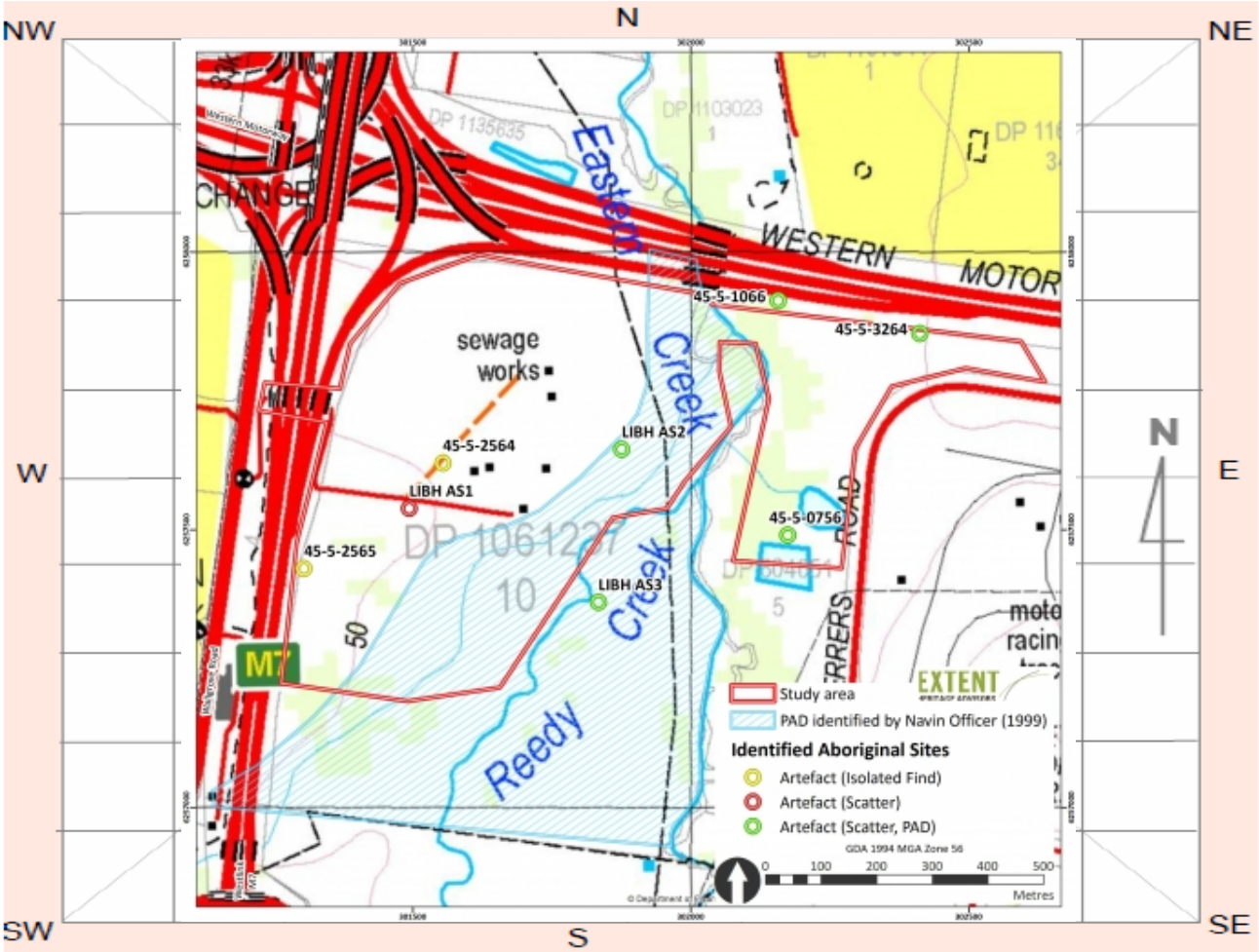
**Land Form Unit:** Slope **Vegetation:** Cleared

**Distance to Water (m):** 190 **Primary Report:** Extent Heritage 2019 Lighthorse Interchange Business Hub ACHAR

**How to get to the site:** Travelling southbound along Wallgrove Rd, take the 165 Wallgrove Rd turnoff, taking the underpass beneath the M7 motorway. At the entrance to the property, travel eastbound for ~155m along the asphalt road. The site is 10m south of the road

**Other site information:** Archaeological test excavation recommended in order to further characterise and investigate nature, significance and distribution of cultural resource.

## Site location map




## Site contents information

**open/closed site:** Open

**Site condition:** Erosion

**Features:**

| | | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|---|
| 1. | Artefact | 3 | 2 | 2 | | | | |

Description:

Three red silcrete flakes: 10x5x3mm, 20x20x10mm and 30x20x10mm, located 10m south of the asphalt road that leads to the transmission station. Scatter visible in area of ground surface exposure within an eroded soil profile characterised by manganese/ironstone gravels onto basal clays.

**Features:**

| | | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|---|
| 2. | | | | | | | | |

Description:

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 3. | | | | | | | |

Description:

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 4. | | | | | | | |

Description:

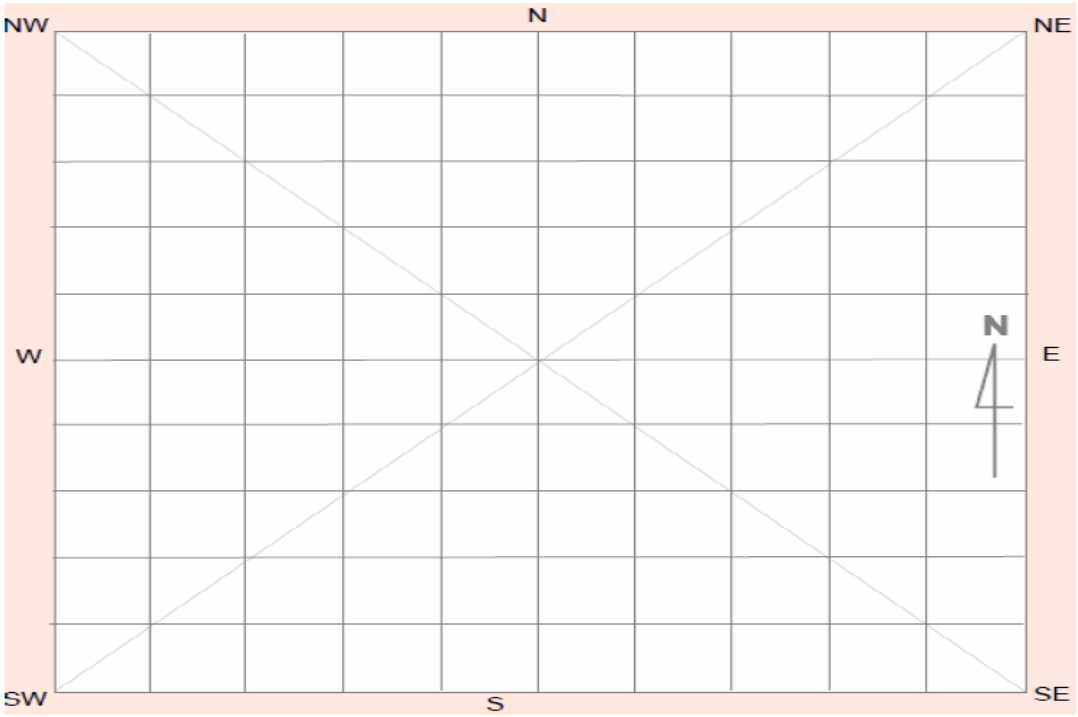
**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 5. | | | | | | | |

Description:

Other Site Info: Archaeological test excavation recommended in order to further characterise and investigate nature, significance and distribution of cultural resource.

## Site plan



## Site photographs

Description: General location of artefact scatter in ground surface exposure, view north.

Description: General location of artefact scatter in ground surface exposure, view east.

Description: Detail red silcrete flake, LIBH AS1

Description:

## Site restrictions

**Do you want to Restrict this site?:**

**Restriction type:** Gender General Location

**Why is this site restricted?:**

## Further information contact

**Title** **Surname** **First name**

**Organisation:**

**Address:**

**Phone:** **E-mail:**

# Aboriginal Site Recording Form

**AHIMS Registrar**
**PO Box 1967, Hurstville 2220 NSW**

**AHIMS site ID:** 45-5-5185 **Date recorded:** 07-02-2019

## Site Location Information

**Site name:** LIBH AS2

**Easting:** 301876 **Northing:** 6257644 **Coordinates must be in GDA (MGA)**

**Horizontal Accuracy (m):** 5

**Zone:** 56 **Location method:** Non-Differential GPS

## Recorder Information

(The person responsible for the completion and submission of this form)

| Title | Surname | First name |
|---|---|---|
| Mrs. | Barry | Laressa |

**Organisation:** AHMS

**Address:** 3/73 Union St Pyrmont NSW 2009

**Phone:** 0295554000 **E-mail:** lberehowyj@ahms.com.au

## Site Context Information

**Land Form Pattern:** Rolling Hills **Land Use:** Pastoral/Grazing

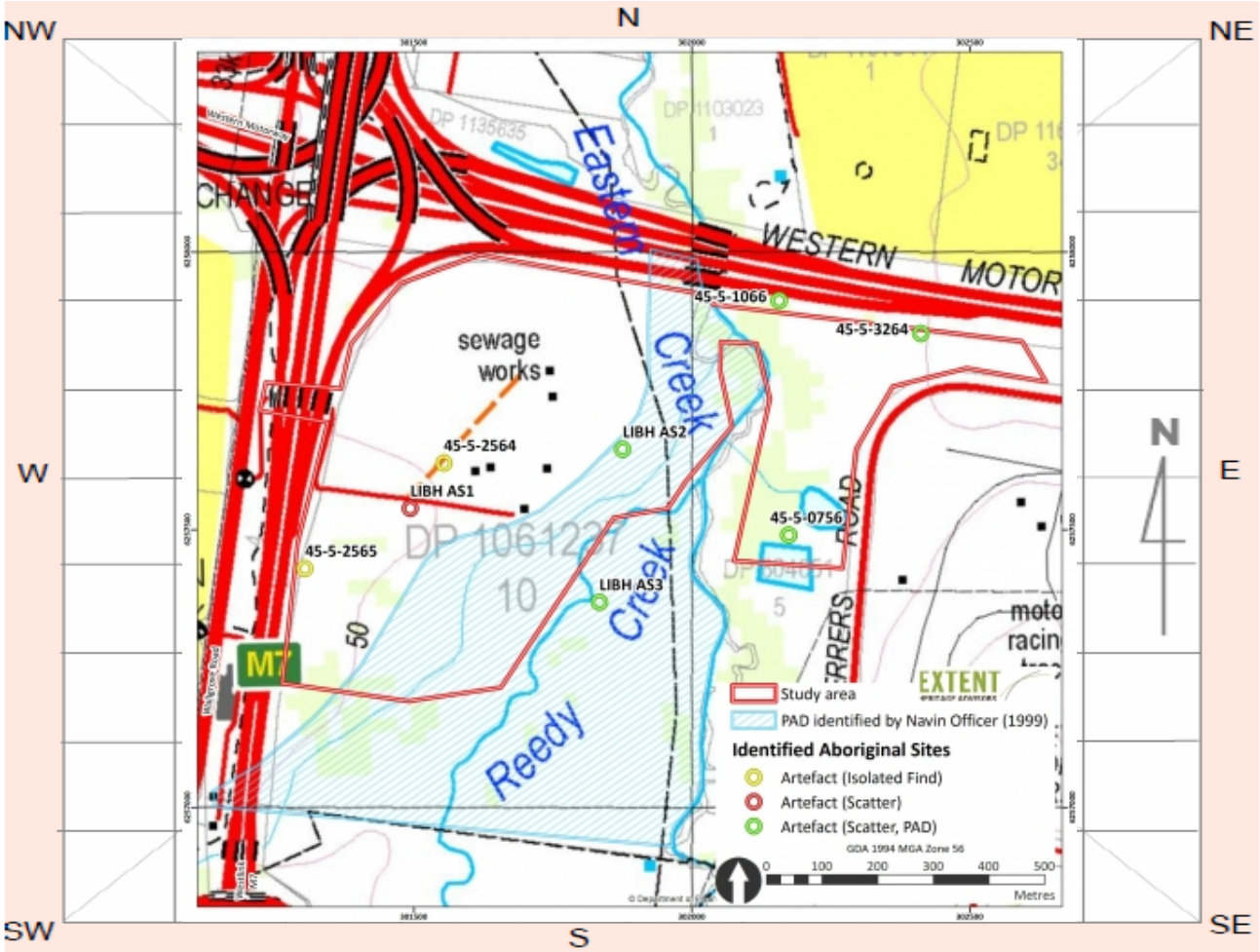
**Land Form Unit:** Slope **Vegetation:** Isolated clumps of trees

**Distance to Water (m):** 50 **Primary Report:** Extent Heritage 2019. Lighthorse Interchange Business Hub ACHAR

**How to get to the site:** Enter the property at 165 Wallgrove Road, Eastern Creek. The site is within a stand of trees 200m northeast of the Transmission Station buildings, and 50m west of the gas pipeline easement.

**Other site information:** Archaeological test excavation recommended to further characterise site extent, nature and significance.

## Site location map




## Site contents information

**open/closed site:** Open

**Site condition:** Disturbed

**Features:**

| | | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|---|
| 1. | Artefact | 2 | 10 | 1 | | | | |

Description:

Artefact scatter of 2 IMTC artefacts: 20x20x20mm (flake) and 30x25x15mm (core). Site located along the eastern bank of a former tributary of Eastern Creek within a stand of trees within a silty clay soil profile, and 50m west of the gas pipeline trench.

**Features:**

| | | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|---|
| 2. | | | | | | | | |

Description:

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 3. | | | | | | | |

Description:

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 4. | | | | | | | |

Description:

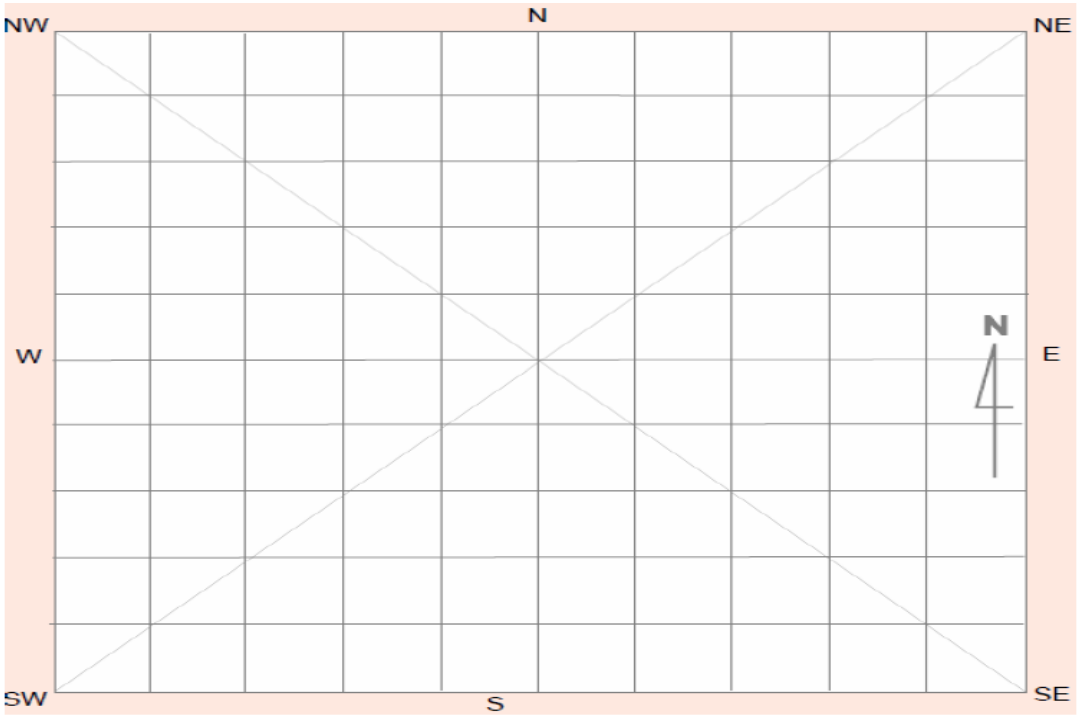
**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 5. | | | | | | | |

Description:

Other Site Info: Archaeological test excavation recommended to further characterise site extent, nature and significance.

## Site plan



## Site photographs

Description: General location of artefact scatter in exposure amongst trees, view east.

Description: Detail IMTC flake

Description: Detail IMTC core with negative flake scars

Description:

## Site restrictions

**Do you want to Restrict this site?:**

**Restriction type:** Gender General Location

**Why is this site restricted?:**

## Further information contact

**Title** **Surname** **First name**

**Organisation:**

**Address:**

**Phone:** **E-mail:**

# Aboriginal Site Recording Form

**AHIMS Registrar**
**PO Box 1967, Hurstville 2220 NSW**

**AHIMS site ID:** 45-5-5184 **Date recorded:** 07-02-2019

## Site Location Information

**Site name:** LIBH AS3

**Easting:** 301834 **Northing:** 6257369 **Coordinates must be in GDA (MGA)**

**Horizontal Accuracy (m):** 5

**Zone:** 56 **Location method:** Non-Differential GPS

## Recorder Information

(The person responsible for the completion and submission of this form)

| Title | Surname | First name |
|---|---|---|
| Mrs. | Barry | Laressa |

**Organisation:** AHMS

**Address:** 3/73 Union St Pyrmont NSW 2009

**Phone:** 0295554000 **E-mail:** lberehowyj@ahms.com.au

## Site Context Information

**Land Form Pattern:** Floodplain **Land Use:** Pastoral/Grazing

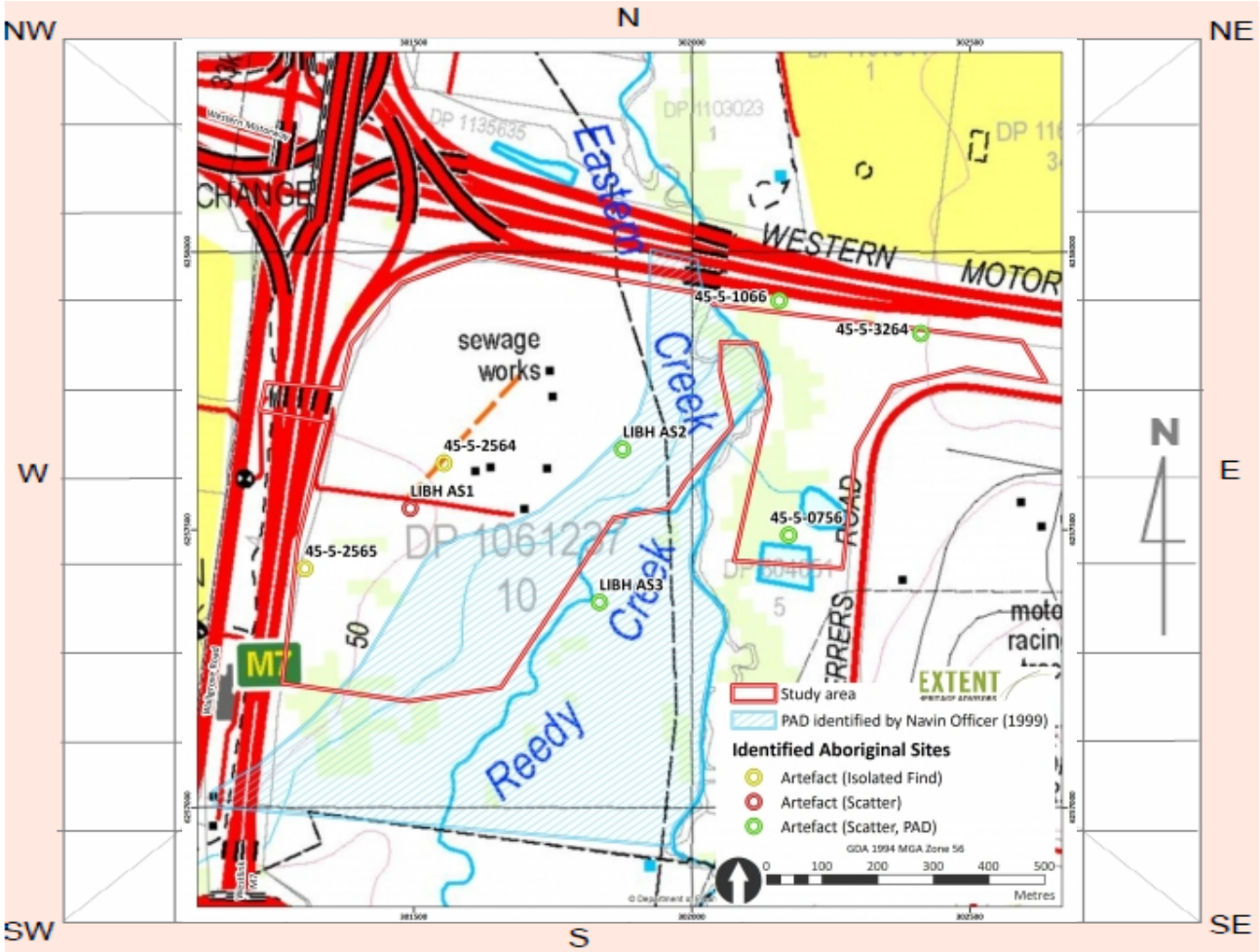
**Land Form Unit:** Levee **Vegetation:** Open Forest

**Distance to Water (m):** 5 **Primary Report:** Extent Heritage 2019. Lighthorse Interchange Business Hub ACHAR

**How to get to the site:** Enter the property at 165 Wallgrove Road, Eastern creek, and travel to the end of the asphalt road. Travel southeast for 215m to a bridge crossing Reedy Ck. The site is located on the eastern creekbank, 65m northeast of bridge.

**Other site information:** Archaeological test excavation recommended to characterise the nature, extent and significance of the Aboriginal archaeological resource.

## Site location map




## Site contents information

**open/closed site:** Open

**Site condition:** Disturbed

**Features:**

| | | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|---|
| 1. | Artefact | 5 | 5 | 5 | | | | |

Description:

4 silcrete and 1 IMTC artefacts: 20x10x10mm, 10x10x5mm, 5x8x5mm, 20x10x5mm, and 15x10x5mm. Visible in exposures on dirt track along eastern bank of Reedy Creek.

**Features:**

| | | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|---|
| 2. | | | | | | | | |

Description:

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 3. | | | | | | | |

Description:

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 4. | | | | | | | |

Description:

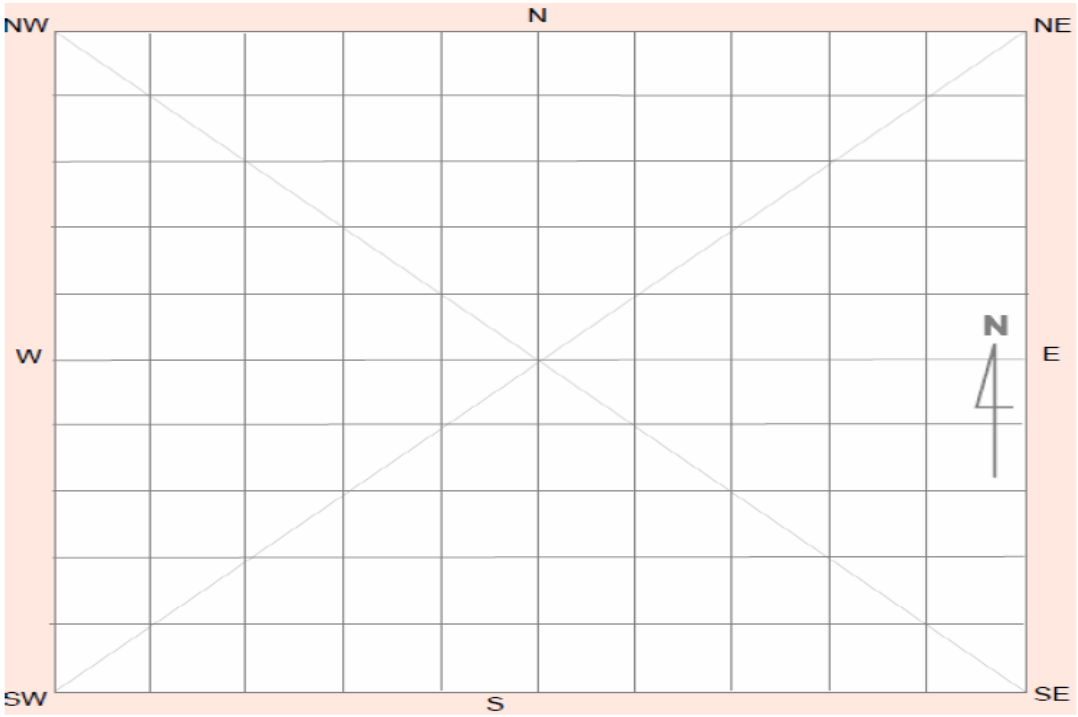
**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 5. | | | | | | | |

Description:

Other Site Info: Archaeological test excavation recommended to characterise the nature, extent and significance of the Aboriginal archaeological resource.

## Site plan



## Site photographs

Description: General location of artefact scatter on eastern bank of Reedy Ck, view west.

Description: Detail artefacts LIBH AS3

Description:

Description:

## Site restrictions

**Do you want to Restrict this site?:**

**Restriction type:** Gender General Location

**Why is this site restricted?:**

## Further information contact

**Title** **Surname** **First name**

**Organisation:**

**Address:**

**Phone:** **E-mail:**

# Aboriginal Site Recording Form

**AHIMS Registrar**
**PO Box 1967, Hurstville 2220 NSW**

**AHIMS site ID:** 45-5-5283 **Date recorded:** 19-12-2019

## Site Location Information

**Site name:** LHIBH Eskdale Creek terrace

**Easting:** 301746 **Northing:** 6257539 **Coordinates must be in GDA (MGA)**

**Horizontal Accuracy (m):** 5

**Zone:** 56 **Location method:** Non-Differential GPS

## Recorder Information

(The person responsible for the completion and submission of this form)

| Title | Surname | First name |
|---|---|---|
| Ms. | Sheppard Brennand | Megan |

**Organisation:** Extent Heritage

**Address:** 3/73 Union Street Pyrmont 2009

**Phone:** 0295554000 **E-mail:** msbrennand@extent.com.au

## Site Context Information

**Land Form Pattern:** Rolling Hills **Land Use:** Pastoral/Grazing

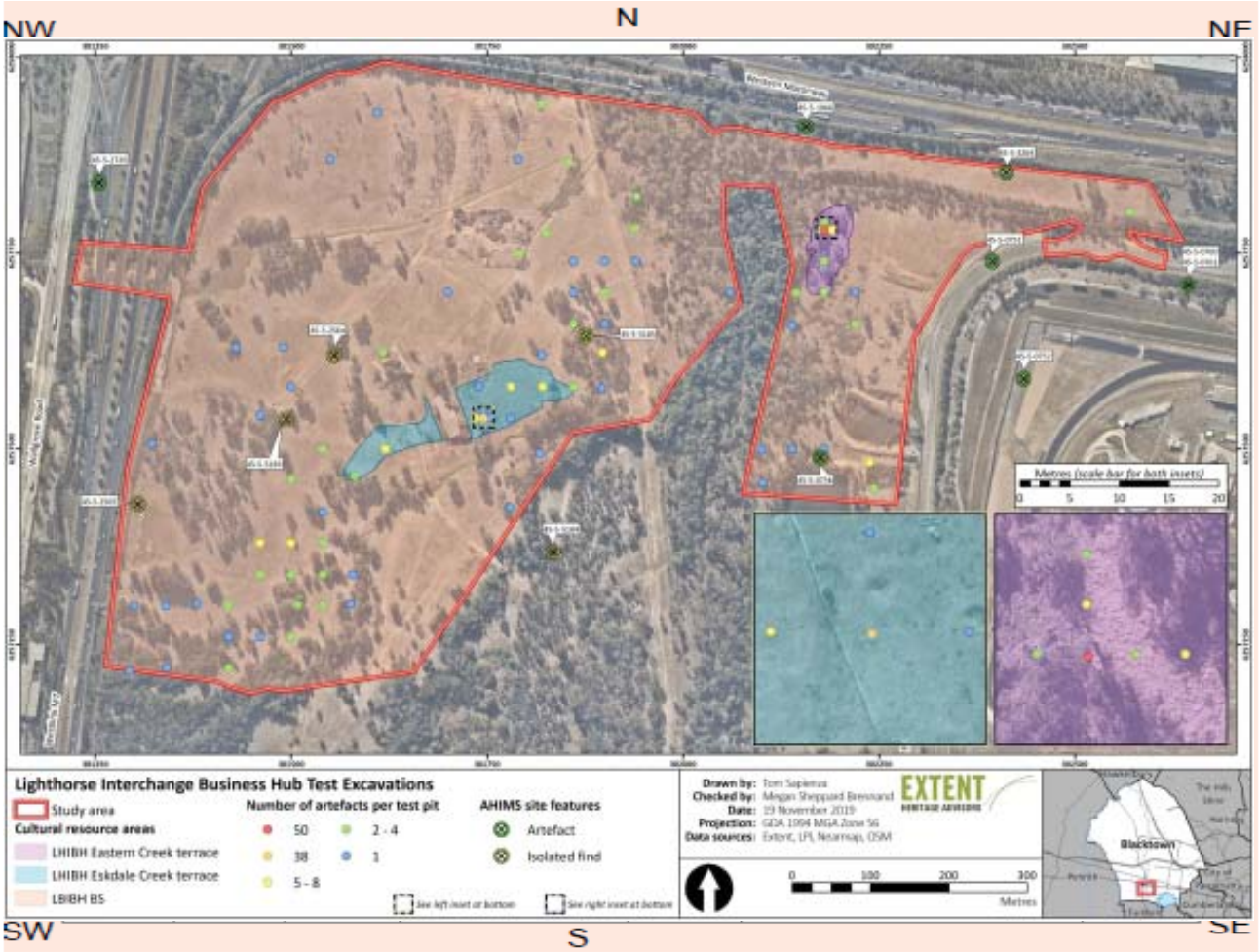
**Land Form Unit:** Terrace **Vegetation:** Cleared

**Distance to Water (m):** 75 **Primary Report:** Light Horse Interchange Business Hub, Eastern Creek NSW SSD 9667

**How to get to the site:** Enter through the first turn off from M7 through three gates onto a private road. Continue off the road into the paddock for ~265m. The terrace extends 300m north east (by 75m) from this point, to the north east across transmission station.

**Other site information:** The levels at which artefacts were found broadly date to within the last 3,000 years.This site is considered to reflect focus of intense, but perhaps short-lived, visitation of the study area in the past.

## Site location map




## Site contents information

**open/closed site:** Open

**Site condition:** Good

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 1. Artefact | 70 | 300 | 75 | | | | |

Description:

Elevated terrace - varying depth above Eskdale Creek. Low density artefact distribution across much of the terrace; however a discrete, highly localised ~100m2 patch of increased artefact density to the north east of army compound. The main artefact concentrations occurred between 10 and 50cm.

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 2. | | | | | | | |

Description:

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 3. | | | | | | | |

Description:

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 4. | | | | | | | |

Description:

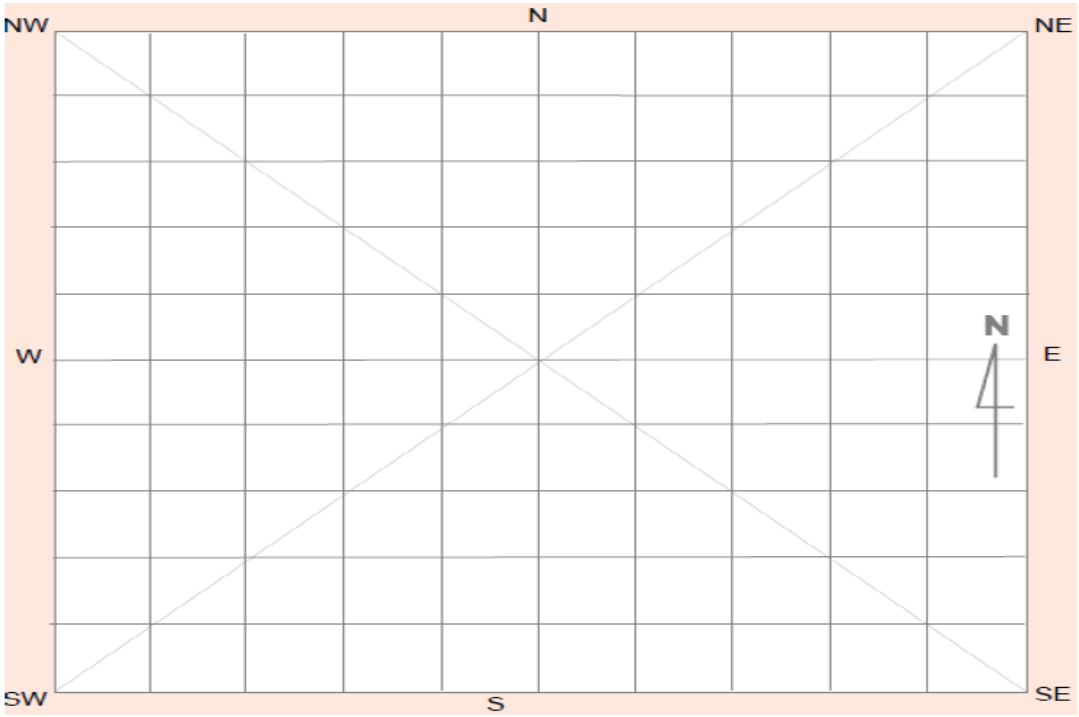
**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 5. | | | | | | | |

Description:

Other Site Info: The levels at which artefacts were found broadly date to within the last 3,000 years.This site is considered to reflect focus of intense, but perhaps short-lived, visitation of the study area in the past.

## Site plan



## Site photographs

Description: Eskdale Creek terrace landform in the vicinity of TP151, view north.

Description: Eskdale Creek terrace landform looking back towards transmission station buildings, view south.

Description: Eskdale Creek terrace landform deposit, TP151, total depth 90cm.

Description: Eskdale Creek terrace landform in the vicinity of TP151, view west.

## Site restrictions

**Do you want to Restrict this site?:**

**Restriction type:** Gender General Location

**Why is this site restricted?:**

## Further information contact

**Title** **Surname** **First name**

**Organisation:**

**Address:**

**Phone:** **E-mail:**

# Aboriginal Site Recording Form

**AHIMS Registrar**
**PO Box 1967, Hurstville 2220 NSW**

**AHIMS site ID:** 41-5-5284 **Date recorded:** 19-12-2019

## Site Location Information

**Site name:** LHIBH Eastern Creek Terrace

**Easting:** 302179 **Northing:** 6257780 **Coordinates must be in GDA (MGA)**

**Horizontal Accuracy (m):** 5

**Zone:** 56 **Location method:** Non-Differential GPS

## Recorder Information

(The person responsible for the completion and submission of this form)

| Title | Surname | First name |
|---|---|---|
| Ms. | Sheppard Brennand | Megan |

**Organisation:** Extent Heritage

**Address:** 3/73 Union Street Pyrmont 2009

**Phone:** 0295554000 **E-mail:** msbrennand@extent.com.au

## Site Context Information

**Land Form Pattern:** Rolling Hills **Land Use:** Pastoral/Grazing

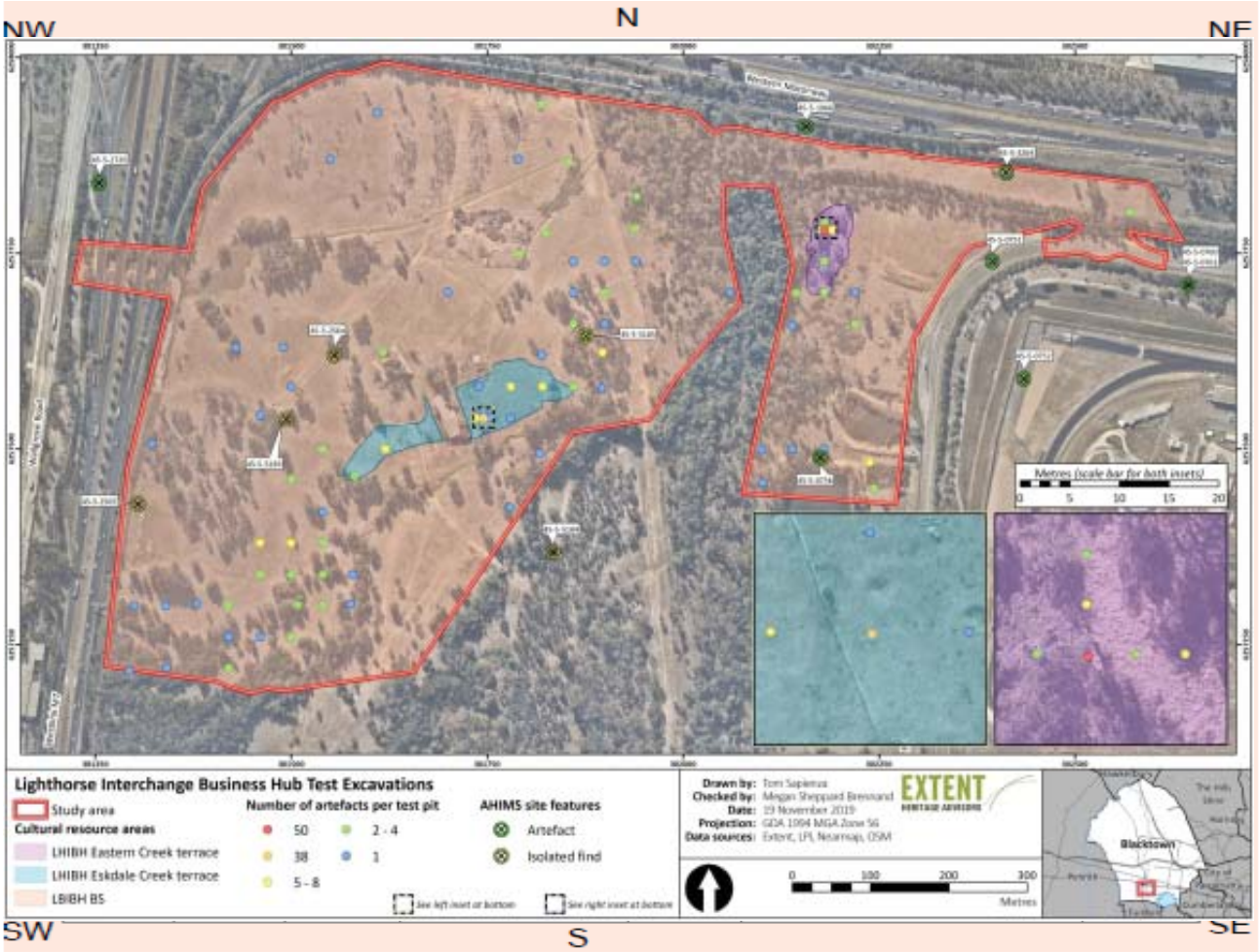
**Land Form Unit:** Terrace **Vegetation:** Cleared

**Distance to Water (m):** 30 **Primary Report:** Light Horse Interchange Business Hub, Eastern Creek NSW SSD 9667

**How to get to the site:** Enter Western Sydney Parklands through first gate heading south off Ferrers Rd. Continue west for ~400m. The terrace covers ~110m north to south and ~50m east to west.

**Other site information:** The levels at which artefacts were found broadly date to within the last 3,000 years. The localised patch is considered to reflect a focus of intense, but perhaps short-lived, visitation of the study area in the past, within which heat treatment of raw materials occurred.

## Site location map




## Site contents information

**open/closed site:** Open

**Site condition:** Good

**Features:**

| | | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|---|
| 1. | Artefact | 70 | 110 | 50 | | | | |

Description:

Elevated, flat terrace above Eastern Creek, characterised by moderately deep, fine sandy clay alluvium, to depths of 50cm. Low density artefact scatter across much of the terrace, with a discrete, highly localised 100m2 patch of increased artefact density in the north. Main concentrations 0-40cm.

**Features:**

| | | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|---|
| 2. | | | | | | | | |

Description:

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 3. | | | | | | | |

Description:

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 4. | | | | | | | |

Description:

**Features:**

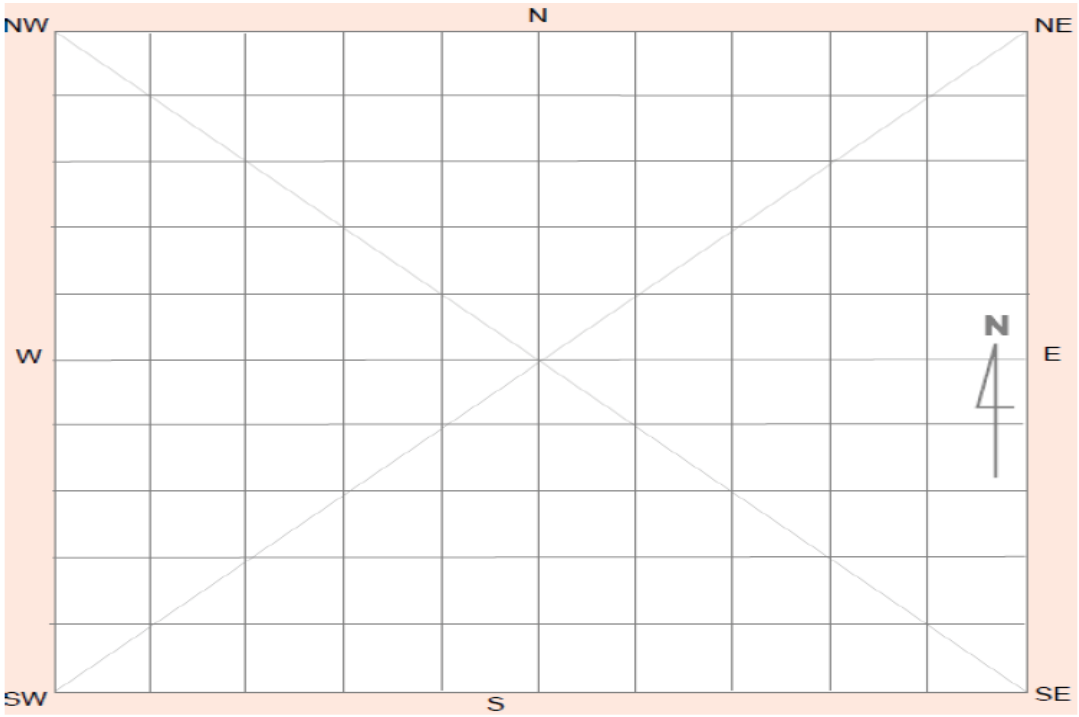
| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 5. | | | | | | | |

Description:

Other Site Info:

The levels at which artefacts were found broadly date to within the last 3,000 years. The localised patch is considered to reflect a focus of intense, but perhaps short-lived, visitation of the study area in the past, within which heat treatment of raw materials occurred.

## Site plan



## Site photographs

Description: Eastern Creek terrace landform in the vicinity of TP57, view north.

Description: Eastern Creek terrace landform, view west.

Description: Eastern Creek terrace landform deposit, TP57, total depth 50cm. OSL samples 9 to 12 are shown.

Description:

## Site restrictions

**Do you want to Restrict this site?:**

**Restriction type:** Gender General Location

**Why is this site restricted?:**

## Further information contact

**Title** **Surname** **First name**

**Organisation:**

**Address:**

**Phone:** **E-mail:**

# Aboriginal Site Recording Form

**AHIMS Registrar**
**PO Box 1967, Hurstville 2220 NSW**

**AHIMS site ID:** 45-5-5285 **Date recorded:** 19-12-2019

## Site Location Information

**Site name:** LHIBH BS

**Easting:** 301616 **Northing:** 6257579 **Coordinates must be in GDA (MGA)**

**Horizontal Accuracy (m):** 5

**Zone:** 56 **Location method:** Non-Differential GPS

## Recorder Information

(The person responsible for the completion and submission of this form)

| Title | Surname | First name |
|---|---|---|
| Mrs. | Barry | Laressa |

**Organisation:** AHMS

**Address:** 3/73 Union St Pyrmont NSW 2009

**Phone:** 0295554000 **E-mail:** lberehowyj@ahms.com.au

## Site Context Information

**Land Form Pattern:** Undulating Plain **Land Use:** Pastoral/Grazing

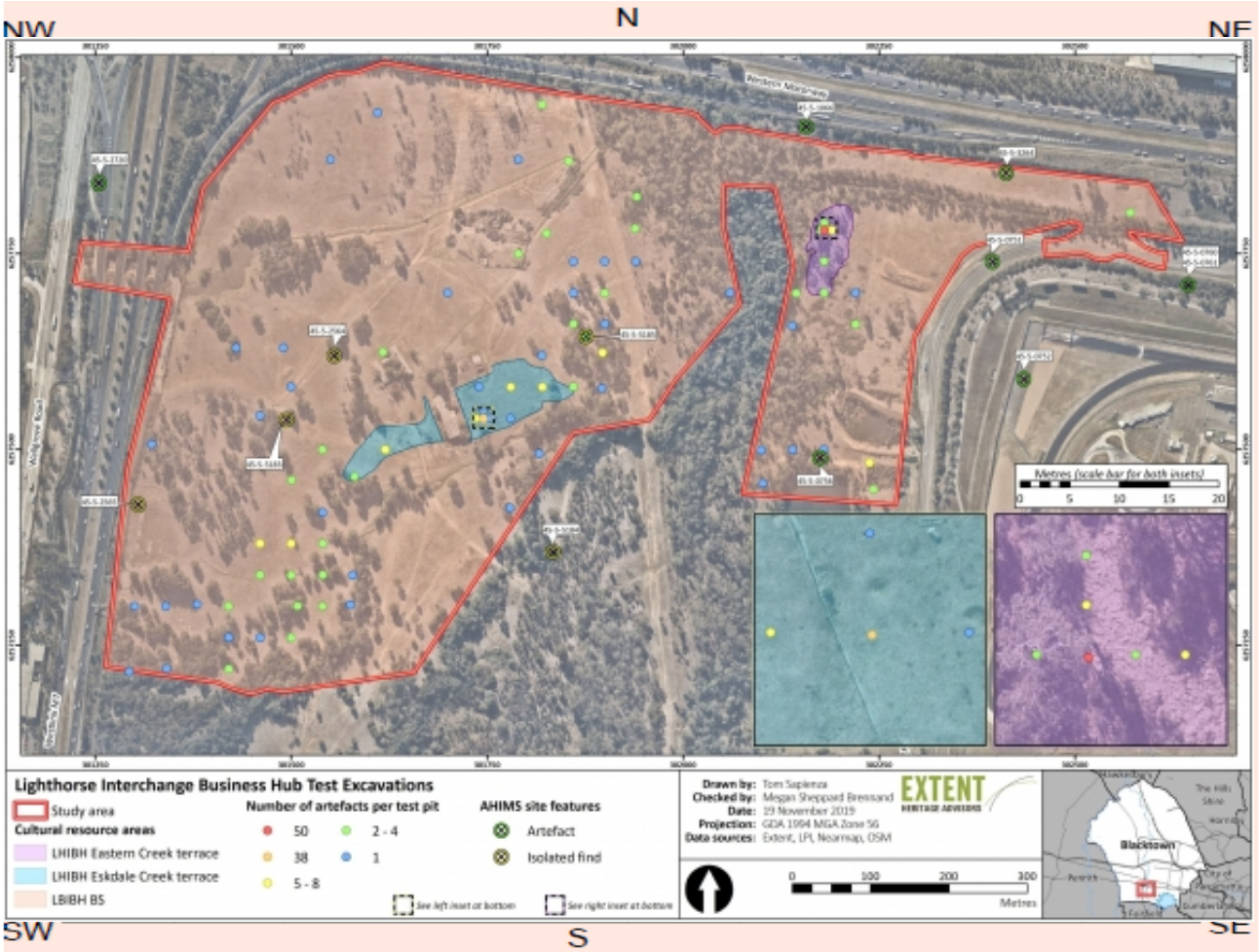
**Land Form Unit:** Slope **Vegetation:** Cleared

**Distance to Water (m):** 100 **Primary Report:** Extent 2019. Light Horse Interchange Business Hub ACHAR. WSPT

**How to get to the site:** Navigate to 165 Wallgrove Road, enter driveway and travel along service road passing below M7 Motorway. Site encompasses broad sloping paddocks

**Other site information:** For management purposes, this background scatter has been registered as a single AHIMS site and incorporates a large proportion of the low-density scatter sites and isolated finds, and artefacts recovered from test excavation, within the study area.

## Site location map




## Site contents information

**open/closed site:** Open

**Site condition:** Disturbed

**Features:**

| | | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|---|
| 1. | Artefact | 188 | 5000 | 3000 | | | | |

Description:

sparse, low density background scatter of cultural material across LHIBH site, present both on the ground surface or in shallow duplex topsoils. This background reflects an ephemeral or transient use of the region in the past.

**Features:**

| | | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|---|
| 2. | | | | | | | | |

Description:

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 3. | | | | | | | |

Description:

**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 4. | | | | | | | |

Description:

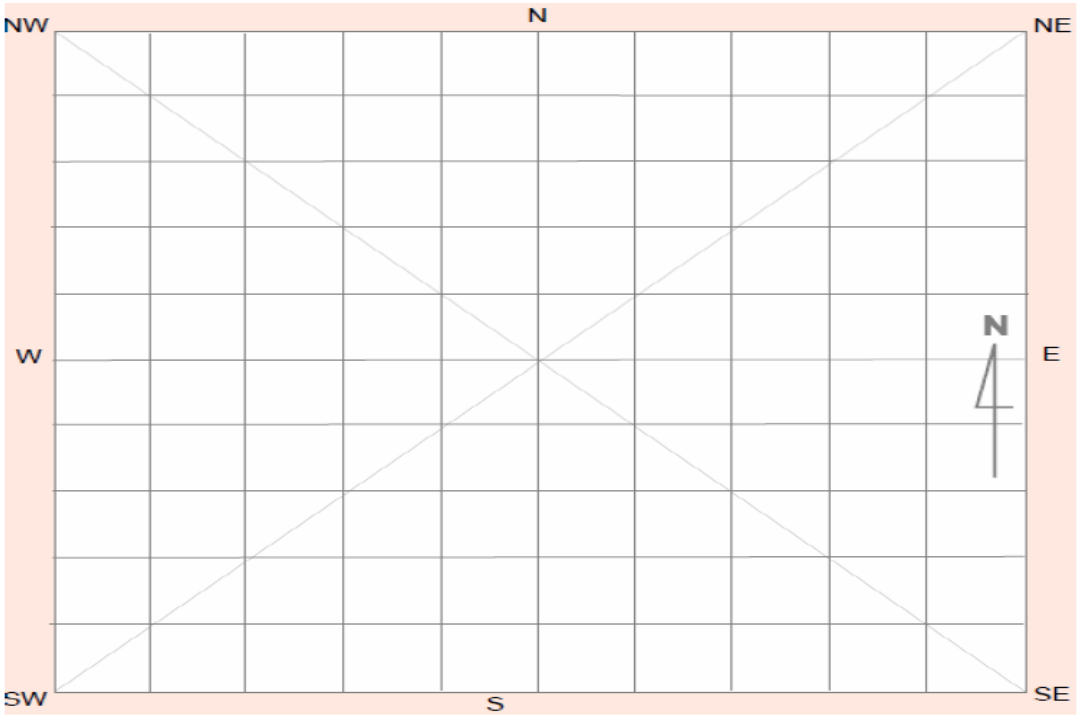
**Features:**

| | Number of features | Length of feature(s) extent (m) | Width of feature (s) extent (m) | Scarred Trees: Scar Depth (cm) | Scarred Trees: Regrowth (cm) | Scarred Trees: Scar shape | Scarred Trees: Tree Species |
|---|---|---|---|---|---|---|---|
| 5. | | | | | | | |

Description:

Other Site Info: For management purposes, this background scatter has been registered as a single AHIMS site and incorporates a large proportion of the low-density scatter sites and isolated finds, and artefacts recovered from test excavation, within the study area.

## Site plan



## Site photographs

Description: LHIBH general area, undulating plain landform

Description: Shallow duplex soils in section

Description: silcrete flake detail

Description:

## Site restrictions

**Do you want to Restrict this site?:**

**Restriction type:** Gender General Location

**Why is this site restricted?:**

## Further information contact

**Title** **Surname** **First name**

**Organisation:**

**Address:**

**Phone:** **E-mail:**

# Appendix 4: Field Investigation

# Appendix 4-1. Sedimentological analysis

TP-57 Magnetic Susceptibility Measurements
Reset=Yes
Range=1.0

| Position(mm) | Validity | Bottom Measurement | Top Measurement | Corrected Measurement |
|---|---|---|---|---|
| 19.86 | 1 | 21.33 | -0.86 | 22.19 |
| 24.86 | 1 | 33.27 | -0.77 | 34.04 |
| 29.86 | 1 | 42.94 | -0.72 | 43.67 |
| 34.86 | 1 | 87.86 | -0.67 | 88.54 |
| 39.86 | 1 | 386.19 | -0.68 | 386.88 |
| 44.86 | 1 | 176.26 | -0.74 | 177 |
| 49.86 | 1 | 98.55 | -0.72 | 99.28 |
| 54.86 | 1 | 225.6 | -0.74 | 226.34 |
| 59.86 | 1 | 152.26 | -0.71 | 152.97 |
| 64.86 | 1 | 438.03 | -0.7 | 438.73 |
| 69.86 | 1 | 133.46 | -0.7 | 134.16 |
| 74.86 | 1 | 297.8 | -0.68 | 298.47 |
| 79.86 | 1 | 797.78 | -0.62 | 798.4 |
| 84.86 | 1 | 606.6 | -0.57 | 607.17 |
| 89.86 | 1 | 391.47 | -0.52 | 391.99 |
| 94.86 | 1 | 352.88 | -0.63 | 353.51 |
| 99.86 | 1 | 214.32 | -0.56 | 214.89 |
| 104.86 | 1 | 208.75 | -0.62 | 209.37 |
| 109.86 | 1 | 911.47 | -0.62 | 912.09 |
| 114.86 | 1 | 687.34 | -0.63 | 687.97 |
| 119.86 | 1 | 298.86 | -0.71 | 299.57 |
| 124.86 | 1 | 425.59 | -0.7 | 426.29 |
| 129.86 | 1 | 170.57 | -0.74 | 171.31 |
| 134.86 | 1 | 386.93 | -0.72 | 387.65 |
| 139.86 | 1 | 206.5 | -0.73 | 207.23 |
| 144.86 | 1 | 321.58 | -0.71 | 322.3 |
| 149.86 | 1 | 212.38 | -0.66 | 213.04 |
| 154.86 | 1 | 86.41 | -0.74 | 87.15 |
| 159.86 | 1 | 218.71 | -0.73 | 219.43 |
| 164.86 | 1 | 320.05 | -0.66 | 320.71 |
| 169.86 | 1 | 269.17 | -0.61 | 269.79 |
| 174.86 | 1 | 109.24 | -0.42 | 109.66 |
| 179.86 | 1 | 99.52 | -0.54 | 100.06 |
| 184.86 | 1 | 167.79 | -0.54 | 168.33 |
| 189.86 | 1 | 548.63 | -0.48 | 549.11 |
| 194.86 | 1 | 1391.73 | -0.44 | 1392.17 |
| 199.86 | 1 | 1867.57 | -0.36 | 1867.93 |
| 204.86 | 1 | 235.2 | -0.29 | 235.49 |
| 209.86 | 1 | 162.54 | -0.1 | 162.64 |
| 214.86 | 1 | 334.22 | -0.14 | 334.36 |
| 219.86 | 1 | 2562.23 | -0.02 | 2562.25 |
| 224.86 | 1 | 6024.65 | -0.07 | 6024.72 |
| 229.86 | 1 | 5215.16 | -0.19 | 5215.35 |
| 234.86 | 1 | 1452.9 | -0.27 | 1453.17 |
| 239.86 | 1 | 216.64 | -0.34 | 216.98 |
| 244.86 | 1 | 62.64 | -0.35 | 63 |

| | | | | |
|---|---|---|---|---|
| 249.86 | 1 | 86.23 | -0.51 | 86.74 |
| 254.86 | 1 | 132.33 | -0.57 | 132.9 |
| 259.86 | 1 | 37.54 | -0.48 | 38.02 |
| 264.86 | 1 | 40.6 | -0.56 | 41.16 |
| 269.86 | 1 | 44.77 | -0.53 | 45.3 |
| 274.86 | 1 | 63.43 | -0.54 | 63.96 |
| 279.86 | 1 | 94.1 | -0.53 | 94.63 |
| 284.86 | 1 | 85.11 | -0.5 | 85.61 |
| 289.86 | 1 | 158.08 | -0.55 | 158.64 |
| 294.86 | 1 | 202.18 | -0.56 | 202.74 |
| 299.86 | 1 | 169.08 | -0.55 | 169.63 |
| 304.86 | 1 | 120.5 | -0.48 | 120.98 |
| 309.86 | 1 | 67.55 | -0.58 | 68.13 |
| 314.86 | 1 | 85.97 | -0.57 | 86.53 |
| 319.86 | 1 | 91.45 | -0.58 | 92.03 |
| 324.86 | 1 | 60.1 | -0.56 | 60.67 |
| 329.86 | 1 | 56.77 | -0.53 | 57.3 |
| 334.86 | 1 | 56.27 | -0.57 | 56.84 |
| 339.86 | 1 | 56.26 | -0.62 | 56.89 |
| 344.86 | 1 | 151.57 | -0.62 | 152.19 |
| 349.86 | 1 | 142.97 | -0.6 | 143.57 |
| 354.86 | 1 | 74.05 | -0.59 | 74.64 |
| 359.86 | 1 | 61.16 | -0.59 | 61.75 |
| 364.86 | 1 | 68.91 | -0.61 | 69.51 |
| 369.86 | 1 | 197.84 | -0.6 | 198.45 |
| 374.86 | 1 | 34.21 | -0.58 | 34.78 |
| 379.86 | 1 | 45.03 | -0.51 | 45.54 |
| 384.86 | 1 | 138.79 | -0.57 | 139.36 |
| 389.86 | 1 | 157.22 | -0.5 | 157.72 |
| 394.86 | 1 | 99.08 | -0.55 | 99.63 |
| 399.86 | 1 | 153.85 | -0.54 | 154.4 |
| 404.86 | 1 | 396.06 | -0.58 | 396.64 |
| 409.86 | 1 | 100.82 | -0.52 | 101.34 |
| 414.86 | 1 | 101.02 | -0.57 | 101.59 |
| 419.86 | 1 | 47.01 | -0.56 | 47.56 |
| 424.86 | 1 | 50.43 | -0.53 | 50.96 |
| 429.86 | 1 | 64.36 | -0.55 | 64.91 |
| 434.86 | 1 | 446.16 | -0.53 | 446.69 |
| 439.86 | 1 | 57.11 | -0.49 | 57.61 |
| 444.86 | 1 | 29.07 | -0.52 | 29.59 |
| 449.86 | 1 | 19.71 | -0.5 | 20.21 |
| 454.86 | 1 | 23.25 | -0.52 | 23.77 |
| 459.86 | 1 | 21.11 | -0.59 | 21.71 |
| 464.86 | 1 | 21.55 | -0.54 | 22.09 |
| 469.86 | 1 | 19.19 | -0.35 | 19.54 |
| 474.86 | 1 | 10.21 | -0.6 | 10.81 |
| 479.86 | 1 | 10.99 | -0.6 | 11.59 |
| 484.86 | 1 | 6.6 | -0.61 | 7.21 |

TP-151 Magnetic Susceptibility Measurements
Reset=Yes
Range=1.0

| Position(mm) | Validity | Bottom Measurement | Top Measurement | Corrected Measurement |
|---|---|---|---|---|
| 8.57 | 1 | 24.57 | -1.65 | 26.22 |
| 13.57 | 1 | 36.32 | -1.69 | 38.01 |
| 18.57 | 1 | 48.71 | -1.84 | 50.55 |
| 23.57 | 1 | 49.27 | -1.92 | 51.18 |
| 28.57 | 1 | 51.75 | -1.99 | 53.74 |
| 33.57 | 1 | 46.18 | -2 | 48.18 |
| 38.57 | 1 | 38.97 | -2.05 | 41.02 |
| 43.57 | 1 | 43.75 | -2.14 | 45.88 |
| 48.57 | 1 | 51.22 | -2.22 | 53.43 |
| 53.57 | 1 | 36.05 | -2.27 | 38.32 |
| 58.57 | 1 | 62.84 | -2.28 | 65.12 |
| 63.57 | 1 | 100.28 | -2.29 | 102.56 |
| 68.57 | 1 | 54.45 | -2.3 | 56.75 |
| 73.57 | 1 | 49.75 | -2.33 | 52.08 |
| 78.57 | 1 | 104.2 | -2.28 | 106.48 |
| 83.57 | 1 | 72.6 | -2.33 | 74.93 |
| 88.57 | 1 | 47.52 | -2.33 | 49.84 |
| 93.57 | 1 | 63.69 | -2.34 | 66.03 |
| 98.57 | 1 | 117.49 | -2.28 | 119.77 |
| 103.57 | 1 | 167.97 | -2.3 | 170.27 |
| 108.57 | 1 | 123.42 | -2.33 | 125.75 |
| 113.57 | 1 | 74.86 | -2.34 | 77.2 |
| 118.57 | 1 | 82.37 | -2.41 | 84.78 |
| 123.57 | 1 | 158.62 | -2.45 | 161.08 |
| 128.57 | 1 | 100.39 | -2.48 | 102.88 |
| 133.57 | 1 | 467.09 | -2.49 | 469.58 |
| 138.57 | 1 | 224.02 | -2.52 | 226.54 |
| 143.57 | 1 | 142.41 | -2.55 | 144.96 |
| 148.57 | 1 | 244.48 | -2.55 | 247.03 |
| 153.57 | 1 | 120.5 | -2.56 | 123.06 |
| 158.57 | 1 | 91.57 | -2.59 | 94.15 |
| 163.57 | 1 | 134.44 | -2.55 | 137 |
| 168.57 | 1 | 101.16 | -2.56 | 103.72 |
| 173.57 | 1 | 168.5 | -2.55 | 171.04 |
| 178.57 | 1 | 189.8 | -2.58 | 192.38 |
| 183.57 | 1 | 217.17 | -2.59 | 219.76 |
| 188.57 | 1 | 105.64 | -2.58 | 108.22 |
| 193.57 | 1 | 98.91 | -2.58 | 101.5 |
| 198.57 | 1 | 142.51 | -2.57 | 145.08 |
| 203.57 | 1 | 126.33 | -2.56 | 128.89 |
| 208.57 | 1 | 113.87 | -2.59 | 116.46 |
| 213.57 | 1 | 183.37 | -2.56 | 185.93 |
| 218.57 | 1 | 613.3 | -2.55 | 615.86 |
| 223.57 | 1 | 213.57 | -2.57 | 216.14 |
| 228.57 | 1 | 123.77 | -2.55 | 126.32 |
| 233.57 | 1 | 467.23 | -2.59 | 469.82 |

| | | | | |
|---|---|---|---|---|
| 238.57 | 1 | 280.76 | -2.59 | 283.35 |
| 243.57 | 1 | 140.82 | -2.53 | 143.35 |
| 248.57 | 1 | 146.27 | -2.59 | 148.87 |
| 253.57 | 1 | 116.75 | -2.6 | 119.35 |
| 258.57 | 1 | 127.39 | -2.63 | 130.02 |
| 263.57 | 1 | 192.71 | -2.65 | 195.36 |
| 268.57 | 1 | 119.18 | -2.62 | 121.8 |
| 273.57 | 1 | 112.94 | -2.63 | 115.57 |
| 278.57 | 1 | 143.78 | -2.59 | 146.38 |
| 283.57 | 1 | 145.78 | -2.53 | 148.31 |
| 288.57 | 1 | 126.04 | -2.56 | 128.6 |
| 293.57 | 1 | 402.71 | -2.59 | 405.3 |
| 298.57 | 1 | 221.42 | -2.58 | 224 |
| 303.57 | 1 | 154.92 | -2.59 | 157.51 |
| 308.57 | 1 | 119.12 | -2.56 | 121.69 |
| 313.57 | 1 | 124.17 | -2.58 | 126.75 |
| 318.57 | 1 | 118.69 | -2.6 | 121.28 |
| 323.57 | 1 | 112.84 | -2.6 | 115.44 |
| 328.57 | 1 | 107.78 | -2.57 | 110.35 |
| 333.57 | 1 | 112.51 | -2.57 | 115.07 |
| 338.57 | 1 | 127.16 | -2.54 | 129.69 |
| 343.57 | 1 | 119.37 | -2.56 | 121.92 |
| 348.57 | 1 | 332.76 | -2.52 | 335.28 |
| 353.57 | 1 | 201.53 | -2.53 | 204.06 |
| 358.57 | 1 | 124.05 | -2.56 | 126.61 |
| 363.57 | 1 | 121.05 | -2.55 | 123.59 |
| 368.57 | 1 | 105.04 | -2.49 | 107.53 |
| 373.57 | 1 | 120.94 | -2.53 | 123.47 |
| 378.57 | 1 | 130.64 | -2.51 | 133.15 |
| 383.57 | 1 | 249.35 | -2.48 | 251.83 |
| 388.57 | 1 | 144.32 | -2.45 | 146.77 |
| 393.57 | 1 | 165.32 | -2.45 | 167.77 |
| 398.57 | 1 | 553.24 | -2.41 | 555.65 |
| 403.57 | 1 | 218.42 | -2.42 | 220.84 |
| 408.57 | 1 | 148.78 | -2.44 | 151.22 |
| 413.57 | 1 | 321.25 | -2.39 | 323.64 |
| 418.57 | 1 | 263.17 | -2.39 | 265.56 |
| 423.57 | 1 | 148.33 | -2.39 | 150.71 |
| 428.57 | 1 | 107.53 | -2.33 | 109.86 |
| 433.57 | 1 | 119.54 | -2.36 | 121.89 |
| 438.57 | 1 | 118.16 | -2.31 | 120.47 |
| 443.57 | 1 | 111.41 | -2.34 | 113.74 |
| 448.57 | 1 | 117.49 | -2.32 | 119.81 |
| 453.57 | 1 | 121.26 | -2.33 | 123.6 |
| 458.57 | 1 | 139.7 | -2.29 | 141.99 |
| 463.57 | 1 | 103.62 | -2.29 | 105.92 |
| 468.57 | 1 | 140.16 | -2.28 | 142.44 |
| 473.57 | 1 | 129.3 | -2.31 | 131.6 |
| 478.57 | 1 | 146.1 | -2.29 | 148.38 |
| 483.57 | 1 | 185.28 | -2.28 | 187.56 |

| | | | | |
|---|---|---|---|---|
| 488.57 | 1 | 118.3 | -2.26 | 120.56 |
| 493.57 | 1 | 100.9 | -2.2 | 103.1 |
| 498.57 | 1 | 122.12 | -2.23 | 124.35 |
| 503.57 | 1 | 91.83 | -2.22 | 94.05 |
| 508.57 | 1 | 113.13 | -2.17 | 115.3 |
| 513.57 | 1 | 133.29 | -2.18 | 135.47 |
| 518.57 | 1 | 98.63 | -2.19 | 100.82 |
| 523.57 | 1 | 86.77 | -2.15 | 88.92 |
| 528.57 | 1 | 85.5 | -2.18 | 87.68 |
| 533.57 | 1 | 99.19 | -2.13 | 101.32 |
| 538.57 | 1 | 82.65 | -2.15 | 84.8 |
| 543.57 | 1 | 78.05 | -2.12 | 80.17 |
| 548.57 | 1 | 96.29 | -2.13 | 98.43 |
| 553.57 | 1 | 89.83 | -2.12 | 91.95 |
| 558.57 | 1 | 94.39 | -2.1 | 96.49 |
| 563.57 | 1 | 79.46 | -2.1 | 81.57 |
| 568.57 | 1 | 111.56 | -2.12 | 113.68 |
| 573.57 | 1 | 88.69 | -2.1 | 90.79 |
| 578.57 | 1 | 88.26 | -2.1 | 90.36 |
| 583.57 | 1 | 104.55 | -2.07 | 106.62 |
| 588.57 | 1 | 104.94 | -2.05 | 106.99 |
| 593.57 | 1 | 101.45 | -2.05 | 103.5 |
| 598.57 | 1 | 105.64 | -2.06 | 107.7 |
| 603.57 | 1 | 96.2 | -2.01 | 98.21 |
| 608.57 | 1 | 119.99 | -2.07 | 122.06 |
| 613.57 | 1 | 116.32 | -2.06 | 118.38 |
| 618.57 | 1 | 136.13 | -2.02 | 138.15 |
| 623.57 | 1 | 69 | -2 | 71 |
| 628.57 | 1 | 77.4 | -2.02 | 79.42 |
| 633.57 | 1 | 106.44 | -2 | 108.44 |
| 638.57 | 1 | 57.35 | -2.01 | 59.36 |
| 643.57 | 1 | 61.8 | -1.96 | 63.76 |
| 648.57 | 1 | 74.77 | -1.97 | 76.73 |
| 653.57 | 1 | 84.95 | -1.94 | 86.89 |
| 658.57 | 1 | 68.83 | -1.9 | 70.73 |
| 663.57 | 1 | 76.84 | -1.91 | 78.75 |
| 668.57 | 1 | 73.53 | -1.86 | 75.39 |
| 673.57 | 1 | 72.87 | -1.83 | 74.7 |
| 678.57 | 1 | 77.37 | -1.89 | 79.25 |
| 683.57 | 1 | 90.38 | -1.82 | 92.2 |
| 688.57 | 1 | 83.75 | -1.82 | 85.58 |
| 693.57 | 1 | 91.73 | -1.78 | 93.51 |
| 698.57 | 1 | 99.21 | -1.8 | 101.01 |
| 703.57 | 1 | 84.58 | -1.8 | 86.38 |
| 708.57 | 1 | 66.32 | -1.79 | 68.11 |
| 713.57 | 1 | 61.66 | -1.72 | 63.38 |
| 718.57 | 1 | 49.16 | -1.75 | 50.91 |
| 723.57 | 1 | 43.25 | -1.71 | 44.97 |
| 728.57 | 1 | 46.9 | -1.67 | 48.57 |
| 733.57 | 1 | 53.47 | -1.66 | 55.13 |

| | | | | |
|---|---|---|---|---|
| 738.57 | 1 | 65.54 | -1.24 | 66.77 |
| 743.57 | 1 | 87.74 | -1.57 | 89.31 |
| 748.57 | 1 | 71.23 | -1.58 | 72.82 |
| 753.57 | 1 | 73.44 | -1.57 | 75.01 |
| 758.57 | 1 | 85.03 | -1.53 | 86.57 |
| 763.57 | 1 | 51.48 | -1.51 | 52.99 |
| 768.57 | 1 | 33.33 | -1.52 | 34.86 |
| 773.57 | 1 | 38.97 | -1.49 | 40.47 |
| 778.57 | 1 | 41.1 | -1.46 | 42.55 |
| 783.57 | 1 | 39.41 | -1.44 | 40.84 |
| 788.57 | 1 | 44.01 | -1.39 | 45.4 |
| 793.57 | 1 | 74.63 | -1.4 | 76.03 |
| 798.57 | 1 | 61.68 | -1.37 | 63.05 |
| 803.57 | 1 | 59.35 | -1.34 | 60.69 |
| 808.57 | 1 | 58 | -1.32 | 59.31 |
| 813.57 | 1 | 48.14 | -1.35 | 49.48 |
| 818.57 | 1 | 38.72 | -1.33 | 40.05 |
| 823.57 | 1 | 34.85 | -1.27 | 36.12 |
| 828.57 | 1 | 19.66 | -1.29 | 20.96 |
| 833.57 | 1 | 13.92 | -1.18 | 15.1 |
| 838.57 | 1 | 12.25 | -1.25 | 13.49 |
| 843.57 | 1 | 18.74 | -1.24 | 19.98 |
| 848.57 | 1 | 25.24 | -1.22 | 26.47 |
| 853.57 | 1 | 26.67 | -1.19 | 27.85 |
| 858.57 | 1 | 38.94 | -1.18 | 40.11 |
| 863.57 | 1 | 32.45 | -1.16 | 33.6 |
| 868.57 | 1 | 27.99 | -1.13 | 29.12 |
| 873.57 | 1 | 25.16 | -1.12 | 26.28 |
| 878.57 | 1 | 25.28 | -1.12 | 26.4 |
| 883.57 | 1 | 25.57 | -1.15 | 26.72 |
| 888.57 | 1 | 32.39 | -1.11 | 33.51 |
| 893.57 | 1 | 28.93 | -1.12 | 30.04 |
| 898.57 | 1 | 27.97 | -1.1 | 29.07 |

| | position (mm) | cps | MSE | Al | Si | P | S | Cl | Ar | K | Ca | Ti | V | Cr | Mn | Fe | Ni | Cu | Zn | Rb | Sr | Y | Zr | Ba | Ce | Sm | Pb | Mo inc | Mo coh | Dt |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 19.86 | 216091 | 1.41 | 117 | 3973 | 70 | 105 | 14 | 1489 | 2118 | 2282 | 11754 | 0 | 207 | 7113 | 106110 | 1103 | 1203 | 1212 | 2117 | 3202 | 1501 | 8686 | 229 | 57 | 175 | 436 | 175530 | 46786 | 0.375 |
| 1 | 20.86 | 233806 | 1.24 | 210 | 5188 | 94 | 64 | 13 | 1217 | 2538 | 2546 | 14550 | 178 | 355 | 9266 | 123324 | 1212 | 1231 | 1470 | 2432 | 3367 | 1404 | 8311 | 219 | 79 | 211 | 533 | 180731 | 46920 | 0.387 |
| 2 | 21.86 | 252787 | 1.28 | 231 | 5609 | 62 | 79 | 0 | 1141 | 2728 | 3096 | 14922 | 226 | 413 | 11383 | 130427 | 1365 | 1281 | 1654 | 2857 | 3684 | 1395 | 10139 | 345 | 86 | 231 | 646 | 187625 | 49137 | 0.402 |
| 3 | 22.86 | 242786 | 1.27 | 218 | 5433 | 83 | 47 | 5 | 1120 | 2672 | 2656 | 14896 | 149 | 288 | 10012 | 126557 | 1393 | 1267 | 1548 | 2661 | 3537 | 1466 | 9180 | 343 | 44 | 218 | 471 | 182865 | 49537 | 0.394 |
| 4 | 23.86 | 242086 | 1.18 | 241 | 5170 | 121 | 55 | 43 | 1265 | 2652 | 2664 | 14587 | 197 | 419 | 8838 | 125194 | 1352 | 1187 | 1451 | 2637 | 3725 | 1451 | 10298 | 319 | 7 | 203 | 718 | 182566 | 48930 | 0.395 |
| 5 | 24.86 | 240155 | 1.26 | 222 | 5448 | 129 | 49 | 11 | 1162 | 2687 | 2489 | 15178 | 215 | 359 | 7675 | 122734 | 1327 | 1184 | 1482 | 2553 | 3468 | 1391 | 8364 | 227 | 128 | 197 | 647 | 183243 | 48194 | 0.394 |
| 6 | 25.86 | 244529 | 1.28 | 209 | 5233 | 64 | 100 | 17 | 1198 | 2642 | 2533 | 14594 | 236 | 309 | 8477 | 123725 | 1347 | 1197 | 1447 | 2679 | 3326 | 1668 | 9778 | 267 | 79 | 305 | 481 | 184494 | 49679 | 0.397 |
| 7 | 26.86 | 263409 | 1.28 | 233 | 5540 | 93 | 109 | 0 | 1059 | 2870 | 3004 | 16017 | 248 | 352 | 9390 | 132407 | 1438 | 1203 | 1527 | 2865 | 3803 | 1531 | 9754 | 305 | 29 | 265 | 967 | 192257 | 51004 | 0.413 |
| 8 | 27.86 | 269912 | 1.31 | 311 | 6041 | 128 | 45 | 7 | 1045 | 2821 | 2940 | 16498 | 294 | 374 | 9623 | 140583 | 1473 | 1203 | 1621 | 3049 | 3857 | 1465 | 9925 | 256 | 62 | 266 | 862 | 193602 | 52104 | 0.417 |
| 9 | 28.86 | 275222 | 1.24 | 237 | 6110 | 96 | 105 | 0 | 1064 | 2812 | 2831 | 16341 | 301 | 346 | 9211 | 143245 | 1464 | 1307 | 1623 | 2756 | 3530 | 1604 | 10609 | 253 | 168 | 263 | 615 | 194929 | 52083 | 0.421 |
| 10 | 29.86 | 282484 | 1.3 | 246 | 6229 | 80 | 70 | 0 | 1068 | 3038 | 2886 | 17809 | 337 | 493 | 9179 | 143391 | 1366 | 1243 | 1574 | 2947 | 3683 | 1587 | 11286 | 304 | 101 | 297 | 628 | 197782 | 52837 | 0.428 |
| 11 | 30.86 | 280013 | 1.23 | 290 | 6192 | 95 | 39 | 0 | 1164 | 3023 | 2656 | 18126 | 274 | 425 | 9050 | 146542 | 1421 | 1275 | 1677 | 2923 | 3766 | 1670 | 10256 | 272 | 72 | 288 | 867 | 198756 | 52709 | 0.424 |
| 12 | 31.86 | 271218 | 1.29 | 218 | 6236 | 110 | 59 | 8 | 1090 | 2915 | 2563 | 18112 | 249 | 433 | 8601 | 142272 | 1356 | 1334 | 1648 | 2985 | 3663 | 1713 | 10794 | 195 | 108 | 249 | 742 | 193167 | 51549 | 0.417 |
| 13 | 32.86 | 268872 | 1.3 | 289 | 6241 | 74 | 57 | 0 | 1109 | 2889 | 2652 | 16491 | 183 | 448 | 9227 | 143285 | 1394 | 1256 | 1496 | 3131 | 3662 | 1589 | 10131 | 302 | 65 | 268 | 714 | 192368 | 50964 | 0.414 |
| 14 | 33.86 | 278012 | 1.26 | 277 | 6235 | 87 | 62 | 0 | 1071 | 2867 | 2694 | 16787 | 238 | 370 | 9302 | 142028 | 1504 | 1221 | 1415 | 2926 | 3576 | 1833 | 10632 | 271 | 148 | 368 | 569 | 199067 | 53031 | 0.423 |
| 15 | 34.86 | 268585 | 1.22 | 196 | 6447 | 47 | 52 | 0 | 1016 | 3070 | 2622 | 16932 | 306 | 467 | 8989 | 143841 | 1439 | 1275 | 1599 | 3139 | 3457 | 1551 | 9902 | 275 | 104 | 319 | 792 | 193299 | 51975 | 0.414 |
| 16 | 35.86 | 271420 | 1.35 | 239 | 6331 | 70 | 51 | 0 | 1144 | 3072 | 2706 | 17387 | 374 | 398 | 9936 | 147873 | 1263 | 1180 | 1636 | 2747 | 3662 | 1600 | 9441 | 259 | 133 | 279 | 639 | 193326 | 52009 | 0.415 |
| 17 | 36.86 | 270777 | 1.26 | 232 | 6128 | 70 | 73 | 10 | 1036 | 2880 | 2677 | 16459 | 240 | 449 | 9368 | 140761 | 1489 | 1219 | 1740 | 2987 | 3885 | 1688 | 10142 | 348 | 78 | 304 | 727 | 195195 | 52387 | 0.417 |
| 18 | 37.86 | 268500 | 1.19 | 299 | 6265 | 104 | 95 | 74 | 1011 | 3087 | 2644 | 17771 | 364 | 341 | 9929 | 146698 | 1488 | 1266 | 1716 | 2673 | 3960 | 1678 | 10786 | 297 | 94 | 205 | 1013 | 191827 | 50877 | 0.412 |
| 19 | 38.86 | 266446 | 1.31 | 249 | 6111 | 41 | 49 | 30 | 1031 | 3101 | 2951 | 17585 | 266 | 559 | 11896 | 167660 | 1493 | 1327 | 1753 | 2910 | 3502 | 1635 | 10207 | 325 | 130 | 320 | 986 | 182118 | 50089 | 0.406 |
| 20 | 39.86 | 276189 | 1.4 | 245 | 5931 | 37 | 121 | 8 | 1034 | 2979 | 3031 | 16071 | 375 | 350 | 11447 | 214514 | 1324 | 1056 | 1565 | 2747 | 3627 | 1304 | 9700 | 302 | 44 | 274 | 811 | 176954 | 50178 | 0.408 |
| 21 | 40.86 | 275448 | 1.38 | 264 | 6342 | 80 | 93 | 17 | 959 | 3098 | 2539 | 16311 | 288 | 675 | 11254 | 202876 | 1369 | 1107 | 1547 | 2518 | 3350 | 1432 | 10090 | 316 | 73 | 300 | 1058 | 179299 | 49512 | 0.409 |
| 22 | 41.86 | 276106 | 1.31 | 283 | 6832 | 82 | 52 | 0 | 967 | 3067 | 2555 | 17156 | 354 | 743 | 10000 | 194107 | 1257 | 1186 | 1658 | 2677 | 3522 | 1221 | 9087 | 207 | 93 | 245 | 732 | 182404 | 49925 | 0.411 |
| 23 | 42.86 | 279083 | 1.27 | 265 | 6534 | 106 | 64 | 0 | 964 | 3067 | 2547 | 17728 | 380 | 660 | 9513 | 165571 | 1389 | 1109 | 1665 | 3018 | 3625 | 1437 | 10198 | 352 | 93 | 329 | 787 | 189353 | 53017 | 0.419 |
| 24 | 43.86 | 269321 | 1.32 | 211 | 6125 | 65 | 16 | 20 | 974 | 2984 | 2287 | 16753 | 199 | 528 | 9973 | 139821 | 1318 | 1292 | 1526 | 2560 | 3544 | 1729 | 10104 | 157 | 111 | 273 | 540 | 193791 | 53030 | 0.415 |
| 25 | 44.86 | 268727 | 1.21 | 220 | 6174 | 107 | 50 | 0 | 1099 | 2920 | 2175 | 18389 | 191 | 495 | 8327 | 137925 | 1379 | 1214 | 1461 | 2513 | 3445 | 1777 | 11155 | 331 | 133 | 213 | 519 | 191699 | 51883 | 0.415 |
| 26 | 45.86 | 269563 | 1.31 | 239 | 6218 | 109 | 56 | 51 | 1093 | 2782 | 2283 | 17233 | 410 | 531 | 8181 | 148162 | 1427 | 1334 | 1447 | 2614 | 2993 | 1608 | 10654 | 288 | 143 | 306 | 483 | 190935 | 52044 | 0.413 |
| 27 | 46.86 | 274292 | 1.29 | 210 | 6230 | 51 | 65 | 0 | 1258 | 2919 | 2380 | 17426 | 294 | 727 | 11008 | 195629 | 1277 | 1349 | 1242 | 2612 | 3188 | 1576 | 9860 | 286 | 112 | 321 | 830 | 181832 | 50427 | 0.409 |
| 28 | 47.86 | 271144 | 1.33 | 259 | 6056 | 55 | 41 | 151 | 1236 | 2715 | 2108 | 17186 | 310 | 487 | 7788 | 141246 | 1506 | 1314 | 1402 | 2871 | 3251 | 1734 | 10167 | 231 | 186 | 293 | 592 | 194987 | 52735 | 0.417 |
| 29 | 48.86 | 266320 | 1.31 | 216 | 5560 | 39 | 76 | 0 | 1353 | 2483 | 1859 | 16327 | 136 | 443 | 7055 | 158268 | 1310 | 1312 | 1252 | 2643 | 3072 | 1553 | 11007 | 193 | 131 | 288 | 458 | 190898 | 51092 | 0.41 |
| 30 | 49.86 | 260462 | 1.31 | 229 | 5876 | 63 | 66 | 25 | 1197 | 2656 | 1767 | 19250 | 250 | 435 | 6652 | 135388 | 1378 | 1266 | 1327 | 2691 | 3254 | 1628 | 10042 | 294 | 72 | 225 | 583 | 191280 | 51112 | 0.408 |
| 31 | 50.86 | 281953 | 1.38 | 251 | 6414 | 81 | 61 | 0 | 904 | 2776 | 1845 | 17036 | 368 | 619 | 10404 | 178767 | 1393 | 1224 | 1241 | 2369 | 3522 | 1361 | 9730 | 308 | 107 | 378 | 597 | 191091 | 51205 | 0.42 |
| 32 | 51.86 | 270350 | 1.4 | 185 | 5910 | 96 | 44 | 44 | 943 | 2435 | 1614 | 16163 | 145 | 574 | 7067 | 131808 | 1434 | 1284 | 1139 | 2697 | 4861 | 1639 | 10837 | 220 | 107 | 294 | 577 | 197126 | 52548 | 0.419 |
| 33 | 52.86 | 272078 | 1.32 | 184 | 5920 | 82 | 57 | 17 | 860 | 2436 | 1723 | 15450 | 214 | 571 | 7694 | 125387 | 1311 | 1163 | 1270 | 2521 | 3608 | 1527 | 11253 | 289 | 81 | 258 | 468 | 199181 | 53486 | 0.421 |
| 34 | 53.86 | 260390 | 1.28 | 215 | 4635 | 73 | 55 | 0 | 849 | 2156 | 1719 | 13799 | 287 | 633 | 8238 | 136672 | 1235 | 1040 | 1217 | 2754 | 3856 | 1493 | 10889 | 198 | 30 | 160 | 751 | 189079 | 51436 | 0.41 |
| 35 | 54.86 | 249019 | 1.29 | 190 | 3830 | 58 | 59 | 0 | 740 | 1642 | 1837 | 11018 | 136 | 327 | 8124 | 93505 | 1277 | 1064 | 1038 | 2472 | 3930 | 1304 | 11335 | 168 | 68 | 92 | 423 | 195287 | 52362 | 0.409 |
| 36 | 55.86 | 268295 | 1.15 | 209 | 4606 | 70 | 23 | 0 | 900 | 1887 | 2610 | 12606 | 130 | 402 | 10464 | 100667 | 1268 | 1201 | 1187 | 2542 | 3940 | 1379 | 10346 | 209 | 77 | 86 | 485 | 204064 | 52155 | 0.421 |
| 37 | 56.86 | 268167 | 1.34 | 253 | 4534 | 120 | 64 | 0 | 1315 | 2072 | 4556 | 12537 | 205 | 279 | 12452 | 127094 | 1237 | 1286 | 1022 | 2398 | 3704 | 1444 | 10517 | 312 | 89 | 152 | 566 | 199101 | 51894 | 0.417 |
| 38 | 57.86 | 261966 | 1.45 | 193 | 3720 | 87 | 50 | 21 | 1580 | 1702 | 3499 | 11767 | 113 | 345 | 10258 | 125274 | 1263 | 1371 | 934 | 1930 | 3477 | 1868 | 9471 | 227 | 34 | 135 | 345 | 200354 | 50828 | 0.412 |
| 39 | 58.86 | 246663 | 1.6 | 133 | 3254 | 89 | 13 | 22 | 1663 | 1638 | 3114 | 9926 | 79 | 298 | 11198 | 89190 | 1171 | 1321 | 1084 | 2208 | 3606 | 1509 | 8850 | 183 | 64 | 55 | 328 | 200821 | 50039 | 0.404 |
| 40 | 59.86 | 232624 | 1.78 | 169 | 2745 | 30 | 10 | 0 | 1786 | 1361 | 3936 | 8213 | 4 | 178 | 11514 | 72620 | 1184 | 1346 | 847 | 2086 | 3649 | 1667 | 7698 | 235 | 0 | 20 | 383 | 199041 | 47815 | 0.395 |
| 41 | 60.86 | 192492 | 1.74 | 123 | 1742 | 90 | 97 | 0 | 2010 | 1013 | 4288 | 5588 | 0 | 96 | 9442 | 40427 | 1056 | 1050 | 658 | 1484 | 3363 | 1646 | 7466 | 227 | 0 | 29 | 216 | 182560 | 43989 | 0.37 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.016214; F-slope= 0.009738; E-offset= 0.075206

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 42 | 61.86 | 197301 | 1.75 | 29 | 1928 | 44 | 65 | 14 | 1923 | 1048 | 1907 | 6823 | 22 | 140 | 5233 | 57120 | 1107 | 1228 | 744 | 1844 | 3091 | 1808 | 8453 | 141 | 26 | 51 | 148 | 185107 | 45532 | 0.369 |
| 43 | 62.86 | 212459 | 1.61 | 118 | 2583 | 49 | 46 | 32 | 1785 | 1325 | 2563 | 8499 | 103 | 376 | 7264 | 72924 | 1096 | 1231 | 964 | 2206 | 3492 | 1305 | 8977 | 202 | 12 | 109 | 155 | 184092 | 45075 | 0.376 |
| 44 | 63.86 | 231341 | 1.55 | 121 | 3732 | 45 | 42 | 9 | 1518 | 1874 | 4545 | 11969 | 38 | 298 | 11156 | 99505 | 1237 | 1398 | 1178 | 1794 | 3274 | 1019 | 8305 | 311 | 80 | 161 | 327 | 183340 | 45526 | 0.384 |
| 45 | 64.86 | 249189 | 1.37 | 297 | 5612 | 52 | 63 | 6 | 1359 | 2553 | 4184 | 14777 | 100 | 344 | 10289 | 119463 | 1151 | 1236 | 1166 | 2019 | 3573 | 1295 | 8360 | 311 | 79 | 131 | 361 | 187840 | 47805 | 0.398 |
| 46 | 65.86 | 229307 | 1.35 | 231 | 3959 | 57 | 85 | 36 | 1437 | 1931 | 2445 | 12980 | 0 | 193 | 6607 | 92529 | 1215 | 1155 | 996 | 2261 | 3551 | 1721 | 8936 | 176 | 62 | 123 | 0 | 192902 | 48866 | 0.39 |
| 47 | 66.86 | 232586 | 1.38 | 153 | 2292 | 55 | 48 | 40 | 1384 | 1242 | 1684 | 7734 | 53 | 390 | 5240 | 70712 | 1283 | 1160 | 838 | 1882 | 3949 | 1339 | 10907 | 161 | 24 | 49 | 341 | 202371 | 49456 | 0.398 |
| 48 | 67.86 | 290857 | 1.44 | 202 | 4763 | 66 | 54 | 9 | 1103 | 2137 | 3350 | 13499 | 129 | 369 | 10109 | 102718 | 1360 | 1407 | 1262 | 2105 | 4537 | 1590 | 9181 | 209 | 84 | 26 | 226 | 223997 | 52276 | 0.436 |
| 49 | 68.86 | 267726 | 1.5 | 229 | 4987 | 71 | 0 | 0 | 1250 | 2134 | 4725 | 12537 | 130 | 212 | 15647 | 101322 | 1270 | 1409 | 1066 | 1667 | 3728 | 1316 | 8045 | 261 | 55 | 12 | 541 | 204873 | 48433 | 0.413 |
| 50 | 69.86 | 233156 | 1.29 | 181 | 4754 | 0 | 27 | 0 | 1369 | 2092 | 4379 | 11138 | 116 | 268 | 13743 | 84876 | 1077 | 1289 | 1065 | 2030 | 3509 | 1453 | 8397 | 223 | 40 | 52 | 635 | 188101 | 45944 | 0.387 |
| 51 | 70.86 | 218113 | 1.34 | 143 | 3824 | 22 | 71 | 0 | 1655 | 1847 | 3363 | 10422 | 0 | 281 | 9709 | 84908 | 1001 | 1269 | 922 | 2101 | 2991 | 1335 | 8370 | 276 | 37 | 106 | 315 | 180226 | 45954 | 0.376 |
| 52 | 71.86 | 219079 | 1.48 | 144 | 3456 | 50 | 84 | 27 | 1752 | 1813 | 2325 | 10824 | 93 | 239 | 7931 | 107440 | 1062 | 1237 | 917 | 2089 | 2912 | 1378 | 8319 | 182 | 98 | 104 | 519 | 178171 | 46857 | 0.374 |
| 53 | 72.86 | 267545 | 1.32 | 298 | 6319 | 48 | 42 | 5 | 1210 | 2596 | 2817 | 16750 | 137 | 403 | 11001 | 168152 | 1238 | 1284 | 1303 | 2623 | 3227 | 1476 | 9436 | 240 | 147 | 212 | 464 | 185390 | 48927 | 0.404 |
| 54 | 73.86 | 262098 | 1.29 | 248 | 6434 | 161 | 65 | 39 | 1156 | 2775 | 2164 | 17496 | 233 | 421 | 8125 | 130674 | 1553 | 1360 | 1328 | 2499 | 3627 | 1658 | 9285 | 273 | 103 | 266 | 368 | 192256 | 51107 | 0.406 |
| 55 | 74.86 | 247839 | 1.36 | 226 | 5949 | 43 | 32 | 0 | 1260 | 2603 | 1797 | 15929 | 188 | 313 | 6718 | 136746 | 1339 | 1372 | 1188 | 2565 | 3262 | 1619 | 9975 | 380 | 76 | 223 | 622 | 182737 | 51130 | 0.394 |
| 56 | 75.86 | 245373 | 1.25 | 305 | 5970 | 93 | 54 | 0 | 1297 | 2522 | 1688 | 16584 | 287 | 271 | 6727 | 129338 | 1313 | 1274 | 1105 | 2832 | 3244 | 1331 | 9580 | 262 | 100 | 231 | 345 | 183209 | 50350 | 0.393 |
| 57 | 76.86 | 244787 | 1.33 | 252 | 6363 | 58 | 0 | 0 | 1149 | 2562 | 1567 | 17948 | 202 | 432 | 6695 | 128763 | 1371 | 1282 | 1148 | 2477 | 3244 | 1580 | 9722 | 257 | 129 | 297 | 569 | 182157 | 49554 | 0.392 |
| 58 | 77.86 | 245395 | 1.29 | 292 | 6250 | 95 | 38 | 0 | 1151 | 2518 | 1499 | 16545 | 236 | 1511 | 6343 | 153448 | 1301 | 1193 | 1260 | 2759 | 2831 | 1466 | 10684 | 308 | 101 | 236 | 502 | 175520 | 49317 | 0.388 |
| 59 | 78.86 | 258848 | 1.56 | 275 | 6275 | 146 | 69 | 12 | 1189 | 2482 | 1660 | 17845 | 245 | 362 | 7719 | 197426 | 1162 | 1178 | 1080 | 2360 | 2916 | 1590 | 9224 | 300 | 175 | 287 | 779 | 173818 | 50404 | 0.392 |
| 60 | 79.86 | 240680 | 1.33 | 206 | 6074 | 67 | 71 | 0 | 1219 | 2433 | 1676 | 15901 | 227 | 390 | 7105 | 130487 | 1298 | 1110 | 1127 | 2737 | 2994 | 1490 | 11753 | 344 | 101 | 233 | 632 | 177348 | 50925 | 0.387 |
| 61 | 80.86 | 247827 | 1.23 | 278 | 6219 | 73 | 44 | 0 | 1191 | 2614 | 1417 | 17412 | 244 | 340 | 7499 | 146986 | 1339 | 1302 | 1308 | 2489 | 2946 | 1595 | 10871 | 201 | 173 | 283 | 684 | 180449 | 50888 | 0.392 |
| 62 | 81.86 | 248861 | 1.29 | 189 | 5539 | 75 | 37 | 16 | 1150 | 2422 | 1544 | 16234 | 352 | 344 | 7067 | 132488 | 1369 | 1369 | 1303 | 2901 | 3383 | 1655 | 10020 | 277 | 67 | 271 | 700 | 188718 | 50733 | 0.394 |
| 63 | 82.86 | 229257 | 1.24 | 250 | 6391 | 27 | 0 | 17 | 1020 | 2785 | 1672 | 16998 | 195 | 418 | 7448 | 139204 | 1264 | 1298 | 1362 | 2759 | 3076 | 1527 | 9246 | 311 | 111 | 231 | 400 | 169026 | 46021 | 0.372 |
| 64 | 83.86 | 225696 | 1.4 | 242 | 6603 | 37 | 94 | 30 | 1131 | 2706 | 1756 | 17562 | 301 | 501 | 12169 | 182078 | 1169 | 1082 | 1071 | 2353 | 2807 | 1396 | 7879 | 274 | 144 | 186 | 940 | 151847 | 46016 | 0.359 |
| 65 | 84.86 | 253559 | 1.52 | 289 | 6415 | 43 | 26 | 84 | 959 | 2591 | 1632 | 17592 | 306 | 471 | 17428 | 235015 | 1123 | 1100 | 1307 | 2381 | 3046 | 1406 | 7536 | 197 | 182 | 268 | 1793 | 153521 | 48989 | 0.377 |
| 66 | 85.86 | 219153 | 1.38 | 245 | 6351 | 51 | 43 | 0 | 1039 | 2509 | 1567 | 17373 | 212 | 501 | 9916 | 150863 | 1320 | 1161 | 1250 | 2327 | 2574 | 1157 | 8008 | 267 | 97 | 204 | 981 | 155406 | 46159 | 0.36 |
| 67 | 86.86 | 219018 | 1.33 | 233 | 6496 | 43 | 45 | 9 | 1118 | 2573 | 1547 | 16499 | 301 | 433 | 11079 | 164954 | 1194 | 1060 | 1147 | 2307 | 2511 | 1249 | 8378 | 235 | 124 | 244 | 1249 | 149011 | 46316 | 0.358 |
| 68 | 87.86 | 234396 | 1.55 | 288 | 6400 | 68 | 47 | 0 | 1026 | 2347 | 1539 | 16472 | 212 | 380 | 11537 | 193147 | 1194 | 1021 | 1145 | 1962 | 2532 | 1079 | 8969 | 264 | 127 | 250 | 1168 | 153815 | 47074 | 0.369 |
| 69 | 88.86 | 247781 | 1.38 | 239 | 6277 | 29 | 0 | 0 | 1140 | 2301 | 1373 | 16421 | 245 | 507 | 11550 | 228609 | 1039 | 1019 | 1217 | 2424 | 2555 | 1104 | 8327 | 220 | 128 | 273 | 894 | 155189 | 47348 | 0.378 |
| 70 | 89.86 | 212076 | 1.29 | 213 | 5699 | 66 | 58 | 7 | 1159 | 2123 | 1337 | 14432 | 285 | 307 | 5198 | 111695 | 1289 | 1111 | 1034 | 2201 | 2732 | 1564 | 8613 | 200 | 106 | 281 | 650 | 166317 | 48540 | 0.367 |
| 71 | 90.86 | 231270 | 1.32 | 187 | 5608 | 45 | 71 | 0 | 1122 | 2064 | 1332 | 13900 | 310 | 261 | 6617 | 118433 | 1310 | 1089 | 1036 | 2618 | 3202 | 1304 | 10150 | 213 | 69 | 219 | 284 | 180146 | 50603 | 0.385 |
| 72 | 91.86 | 227547 | 1.23 | 251 | 5790 | 106 | 81 | 41 | 1330 | 2268 | 1431 | 14834 | 155 | 282 | 7168 | 124344 | 1273 | 1261 | 1065 | 2297 | 3036 | 1767 | 10281 | 243 | 118 | 230 | 535 | 177181 | 49260 | 0.378 |
| 73 | 92.86 | 216930 | 1.41 | 241 | 5024 | 64 | 42 | 0 | 1534 | 2046 | 1423 | 14506 | 166 | 278 | 5577 | 109463 | 1150 | 1371 | 1116 | 2366 | 2983 | 1766 | 10013 | 208 | 156 | 199 | 196 | 172126 | 47441 | 0.369 |
| 74 | 93.86 | 210516 | 1.3 | 172 | 4826 | 86 | 48 | 0 | 1670 | 2036 | 1380 | 14660 | 0 | 451 | 5728 | 109855 | 1214 | 1250 | 1030 | 2347 | 2525 | 1675 | 9562 | 290 | 113 | 189 | 471 | 165636 | 47532 | 0.365 |
| 75 | 94.86 | 218563 | 1.29 | 191 | 4587 | 58 | 46 | 10 | 1488 | 1973 | 1268 | 12749 | 196 | 329 | 7783 | 166656 | 1118 | 1042 | 880 | 2045 | 2876 | 1338 | 8213 | 201 | 76 | 297 | 432 | 161004 | 46736 | 0.364 |
| 76 | 95.86 | 262942 | 1.39 | 261 | 5431 | 111 | 18 | 23 | 1304 | 2490 | 1640 | 16636 | 318 | 467 | 12721 | 217898 | 1253 | 1332 | 999 | 2603 | 3165 | 1441 | 8700 | 336 | 137 | 337 | 956 | 175023 | 48683 | 0.392 |
| 77 | 96.86 | 243139 | 1.31 | 166 | 5221 | 57 | 93 | 9 | 1570 | 2521 | 1642 | 16217 | 337 | 381 | 12347 | 182317 | 1151 | 1395 | 1008 | 2618 | 2824 | 1730 | 9600 | 356 | 32 | 251 | 857 | 170186 | 47488 | 0.381 |
| 78 | 97.86 | 215153 | 1.35 | 201 | 4287 | 97 | 40 | 18 | 1608 | 1959 | 1370 | 14048 | 140 | 326 | 6967 | 141870 | 1056 | 1469 | 924 | 2183 | 2680 | 1611 | 9079 | 308 | 119 | 256 | 562 | 163541 | 47054 | 0.362 |
| 79 | 98.86 | 234747 | 1.31 | 256 | 5242 | 47 | 72 | 0 | 1283 | 2192 | 1312 | 14693 | 207 | 329 | 6738 | 164206 | 1252 | 1095 | 986 | 2331 | 2821 | 1692 | 10919 | 238 | 130 | 233 | 773 | 168091 | 48647 | 0.377 |
| 80 | 99.86 | 239431 | 1.38 | 220 | 5996 | 78 | 41 | 128 | 1158 | 2454 | 1538 | 16736 | 294 | 856 | 8547 | 164613 | 1304 | 1021 | 1086 | 2270 | 3222 | 1488 | 9813 | 307 | 90 | 244 | 644 | 170292 | 49077 | 0.38 |
| 81 | 100.86 | 226031 | 1.44 | 252 | 4652 | 121 | 88 | 66 | 1543 | 2102 | 1584 | 14074 | 93 | 412 | 7901 | 153199 | 1152 | 1491 | 1159 | 2681 | 2646 | 1492 | 9563 | 287 | 85 | 190 | 460 | 170394 | 47849 | 0.369 |
| 82 | 101.86 | 198116 | 1.41 | 203 | 3750 | 76 | 84 | 30 | 1855 | 1762 | 1414 | 11820 | 105 | 429 | 5379 | 105839 | 1102 | 1361 | 859 | 2195 | 2758 | 1706 | 9070 | 216 | 80 | 175 | 367 | 164011 | 45715 | 0.351 |
| 83 | 102.86 | 207133 | 1.36 | 196 | 4416 | 80 | 68 | 8 | 1733 | 1841 | 1414 | 13526 | 5 | 296 | 6040 | 111494 | 1051 | 1348 | 982 | 2326 | 2831 | 1479 | 9554 | 246 | 100 | 148 | 489 | 166120 | 47367 | 0.358 |
| 84 | 103.86 | 210023 | 1.31 | 217 | 5251 | 71 | 11 | 0 | 1509 | 2282 | 1485 | 15773 | 27 | 391 | 7126 | 132632 | 1224 | 1357 | 1086 | 2489 | 2665 | 1356 | 8247 | 190 | 111 | 250 | 471 | 158647 | 46770 | 0.355 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.016214;  F-slope= 0.009738; E-offset= 0.075206

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 85 | 104.86 | 222726 | 1.29 | 183 | 5615 | 27 | 56 | 0 | 1406 | 2504 | 1548 | 15683 | 199 | 457 | 7487 | 160786 | 1195 | 1214 | 988 | 2073 | 2547 | 1282 | 8695 | 227 | 133 | 256 | 587 | 158326 | 47776 | 0.362 |
| 86 | 105.86 | 252406 | 1.54 | 247 | 6409 | 114 | 73 | 37 | 1384 | 2697 | 1604 | 16968 | 218 | 899 | 8449 | 221919 | 1319 | 1373 | 1010 | 2054 | 2843 | 1519 | 9438 | 421 | 58 | 276 | 890 | 162222 | 48590 | 0.38 |
| 87 | 106.86 | 235396 | 1.32 | 215 | 6458 | 80 | 55 | 19 | 1402 | 2675 | 1731 | 17660 | 256 | 503 | 7674 | 172416 | 1236 | 1181 | 1148 | 2343 | 2743 | 1626 | 9027 | 267 | 146 | 238 | 800 | 161640 | 48260 | 0.371 |
| 88 | 107.86 | 247850 | 1.49 | 235 | 6156 | 35 | 53 | 0 | 1292 | 2592 | 1530 | 17266 | 238 | 465 | 9007 | 219031 | 1121 | 1223 | 954 | 2112 | 2959 | 1412 | 9201 | 269 | 110 | 301 | 686 | 160421 | 48519 | 0.376 |
| 89 | 108.86 | 265283 | 1.54 | 192 | 6487 | 102 | 59 | 0 | 1379 | 2519 | 1566 | 18232 | 235 | 488 | 7196 | 226871 | 1322 | 1345 | 1189 | 2730 | 2946 | 1297 | 10384 | 305 | 99 | 299 | 629 | 168653 | 50194 | 0.392 |
| 90 | 109.86 | 238772 | 1.3 | 210 | 6458 | 37 | 0 | 0 | 1226 | 2436 | 1513 | 18339 | 158 | 386 | 8029 | 150392 | 1342 | 1148 | 1058 | 2373 | 3030 | 1543 | 9920 | 180 | 135 | 274 | 205 | 172509 | 49536 | 0.38 |
| 91 | 110.86 | 242405 | 1.37 | 288 | 6702 | 75 | 94 | 0 | 1228 | 2392 | 1513 | 17819 | 106 | 460 | 8133 | 167092 | 1330 | 1242 | 1069 | 2460 | 2777 | 1669 | 9079 | 387 | 117 | 353 | 545 | 169392 | 48727 | 0.382 |
| 92 | 111.86 | 245632 | 1.49 | 262 | 6745 | 128 | 19 | 0 | 1219 | 2379 | 1470 | 17063 | 183 | 2134 | 5970 | 177723 | 1288 | 1135 | 1120 | 1927 | 2746 | 1342 | 8691 | 233 | 113 | 293 | 593 | 168402 | 49403 | 0.384 |
| 93 | 112.86 | 264185 | 1.4 | 227 | 6567 | 43 | 39 | 0 | 1021 | 2515 | 1720 | 18090 | 249 | 639 | 27982 | 188568 | 1352 | 1104 | 1160 | 2611 | 3135 | 1443 | 10492 | 421 | 194 | 322 | 1037 | 170294 | 49018 | 0.396 |
| 94 | 113.86 | 251491 | 1.35 | 297 | 6482 | 84 | 0 | 102 | 1062 | 2302 | 1622 | 17069 | 327 | 427 | 22677 | 161583 | 1354 | 1051 | 983 | 2097 | 2782 | 1540 | 10947 | 330 | 183 | 323 | 698 | 167958 | 50474 | 0.391 |
| 95 | 114.86 | 255380 | 1.33 | 280 | 6679 | 67 | 78 | 189 | 993 | 2359 | 1611 | 17524 | 333 | 466 | 8498 | 140304 | 1330 | 1181 | 1120 | 2222 | 3675 | 1557 | 10136 | 287 | 94 | 208 | 661 | 184619 | 53157 | 0.402 |
| 96 | 115.86 | 253353 | 1.29 | 274 | 6858 | 71 | 54 | 0 | 966 | 2483 | 1292 | 16645 | 421 | 293 | 5911 | 122686 | 1356 | 1094 | 1161 | 2574 | 3587 | 1798 | 11534 | 237 | 115 | 285 | 336 | 189892 | 52576 | 0.403 |
| 97 | 116.86 | 248245 | 1.3 | 290 | 6866 | 32 | 39 | 0 | 1008 | 2414 | 1358 | 17321 | 224 | 366 | 6216 | 125430 | 1504 | 1244 | 1226 | 2810 | 3729 | 1998 | 10289 | 268 | 114 | 274 | 253 | 184151 | 50300 | 0.396 |
| 98 | 117.86 | 241239 | 1.3 | 207 | 7053 | 91 | 21 | 0 | 1028 | 2497 | 1342 | 18410 | 295 | 458 | 5688 | 134213 | 1268 | 1242 | 1186 | 2450 | 3322 | 1883 | 10084 | 341 | 111 | 224 | 368 | 175423 | 49213 | 0.386 |
| 99 | 118.86 | 239922 | 1.38 | 277 | 6813 | 41 | 53 | 0 | 1004 | 2289 | 1397 | 17628 | 103 | 389 | 7136 | 157002 | 1319 | 1156 | 1152 | 2327 | 3245 | 1397 | 10699 | 339 | 111 | 236 | 845 | 165693 | 50143 | 0.382 |
| 100 | 119.86 | 247297 | 1.36 | 255 | 6439 | 98 | 7 | 0 | 854 | 2106 | 1301 | 16284 | 386 | 399 | 5960 | 142098 | 1366 | 1157 | 1160 | 2159 | 3260 | 1771 | 10233 | 312 | 38 | 269 | 529 | 178173 | 53351 | 0.394 |
| 101 | 120.86 | 250885 | 1.25 | 288 | 6873 | 110 | 76 | 10 | 1009 | 2277 | 1424 | 17506 | 227 | 571 | 7505 | 125837 | 1377 | 1163 | 1294 | 2333 | 3330 | 1757 | 11246 | 303 | 103 | 273 | 572 | 185661 | 52639 | 0.399 |
| 102 | 121.86 | 248071 | 1.33 | 249 | 7022 | 33 | 27 | 0 | 957 | 2290 | 1419 | 17417 | 252 | 324 | 4541 | 127702 | 1336 | 1134 | 1152 | 2543 | 3461 | 1712 | 10882 | 266 | 126 | 214 | 519 | 181256 | 51452 | 0.395 |
| 103 | 122.86 | 241076 | 1.39 | 201 | 6772 | 64 | 31 | 34 | 1154 | 2265 | 1479 | 17380 | 228 | 338 | 4407 | 119668 | 1328 | 1253 | 1244 | 2403 | 3099 | 1688 | 10068 | 332 | 65 | 302 | 450 | 179337 | 51488 | 0.391 |
| 104 | 123.86 | 243622 | 1.22 | 234 | 6448 | 87 | 0 | 0 | 1089 | 2200 | 1482 | 17748 | 98 | 427 | 5997 | 121008 | 1221 | 1105 | 964 | 2122 | 2989 | 1477 | 11064 | 348 | 131 | 260 | 389 | 178117 | 51303 | 0.393 |
| 105 | 124.86 | 236699 | 1.17 | 266 | 6792 | 29 | 37 | 136 | 1073 | 2283 | 1478 | 17453 | 65 | 373 | 6561 | 125151 | 1269 | 1118 | 900 | 2218 | 3028 | 1588 | 9803 | 256 | 137 | 176 | 689 | 172387 | 50518 | 0.387 |
| 106 | 125.86 | 255797 | 1.36 | 250 | 6175 | 79 | 69 | 528 | 1213 | 2282 | 1654 | 17071 | 281 | 477 | 10077 | 185238 | 1383 | 1095 | 870 | 2048 | 2836 | 1738 | 9593 | 309 | 115 | 352 | 879 | 173842 | 50725 | 0.392 |
| 107 | 126.86 | 240371 | 1.32 | 162 | 5600 | 116 | 32 | 136 | 1394 | 1930 | 1398 | 16084 | 158 | 1244 | 6625 | 133027 | 1212 | 1357 | 882 | 2313 | 3049 | 1745 | 10125 | 276 | 72 | 314 | 448 | 179082 | 52028 | 0.389 |
| 108 | 127.86 | 225186 | 1.3 | 248 | 4999 | 99 | 35 | 0 | 1467 | 1853 | 1376 | 15017 | 159 | 257 | 3876 | 102385 | 1255 | 1412 | 859 | 2190 | 3089 | 1761 | 10484 | 286 | 117 | 230 | 81 | 177147 | 49937 | 0.382 |
| 109 | 128.86 | 225982 | 1.24 | 179 | 5744 | 54 | 31 | 0 | 1330 | 2062 | 1438 | 15404 | 152 | 388 | 3564 | 106833 | 1376 | 1212 | 976 | 2380 | 2970 | 1726 | 10414 | 277 | 129 | 216 | 257 | 176480 | 49488 | 0.38 |
| 110 | 129.86 | 242244 | 1.39 | 241 | 6472 | 42 | 68 | 0 | 1167 | 2154 | 1534 | 17401 | 225 | 426 | 4706 | 146767 | 1220 | 1307 | 1045 | 2288 | 2935 | 1544 | 9598 | 330 | 97 | 249 | 532 | 175457 | 50423 | 0.388 |
| 111 | 130.86 | 240140 | 1.24 | 172 | 6992 | 62 | 38 | 12 | 1177 | 2289 | 1645 | 17695 | 304 | 367 | 3795 | 117546 | 1358 | 1206 | 953 | 2352 | 3196 | 1409 | 10413 | 238 | 140 | 188 | 122 | 181670 | 50760 | 0.391 |
| 112 | 131.86 | 237000 | 1.38 | 259 | 6276 | 108 | 79 | 0 | 857 | 1863 | 1375 | 14854 | 190 | 311 | 3375 | 102779 | 1305 | 946 | 1020 | 2558 | 3320 | 1658 | 10866 | 275 | 0 | 131 | 425 | 185118 | 52115 | 0.395 |
| 113 | 132.86 | 231974 | 1.42 | 260 | 6423 | 64 | 57 | 0 | 750 | 1997 | 1466 | 15149 | 311 | 333 | 3576 | 102513 | 1339 | 1054 | 1130 | 2151 | 3137 | 1495 | 10426 | 216 | 41 | 223 | 323 | 179601 | 51730 | 0.389 |
| 114 | 133.86 | 239356 | 1.35 | 224 | 6555 | 100 | 39 | 44 | 942 | 2306 | 1712 | 15437 | 256 | 343 | 5203 | 122579 | 1300 | 1119 | 1045 | 2191 | 3342 | 1600 | 10502 | 228 | 86 | 292 | 404 | 174916 | 51574 | 0.39 |
| 115 | 134.86 | 238264 | 1.38 | 228 | 6904 | 98 | 35 | 0 | 1073 | 2400 | 1604 | 17724 | 201 | 417 | 4320 | 121650 | 1350 | 1227 | 920 | 2561 | 3419 | 1293 | 9765 | 302 | 132 | 233 | 442 | 176219 | 51326 | 0.387 |
| 116 | 135.86 | 238831 | 1.35 | 258 | 7245 | 32 | 47 | 0 | 1055 | 2315 | 1668 | 18311 | 155 | 475 | 3704 | 136245 | 1457 | 1315 | 1037 | 2549 | 2959 | 1445 | 10593 | 358 | 124 | 309 | 262 | 172662 | 50683 | 0.386 |
| 117 | 136.86 | 255748 | 1.39 | 192 | 7101 | 61 | 53 | 0 | 962 | 2267 | 1758 | 18773 | 267 | 537 | 6680 | 162723 | 1453 | 937 | 981 | 2586 | 3409 | 1763 | 10635 | 185 | 147 | 239 | 644 | 177939 | 51610 | 0.397 |
| 118 | 137.86 | 248648 | 1.34 | 240 | 7054 | 40 | 79 | 11 | 1088 | 2281 | 1681 | 18344 | 381 | 391 | 3580 | 154773 | 1294 | 1154 | 1017 | 2493 | 3295 | 1416 | 10421 | 339 | 121 | 266 | 226 | 174827 | 50174 | 0.393 |
| 119 | 138.86 | 243999 | 1.42 | 277 | 7233 | 51 | 10 | 0 | 1034 | 2210 | 1670 | 19031 | 222 | 487 | 3712 | 137085 | 1365 | 1242 | 1122 | 1975 | 3272 | 1661 | 11211 | 322 | 106 | 233 | 381 | 174172 | 51044 | 0.391 |
| 120 | 139.86 | 249348 | 1.32 | 262 | 6690 | 49 | 72 | 42 | 1117 | 2238 | 1948 | 18104 | 235 | 647 | 5357 | 145988 | 1276 | 1199 | 897 | 2012 | 3062 | 1566 | 10438 | 365 | 130 | 260 | 466 | 176098 | 51864 | 0.394 |
| 121 | 140.86 | 256156 | 1.33 | 270 | 6764 | 96 | 61 | 0 | 1110 | 2285 | 1745 | 19775 | 277 | 500 | 4342 | 156608 | 1375 | 1134 | 1042 | 2530 | 3423 | 1272 | 10540 | 299 | 113 | 354 | 373 | 177677 | 52655 | 0.398 |
| 122 | 141.86 | 254731 | 1.25 | 286 | 6845 | 56 | 0 | 0 | 1075 | 2325 | 1703 | 18445 | 324 | 670 | 4725 | 148418 | 1327 | 1300 | 871 | 2239 | 3264 | 1204 | 11025 | 262 | 142 | 233 | 323 | 177686 | 51835 | 0.398 |
| 123 | 142.86 | 250515 | 1.32 | 258 | 6665 | 23 | 59 | 0 | 1066 | 2187 | 1795 | 17126 | 238 | 393 | 5035 | 129320 | 1373 | 1240 | 965 | 2236 | 3240 | 1590 | 9716 | 221 | 144 | 186 | 232 | 184901 | 52509 | 0.4 |
| 124 | 143.86 | 249895 | 1.28 | 307 | 6887 | 92 | 46 | 0 | 1094 | 2099 | 1624 | 17764 | 225 | 312 | 4417 | 123499 | 1340 | 1131 | 977 | 2553 | 3195 | 1577 | 11266 | 290 | 131 | 233 | 166 | 185620 | 52356 | 0.401 |
| 125 | 144.86 | 248936 | 1.3 | 283 | 6764 | 67 | 31 | 0 | 1066 | 2216 | 1727 | 17436 | 109 | 507 | 4978 | 123669 | 1454 | 1355 | 1044 | 2181 | 3533 | 1841 | 11073 | 420 | 88 | 280 | 358 | 185394 | 52980 | 0.399 |
| 126 | 145.86 | 254651 | 1.29 | 260 | 6764 | 106 | 69 | 15 | 1154 | 2232 | 1657 | 17227 | 161 | 508 | 8574 | 176605 | 1296 | 1114 | 912 | 2309 | 3238 | 1629 | 10079 | 301 | 87 | 273 | 284 | 173790 | 50314 | 0.393 |
| 127 | 146.86 | 254374 | 1.26 | 279 | 7092 | 112 | 24 | 0 | 1094 | 2279 | 1621 | 19630 | 207 | 359 | 12224 | 149400 | 1247 | 1198 | 943 | 1970 | 2991 | 1517 | 9829 | 201 | 167 | 287 | 379 | 178146 | 51420 | 0.398 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.016214; F-slope= 0.009738; E-offset= 0.075206

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 128 | 147.86 | 243119 | 1.3 | 310 | 7000 | 62 | 41 | 25 | 1139 | 2241 | 1614 | 17109 | 257 | 446 | 4254 | 121584 | 1412 | 1328 | 1042 | 2130 | 3262 | 1642 | 10468 | 296 | 124 | 254 | 249 | 183016 | 51692 | 0.392 |
| 129 | 148.86 | 253514 | 1.47 | 263 | 6383 | 58 | 45 | 12 | 1149 | 2030 | 1628 | 17325 | 314 | 443 | 4324 | 189937 | 1201 | 1108 | 779 | 2155 | 3121 | 1620 | 9976 | 194 | 101 | 219 | 318 | 171552 | 49969 | 0.39 |
| 130 | 149.86 | 233481 | 1.18 | 197 | 6248 | 40 | 28 | 0 | 1110 | 2043 | 1728 | 15843 | 219 | 355 | 4242 | 110495 | 1448 | 1378 | 870 | 2112 | 3188 | 1726 | 11049 | 292 | 94 | 245 | 361 | 180998 | 51050 | 0.385 |
| 131 | 150.86 | 221223 | 1.29 | 245 | 6275 | 62 | 0 | 0 | 1140 | 1974 | 1548 | 15035 | 129 | 367 | 3186 | 101938 | 1236 | 1233 | 957 | 2467 | 2923 | 1522 | 9502 | 229 | 107 | 214 | 206 | 174580 | 48948 | 0.375 |
| 132 | 151.86 | 206792 | 1.24 | 200 | 6328 | 77 | 0 | 0 | 1208 | 1935 | 1566 | 16119 | 229 | 320 | 3324 | 102279 | 1140 | 1104 | 939 | 1835 | 2496 | 1255 | 9064 | 305 | 78 | 242 | 181 | 162889 | 46866 | 0.36 |
| 133 | 152.86 | 187717 | 1.3 | 201 | 5062 | 96 | 59 | 0 | 1470 | 1605 | 1427 | 13728 | 141 | 338 | 3035 | 88900 | 1140 | 1198 | 780 | 2012 | 2748 | 1578 | 8440 | 331 | 8 | 235 | 318 | 156080 | 46013 | 0.345 |
| 134 | 153.86 | 194846 | 1.28 | 141 | 4745 | 31 | 35 | 0 | 1634 | 1560 | 1343 | 13725 | 97 | 258 | 3087 | 86733 | 1197 | 1318 | 771 | 2085 | 2728 | 1551 | 9982 | 188 | 74 | 164 | 45 | 163106 | 47093 | 0.354 |
| 135 | 154.86 | 204557 | 1.22 | 166 | 5203 | 71 | 27 | 0 | 1657 | 1693 | 1463 | 14771 | 98 | 356 | 3407 | 104742 | 1229 | 1266 | 893 | 1956 | 2822 | 1444 | 9784 | 364 | 73 | 218 | 0 | 163356 | 47598 | 0.358 |
| 136 | 155.86 | 208320 | 1.29 | 196 | 5612 | 59 | 58 | 0 | 1560 | 1939 | 1551 | 14479 | 149 | 331 | 3244 | 101477 | 1191 | 1387 | 847 | 1929 | 2492 | 1270 | 9414 | 254 | 130 | 239 | 226 | 164777 | 48554 | 0.362 |
| 137 | 156.86 | 221596 | 1.49 | 233 | 5962 | 27 | 39 | 0 | 1624 | 2076 | 1660 | 16057 | 231 | 452 | 4168 | 132992 | 1205 | 1307 | 788 | 2348 | 3126 | 1618 | 10614 | 292 | 139 | 258 | 171 | 163994 | 48621 | 0.369 |
| 138 | 157.86 | 242103 | 1.63 | 260 | 6367 | 84 | 43 | 20 | 1425 | 2162 | 1802 | 18230 | 358 | 593 | 5671 | 195508 | 1263 | 1405 | 793 | 1850 | 2989 | 1153 | 9172 | 295 | 139 | 360 | 581 | 160300 | 48657 | 0.376 |
| 139 | 158.86 | 230319 | 1.6 | 197 | 6083 | 36 | 44 | 0 | 1564 | 2064 | 1567 | 16825 | 97 | 302 | 5508 | 164307 | 1038 | 1240 | 678 | 1921 | 2597 | 1366 | 9154 | 422 | 53 | 276 | 681 | 158161 | 50069 | 0.371 |
| 140 | 159.86 | 242231 | 1.42 | 228 | 5934 | 65 | 66 | 10 | 1529 | 2051 | 1490 | 15742 | 176 | 343 | 10224 | 189909 | 1111 | 1369 | 833 | 2134 | 2640 | 1448 | 10444 | 272 | 137 | 263 | 706 | 161427 | 50721 | 0.378 |
| 141 | 160.86 | 239370 | 1.37 | 163 | 5739 | 83 | 48 | 89 | 1578 | 1946 | 1574 | 16117 | 179 | 476 | 11663 | 188104 | 1137 | 1541 | 722 | 1909 | 2583 | 1208 | 10614 | 177 | 179 | 334 | 593 | 162918 | 48607 | 0.376 |
| 142 | 161.86 | 217297 | 1.4 | 187 | 5419 | 52 | 35 | 0 | 1600 | 1851 | 1497 | 15522 | 171 | 297 | 4326 | 111623 | 1352 | 1302 | 864 | 1746 | 2905 | 1727 | 9397 | 181 | 134 | 247 | 26 | 170651 | 49227 | 0.37 |
| 143 | 162.86 | 246293 | 1.4 | 174 | 5673 | 64 | 31 | 28 | 1556 | 2022 | 1586 | 16504 | 195 | 546 | 7214 | 203045 | 1196 | 1136 | 728 | 2237 | 2939 | 1464 | 10479 | 222 | 186 | 282 | 571 | 167371 | 49305 | 0.38 |
| 144 | 163.86 | 213487 | 1.3 | 151 | 5850 | 67 | 68 | 13 | 1486 | 1844 | 1630 | 15783 | 119 | 314 | 3646 | 110926 | 1260 | 1168 | 822 | 1880 | 2950 | 2291 | 9950 | 244 | 61 | 229 | 251 | 168407 | 47730 | 0.367 |
| 145 | 164.86 | 220939 | 1.31 | 199 | 6251 | 84 | 26 | 0 | 1380 | 1940 | 1656 | 16356 | 226 | 341 | 4207 | 105388 | 1232 | 1227 | 947 | 2284 | 3035 | 1739 | 9864 | 310 | 88 | 315 | 192 | 173179 | 49653 | 0.374 |
| 146 | 165.86 | 232189 | 1.36 | 235 | 6987 | 63 | 57 | 0 | 1256 | 2142 | 1774 | 17850 | 210 | 382 | 4662 | 115512 | 1384 | 1294 | 1014 | 2047 | 3207 | 1702 | 9861 | 355 | 100 | 358 | 177 | 176141 | 50785 | 0.382 |
| 147 | 166.86 | 230455 | 1.38 | 229 | 7102 | 67 | 29 | 54 | 1115 | 2167 | 1784 | 17471 | 343 | 341 | 6998 | 140698 | 1436 | 1181 | 1065 | 2235 | 2698 | 1293 | 10146 | 361 | 49 | 368 | 200 | 164068 | 48710 | 0.374 |
| 148 | 167.86 | 241382 | 1.48 | 303 | 6857 | 60 | 23 | 0 | 1118 | 2255 | 1735 | 18591 | 314 | 455 | 5514 | 176533 | 1354 | 1122 | 986 | 2185 | 2905 | 1505 | 9147 | 299 | 87 | 258 | 455 | 164824 | 49336 | 0.38 |
| 149 | 168.86 | 244448 | 1.47 | 197 | 7124 | 68 | 32 | 13 | 1043 | 2250 | 1810 | 19250 | 344 | 418 | 4918 | 139669 | 1381 | 1147 | 1102 | 2308 | 3044 | 1339 | 9559 | 322 | 119 | 298 | 556 | 173153 | 52089 | 0.39 |
| 150 | 169.86 | 242113 | 1.42 | 279 | 6451 | 71 | 57 | 0 | 1141 | 2168 | 1712 | 18239 | 194 | 344 | 4961 | 141141 | 1201 | 1100 | 972 | 2425 | 3166 | 1531 | 12072 | 348 | 33 | 244 | 325 | 173650 | 51140 | 0.388 |
| 151 | 170.86 | 240925 | 1.27 | 213 | 6672 | 56 | 29 | 7 | 1087 | 2411 | 1903 | 19021 | 295 | 411 | 4848 | 131399 | 1374 | 1238 | 911 | 2499 | 3487 | 1573 | 10591 | 289 | 189 | 299 | 278 | 176412 | 50947 | 0.388 |
| 152 | 171.86 | 233975 | 1.31 | 273 | 6981 | 73 | 0 | 136 | 1178 | 2300 | 1749 | 17436 | 244 | 447 | 5283 | 118671 | 1425 | 1218 | 830 | 1973 | 3302 | 1474 | 10861 | 314 | 114 | 293 | 397 | 174582 | 50662 | 0.382 |
| 153 | 172.86 | 239641 | 1.3 | 231 | 7193 | 100 | 45 | 194 | 1164 | 2316 | 1853 | 17844 | 269 | 395 | 5722 | 126547 | 1496 | 1163 | 1026 | 2093 | 3364 | 1710 | 11047 | 266 | 162 | 226 | 304 | 173188 | 50514 | 0.387 |
| 154 | 173.86 | 251227 | 1.33 | 239 | 7592 | 49 | 41 | 47 | 1129 | 2369 | 1863 | 17972 | 285 | 570 | 4347 | 122045 | 1402 | 1167 | 1047 | 1949 | 3284 | 1589 | 10485 | 353 | 100 | 240 | 246 | 181839 | 53421 | 0.4 |
| 155 | 174.86 | 261322 | 1.32 | 270 | 7629 | 30 | 40 | 52 | 1079 | 2542 | 2111 | 19924 | 380 | 472 | 6194 | 129446 | 1525 | 1402 | 1133 | 2269 | 3412 | 1625 | 12315 | 269 | 120 | 263 | 50 | 183858 | 54145 | 0.408 |
| 156 | 175.86 | 255399 | 1.24 | 197 | 7041 | 78 | 19 | 0 | 1168 | 2393 | 1968 | 17912 | 252 | 477 | 5100 | 120822 | 1492 | 1214 | 1048 | 2505 | 3767 | 1719 | 10895 | 361 | 93 | 240 | 305 | 186955 | 54966 | 0.406 |
| 157 | 176.86 | 264266 | 1.29 | 294 | 7388 | 72 | 49 | 62 | 1077 | 2559 | 2009 | 18358 | 294 | 468 | 7448 | 135194 | 1432 | 1237 | 1023 | 2601 | 3660 | 1444 | 11726 | 289 | 145 | 238 | 457 | 189321 | 53266 | 0.41 |
| 158 | 177.86 | 251957 | 1.34 | 281 | 6662 | 111 | 36 | 32 | 1237 | 2409 | 2007 | 17341 | 209 | 467 | 11365 | 134922 | 1424 | 1254 | 1253 | 2266 | 3788 | 1974 | 10648 | 378 | 143 | 217 | 730 | 182253 | 51833 | 0.399 |
| 159 | 178.86 | 248774 | 1.34 | 202 | 6553 | 108 | 49 | 12 | 1162 | 2437 | 1953 | 17323 | 178 | 372 | 7330 | 130764 | 1250 | 1173 | 1116 | 2389 | 3692 | 2129 | 10698 | 243 | 185 | 252 | 683 | 181764 | 51512 | 0.398 |
| 160 | 179.86 | 233532 | 1.36 | 323 | 6435 | 62 | 19 | 0 | 1191 | 2234 | 1796 | 16247 | 287 | 378 | 4546 | 114078 | 1391 | 1113 | 988 | 2406 | 3188 | 1412 | 10315 | 271 | 116 | 241 | 476 | 176183 | 50415 | 0.388 |
| 161 | 180.86 | 229627 | 1.22 | 139 | 6594 | 61 | 47 | 0 | 1201 | 2233 | 1720 | 17662 | 71 | 400 | 3947 | 119736 | 1363 | 1084 | 1108 | 2019 | 3030 | 1413 | 10416 | 317 | 114 | 240 | 358 | 172185 | 49055 | 0.382 |
| 162 | 181.86 | 247907 | 1.26 | 210 | 6482 | 94 | 35 | 16 | 1120 | 2289 | 1759 | 17382 | 207 | 453 | 6526 | 153661 | 1350 | 1249 | 1001 | 2093 | 3228 | 1556 | 11298 | 233 | 116 | 292 | 732 | 173083 | 50768 | 0.393 |
| 163 | 182.86 | 241006 | 1.31 | 244 | 6616 | 93 | 35 | 92 | 1252 | 2247 | 1916 | 16855 | 244 | 459 | 4955 | 117436 | 1411 | 1244 | 1103 | 2463 | 3510 | 1562 | 10686 | 248 | 180 | 231 | 471 | 183723 | 51433 | 0.393 |
| 164 | 183.86 | 243642 | 1.32 | 236 | 6617 | 89 | 35 | 0 | 1182 | 2471 | 1780 | 17756 | 323 | 394 | 4811 | 123626 | 1517 | 1231 | 1061 | 2424 | 3268 | 1840 | 10011 | 247 | 119 | 259 | 217 | 183818 | 51663 | 0.394 |
| 165 | 184.86 | 240642 | 1.31 | 230 | 6806 | 38 | 20 | 66 | 1117 | 2539 | 1973 | 17871 | 319 | 524 | 4661 | 126968 | 1400 | 1228 | 1170 | 2609 | 3557 | 1593 | 11046 | 216 | 166 | 205 | 505 | 179108 | 50670 | 0.389 |
| 166 | 185.86 | 239712 | 1.26 | 227 | 6685 | 53 | 6 | 0 | 1131 | 2470 | 1963 | 17094 | 293 | 758 | 5613 | 139189 | 1384 | 1268 | 1061 | 2590 | 3331 | 1283 | 10962 | 227 | 139 | 278 | 507 | 172979 | 49797 | 0.385 |
| 167 | 186.86 | 240042 | 1.39 | 278 | 6990 | 51 | 52 | 0 | 1182 | 2486 | 1924 | 18384 | 157 | 345 | 5146 | 134598 | 1232 | 1236 | 966 | 2394 | 3094 | 1261 | 9783 | 200 | 198 | 249 | 416 | 175450 | 51333 | 0.386 |
| 168 | 187.86 | 253675 | 1.38 | 250 | 6807 | 83 | 53 | 0 | 1132 | 2551 | 2425 | 18845 | 378 | 615 | 8715 | 175385 | 1325 | 1222 | 1056 | 2140 | 3498 | 1614 | 10541 | 242 | 198 | 310 | 565 | 172491 | 50291 | 0.391 |
| 169 | 188.86 | 243488 | 1.34 | 222 | 6808 | 48 | 57 | 0 | 1139 | 2403 | 1816 | 17468 | 200 | 439 | 4727 | 142007 | 1300 | 1156 | 1126 | 2377 | 3500 | 1616 | 9618 | 189 | 187 | 203 | 580 | 175452 | 50505 | 0.389 |
| 170 | 189.86 | 239530 | 1.2 | 245 | 6665 | 53 | 25 | 8 | 1137 | 2390 | 1910 | 17336 | 214 | 464 | 5174 | 127256 | 1437 | 1129 | 1043 | 2577 | 3496 | 1608 | 10228 | 263 | 108 | 316 | 448 | 174652 | 49943 | 0.389 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.016214; F-slope= 0.009738; E-offset= 0.075206

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 171 | 190.86 | 242584 | 1.39 | 260 | 6519 | 76 | 39 | 0 | 1277 | 2329 | 1776 | 17408 | 184 | 565 | 5299 | 156867 | 1269 | 1174 | 1089 | 2428 | 3358 | 1454 | 9940 | 181 | 169 | 235 | 442 | 170387 | 49977 | 0.386 |
| 172 | 191.86 | 256918 | 1.53 | 225 | 6260 | 111 | 51 | 28 | 1256 | 2461 | 1996 | 17904 | 83 | 494 | 5107 | 171536 | 1257 | 1143 | 968 | 2358 | 3607 | 1756 | 10168 | 394 | 72 | 218 | 596 | 177078 | 51508 | 0.398 |
| 173 | 192.86 | 237151 | 1.33 | 294 | 6188 | 46 | 38 | 0 | 1530 | 2172 | 1756 | 16775 | 204 | 336 | 3652 | 120225 | 1228 | 1406 | 889 | 2662 | 3267 | 1861 | 10593 | 329 | 148 | 251 | 11 | 179305 | 51454 | 0.388 |
| 174 | 193.86 | 226930 | 1.41 | 195 | 5918 | 50 | 56 | 0 | 1443 | 2000 | 1738 | 16869 | 54 | 343 | 2898 | 118154 | 1257 | 1577 | 823 | 2372 | 3313 | 1602 | 9262 | 183 | 129 | 272 | 239 | 175877 | 49032 | 0.379 |
| 175 | 194.86 | 230886 | 1.34 | 192 | 6255 | 85 | 58 | 11 | 1378 | 2223 | 1823 | 17253 | 111 | 631 | 5429 | 117538 | 1364 | 1359 | 959 | 2403 | 3182 | 1710 | 9796 | 295 | 148 | 289 | 248 | 175183 | 49650 | 0.382 |
| 176 | 195.86 | 247817 | 1.45 | 246 | 6904 | 55 | 25 | 0 | 1279 | 2315 | 1799 | 18348 | 220 | 570 | 4832 | 166952 | 1308 | 1065 | 1028 | 2569 | 3145 | 1671 | 9693 | 232 | 104 | 246 | 437 | 171801 | 49909 | 0.389 |
| 177 | 196.86 | 244116 | 1.42 | 243 | 7220 | 14 | 18 | 0 | 1238 | 2451 | 1757 | 19076 | 263 | 629 | 4202 | 169946 | 1304 | 1034 | 827 | 2296 | 3385 | 1226 | 9578 | 352 | 160 | 221 | 449 | 166097 | 48771 | 0.384 |
| 178 | 197.86 | 245753 | 1.65 | 292 | 7333 | 58 | 66 | 0 | 1148 | 2324 | 1864 | 18525 | 155 | 511 | 3374 | 162050 | 1251 | 1171 | 1024 | 2410 | 3411 | 1770 | 10544 | 277 | 147 | 350 | 372 | 167169 | 51225 | 0.388 |
| 179 | 198.86 | 267339 | 1.52 | 243 | 7339 | 113 | 74 | 48 | 1263 | 2413 | 1901 | 20033 | 344 | 485 | 4107 | 204524 | 1329 | 1082 | 939 | 2546 | 3357 | 1489 | 10679 | 206 | 114 | 270 | 586 | 172330 | 51772 | 0.401 |
| 180 | 199.86 | 256390 | 1.37 | 314 | 7072 | 78 | 40 | 19 | 1274 | 2405 | 1809 | 18263 | 244 | 534 | 2857 | 139084 | 1340 | 1256 | 947 | 2463 | 3324 | 1621 | 11340 | 283 | 113 | 224 | 226 | 184636 | 53364 | 0.404 |
| 181 | 200.86 | 253426 | 1.35 | 224 | 6901 | 105 | 71 | 11 | 1340 | 2346 | 1722 | 18265 | 220 | 437 | 3058 | 119938 | 1361 | 1343 | 1051 | 2249 | 3527 | 1486 | 10945 | 304 | 136 | 273 | 8 | 187988 | 52361 | 0.405 |
| 182 | 201.86 | 250004 | 1.29 | 213 | 6882 | 69 | 40 | 9 | 1353 | 2295 | 1880 | 18813 | 196 | 335 | 3313 | 121395 | 1276 | 1416 | 1000 | 2591 | 3277 | 1641 | 11382 | 320 | 68 | 281 | 244 | 185416 | 52867 | 0.4 |
| 183 | 202.86 | 246904 | 1.33 | 283 | 6864 | 86 | 25 | 0 | 1334 | 2255 | 1847 | 18202 | 158 | 429 | 3607 | 124322 | 1338 | 1316 | 1053 | 1981 | 3744 | 2095 | 10246 | 400 | 173 | 320 | 144 | 184296 | 52010 | 0.395 |
| 184 | 203.86 | 243195 | 1.29 | 204 | 7016 | 63 | 18 | 5 | 1375 | 2379 | 1699 | 18083 | 261 | 445 | 3999 | 139996 | 1299 | 1294 | 1048 | 2528 | 3543 | 1857 | 10725 | 257 | 182 | 284 | 264 | 176474 | 50132 | 0.387 |
| 185 | 204.86 | 235854 | 1.3 | 289 | 6712 | 34 | 60 | 0 | 1312 | 2315 | 1909 | 18218 | 130 | 511 | 3677 | 138970 | 1250 | 1254 | 921 | 2395 | 3109 | 1433 | 12180 | 351 | 94 | 236 | 333 | 171292 | 49808 | 0.381 |
| 186 | 205.86 | 230449 | 1.35 | 198 | 6155 | 5 | 6 | 0 | 1401 | 2146 | 1727 | 18093 | 149 | 699 | 3939 | 126959 | 1381 | 1390 | 884 | 2227 | 2942 | 1416 | 12345 | 284 | 113 | 247 | 298 | 172036 | 49776 | 0.378 |
| 187 | 206.86 | 218417 | 1.25 | 219 | 6292 | 33 | 36 | 0 | 1352 | 2119 | 1691 | 16334 | 131 | 263 | 3249 | 131194 | 1228 | 1280 | 834 | 2241 | 3133 | 1307 | 9570 | 286 | 111 | 241 | 612 | 162093 | 49056 | 0.365 |
| 188 | 207.86 | 215900 | 1.4 | 221 | 6160 | 13 | 51 | 0 | 1301 | 2111 | 1718 | 16105 | 164 | 476 | 3072 | 147654 | 1316 | 1221 | 1024 | 2019 | 2859 | 1424 | 9274 | 300 | 128 | 218 | 314 | 158711 | 47300 | 0.36 |
| 189 | 208.86 | 222585 | 1.38 | 223 | 6591 | 49 | 0 | 0 | 1329 | 2145 | 1676 | 18231 | 209 | 679 | 4400 | 137716 | 1334 | 1211 | 931 | 2037 | 3012 | 1554 | 9647 | 281 | 90 | 282 | 578 | 163694 | 48493 | 0.367 |
| 190 | 209.86 | 227101 | 1.73 | 263 | 7080 | 55 | 32 | 0 | 1268 | 2357 | 1797 | 18480 | 263 | 609 | 6498 | 204423 | 1008 | 1177 | 1011 | 2180 | 2810 | 1202 | 7868 | 362 | 44 | 302 | 770 | 147027 | 45298 | 0.356 |
| 191 | 210.86 | 216461 | 1.84 | 259 | 6503 | 55 | 5 | 0 | 1374 | 2332 | 1791 | 17640 | 129 | 540 | 3774 | 199388 | 1012 | 1119 | 738 | 2078 | 2609 | 1240 | 7765 | 324 | 78 | 265 | 636 | 142269 | 45563 | 0.347 |
| 192 | 211.86 | 228084 | 1.52 | 196 | 6243 | 48 | 44 | 0 | 1272 | 2128 | 1705 | 16651 | 248 | 417 | 4354 | 222639 | 978 | 1081 | 848 | 2157 | 2475 | 1256 | 8722 | 251 | 101 | 236 | 715 | 145568 | 46516 | 0.357 |
| 193 | 212.86 | 213837 | 1.28 | 216 | 6250 | 63 | 6 | 0 | 1195 | 2093 | 1644 | 17560 | 147 | 448 | 3301 | 136037 | 1080 | 1210 | 987 | 1880 | 2797 | 1146 | 8627 | 259 | 78 | 187 | 642 | 155993 | 47007 | 0.362 |
| 194 | 213.86 | 213285 | 1.27 | 181 | 5680 | 44 | 48 | 8 | 1169 | 1958 | 1454 | 15627 | 259 | 1136 | 3126 | 107191 | 1228 | 1160 | 829 | 2188 | 3030 | 1347 | 9336 | 309 | 77 | 191 | 282 | 167950 | 48594 | 0.37 |
| 195 | 214.86 | 240615 | 1.36 | 170 | 6005 | 70 | 37 | 0 | 1188 | 1997 | 1494 | 16927 | 234 | 829 | 4196 | 117355 | 1292 | 1275 | 1053 | 2333 | 3671 | 1968 | 11399 | 288 | 73 | 199 | 673 | 178935 | 52936 | 0.394 |
| 196 | 215.86 | 257700 | 1.38 | 330 | 7116 | 122 | 69 | 0 | 1099 | 2364 | 1813 | 19661 | 309 | 443 | 12957 | 153393 | 1231 | 1097 | 1019 | 2117 | 3927 | 1879 | 10041 | 272 | 115 | 236 | 1254 | 176655 | 53226 | 0.399 |
| 197 | 216.86 | 240712 | 1.5 | 244 | 6578 | 29 | 0 | 0 | 1107 | 2229 | 1835 | 16578 | 222 | 398 | 3124 | 149879 | 1344 | 1323 | 1165 | 2469 | 3542 | 1539 | 9927 | 384 | 107 | 214 | 616 | 171921 | 50871 | 0.386 |
| 198 | 217.86 | 247853 | 1.53 | 301 | 6787 | 70 | 69 | 25 | 1065 | 2160 | 2044 | 16943 | 264 | 385 | 3818 | 199472 | 1259 | 1026 | 832 | 2015 | 3371 | 1699 | 10097 | 218 | 76 | 153 | 724 | 167188 | 49570 | 0.382 |
| 199 | 218.86 | 233060 | 1.24 | 245 | 6538 | 46 | 53 | 0 | 1168 | 2061 | 2058 | 16408 | 280 | 417 | 3650 | 179416 | 1201 | 1142 | 985 | 2030 | 3089 | 1199 | 9171 | 311 | 49 | 203 | 267 | 163525 | 46794 | 0.37 |
| 200 | 219.86 | 198527 | 1.52 | 243 | 5818 | 38 | 17 | 0 | 1182 | 1890 | 1687 | 14882 | 229 | 317 | 2279 | 140219 | 1072 | 990 | 718 | 1769 | 3127 | 1231 | 7680 | 180 | 149 | 164 | 223 | 148857 | 43083 | 0.342 |
| 201 | 220.86 | 240798 | 1.98 | 283 | 6083 | 79 | 30 | 0 | 1074 | 2112 | 2093 | 16337 | 288 | 1056 | 3041 | 225198 | 1100 | 1171 | 844 | 1956 | 2826 | 1457 | 8624 | 269 | 81 | 262 | 464 | 152216 | 46572 | 0.371 |
| 202 | 221.86 | 260015 | 1.5 | 321 | 6440 | 87 | 39 | 10 | 1018 | 2248 | 2036 | 17297 | 395 | 679 | 2990 | 226365 | 1117 | 1178 | 955 | 2101 | 3385 | 1240 | 8969 | 165 | 109 | 250 | 466 | 165115 | 49936 | 0.389 |
| 203 | 222.86 | 242918 | 1.34 | 194 | 6751 | 0 | 19 | 0 | 1123 | 2286 | 2329 | 18650 | 236 | 477 | 3448 | 125781 | 1293 | 1261 | 961 | 2268 | 3534 | 1116 | 9736 | 218 | 110 | 222 | 331 | 177395 | 50505 | 0.389 |
| 204 | 223.86 | 237087 | 1.3 | 268 | 6372 | 15 | 0 | 0 | 1041 | 2363 | 4240 | 16252 | 194 | 443 | 5077 | 128129 | 1251 | 1162 | 818 | 1945 | 3720 | 1572 | 9243 | 241 | 115 | 175 | 233 | 173481 | 50463 | 0.384 |
| 205 | 224.86 | 239054 | 1.23 | 203 | 5252 | 34 | 23 | 8 | 1089 | 1816 | 3221 | 14012 | 151 | 418 | 5051 | 115139 | 1325 | 1052 | 688 | 2177 | 3834 | 1787 | 10401 | 187 | 97 | 117 | 280 | 179694 | 50805 | 0.39 |
| 206 | 225.86 | 243657 | 1.28 | 209 | 5068 | 49 | 10 | 0 | 1150 | 1870 | 4154 | 14415 | 230 | 701 | 4146 | 116501 | 1276 | 1305 | 854 | 2115 | 4063 | 1365 | 9985 | 195 | 107 | 142 | 215 | 183812 | 51004 | 0.393 |
| 207 | 226.86 | 253068 | 1.28 | 185 | 5536 | 14 | 21 | 7 | 1192 | 2160 | 5977 | 16644 | 93 | 458 | 4493 | 118924 | 1240 | 1455 | 844 | 2301 | 4502 | 1565 | 10429 | 292 | 101 | 141 | 189 | 188690 | 51764 | 0.399 |
| 208 | 227.86 | 234691 | 1.33 | 173 | 5552 | 27 | 10 | 0 | 1304 | 2147 | 4256 | 15483 | 93 | 326 | 3457 | 113332 | 1226 | 1371 | 913 | 1770 | 3660 | 1594 | 9549 | 296 | 119 | 184 | 101 | 178893 | 50278 | 0.384 |
| 209 | 228.86 | 235196 | 1.28 | 224 | 5508 | 25 | 35 | 278 | 1225 | 2152 | 3767 | 15477 | 195 | 273 | 3342 | 119866 | 1285 | 1204 | 885 | 2115 | 3346 | 1586 | 10004 | 246 | 103 | 188 | 204 | 177820 | 50900 | 0.384 |
| 210 | 229.86 | 239458 | 1.32 | 200 | 5389 | 75 | 28 | 0 | 1246 | 2090 | 3586 | 16017 | 251 | 245 | 3271 | 129204 | 1239 | 1280 | 834 | 2077 | 3872 | 1419 | 9541 | 230 | 131 | 211 | 271 | 177268 | 50411 | 0.387 |
| 211 | 230.86 | 241838 | 1.33 | 248 | 5528 | 53 | 52 | 99 | 1230 | 2040 | 4226 | 15425 | 181 | 228 | 3851 | 124619 | 1167 | 1231 | 815 | 2347 | 3751 | 1486 | 9829 | 179 | 89 | 169 | 376 | 178089 | 50818 | 0.391 |
| 212 | 231.86 | 235533 | 1.22 | 260 | 5368 | 17 | 5 | 79 | 1280 | 1890 | 4026 | 14645 | 185 | 316 | 4365 | 113413 | 1184 | 1206 | 862 | 2170 | 3921 | 1675 | 8843 | 292 | 53 | 207 | 151 | 179557 | 50325 | 0.389 |
| 213 | 232.86 | 242596 | 1.25 | 233 | 5398 | 54 | 48 | 23 | 1321 | 1922 | 3463 | 14530 | 217 | 482 | 4347 | 121225 | 1128 | 1328 | 916 | 2084 | 3852 | 1598 | 9520 | 178 | 182 | 149 | 622 | 184812 | 50432 | 0.393 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.016214; F-slope= 0.009738; E-offset= 0.075206

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 214 | 233.86 | 235614 | 1.19 | 154 | 4961 | 86 | 0 | 20 | 1282 | 1836 | 3223 | 14322 | 138 | 319 | 3234 | 101775 | 1259 | 1255 | 753 | 1880 | 3532 | 1789 | 10578 | 276 | 91 | 152 | 237 | 183135 | 50892 | 0.393 |
| 215 | 234.86 | 232223 | 1.2 | 189 | 5005 | 22 | 0 | 0 | 1335 | 1837 | 3405 | 14040 | 227 | 195 | 3533 | 101115 | 1190 | 1447 | 786 | 2017 | 3471 | 1487 | 10062 | 372 | 58 | 206 | 0 | 179827 | 50370 | 0.389 |
| 216 | 235.86 | 227988 | 1.26 | 196 | 5079 | 61 | 38 | 0 | 1426 | 1744 | 4010 | 14116 | 73 | 206 | 3632 | 99036 | 1127 | 1337 | 716 | 2097 | 3326 | 1650 | 10205 | 176 | 96 | 186 | 226 | 178582 | 49680 | 0.385 |
| 217 | 236.86 | 231249 | 1.25 | 168 | 5011 | 62 | 15 | 0 | 1463 | 1764 | 3196 | 14270 | 100 | 269 | 2980 | 107227 | 1110 | 1279 | 723 | 2222 | 3321 | 1783 | 10964 | 243 | 75 | 244 | 0 | 179323 | 49977 | 0.388 |
| 218 | 237.86 | 242815 | 1.26 | 218 | 4990 | 91 | 75 | 0 | 1397 | 1827 | 2383 | 16246 | 29 | 289 | 2787 | 115078 | 1281 | 1329 | 810 | 2270 | 3433 | 1729 | 11477 | 246 | 60 | 218 | 321 | 186708 | 52274 | 0.4 |
| 219 | 238.86 | 261205 | 1.22 | 233 | 5844 | 132 | 56 | 0 | 1246 | 1999 | 2780 | 15757 | 132 | 448 | 2994 | 119564 | 1484 | 1411 | 925 | 2392 | 3716 | 1691 | 12191 | 305 | 100 | 207 | 264 | 194486 | 54291 | 0.415 |
| 220 | 239.86 | 240844 | 1.35 | 212 | 6106 | 40 | 9 | 0 | 1219 | 1967 | 2094 | 17331 | 148 | 560 | 4488 | 127225 | 1311 | 1147 | 849 | 2171 | 3117 | 1517 | 9899 | 127 | 193 | 237 | 99 | 180170 | 50560 | 0.393 |
| 221 | 240.86 | 236115 | 1.34 | 290 | 6144 | 57 | 19 | 0 | 1294 | 2049 | 2104 | 17753 | 62 | 281 | 2558 | 123197 | 1238 | 1311 | 917 | 2246 | 3097 | 1600 | 10085 | 257 | 125 | 254 | 249 | 176428 | 49633 | 0.389 |
| 222 | 241.86 | 249789 | 1.31 | 252 | 6146 | 138 | 32 | 7 | 1207 | 2086 | 2228 | 16038 | 225 | 262 | 2580 | 127674 | 1310 | 1157 | 949 | 2258 | 3325 | 1726 | 11647 | 265 | 174 | 176 | 357 | 186924 | 53072 | 0.402 |
| 223 | 242.86 | 242009 | 1.29 | 186 | 5998 | 94 | 37 | 26 | 1289 | 2083 | 2258 | 17032 | 181 | 330 | 3759 | 139163 | 1282 | 1233 | 753 | 1785 | 3438 | 1782 | 10635 | 254 | 83 | 212 | 390 | 179056 | 51061 | 0.39 |
| 224 | 243.86 | 227093 | 1.36 | 232 | 5990 | 63 | 53 | 0 | 1283 | 2039 | 2558 | 15406 | 157 | 327 | 2323 | 120050 | 1305 | 1299 | 756 | 2095 | 3370 | 1768 | 9583 | 257 | 134 | 156 | 310 | 175711 | 49505 | 0.379 |
| 225 | 244.86 | 228535 | 1.19 | 214 | 5755 | 79 | 0 | 0 | 1312 | 2289 | 2772 | 16552 | 214 | 684 | 2440 | 143557 | 1288 | 1188 | 786 | 2095 | 2881 | 1318 | 9333 | 385 | 117 | 259 | 159 | 169158 | 47695 | 0.376 |
| 226 | 245.86 | 248037 | 1.37 | 203 | 5595 | 91 | 60 | 320 | 1330 | 2329 | 2901 | 16253 | 221 | 320 | 3852 | 205770 | 1188 | 1149 | 809 | 2160 | 3192 | 1451 | 9153 | 230 | 150 | 236 | 300 | 168131 | 48661 | 0.384 |
| 227 | 246.86 | 261078 | 1.29 | 267 | 5773 | 83 | 92 | 7 | 1291 | 2218 | 2211 | 16174 | 331 | 414 | 3567 | 265932 | 1163 | 1141 | 600 | 2301 | 2987 | 1665 | 9122 | 230 | 105 | 329 | 390 | 162602 | 47568 | 0.387 |
| 228 | 247.86 | 233542 | 1.33 | 220 | 6304 | 32 | 38 | 0 | 1333 | 2316 | 2025 | 16673 | 193 | 322 | 3838 | 160231 | 1220 | 1372 | 680 | 2293 | 2949 | 1481 | 9499 | 301 | 95 | 293 | 224 | 165632 | 47621 | 0.378 |
| 229 | 248.86 | 212285 | 1.3 | 250 | 6356 | 45 | 0 | 0 | 1304 | 2320 | 1635 | 17128 | 70 | 392 | 2753 | 145895 | 1152 | 1232 | 929 | 2131 | 2761 | 1349 | 8553 | 205 | 113 | 244 | 304 | 155010 | 46127 | 0.36 |
| 230 | 249.86 | 228001 | 1.27 | 299 | 6036 | 86 | 53 | 0 | 1192 | 2172 | 1798 | 15760 | 224 | 320 | 3741 | 128977 | 1152 | 1210 | 878 | 1955 | 3017 | 1732 | 10250 | 289 | 141 | 237 | 137 | 172481 | 50118 | 0.38 |
| 231 | 250.86 | 247825 | 1.32 | 274 | 6750 | 51 | 46 | 10 | 1066 | 2422 | 1975 | 18092 | 230 | 432 | 6175 | 156662 | 1221 | 1247 | 1004 | 2339 | 3408 | 1589 | 10504 | 241 | 187 | 292 | 399 | 175119 | 50836 | 0.392 |
| 232 | 251.86 | 241401 | 1.34 | 263 | 6153 | 95 | 63 | 25 | 1194 | 2390 | 1636 | 16295 | 199 | 366 | 2602 | 194855 | 1195 | 1105 | 853 | 2112 | 3102 | 1249 | 9804 | 218 | 142 | 247 | 322 | 164893 | 47444 | 0.38 |
| 233 | 252.86 | 233876 | 1.29 | 278 | 6313 | 56 | 15 | 25 | 1187 | 2274 | 1631 | 16696 | 289 | 366 | 2566 | 179807 | 1132 | 1087 | 935 | 2461 | 3040 | 1236 | 10097 | 279 | 107 | 265 | 338 | 160921 | 47451 | 0.375 |
| 234 | 253.86 | 243919 | 1.25 | 272 | 6122 | 67 | 39 | 35 | 1145 | 2396 | 1691 | 16337 | 278 | 383 | 3212 | 171582 | 1260 | 1121 | 961 | 2184 | 3175 | 1399 | 9098 | 197 | 149 | 264 | 153 | 171958 | 49641 | 0.387 |
| 235 | 254.86 | 250022 | 1.32 | 218 | 6112 | 50 | 0 | 0 | 1109 | 2219 | 1700 | 16778 | 406 | 451 | 2854 | 152618 | 1411 | 1111 | 863 | 2208 | 3179 | 1619 | 10246 | 144 | 165 | 280 | 290 | 180694 | 51157 | 0.398 |
| 236 | 255.86 | 270250 | 1.29 | 227 | 6506 | 74 | 16 | 0 | 1057 | 2393 | 1503 | 18631 | 259 | 505 | 3193 | 162363 | 1363 | 1178 | 1070 | 2506 | 3496 | 1636 | 11508 | 223 | 109 | 221 | 190 | 186458 | 53591 | 0.415 |
| 237 | 256.86 | 263429 | 1.32 | 282 | 6610 | 55 | 34 | 0 | 1038 | 2478 | 1591 | 17922 | 206 | 439 | 2451 | 161556 | 1404 | 1248 | 934 | 2752 | 3365 | 1864 | 10605 | 378 | 61 | 281 | 128 | 185530 | 52262 | 0.408 |
| 238 | 257.86 | 250986 | 1.34 | 230 | 6295 | 103 | 35 | 0 | 1248 | 2245 | 1541 | 16662 | 302 | 300 | 2634 | 140538 | 1309 | 1241 | 896 | 2283 | 3477 | 1880 | 12100 | 166 | 112 | 291 | 311 | 182999 | 52314 | 0.401 |
| 239 | 258.86 | 252195 | 1.27 | 214 | 6562 | 103 | 23 | 0 | 1115 | 2278 | 1566 | 16582 | 177 | 316 | 2406 | 133266 | 1358 | 1330 | 924 | 2528 | 3380 | 1666 | 11328 | 341 | 94 | 247 | 207 | 184963 | 52226 | 0.403 |
| 240 | 259.86 | 238741 | 1.3 | 169 | 6725 | 45 | 33 | 0 | 1115 | 2186 | 1679 | 17742 | 314 | 573 | 2675 | 147239 | 1221 | 1153 | 869 | 2090 | 2949 | 1394 | 9552 | 185 | 127 | 221 | 200 | 174172 | 49120 | 0.387 |
| 241 | 260.86 | 245249 | 1.4 | 262 | 6442 | 49 | 0 | 0 | 1134 | 2186 | 1481 | 16446 | 317 | 283 | 1706 | 134480 | 1264 | 1224 | 842 | 2362 | 3602 | 1642 | 10387 | 115 | 165 | 218 | 326 | 183955 | 52555 | 0.396 |
| 242 | 261.86 | 244558 | 1.34 | 270 | 6339 | 69 | 92 | 37 | 1230 | 2072 | 1526 | 15909 | 164 | 327 | 1907 | 125547 | 1442 | 1238 | 836 | 2018 | 3443 | 1704 | 12287 | 224 | 125 | 208 | 105 | 184108 | 51898 | 0.397 |
| 243 | 262.86 | 246605 | 1.37 | 239 | 6615 | 56 | 41 | 0 | 1187 | 2325 | 1810 | 17576 | 202 | 804 | 6701 | 150643 | 1297 | 1294 | 860 | 2424 | 3456 | 1658 | 10880 | 231 | 138 | 261 | 595 | 176803 | 49956 | 0.391 |
| 244 | 263.86 | 229912 | 1.26 | 326 | 6649 | 69 | 13 | 0 | 1305 | 2387 | 1703 | 17278 | 215 | 327 | 2528 | 130240 | 1234 | 1342 | 962 | 2151 | 2963 | 1319 | 10565 | 245 | 120 | 232 | 167 | 171224 | 49224 | 0.38 |
| 245 | 264.86 | 232714 | 1.29 | 222 | 6680 | 107 | 28 | 0 | 1279 | 2270 | 1536 | 18951 | 232 | 435 | 2186 | 125396 | 1325 | 1243 | 803 | 1887 | 3251 | 1470 | 10184 | 269 | 102 | 161 | 151 | 174580 | 49882 | 0.383 |
| 246 | 265.86 | 229786 | 1.28 | 282 | 6263 | 100 | 45 | 0 | 1313 | 2058 | 1579 | 19629 | 239 | 390 | 2126 | 126312 | 1134 | 1146 | 846 | 2133 | 3221 | 1508 | 9909 | 301 | 99 | 206 | 359 | 173187 | 50362 | 0.381 |
| 247 | 266.86 | 239151 | 1.29 | 258 | 5974 | 81 | 42 | 0 | 1304 | 2121 | 1518 | 16802 | 231 | 284 | 4524 | 156021 | 1148 | 1283 | 806 | 2121 | 3278 | 1713 | 10829 | 162 | 117 | 192 | 383 | 171658 | 50367 | 0.385 |
| 248 | 267.86 | 231708 | 1.31 | 324 | 6301 | 46 | 21 | 37 | 1240 | 2200 | 1606 | 18241 | 245 | 375 | 1929 | 126599 | 1263 | 1274 | 881 | 1817 | 3498 | 1662 | 10570 | 331 | 105 | 208 | 289 | 173407 | 50623 | 0.382 |
| 249 | 268.86 | 221840 | 1.33 | 297 | 6419 | 31 | 61 | 0 | 1111 | 2058 | 1419 | 17002 | 277 | 326 | 3048 | 156891 | 1154 | 1047 | 807 | 2348 | 2914 | 1317 | 9943 | 191 | 86 | 199 | 203 | 160139 | 46846 | 0.367 |
| 250 | 269.86 | 228951 | 1.43 | 255 | 6024 | 58 | 34 | 0 | 1042 | 2016 | 1412 | 15644 | 143 | 312 | 1960 | 167447 | 1162 | 958 | 853 | 2367 | 3240 | 1479 | 9086 | 139 | 92 | 176 | 373 | 162409 | 49041 | 0.376 |
| 251 | 270.86 | 222040 | 1.35 | 282 | 6131 | 58 | 20 | 0 | 1049 | 2153 | 2141 | 16628 | 175 | 430 | 6538 | 136373 | 1150 | 1078 | 965 | 1934 | 3702 | 1876 | 8356 | 234 | 273 | 226 | 647 | 160584 | 48225 | 0.372 |
| 252 | 271.86 | 236774 | 1.56 | 219 | 6215 | 65 | 56 | 15 | 1087 | 2033 | 1613 | 15747 | 352 | 249 | 3897 | 182114 | 1184 | 876 | 721 | 2425 | 3041 | 1444 | 9350 | 187 | 132 | 176 | 578 | 159747 | 49716 | 0.379 |
| 253 | 272.86 | 261739 | 1.6 | 225 | 6420 | 94 | 23 | 0 | 1105 | 2301 | 1627 | 18588 | 290 | 253 | 2774 | 197904 | 1222 | 1009 | 840 | 2445 | 3468 | 1670 | 9903 | 199 | 144 | 155 | 502 | 171401 | 52054 | 0.398 |
| 254 | 273.86 | 223539 | 1.29 | 207 | 5709 | 160 | 39 | 0 | 1282 | 1957 | 1531 | 15592 | 170 | 336 | 4641 | 123421 | 1192 | 1052 | 817 | 2027 | 2946 | 1592 | 9442 | 266 | 28 | 178 | 357 | 169498 | 49436 | 0.377 |
| 255 | 274.86 | 224880 | 1.33 | 216 | 6044 | 77 | 51 | 0 | 1157 | 2029 | 1431 | 16007 | 152 | 294 | 2120 | 113467 | 1362 | 1017 | 792 | 1796 | 3114 | 1596 | 10305 | 144 | 234 | 164 | 198 | 171822 | 49785 | 0.381 |
| 256 | 275.86 | 236962 | 1.42 | 295 | 6381 | 94 | 42 | 0 | 1097 | 2132 | 1570 | 16711 | 340 | 418 | 2197 | 117585 | 1308 | 1155 | 908 | 2160 | 3222 | 1527 | 11187 | 249 | 61 | 140 | 135 | 178517 | 50953 | 0.391 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.016214; F-slope= 0.009738; E-offset= 0.075206

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 257 | 276.86 | 235917 | 1.35 | 237 | 6164 | 75 | 68 | 0 | 1004 | 2013 | 1568 | 16129 | 226 | 286 | 2168 | 120172 | 1316 | 978 | 808 | 2302 | 3393 | 1579 | 10757 | 257 | 75 | 179 | 326 | 177462 | 50915 | 0.392 |
| 258 | 277.86 | 233853 | 1.3 | 226 | 5836 | 113 | 34 | 0 | 1108 | 1969 | 1501 | 15407 | 176 | 275 | 2052 | 116949 | 1236 | 1066 | 855 | 2190 | 3198 | 1397 | 12008 | 169 | 104 | 188 | 257 | 176370 | 51779 | 0.391 |
| 259 | 278.86 | 242600 | 1.33 | 233 | 6237 | 37 | 49 | 0 | 1139 | 2102 | 1653 | 16200 | 266 | 320 | 1869 | 123129 | 1382 | 1181 | 878 | 2122 | 3438 | 1768 | 11796 | 272 | 101 | 236 | 112 | 180888 | 52051 | 0.396 |
| 260 | 279.86 | 237428 | 1.32 | 281 | 6353 | 66 | 0 | 0 | 1182 | 2153 | 1727 | 17187 | 216 | 316 | 1806 | 123323 | 1297 | 1082 | 776 | 1787 | 3281 | 1757 | 10365 | 262 | 93 | 218 | 273 | 179327 | 50341 | 0.391 |
| 261 | 280.86 | 244019 | 1.39 | 257 | 6336 | 26 | 31 | 7 | 1090 | 2129 | 1601 | 16521 | 290 | 403 | 1941 | 128852 | 1377 | 1225 | 917 | 2072 | 3451 | 1795 | 10260 | 228 | 117 | 271 | 322 | 181465 | 51879 | 0.396 |
| 262 | 281.86 | 238953 | 1.28 | 241 | 6382 | 55 | 0 | 0 | 1078 | 2155 | 1587 | 18224 | 123 | 434 | 2573 | 127204 | 1275 | 1192 | 916 | 2300 | 3326 | 1644 | 10782 | 204 | 167 | 240 | 473 | 177211 | 50759 | 0.392 |
| 263 | 282.86 | 240151 | 1.44 | 270 | 6291 | 91 | 44 | 9 | 1052 | 2047 | 1544 | 16989 | 275 | 768 | 2811 | 144576 | 1331 | 1064 | 928 | 2238 | 3414 | 1480 | 10508 | 198 | 115 | 234 | 166 | 174978 | 50870 | 0.389 |
| 264 | 283.86 | 244993 | 1.34 | 287 | 6310 | 72 | 106 | 0 | 1106 | 2167 | 1633 | 18193 | 142 | 378 | 2948 | 129186 | 1287 | 1062 | 757 | 2392 | 3408 | 1706 | 10354 | 321 | 112 | 225 | 219 | 182640 | 51849 | 0.396 |
| 265 | 284.86 | 244102 | 1.25 | 191 | 6453 | 78 | 34 | 0 | 1089 | 2190 | 1843 | 17512 | 170 | 365 | 2647 | 131773 | 1302 | 1238 | 907 | 2585 | 3623 | 1684 | 10301 | 189 | 167 | 203 | 63 | 182219 | 51025 | 0.395 |
| 266 | 285.86 | 237159 | 1.35 | 246 | 6351 | 92 | 27 | 0 | 1145 | 2231 | 1700 | 18064 | 213 | 333 | 2754 | 132107 | 1331 | 1127 | 851 | 2243 | 3398 | 1665 | 10482 | 322 | 124 | 210 | 249 | 175816 | 49034 | 0.387 |
| 267 | 286.86 | 245600 | 1.35 | 243 | 6435 | 50 | 21 | 0 | 1110 | 2297 | 1669 | 17120 | 176 | 504 | 2752 | 184316 | 1310 | 949 | 908 | 1842 | 3193 | 1400 | 9626 | 325 | 171 | 286 | 335 | 165324 | 49261 | 0.385 |
| 268 | 287.86 | 251293 | 1.35 | 234 | 6362 | 87 | 45 | 75 | 1096 | 2176 | 1712 | 18855 | 320 | 585 | 3822 | 177381 | 1232 | 1120 | 932 | 1903 | 3411 | 1582 | 10253 | 232 | 132 | 320 | 540 | 172831 | 50464 | 0.394 |
| 269 | 288.86 | 261772 | 1.34 | 214 | 6432 | 82 | 92 | 12 | 1060 | 2313 | 1706 | 17014 | 294 | 581 | 3710 | 161152 | 1339 | 1206 | 913 | 2148 | 3634 | 2118 | 11821 | 335 | 66 | 334 | 312 | 182105 | 52170 | 0.407 |
| 270 | 289.86 | 259628 | 1.32 | 262 | 6530 | 39 | 0 | 0 | 1110 | 2424 | 1739 | 17908 | 353 | 921 | 3282 | 152680 | 1429 | 1196 | 953 | 2111 | 4076 | 2479 | 11036 | 303 | 67 | 298 | 396 | 180647 | 51373 | 0.405 |
| 271 | 290.86 | 264658 | 1.41 | 262 | 6547 | 42 | 8 | 0 | 1154 | 2295 | 1759 | 18704 | 297 | 1075 | 4095 | 172808 | 1245 | 1114 | 1012 | 2044 | 4358 | 2869 | 10419 | 210 | 180 | 318 | 678 | 180431 | 52099 | 0.407 |
| 272 | 291.86 | 255699 | 1.34 | 230 | 6752 | 92 | 23 | 0 | 1122 | 2257 | 1742 | 18459 | 185 | 629 | 2696 | 131732 | 1509 | 1075 | 972 | 2178 | 3546 | 1995 | 11136 | 391 | 82 | 289 | 180 | 187817 | 53371 | 0.406 |
| 273 | 292.86 | 260176 | 1.38 | 252 | 6603 | 73 | 69 | 0 | 1090 | 2200 | 1721 | 18605 | 312 | 577 | 2990 | 145912 | 1381 | 1123 | 960 | 2173 | 3929 | 1927 | 10894 | 314 | 76 | 259 | 333 | 186488 | 52863 | 0.407 |
| 274 | 293.86 | 263439 | 1.4 | 301 | 7125 | 35 | 0 | 0 | 1082 | 2438 | 1732 | 19078 | 241 | 497 | 3504 | 147674 | 1389 | 1284 | 1056 | 2395 | 3714 | 1549 | 11158 | 283 | 147 | 184 | 422 | 184749 | 52359 | 0.409 |
| 275 | 294.86 | 253338 | 1.38 | 293 | 6169 | 47 | 0 | 0 | 1089 | 2036 | 1484 | 18471 | 213 | 366 | 2827 | 132016 | 1375 | 987 | 839 | 1965 | 3648 | 2047 | 11476 | 239 | 152 | 222 | 400 | 184022 | 52855 | 0.405 |
| 276 | 295.86 | 260126 | 1.39 | 299 | 6135 | 112 | 15 | 13 | 1018 | 2020 | 1662 | 17171 | 204 | 532 | 2592 | 127767 | 1386 | 1254 | 1136 | 2463 | 3644 | 1654 | 11692 | 311 | 82 | 176 | 251 | 190719 | 54118 | 0.413 |
| 277 | 296.86 | 258663 | 1.27 | 209 | 6202 | 63 | 0 | 126 | 1090 | 2249 | 1645 | 17707 | 214 | 461 | 2481 | 140742 | 1378 | 1294 | 862 | 2270 | 3343 | 1739 | 12337 | 237 | 96 | 256 | 321 | 184311 | 52431 | 0.407 |
| 278 | 297.86 | 249657 | 1.29 | 240 | 6429 | 53 | 34 | 0 | 1122 | 2259 | 1712 | 16619 | 256 | 322 | 2955 | 135171 | 1338 | 1270 | 1010 | 2090 | 3639 | 1649 | 10517 | 260 | 71 | 221 | 90 | 182266 | 51117 | 0.4 |
| 279 | 298.86 | 255202 | 1.37 | 293 | 6859 | 50 | 39 | 0 | 1064 | 2416 | 1687 | 18583 | 302 | 467 | 3030 | 141171 | 1370 | 1250 | 876 | 2362 | 3677 | 1613 | 11089 | 403 | 70 | 226 | 341 | 184157 | 52393 | 0.404 |
| 280 | 299.86 | 250028 | 1.41 | 203 | 6973 | 42 | 46 | 0 | 1109 | 2237 | 1678 | 17449 | 235 | 641 | 2590 | 141410 | 1358 | 1089 | 1011 | 1891 | 3857 | 1756 | 10538 | 267 | 107 | 247 | 356 | 177852 | 51254 | 0.399 |
| 281 | 300.86 | 249201 | 1.34 | 276 | 6751 | 119 | 28 | 0 | 1127 | 2218 | 1608 | 17428 | 384 | 737 | 2373 | 150107 | 1241 | 1122 | 925 | 2232 | 3298 | 1427 | 10483 | 238 | 99 | 190 | 229 | 177336 | 51944 | 0.398 |
| 282 | 301.86 | 254322 | 1.41 | 232 | 6733 | 56 | 54 | 31 | 999 | 2230 | 1590 | 17601 | 257 | 521 | 2458 | 146775 | 1260 | 1060 | 1068 | 2108 | 3258 | 1684 | 11729 | 209 | 137 | 205 | 270 | 180356 | 52528 | 0.404 |
| 283 | 302.86 | 257778 | 1.38 | 289 | 6992 | 99 | 30 | 0 | 979 | 2121 | 1661 | 17374 | 324 | 441 | 1851 | 142576 | 1372 | 1109 | 1129 | 2331 | 3665 | 1826 | 11736 | 317 | 68 | 210 | 381 | 185828 | 53332 | 0.408 |
| 284 | 303.86 | 256304 | 1.36 | 253 | 6807 | 70 | 34 | 0 | 964 | 2381 | 1628 | 17791 | 304 | 872 | 2591 | 150827 | 1428 | 1133 | 816 | 2375 | 3778 | 1639 | 11108 | 309 | 78 | 174 | 331 | 183040 | 51854 | 0.404 |
| 285 | 304.86 | 246406 | 1.32 | 251 | 6463 | 66 | 12 | 8 | 1082 | 2106 | 1660 | 16661 | 270 | 648 | 2418 | 152298 | 1257 | 1101 | 915 | 2310 | 3524 | 1519 | 10948 | 194 | 140 | 290 | 263 | 176387 | 51285 | 0.394 |
| 286 | 305.86 | 229969 | 1.22 | 286 | 6649 | 63 | 12 | 16 | 1278 | 2310 | 1648 | 18088 | 85 | 385 | 2144 | 134657 | 1351 | 1250 | 895 | 2031 | 3433 | 1710 | 10341 | 313 | 88 | 231 | 328 | 172240 | 48753 | 0.379 |
| 287 | 306.86 | 230728 | 1.27 | 269 | 6029 | 70 | 35 | 12 | 1260 | 2211 | 1639 | 16593 | 137 | 539 | 3604 | 140929 | 1180 | 1176 | 780 | 2556 | 3314 | 1508 | 11061 | 301 | 94 | 247 | 322 | 170428 | 49478 | 0.378 |
| 288 | 307.86 | 210287 | 1.39 | 265 | 5410 | 98 | 54 | 0 | 1331 | 1961 | 1487 | 15754 | 178 | 311 | 1683 | 114221 | 1205 | 1035 | 827 | 2127 | 3054 | 1736 | 10728 | 306 | 102 | 177 | 104 | 164508 | 47497 | 0.366 |
| 289 | 308.86 | 224687 | 1.34 | 208 | 5885 | 43 | 33 | 12 | 1230 | 2032 | 1540 | 16630 | 267 | 424 | 1667 | 121920 | 1186 | 1218 | 766 | 1936 | 3320 | 1613 | 10692 | 240 | 64 | 215 | 285 | 171242 | 49351 | 0.379 |
| 290 | 309.86 | 240250 | 1.33 | 233 | 6605 | 34 | 45 | 84 | 1058 | 2322 | 1705 | 16850 | 167 | 321 | 3054 | 130524 | 1271 | 1056 | 884 | 2450 | 3452 | 1529 | 11099 | 322 | 86 | 230 | 377 | 177998 | 51478 | 0.392 |
| 291 | 310.86 | 250677 | 1.29 | 292 | 6891 | 96 | 47 | 100 | 1074 | 2473 | 1738 | 19864 | 304 | 486 | 5078 | 170632 | 1280 | 1110 | 870 | 2259 | 3392 | 1803 | 10114 | 329 | 130 | 331 | 751 | 171376 | 49670 | 0.392 |
| 292 | 311.86 | 238238 | 1.4 | 330 | 6441 | 38 | 30 | 223 | 1197 | 2368 | 1714 | 18013 | 218 | 913 | 3499 | 163317 | 1253 | 1181 | 769 | 2461 | 3164 | 1630 | 9036 | 289 | 195 | 224 | 495 | 166897 | 49459 | 0.383 |
| 293 | 312.86 | 249951 | 1.36 | 251 | 6059 | 79 | 51 | 0 | 1309 | 2221 | 1515 | 16844 | 292 | 373 | 4041 | 160564 | 1242 | 1219 | 858 | 2136 | 3295 | 1682 | 10421 | 289 | 102 | 208 | 213 | 177317 | 51486 | 0.396 |
| 294 | 313.86 | 265813 | 1.32 | 290 | 7274 | 96 | 35 | 0 | 1188 | 2578 | 1611 | 19585 | 165 | 306 | 3127 | 155527 | 1394 | 1298 | 918 | 2463 | 3531 | 1759 | 11943 | 250 | 96 | 203 | 271 | 187250 | 53060 | 0.411 |
| 295 | 314.86 | 242856 | 1.29 | 264 | 6258 | 63 | 38 | 0 | 1302 | 2438 | 1541 | 17372 | 263 | 410 | 4495 | 135289 | 1315 | 1140 | 829 | 2087 | 3136 | 1398 | 9942 | 332 | 84 | 195 | 334 | 180649 | 50603 | 0.393 |
| 296 | 315.86 | 250505 | 1.3 | 289 | 6667 | 99 | 81 | 26 | 1349 | 2513 | 1584 | 18638 | 279 | 473 | 4326 | 177848 | 1213 | 1291 | 855 | 2515 | 3050 | 1448 | 9675 | 265 | 113 | 245 | 288 | 174068 | 49113 | 0.391 |
| 297 | 316.86 | 205814 | 1.2 | 203 | 4991 | 77 | 78 | 62 | 1346 | 1778 | 1304 | 13882 | 174 | 373 | 4384 | 109255 | 1184 | 1075 | 723 | 1833 | 3149 | 1763 | 9758 | 205 | 57 | 168 | 390 | 163717 | 47390 | 0.364 |
| 298 | 317.86 | 232981 | 1.33 | 230 | 6116 | 58 | 0 | 9 | 1342 | 2202 | 1495 | 16092 | 239 | 606 | 6403 | 144429 | 1182 | 1068 | 950 | 2360 | 3016 | 1307 | 9795 | 261 | 70 | 302 | 453 | 170157 | 49244 | 0.382 |
| 299 | 318.86 | 226765 | 1.27 | 219 | 5634 | 47 | 17 | 0 | 1338 | 2029 | 1416 | 15971 | 235 | 636 | 6970 | 125235 | 1235 | 1129 | 728 | 1956 | 3362 | 1492 | 10120 | 314 | 51 | 222 | 375 | 173442 | 49437 | 0.379 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.016214; F-slope= 0.009738; E-offset= 0.075206

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | 319.86 | 238606 | 1.35 | 224 | 6104 | 112 | 67 | 45 | 1387 | 2378 | 1620 | 17573 | 204 | 431 | 6396 | 129279 | 1291 | 1361 | 877 | 2101 | 3420 | 1577 | 11261 | 328 | 54 | 241 | 250 | 179745 | 50827 | 0.389 |
| 301 | 320.86 | 217159 | 1.28 | 307 | 5184 | 59 | 86 | 0 | 1475 | 2257 | 1353 | 14492 | 205 | 559 | 7576 | 118571 | 1211 | 1087 | 653 | 1876 | 3160 | 1247 | 9111 | 151 | 111 | 198 | 134 | 168430 | 48581 | 0.371 |
| 302 | 321.86 | 232760 | 1.4 | 315 | 6021 | 75 | 23 | 72 | 1129 | 2398 | 1454 | 17290 | 327 | 633 | 12210 | 133931 | 1137 | 1014 | 817 | 2453 | 3541 | 1112 | 10104 | 333 | 126 | 221 | 732 | 167739 | 49126 | 0.381 |
| 303 | 322.86 | 234707 | 1.31 | 224 | 5632 | 95 | 25 | 65 | 1061 | 2141 | 1296 | 15051 | 338 | 393 | 12574 | 146375 | 1207 | 906 | 813 | 2401 | 3406 | 1469 | 9675 | 212 | 85 | 162 | 563 | 166160 | 49965 | 0.383 |
| 304 | 323.86 | 276483 | 1.42 | 290 | 6239 | 79 | 50 | 107 | 833 | 2398 | 1822 | 15950 | 306 | 876 | 10659 | 236780 | 1261 | 879 | 918 | 2372 | 3525 | 1514 | 8936 | 193 | 193 | 311 | 808 | 171769 | 50921 | 0.407 |
| 305 | 324.86 | 274037 | 1.45 | 350 | 6452 | 58 | 44 | 0 | 871 | 2171 | 1406 | 16867 | 316 | 707 | 3841 | 255529 | 1182 | 903 | 851 | 2326 | 3498 | 1448 | 9587 | 103 | 81 | 226 | 693 | 168483 | 50335 | 0.406 |
| 306 | 325.86 | 233387 | 1.34 | 221 | 5531 | 97 | 40 | 12 | 894 | 1846 | 1325 | 13675 | 295 | 255 | 2375 | 115521 | 1382 | 1005 | 834 | 2319 | 3570 | 2067 | 11662 | 239 | 94 | 139 | 93 | 179441 | 51719 | 0.394 |
| 307 | 326.86 | 233649 | 1.32 | 283 | 6695 | 74 | 0 | 17 | 1104 | 2351 | 1641 | 16865 | 249 | 491 | 2768 | 145421 | 1237 | 843 | 969 | 2204 | 3401 | 1554 | 11138 | 256 | 75 | 224 | 442 | 169401 | 48269 | 0.384 |
| 308 | 327.86 | 236167 | 1.44 | 270 | 5929 | 83 | 34 | 0 | 1241 | 2021 | 1452 | 16358 | 261 | 360 | 3625 | 194507 | 1275 | 1046 | 844 | 2321 | 3077 | 1523 | 10008 | 200 | 115 | 280 | 433 | 161774 | 47935 | 0.376 |
| 309 | 328.86 | 218253 | 1.35 | 175 | 5363 | 53 | 8 | 0 | 1135 | 1824 | 1401 | 14591 | 251 | 537 | 2718 | 198204 | 1014 | 891 | 674 | 1891 | 2789 | 1435 | 8797 | 176 | 114 | 226 | 439 | 150474 | 44898 | 0.36 |
| 310 | 329.86 | 212489 | 1.27 | 254 | 5679 | 104 | 32 | 8 | 1116 | 1845 | 1411 | 13705 | 378 | 519 | 3911 | 135271 | 1191 | 899 | 866 | 1732 | 3139 | 1737 | 9607 | 136 | 146 | 195 | 430 | 161847 | 47584 | 0.366 |
| 311 | 330.86 | 230031 | 1.28 | 296 | 5196 | 53 | 50 | 0 | 1083 | 1742 | 1347 | 15743 | 136 | 358 | 4894 | 124285 | 1349 | 1049 | 846 | 2233 | 3628 | 1931 | 9933 | 97 | 155 | 191 | 362 | 178272 | 50398 | 0.385 |
| 312 | 331.86 | 219646 | 1.25 | 305 | 6115 | 55 | 15 | 5 | 1196 | 2121 | 1573 | 16328 | 33 | 431 | 4208 | 137360 | 1266 | 1145 | 887 | 2098 | 3066 | 1453 | 9747 | 343 | 23 | 239 | 389 | 164755 | 47478 | 0.369 |
| 313 | 332.86 | 197273 | 1.37 | 246 | 5935 | 61 | 34 | 0 | 1220 | 2027 | 1541 | 15358 | 241 | 386 | 2946 | 125977 | 1113 | 1023 | 902 | 1780 | 2935 | 1293 | 8218 | 189 | 136 | 193 | 323 | 148504 | 42943 | 0.348 |
| 314 | 333.86 | 184439 | 1.27 | 235 | 5106 | 41 | 12 | 0 | 1139 | 1720 | 1381 | 13108 | 84 | 276 | 1891 | 104917 | 1112 | 941 | 744 | 1775 | 2610 | 1092 | 8268 | 200 | 22 | 174 | 325 | 147121 | 42878 | 0.343 |
| 315 | 334.86 | 198970 | 1.3 | 165 | 5136 | 38 | 0 | 0 | 1136 | 1769 | 1314 | 14151 | 216 | 301 | 1636 | 122879 | 1080 | 927 | 803 | 1922 | 2776 | 1078 | 8253 | 180 | 96 | 199 | 177 | 153092 | 45169 | 0.355 |
| 316 | 335.86 | 201407 | 1.31 | 213 | 4669 | 66 | 57 | 5 | 1173 | 1609 | 1315 | 12971 | 118 | 178 | 1795 | 112486 | 1147 | 888 | 714 | 2023 | 3191 | 1709 | 8710 | 152 | 95 | 164 | 397 | 161398 | 47097 | 0.361 |
| 317 | 336.86 | 237835 | 1.25 | 287 | 6335 | 88 | 0 | 0 | 1136 | 2359 | 1741 | 16710 | 188 | 475 | 2649 | 139846 | 1356 | 1081 | 992 | 2327 | 3296 | 1588 | 9170 | 296 | 64 | 325 | 407 | 176526 | 49832 | 0.387 |
| 318 | 337.86 | 247574 | 1.31 | 231 | 6175 | 94 | 0 | 25 | 1076 | 2424 | 1695 | 17162 | 360 | 807 | 3891 | 193158 | 1225 | 1091 | 960 | 2310 | 3022 | 1323 | 9513 | 200 | 164 | 323 | 117 | 166819 | 48398 | 0.387 |
| 319 | 338.86 | 241649 | 1.34 | 220 | 6072 | 70 | 41 | 124 | 1099 | 2359 | 1806 | 16990 | 310 | 522 | 4127 | 158519 | 1273 | 1106 | 855 | 2119 | 3329 | 1542 | 10275 | 315 | 141 | 237 | 444 | 171835 | 49823 | 0.387 |
| 320 | 339.86 | 255176 | 1.32 | 274 | 6149 | 77 | 62 | 157 | 1138 | 2679 | 2182 | 17484 | 233 | 769 | 2624 | 174489 | 1238 | 999 | 936 | 2612 | 3416 | 1280 | 10922 | 223 | 163 | 297 | 435 | 175302 | 50463 | 0.398 |
| 321 | 340.86 | 269647 | 1.33 | 326 | 6890 | 107 | 55 | 68 | 1056 | 2669 | 2018 | 18946 | 345 | 1390 | 2297 | 186536 | 1296 | 1243 | 871 | 2736 | 3658 | 1712 | 10776 | 285 | 146 | 298 | 262 | 181312 | 52041 | 0.408 |
| 322 | 341.86 | 264690 | 1.43 | 265 | 6848 | 92 | 13 | 86 | 1202 | 2688 | 1835 | 19297 | 363 | 608 | 1976 | 183881 | 1444 | 1158 | 1036 | 2490 | 3561 | 1452 | 11302 | 308 | 96 | 270 | 448 | 178115 | 51830 | 0.404 |
| 323 | 342.86 | 252451 | 1.41 | 256 | 6880 | 50 | 0 | 0 | 1213 | 2803 | 1926 | 20094 | 430 | 449 | 3452 | 201972 | 1231 | 1253 | 854 | 2549 | 3351 | 1792 | 10095 | 283 | 186 | 338 | 308 | 166448 | 48778 | 0.387 |
| 324 | 343.86 | 255314 | 1.4 | 301 | 5171 | 77 | 53 | 0 | 1315 | 2263 | 1493 | 16618 | 406 | 1399 | 5410 | 337607 | 972 | 985 | 665 | 1813 | 2742 | 1283 | 8081 | 243 | 83 | 346 | 591 | 139882 | 42741 | 0.367 |
| 325 | 344.86 | 247698 | 1.52 | 231 | 5787 | 67 | 42 | 12 | 1295 | 2448 | 1693 | 17712 | 221 | 473 | 4062 | 241175 | 1213 | 1145 | 861 | 2342 | 3288 | 1225 | 8391 | 218 | 127 | 311 | 446 | 156765 | 46674 | 0.376 |
| 326 | 345.86 | 222853 | 1.31 | 281 | 6016 | 51 | 39 | 0 | 1278 | 2251 | 1699 | 16710 | 246 | 246 | 2562 | 136661 | 1193 | 1188 | 780 | 2049 | 3610 | 1465 | 10966 | 229 | 142 | 260 | 379 | 163148 | 47103 | 0.372 |
| 327 | 346.86 | 230115 | 1.33 | 264 | 6035 | 98 | 16 | 0 | 1283 | 2416 | 1731 | 16966 | 215 | 342 | 3219 | 162756 | 1102 | 1117 | 800 | 2191 | 3063 | 1524 | 10383 | 235 | 191 | 286 | 509 | 160511 | 47689 | 0.374 |
| 328 | 347.86 | 238651 | 1.37 | 305 | 6290 | 51 | 16 | 0 | 1172 | 2243 | 1751 | 17986 | 239 | 449 | 2883 | 182817 | 1200 | 1145 | 878 | 2034 | 3080 | 1972 | 10208 | 322 | 104 | 252 | 527 | 161943 | 48692 | 0.379 |
| 329 | 348.86 | 238700 | 1.31 | 238 | 6039 | 57 | 13 | 0 | 1183 | 2268 | 1726 | 16654 | 216 | 443 | 2148 | 143722 | 1234 | 1070 | 942 | 2202 | 3150 | 1766 | 10666 | 350 | 114 | 274 | 222 | 173431 | 50398 | 0.389 |
| 330 | 349.86 | 250559 | 1.26 | 238 | 6422 | 100 | 20 | 0 | 1118 | 2434 | 1687 | 17074 | 244 | 462 | 2143 | 148322 | 1338 | 963 | 933 | 2366 | 3417 | 1766 | 11404 | 224 | 95 | 292 | 358 | 178318 | 51116 | 0.399 |
| 331 | 350.86 | 249998 | 1.32 | 278 | 6618 | 83 | 10 | 0 | 1137 | 2449 | 1723 | 18753 | 196 | 495 | 2471 | 152645 | 1343 | 1256 | 872 | 2231 | 3646 | 1551 | 10753 | 263 | 137 | 209 | 273 | 177289 | 50821 | 0.396 |
| 332 | 351.86 | 254473 | 1.35 | 202 | 6391 | 40 | 56 | 0 | 1168 | 2586 | 1706 | 18764 | 309 | 541 | 2817 | 173793 | 1386 | 1160 | 858 | 2023 | 3760 | 1622 | 10711 | 236 | 192 | 342 | 306 | 175420 | 50007 | 0.397 |
| 333 | 352.86 | 255775 | 1.33 | 300 | 6271 | 74 | 93 | 0 | 1120 | 2436 | 1704 | 17127 | 255 | 641 | 4643 | 168981 | 1268 | 1056 | 852 | 2371 | 3699 | 1844 | 10451 | 289 | 119 | 350 | 222 | 178624 | 51536 | 0.399 |
| 334 | 353.86 | 263979 | 1.22 | 312 | 6177 | 101 | 27 | 0 | 1108 | 2273 | 1780 | 18214 | 260 | 530 | 9757 | 173375 | 1252 | 1116 | 822 | 2550 | 3589 | 1990 | 10350 | 141 | 194 | 274 | 658 | 180905 | 51277 | 0.405 |
| 335 | 354.86 | 261094 | 1.28 | 291 | 5749 | 63 | 33 | 22 | 1233 | 2285 | 1852 | 17508 | 266 | 538 | 6298 | 186786 | 1254 | 1093 | 768 | 2674 | 3459 | 1538 | 10649 | 267 | 95 | 291 | 362 | 177265 | 50465 | 0.401 |
| 336 | 355.86 | 245387 | 1.32 | 224 | 5995 | 75 | 74 | 10 | 1285 | 2418 | 1669 | 16532 | 356 | 481 | 3410 | 161425 | 1320 | 1134 | 895 | 2745 | 3725 | 1632 | 11827 | 271 | 179 | 301 | 479 | 174218 | 50117 | 0.391 |
| 337 | 356.86 | 243708 | 1.26 | 256 | 5807 | 102 | 82 | 0 | 1200 | 2367 | 1770 | 18021 | 274 | 834 | 3847 | 162754 | 1243 | 1138 | 813 | 2383 | 3544 | 1826 | 10698 | 209 | 119 | 262 | 325 | 170484 | 49799 | 0.389 |
| 338 | 357.86 | 245939 | 1.3 | 322 | 6085 | 82 | 21 | 0 | 1175 | 2331 | 1662 | 17087 | 209 | 651 | 3116 | 151757 | 1318 | 1210 | 775 | 2281 | 3454 | 1819 | 12255 | 256 | 71 | 277 | 298 | 175057 | 50280 | 0.393 |
| 339 | 358.86 | 253691 | 1.36 | 285 | 6073 | 89 | 0 | 0 | 1164 | 2348 | 1816 | 17549 | 205 | 618 | 3010 | 157049 | 1314 | 1191 | 895 | 2514 | 3573 | 1601 | 11709 | 327 | 102 | 278 | 173 | 179844 | 50744 | 0.4 |
| 340 | 359.86 | 254434 | 1.28 | 222 | 6246 | 50 | 0 | 0 | 1238 | 2446 | 1751 | 17790 | 272 | 473 | 3669 | 160017 | 1217 | 1083 | 942 | 2714 | 3220 | 1729 | 10257 | 326 | 63 | 429 | 339 | 180448 | 51011 | 0.4 |
| 341 | 360.86 | 248772 | 1.34 | 318 | 6206 | 50 | 7 | 0 | 1329 | 2327 | 1723 | 18019 | 210 | 371 | 3174 | 167387 | 1262 | 1133 | 736 | 2556 | 3431 | 1369 | 10436 | 299 | 98 | 274 | 83 | 175993 | 49857 | 0.392 |
| 342 | 361.86 | 237564 | 1.29 | 281 | 6208 | 63 | 38 | 0 | 1326 | 2345 | 1733 | 17753 | 328 | 313 | 3178 | 156003 | 1238 | 1115 | 723 | 2009 | 3287 | 1767 | 10128 | 150 | 174 | 266 | 263 | 171487 | 48978 | 0.383 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.016214; F-slope= 0.009738; E-offset= 0.075206

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 343 | 362.86 | 234827 | 1.36 | 259 | 5714 | 35 | 17 | 0 | 1286 | 2091 | 1821 | 15798 | 258 | 453 | 3742 | 151666 | 1179 | 1199 | 793 | 2262 | 3266 | 1762 | 10205 | 246 | 146 | 261 | 159 | 170676 | 48938 | 0.382 |
| 344 | 363.86 | 241267 | 1.31 | 249 | 5899 | 99 | 58 | 14 | 1241 | 2265 | 1878 | 16465 | 245 | 445 | 2642 | 153235 | 1261 | 1046 | 846 | 2340 | 3868 | 1758 | 10712 | 317 | 80 | 270 | 229 | 175200 | 49946 | 0.388 |
| 345 | 364.86 | 241334 | 1.27 | 243 | 6156 | 59 | 59 | 0 | 1217 | 2426 | 1767 | 18855 | 275 | 489 | 2995 | 152499 | 1350 | 1149 | 881 | 2460 | 3317 | 1728 | 9941 | 147 | 190 | 252 | 230 | 173194 | 49517 | 0.388 |
| 346 | 365.86 | 243444 | 1.3 | 236 | 6413 | 134 | 55 | 7 | 1243 | 2362 | 1985 | 18058 | 249 | 359 | 2407 | 161951 | 1218 | 1226 | 883 | 2414 | 3342 | 1462 | 9925 | 312 | 139 | 254 | 300 | 173453 | 50072 | 0.388 |
| 347 | 366.86 | 232355 | 1.32 | 263 | 6094 | 57 | 37 | 0 | 1257 | 2300 | 1784 | 17217 | 179 | 624 | 1985 | 155951 | 1226 | 1245 | 840 | 2091 | 3183 | 1292 | 9465 | 362 | 85 | 261 | 281 | 166733 | 47922 | 0.379 |
| 348 | 367.86 | 240419 | 1.37 | 254 | 6389 | 81 | 14 | 6 | 1150 | 2491 | 1887 | 17893 | 202 | 597 | 2217 | 152645 | 1165 | 1172 | 883 | 2465 | 3423 | 1570 | 9795 | 282 | 145 | 301 | 341 | 170722 | 49976 | 0.386 |
| 349 | 368.86 | 246016 | 1.35 | 238 | 6232 | 69 | 0 | 0 | 1172 | 2332 | 1711 | 18061 | 318 | 706 | 2941 | 178953 | 1166 | 1064 | 897 | 2600 | 3260 | 1486 | 9699 | 340 | 95 | 226 | 147 | 169010 | 49986 | 0.387 |
| 350 | 369.86 | 245903 | 1.33 | 194 | 6065 | 31 | 20 | 0 | 1242 | 2220 | 1821 | 16542 | 205 | 496 | 2104 | 165182 | 1187 | 1164 | 793 | 1963 | 3325 | 1905 | 9657 | 213 | 124 | 298 | 326 | 173589 | 50341 | 0.391 |
| 351 | 370.86 | 248512 | 1.3 | 267 | 6214 | 97 | 50 | 0 | 1277 | 2413 | 1778 | 17464 | 233 | 466 | 1961 | 148558 | 1392 | 1241 | 775 | 2327 | 3514 | 1779 | 9881 | 294 | 148 | 318 | 202 | 179550 | 51338 | 0.397 |
| 352 | 371.86 | 248044 | 1.36 | 258 | 6405 | 24 | 55 | 24 | 1280 | 2503 | 1888 | 17341 | 150 | 452 | 1740 | 153091 | 1264 | 1205 | 924 | 2308 | 3486 | 1559 | 10238 | 312 | 137 | 326 | 281 | 179581 | 51222 | 0.394 |
| 353 | 372.86 | 245601 | 1.3 | 282 | 6494 | 38 | 28 | 0 | 1254 | 2443 | 1743 | 19385 | 119 | 496 | 1860 | 154577 | 1346 | 1197 | 815 | 2530 | 3370 | 1722 | 10843 | 209 | 130 | 264 | 134 | 175804 | 49722 | 0.391 |
| 354 | 373.86 | 245631 | 1.26 | 326 | 5831 | 43 | 57 | 0 | 1307 | 2452 | 1672 | 16960 | 193 | 439 | 1929 | 151410 | 1333 | 1235 | 943 | 2113 | 3293 | 1523 | 10429 | 215 | 155 | 303 | 224 | 176258 | 50397 | 0.393 |
| 355 | 374.86 | 245586 | 1.35 | 264 | 5658 | 48 | 20 | 0 | 1356 | 2274 | 1716 | 17726 | 177 | 719 | 1985 | 151285 | 1253 | 1092 | 704 | 2465 | 3471 | 1564 | 10667 | 280 | 133 | 272 | 199 | 177273 | 50854 | 0.393 |
| 356 | 375.86 | 259942 | 1.3 | 260 | 5856 | 62 | 78 | 0 | 1217 | 2389 | 1786 | 16965 | 279 | 839 | 2089 | 160162 | 1317 | 1201 | 883 | 2569 | 3838 | 1893 | 10378 | 293 | 71 | 364 | 318 | 185078 | 52667 | 0.406 |
| 357 | 376.86 | 269945 | 1.29 | 291 | 6227 | 91 | 91 | 14 | 1219 | 2453 | 1844 | 17677 | 192 | 554 | 2289 | 168085 | 1387 | 1290 | 870 | 2616 | 4124 | 1887 | 11572 | 315 | 76 | 256 | 383 | 187843 | 53961 | 0.413 |
| 358 | 377.86 | 248212 | 1.31 | 213 | 6277 | 15 | 65 | 0 | 1286 | 2333 | 1829 | 17114 | 195 | 432 | 2454 | 163456 | 1311 | 1165 | 1031 | 2387 | 3473 | 1697 | 10485 | 216 | 114 | 284 | 356 | 176839 | 50229 | 0.394 |
| 359 | 378.86 | 213744 | 1.37 | 233 | 5638 | 108 | 8 | 0 | 1354 | 2192 | 1662 | 16053 | 309 | 364 | 2155 | 147952 | 1096 | 1031 | 721 | 2137 | 3149 | 1281 | 8475 | 235 | 56 | 298 | 412 | 158370 | 45073 | 0.361 |
| 360 | 379.86 | 207343 | 1.32 | 184 | 4967 | 96 | 69 | 34 | 1326 | 1937 | 1528 | 14633 | 170 | 432 | 1419 | 126133 | 1165 | 931 | 671 | 1995 | 2944 | 1499 | 8502 | 259 | 99 | 310 | 197 | 161201 | 46415 | 0.363 |
| 361 | 380.86 | 245503 | 1.35 | 291 | 5710 | 82 | 26 | 20 | 1378 | 2297 | 1684 | 16667 | 62 | 997 | 1538 | 149517 | 1179 | 1156 | 794 | 2426 | 3504 | 1575 | 10893 | 222 | 99 | 280 | 305 | 178100 | 50825 | 0.395 |
| 362 | 381.86 | 256267 | 1.38 | 294 | 5615 | 93 | 110 | 21 | 1389 | 2312 | 2042 | 16152 | 243 | 1651 | 4270 | 181090 | 1195 | 1183 | 868 | 1971 | 3737 | 1992 | 9579 | 212 | 167 | 329 | 318 | 177075 | 50807 | 0.398 |
| 363 | 382.86 | 247029 | 1.42 | 235 | 5703 | 62 | 60 | 7 | 1401 | 2328 | 1710 | 17155 | 261 | 1618 | 1793 | 155209 | 1243 | 1176 | 751 | 2397 | 3486 | 1516 | 10551 | 276 | 171 | 250 | 57 | 179096 | 51303 | 0.394 |
| 364 | 383.86 | 246000 | 1.33 | 275 | 5920 | 62 | 0 | 19 | 1318 | 2533 | 1848 | 17083 | 248 | 831 | 1797 | 157433 | 1288 | 1212 | 850 | 2630 | 3387 | 1728 | 10384 | 235 | 180 | 316 | 370 | 177455 | 50310 | 0.391 |
| 365 | 384.86 | 254662 | 1.34 | 300 | 5913 | 79 | 30 | 26 | 1332 | 2555 | 1805 | 16929 | 203 | 689 | 1564 | 158518 | 1203 | 1146 | 1009 | 2419 | 3530 | 1791 | 11728 | 295 | 151 | 264 | 292 | 179086 | 51330 | 0.401 |
| 366 | 385.86 | 260152 | 1.33 | 325 | 6204 | 69 | 35 | 0 | 1307 | 2524 | 1784 | 18146 | 196 | 518 | 1544 | 163626 | 1339 | 1194 | 822 | 2406 | 3822 | 1628 | 10994 | 320 | 67 | 322 | 223 | 181419 | 51796 | 0.404 |
| 367 | 386.86 | 268057 | 1.3 | 306 | 6148 | 77 | 26 | 45 | 1306 | 2560 | 1783 | 17319 | 322 | 547 | 1600 | 181821 | 1399 | 1243 | 791 | 2594 | 3938 | 1752 | 11040 | 224 | 134 | 281 | 213 | 184267 | 52669 | 0.409 |
| 368 | 387.86 | 265861 | 1.31 | 255 | 6246 | 75 | 48 | 74 | 1395 | 2395 | 2058 | 18189 | 181 | 472 | 1423 | 170123 | 1394 | 1496 | 932 | 2548 | 3812 | 1798 | 9874 | 262 | 167 | 351 | 206 | 185817 | 52330 | 0.409 |
| 369 | 388.86 | 255548 | 1.41 | 193 | 6027 | 131 | 24 | 0 | 1362 | 2514 | 1812 | 17906 | 273 | 349 | 1636 | 168574 | 1239 | 1358 | 879 | 2548 | 4059 | 1739 | 10150 | 262 | 96 | 300 | 218 | 181460 | 51445 | 0.399 |
| 370 | 389.86 | 262175 | 1.37 | 285 | 6391 | 59 | 20 | 0 | 1357 | 2545 | 1903 | 18048 | 298 | 528 | 2271 | 175046 | 1301 | 1351 | 811 | 2458 | 3775 | 1734 | 10412 | 273 | 151 | 337 | 303 | 183717 | 50945 | 0.402 |
| 371 | 390.86 | 259902 | 1.36 | 273 | 6251 | 59 | 56 | 0 | 1361 | 2363 | 1912 | 17230 | 259 | 623 | 1903 | 209723 | 1231 | 1231 | 844 | 2482 | 3230 | 1253 | 9591 | 274 | 151 | 317 | 204 | 171532 | 49515 | 0.396 |
| 372 | 391.86 | 247345 | 1.36 | 250 | 6167 | 36 | 33 | 0 | 1242 | 2282 | 1822 | 18371 | 152 | 372 | 2041 | 164351 | 1339 | 1253 | 846 | 2184 | 3412 | 1538 | 10096 | 298 | 132 | 308 | 326 | 176333 | 49903 | 0.392 |
| 373 | 392.86 | 252359 | 1.26 | 272 | 6599 | 111 | 53 | 11 | 1119 | 2541 | 1860 | 18657 | 319 | 483 | 2365 | 183339 | 1251 | 1035 | 832 | 2218 | 3719 | 1811 | 9489 | 267 | 114 | 290 | 344 | 175440 | 49767 | 0.393 |
| 374 | 393.86 | 234339 | 1.26 | 338 | 6561 | 49 | 56 | 0 | 1171 | 2450 | 1900 | 16970 | 218 | 530 | 2904 | 174745 | 1141 | 1160 | 819 | 2126 | 3250 | 1847 | 10062 | 268 | 119 | 301 | 378 | 163693 | 47778 | 0.376 |
| 375 | 394.86 | 232776 | 1.26 | 266 | 5932 | 26 | 42 | 0 | 1261 | 2267 | 1616 | 16021 | 330 | 387 | 2602 | 160917 | 1255 | 1128 | 955 | 2110 | 3577 | 1660 | 10433 | 184 | 115 | 213 | 269 | 166618 | 47907 | 0.378 |
| 376 | 395.86 | 246241 | 1.28 | 297 | 6092 | 29 | 31 | 0 | 1267 | 2327 | 1767 | 16574 | 205 | 750 | 2253 | 210990 | 1164 | 1136 | 849 | 1969 | 3231 | 1434 | 9764 | 255 | 142 | 314 | 435 | 162793 | 47599 | 0.38 |
| 377 | 396.86 | 257930 | 1.38 | 230 | 6085 | 88 | 34 | 0 | 1284 | 2494 | 1825 | 17041 | 282 | 725 | 2137 | 240749 | 1306 | 1257 | 726 | 2243 | 3053 | 1529 | 9996 | 317 | 134 | 361 | 443 | 162070 | 49075 | 0.387 |
| 378 | 397.86 | 235871 | 1.35 | 226 | 5967 | 26 | 17 | 0 | 1418 | 2366 | 1823 | 16183 | 296 | 605 | 1645 | 161580 | 1292 | 1125 | 769 | 2274 | 3301 | 1902 | 10183 | 199 | 176 | 253 | 244 | 166405 | 49864 | 0.38 |
| 379 | 398.86 | 241746 | 1.35 | 346 | 6054 | 76 | 45 | 0 | 1343 | 2312 | 1880 | 18139 | 144 | 379 | 1500 | 156080 | 1277 | 1225 | 865 | 2323 | 3443 | 1639 | 10918 | 320 | 139 | 284 | 124 | 174241 | 51002 | 0.388 |
| 380 | 399.86 | 259989 | 1.32 | 288 | 6466 | 106 | 80 | 0 | 1314 | 2633 | 1837 | 19084 | 305 | 399 | 1721 | 170324 | 1324 | 1334 | 768 | 2478 | 3659 | 1800 | 10517 | 350 | 141 | 256 | 267 | 182874 | 52170 | 0.402 |
| 381 | 400.86 | 249430 | 1.34 | 260 | 6405 | 99 | 86 | 5 | 1419 | 2603 | 1823 | 19189 | 288 | 363 | 2076 | 171079 | 1319 | 1165 | 905 | 2415 | 3507 | 1388 | 11505 | 335 | 64 | 249 | 102 | 175895 | 50031 | 0.391 |
| 382 | 401.86 | 245273 | 1.35 | 292 | 6252 | 54 | 56 | 82 | 1382 | 2606 | 1793 | 18054 | 216 | 482 | 2822 | 177605 | 1219 | 1259 | 758 | 2389 | 3253 | 1441 | 9861 | 307 | 135 | 278 | 363 | 171017 | 49432 | 0.386 |
| 383 | 402.86 | 250794 | 1.38 | 242 | 5811 | 68 | 19 | 0 | 1360 | 2440 | 1632 | 16626 | 297 | 552 | 3453 | 203467 | 1302 | 1325 | 810 | 2350 | 3464 | 1573 | 9308 | 373 | 49 | 328 | 463 | 168923 | 49616 | 0.387 |
| 384 | 403.86 | 239922 | 1.38 | 180 | 5778 | 67 | 39 | 0 | 1477 | 2430 | 1760 | 16348 | 280 | 504 | 3830 | 169697 | 1391 | 1223 | 840 | 2224 | 3309 | 1538 | 9567 | 257 | 105 | 306 | 454 | 170051 | 49776 | 0.383 |
| 385 | 404.86 | 244222 | 1.3 | 197 | 5708 | 52 | 61 | 0 | 1388 | 2257 | 1701 | 18026 | 154 | 310 | 3502 | 163564 | 1179 | 1219 | 821 | 2359 | 3368 | 1626 | 10277 | 119 | 203 | 279 | 566 | 172834 | 50445 | 0.388 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.016214; F-slope= 0.009738; E-offset= 0.075206

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 386 | 405.86 | 242291 | 1.37 | 190 | 6006 | 76 | 11 | 0 | 1421 | 2471 | 1682 | 17342 | 316 | 418 | 3268 | 170973 | 1199 | 1151 | 734 | 2225 | 3051 | 1581 | 9099 | 268 | 121 | 379 | 341 | 170655 | 48957 | 0.386 |
| 387 | 406.86 | 235782 | 1.28 | 217 | 5793 | 49 | 72 | 0 | 1389 | 2260 | 1731 | 16833 | 211 | 404 | 4381 | 142797 | 1223 | 1263 | 769 | 2385 | 3392 | 1523 | 9203 | 259 | 151 | 310 | 376 | 174449 | 49936 | 0.385 |
| 388 | 407.86 | 234871 | 1.21 | 245 | 5095 | 74 | 32 | 0 | 1409 | 1954 | 2332 | 14533 | 292 | 383 | 4878 | 155514 | 1213 | 1176 | 750 | 2293 | 3161 | 1725 | 9658 | 199 | 176 | 263 | 386 | 170618 | 48630 | 0.383 |
| 389 | 408.86 | 241864 | 1.3 | 215 | 5404 | 77 | 33 | 0 | 1249 | 2257 | 2735 | 15127 | 256 | 383 | 6141 | 166986 | 1191 | 1155 | 843 | 2515 | 3523 | 1842 | 10863 | 234 | 218 | 291 | 439 | 169679 | 49196 | 0.386 |
| 390 | 409.86 | 245083 | 1.4 | 242 | 5681 | 31 | 39 | 11 | 1306 | 2313 | 1794 | 16777 | 333 | 488 | 5227 | 161607 | 1207 | 1232 | 891 | 2740 | 3385 | 1552 | 9940 | 297 | 119 | 261 | 407 | 174398 | 50849 | 0.39 |
| 391 | 410.86 | 257468 | 1.36 | 287 | 5848 | 82 | 6 | 13 | 1319 | 2655 | 1860 | 17880 | 417 | 616 | 6907 | 181619 | 1290 | 1329 | 1010 | 2541 | 3451 | 1687 | 10597 | 206 | 208 | 289 | 539 | 176335 | 50109 | 0.397 |
| 392 | 411.86 | 261130 | 1.24 | 310 | 5948 | 111 | 82 | 12 | 1329 | 2663 | 1953 | 18295 | 243 | 740 | 4822 | 197573 | 1291 | 1314 | 930 | 2503 | 3602 | 1846 | 10347 | 183 | 190 | 315 | 340 | 175165 | 49970 | 0.398 |
| 393 | 412.86 | 264885 | 1.34 | 284 | 5588 | 103 | 32 | 0 | 1315 | 2828 | 1729 | 18344 | 323 | 730 | 5108 | 230136 | 1224 | 1295 | 930 | 2619 | 3647 | 1784 | 9836 | 198 | 118 | 328 | 277 | 170714 | 49366 | 0.397 |
| 394 | 413.86 | 261475 | 1.3 | 278 | 4948 | 68 | 73 | 10 | 1423 | 2775 | 1803 | 17404 | 226 | 1115 | 7975 | 229895 | 1233 | 1222 | 901 | 2949 | 3634 | 1759 | 9518 | 163 | 175 | 278 | 642 | 170113 | 49659 | 0.393 |
| 395 | 414.86 | 247962 | 1.28 | 240 | 4637 | 53 | 66 | 0 | 1504 | 2741 | 1816 | 16114 | 325 | 498 | 9206 | 206316 | 1119 | 1174 | 808 | 2485 | 3511 | 1615 | 10047 | 188 | 209 | 220 | 540 | 165968 | 48508 | 0.385 |
| 396 | 415.86 | 253238 | 1.34 | 262 | 4602 | 107 | 19 | 21 | 1458 | 2739 | 1697 | 16271 | 202 | 629 | 10014 | 207206 | 1129 | 1192 | 794 | 2611 | 3706 | 1700 | 9087 | 274 | 136 | 278 | 750 | 169238 | 49144 | 0.39 |
| 397 | 416.86 | 239529 | 1.23 | 187 | 4482 | 120 | 22 | 0 | 1527 | 2606 | 1643 | 15612 | 228 | 1392 | 9530 | 190656 | 1227 | 1148 | 981 | 2568 | 3578 | 1685 | 9893 | 275 | 135 | 311 | 733 | 165281 | 47786 | 0.38 |
| 398 | 417.86 | 232158 | 1.27 | 292 | 4564 | 70 | 48 | 31 | 1472 | 2543 | 1657 | 15434 | 312 | 1615 | 12315 | 179657 | 1017 | 1078 | 752 | 2480 | 3319 | 1528 | 8953 | 218 | 139 | 219 | 790 | 162065 | 46201 | 0.374 |
| 399 | 418.86 | 232062 | 1.28 | 288 | 4856 | 116 | 57 | 0 | 1492 | 2497 | 1739 | 15993 | 225 | 878 | 10891 | 191509 | 1160 | 1073 | 721 | 2706 | 3848 | 1532 | 9861 | 256 | 94 | 285 | 720 | 160055 | 45356 | 0.371 |
| 400 | 419.86 | 265355 | 1.36 | 244 | 6110 | 89 | 45 | 0 | 1340 | 3087 | 1920 | 19933 | 158 | 633 | 7651 | 230643 | 1193 | 1197 | 894 | 3004 | 3669 | 2160 | 10278 | 329 | 133 | 306 | 878 | 169581 | 48372 | 0.395 |
| 401 | 420.86 | 253353 | 1.33 | 328 | 5842 | 60 | 70 | 0 | 1491 | 2723 | 1885 | 17765 | 260 | 449 | 2971 | 194216 | 1194 | 1352 | 730 | 2626 | 3361 | 1647 | 10216 | 383 | 127 | 289 | 554 | 174382 | 49727 | 0.392 |
| 402 | 421.86 | 264412 | 1.34 | 321 | 6611 | 77 | 22 | 0 | 1288 | 2928 | 1879 | 20239 | 185 | 653 | 1637 | 191955 | 1296 | 1242 | 929 | 2657 | 3603 | 1770 | 10586 | 259 | 146 | 233 | 262 | 178635 | 51346 | 0.401 |
| 403 | 422.86 | 265867 | 1.34 | 341 | 6719 | 40 | 46 | 0 | 1261 | 2813 | 1884 | 19812 | 268 | 603 | 1715 | 189538 | 1357 | 1384 | 998 | 2352 | 3787 | 1842 | 10679 | 358 | 76 | 307 | 267 | 180261 | 51470 | 0.403 |
| 404 | 423.86 | 254414 | 1.34 | 250 | 6359 | 82 | 17 | 0 | 1299 | 2659 | 1794 | 17355 | 265 | 364 | 1632 | 164743 | 1229 | 1264 | 918 | 2343 | 3669 | 1622 | 9706 | 174 | 147 | 231 | 434 | 178892 | 50889 | 0.398 |
| 405 | 424.86 | 248140 | 1.33 | 218 | 6167 | 61 | 36 | 0 | 1204 | 2511 | 1832 | 17081 | 330 | 388 | 1743 | 161819 | 1302 | 1150 | 874 | 2464 | 3753 | 1594 | 9556 | 291 | 84 | 275 | 297 | 176711 | 50409 | 0.393 |
| 406 | 425.86 | 265767 | 1.26 | 325 | 6608 | 45 | 51 | 14 | 1212 | 2712 | 1822 | 18438 | 309 | 520 | 1608 | 184352 | 1317 | 1222 | 954 | 2681 | 3563 | 1677 | 10403 | 329 | 123 | 313 | 285 | 180708 | 51943 | 0.406 |
| 407 | 426.86 | 258124 | 1.3 | 311 | 6972 | 28 | 68 | 0 | 1129 | 2785 | 1964 | 19836 | 157 | 457 | 1306 | 176451 | 1426 | 1208 | 933 | 2382 | 3718 | 1720 | 9242 | 264 | 207 | 246 | 277 | 179353 | 50559 | 0.397 |
| 408 | 427.86 | 226657 | 1.31 | 257 | 5967 | 89 | 13 | 0 | 1149 | 2242 | 1675 | 17738 | 105 | 354 | 1020 | 137574 | 1202 | 979 | 775 | 2194 | 3347 | 1733 | 9414 | 192 | 183 | 224 | 315 | 171598 | 48783 | 0.378 |
| 409 | 428.86 | 245809 | 1.36 | 322 | 6614 | 26 | 0 | 0 | 1099 | 2518 | 1742 | 17026 | 312 | 641 | 1077 | 150890 | 1425 | 1119 | 750 | 2240 | 3541 | 1730 | 10478 | 313 | 93 | 259 | 115 | 177628 | 50786 | 0.394 |
| 410 | 429.86 | 255247 | 1.36 | 206 | 6907 | 88 | 13 | 0 | 1199 | 2552 | 1698 | 17250 | 277 | 693 | 1045 | 168015 | 1297 | 1084 | 805 | 2339 | 3664 | 1639 | 10385 | 304 | 66 | 300 | 333 | 178379 | 50982 | 0.399 |
| 411 | 430.86 | 249101 | 1.37 | 305 | 6774 | 68 | 60 | 6 | 1195 | 2642 | 1659 | 18277 | 153 | 405 | 814 | 148112 | 1327 | 1195 | 880 | 2338 | 3382 | 1523 | 10312 | 210 | 128 | 257 | 282 | 179661 | 50417 | 0.397 |
| 412 | 431.86 | 267319 | 1.34 | 208 | 6345 | 39 | 37 | 42 | 1141 | 2628 | 1715 | 18067 | 379 | 423 | 1078 | 210669 | 1284 | 1147 | 756 | 2530 | 3543 | 1561 | 10189 | 235 | 120 | 332 | 117 | 177665 | 50329 | 0.403 |
| 413 | 432.86 | 260581 | 1.19 | 304 | 6751 | 54 | 53 | 5 | 1121 | 2969 | 1787 | 18753 | 152 | 634 | 1430 | 181838 | 1262 | 1281 | 864 | 2578 | 3721 | 1714 | 10906 | 486 | 21 | 272 | 290 | 177666 | 51362 | 0.4 |
| 414 | 433.86 | 261343 | 1.24 | 291 | 6678 | 43 | 60 | 8 | 1173 | 2875 | 1844 | 19516 | 397 | 505 | 1518 | 179310 | 1398 | 1311 | 945 | 2381 | 3481 | 1604 | 10829 | 314 | 107 | 333 | 445 | 176527 | 51214 | 0.401 |
| 415 | 434.86 | 256376 | 1.31 | 309 | 6171 | 64 | 10 | 0 | 1172 | 2645 | 1733 | 17665 | 287 | 236 | 1419 | 156040 | 1328 | 1189 | 900 | 2320 | 3617 | 1861 | 11505 | 325 | 132 | 310 | 150 | 182357 | 52075 | 0.402 |
| 416 | 435.86 | 263066 | 1.31 | 270 | 6088 | 60 | 32 | 0 | 1118 | 2711 | 1732 | 18650 | 197 | 501 | 1632 | 174238 | 1294 | 1153 | 795 | 2760 | 3794 | 1646 | 10855 | 272 | 108 | 241 | 124 | 180991 | 51597 | 0.405 |
| 417 | 436.86 | 250582 | 1.32 | 268 | 5861 | 50 | 40 | 0 | 1275 | 2722 | 1685 | 17726 | 231 | 417 | 1540 | 172262 | 1235 | 1106 | 833 | 2470 | 3565 | 1536 | 9689 | 351 | 84 | 224 | 228 | 176286 | 50279 | 0.394 |
| 418 | 437.86 | 250139 | 1.31 | 262 | 6056 | 77 | 80 | 35 | 1176 | 2655 | 1752 | 17742 | 418 | 379 | 1731 | 175705 | 1345 | 992 | 955 | 2497 | 3465 | 1813 | 10135 | 286 | 100 | 272 | 410 | 174201 | 49933 | 0.393 |
| 419 | 438.86 | 248930 | 1.33 | 295 | 5703 | 46 | 38 | 0 | 1157 | 2775 | 1669 | 17728 | 272 | 1116 | 1567 | 184118 | 1241 | 1084 | 933 | 2539 | 3331 | 1552 | 10505 | 224 | 122 | 252 | 369 | 171114 | 49241 | 0.391 |
| 420 | 439.86 | 255941 | 1.29 | 282 | 5818 | 87 | 72 | 0 | 1066 | 2715 | 1779 | 17992 | 298 | 497 | 1923 | 201661 | 1371 | 1090 | 866 | 2559 | 3625 | 1366 | 9719 | 257 | 150 | 252 | 385 | 170956 | 49919 | 0.394 |
| 421 | 440.86 | 261150 | 1.32 | 275 | 6011 | 40 | 45 | 0 | 1176 | 2856 | 1767 | 19560 | 413 | 609 | 2424 | 211104 | 1218 | 977 | 715 | 2847 | 3935 | 1658 | 9583 | 311 | 126 | 307 | 491 | 171356 | 49983 | 0.396 |
| 422 | 441.86 | 263463 | 1.37 | 313 | 5628 | 74 | 37 | 0 | 1177 | 2817 | 1886 | 17496 | 313 | 686 | 2416 | 220749 | 1241 | 1099 | 848 | 2522 | 3544 | 1762 | 10033 | 248 | 157 | 339 | 617 | 170054 | 49986 | 0.397 |
| 423 | 442.86 | 297731 | 1.41 | 355 | 5560 | 63 | 88 | 22 | 1156 | 2960 | 1855 | 18461 | 317 | 769 | 3337 | 332676 | 1204 | 1084 | 904 | 2818 | 3218 | 1295 | 9133 | 309 | 137 | 383 | 421 | 164190 | 47947 | 0.41 |
| 424 | 443.86 | 270563 | 1.25 | 298 | 6237 | 110 | 63 | 10 | 1165 | 2890 | 1808 | 18198 | 310 | 520 | 3302 | 210664 | 1406 | 1255 | 925 | 2699 | 3930 | 1722 | 10094 | 234 | 166 | 335 | 470 | 177283 | 51394 | 0.405 |
| 425 | 444.86 | 267314 | 1.31 | 318 | 5890 | 82 | 26 | 23 | 1191 | 2934 | 2057 | 18275 | 359 | 701 | 3675 | 220701 | 1487 | 1203 | 900 | 2474 | 3830 | 1698 | 10236 | 330 | 169 | 343 | 537 | 172148 | 50298 | 0.399 |
| 426 | 445.86 | 284039 | 1.27 | 361 | 5794 | 56 | 41 | 96 | 1209 | 3038 | 2449 | 20884 | 196 | 729 | 5722 | 243330 | 1468 | 1146 | 904 | 2602 | 3891 | 2120 | 10197 | 173 | 270 | 412 | 489 | 175638 | 50974 | 0.411 |
| 427 | 446.86 | 283528 | 1.32 | 351 | 6194 | 95 | 54 | 0 | 1118 | 3110 | 2198 | 19704 | 353 | 504 | 3340 | 230005 | 1347 | 1158 | 853 | 3040 | 4050 | 1880 | 10192 | 213 | 233 | 308 | 310 | 180934 | 51200 | 0.412 |
| 428 | 447.86 | 276831 | 1.42 | 262 | 5987 | 100 | 69 | 10 | 1204 | 2944 | 2118 | 20635 | 153 | 549 | 3532 | 234428 | 1289 | 1246 | 851 | 2728 | 4119 | 1789 | 9979 | 395 | 107 | 298 | 535 | 176672 | 50091 | 0.406 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.016214;  F-slope= 0.009738; E-offset= 0.075206

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 429 | 448.86 | 256028 | 1.28 | 266 | 6020 | 121 | 18 | 0 | 1204 | 2787 | 1911 | 19093 | 323 | 460 | 1584 | 199945 | 1307 | 1202 | 859 | 2450 | 3837 | 1779 | 9694 | 164 | 197 | 303 | 430 | 171625 | 48626 | 0.393 |
| 430 | 449.86 | 250056 | 1.32 | 315 | 5761 | 32 | 22 | 0 | 1254 | 2702 | 1679 | 18235 | 303 | 392 | 1532 | 186636 | 1273 | 1085 | 798 | 2407 | 3427 | 1346 | 8869 | 197 | 156 | 290 | 310 | 171196 | 49172 | 0.391 |
| 431 | 450.86 | 262014 | 1.33 | 298 | 5922 | 73 | 93 | 0 | 1124 | 2767 | 1792 | 18230 | 260 | 1325 | 1466 | 191246 | 1229 | 995 | 872 | 3070 | 3908 | 1881 | 9468 | 242 | 105 | 320 | 469 | 178545 | 51528 | 0.402 |
| 432 | 451.86 | 279645 | 1.24 | 330 | 6217 | 56 | 25 | 0 | 1146 | 3004 | 1876 | 19585 | 281 | 712 | 1665 | 219829 | 1377 | 1142 | 921 | 2943 | 3984 | 1731 | 10122 | 178 | 187 | 340 | 331 | 179130 | 51768 | 0.413 |
| 433 | 452.86 | 271592 | 1.31 | 273 | 6075 | 58 | 56 | 0 | 1203 | 2827 | 1732 | 20114 | 271 | 802 | 1451 | 210525 | 1237 | 1117 | 842 | 2931 | 3821 | 1609 | 9684 | 257 | 191 | 302 | 491 | 175557 | 50859 | 0.406 |
| 434 | 453.86 | 264548 | 1.36 | 309 | 5835 | 61 | 0 | 0 | 1257 | 3080 | 1725 | 19198 | 368 | 674 | 1361 | 235342 | 1227 | 1213 | 953 | 2589 | 3514 | 1590 | 9343 | 319 | 141 | 407 | 183 | 166451 | 49188 | 0.395 |
| 435 | 454.86 | 266141 | 1.28 | 318 | 5798 | 121 | 22 | 0 | 1188 | 2919 | 1770 | 19106 | 291 | 692 | 1141 | 216633 | 1247 | 1158 | 996 | 2595 | 4008 | 1760 | 9364 | 356 | 108 | 302 | 469 | 173643 | 50765 | 0.4 |
| 436 | 455.86 | 262399 | 1.22 | 289 | 5709 | 58 | 25 | 0 | 1313 | 3117 | 1855 | 19187 | 360 | 713 | 1597 | 242896 | 1226 | 1148 | 927 | 2618 | 3623 | 1665 | 8923 | 363 | 109 | 346 | 225 | 165344 | 47426 | 0.391 |
| 437 | 456.86 | 270886 | 1.29 | 299 | 5414 | 91 | 61 | 4 | 1244 | 3071 | 1708 | 18784 | 291 | 822 | 2414 | 260831 | 1313 | 1086 | 848 | 2729 | 3879 | 1809 | 8864 | 245 | 151 | 330 | 358 | 166557 | 47581 | 0.396 |
| 438 | 457.86 | 273113 | 1.31 | 328 | 5581 | 61 | 34 | 0 | 1251 | 3184 | 1722 | 18571 | 313 | 962 | 2183 | 252312 | 1261 | 1141 | 910 | 2774 | 3901 | 1376 | 8616 | 148 | 174 | 369 | 456 | 170004 | 49162 | 0.401 |
| 439 | 458.86 | 277643 | 1.35 | 252 | 5570 | 128 | 46 | 12 | 1245 | 3143 | 1765 | 18326 | 441 | 1723 | 2123 | 241194 | 1282 | 1163 | 981 | 3232 | 4008 | 1460 | 8832 | 294 | 106 | 293 | 464 | 175289 | 50529 | 0.407 |
| 440 | 459.86 | 275493 | 1.38 | 329 | 5291 | 113 | 42 | 0 | 1280 | 3009 | 1899 | 17936 | 468 | 1524 | 2647 | 242417 | 1196 | 1102 | 884 | 3061 | 3835 | 1732 | 9483 | 158 | 217 | 340 | 545 | 173641 | 49968 | 0.404 |
| 441 | 460.86 | 281160 | 1.33 | 318 | 5362 | 78 | 58 | 9 | 1329 | 3186 | 1849 | 19560 | 363 | 1367 | 2400 | 256555 | 1328 | 1232 | 742 | 3105 | 3991 | 1784 | 8655 | 303 | 147 | 347 | 433 | 173737 | 50153 | 0.407 |
| 442 | 461.86 | 286829 | 1.34 | 364 | 5506 | 139 | 48 | 17 | 1225 | 3259 | 1829 | 18331 | 334 | 1158 | 1517 | 269613 | 1298 | 1107 | 815 | 3095 | 4012 | 1630 | 8758 | 340 | 81 | 337 | 620 | 173523 | 50474 | 0.411 |
| 443 | 462.86 | 280219 | 1.3 | 369 | 5286 | 83 | 46 | 10 | 1248 | 3245 | 1906 | 18176 | 480 | 816 | 1592 | 272264 | 1375 | 1278 | 785 | 2522 | 3979 | 1919 | 8521 | 366 | 91 | 407 | 521 | 168914 | 49535 | 0.405 |
| 444 | 463.86 | 278306 | 1.35 | 322 | 5493 | 123 | 63 | 0 | 1163 | 3110 | 1845 | 19104 | 310 | 891 | 1263 | 246423 | 1297 | 1228 | 868 | 2938 | 4037 | 1601 | 8866 | 282 | 122 | 220 | 632 | 175104 | 50496 | 0.408 |
| 445 | 464.86 | 275011 | 1.42 | 323 | 5233 | 135 | 51 | 0 | 1150 | 3193 | 1928 | 18426 | 282 | 515 | 1451 | 240591 | 1213 | 1205 | 873 | 2712 | 3924 | 1652 | 9291 | 357 | 85 | 312 | 288 | 173364 | 49640 | 0.406 |
| 446 | 465.86 | 279209 | 1.3 | 286 | 5157 | 91 | 65 | 34 | 1275 | 2966 | 1748 | 18031 | 336 | 557 | 1427 | 237082 | 1219 | 1182 | 841 | 3027 | 3904 | 1979 | 8660 | 371 | 92 | 359 | 512 | 178852 | 51305 | 0.411 |
| 447 | 466.86 | 286440 | 1.31 | 303 | 5017 | 77 | 55 | 0 | 1312 | 2842 | 1904 | 17449 | 307 | 824 | 1597 | 231730 | 1239 | 1242 | 1064 | 3471 | 4410 | 1793 | 9895 | 263 | 127 | 240 | 344 | 183984 | 52673 | 0.419 |
| 448 | 467.86 | 280204 | 1.41 | 269 | 4933 | 83 | 27 | 0 | 1402 | 2991 | 1844 | 17650 | 398 | 445 | 1915 | 233588 | 1216 | 1256 | 826 | 2951 | 4242 | 1716 | 9598 | 196 | 159 | 276 | 377 | 181833 | 51633 | 0.413 |
| 449 | 468.86 | 251899 | 1.29 | 320 | 4742 | 88 | 65 | 0 | 1471 | 2770 | 1646 | 17982 | 319 | 426 | 1974 | 225506 | 1204 | 1204 | 726 | 2786 | 3853 | 1879 | 8562 | 280 | 122 | 278 | 322 | 167571 | 48220 | 0.387 |
| 450 | 469.86 | 237415 | 1.27 | 278 | 4774 | 86 | 5 | 23 | 1565 | 2630 | 1649 | 16384 | 206 | 510 | 1897 | 237152 | 1089 | 1134 | 778 | 2422 | 3287 | 2008 | 7809 | 247 | 120 | 236 | 416 | 157125 | 45550 | 0.369 |
| 451 | 470.86 | 225199 | 1.3 | 288 | 4254 | 95 | 29 | 10 | 1408 | 2317 | 1440 | 14243 | 320 | 319 | 1421 | 198307 | 1134 | 1079 | 851 | 2477 | 3610 | 1595 | 8288 | 214 | 52 | 217 | 314 | 157300 | 45916 | 0.367 |
| 452 | 471.86 | 215585 | 1.29 | 245 | 4121 | 102 | 64 | 0 | 1488 | 2231 | 1422 | 13234 | 299 | 360 | 1050 | 189464 | 1164 | 1041 | 664 | 2235 | 3437 | 1425 | 8390 | 176 | 91 | 225 | 428 | 154485 | 45444 | 0.36 |
| 453 | 472.86 | 213665 | 1.33 | 334 | 5178 | 75 | 45 | 22 | 1372 | 2544 | 1718 | 15423 | 326 | 409 | 918 | 217521 | 1170 | 1081 | 774 | 2309 | 3168 | 1446 | 7936 | 183 | 129 | 261 | 346 | 144015 | 41703 | 0.352 |
| 454 | 473.86 | 185624 | 1.3 | 167 | 3150 | 116 | 39 | 73 | 1799 | 1606 | 1349 | 9978 | 18 | 235 | 449 | 125810 | 930 | 882 | 517 | 1840 | 2873 | 1718 | 7592 | 203 | 79 | 177 | 8 | 153149 | 43799 | 0.344 |
| 455 | 474.86 | 238150 | 1.36 | 210 | 5200 | 134 | 48 | 28 | 1112 | 2339 | 1633 | 14475 | 360 | 436 | 683 | 173888 | 1226 | 1067 | 771 | 2517 | 3794 | 1847 | 10094 | 180 | 97 | 266 | 274 | 169990 | 48984 | 0.384 |
| 456 | 475.86 | 247852 | 1.23 | 334 | 6543 | 85 | 30 | 105 | 1283 | 2828 | 1701 | 17183 | 296 | 610 | 738 | 195552 | 1172 | 1179 | 808 | 2462 | 3622 | 1749 | 9586 | 333 | 102 | 271 | 94 | 169187 | 48426 | 0.388 |
| 457 | 476.86 | 247270 | 1.33 | 235 | 5354 | 50 | 74 | 105 | 1350 | 2915 | 1845 | 17415 | 287 | 450 | 763 | 213011 | 1114 | 1146 | 826 | 2545 | 3865 | 1549 | 8445 | 307 | 30 | 191 | 459 | 166381 | 47787 | 0.384 |
| 458 | 477.86 | 246584 | 1.23 | 186 | 4574 | 75 | 35 | 26 | 1383 | 2796 | 1760 | 17296 | 350 | 398 | 877 | 206567 | 1204 | 1264 | 984 | 2832 | 4129 | 1795 | 8403 | 254 | 116 | 323 | 290 | 169365 | 48334 | 0.384 |
| 459 | 478.86 | 253396 | 1.29 | 265 | 6192 | 115 | 27 | 0 | 1319 | 3063 | 1908 | 19207 | 306 | 449 | 775 | 215487 | 1182 | 1201 | 818 | 2921 | 3621 | 1602 | 8856 | 216 | 143 | 345 | 307 | 168104 | 48984 | 0.389 |
| 460 | 479.86 | 270384 | 1.31 | 266 | 5638 | 119 | 36 | 45 | 1232 | 3029 | 1834 | 17824 | 317 | 765 | 718 | 217013 | 1228 | 1087 | 988 | 2705 | 3964 | 1736 | 8906 | 210 | 129 | 258 | 405 | 177867 | 51322 | 0.406 |
| 461 | 480.86 | 222454 | 1.26 | 132 | 2414 | 92 | 45 | 23 | 1069 | 1305 | 1464 | 8165 | 132 | 178 | 368 | 116592 | 1156 | 931 | 740 | 2442 | 3787 | 2103 | 9503 | 119 | 40 | 94 | 175 | 179756 | 51977 | 0.39 |
| 462 | 481.86 | 187145 | 2.34 | 129 | 75 | 130 | 62 | 75 | 658 | 69 | 1424 | 338 | 21 | 0 | 0 | 27971 | 991 | 720 | 744 | 2829 | 4210 | 2005 | 9414 | 0 | 0 | 0 | 0 | 185167 | 52362 | 0.38 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.016214;  F-slope= 0.009738; E-offset= 0.075206

TP-151

| | position | cps | MSE | Al | Si | P | S | Cl | Ar | K | Ca | Ti | V | Cr | Mn | Fe | Ni | Cu | Zn | Rb | Sr | Y | Zr | Ba | Ce | Sm | Pb | Mo inc | Mo coh | Dt |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 8.57 | 212254 | 1.32 | 176 | 3943 | 146 | 106 | 15 | 1492 | 1498 | 2334 | 8598 | 130 | 250 | 1670 | 97543 | 1090 | 1292 | 1824 | 1772 | 2143 | 1016 | 13337 | 237 | 64 | 185 | 780 | 173513 | 47062 | 0.375 |
| 1 | 9.57 | 218414 | 1.42 | 181 | 3579 | 130 | 34 | 32 | 1499 | 1498 | 2030 | 8290 | 158 | 213 | 1638 | 102587 | 1184 | 1352 | 1612 | 1821 | 1867 | 1579 | 14964 | 193 | 73 | 187 | 382 | 176972 | 47806 | 0.379 |
| 2 | 10.57 | 224041 | 1.39 | 150 | 3955 | 95 | 113 | 17 | 1358 | 1700 | 2521 | 10761 | 60 | 406 | 1526 | 106962 | 1151 | 1531 | 1739 | 1568 | 1580 | 1098 | 12939 | 279 | 67 | 175 | 558 | 178849 | 48069 | 0.382 |
| 3 | 11.57 | 234578 | 1.29 | 138 | 4607 | 36 | 54 | 27 | 1313 | 1829 | 2067 | 10938 | 116 | 278 | 1825 | 115621 | 1220 | 1383 | 1722 | 2165 | 2244 | 1514 | 14626 | 152 | 102 | 189 | 676 | 183580 | 50237 | 0.391 |
| 4 | 12.57 | 238393 | 1.27 | 133 | 4676 | 32 | 66 | 0 | 1381 | 1787 | 2307 | 10384 | 187 | 361 | 1872 | 116855 | 1260 | 1554 | 1706 | 2276 | 2252 | 1204 | 15107 | 228 | 95 | 251 | 467 | 182698 | 50186 | 0.394 |
| 5 | 13.57 | 245552 | 1.36 | 188 | 4870 | 85 | 98 | 0 | 1357 | 1866 | 2228 | 11943 | 288 | 368 | 2032 | 117770 | 1261 | 1422 | 1635 | 2069 | 2141 | 1618 | 15352 | 270 | 113 | 229 | 597 | 187408 | 51061 | 0.401 |
| 6 | 14.57 | 250932 | 1.26 | 169 | 4624 | 37 | 28 | 0 | 1249 | 1753 | 2296 | 10964 | 229 | 333 | 2331 | 119839 | 1231 | 1563 | 1976 | 2143 | 1920 | 1312 | 16052 | 177 | 77 | 216 | 824 | 189048 | 51803 | 0.405 |
| 7 | 15.57 | 259737 | 1.32 | 162 | 5069 | 86 | 82 | 62 | 1243 | 1848 | 2381 | 10719 | 241 | 228 | 2618 | 123603 | 1414 | 1373 | 1885 | 2118 | 2380 | 1559 | 14964 | 190 | 118 | 178 | 840 | 195229 | 52448 | 0.412 |
| 8 | 16.57 | 257755 | 1.31 | 122 | 5228 | 122 | 73 | 16 | 1207 | 1978 | 2378 | 11899 | 153 | 706 | 1960 | 119680 | 1299 | 1409 | 1991 | 2481 | 2272 | 1235 | 16793 | 178 | 87 | 189 | 805 | 194314 | 52568 | 0.411 |
| 9 | 17.57 | 258277 | 1.29 | 100 | 4960 | 120 | 53 | 9 | 1143 | 1899 | 2717 | 11046 | 44 | 678 | 1895 | 120548 | 1301 | 1593 | 2237 | 2358 | 2134 | 1114 | 15333 | 300 | 53 | 216 | 736 | 192760 | 51486 | 0.411 |
| 10 | 18.57 | 257436 | 1.29 | 175 | 5411 | 124 | 91 | 42 | 1235 | 1901 | 2512 | 10915 | 52 | 624 | 1946 | 122941 | 1335 | 1698 | 1778 | 2146 | 1960 | 1406 | 16060 | 240 | 115 | 227 | 530 | 190472 | 51487 | 0.41 |
| 11 | 19.57 | 257689 | 1.32 | 117 | 5418 | 37 | 110 | 7 | 1270 | 1951 | 2427 | 11403 | 62 | 366 | 1827 | 122467 | 1450 | 1573 | 1944 | 2320 | 2139 | 988 | 16002 | 273 | 79 | 246 | 829 | 192756 | 51835 | 0.411 |
| 12 | 20.57 | 256779 | 1.33 | 171 | 5228 | 81 | 50 | 0 | 1307 | 1899 | 2620 | 11546 | 127 | 457 | 1800 | 122111 | 1268 | 1504 | 2033 | 2311 | 2149 | 1346 | 14363 | 293 | 51 | 304 | 653 | 193346 | 51751 | 0.409 |
| 13 | 21.57 | 257120 | 1.4 | 142 | 5320 | 117 | 64 | 29 | 1196 | 1916 | 2267 | 11500 | 159 | 223 | 2086 | 121331 | 1170 | 1468 | 1848 | 2438 | 2152 | 1170 | 16866 | 213 | 131 | 207 | 566 | 191881 | 52146 | 0.41 |
| 14 | 22.57 | 262339 | 1.33 | 93 | 5347 | 105 | 81 | 0 | 1230 | 2018 | 2073 | 10462 | 256 | 326 | 2028 | 125032 | 1300 | 1339 | 1918 | 2456 | 2286 | 1455 | 15537 | 178 | 95 | 244 | 746 | 196736 | 53375 | 0.415 |
| 15 | 23.57 | 267390 | 1.25 | 187 | 5449 | 111 | 95 | 18 | 1199 | 2096 | 2368 | 12600 | 194 | 743 | 2134 | 134334 | 1362 | 1459 | 1987 | 2493 | 2235 | 1373 | 15263 | 308 | 92 | 226 | 566 | 195498 | 51812 | 0.417 |
| 16 | 24.57 | 263164 | 1.35 | 159 | 5643 | 116 | 59 | 14 | 1248 | 1979 | 2526 | 13298 | 157 | 246 | 2067 | 133117 | 1291 | 1440 | 2181 | 2279 | 2291 | 1307 | 16921 | 215 | 128 | 470 | 773 | 191474 | 52550 | 0.413 |
| 17 | 25.57 | 264294 | 1.33 | 152 | 5730 | 107 | 57 | 33 | 1249 | 1997 | 2226 | 13288 | 245 | 361 | 1922 | 132848 | 1386 | 1643 | 1886 | 2293 | 2219 | 1198 | 16758 | 210 | 103 | 286 | 599 | 193136 | 53463 | 0.413 |
| 18 | 26.57 | 265086 | 1.29 | 163 | 5784 | 95 | 77 | 35 | 1208 | 1899 | 2188 | 11741 | 216 | 460 | 1783 | 130469 | 1387 | 1418 | 1777 | 2499 | 2407 | 1380 | 15161 | 345 | 36 | 239 | 697 | 194692 | 53758 | 0.415 |
| 19 | 27.57 | 263792 | 1.35 | 147 | 5898 | 89 | 58 | 34 | 1227 | 1846 | 2049 | 10429 | 228 | 420 | 1841 | 127037 | 1328 | 1553 | 1962 | 1888 | 2200 | 1701 | 17048 | 307 | 52 | 236 | 672 | 194957 | 53433 | 0.416 |
| 20 | 28.57 | 261787 | 1.32 | 165 | 5403 | 45 | 47 | 17 | 1177 | 1955 | 2203 | 12589 | 108 | 470 | 2161 | 126031 | 1329 | 1326 | 1752 | 2151 | 2127 | 1315 | 16672 | 206 | 104 | 219 | 692 | 191989 | 52547 | 0.414 |
| 21 | 29.57 | 263183 | 1.21 | 141 | 5208 | 112 | 61 | 42 | 1298 | 1848 | 2287 | 12550 | 122 | 394 | 1931 | 142886 | 1405 | 1384 | 1780 | 2094 | 2132 | 1403 | 14106 | 290 | 101 | 244 | 836 | 191744 | 52308 | 0.412 |
| 22 | 30.57 | 261840 | 1.29 | 174 | 5238 | 137 | 34 | 20 | 1154 | 1998 | 2027 | 13898 | 179 | 362 | 1867 | 125620 | 1302 | 1377 | 1838 | 2240 | 1794 | 1315 | 15374 | 324 | 62 | 202 | 1009 | 195420 | 52843 | 0.414 |
| 23 | 31.57 | 266151 | 1.29 | 171 | 5253 | 99 | 57 | 30 | 1135 | 1971 | 1984 | 10682 | 204 | 190 | 2129 | 129257 | 1354 | 1530 | 1742 | 2443 | 2136 | 1685 | 16339 | 201 | 110 | 197 | 693 | 197011 | 53734 | 0.417 |
| 24 | 32.57 | 274053 | 1.27 | 156 | 5384 | 99 | 67 | 43 | 1225 | 1987 | 2111 | 12405 | 245 | 415 | 1793 | 136877 | 1366 | 1481 | 1768 | 2417 | 2288 | 1386 | 15780 | 130 | 127 | 200 | 896 | 201438 | 54067 | 0.423 |
| 25 | 33.57 | 272332 | 1.25 | 123 | 5280 | 131 | 61 | 16 | 1220 | 1985 | 2067 | 10837 | 222 | 348 | 1651 | 137366 | 1363 | 1551 | 2016 | 2353 | 2447 | 1478 | 15598 | 213 | 97 | 267 | 737 | 200575 | 53233 | 0.42 |
| 26 | 34.57 | 265595 | 1.3 | 155 | 5426 | 46 | 81 | 0 | 1271 | 1971 | 2214 | 11739 | 216 | 247 | 1809 | 134578 | 1363 | 1594 | 1726 | 2191 | 2069 | 1731 | 14721 | 227 | 106 | 251 | 727 | 196316 | 52332 | 0.414 |
| 27 | 35.57 | 255874 | 1.35 | 92 | 5381 | 82 | 66 | 0 | 1272 | 1832 | 2131 | 11367 | 145 | 288 | 1900 | 132146 | 1193 | 1514 | 1753 | 2372 | 1982 | 1285 | 16916 | 155 | 96 | 204 | 808 | 188513 | 51488 | 0.406 |
| 28 | 36.57 | 258938 | 1.36 | 199 | 5361 | 67 | 71 | 12 | 1365 | 1971 | 2231 | 12591 | 40 | 314 | 2052 | 128624 | 1425 | 1481 | 1766 | 2436 | 1922 | 1323 | 15842 | 273 | 46 | 252 | 921 | 192686 | 52258 | 0.409 |
| 29 | 37.57 | 259147 | 1.36 | 154 | 5634 | 102 | 59 | 25 | 1407 | 1983 | 2046 | 12162 | 250 | 397 | 1954 | 127232 | 1221 | 1852 | 1801 | 2166 | 1935 | 1312 | 14617 | 267 | 125 | 323 | 604 | 193495 | 52225 | 0.409 |
| 30 | 38.57 | 255408 | 1.31 | 164 | 5077 | 92 | 44 | 14 | 1399 | 2069 | 2104 | 12370 | 122 | 412 | 2209 | 129166 | 1214 | 1614 | 1901 | 2196 | 2095 | 1104 | 14513 | 250 | 37 | 198 | 813 | 190459 | 51670 | 0.406 |
| 31 | 39.57 | 249156 | 1.35 | 136 | 5252 | 103 | 79 | 12 | 1304 | 1925 | 1960 | 12416 | 146 | 478 | 2189 | 124422 | 1263 | 1593 | 1731 | 2247 | 1976 | 1300 | 15664 | 231 | 110 | 207 | 654 | 190258 | 50505 | 0.401 |
| 32 | 40.57 | 241654 | 1.34 | 122 | 5139 | 87 | 60 | 35 | 1382 | 1843 | 2025 | 10931 | 53 | 442 | 1985 | 118371 | 1319 | 1782 | 1679 | 2255 | 1936 | 1175 | 16232 | 285 | 66 | 230 | 509 | 182577 | 49873 | 0.395 |
| 33 | 41.57 | 243875 | 1.32 | 140 | 5216 | 80 | 45 | 30 | 1334 | 1808 | 1875 | 10322 | 93 | 385 | 2280 | 118597 | 1223 | 1451 | 1629 | 1974 | 2110 | 1531 | 14493 | 244 | 84 | 213 | 580 | 187902 | 50705 | 0.398 |
| 34 | 42.57 | 244942 | 1.33 | 157 | 5417 | 73 | 65 | 17 | 1305 | 1777 | 1793 | 12064 | 78 | 275 | 2037 | 120572 | 1319 | 1381 | 1591 | 2051 | 2135 | 1323 | 15235 | 206 | 94 | 182 | 781 | 187116 | 51102 | 0.398 |
| 35 | 43.57 | 243574 | 1.33 | 180 | 5415 | 80 | 32 | 0 | 1186 | 1865 | 1920 | 11972 | 131 | 343 | 2038 | 122948 | 1260 | 1315 | 1705 | 2393 | 2033 | 1007 | 15650 | 204 | 99 | 199 | 815 | 183821 | 49804 | 0.397 |
| 36 | 44.57 | 244235 | 1.33 | 139 | 5372 | 93 | 85 | 0 | 1192 | 1814 | 1771 | 12026 | 249 | 320 | 2178 | 121029 | 1217 | 1584 | 1650 | 2086 | 2041 | 1399 | 17373 | 227 | 82 | 138 | 768 | 183697 | 49797 | 0.397 |
| 37 | 45.57 | 246620 | 1.31 | 169 | 5030 | 73 | 53 | 0 | 1196 | 1873 | 1883 | 11782 | 226 | 239 | 2281 | 130110 | 1231 | 1432 | 2004 | 2178 | 1833 | 1384 | 15720 | 228 | 84 | 204 | 656 | 183862 | 50324 | 0.398 |
| 38 | 46.57 | 245606 | 1.29 | 145 | 5580 | 96 | 69 | 0 | 1149 | 1904 | 1863 | 12683 | 270 | 364 | 2515 | 123715 | 1315 | 1352 | 1480 | 2214 | 1777 | 1100 | 15701 | 197 | 119 | 267 | 874 | 183669 | 50956 | 0.397 |
| 39 | 47.57 | 244277 | 1.31 | 144 | 5377 | 66 | 56 | 23 | 1138 | 1806 | 1898 | 10314 | 164 | 226 | 1961 | 118440 | 1380 | 1383 | 1761 | 2248 | 1902 | 1374 | 14568 | 177 | 128 | 171 | 899 | 187003 | 51127 | 0.397 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 48.57 | 248668 | 1.27 | 151 | 5282 | 81 | 35 | 11 | 1188 | 1909 | 1916 | 10305 | 237 | 380 | 1898 | 123685 | 1328 | 1472 | 1759 | 2293 | 1894 | 1107 | 15136 | 383 | 8 | 283 | 739 | 186319 | 51596 | 0.401 |
| 41 | 49.57 | 238453 | 1.25 | 145 | 4957 | 142 | 56 | 0 | 1216 | 1728 | 1691 | 10617 | 123 | 547 | 2120 | 113321 | 1297 | 1325 | 1476 | 2097 | 1781 | 1250 | 13804 | 184 | 89 | 255 | 868 | 187075 | 50335 | 0.394 |
| 42 | 50.57 | 243519 | 1.23 | 213 | 5042 | 96 | 51 | 51 | 1263 | 1780 | 1884 | 10156 | 93 | 327 | 1830 | 120860 | 1286 | 1249 | 1540 | 2565 | 1678 | 1073 | 14236 | 268 | 71 | 167 | 724 | 185879 | 50353 | 0.397 |
| 43 | 51.57 | 250326 | 1.29 | 155 | 5633 | 60 | 69 | 43 | 1302 | 1959 | 1830 | 11244 | 263 | 339 | 1607 | 125447 | 1322 | 1433 | 1489 | 2137 | 1762 | 1576 | 16104 | 142 | 159 | 224 | 783 | 187421 | 50806 | 0.402 |
| 44 | 52.57 | 250526 | 1.36 | 228 | 5414 | 60 | 27 | 0 | 1259 | 1873 | 1865 | 11208 | 266 | 709 | 1797 | 136282 | 1306 | 1428 | 1485 | 2373 | 2031 | 1274 | 15812 | 139 | 137 | 253 | 783 | 184345 | 50667 | 0.399 |
| 45 | 53.57 | 241768 | 1.27 | 128 | 4937 | 113 | 39 | 0 | 1159 | 1680 | 1712 | 11069 | 188 | 715 | 1555 | 117692 | 1257 | 1493 | 1374 | 2216 | 2144 | 1362 | 15403 | 190 | 76 | 234 | 730 | 185851 | 49878 | 0.396 |
| 46 | 54.57 | 247274 | 1.33 | 168 | 5033 | 68 | 38 | 0 | 1286 | 1761 | 1729 | 11267 | 230 | 424 | 1679 | 117116 | 1227 | 1350 | 1527 | 2153 | 1919 | 1317 | 16420 | 198 | 108 | 211 | 782 | 187811 | 51286 | 0.401 |
| 47 | 55.57 | 246567 | 1.35 | 185 | 5070 | 85 | 73 | 11 | 1221 | 1826 | 1903 | 11960 | 210 | 301 | 1749 | 126526 | 1208 | 1399 | 1561 | 2318 | 2137 | 1481 | 13875 | 203 | 74 | 267 | 841 | 187412 | 50400 | 0.399 |
| 48 | 56.57 | 253148 | 1.32 | 140 | 5357 | 67 | 40 | 27 | 1162 | 1896 | 1832 | 11904 | 89 | 380 | 1834 | 136808 | 1222 | 1430 | 1545 | 2540 | 1941 | 1534 | 15307 | 305 | 64 | 275 | 1013 | 186501 | 51389 | 0.402 |
| 49 | 57.57 | 253427 | 1.32 | 156 | 5354 | 53 | 100 | 0 | 1154 | 1989 | 1857 | 12055 | 236 | 507 | 1800 | 138350 | 1322 | 1298 | 1733 | 2418 | 1879 | 1145 | 15706 | 148 | 152 | 299 | 1062 | 185270 | 51085 | 0.401 |
| 50 | 58.57 | 250682 | 1.28 | 118 | 5114 | 54 | 77 | 10 | 1222 | 1959 | 1915 | 11788 | 108 | 467 | 1745 | 127112 | 1285 | 1425 | 1551 | 2095 | 1775 | 1183 | 16986 | 274 | 90 | 309 | 733 | 187124 | 51007 | 0.401 |
| 51 | 59.57 | 263446 | 1.36 | 116 | 5115 | 99 | 80 | 28 | 1276 | 1851 | 1823 | 10862 | 200 | 343 | 2072 | 165562 | 1380 | 1353 | 1709 | 1976 | 2123 | 1360 | 16907 | 256 | 110 | 271 | 699 | 186592 | 51146 | 0.406 |
| 52 | 60.57 | 247343 | 1.25 | 178 | 5157 | 59 | 91 | 20 | 1233 | 1784 | 1942 | 12319 | 146 | 551 | 1741 | 128363 | 1298 | 1508 | 1774 | 2137 | 1934 | 1101 | 13807 | 204 | 121 | 258 | 759 | 184885 | 50516 | 0.398 |
| 53 | 61.57 | 233064 | 1.28 | 175 | 4519 | 42 | 55 | 36 | 1227 | 1641 | 1853 | 10201 | 185 | 506 | 1495 | 108577 | 1109 | 1288 | 1620 | 1771 | 1898 | 1293 | 15193 | 204 | 78 | 208 | 677 | 182633 | 50408 | 0.389 |
| 54 | 62.57 | 245429 | 1.3 | 143 | 5195 | 79 | 50 | 0 | 1246 | 2009 | 2050 | 12963 | 212 | 409 | 1763 | 127983 | 1258 | 1326 | 1609 | 1982 | 1855 | 1304 | 13951 | 271 | 77 | 192 | 587 | 184057 | 50197 | 0.396 |
| 55 | 63.57 | 257270 | 1.25 | 165 | 5494 | 100 | 52 | 6 | 1211 | 1936 | 1828 | 11639 | 196 | 524 | 1633 | 139837 | 1260 | 1335 | 1660 | 2275 | 1832 | 1381 | 17372 | 246 | 94 | 274 | 894 | 185107 | 51215 | 0.406 |
| 56 | 64.57 | 255106 | 1.36 | 188 | 5348 | 113 | 41 | 34 | 1203 | 1917 | 1781 | 11749 | 140 | 500 | 1591 | 128466 | 1421 | 1422 | 1551 | 2157 | 1906 | 1673 | 16158 | 238 | 100 | 266 | 587 | 188888 | 51659 | 0.405 |
| 57 | 65.57 | 257178 | 1.33 | 84 | 5309 | 95 | 57 | 0 | 1217 | 1766 | 1770 | 12331 | 258 | 555 | 1787 | 131224 | 1418 | 1498 | 1581 | 2215 | 2152 | 1252 | 17085 | 288 | 91 | 270 | 1026 | 190310 | 51939 | 0.406 |
| 58 | 66.57 | 262482 | 1.31 | 174 | 5282 | 91 | 93 | 0 | 1161 | 1875 | 1754 | 13533 | 132 | 413 | 1764 | 134453 | 1221 | 1420 | 1561 | 2239 | 2115 | 1459 | 18828 | 202 | 72 | 270 | 679 | 190809 | 52567 | 0.411 |
| 59 | 67.57 | 264514 | 1.26 | 184 | 5353 | 89 | 59 | 0 | 1188 | 2073 | 1971 | 11892 | 264 | 363 | 1878 | 137606 | 1342 | 1408 | 1555 | 2229 | 2139 | 1882 | 17295 | 303 | 92 | 287 | 767 | 189632 | 52423 | 0.411 |
| 60 | 68.57 | 265258 | 1.39 | 186 | 5538 | 118 | 80 | 32 | 1169 | 2008 | 1702 | 11849 | 302 | 630 | 2298 | 146140 | 1358 | 1441 | 1606 | 2654 | 1992 | 1339 | 16492 | 205 | 137 | 229 | 795 | 187649 | 52458 | 0.411 |
| 61 | 69.57 | 261466 | 1.21 | 129 | 5375 | 96 | 73 | 0 | 1097 | 1871 | 1656 | 11892 | 227 | 429 | 1888 | 141296 | 1249 | 1319 | 1461 | 2772 | 1869 | 1126 | 18175 | 132 | 153 | 237 | 747 | 188132 | 52306 | 0.408 |
| 62 | 70.57 | 263497 | 1.29 | 165 | 5656 | 78 | 59 | 0 | 1207 | 1932 | 1642 | 13794 | 85 | 354 | 1817 | 142429 | 1347 | 1484 | 1494 | 1928 | 1944 | 1103 | 15728 | 202 | 149 | 255 | 734 | 189831 | 52591 | 0.41 |
| 63 | 71.57 | 262214 | 1.34 | 140 | 5464 | 53 | 19 | 0 | 1155 | 1889 | 1653 | 15103 | 121 | 502 | 1656 | 136129 | 1283 | 1446 | 1697 | 2338 | 1800 | 1420 | 16594 | 283 | 63 | 277 | 757 | 189670 | 52579 | 0.41 |
| 64 | 72.57 | 260238 | 1.33 | 167 | 5412 | 132 | 93 | 15 | 1271 | 1879 | 1588 | 10867 | 182 | 1858 | 1732 | 134987 | 1254 | 1349 | 1613 | 2110 | 1874 | 1370 | 15197 | 200 | 130 | 261 | 697 | 190332 | 52443 | 0.409 |
| 65 | 73.57 | 261011 | 1.29 | 132 | 5479 | 74 | 57 | 22 | 1231 | 1957 | 1649 | 10451 | 277 | 533 | 1700 | 137258 | 1465 | 1310 | 1864 | 2690 | 2372 | 1300 | 16067 | 237 | 136 | 277 | 895 | 190850 | 51763 | 0.41 |
| 66 | 74.57 | 266592 | 1.36 | 138 | 5266 | 77 | 21 | 0 | 1155 | 1889 | 1634 | 12011 | 123 | 627 | 1726 | 136059 | 1413 | 1199 | 1621 | 2295 | 2303 | 1447 | 16150 | 227 | 98 | 317 | 799 | 193220 | 52409 | 0.415 |
| 67 | 75.57 | 266910 | 1.34 | 126 | 5377 | 48 | 79 | 31 | 1163 | 1881 | 1735 | 14903 | 208 | 422 | 1614 | 132050 | 1331 | 1448 | 1619 | 2255 | 2029 | 1244 | 15268 | 238 | 98 | 260 | 687 | 194645 | 53956 | 0.415 |
| 68 | 76.57 | 265398 | 1.37 | 189 | 5479 | 129 | 93 | 0 | 1130 | 2114 | 1633 | 12227 | 193 | 732 | 1602 | 134832 | 1332 | 1459 | 1637 | 2142 | 1822 | 1429 | 14937 | 309 | 85 | 305 | 904 | 193236 | 52529 | 0.413 |
| 69 | 77.57 | 267374 | 1.3 | 125 | 5339 | 38 | 81 | 0 | 1136 | 2021 | 1664 | 12047 | 370 | 686 | 1686 | 149421 | 1486 | 1387 | 1663 | 2039 | 1945 | 1363 | 16588 | 281 | 155 | 317 | 557 | 189280 | 52487 | 0.412 |
| 70 | 78.57 | 272639 | 1.39 | 113 | 5287 | 74 | 65 | 31 | 1128 | 1964 | 1763 | 13569 | 272 | 396 | 1822 | 167243 | 1307 | 1414 | 1721 | 2509 | 2262 | 1395 | 16425 | 370 | 77 | 265 | 1050 | 186654 | 52143 | 0.414 |
| 71 | 79.57 | 267953 | 1.3 | 103 | 5465 | 68 | 65 | 16 | 1180 | 2091 | 1687 | 12014 | 73 | 377 | 1844 | 141166 | 1392 | 1441 | 1709 | 2382 | 2168 | 1128 | 17894 | 264 | 254 | 312 | 704 | 191209 | 53068 | 0.415 |
| 72 | 80.57 | 264598 | 1.32 | 180 | 5537 | 90 | 65 | 42 | 1101 | 1924 | 1577 | 11809 | 288 | 350 | 1732 | 138302 | 1350 | 1328 | 1659 | 2160 | 2081 | 1223 | 15282 | 289 | 54 | 293 | 672 | 191440 | 53038 | 0.412 |
| 73 | 81.57 | 261984 | 1.29 | 190 | 5494 | 86 | 65 | 14 | 1144 | 1940 | 1631 | 11847 | 194 | 592 | 1798 | 138065 | 1329 | 1306 | 1578 | 2263 | 1927 | 1356 | 17603 | 245 | 71 | 248 | 687 | 189504 | 52094 | 0.41 |
| 74 | 82.57 | 263818 | 1.3 | 179 | 5380 | 52 | 78 | 70 | 1211 | 2035 | 1554 | 12895 | 247 | 272 | 1717 | 134942 | 1340 | 1410 | 1723 | 2394 | 2086 | 1366 | 15898 | 160 | 173 | 215 | 642 | 192215 | 53087 | 0.412 |
| 75 | 83.57 | 264339 | 1.27 | 188 | 5676 | 116 | 89 | 10 | 1168 | 1962 | 1676 | 10720 | 237 | 238 | 1679 | 136082 | 1353 | 1570 | 1494 | 2348 | 1881 | 1048 | 16755 | 267 | 43 | 224 | 831 | 190096 | 52697 | 0.412 |
| 76 | 84.57 | 268642 | 1.33 | 161 | 5627 | 74 | 22 | 0 | 1190 | 1899 | 1576 | 12125 | 197 | 1050 | 1680 | 158412 | 1271 | 1364 | 1501 | 2036 | 2009 | 1325 | 15035 | 263 | 105 | 305 | 631 | 189101 | 52821 | 0.412 |
| 77 | 85.57 | 268793 | 1.36 | 97 | 5513 | 113 | 41 | 18 | 1221 | 2026 | 1592 | 13690 | 206 | 435 | 1566 | 141230 | 1242 | 1417 | 1620 | 2014 | 1964 | 1285 | 15587 | 221 | 75 | 213 | 921 | 194566 | 53654 | 0.415 |
| 78 | 86.57 | 271808 | 1.33 | 120 | 5769 | 81 | 60 | 0 | 1195 | 2104 | 1664 | 13691 | 258 | 331 | 1531 | 141282 | 1465 | 1756 | 1833 | 2569 | 2171 | 1010 | 18067 | 201 | 80 | 251 | 823 | 191508 | 53536 | 0.417 |
| 79 | 87.57 | 258773 | 1.29 | 132 | 5592 | 56 | 19 | 0 | 1198 | 1903 | 1699 | 11435 | 201 | 390 | 1506 | 127980 | 1232 | 1512 | 1587 | 2275 | 1928 | 1409 | 15015 | 234 | 128 | 287 | 639 | 190901 | 52049 | 0.408 |
| 80 | 88.57 | 263117 | 1.31 | 175 | 5438 | 80 | 58 | 34 | 1180 | 1994 | 1756 | 12433 | 202 | 543 | 1897 | 143728 | 1319 | 1490 | 2167 | 2230 | 1896 | 1357 | 14244 | 308 | 124 | 290 | 648 | 190038 | 52139 | 0.409 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 81 | 89.57 | 255885 | 1.31 | 195 | 5468 | 12 | 77 | 0 | 1232 | 1816 | 1589 | 11805 | 147 | 407 | 1849 | 129218 | 1330 | 1465 | 1607 | 2167 | 2002 | 1437 | 14547 | 263 | 119 | 297 | 831 | 189933 | 52172 | 0.405 |
| 82 | 90.57 | 256112 | 1.24 | 179 | 5385 | 50 | 57 | 0 | 1199 | 1979 | 1784 | 12762 | 165 | 331 | 1829 | 129303 | 1337 | 1321 | 1840 | 2148 | 1993 | 1400 | 14147 | 290 | 138 | 302 | 612 | 190167 | 50897 | 0.405 |
| 83 | 91.57 | 251946 | 1.27 | 222 | 5481 | 94 | 116 | 24 | 1233 | 1888 | 1647 | 12435 | 305 | 297 | 1368 | 131295 | 1275 | 1371 | 1651 | 1988 | 2140 | 1160 | 13615 | 224 | 183 | 255 | 1033 | 188615 | 51408 | 0.401 |
| 84 | 92.57 | 261446 | 1.3 | 116 | 5420 | 69 | 50 | 0 | 1238 | 1916 | 1623 | 11756 | 294 | 288 | 1427 | 137833 | 1292 | 1286 | 1508 | 2134 | 1982 | 1623 | 19784 | 355 | 63 | 404 | 990 | 186263 | 52473 | 0.409 |
| 85 | 93.57 | 261035 | 1.24 | 164 | 5461 | 79 | 67 | 7 | 1150 | 2025 | 1616 | 11083 | 203 | 376 | 1371 | 137437 | 1314 | 1413 | 1714 | 2467 | 2030 | 1117 | 16028 | 187 | 98 | 293 | 771 | 190421 | 52907 | 0.408 |
| 86 | 94.57 | 262829 | 1.26 | 115 | 5621 | 56 | 75 | 0 | 1176 | 1865 | 1642 | 11406 | 229 | 304 | 1479 | 133336 | 1394 | 1316 | 1478 | 2362 | 1961 | 1168 | 16280 | 335 | 61 | 312 | 686 | 189573 | 52404 | 0.412 |
| 87 | 95.57 | 265969 | 1.34 | 231 | 5375 | 150 | 73 | 25 | 1222 | 2135 | 1666 | 13686 | 221 | 380 | 1394 | 141025 | 1412 | 1395 | 1676 | 2296 | 2034 | 1367 | 16608 | 195 | 214 | 266 | 805 | 191160 | 52777 | 0.412 |
| 88 | 96.57 | 270261 | 1.36 | 157 | 5374 | 61 | 51 | 27 | 1102 | 1986 | 1700 | 12520 | 196 | 306 | 1437 | 148000 | 1345 | 1340 | 1739 | 2392 | 2010 | 1284 | 16537 | 205 | 164 | 379 | 890 | 191270 | 52617 | 0.416 |
| 89 | 97.57 | 266766 | 1.27 | 84 | 5638 | 67 | 8 | 0 | 1158 | 1988 | 1535 | 11633 | 302 | 463 | 1183 | 140934 | 1369 | 1352 | 1682 | 2382 | 1811 | 1433 | 15393 | 278 | 49 | 350 | 783 | 192828 | 53146 | 0.413 |
| 90 | 98.57 | 264348 | 1.31 | 205 | 5603 | 85 | 58 | 0 | 1167 | 1906 | 1553 | 12332 | 153 | 1350 | 1457 | 137214 | 1442 | 1349 | 1633 | 2630 | 2087 | 1596 | 15339 | 346 | 59 | 306 | 785 | 190789 | 52440 | 0.412 |
| 91 | 99.57 | 264360 | 1.33 | 159 | 5428 | 119 | 30 | 0 | 1197 | 2073 | 1634 | 11662 | 233 | 832 | 1345 | 139511 | 1538 | 1223 | 1483 | 2236 | 2083 | 1424 | 15886 | 273 | 106 | 255 | 817 | 189954 | 53254 | 0.411 |
| 92 | 100.57 | 266830 | 1.3 | 119 | 5550 | 90 | 80 | 0 | 1193 | 1999 | 1567 | 12385 | 257 | 904 | 1451 | 146952 | 1393 | 1292 | 1580 | 2237 | 2319 | 1384 | 17034 | 233 | 123 | 240 | 599 | 190628 | 52844 | 0.412 |
| 93 | 101.57 | 268199 | 1.3 | 202 | 5467 | 66 | 68 | 10 | 1147 | 1989 | 1664 | 12606 | 261 | 322 | 1668 | 138529 | 1388 | 1375 | 1721 | 1819 | 2147 | 1314 | 19164 | 266 | 99 | 351 | 750 | 191938 | 53124 | 0.415 |
| 94 | 102.57 | 270161 | 1.3 | 162 | 5616 | 125 | 91 | 0 | 1204 | 1952 | 1566 | 13199 | 235 | 483 | 2196 | 139439 | 1445 | 1447 | 1571 | 2420 | 1918 | 1416 | 16523 | 221 | 90 | 251 | 695 | 193534 | 53500 | 0.416 |
| 95 | 103.57 | 277023 | 1.29 | 183 | 5813 | 58 | 69 | 32 | 1201 | 2063 | 1619 | 12450 | 136 | 464 | 3040 | 154603 | 1316 | 1350 | 1607 | 2157 | 1700 | 1873 | 16663 | 314 | 87 | 326 | 662 | 194274 | 53620 | 0.419 |
| 96 | 104.57 | 278260 | 1.29 | 131 | 5877 | 130 | 70 | 54 | 1229 | 2028 | 1512 | 12448 | 242 | 453 | 5157 | 149895 | 1529 | 1581 | 1754 | 2294 | 2011 | 1294 | 16745 | 182 | 170 | 309 | 758 | 194341 | 54230 | 0.421 |
| 97 | 105.57 | 279838 | 1.36 | 207 | 6246 | 85 | 34 | 13 | 1193 | 1960 | 1634 | 13879 | 98 | 429 | 5511 | 151760 | 1353 | 1428 | 1437 | 2408 | 1977 | 1216 | 17051 | 241 | 116 | 347 | 757 | 195297 | 53414 | 0.421 |
| 98 | 106.57 | 273141 | 1.35 | 161 | 6042 | 129 | 27 | 0 | 1249 | 1861 | 1556 | 17185 | 297 | 281 | 5835 | 155920 | 1393 | 1562 | 1618 | 2007 | 1973 | 1496 | 15595 | 376 | 38 | 313 | 807 | 192706 | 52736 | 0.414 |
| 99 | 107.57 | 270452 | 1.35 | 159 | 5932 | 57 | 32 | 0 | 1065 | 1729 | 1583 | 12384 | 160 | 357 | 4679 | 158721 | 1445 | 1367 | 1538 | 2441 | 2098 | 1320 | 17289 | 257 | 170 | 295 | 923 | 188448 | 53108 | 0.412 |
| 100 | 108.57 | 256490 | 1.33 | 173 | 5393 | 29 | 70 | 30 | 1214 | 1894 | 1469 | 11791 | 227 | 258 | 2863 | 139212 | 1431 | 1245 | 1517 | 2104 | 2064 | 1336 | 15704 | 227 | 71 | 308 | 574 | 187121 | 51609 | 0.404 |
| 101 | 109.57 | 261991 | 1.33 | 168 | 5537 | 55 | 76 | 64 | 1250 | 1916 | 1459 | 12577 | 134 | 436 | 2625 | 147414 | 1285 | 1291 | 1601 | 2025 | 2175 | 1417 | 14864 | 305 | 28 | 289 | 841 | 186984 | 52445 | 0.407 |
| 102 | 110.57 | 262365 | 1.35 | 185 | 5079 | 33 | 43 | 0 | 1205 | 1845 | 1544 | 12544 | 161 | 429 | 2148 | 142040 | 1382 | 1326 | 1505 | 2293 | 1927 | 1758 | 15165 | 239 | 103 | 261 | 591 | 191123 | 51237 | 0.409 |
| 103 | 111.57 | 261989 | 1.33 | 219 | 5203 | 83 | 86 | 24 | 1176 | 1856 | 1507 | 13431 | 84 | 330 | 1939 | 139658 | 1408 | 1461 | 1508 | 2256 | 2066 | 1533 | 16356 | 182 | 107 | 319 | 603 | 190178 | 52622 | 0.41 |
| 104 | 112.57 | 261613 | 1.32 | 158 | 5253 | 148 | 46 | 899 | 1282 | 1857 | 1645 | 13961 | 210 | 631 | 2184 | 135013 | 1288 | 1308 | 1574 | 2606 | 1888 | 1494 | 17049 | 207 | 102 | 340 | 682 | 191045 | 52560 | 0.41 |
| 105 | 113.57 | 263238 | 1.39 | 155 | 5191 | 54 | 34 | 0 | 1220 | 1724 | 1513 | 13122 | 195 | 1039 | 2450 | 141861 | 1353 | 1375 | 1429 | 2296 | 1866 | 1536 | 16351 | 250 | 122 | 369 | 610 | 190031 | 52567 | 0.41 |
| 106 | 114.57 | 264995 | 1.25 | 164 | 5174 | 50 | 87 | 0 | 1266 | 1900 | 1554 | 13418 | 242 | 557 | 1627 | 130979 | 1444 | 1273 | 1669 | 2319 | 2017 | 1272 | 15735 | 258 | 111 | 400 | 850 | 195691 | 53578 | 0.413 |
| 107 | 115.57 | 271786 | 1.38 | 191 | 5096 | 91 | 64 | 29 | 1154 | 1923 | 1767 | 12521 | 164 | 374 | 1747 | 142844 | 1277 | 1532 | 1708 | 2453 | 2310 | 1442 | 15249 | 274 | 87 | 285 | 985 | 197562 | 53569 | 0.417 |
| 108 | 116.57 | 266147 | 1.22 | 125 | 5372 | 114 | 46 | 0 | 1242 | 2009 | 1563 | 12728 | 242 | 278 | 2772 | 136897 | 1391 | 1336 | 1604 | 2306 | 2095 | 1348 | 15252 | 305 | 75 | 302 | 907 | 193816 | 53030 | 0.413 |
| 109 | 117.57 | 267048 | 1.3 | 168 | 5330 | 36 | 52 | 0 | 1242 | 1840 | 1659 | 12177 | 167 | 483 | 1570 | 140162 | 1285 | 1411 | 1801 | 2066 | 1916 | 1666 | 16675 | 264 | 108 | 440 | 705 | 191946 | 52830 | 0.413 |
| 110 | 118.57 | 266793 | 1.38 | 165 | 5258 | 69 | 60 | 17 | 1291 | 1846 | 1659 | 12745 | 196 | 482 | 1693 | 139794 | 1367 | 1402 | 1703 | 2137 | 1783 | 1232 | 17229 | 293 | 81 | 301 | 820 | 190289 | 52547 | 0.413 |
| 111 | 119.57 | 268720 | 1.34 | 177 | 5330 | 81 | 64 | 12 | 1192 | 1963 | 1664 | 12673 | 191 | 520 | 1710 | 141617 | 1462 | 1398 | 1657 | 2326 | 2034 | 1364 | 17349 | 210 | 125 | 308 | 776 | 191975 | 53095 | 0.415 |
| 112 | 120.57 | 268260 | 1.3 | 119 | 5362 | 116 | 76 | 308 | 1210 | 1872 | 1800 | 12155 | 176 | 483 | 1758 | 138814 | 1235 | 1378 | 1474 | 2517 | 2086 | 1374 | 17266 | 340 | 82 | 298 | 886 | 192445 | 53685 | 0.415 |
| 113 | 121.57 | 268406 | 1.25 | 149 | 5574 | 111 | 65 | 0 | 1237 | 1917 | 1518 | 11733 | 213 | 352 | 1514 | 146668 | 1381 | 1258 | 1436 | 1908 | 2085 | 1219 | 15037 | 247 | 82 | 251 | 816 | 190969 | 53010 | 0.413 |
| 114 | 122.57 | 284808 | 1.42 | 173 | 5445 | 137 | 78 | 140 | 1256 | 2044 | 1610 | 13871 | 168 | 534 | 1593 | 203482 | 1405 | 1304 | 1590 | 2384 | 2067 | 1483 | 17133 | 236 | 96 | 373 | 829 | 187420 | 52586 | 0.418 |
| 115 | 123.57 | 269303 | 1.34 | 149 | 5547 | 81 | 55 | 29 | 1265 | 1817 | 1586 | 12664 | 100 | 511 | 1712 | 150486 | 1274 | 1454 | 1413 | 2189 | 1951 | 1455 | 17416 | 125 | 169 | 265 | 477 | 190535 | 53490 | 0.413 |
| 116 | 124.57 | 267341 | 1.39 | 159 | 5471 | 30 | 56 | 14 | 1328 | 1965 | 1553 | 12229 | 283 | 400 | 1479 | 150903 | 1343 | 1222 | 1334 | 2060 | 1837 | 1022 | 16114 | 308 | 113 | 377 | 567 | 189890 | 52683 | 0.412 |
| 117 | 125.57 | 272047 | 1.31 | 223 | 5723 | 95 | 71 | 6 | 1234 | 1888 | 1570 | 16238 | 249 | 420 | 1765 | 154859 | 1385 | 1281 | 1472 | 2022 | 2029 | 1532 | 16234 | 247 | 140 | 281 | 889 | 190353 | 53470 | 0.415 |
| 118 | 126.57 | 270733 | 1.3 | 112 | 5848 | 65 | 54 | 0 | 1222 | 1906 | 1465 | 15091 | 203 | 551 | 1799 | 154117 | 1375 | 1243 | 1392 | 2505 | 1987 | 1560 | 17174 | 377 | 87 | 296 | 714 | 190182 | 52898 | 0.413 |
| 119 | 127.57 | 264992 | 1.34 | 177 | 5898 | 52 | 79 | 0 | 1231 | 1866 | 1435 | 12923 | 150 | 363 | 1560 | 142008 | 1199 | 1200 | 1545 | 2227 | 1857 | 1369 | 17032 | 193 | 155 | 400 | 779 | 188791 | 53111 | 0.411 |
| 120 | 128.57 | 262998 | 1.3 | 241 | 5692 | 49 | 68 | 0 | 1218 | 1929 | 1435 | 11966 | 132 | 428 | 1488 | 141669 | 1359 | 1209 | 1409 | 2072 | 2014 | 1407 | 15710 | 257 | 153 | 280 | 559 | 189560 | 52513 | 0.409 |
| 121 | 129.57 | 264971 | 1.35 | 181 | 5627 | 138 | 58 | 19 | 1197 | 1979 | 1562 | 13818 | 200 | 646 | 1908 | 147381 | 1306 | 1306 | 1410 | 2107 | 1913 | 1508 | 17926 | 254 | 192 | 304 | 508 | 186568 | 52767 | 0.41 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 122 | 130.57 | 263906 | 1.3 | 196 | 5607 | 97 | 79 | 0 | 1235 | 1918 | 1561 | 11928 | 145 | 395 | 1977 | 138137 | 1227 | 1299 | 1446 | 2272 | 1801 | 1322 | 17416 | 265 | 55 | 353 | 423 | 188212 | 53883 | 0.411 |
| 123 | 131.57 | 267341 | 1.3 | 207 | 5577 | 108 | 55 | 22 | 1218 | 1905 | 1600 | 14611 | 127 | 636 | 1933 | 141063 | 1276 | 1286 | 1452 | 2228 | 2140 | 1430 | 18123 | 369 | 55 | 299 | 478 | 192141 | 52746 | 0.413 |
| 124 | 132.57 | 267064 | 1.38 | 158 | 5789 | 70 | 24 | 23 | 1272 | 1978 | 1537 | 12918 | 208 | 382 | 2087 | 157026 | 1348 | 1358 | 1506 | 2446 | 1737 | 1416 | 17037 | 213 | 170 | 350 | 804 | 187454 | 52208 | 0.41 |
| 125 | 133.57 | 279204 | 1.35 | 147 | 5515 | 58 | 18 | 0 | 1198 | 1899 | 1366 | 13592 | 176 | 544 | 2202 | 217271 | 1336 | 1205 | 1312 | 2430 | 1759 | 1423 | 15356 | 270 | 105 | 363 | 899 | 181174 | 52208 | 0.411 |
| 126 | 134.57 | 282488 | 1.32 | 205 | 5561 | 120 | 73 | 26 | 1259 | 1989 | 1529 | 14515 | 163 | 933 | 2194 | 209495 | 1316 | 1335 | 1749 | 1939 | 1862 | 1459 | 16113 | 308 | 58 | 367 | 666 | 185077 | 51995 | 0.414 |
| 127 | 135.57 | 268015 | 1.44 | 179 | 5678 | 62 | 46 | 0 | 1271 | 1836 | 1437 | 14155 | 286 | 445 | 1536 | 156301 | 1332 | 1397 | 1315 | 2240 | 2018 | 1648 | 16837 | 247 | 99 | 312 | 759 | 188316 | 52373 | 0.41 |
| 128 | 136.57 | 266592 | 1.39 | 176 | 5650 | 94 | 82 | 318 | 1265 | 1883 | 1479 | 14294 | 156 | 420 | 1415 | 156956 | 1481 | 1278 | 1393 | 2440 | 2036 | 1305 | 17328 | 113 | 217 | 358 | 590 | 185359 | 52343 | 0.41 |
| 129 | 137.57 | 267002 | 1.32 | 161 | 5780 | 82 | 65 | 15 | 1283 | 1826 | 1461 | 12446 | 159 | 432 | 1458 | 146048 | 1410 | 1229 | 1478 | 2343 | 2089 | 1644 | 16195 | 358 | 98 | 303 | 719 | 191383 | 53193 | 0.412 |
| 130 | 138.57 | 280191 | 1.3 | 270 | 5674 | 127 | 37 | 5 | 1228 | 1818 | 1374 | 13276 | 133 | 1407 | 1656 | 184652 | 1442 | 1217 | 1528 | 2186 | 1807 | 1548 | 15930 | 267 | 122 | 345 | 607 | 189728 | 53003 | 0.418 |
| 131 | 139.57 | 271532 | 1.38 | 117 | 5895 | 66 | 45 | 12 | 1259 | 1810 | 1541 | 13107 | 160 | 684 | 1485 | 149729 | 1450 | 1250 | 1567 | 2163 | 1932 | 1221 | 18781 | 224 | 162 | 311 | 670 | 190617 | 53486 | 0.416 |
| 132 | 140.57 | 274334 | 1.36 | 168 | 5831 | 112 | 47 | 0 | 1209 | 1884 | 1453 | 12720 | 212 | 682 | 1778 | 163981 | 1397 | 1359 | 1387 | 2238 | 1780 | 1406 | 17452 | 259 | 144 | 308 | 482 | 189341 | 52121 | 0.416 |
| 133 | 141.57 | 271834 | 1.34 | 133 | 5790 | 74 | 28 | 22 | 1259 | 1823 | 1429 | 15604 | 160 | 418 | 1750 | 154000 | 1575 | 1378 | 1584 | 2338 | 2143 | 1139 | 17243 | 224 | 180 | 293 | 549 | 187493 | 53390 | 0.415 |
| 134 | 142.57 | 263278 | 1.39 | 192 | 6093 | 32 | 75 | 0 | 1146 | 1822 | 1345 | 12049 | 300 | 515 | 1518 | 137119 | 1475 | 1269 | 1347 | 2446 | 2034 | 1561 | 17021 | 204 | 66 | 312 | 414 | 188484 | 53579 | 0.411 |
| 135 | 143.57 | 268540 | 1.38 | 151 | 5971 | 140 | 55 | 21 | 1225 | 1740 | 1490 | 12648 | 92 | 453 | 1362 | 153965 | 1362 | 1002 | 1333 | 2081 | 2028 | 1435 | 17653 | 247 | 123 | 248 | 520 | 188508 | 53176 | 0.412 |
| 136 | 144.57 | 265012 | 1.3 | 186 | 5860 | 10 | 25 | 0 | 1197 | 1889 | 1410 | 13014 | 164 | 471 | 1388 | 139557 | 1333 | 1280 | 1404 | 2505 | 1852 | 1699 | 16867 | 211 | 149 | 217 | 304 | 190638 | 53132 | 0.412 |
| 137 | 145.57 | 265440 | 1.37 | 209 | 5591 | 96 | 37 | 0 | 1237 | 1692 | 1495 | 11690 | 252 | 687 | 1585 | 147493 | 1378 | 1227 | 1441 | 2082 | 1843 | 1523 | 16510 | 215 | 119 | 288 | 446 | 189570 | 52687 | 0.41 |
| 138 | 146.57 | 267410 | 1.38 | 113 | 5709 | 60 | 10 | 0 | 1177 | 1732 | 1447 | 15006 | 172 | 597 | 1714 | 144500 | 1326 | 1295 | 1422 | 2360 | 2026 | 1255 | 18392 | 406 | 102 | 441 | 702 | 188067 | 52763 | 0.414 |
| 139 | 147.57 | 268049 | 1.4 | 182 | 5815 | 116 | 6 | 0 | 1189 | 1904 | 1534 | 12587 | 199 | 585 | 2076 | 152802 | 1378 | 1242 | 1268 | 2293 | 1991 | 1658 | 18197 | 322 | 77 | 384 | 396 | 187197 | 52897 | 0.412 |
| 140 | 148.57 | 268138 | 1.27 | 199 | 5893 | 125 | 71 | 22 | 1245 | 1782 | 1441 | 13554 | 75 | 533 | 1584 | 153155 | 1391 | 1248 | 1344 | 2373 | 2008 | 1396 | 16738 | 302 | 18 | 317 | 524 | 187912 | 52947 | 0.412 |
| 141 | 149.57 | 269938 | 1.27 | 155 | 5888 | 57 | 95 | 0 | 1182 | 1649 | 1522 | 14687 | 152 | 324 | 1981 | 148697 | 1418 | 1194 | 1235 | 2215 | 1942 | 1299 | 16411 | 297 | 118 | 365 | 422 | 191588 | 53540 | 0.414 |
| 142 | 150.57 | 267434 | 1.36 | 205 | 5847 | 79 | 83 | 9 | 1202 | 1786 | 1417 | 12039 | 298 | 774 | 2159 | 144176 | 1271 | 1355 | 1441 | 2210 | 1924 | 1664 | 16283 | 229 | 66 | 281 | 562 | 192607 | 53202 | 0.414 |
| 143 | 151.57 | 269804 | 1.35 | 161 | 5646 | 80 | 6 | 0 | 1273 | 1738 | 1429 | 13208 | 193 | 336 | 1917 | 140889 | 1301 | 1443 | 1399 | 1901 | 1994 | 1528 | 17207 | 284 | 80 | 387 | 477 | 193346 | 53799 | 0.416 |
| 144 | 152.57 | 276067 | 1.27 | 174 | 5954 | 67 | 32 | 0 | 1139 | 1733 | 1625 | 12087 | 309 | 331 | 2106 | 142494 | 1271 | 1325 | 1489 | 2372 | 1980 | 1460 | 15048 | 286 | 82 | 358 | 398 | 197745 | 54337 | 0.422 |
| 145 | 153.57 | 278526 | 1.36 | 208 | 6203 | 30 | 42 | 10 | 1228 | 2005 | 1693 | 13268 | 81 | 347 | 3038 | 154928 | 1384 | 1454 | 1620 | 2034 | 1841 | 1344 | 16914 | 211 | 175 | 381 | 505 | 192728 | 53118 | 0.42 |
| 146 | 154.57 | 262762 | 1.24 | 116 | 5480 | 54 | 44 | 12 | 1226 | 1656 | 1440 | 12546 | 167 | 343 | 2802 | 137131 | 1333 | 1278 | 1319 | 2283 | 1952 | 1398 | 16095 | 236 | 73 | 243 | 501 | 192342 | 52787 | 0.411 |
| 147 | 155.57 | 272345 | 1.25 | 221 | 5691 | 71 | 90 | 0 | 1134 | 1733 | 1703 | 12054 | 221 | 686 | 3290 | 145233 | 1463 | 1308 | 1571 | 2083 | 2043 | 1452 | 16947 | 301 | 50 | 297 | 552 | 191499 | 53051 | 0.418 |
| 148 | 156.57 | 271413 | 1.3 | 150 | 5685 | 84 | 37 | 41 | 1146 | 1772 | 1650 | 11176 | 118 | 529 | 3638 | 135469 | 1358 | 1266 | 1442 | 2491 | 2192 | 1417 | 17872 | 373 | 70 | 287 | 570 | 194321 | 53851 | 0.419 |
| 149 | 157.57 | 269083 | 1.28 | 116 | 5824 | 84 | 50 | 0 | 1201 | 1854 | 1711 | 12708 | 195 | 390 | 4584 | 136558 | 1411 | 1397 | 1474 | 2379 | 1783 | 1371 | 16164 | 258 | 53 | 315 | 416 | 192133 | 53672 | 0.416 |
| 150 | 158.57 | 264786 | 1.32 | 188 | 5645 | 40 | 33 | 0 | 1113 | 1906 | 1584 | 11903 | 161 | 449 | 4457 | 132259 | 1330 | 1180 | 1473 | 2156 | 2010 | 1493 | 16301 | 338 | 68 | 275 | 560 | 192000 | 53480 | 0.413 |
| 151 | 159.57 | 264935 | 1.35 | 181 | 5683 | 111 | 51 | 0 | 1130 | 1765 | 1445 | 15314 | 164 | 549 | 3699 | 133140 | 1432 | 1138 | 1433 | 2154 | 1898 | 1366 | 16675 | 198 | 131 | 268 | 522 | 191386 | 53189 | 0.413 |
| 152 | 160.57 | 268040 | 1.35 | 180 | 5495 | 82 | 35 | 0 | 1137 | 1717 | 1580 | 12584 | 184 | 315 | 4125 | 144411 | 1290 | 1354 | 1478 | 2453 | 1791 | 1435 | 18171 | 294 | 137 | 200 | 544 | 190223 | 54117 | 0.414 |
| 153 | 161.57 | 267091 | 1.29 | 151 | 5712 | 113 | 57 | 67 | 1119 | 1804 | 1668 | 12259 | 329 | 311 | 4616 | 146952 | 1346 | 1331 | 1543 | 2222 | 2003 | 1511 | 15450 | 274 | 135 | 259 | 561 | 190862 | 52551 | 0.412 |
| 154 | 162.57 | 273567 | 1.27 | 113 | 6050 | 101 | 15 | 0 | 1214 | 1892 | 1773 | 12325 | 212 | 371 | 3854 | 146508 | 1471 | 1343 | 1625 | 2050 | 2021 | 1631 | 17096 | 282 | 122 | 341 | 462 | 193035 | 53538 | 0.417 |
| 155 | 163.57 | 284904 | 1.3 | 178 | 5790 | 125 | 118 | 185 | 1243 | 1968 | 1518 | 13912 | 153 | 403 | 5002 | 211249 | 1442 | 1264 | 1534 | 2076 | 1917 | 1429 | 16451 | 354 | 117 | 339 | 543 | 183512 | 52017 | 0.416 |
| 156 | 164.57 | 255320 | 1.31 | 202 | 5511 | 67 | 53 | 5 | 1204 | 1641 | 1466 | 13363 | 118 | 448 | 4426 | 144989 | 1396 | 1297 | 1471 | 2299 | 1761 | 1169 | 14951 | 315 | 71 | 259 | 553 | 184445 | 51457 | 0.401 |
| 157 | 165.57 | 257959 | 1.39 | 118 | 5607 | 69 | 55 | 0 | 1282 | 1728 | 1334 | 12732 | 149 | 287 | 3937 | 147202 | 1446 | 1237 | 1214 | 1898 | 1846 | 1463 | 15484 | 342 | 100 | 355 | 638 | 184138 | 52265 | 0.403 |
| 158 | 166.57 | 265791 | 1.26 | 169 | 5834 | 32 | 52 | 6 | 1203 | 1746 | 1329 | 12968 | 156 | 344 | 3884 | 150836 | 1406 | 1196 | 1296 | 2197 | 1736 | 1544 | 18151 | 284 | 107 | 324 | 327 | 188675 | 53044 | 0.409 |
| 159 | 167.57 | 261455 | 1.29 | 185 | 5968 | 96 | 88 | 52 | 1369 | 1611 | 1346 | 12546 | 263 | 274 | 4000 | 143802 | 1287 | 1360 | 1146 | 2193 | 1823 | 1367 | 17077 | 217 | 105 | 304 | 290 | 185449 | 52766 | 0.407 |
| 160 | 168.57 | 262056 | 1.35 | 152 | 5949 | 97 | 23 | 63 | 1202 | 1646 | 1389 | 12517 | 190 | 397 | 5121 | 156785 | 1353 | 1290 | 1164 | 1780 | 1755 | 1216 | 15617 | 274 | 147 | 279 | 361 | 184943 | 52536 | 0.406 |
| 161 | 169.57 | 262873 | 1.28 | 179 | 6120 | 75 | 12 | 0 | 1200 | 1752 | 1419 | 13923 | 146 | 358 | 4485 | 153156 | 1385 | 1210 | 1238 | 1946 | 1902 | 1283 | 16707 | 239 | 123 | 351 | 367 | 184034 | 52479 | 0.407 |
| 162 | 170.57 | 257311 | 1.37 | 172 | 5514 | 101 | 80 | 0 | 1239 | 1509 | 1365 | 14476 | 129 | 524 | 3777 | 144455 | 1355 | 1306 | 1215 | 1917 | 2047 | 1679 | 17093 | 234 | 104 | 302 | 521 | 184217 | 52554 | 0.404 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 163 | 171.57 | 263290 | 1.22 | 180 | 5913 | 82 | 54 | 9 | 1207 | 1655 | 1385 | 11868 | 165 | 460 | 5057 | 149647 | 1403 | 1402 | 1242 | 1856 | 1755 | 1607 | 17344 | 269 | 160 | 345 | 305 | 185421 | 52911 | 0.409 |
| 164 | 172.57 | 258110 | 1.35 | 177 | 5925 | 86 | 9 | 0 | 1163 | 1631 | 1275 | 13819 | 266 | 278 | 4544 | 148637 | 1271 | 1153 | 1294 | 2198 | 1853 | 1346 | 15064 | 233 | 122 | 378 | 557 | 184618 | 52175 | 0.403 |
| 165 | 173.57 | 263376 | 1.32 | 172 | 5967 | 144 | 0 | 0 | 1206 | 1616 | 1364 | 12197 | 245 | 283 | 5927 | 163860 | 1253 | 1184 | 1022 | 1811 | 1885 | 1544 | 16241 | 232 | 114 | 310 | 262 | 182724 | 52808 | 0.405 |
| 166 | 174.57 | 264407 | 1.32 | 135 | 6031 | 106 | 16 | 0 | 1165 | 1556 | 1184 | 12132 | 190 | 452 | 6777 | 155421 | 1324 | 1117 | 1169 | 1873 | 1819 | 1677 | 17144 | 208 | 99 | 337 | 327 | 185027 | 52735 | 0.407 |
| 167 | 175.57 | 266949 | 1.34 | 165 | 6039 | 91 | 42 | 0 | 1228 | 1687 | 1271 | 12804 | 359 | 443 | 6721 | 176556 | 1202 | 1157 | 1191 | 2034 | 1891 | 1498 | 18453 | 220 | 86 | 435 | 327 | 180242 | 51679 | 0.406 |
| 168 | 176.57 | 269453 | 1.29 | 140 | 6216 | 106 | 52 | 21 | 1224 | 1713 | 1244 | 13285 | 272 | 249 | 6121 | 179469 | 1259 | 1087 | 1286 | 2302 | 2281 | 1093 | 16992 | 253 | 140 | 297 | 500 | 181516 | 52626 | 0.408 |
| 169 | 177.57 | 268203 | 1.38 | 168 | 6071 | 54 | 75 | 0 | 1187 | 1671 | 1234 | 14194 | 235 | 409 | 6410 | 176180 | 1295 | 1201 | 1145 | 2121 | 1752 | 1143 | 16415 | 273 | 129 | 373 | 230 | 181364 | 52197 | 0.407 |
| 170 | 178.57 | 268067 | 1.3 | 128 | 6232 | 60 | 6 | 0 | 1178 | 1670 | 1160 | 12416 | 130 | 605 | 5733 | 172048 | 1372 | 1033 | 1202 | 2068 | 1804 | 1770 | 16446 | 290 | 82 | 361 | 307 | 183824 | 52137 | 0.408 |
| 171 | 179.57 | 265442 | 1.3 | 159 | 6321 | 63 | 36 | 0 | 1204 | 1602 | 1193 | 15714 | 200 | 329 | 5809 | 154234 | 1453 | 955 | 1252 | 2127 | 1857 | 1567 | 17599 | 256 | 117 | 372 | 283 | 183372 | 52526 | 0.409 |
| 172 | 180.57 | 264898 | 1.33 | 218 | 6342 | 79 | 54 | 0 | 1139 | 1529 | 1240 | 13090 | 160 | 283 | 5594 | 148501 | 1292 | 1314 | 1214 | 1918 | 1885 | 1392 | 18859 | 319 | 80 | 289 | 479 | 184500 | 53551 | 0.41 |
| 173 | 181.57 | 278955 | 1.26 | 193 | 6297 | 105 | 33 | 42 | 1151 | 1594 | 1225 | 13565 | 261 | 693 | 5821 | 202200 | 1453 | 1189 | 1090 | 1968 | 1876 | 1987 | 16329 | 342 | 64 | 460 | 536 | 182434 | 52413 | 0.414 |
| 174 | 182.57 | 283009 | 1.45 | 231 | 6231 | 43 | 48 | 0 | 1283 | 1616 | 1236 | 16475 | 158 | 438 | 5885 | 221010 | 1339 | 1087 | 1058 | 1791 | 1895 | 1953 | 19016 | 285 | 125 | 377 | 518 | 177329 | 51779 | 0.414 |
| 175 | 183.57 | 267750 | 1.34 | 182 | 6296 | 31 | 32 | 0 | 1160 | 1646 | 1299 | 13634 | 195 | 410 | 5574 | 171080 | 1405 | 1196 | 1089 | 1973 | 1747 | 1393 | 17860 | 205 | 122 | 294 | 347 | 181027 | 52101 | 0.409 |
| 176 | 184.57 | 264212 | 1.34 | 153 | 6330 | 66 | 18 | 344 | 1231 | 1595 | 1305 | 13273 | 170 | 381 | 5165 | 158387 | 1341 | 1277 | 1231 | 2085 | 1908 | 1409 | 17137 | 223 | 177 | 377 | 357 | 182881 | 52379 | 0.408 |
| 177 | 185.57 | 264382 | 1.4 | 143 | 6431 | 41 | 0 | 499 | 1248 | 1657 | 1307 | 13972 | 141 | 391 | 6960 | 150969 | 1174 | 1122 | 1081 | 2163 | 2077 | 1069 | 19999 | 210 | 56 | 349 | 248 | 181449 | 53099 | 0.409 |
| 178 | 186.57 | 266895 | 1.34 | 153 | 6106 | 84 | 34 | 0 | 1234 | 1756 | 1165 | 13108 | 250 | 427 | 7878 | 170506 | 1330 | 1225 | 1083 | 2236 | 2054 | 1275 | 15486 | 231 | 133 | 337 | 348 | 184067 | 52187 | 0.407 |
| 179 | 187.57 | 264554 | 1.36 | 172 | 6220 | 63 | 53 | 21 | 1261 | 1534 | 1218 | 11647 | 238 | 445 | 7076 | 149391 | 1418 | 1057 | 1061 | 2080 | 1941 | 1485 | 19363 | 90 | 185 | 301 | 372 | 185493 | 52759 | 0.409 |
| 180 | 188.57 | 266102 | 1.38 | 152 | 6146 | 61 | 92 | 0 | 1299 | 1692 | 1135 | 13598 | 128 | 488 | 8394 | 157582 | 1271 | 1162 | 1170 | 1692 | 1852 | 1465 | 16986 | 253 | 113 | 365 | 338 | 183044 | 52318 | 0.409 |
| 181 | 189.57 | 264869 | 1.46 | 176 | 6002 | 104 | 26 | 0 | 1262 | 1542 | 1156 | 13539 | 100 | 684 | 6670 | 154905 | 1330 | 1179 | 1204 | 2245 | 1997 | 1595 | 17341 | 239 | 143 | 299 | 381 | 185755 | 52762 | 0.409 |
| 182 | 190.57 | 263757 | 1.31 | 174 | 6375 | 79 | 0 | 0 | 1195 | 1603 | 1191 | 13174 | 262 | 386 | 7267 | 150783 | 1365 | 1290 | 945 | 2202 | 1670 | 1480 | 16318 | 200 | 91 | 266 | 284 | 184623 | 52496 | 0.408 |
| 183 | 191.57 | 265013 | 1.27 | 190 | 6322 | 100 | 29 | 0 | 1314 | 1550 | 1260 | 13925 | 164 | 304 | 7852 | 155098 | 1174 | 1124 | 1013 | 2039 | 1731 | 1157 | 17708 | 249 | 103 | 304 | 263 | 184189 | 52464 | 0.409 |
| 184 | 192.57 | 269174 | 1.37 | 193 | 6255 | 95 | 26 | 0 | 1229 | 1587 | 1177 | 12817 | 178 | 345 | 8349 | 172911 | 1345 | 898 | 1221 | 1970 | 2208 | 1677 | 17715 | 298 | 55 | 318 | 319 | 182005 | 52636 | 0.41 |
| 185 | 193.57 | 265741 | 1.33 | 211 | 6236 | 79 | 66 | 0 | 1180 | 1719 | 1270 | 12230 | 239 | 381 | 8476 | 155671 | 1363 | 1044 | 1147 | 1924 | 1917 | 1783 | 19510 | 277 | 87 | 362 | 248 | 184316 | 52342 | 0.409 |
| 186 | 194.57 | 263462 | 1.35 | 164 | 6192 | 102 | 47 | 0 | 1207 | 1672 | 1122 | 15758 | 147 | 464 | 8674 | 147591 | 1344 | 1090 | 1069 | 1883 | 1817 | 1668 | 16571 | 280 | 118 | 327 | 262 | 187083 | 52755 | 0.408 |
| 187 | 195.57 | 265091 | 1.41 | 188 | 6136 | 79 | 50 | 25 | 1223 | 1534 | 1212 | 13832 | 254 | 321 | 11615 | 147926 | 1325 | 1080 | 1176 | 2039 | 1754 | 1711 | 15963 | 298 | 124 | 357 | 273 | 185665 | 53344 | 0.41 |
| 188 | 196.57 | 265950 | 1.33 | 153 | 5936 | 9 | 34 | 0 | 1214 | 1725 | 1107 | 13196 | 248 | 362 | 11366 | 152566 | 1520 | 1105 | 1188 | 1769 | 1665 | 1482 | 17661 | 218 | 130 | 270 | 383 | 183993 | 52257 | 0.41 |
| 189 | 197.57 | 261012 | 1.39 | 173 | 6353 | 106 | 76 | 0 | 1333 | 1586 | 1227 | 12650 | 153 | 389 | 12243 | 148374 | 1446 | 1008 | 1110 | 1792 | 1731 | 1738 | 17261 | 369 | 111 | 367 | 331 | 181761 | 51809 | 0.405 |
| 190 | 198.57 | 259898 | 1.36 | 175 | 6207 | 81 | 81 | 0 | 1278 | 1593 | 1133 | 14732 | 268 | 647 | 10551 | 141877 | 1278 | 1193 | 1167 | 2119 | 1777 | 1291 | 18276 | 239 | 101 | 411 | 469 | 182710 | 52362 | 0.406 |
| 191 | 199.57 | 261035 | 1.28 | 176 | 6329 | 89 | 16 | 0 | 1173 | 1543 | 1150 | 12808 | 199 | 352 | 10633 | 140825 | 1441 | 1173 | 1170 | 2008 | 1952 | 1419 | 17512 | 289 | 208 | 327 | 291 | 184316 | 52344 | 0.407 |
| 192 | 200.57 | 260568 | 1.33 | 169 | 6375 | 68 | 20 | 0 | 1234 | 1691 | 1120 | 13188 | 140 | 342 | 9935 | 134570 | 1453 | 1154 | 1079 | 1938 | 1849 | 1796 | 16489 | 323 | 89 | 295 | 355 | 188152 | 53308 | 0.408 |
| 193 | 201.57 | 261235 | 1.36 | 165 | 6190 | 88 | 25 | 0 | 1372 | 1556 | 1141 | 13012 | 218 | 418 | 11459 | 143611 | 1321 | 1044 | 1185 | 1876 | 1884 | 1737 | 15916 | 230 | 181 | 274 | 150 | 185548 | 52583 | 0.407 |
| 194 | 202.57 | 262054 | 1.32 | 160 | 6272 | 71 | 37 | 0 | 1224 | 1587 | 1126 | 13262 | 137 | 545 | 13029 | 142416 | 1345 | 1042 | 1125 | 2049 | 2085 | 1958 | 18798 | 271 | 137 | 277 | 334 | 183169 | 52249 | 0.407 |
| 195 | 203.57 | 257919 | 1.3 | 146 | 6156 | 89 | 16 | 0 | 1254 | 1576 | 1145 | 13532 | 256 | 443 | 11451 | 139595 | 1243 | 1228 | 1148 | 1953 | 1801 | 1487 | 16432 | 302 | 155 | 379 | 163 | 183804 | 52206 | 0.403 |
| 196 | 204.57 | 260330 | 1.36 | 171 | 6340 | 91 | 0 | 0 | 1240 | 1636 | 1115 | 12983 | 210 | 336 | 11471 | 135532 | 1570 | 1121 | 1128 | 1965 | 2147 | 1678 | 14950 | 217 | 190 | 348 | 303 | 188459 | 53529 | 0.408 |
| 197 | 205.57 | 259871 | 1.4 | 183 | 6278 | 85 | 28 | 0 | 1237 | 1529 | 1076 | 15088 | 165 | 318 | 12684 | 134274 | 1395 | 1197 | 1100 | 2131 | 1594 | 1226 | 15315 | 222 | 134 | 321 | 87 | 185656 | 52921 | 0.407 |
| 198 | 206.57 | 261290 | 1.42 | 187 | 6145 | 55 | 0 | 0 | 1264 | 1733 | 1109 | 13857 | 188 | 435 | 12083 | 136539 | 1326 | 1240 | 1114 | 1893 | 1918 | 1663 | 16616 | 277 | 134 | 434 | 262 | 187446 | 53265 | 0.409 |
| 199 | 207.57 | 261019 | 1.44 | 143 | 6008 | 37 | 0 | 7 | 1242 | 1643 | 1123 | 12732 | 168 | 750 | 12313 | 140625 | 1386 | 1247 | 1190 | 1960 | 1628 | 998 | 18069 | 218 | 156 | 336 | 103 | 183461 | 53060 | 0.407 |
| 200 | 208.57 | 260523 | 1.35 | 100 | 6215 | 42 | 13 | 5 | 1259 | 1604 | 1085 | 13426 | 152 | 509 | 11822 | 148321 | 1477 | 1173 | 966 | 1733 | 1522 | 1265 | 14784 | 290 | 102 | 384 | 328 | 183946 | 52872 | 0.405 |
| 201 | 209.57 | 263648 | 1.3 | 129 | 6231 | 107 | 55 | 17 | 1311 | 1577 | 1073 | 12276 | 160 | 584 | 14448 | 158069 | 1303 | 1276 | 875 | 1974 | 1844 | 1355 | 18032 | 321 | 129 | 366 | 571 | 181443 | 52839 | 0.406 |
| 202 | 210.57 | 258297 | 1.28 | 177 | 6521 | 59 | 35 | 19 | 1248 | 1528 | 1070 | 12928 | 188 | 371 | 8180 | 139471 | 1414 | 1070 | 906 | 1820 | 1920 | 1575 | 16745 | 284 | 84 | 359 | 264 | 185431 | 52626 | 0.405 |
| 203 | 211.57 | 261784 | 1.38 | 161 | 6493 | 78 | 10 | 0 | 1220 | 1566 | 1031 | 13201 | 159 | 486 | 8866 | 145107 | 1334 | 1008 | 948 | 1871 | 1782 | 1545 | 18684 | 294 | 99 | 359 | 315 | 184939 | 53252 | 0.407 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 204 | 212.57 | 258688 | 1.36 | 133 | 6352 | 78 | 69 | 0 | 1246 | 1661 | 1089 | 13922 | 140 | 464 | 9790 | 131612 | 1471 | 1092 | 1107 | 2049 | 1907 | 1349 | 18631 | 348 | 92 | 404 | 295 | 184362 | 53792 | 0.406 |
| 205 | 213.57 | 256815 | 1.27 | 174 | 6503 | 89 | 32 | 0 | 1354 | 1624 | 1105 | 12020 | 155 | 556 | 12035 | 131385 | 1356 | 1146 | 946 | 1862 | 1461 | 1708 | 17483 | 236 | 115 | 245 | 368 | 185161 | 53299 | 0.404 |
| 206 | 214.57 | 256866 | 1.4 | 161 | 6345 | 42 | 0 | 0 | 1308 | 1593 | 1085 | 13665 | 96 | 385 | 12423 | 135496 | 1232 | 1200 | 884 | 1860 | 1773 | 1572 | 15695 | 279 | 114 | 329 | 251 | 185695 | 52625 | 0.404 |
| 207 | 215.57 | 256870 | 1.35 | 151 | 6337 | 75 | 60 | 0 | 1247 | 1483 | 1090 | 14117 | 83 | 355 | 10771 | 137702 | 1380 | 1263 | 1048 | 1662 | 1881 | 1152 | 15823 | 406 | 54 | 344 | 213 | 183995 | 52722 | 0.403 |
| 208 | 216.57 | 259687 | 1.38 | 164 | 6312 | 69 | 6 | 0 | 1255 | 1651 | 1096 | 12719 | 179 | 597 | 9276 | 159189 | 1260 | 1039 | 1037 | 1955 | 1831 | 1228 | 18809 | 218 | 105 | 371 | 351 | 177412 | 51713 | 0.403 |
| 209 | 217.57 | 256230 | 1.29 | 189 | 6270 | 32 | 22 | 0 | 1307 | 1572 | 1101 | 12885 | 188 | 423 | 10157 | 142921 | 1360 | 1078 | 858 | 2101 | 1777 | 1368 | 16871 | 251 | 132 | 356 | 268 | 180152 | 52150 | 0.402 |
| 210 | 218.57 | 261034 | 1.4 | 152 | 6211 | 84 | 25 | 0 | 1245 | 1563 | 1072 | 12950 | 193 | 345 | 12033 | 146901 | 1365 | 1168 | 903 | 2116 | 1966 | 1430 | 17527 | 246 | 124 | 296 | 128 | 182255 | 52971 | 0.406 |
| 211 | 219.57 | 266485 | 1.35 | 256 | 6354 | 80 | 36 | 0 | 1326 | 1593 | 1119 | 13678 | 200 | 579 | 13119 | 168004 | 1350 | 983 | 995 | 2250 | 1739 | 1285 | 15989 | 290 | 121 | 329 | 199 | 182582 | 52243 | 0.407 |
| 212 | 220.57 | 264101 | 1.28 | 199 | 6246 | 41 | 29 | 0 | 1196 | 1622 | 982 | 12902 | 146 | 318 | 12549 | 161521 | 1397 | 1120 | 1025 | 1979 | 1935 | 1143 | 17847 | 309 | 90 | 359 | 440 | 180250 | 52623 | 0.407 |
| 213 | 221.57 | 258284 | 1.31 | 180 | 6355 | 74 | 24 | 6 | 1241 | 1555 | 1069 | 14253 | 103 | 1361 | 12207 | 140186 | 1299 | 1094 | 864 | 1980 | 1876 | 1333 | 16077 | 216 | 163 | 284 | 339 | 183497 | 52268 | 0.404 |
| 214 | 222.57 | 259471 | 1.29 | 148 | 6233 | 60 | 25 | 0 | 1223 | 1507 | 1094 | 13122 | 165 | 833 | 10929 | 143859 | 1297 | 1164 | 812 | 1911 | 1560 | 1306 | 18266 | 203 | 131 | 346 | 195 | 182090 | 52000 | 0.405 |
| 215 | 223.57 | 260217 | 1.33 | 154 | 6381 | 81 | 9 | 0 | 1171 | 1523 | 1077 | 13959 | 169 | 314 | 9580 | 136490 | 1412 | 1081 | 709 | 1972 | 1611 | 1337 | 19611 | 235 | 103 | 285 | 242 | 183234 | 52562 | 0.408 |
| 216 | 224.57 | 257052 | 1.34 | 122 | 6471 | 57 | 56 | 0 | 1289 | 1599 | 1074 | 13400 | 209 | 460 | 12346 | 134273 | 1245 | 1026 | 1082 | 1905 | 1779 | 1416 | 15987 | 230 | 116 | 342 | 202 | 184915 | 53185 | 0.404 |
| 217 | 225.57 | 259933 | 1.35 | 140 | 6198 | 39 | 38 | 13 | 1257 | 1597 | 1001 | 14520 | 191 | 482 | 12111 | 134618 | 1438 | 1112 | 973 | 2107 | 1989 | 1369 | 16532 | 340 | 46 | 396 | 286 | 186156 | 52937 | 0.407 |
| 218 | 226.57 | 261250 | 1.32 | 119 | 6317 | 86 | 21 | 0 | 1181 | 1509 | 1036 | 18132 | 131 | 511 | 10223 | 131989 | 1320 | 1131 | 850 | 2216 | 2007 | 1262 | 20159 | 268 | 61 | 381 | 35 | 182234 | 52544 | 0.409 |
| 219 | 227.57 | 261272 | 1.41 | 124 | 6171 | 30 | 48 | 0 | 1282 | 1665 | 1043 | 12033 | 325 | 454 | 9894 | 146085 | 1252 | 1037 | 1116 | 2006 | 1845 | 1729 | 17363 | 245 | 97 | 314 | 209 | 183876 | 52938 | 0.408 |
| 220 | 228.57 | 259768 | 1.42 | 121 | 6226 | 34 | 0 | 0 | 1243 | 1614 | 1013 | 12282 | 302 | 264 | 11013 | 134584 | 1261 | 1121 | 914 | 1993 | 1978 | 1721 | 19354 | 299 | 114 | 252 | 216 | 185147 | 52902 | 0.407 |
| 221 | 229.57 | 258593 | 1.42 | 142 | 6263 | 88 | 0 | 94 | 1268 | 1572 | 1053 | 12730 | 254 | 592 | 9124 | 129987 | 1357 | 1150 | 935 | 2025 | 1891 | 1503 | 16753 | 234 | 118 | 342 | 271 | 188088 | 53663 | 0.408 |
| 222 | 230.57 | 260839 | 1.3 | 186 | 6298 | 45 | 33 | 36 | 1290 | 1595 | 1116 | 12026 | 175 | 576 | 9007 | 136807 | 1326 | 1165 | 925 | 1885 | 2015 | 1635 | 18748 | 248 | 127 | 419 | 129 | 185803 | 52680 | 0.409 |
| 223 | 231.57 | 256710 | 1.25 | 153 | 6219 | 104 | 34 | 16 | 1260 | 1595 | 1133 | 13437 | 244 | 774 | 12147 | 147997 | 1321 | 973 | 825 | 1972 | 1671 | 1569 | 14317 | 300 | 73 | 381 | 363 | 182516 | 52451 | 0.402 |
| 224 | 232.57 | 261209 | 1.29 | 130 | 6281 | 63 | 47 | 14 | 1243 | 1516 | 1076 | 13087 | 130 | 469 | 15488 | 143553 | 1375 | 1064 | 1089 | 1916 | 1926 | 1573 | 16818 | 271 | 100 | 242 | 292 | 183783 | 53190 | 0.406 |
| 225 | 233.57 | 261481 | 1.34 | 163 | 6219 | 57 | 45 | 0 | 1212 | 1536 | 1142 | 13643 | 241 | 335 | 15925 | 159326 | 1322 | 1161 | 999 | 2036 | 1657 | 1645 | 17482 | 314 | 91 | 360 | 467 | 178560 | 52113 | 0.403 |
| 226 | 234.57 | 266610 | 1.34 | 215 | 6480 | 45 | 43 | 0 | 1234 | 1563 | 1092 | 13788 | 163 | 369 | 12224 | 183814 | 1305 | 1104 | 759 | 1816 | 1668 | 1521 | 15588 | 261 | 116 | 385 | 200 | 178822 | 52217 | 0.404 |
| 227 | 235.57 | 259170 | 1.37 | 165 | 6186 | 85 | 28 | 0 | 1226 | 1537 | 1061 | 13750 | 282 | 459 | 13769 | 139224 | 1335 | 1157 | 948 | 1989 | 1823 | 1350 | 15944 | 222 | 135 | 350 | 337 | 184143 | 52869 | 0.405 |
| 228 | 236.57 | 261013 | 1.33 | 162 | 6274 | 67 | 32 | 56 | 1246 | 1517 | 1417 | 13058 | 255 | 244 | 11871 | 140504 | 1201 | 1161 | 1036 | 1806 | 1912 | 1437 | 15763 | 309 | 223 | 321 | 291 | 183508 | 52676 | 0.407 |
| 229 | 237.57 | 262691 | 1.36 | 156 | 6024 | 58 | 23 | 0 | 1253 | 1573 | 1147 | 14286 | 222 | 280 | 9987 | 141950 | 1249 | 1055 | 886 | 1678 | 1634 | 1621 | 19639 | 336 | 76 | 292 | 168 | 184381 | 52434 | 0.409 |
| 230 | 238.57 | 266237 | 1.31 | 175 | 6379 | 140 | 36 | 0 | 1207 | 1645 | 1205 | 13426 | 261 | 881 | 9858 | 142214 | 1338 | 1073 | 886 | 2115 | 1931 | 1348 | 19128 | 177 | 170 | 292 | 297 | 185579 | 53564 | 0.413 |
| 231 | 239.57 | 268032 | 1.38 | 193 | 6102 | 75 | 44 | 0 | 1220 | 1601 | 1083 | 12745 | 222 | 467 | 9954 | 142750 | 1428 | 1128 | 898 | 2060 | 2077 | 1500 | 19932 | 233 | 147 | 339 | 198 | 187430 | 54642 | 0.414 |
| 232 | 240.57 | 270910 | 1.32 | 155 | 5635 | 63 | 94 | 8 | 1255 | 1510 | 1674 | 11848 | 180 | 291 | 18406 | 158543 | 1336 | 1183 | 1000 | 1819 | 1953 | 1895 | 17545 | 178 | 306 | 276 | 367 | 187568 | 53761 | 0.412 |
| 233 | 241.57 | 261902 | 1.4 | 197 | 6005 | 72 | 71 | 0 | 1284 | 1651 | 1156 | 12902 | 222 | 931 | 10423 | 150448 | 1365 | 1251 | 819 | 2089 | 1828 | 1299 | 16181 | 244 | 148 | 288 | 296 | 185310 | 53249 | 0.407 |
| 234 | 242.57 | 250837 | 1.33 | 177 | 5874 | 73 | 50 | 80 | 1244 | 1502 | 1073 | 15250 | 149 | 197 | 10352 | 128659 | 1361 | 1043 | 922 | 1707 | 1836 | 1274 | 17030 | 257 | 104 | 312 | 114 | 182273 | 52430 | 0.401 |
| 235 | 243.57 | 255321 | 1.25 | 197 | 6259 | 83 | 38 | 34 | 1170 | 1550 | 1124 | 12542 | 130 | 405 | 9244 | 125197 | 1306 | 1035 | 808 | 1977 | 1884 | 1403 | 17874 | 204 | 102 | 290 | 317 | 185278 | 52702 | 0.407 |
| 236 | 244.57 | 257053 | 1.2 | 254 | 6259 | 87 | 59 | 0 | 1226 | 1533 | 1088 | 13814 | 163 | 272 | 9275 | 127067 | 1290 | 1077 | 829 | 1982 | 1872 | 1359 | 17734 | 214 | 127 | 271 | 329 | 185845 | 53355 | 0.407 |
| 237 | 245.57 | 261628 | 1.34 | 177 | 6309 | 50 | 28 | 75 | 1228 | 1554 | 1103 | 13509 | 232 | 396 | 10091 | 141782 | 1407 | 1153 | 818 | 1631 | 1939 | 1165 | 18095 | 208 | 91 | 255 | 451 | 184436 | 52465 | 0.409 |
| 238 | 246.57 | 261070 | 1.38 | 121 | 6419 | 81 | 60 | 16 | 1278 | 1517 | 1211 | 12169 | 294 | 503 | 8502 | 136456 | 1386 | 1272 | 878 | 1983 | 1829 | 1402 | 18772 | 227 | 128 | 246 | 321 | 186508 | 53464 | 0.409 |
| 239 | 247.57 | 260080 | 1.35 | 172 | 6252 | 41 | 69 | 19 | 1278 | 1486 | 1107 | 13027 | 243 | 407 | 7623 | 136916 | 1324 | 1140 | 773 | 1913 | 1746 | 1614 | 17470 | 190 | 143 | 293 | 181 | 184919 | 52585 | 0.408 |
| 240 | 248.57 | 259841 | 1.34 | 140 | 6238 | 100 | 59 | 231 | 1256 | 1556 | 1047 | 13073 | 168 | 233 | 8810 | 135971 | 1249 | 1067 | 781 | 1832 | 1614 | 1560 | 19532 | 197 | 180 | 207 | 228 | 183424 | 53263 | 0.408 |
| 241 | 249.57 | 259782 | 1.37 | 163 | 6434 | 100 | 17 | 0 | 1242 | 1493 | 1086 | 13314 | 145 | 655 | 7801 | 135824 | 1234 | 1138 | 814 | 2185 | 1804 | 1438 | 19012 | 318 | 102 | 305 | 439 | 183492 | 53018 | 0.408 |
| 242 | 250.57 | 260466 | 1.3 | 198 | 6210 | 72 | 42 | 0 | 1247 | 1559 | 1134 | 14536 | 53 | 383 | 6741 | 145290 | 1347 | 1281 | 955 | 1525 | 1877 | 1470 | 16369 | 320 | 57 | 328 | 262 | 185439 | 53519 | 0.408 |
| 243 | 251.57 | 261957 | 1.36 | 188 | 6027 | 70 | 52 | 0 | 1227 | 1551 | 1089 | 12234 | 129 | 774 | 8131 | 148233 | 1329 | 1199 | 796 | 1861 | 1991 | 1443 | 17360 | 223 | 151 | 291 | 287 | 184515 | 53080 | 0.408 |
| 244 | 252.57 | 262153 | 1.34 | 205 | 6119 | 100 | 30 | 0 | 1279 | 1484 | 1365 | 13428 | 129 | 446 | 8667 | 144784 | 1364 | 1250 | 685 | 1934 | 1751 | 1502 | 17633 | 268 | 215 | 406 | 150 | 183808 | 52545 | 0.408 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 245 | 253.57 | 260358 | 1.3 | 197 | 6294 | 103 | 46 | 0 | 1226 | 1666 | 1068 | 11771 | 105 | 531 | 8870 | 143889 | 1408 | 1279 | 788 | 2278 | 1665 | 1353 | 16792 | 333 | 102 | 350 | 373 | 185872 | 52698 | 0.407 |
| 246 | 254.57 | 267861 | 1.33 | 215 | 6068 | 105 | 43 | 17 | 1328 | 1438 | 1179 | 13160 | 214 | 659 | 9204 | 168338 | 1409 | 1103 | 712 | 1888 | 1565 | 1189 | 16381 | 272 | 92 | 362 | 71 | 183818 | 52384 | 0.409 |
| 247 | 255.57 | 262874 | 1.33 | 164 | 6061 | 63 | 50 | 16 | 1240 | 1570 | 1087 | 12656 | 197 | 459 | 14464 | 151918 | 1378 | 1216 | 776 | 1921 | 1755 | 1666 | 15698 | 327 | 125 | 312 | 162 | 184659 | 53305 | 0.408 |
| 248 | 256.57 | 261120 | 1.34 | 168 | 6199 | 61 | 49 | 0 | 1179 | 1606 | 1196 | 13943 | 220 | 277 | 10186 | 127764 | 1367 | 1066 | 741 | 2301 | 2081 | 2001 | 18509 | 254 | 131 | 312 | 183 | 189028 | 53305 | 0.411 |
| 249 | 257.57 | 265569 | 1.32 | 165 | 6231 | 91 | 83 | 0 | 1277 | 1659 | 1112 | 12837 | 87 | 454 | 11224 | 136223 | 1329 | 1124 | 636 | 2009 | 2031 | 2117 | 18015 | 204 | 140 | 284 | 216 | 190497 | 53302 | 0.412 |
| 250 | 258.57 | 267023 | 1.39 | 212 | 6290 | 109 | 98 | 24 | 1287 | 1572 | 1442 | 12722 | 124 | 437 | 11502 | 151668 | 1398 | 1141 | 876 | 1841 | 1884 | 1711 | 16838 | 323 | 186 | 276 | 226 | 185205 | 52952 | 0.411 |
| 251 | 259.57 | 254343 | 1.39 | 160 | 6194 | 87 | 44 | 0 | 1205 | 1506 | 1095 | 13882 | 105 | 332 | 8977 | 123297 | 1303 | 1143 | 661 | 2172 | 1801 | 1455 | 17348 | 242 | 135 | 329 | 172 | 183439 | 52637 | 0.405 |
| 252 | 260.57 | 258731 | 1.3 | 160 | 5889 | 82 | 0 | 0 | 1275 | 1535 | 1158 | 15043 | 65 | 318 | 12748 | 149594 | 1306 | 1042 | 683 | 1789 | 2390 | 1507 | 16390 | 262 | 153 | 278 | 432 | 182582 | 51958 | 0.403 |
| 253 | 261.57 | 264678 | 1.31 | 166 | 6001 | 75 | 31 | 0 | 1228 | 1538 | 1258 | 12159 | 274 | 365 | 12202 | 152300 | 1266 | 1186 | 828 | 2166 | 2068 | 1473 | 18288 | 298 | 192 | 296 | 743 | 183564 | 52807 | 0.409 |
| 254 | 262.57 | 257644 | 1.37 | 133 | 6494 | 78 | 48 | 0 | 1187 | 1648 | 1056 | 14712 | 100 | 452 | 9217 | 123993 | 1276 | 1095 | 689 | 2067 | 2054 | 1738 | 18972 | 260 | 135 | 314 | 111 | 185740 | 53143 | 0.408 |
| 255 | 263.57 | 258731 | 1.38 | 204 | 6301 | 87 | 25 | 0 | 1272 | 1494 | 1183 | 11708 | 121 | 658 | 10422 | 122259 | 1316 | 1207 | 938 | 2367 | 2223 | 1549 | 16635 | 240 | 173 | 317 | 277 | 189353 | 54115 | 0.41 |
| 256 | 264.57 | 258449 | 1.36 | 164 | 6239 | 22 | 24 | 0 | 1186 | 1609 | 1154 | 12768 | 308 | 333 | 8018 | 120277 | 1271 | 1190 | 947 | 2222 | 2064 | 1788 | 17467 | 217 | 123 | 345 | 219 | 189804 | 53579 | 0.41 |
| 257 | 265.57 | 259402 | 1.4 | 234 | 6340 | 90 | 37 | 0 | 1180 | 1569 | 1340 | 13309 | 190 | 373 | 9399 | 130446 | 1419 | 1268 | 838 | 2075 | 1920 | 1418 | 17879 | 279 | 128 | 281 | 332 | 185807 | 53017 | 0.409 |
| 258 | 266.57 | 266560 | 1.42 | 163 | 6108 | 101 | 56 | 0 | 1232 | 1500 | 1678 | 12980 | 181 | 736 | 14471 | 148127 | 1265 | 1375 | 881 | 1940 | 1861 | 1636 | 17098 | 347 | 159 | 237 | 386 | 185380 | 52954 | 0.411 |
| 259 | 267.57 | 258026 | 1.5 | 96 | 6226 | 74 | 40 | 369 | 1249 | 1613 | 1270 | 13464 | 111 | 327 | 6636 | 123671 | 1583 | 1171 | 704 | 2053 | 2003 | 1676 | 18031 | 304 | 67 | 306 | 249 | 187616 | 53640 | 0.409 |
| 260 | 268.57 | 259474 | 1.32 | 128 | 6327 | 65 | 34 | 24 | 1300 | 1506 | 1263 | 12431 | 48 | 310 | 7235 | 131088 | 1212 | 1256 | 776 | 1699 | 1885 | 1682 | 19238 | 254 | 116 | 305 | 284 | 185045 | 53226 | 0.408 |
| 261 | 269.57 | 253243 | 1.32 | 172 | 6136 | 86 | 12 | 0 | 1203 | 1470 | 1127 | 12956 | 99 | 381 | 9246 | 131101 | 1279 | 1250 | 883 | 2069 | 1910 | 1345 | 17201 | 325 | 72 | 341 | 282 | 182579 | 52263 | 0.403 |
| 262 | 270.57 | 248964 | 1.24 | 178 | 5896 | 50 | 29 | 0 | 1254 | 1466 | 1150 | 13674 | 224 | 264 | 8546 | 126360 | 1353 | 1112 | 663 | 1675 | 2143 | 1475 | 16568 | 235 | 89 | 253 | 136 | 181054 | 51720 | 0.4 |
| 263 | 271.57 | 251641 | 1.28 | 185 | 5994 | 101 | 45 | 18 | 1265 | 1514 | 1151 | 12896 | 144 | 401 | 9173 | 124988 | 1337 | 1060 | 746 | 1717 | 1877 | 1485 | 16380 | 326 | 86 | 296 | 67 | 183138 | 52591 | 0.403 |
| 264 | 272.57 | 255149 | 1.28 | 135 | 6413 | 59 | 7 | 0 | 1211 | 1542 | 1111 | 13839 | 194 | 483 | 8733 | 122055 | 1463 | 1093 | 660 | 1749 | 1783 | 1345 | 16435 | 261 | 111 | 335 | 143 | 185389 | 53528 | 0.406 |
| 265 | 273.57 | 255757 | 1.42 | 188 | 6699 | 84 | 29 | 0 | 1221 | 1615 | 1183 | 14040 | 167 | 400 | 8257 | 116609 | 1470 | 1121 | 789 | 1972 | 2060 | 1199 | 17559 | 109 | 152 | 292 | 471 | 185455 | 53073 | 0.408 |
| 266 | 274.57 | 257057 | 1.35 | 140 | 6449 | 20 | 32 | 7 | 1229 | 1591 | 1183 | 12648 | 36 | 1084 | 6891 | 122242 | 1294 | 1122 | 841 | 1859 | 1530 | 1620 | 17431 | 271 | 52 | 347 | 393 | 185895 | 53486 | 0.408 |
| 267 | 275.57 | 259194 | 1.4 | 130 | 6569 | 52 | 53 | 0 | 1203 | 1620 | 1250 | 13101 | 240 | 281 | 4418 | 124695 | 1510 | 1180 | 723 | 2121 | 2038 | 1591 | 17584 | 239 | 137 | 367 | 164 | 187720 | 53933 | 0.41 |
| 268 | 276.57 | 259364 | 1.48 | 183 | 6579 | 100 | 35 | 0 | 1287 | 1743 | 1234 | 13747 | 90 | 379 | 4651 | 127164 | 1405 | 1092 | 663 | 1955 | 1942 | 1531 | 17219 | 146 | 154 | 292 | 269 | 188385 | 53659 | 0.41 |
| 269 | 277.57 | 253428 | 1.45 | 137 | 6511 | 119 | 58 | 0 | 1199 | 1613 | 1189 | 12600 | 137 | 296 | 4138 | 114769 | 1508 | 1320 | 821 | 1904 | 1890 | 1710 | 18793 | 338 | 41 | 270 | 381 | 186647 | 53713 | 0.407 |
| 270 | 278.57 | 256863 | 1.37 | 189 | 6473 | 36 | 0 | 0 | 1233 | 1538 | 1078 | 13527 | 154 | 371 | 4105 | 124184 | 1432 | 1314 | 774 | 2061 | 2061 | 1417 | 17506 | 280 | 106 | 366 | 151 | 187412 | 53340 | 0.409 |
| 271 | 279.57 | 260065 | 1.3 | 181 | 6616 | 105 | 44 | 75 | 1206 | 1531 | 1293 | 12481 | 230 | 345 | 4413 | 136003 | 1267 | 1210 | 770 | 1794 | 2186 | 1909 | 18352 | 215 | 156 | 269 | 453 | 185491 | 52731 | 0.409 |
| 272 | 280.57 | 255345 | 1.4 | 175 | 6370 | 70 | 41 | 0 | 1204 | 1536 | 1190 | 13788 | 74 | 237 | 4141 | 134057 | 1311 | 1108 | 733 | 2109 | 1774 | 1519 | 18590 | 233 | 105 | 269 | 396 | 183502 | 52807 | 0.406 |
| 273 | 281.57 | 253679 | 1.3 | 175 | 6414 | 108 | 15 | 9 | 1174 | 1530 | 1233 | 12316 | 112 | 333 | 5730 | 129151 | 1418 | 1031 | 758 | 1744 | 1862 | 1518 | 15818 | 326 | 44 | 370 | 151 | 184365 | 52892 | 0.404 |
| 274 | 282.57 | 251996 | 1.33 | 149 | 6432 | 53 | 11 | 5 | 1213 | 1434 | 1225 | 12904 | 208 | 435 | 5426 | 115606 | 1242 | 1369 | 728 | 1716 | 1822 | 1572 | 16817 | 241 | 127 | 298 | 83 | 185543 | 52753 | 0.405 |
| 275 | 283.57 | 255804 | 1.42 | 111 | 6435 | 42 | 63 | 0 | 1251 | 1510 | 1246 | 14234 | 85 | 521 | 8510 | 144822 | 1264 | 1119 | 808 | 2090 | 2182 | 1302 | 16228 | 298 | 84 | 332 | 368 | 181530 | 52612 | 0.402 |
| 276 | 284.57 | 260996 | 1.34 | 152 | 6009 | 57 | 0 | 0 | 1266 | 1672 | 1168 | 14371 | 291 | 395 | 6684 | 149121 | 1268 | 1320 | 661 | 1777 | 1933 | 1156 | 19071 | 289 | 87 | 299 | 264 | 181701 | 52845 | 0.407 |
| 277 | 285.57 | 257643 | 1.44 | 175 | 6494 | 63 | 25 | 0 | 1240 | 1653 | 1142 | 13121 | 154 | 226 | 5450 | 133680 | 1347 | 1126 | 854 | 1800 | 2112 | 1568 | 15393 | 202 | 118 | 384 | 364 | 188687 | 53560 | 0.408 |
| 278 | 286.57 | 258080 | 1.35 | 139 | 6132 | 85 | 86 | 0 | 1304 | 1640 | 1226 | 13657 | 194 | 364 | 5376 | 136856 | 1464 | 1113 | 757 | 1831 | 1979 | 1464 | 18078 | 155 | 151 | 355 | 108 | 183373 | 52802 | 0.407 |
| 279 | 287.57 | 257344 | 1.32 | 184 | 6108 | 43 | 38 | 0 | 1281 | 1576 | 1160 | 12546 | 178 | 266 | 5635 | 138990 | 1360 | 1022 | 770 | 2065 | 2027 | 1632 | 16829 | 220 | 157 | 280 | 272 | 186552 | 52661 | 0.405 |
| 280 | 288.57 | 260170 | 1.42 | 207 | 6461 | 123 | 29 | 0 | 1232 | 1586 | 1243 | 13071 | 236 | 492 | 6107 | 147151 | 1344 | 1097 | 734 | 1887 | 2039 | 2000 | 17238 | 183 | 405 | 373 | 532 | 183870 | 52767 | 0.406 |
| 281 | 289.57 | 257751 | 1.26 | 143 | 6523 | 102 | 22 | 0 | 1287 | 1574 | 1305 | 12855 | 122 | 524 | 6018 | 138001 | 1352 | 1201 | 727 | 1702 | 2031 | 1725 | 16316 | 209 | 125 | 310 | 191 | 185878 | 52453 | 0.406 |
| 282 | 290.57 | 253683 | 1.31 | 96 | 6466 | 107 | 41 | 0 | 1298 | 1584 | 1210 | 15053 | 170 | 317 | 5408 | 127073 | 1451 | 986 | 778 | 2081 | 1717 | 1060 | 15575 | 284 | 148 | 338 | 320 | 184708 | 52866 | 0.404 |
| 283 | 291.57 | 258281 | 1.39 | 194 | 6404 | 63 | 0 | 0 | 1207 | 1650 | 1251 | 12850 | 187 | 369 | 4182 | 135782 | 1277 | 1217 | 994 | 1736 | 1998 | 1305 | 16687 | 245 | 60 | 411 | 96 | 185403 | 53553 | 0.407 |
| 284 | 292.57 | 254886 | 1.31 | 206 | 6424 | 103 | 29 | 0 | 1288 | 1628 | 1258 | 12387 | 105 | 388 | 4954 | 139652 | 1240 | 1323 | 821 | 2094 | 2061 | 1362 | 15446 | 336 | 114 | 330 | 382 | 182148 | 51893 | 0.403 |
| 285 | 293.57 | 261370 | 1.41 | 163 | 6325 | 132 | 24 | 0 | 1306 | 1519 | 1197 | 12414 | 182 | 345 | 9070 | 197010 | 1174 | 1039 | 650 | 1813 | 1920 | 1750 | 15953 | 233 | 91 | 404 | 405 | 172101 | 50403 | 0.398 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 286 | 294.57 | 260151 | 1.27 | 156 | 6116 | 21 | 19 | 0 | 1331 | 1589 | 1734 | 12738 | 244 | 320 | 10536 | 150253 | 1310 | 1150 | 891 | 2186 | 2345 | 1991 | 16323 | 403 | 197 | 386 | 480 | 181996 | 52048 | 0.406 |
| 287 | 295.57 | 260193 | 1.39 | 190 | 6212 | 67 | 5 | 0 | 1203 | 1595 | 1239 | 11881 | 239 | 309 | 4780 | 146371 | 1311 | 1147 | 805 | 1839 | 1839 | 1445 | 17962 | 205 | 187 | 366 | 282 | 183617 | 53437 | 0.408 |
| 288 | 296.57 | 257948 | 1.4 | 197 | 6428 | 115 | 68 | 15 | 1228 | 1562 | 1432 | 13024 | 229 | 280 | 5327 | 136531 | 1298 | 1313 | 764 | 1900 | 2073 | 1310 | 16755 | 237 | 184 | 314 | 383 | 184343 | 53324 | 0.407 |
| 289 | 297.57 | 256182 | 1.35 | 133 | 6153 | 79 | 9 | 0 | 1265 | 1612 | 1398 | 13809 | 156 | 361 | 4623 | 135662 | 1355 | 1158 | 754 | 2057 | 1792 | 1290 | 17774 | 345 | 136 | 399 | 321 | 180984 | 52578 | 0.406 |
| 290 | 298.57 | 254091 | 1.39 | 149 | 6415 | 59 | 63 | 7 | 1217 | 1509 | 1222 | 14053 | 185 | 270 | 4323 | 131676 | 1402 | 1031 | 691 | 2029 | 2225 | 1275 | 17521 | 304 | 103 | 339 | 326 | 184887 | 52466 | 0.404 |
| 291 | 299.57 | 258860 | 1.42 | 222 | 6532 | 46 | 0 | 45 | 1240 | 1493 | 1221 | 12968 | 249 | 485 | 3909 | 135210 | 1313 | 1094 | 747 | 2013 | 1870 | 1586 | 18974 | 313 | 81 | 310 | 195 | 185612 | 53353 | 0.408 |
| 292 | 300.57 | 259949 | 1.42 | 117 | 6489 | 79 | 28 | 180 | 1180 | 1563 | 1256 | 13959 | 242 | 431 | 3419 | 139688 | 1454 | 1128 | 799 | 1689 | 1860 | 1148 | 17696 | 139 | 200 | 349 | 205 | 184792 | 53459 | 0.408 |
| 293 | 301.57 | 258300 | 1.33 | 158 | 6351 | 63 | 32 | 1052 | 1199 | 1762 | 1446 | 13572 | 240 | 229 | 3524 | 140381 | 1295 | 1161 | 649 | 1966 | 1942 | 2043 | 17574 | 119 | 160 | 307 | 110 | 184468 | 52909 | 0.406 |
| 294 | 302.57 | 254963 | 1.32 | 131 | 6361 | 57 | 49 | 62 | 1247 | 1728 | 1348 | 15668 | 87 | 855 | 3930 | 133442 | 1341 | 1167 | 674 | 1845 | 2054 | 1267 | 17667 | 245 | 213 | 209 | 153 | 181824 | 52542 | 0.405 |
| 295 | 303.57 | 259040 | 1.29 | 170 | 6313 | 81 | 77 | 0 | 1267 | 1526 | 1252 | 12946 | 259 | 344 | 5086 | 142662 | 1363 | 1149 | 752 | 1888 | 2020 | 1632 | 18498 | 371 | 8 | 261 | 279 | 183209 | 52723 | 0.407 |
| 296 | 304.57 | 262543 | 1.39 | 155 | 6550 | 92 | 0 | 0 | 1172 | 1548 | 1397 | 14821 | 161 | 251 | 3097 | 140642 | 1328 | 1077 | 820 | 2101 | 2321 | 1767 | 17558 | 225 | 146 | 360 | 341 | 185699 | 53229 | 0.411 |
| 297 | 305.57 | 261825 | 1.32 | 200 | 6491 | 90 | 5 | 5 | 1212 | 1679 | 1346 | 14461 | 111 | 900 | 4309 | 147495 | 1238 | 1221 | 757 | 1829 | 2151 | 1434 | 16622 | 227 | 132 | 349 | 281 | 184338 | 53062 | 0.408 |
| 298 | 306.57 | 260403 | 1.37 | 157 | 5955 | 62 | 22 | 171 | 1248 | 1604 | 2007 | 13569 | 96 | 616 | 4370 | 165996 | 1220 | 1025 | 663 | 1848 | 2386 | 1579 | 15902 | 338 | 191 | 378 | 343 | 179167 | 52191 | 0.404 |
| 299 | 307.57 | 262415 | 1.37 | 148 | 6384 | 50 | 67 | 21 | 1214 | 1602 | 1266 | 14894 | 267 | 431 | 4222 | 146709 | 1364 | 1202 | 718 | 2136 | 2065 | 1357 | 17666 | 329 | 75 | 295 | 363 | 184579 | 53233 | 0.409 |
| 300 | 308.57 | 265807 | 1.39 | 213 | 6621 | 103 | 0 | 0 | 1231 | 1590 | 1380 | 14434 | 168 | 623 | 3876 | 146725 | 1344 | 1039 | 769 | 1855 | 2062 | 1192 | 19657 | 305 | 78 | 357 | 422 | 184686 | 53546 | 0.412 |
| 301 | 309.57 | 261031 | 1.26 | 179 | 6606 | 58 | 11 | 0 | 1225 | 1598 | 1310 | 14431 | 119 | 555 | 3077 | 135184 | 1306 | 1052 | 713 | 2277 | 1935 | 1456 | 18534 | 264 | 77 | 401 | 263 | 184523 | 53114 | 0.41 |
| 302 | 310.57 | 261991 | 1.31 | 178 | 6777 | 68 | 35 | 0 | 1211 | 1561 | 1255 | 12393 | 216 | 493 | 4582 | 137221 | 1436 | 1178 | 729 | 1846 | 2014 | 1159 | 19114 | 298 | 131 | 395 | 298 | 184025 | 53241 | 0.41 |
| 303 | 311.57 | 262310 | 1.3 | 158 | 6699 | 71 | 5 | 0 | 1180 | 1664 | 1235 | 15193 | 141 | 447 | 5305 | 158155 | 1309 | 1016 | 664 | 1690 | 1745 | 1315 | 18190 | 302 | 134 | 376 | 225 | 180650 | 51706 | 0.407 |
| 304 | 312.57 | 264299 | 1.32 | 171 | 6715 | 86 | 30 | 0 | 1256 | 1449 | 1241 | 14418 | 163 | 364 | 4055 | 159624 | 1298 | 1077 | 810 | 1830 | 2036 | 1359 | 18745 | 338 | 79 | 341 | 572 | 180748 | 52521 | 0.409 |
| 305 | 313.57 | 259699 | 1.35 | 162 | 6595 | 80 | 38 | 17 | 1192 | 1522 | 1277 | 12905 | 214 | 649 | 3689 | 139629 | 1317 | 1028 | 689 | 2082 | 2408 | 1332 | 17318 | 234 | 135 | 356 | 243 | 184493 | 53318 | 0.408 |
| 306 | 314.57 | 260377 | 1.36 | 157 | 6866 | 99 | 32 | 0 | 1183 | 1515 | 1474 | 13207 | 172 | 248 | 3465 | 140401 | 1191 | 965 | 659 | 1977 | 1979 | 1525 | 17185 | 189 | 153 | 301 | 412 | 184935 | 52737 | 0.409 |
| 307 | 315.57 | 261396 | 1.32 | 158 | 6736 | 107 | 45 | 14 | 1209 | 1659 | 1282 | 13780 | 173 | 325 | 3800 | 138435 | 1390 | 1174 | 718 | 1881 | 2000 | 1187 | 18379 | 312 | 108 | 298 | 26 | 184706 | 52975 | 0.41 |
| 308 | 316.57 | 263035 | 1.41 | 186 | 6443 | 85 | 52 | 10 | 1216 | 1606 | 1332 | 14283 | 233 | 267 | 4060 | 151146 | 1263 | 1126 | 532 | 2215 | 2218 | 1460 | 17554 | 153 | 164 | 395 | 484 | 184487 | 52624 | 0.409 |
| 309 | 317.57 | 261819 | 1.35 | 203 | 6767 | 83 | 44 | 0 | 1188 | 1533 | 1217 | 12168 | 193 | 467 | 3276 | 141458 | 1304 | 998 | 675 | 2212 | 2219 | 1594 | 17636 | 287 | 105 | 395 | 312 | 184990 | 53088 | 0.411 |
| 310 | 318.57 | 259656 | 1.39 | 161 | 6755 | 40 | 0 | 34 | 1240 | 1568 | 1255 | 13570 | 209 | 266 | 2967 | 130719 | 1369 | 1063 | 818 | 2000 | 2091 | 1386 | 17699 | 85 | 237 | 278 | 394 | 185219 | 54209 | 0.409 |
| 311 | 319.57 | 261415 | 1.39 | 155 | 6393 | 98 | 44 | 0 | 1186 | 1442 | 1517 | 12164 | 184 | 263 | 3391 | 148500 | 1282 | 1091 | 643 | 2111 | 2115 | 2119 | 16818 | 236 | 148 | 305 | 375 | 185472 | 53005 | 0.409 |
| 312 | 320.57 | 255636 | 1.31 | 170 | 6659 | 65 | 70 | 0 | 1241 | 1492 | 1330 | 12378 | 181 | 509 | 3302 | 131470 | 1371 | 1194 | 685 | 2095 | 2076 | 1162 | 17326 | 339 | 76 | 291 | 386 | 185474 | 52761 | 0.406 |
| 313 | 321.57 | 256944 | 1.41 | 143 | 6911 | 55 | 90 | 18 | 1217 | 1631 | 1329 | 12352 | 250 | 366 | 2681 | 128271 | 1382 | 1062 | 790 | 1750 | 2143 | 1149 | 17418 | 238 | 188 | 296 | 298 | 185363 | 53593 | 0.408 |
| 314 | 322.57 | 258873 | 1.36 | 194 | 6552 | 86 | 0 | 0 | 1128 | 1536 | 1304 | 14751 | 224 | 300 | 3223 | 134403 | 1347 | 1143 | 931 | 2061 | 2374 | 1307 | 17373 | 190 | 124 | 325 | 498 | 185140 | 52819 | 0.409 |
| 315 | 323.57 | 265467 | 1.37 | 202 | 6490 | 120 | 61 | 0 | 1248 | 1620 | 1263 | 13477 | 224 | 2230 | 3851 | 157455 | 1381 | 1006 | 868 | 2018 | 2471 | 1855 | 16974 | 244 | 152 | 281 | 624 | 185031 | 52871 | 0.41 |
| 316 | 324.57 | 257064 | 1.45 | 203 | 6752 | 43 | 0 | 0 | 1193 | 1492 | 1284 | 12792 | 193 | 491 | 3537 | 134998 | 1387 | 1224 | 732 | 2009 | 2278 | 1958 | 20409 | 230 | 58 | 402 | 435 | 183949 | 52409 | 0.406 |
| 317 | 325.57 | 258362 | 1.44 | 115 | 6675 | 61 | 15 | 0 | 1198 | 1564 | 1315 | 12552 | 96 | 523 | 3404 | 137603 | 1382 | 1130 | 718 | 1902 | 2171 | 1426 | 17268 | 236 | 104 | 367 | 331 | 183373 | 53346 | 0.407 |
| 318 | 326.57 | 260394 | 1.36 | 163 | 6716 | 57 | 49 | 0 | 1224 | 1482 | 1412 | 13779 | 241 | 550 | 3314 | 136957 | 1447 | 1171 | 758 | 2049 | 1942 | 1308 | 17158 | 187 | 147 | 237 | 499 | 185850 | 53319 | 0.41 |
| 319 | 327.57 | 258028 | 1.31 | 217 | 6560 | 71 | 42 | 0 | 1278 | 1513 | 1303 | 12279 | 183 | 478 | 3618 | 138273 | 1398 | 1196 | 717 | 1721 | 1838 | 2025 | 16185 | 286 | 92 | 252 | 361 | 183841 | 52711 | 0.407 |
| 320 | 328.57 | 258210 | 1.35 | 135 | 6720 | 102 | 12 | 0 | 1197 | 1564 | 1246 | 14710 | 197 | 500 | 3792 | 136307 | 1376 | 1177 | 729 | 1909 | 2018 | 1626 | 16128 | 292 | 114 | 302 | 52 | 184451 | 53570 | 0.406 |
| 321 | 329.57 | 263282 | 1.34 | 142 | 6670 | 72 | 44 | 0 | 1237 | 1558 | 1320 | 13445 | 163 | 283 | 3288 | 152510 | 1357 | 1022 | 656 | 2091 | 1966 | 1395 | 15832 | 164 | 132 | 236 | 299 | 185680 | 53628 | 0.409 |
| 322 | 330.57 | 261791 | 1.31 | 182 | 6609 | 88 | 32 | 0 | 1304 | 1548 | 1252 | 14146 | 125 | 366 | 3687 | 143759 | 1373 | 942 | 703 | 1858 | 2029 | 1346 | 15949 | 214 | 121 | 292 | 380 | 186453 | 52867 | 0.41 |
| 323 | 331.57 | 259368 | 1.38 | 195 | 6548 | 109 | 97 | 0 | 1200 | 1772 | 1274 | 12836 | 129 | 447 | 4445 | 136095 | 1370 | 1129 | 639 | 2152 | 2085 | 1849 | 18107 | 154 | 238 | 331 | 411 | 185807 | 53376 | 0.409 |
| 324 | 332.57 | 261356 | 1.39 | 147 | 6559 | 78 | 9 | 8 | 1166 | 1698 | 1270 | 13397 | 237 | 419 | 3884 | 144129 | 1304 | 1018 | 673 | 1943 | 2179 | 1681 | 19216 | 305 | 95 | 276 | 326 | 183023 | 52673 | 0.409 |
| 325 | 333.57 | 260831 | 1.33 | 167 | 6339 | 82 | 0 | 0 | 1235 | 1608 | 1304 | 14211 | 113 | 591 | 3105 | 145173 | 1424 | 1201 | 661 | 1890 | 2003 | 1670 | 16572 | 283 | 129 | 363 | 520 | 184893 | 52856 | 0.407 |
| 326 | 334.57 | 270291 | 1.32 | 164 | 6521 | 108 | 0 | 0 | 1138 | 1610 | 1432 | 14193 | 135 | 948 | 4307 | 158598 | 1348 | 1244 | 836 | 1847 | 2733 | 2066 | 18538 | 249 | 145 | 271 | 507 | 185737 | 53123 | 0.414 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 327 | 335.57 | 274203 | 1.32 | 172 | 6759 | 87 | 31 | 25 | 1240 | 1696 | 1413 | 17000 | 77 | 571 | 6644 | 175596 | 1383 | 1120 | 846 | 2150 | 2463 | 1733 | 16819 | 342 | 93 | 383 | 608 | 184739 | 52518 | 0.414 |
| 328 | 336.57 | 270471 | 1.34 | 152 | 6680 | 5 | 14 | 0 | 1174 | 1700 | 1332 | 12734 | 183 | 399 | 7407 | 169885 | 1426 | 1191 | 535 | 1903 | 2518 | 1626 | 16491 | 217 | 168 | 298 | 726 | 183743 | 51977 | 0.411 |
| 329 | 337.57 | 258432 | 1.31 | 151 | 6220 | 65 | 33 | 0 | 1171 | 1507 | 1232 | 14315 | 191 | 396 | 5413 | 170665 | 1341 | 1101 | 839 | 1922 | 2062 | 1699 | 16649 | 213 | 162 | 268 | 483 | 175094 | 51257 | 0.401 |
| 330 | 338.57 | 252501 | 1.45 | 152 | 6375 | 108 | 7 | 0 | 1057 | 1546 | 1203 | 13302 | 151 | 424 | 2787 | 133194 | 1361 | 1059 | 753 | 2065 | 1944 | 1649 | 18430 | 208 | 125 | 244 | 234 | 181108 | 52685 | 0.403 |
| 331 | 339.57 | 259600 | 1.47 | 142 | 6516 | 42 | 0 | 0 | 1155 | 1647 | 1263 | 13150 | 303 | 505 | 2541 | 142184 | 1440 | 1135 | 682 | 2139 | 2227 | 1702 | 18473 | 324 | 84 | 297 | 179 | 183535 | 52551 | 0.408 |
| 332 | 340.57 | 263969 | 1.42 | 226 | 6662 | 101 | 24 | 0 | 1250 | 1602 | 1313 | 13433 | 194 | 459 | 2835 | 154676 | 1354 | 1131 | 680 | 1955 | 2040 | 1662 | 20282 | 257 | 115 | 312 | 369 | 180785 | 52680 | 0.41 |
| 333 | 341.57 | 269749 | 1.39 | 174 | 6407 | 66 | 17 | 0 | 1174 | 1759 | 1353 | 12949 | 225 | 869 | 3474 | 175729 | 1513 | 1183 | 885 | 2066 | 2086 | 1214 | 17723 | 238 | 140 | 344 | 409 | 181886 | 53437 | 0.411 |
| 334 | 342.57 | 260922 | 1.36 | 161 | 6431 | 48 | 50 | 0 | 1218 | 1636 | 1453 | 13483 | 170 | 377 | 3773 | 151371 | 1389 | 1270 | 763 | 2159 | 2073 | 1370 | 15925 | 246 | 150 | 306 | 285 | 182934 | 52744 | 0.407 |
| 335 | 343.57 | 263410 | 1.38 | 171 | 6356 | 55 | 46 | 0 | 1121 | 1632 | 1438 | 16928 | 276 | 632 | 3351 | 148432 | 1345 | 1202 | 831 | 1778 | 2146 | 1441 | 17917 | 228 | 140 | 297 | 47 | 184240 | 53002 | 0.409 |
| 336 | 344.57 | 268424 | 1.36 | 174 | 6533 | 65 | 13 | 0 | 1158 | 1612 | 1317 | 14113 | 132 | 545 | 3614 | 163094 | 1360 | 1001 | 797 | 2154 | 2197 | 1335 | 20120 | 256 | 108 | 340 | 359 | 181675 | 52264 | 0.412 |
| 337 | 345.57 | 267793 | 1.36 | 228 | 6510 | 93 | 4 | 12 | 1193 | 1704 | 1352 | 15600 | 226 | 350 | 4328 | 163175 | 1384 | 1080 | 744 | 2057 | 2306 | 1681 | 17348 | 262 | 83 | 392 | 361 | 184079 | 52611 | 0.411 |
| 338 | 346.57 | 264006 | 1.38 | 218 | 6655 | 106 | 39 | 0 | 1250 | 1630 | 1253 | 13867 | 223 | 292 | 3452 | 151745 | 1358 | 1102 | 857 | 1916 | 1966 | 1522 | 16800 | 255 | 146 | 274 | 315 | 184989 | 52935 | 0.41 |
| 339 | 347.57 | 262555 | 1.33 | 77 | 6658 | 48 | 6 | 12 | 1204 | 1610 | 1276 | 14274 | 221 | 529 | 2679 | 153255 | 1340 | 1196 | 859 | 1581 | 1880 | 1640 | 17069 | 291 | 101 | 272 | 209 | 183665 | 52887 | 0.409 |
| 340 | 348.57 | 264335 | 1.31 | 201 | 6591 | 113 | 70 | 0 | 1209 | 1675 | 1263 | 13643 | 181 | 288 | 4112 | 156931 | 1384 | 1039 | 716 | 1970 | 2220 | 1492 | 15826 | 207 | 171 | 243 | 369 | 184741 | 52823 | 0.409 |
| 341 | 349.57 | 266998 | 1.38 | 141 | 6248 | 89 | 47 | 0 | 1285 | 1699 | 1296 | 15222 | 96 | 278 | 7234 | 162112 | 1353 | 1067 | 701 | 1972 | 2189 | 1451 | 17546 | 325 | 112 | 287 | 395 | 182423 | 52792 | 0.41 |
| 342 | 350.57 | 261641 | 1.37 | 210 | 6387 | 63 | 68 | 0 | 1166 | 1687 | 1268 | 12569 | 79 | 265 | 4777 | 149854 | 1364 | 1177 | 760 | 1988 | 2075 | 1495 | 17384 | 293 | 76 | 315 | 299 | 182287 | 52418 | 0.408 |
| 343 | 351.57 | 264715 | 1.41 | 175 | 6693 | 51 | 67 | 0 | 1189 | 1644 | 1300 | 12313 | 256 | 1200 | 2605 | 149573 | 1413 | 1060 | 682 | 1807 | 2101 | 1065 | 16852 | 203 | 82 | 224 | 137 | 185991 | 53711 | 0.412 |
| 344 | 352.57 | 259404 | 1.37 | 190 | 6706 | 80 | 88 | 22 | 1163 | 1688 | 1287 | 12866 | 215 | 326 | 2540 | 133009 | 1383 | 1119 | 701 | 2181 | 2284 | 1286 | 17472 | 323 | 103 | 306 | 324 | 185288 | 53795 | 0.409 |
| 345 | 353.57 | 255787 | 1.33 | 172 | 6524 | 62 | 31 | 0 | 1197 | 1590 | 1396 | 13688 | 223 | 461 | 2636 | 135017 | 1334 | 1195 | 736 | 2046 | 2118 | 1251 | 16898 | 173 | 183 | 241 | 193 | 184097 | 53076 | 0.406 |
| 346 | 354.57 | 259277 | 1.3 | 191 | 6535 | 94 | 46 | 0 | 1218 | 1588 | 1361 | 12542 | 149 | 400 | 2888 | 142837 | 1409 | 1173 | 768 | 2164 | 2411 | 1767 | 17565 | 280 | 147 | 358 | 486 | 185245 | 52899 | 0.408 |
| 347 | 355.57 | 258495 | 1.35 | 200 | 6598 | 22 | 73 | 0 | 1246 | 1598 | 1218 | 13375 | 176 | 403 | 2769 | 130047 | 1403 | 1229 | 703 | 2245 | 2076 | 1165 | 18578 | 246 | 94 | 333 | 227 | 186194 | 53529 | 0.409 |
| 348 | 356.57 | 258913 | 1.4 | 125 | 6555 | 84 | 0 | 0 | 1146 | 1565 | 1229 | 13436 | 138 | 397 | 3099 | 129331 | 1429 | 1100 | 762 | 2159 | 2182 | 1427 | 17958 | 255 | 142 | 252 | 206 | 187769 | 54002 | 0.41 |
| 349 | 357.57 | 261318 | 1.4 | 178 | 6792 | 59 | 29 | 0 | 1198 | 1626 | 1238 | 13273 | 300 | 283 | 3578 | 147181 | 1362 | 1305 | 729 | 2112 | 2450 | 1436 | 16875 | 204 | 179 | 410 | 358 | 184401 | 53136 | 0.408 |
| 350 | 358.57 | 263471 | 1.39 | 151 | 6690 | 78 | 51 | 0 | 1200 | 1477 | 1364 | 13803 | 107 | 258 | 3564 | 142395 | 1332 | 1039 | 626 | 2005 | 2037 | 1493 | 18892 | 247 | 121 | 368 | 381 | 184028 | 53341 | 0.411 |
| 351 | 359.57 | 260664 | 1.36 | 151 | 6857 | 62 | 55 | 0 | 1252 | 1605 | 1253 | 13004 | 169 | 312 | 3000 | 135121 | 1369 | 1075 | 879 | 2085 | 2354 | 1471 | 16515 | 275 | 116 | 303 | 262 | 187992 | 53819 | 0.41 |
| 352 | 360.57 | 259124 | 1.33 | 257 | 6695 | 24 | 6 | 0 | 1184 | 1633 | 1308 | 14193 | 190 | 344 | 3116 | 131652 | 1218 | 1001 | 635 | 1970 | 2039 | 1359 | 19435 | 373 | 111 | 334 | 281 | 184323 | 53053 | 0.409 |
| 353 | 361.57 | 260338 | 1.33 | 230 | 6591 | 39 | 15 | 0 | 1126 | 1697 | 1373 | 13935 | 234 | 401 | 3657 | 139636 | 1473 | 1165 | 845 | 2085 | 2194 | 1517 | 16943 | 281 | 84 | 298 | 305 | 186037 | 53345 | 0.408 |
| 354 | 362.57 | 256956 | 1.38 | 219 | 6635 | 97 | 41 | 0 | 1147 | 1574 | 1401 | 14156 | 137 | 437 | 3727 | 126216 | 1354 | 1072 | 751 | 1932 | 2136 | 1485 | 20263 | 174 | 171 | 282 | 202 | 184424 | 52844 | 0.408 |
| 355 | 363.57 | 258264 | 1.45 | 122 | 6609 | 24 | 0 | 0 | 1211 | 1640 | 1371 | 12733 | 222 | 417 | 4133 | 129419 | 1444 | 1244 | 795 | 2370 | 2228 | 1529 | 17216 | 322 | 75 | 350 | 350 | 186740 | 53124 | 0.408 |
| 356 | 364.57 | 257388 | 1.35 | 151 | 6572 | 105 | 40 | 0 | 1159 | 1558 | 1472 | 11148 | 307 | 646 | 4184 | 129039 | 1369 | 1252 | 700 | 2179 | 2191 | 1336 | 17315 | 343 | 48 | 268 | 361 | 185685 | 53340 | 0.407 |
| 357 | 365.57 | 258558 | 1.41 | 152 | 6406 | 75 | 25 | 0 | 1172 | 1669 | 1351 | 13615 | 334 | 496 | 4637 | 132463 | 1364 | 1057 | 714 | 2060 | 2330 | 1402 | 18710 | 288 | 135 | 336 | 295 | 184989 | 52963 | 0.407 |
| 358 | 366.57 | 258232 | 1.43 | 230 | 6541 | 89 | 13 | 0 | 1185 | 1657 | 1315 | 14505 | 301 | 484 | 4890 | 133010 | 1359 | 1123 | 721 | 2241 | 1945 | 1614 | 17210 | 275 | 130 | 324 | 248 | 185278 | 53757 | 0.407 |
| 359 | 367.57 | 260619 | 1.33 | 172 | 6392 | 50 | 0 | 0 | 1215 | 1600 | 1355 | 15259 | 303 | 511 | 5324 | 139567 | 1400 | 1155 | 683 | 1976 | 2024 | 1638 | 16572 | 247 | 110 | 314 | 349 | 184638 | 53250 | 0.408 |
| 360 | 368.57 | 263952 | 1.39 | 157 | 6569 | 64 | 58 | 0 | 1181 | 1817 | 1407 | 14440 | 240 | 586 | 5417 | 161135 | 1433 | 1154 | 773 | 2148 | 2398 | 1268 | 16516 | 234 | 170 | 350 | 268 | 181545 | 52847 | 0.407 |
| 361 | 369.57 | 258140 | 1.25 | 189 | 6594 | 95 | 0 | 0 | 1185 | 1571 | 1326 | 12067 | 209 | 488 | 5995 | 146651 | 1249 | 909 | 847 | 2198 | 2247 | 1449 | 16246 | 221 | 97 | 267 | 508 | 181945 | 52192 | 0.405 |
| 362 | 370.57 | 263571 | 1.27 | 157 | 5959 | 25 | 0 | 0 | 1187 | 1739 | 1389 | 13961 | 319 | 435 | 6759 | 170640 | 1360 | 1184 | 794 | 1831 | 2074 | 2051 | 15866 | 272 | 108 | 299 | 531 | 179121 | 51691 | 0.404 |
| 363 | 371.57 | 275609 | 1.39 | 241 | 5909 | 67 | 31 | 12 | 1176 | 1804 | 1458 | 13793 | 397 | 390 | 6267 | 192005 | 1336 | 1121 | 834 | 2221 | 2144 | 1750 | 15535 | 308 | 86 | 353 | 517 | 182455 | 52696 | 0.412 |
| 364 | 372.57 | 277938 | 1.42 | 194 | 6014 | 79 | 19 | 0 | 1117 | 1838 | 1515 | 13564 | 248 | 595 | 5961 | 200561 | 1425 | 1265 | 842 | 2114 | 2387 | 1273 | 15313 | 257 | 119 | 309 | 716 | 182690 | 52639 | 0.413 |
| 365 | 373.57 | 272923 | 1.3 | 186 | 5822 | 93 | 34 | 0 | 1276 | 1801 | 1370 | 12959 | 350 | 623 | 7477 | 215565 | 1203 | 1128 | 620 | 2530 | 2415 | 1449 | 16135 | 282 | 110 | 309 | 693 | 174850 | 50510 | 0.406 |
| 366 | 374.57 | 255134 | 1.42 | 183 | 5837 | 46 | 28 | 11 | 1196 | 1765 | 1304 | 13357 | 245 | 294 | 7363 | 178278 | 1095 | 1200 | 708 | 2345 | 2089 | 1250 | 14672 | 144 | 205 | 292 | 510 | 173452 | 50970 | 0.395 |
| 367 | 375.57 | 252624 | 1.4 | 186 | 5850 | 71 | 59 | 0 | 1167 | 1620 | 1224 | 13508 | 36 | 405 | 8053 | 162135 | 1304 | 1120 | 823 | 2114 | 2104 | 1232 | 14148 | 246 | 75 | 374 | 472 | 176293 | 51058 | 0.396 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 368 | 376.57 | 261655 | 1.28 | 141 | 6036 | 100 | 44 | 6 | 1246 | 1680 | 1261 | 13445 | 104 | 418 | 8582 | 183883 | 1316 | 973 | 765 | 2185 | 2040 | 1662 | 15640 | 279 | 117 | 330 | 714 | 174399 | 50916 | 0.401 |
| 369 | 377.57 | 265896 | 1.39 | 180 | 5770 | 93 | 0 | 60 | 1150 | 1812 | 1402 | 11433 | 243 | 680 | 7306 | 188693 | 1261 | 1037 | 788 | 2332 | 2381 | 1331 | 17207 | 175 | 196 | 343 | 519 | 175446 | 52475 | 0.404 |
| 370 | 378.57 | 278128 | 1.39 | 202 | 5854 | 96 | 49 | 0 | 1182 | 1898 | 1381 | 13014 | 205 | 385 | 9240 | 231167 | 1164 | 969 | 720 | 2293 | 2183 | 1052 | 16286 | 270 | 118 | 364 | 575 | 173739 | 51177 | 0.408 |
| 371 | 379.57 | 275263 | 1.38 | 199 | 5973 | 90 | 61 | 14 | 1202 | 1807 | 1418 | 12421 | 337 | 511 | 9202 | 204823 | 1346 | 1053 | 701 | 2281 | 2060 | 1173 | 15128 | 308 | 122 | 414 | 524 | 181362 | 52051 | 0.41 |
| 372 | 380.57 | 271729 | 1.37 | 143 | 5930 | 81 | 0 | 0 | 1080 | 1817 | 1336 | 12015 | 306 | 530 | 7565 | 184371 | 1528 | 1144 | 908 | 2133 | 2352 | 1264 | 16666 | 212 | 197 | 354 | 500 | 179606 | 51917 | 0.411 |
| 373 | 381.57 | 270401 | 1.35 | 202 | 6056 | 89 | 18 | 0 | 1175 | 1822 | 1326 | 14665 | 237 | 465 | 7982 | 178763 | 1331 | 1179 | 888 | 2431 | 2447 | 1493 | 15971 | 204 | 148 | 373 | 651 | 181755 | 52829 | 0.41 |
| 374 | 382.57 | 270306 | 1.36 | 202 | 5791 | 56 | 17 | 0 | 1163 | 1854 | 1473 | 13036 | 248 | 372 | 9198 | 193588 | 1312 | 1007 | 888 | 2465 | 2157 | 1143 | 16456 | 187 | 185 | 301 | 676 | 179651 | 50941 | 0.407 |
| 375 | 383.57 | 268098 | 1.33 | 159 | 5887 | 72 | 86 | 20 | 1297 | 1829 | 1333 | 12542 | 261 | 438 | 11226 | 207120 | 1293 | 1062 | 712 | 2145 | 2088 | 1195 | 17949 | 259 | 150 | 339 | 550 | 172362 | 50138 | 0.402 |
| 376 | 384.57 | 254428 | 1.32 | 237 | 5492 | 114 | 39 | 0 | 1193 | 1598 | 1444 | 12455 | 182 | 577 | 10441 | 170394 | 1199 | 1096 | 599 | 2343 | 2152 | 2239 | 17878 | 240 | 128 | 328 | 326 | 173253 | 50359 | 0.397 |
| 377 | 385.57 | 261401 | 1.28 | 134 | 5683 | 88 | 57 | 0 | 1177 | 1664 | 1377 | 13581 | 316 | 313 | 9421 | 168050 | 1493 | 1062 | 853 | 1828 | 2053 | 1241 | 16233 | 204 | 149 | 259 | 586 | 179621 | 51500 | 0.404 |
| 378 | 386.57 | 279496 | 1.3 | 166 | 5732 | 93 | 49 | 0 | 1154 | 1687 | 1464 | 12639 | 323 | 666 | 9063 | 198654 | 1266 | 943 | 724 | 1938 | 2319 | 1364 | 18141 | 216 | 158 | 338 | 476 | 179711 | 52247 | 0.416 |
| 379 | 387.57 | 271977 | 1.4 | 214 | 6028 | 97 | 67 | 0 | 1195 | 1822 | 1534 | 11962 | 385 | 388 | 11771 | 164434 | 1323 | 1117 | 722 | 2544 | 2060 | 1392 | 18272 | 254 | 196 | 289 | 444 | 183752 | 52518 | 0.413 |
| 380 | 388.57 | 259947 | 1.18 | 166 | 5971 | 101 | 0 | 0 | 1243 | 1635 | 1440 | 14395 | 242 | 468 | 10361 | 153304 | 1304 | 1088 | 563 | 1971 | 2676 | 2015 | 16421 | 231 | 191 | 376 | 609 | 182201 | 52001 | 0.405 |
| 381 | 389.57 | 269070 | 1.27 | 243 | 5930 | 102 | 86 | 107 | 1181 | 1814 | 2906 | 13234 | 215 | 540 | 9552 | 165498 | 1453 | 1274 | 670 | 1896 | 3405 | 2584 | 17606 | 323 | 281 | 385 | 856 | 181496 | 51605 | 0.41 |
| 382 | 390.57 | 274764 | 1.37 | 222 | 5633 | 137 | 61 | 7 | 1202 | 1740 | 5182 | 12993 | 283 | 368 | 9707 | 180888 | 1245 | 1213 | 693 | 1988 | 3271 | 2429 | 16893 | 644 | 302 | 365 | 962 | 179656 | 51831 | 0.412 |
| 383 | 391.57 | 266110 | 1.32 | 214 | 5958 | 66 | 7 | 0 | 1224 | 1793 | 2248 | 12977 | 219 | 573 | 9404 | 165630 | 1355 | 1221 | 754 | 1965 | 2426 | 1705 | 15607 | 370 | 173 | 341 | 681 | 182282 | 52272 | 0.409 |
| 384 | 392.57 | 270558 | 1.45 | 172 | 5959 | 118 | 57 | 28 | 1236 | 1758 | 1723 | 13153 | 238 | 535 | 6869 | 196595 | 1367 | 1149 | 699 | 2141 | 2087 | 1610 | 15783 | 341 | 90 | 362 | 640 | 178399 | 52140 | 0.408 |
| 385 | 393.57 | 266839 | 1.31 | 233 | 6207 | 50 | 57 | 0 | 1287 | 1685 | 2005 | 12419 | 107 | 492 | 7307 | 159997 | 1407 | 1115 | 694 | 2216 | 2322 | 1876 | 16186 | 334 | 156 | 325 | 382 | 186318 | 52419 | 0.409 |
| 386 | 394.57 | 264440 | 1.39 | 149 | 6346 | 51 | 35 | 0 | 1154 | 1796 | 1459 | 13048 | 249 | 396 | 6697 | 148532 | 1386 | 1170 | 812 | 2449 | 2156 | 1548 | 17297 | 266 | 143 | 290 | 178 | 184955 | 53223 | 0.41 |
| 387 | 395.57 | 258115 | 1.39 | 197 | 6542 | 64 | 6 | 0 | 1160 | 1759 | 1454 | 13216 | 185 | 378 | 7708 | 141669 | 1309 | 1066 | 718 | 1853 | 2286 | 1398 | 18608 | 247 | 101 | 348 | 317 | 182302 | 52411 | 0.404 |
| 388 | 396.57 | 254807 | 1.29 | 151 | 6118 | 71 | 41 | 0 | 1184 | 1587 | 1414 | 13030 | 255 | 418 | 7676 | 138505 | 1199 | 1026 | 770 | 2142 | 2186 | 1417 | 16693 | 202 | 179 | 355 | 280 | 183452 | 53154 | 0.401 |
| 389 | 397.57 | 257668 | 1.37 | 169 | 6475 | 53 | 30 | 0 | 1165 | 1617 | 1311 | 13784 | 209 | 255 | 7894 | 136699 | 1319 | 1115 | 820 | 2351 | 2098 | 1304 | 17175 | 235 | 154 | 272 | 307 | 185373 | 53669 | 0.405 |
| 390 | 398.57 | 261933 | 1.37 | 160 | 6369 | 50 | 18 | 0 | 1141 | 1815 | 1411 | 14111 | 272 | 304 | 7431 | 155302 | 1357 | 999 | 677 | 2014 | 2160 | 1495 | 16904 | 281 | 119 | 279 | 236 | 180821 | 52495 | 0.406 |
| 391 | 399.57 | 269083 | 1.21 | 189 | 6031 | 84 | 0 | 5 | 1163 | 1677 | 1510 | 17706 | 238 | 496 | 7400 | 167726 | 1246 | 1059 | 741 | 2128 | 2401 | 1583 | 17687 | 211 | 231 | 330 | 473 | 183793 | 52483 | 0.41 |
| 392 | 400.57 | 268155 | 1.34 | 202 | 6016 | 19 | 50 | 0 | 1273 | 1829 | 1452 | 15592 | 282 | 463 | 6086 | 189330 | 1329 | 1113 | 678 | 2267 | 1916 | 1305 | 16337 | 303 | 101 | 315 | 436 | 177744 | 51610 | 0.406 |
| 393 | 401.57 | 265731 | 1.32 | 202 | 5859 | 41 | 60 | 18 | 1208 | 1760 | 1304 | 14236 | 306 | 447 | 8203 | 179475 | 1162 | 1032 | 779 | 2217 | 2149 | 1416 | 17607 | 119 | 140 | 285 | 564 | 176364 | 51293 | 0.405 |
| 394 | 402.57 | 269494 | 1.36 | 204 | 5748 | 92 | 51 | 47 | 1256 | 1882 | 1508 | 13403 | 159 | 423 | 8254 | 180393 | 1306 | 1069 | 619 | 2196 | 2196 | 1429 | 17950 | 265 | 127 | 235 | 440 | 179802 | 51846 | 0.409 |
| 395 | 403.57 | 266161 | 1.25 | 247 | 5961 | 79 | 20 | 6 | 1296 | 1769 | 1419 | 13068 | 300 | 480 | 7046 | 189095 | 1380 | 1123 | 675 | 2097 | 2179 | 1328 | 14674 | 255 | 76 | 311 | 399 | 178332 | 51125 | 0.404 |
| 396 | 404.57 | 275348 | 1.36 | 216 | 5671 | 85 | 0 | 9 | 1127 | 1977 | 1545 | 14134 | 165 | 560 | 7708 | 207187 | 1276 | 1116 | 857 | 2304 | 2109 | 1249 | 15745 | 267 | 121 | 368 | 349 | 178633 | 51490 | 0.41 |
| 397 | 405.57 | 280345 | 1.39 | 184 | 5987 | 95 | 10 | 0 | 1242 | 1831 | 1626 | 15125 | 279 | 393 | 10641 | 200193 | 1388 | 1147 | 599 | 2554 | 2580 | 2124 | 17460 | 359 | 131 | 452 | 719 | 180231 | 52417 | 0.415 |
| 398 | 406.57 | 277547 | 1.38 | 213 | 5531 | 96 | 31 | 11 | 1280 | 1851 | 2249 | 14765 | 218 | 323 | 15514 | 208011 | 1144 | 1400 | 551 | 1880 | 2625 | 2999 | 15159 | 208 | 414 | 373 | 588 | 177280 | 51343 | 0.409 |
| 399 | 407.57 | 263788 | 1.33 | 197 | 5745 | 97 | 59 | 16 | 1239 | 1791 | 1387 | 12939 | 147 | 365 | 10168 | 182392 | 1195 | 1039 | 609 | 1997 | 2249 | 1356 | 15249 | 310 | 111 | 276 | 420 | 177154 | 51143 | 0.402 |
| 400 | 408.57 | 267647 | 1.34 | 197 | 5228 | 135 | 19 | 34 | 1273 | 1784 | 1466 | 14021 | 228 | 347 | 10927 | 230455 | 1244 | 1010 | 701 | 2497 | 2131 | 874 | 13635 | 338 | 84 | 275 | 561 | 169032 | 49537 | 0.398 |
| 401 | 409.57 | 263468 | 1.34 | 229 | 5084 | 117 | 83 | 30 | 1185 | 1860 | 1509 | 13568 | 189 | 504 | 13088 | 214010 | 1201 | 1061 | 632 | 2381 | 2197 | 1387 | 14439 | 156 | 133 | 281 | 820 | 170637 | 49979 | 0.396 |
| 402 | 410.57 | 263991 | 1.29 | 238 | 5216 | 102 | 57 | 15 | 1279 | 1823 | 1478 | 13264 | 244 | 377 | 13830 | 211121 | 1215 | 941 | 658 | 2234 | 2021 | 1121 | 16942 | 264 | 69 | 327 | 527 | 167245 | 49967 | 0.397 |
| 403 | 411.57 | 278755 | 1.36 | 209 | 5417 | 107 | 44 | 0 | 1200 | 1858 | 1402 | 12760 | 255 | 551 | 12200 | 255223 | 1245 | 1028 | 627 | 2009 | 2049 | 1318 | 14278 | 292 | 60 | 404 | 563 | 169254 | 49481 | 0.405 |
| 404 | 412.57 | 269349 | 1.36 | 246 | 5243 | 95 | 63 | 18 | 1157 | 1906 | 1529 | 14777 | 249 | 468 | 12050 | 218576 | 1195 | 1126 | 615 | 2314 | 2331 | 1216 | 16921 | 267 | 170 | 334 | 602 | 168832 | 50143 | 0.402 |
| 405 | 413.57 | 268199 | 1.4 | 236 | 5334 | 34 | 40 | 24 | 1272 | 1749 | 1608 | 13499 | 198 | 420 | 13701 | 197325 | 1276 | 1092 | 553 | 2309 | 2167 | 837 | 16498 | 284 | 127 | 375 | 617 | 176637 | 51220 | 0.403 |
| 406 | 414.57 | 271020 | 1.25 | 190 | 5370 | 81 | 62 | 20 | 1236 | 1919 | 1486 | 11411 | 228 | 463 | 13435 | 199101 | 1374 | 1161 | 770 | 2356 | 2317 | 1402 | 14962 | 283 | 110 | 359 | 550 | 178937 | 51895 | 0.407 |
| 407 | 415.57 | 281751 | 1.3 | 202 | 5624 | 123 | 44 | 218 | 1307 | 1969 | 1601 | 14128 | 181 | 328 | 12365 | 215380 | 1362 | 1147 | 741 | 2481 | 2303 | 1305 | 16614 | 263 | 116 | 354 | 639 | 179687 | 51827 | 0.413 |
| 408 | 416.57 | 267622 | 1.28 | 155 | 5354 | 100 | 45 | 0 | 1351 | 1817 | 1416 | 13833 | 151 | 478 | 13035 | 196078 | 1272 | 1201 | 663 | 2470 | 2017 | 1255 | 17292 | 219 | 134 | 279 | 592 | 174737 | 51131 | 0.404 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 409 | 417.57 | 266445 | 1.37 | 191 | 5421 | 51 | 26 | 32 | 1233 | 1816 | 1464 | 11803 | 234 | 1093 | 10433 | 193354 | 1199 | 1029 | 576 | 2626 | 2102 | 1172 | 17789 | 205 | 179 | 346 | 372 | 173441 | 51354 | 0.405 |
| 410 | 418.57 | 283555 | 1.33 | 239 | 5317 | 101 | 12 | 142 | 1238 | 1841 | 1404 | 11752 | 189 | 472 | 12202 | 263545 | 1196 | 1097 | 525 | 2247 | 1990 | 1324 | 14932 | 315 | 105 | 324 | 578 | 169275 | 49963 | 0.408 |
| 411 | 419.57 | 274119 | 1.34 | 247 | 5557 | 64 | 51 | 0 | 1205 | 1858 | 1363 | 12898 | 201 | 438 | 11454 | 211368 | 1219 | 1209 | 582 | 2311 | 2154 | 1468 | 17212 | 290 | 146 | 356 | 710 | 173279 | 50858 | 0.407 |
| 412 | 420.57 | 264855 | 1.32 | 216 | 5477 | 115 | 9 | 0 | 1322 | 1819 | 1465 | 12028 | 331 | 335 | 10054 | 189933 | 1251 | 1230 | 688 | 2196 | 2114 | 1328 | 16237 | 173 | 107 | 314 | 552 | 176069 | 50882 | 0.404 |
| 413 | 421.57 | 269212 | 1.28 | 247 | 5551 | 93 | 47 | 44 | 1312 | 1793 | 1481 | 13215 | 216 | 467 | 11389 | 222323 | 1367 | 1009 | 633 | 2406 | 1978 | 1123 | 17205 | 229 | 112 | 218 | 543 | 167370 | 49507 | 0.401 |
| 414 | 422.57 | 267622 | 1.41 | 184 | 5743 | 104 | 35 | 0 | 1270 | 1673 | 1427 | 12448 | 304 | 251 | 8867 | 188929 | 1289 | 1083 | 777 | 2589 | 2082 | 1256 | 17716 | 273 | 121 | 333 | 349 | 176476 | 51675 | 0.406 |
| 415 | 423.57 | 264981 | 1.27 | 177 | 5669 | 75 | 70 | 104 | 1245 | 1790 | 1503 | 14458 | 128 | 1520 | 8515 | 184142 | 1338 | 1110 | 595 | 2375 | 2330 | 1396 | 15508 | 241 | 145 | 277 | 461 | 178360 | 51846 | 0.405 |
| 416 | 424.57 | 262226 | 1.3 | 224 | 5925 | 115 | 8 | 9 | 1243 | 1783 | 1351 | 12295 | 289 | 637 | 6643 | 171140 | 1321 | 1174 | 716 | 2279 | 2278 | 1053 | 16666 | 172 | 218 | 363 | 639 | 177051 | 51997 | 0.405 |
| 417 | 425.57 | 260084 | 1.38 | 191 | 6085 | 39 | 0 | 65 | 1110 | 1786 | 1408 | 14038 | 68 | 546 | 5910 | 163639 | 1291 | 977 | 626 | 2058 | 2264 | 1297 | 17495 | 296 | 86 | 406 | 175 | 178768 | 52152 | 0.404 |
| 418 | 426.57 | 258562 | 1.38 | 208 | 6317 | 57 | 15 | 27 | 1167 | 1712 | 1358 | 14143 | 196 | 258 | 4886 | 156807 | 1233 | 1074 | 696 | 2305 | 2336 | 1503 | 16374 | 301 | 108 | 270 | 503 | 179705 | 52389 | 0.404 |
| 419 | 427.57 | 256875 | 1.33 | 188 | 6340 | 88 | 55 | 0 | 1227 | 1765 | 1367 | 14050 | 195 | 959 | 4894 | 144714 | 1406 | 1103 | 754 | 2541 | 2160 | 1245 | 17838 | 228 | 103 | 322 | 555 | 180389 | 52213 | 0.405 |
| 420 | 428.57 | 256984 | 1.27 | 176 | 6300 | 83 | 17 | 0 | 1229 | 1696 | 1328 | 13259 | 169 | 1481 | 4834 | 147765 | 1236 | 949 | 764 | 2362 | 2476 | 1455 | 18878 | 216 | 126 | 353 | 461 | 177872 | 52564 | 0.405 |
| 421 | 429.57 | 258043 | 1.36 | 164 | 6137 | 77 | 0 | 0 | 1257 | 1692 | 1364 | 14044 | 194 | 980 | 4592 | 151788 | 1368 | 1134 | 732 | 1868 | 2279 | 1458 | 16363 | 277 | 150 | 369 | 514 | 180407 | 51869 | 0.405 |
| 422 | 430.57 | 259953 | 1.37 | 228 | 6284 | 76 | 17 | 19 | 1115 | 1910 | 1353 | 13814 | 197 | 429 | 4223 | 161752 | 1231 | 1035 | 727 | 2134 | 2106 | 1665 | 16547 | 286 | 213 | 311 | 385 | 179354 | 51705 | 0.404 |
| 423 | 431.57 | 264603 | 1.25 | 186 | 6259 | 134 | 38 | 0 | 1299 | 1706 | 1375 | 13981 | 218 | 384 | 4030 | 167843 | 1217 | 939 | 770 | 2100 | 2406 | 1397 | 18926 | 226 | 104 | 353 | 434 | 180272 | 52190 | 0.408 |
| 424 | 432.57 | 260117 | 1.37 | 203 | 6352 | 72 | 0 | 0 | 1206 | 1744 | 1435 | 13749 | 173 | 749 | 3621 | 165323 | 1276 | 1031 | 728 | 2083 | 2090 | 1154 | 15460 | 293 | 79 | 318 | 458 | 179555 | 52075 | 0.404 |
| 425 | 433.57 | 259857 | 1.43 | 148 | 6284 | 29 | 46 | 0 | 1119 | 1694 | 1371 | 14096 | 206 | 229 | 3661 | 161141 | 1206 | 1048 | 868 | 2293 | 2266 | 1335 | 16502 | 291 | 56 | 286 | 447 | 180771 | 52092 | 0.405 |
| 426 | 434.57 | 260655 | 1.43 | 226 | 6361 | 100 | 12 | 12 | 1208 | 1721 | 1398 | 14085 | 202 | 307 | 4646 | 160183 | 1311 | 1206 | 690 | 2587 | 2393 | 1209 | 16464 | 225 | 198 | 293 | 451 | 180694 | 52482 | 0.406 |
| 427 | 435.57 | 265318 | 1.4 | 186 | 6063 | 62 | 55 | 121 | 1220 | 1898 | 1542 | 13630 | 197 | 750 | 4900 | 173470 | 1247 | 1106 | 676 | 2362 | 2306 | 1483 | 16890 | 238 | 102 | 321 | 359 | 180398 | 51878 | 0.407 |
| 428 | 436.57 | 267379 | 1.3 | 255 | 5916 | 99 | 71 | 23 | 1168 | 1820 | 1429 | 13873 | 232 | 321 | 5719 | 191650 | 1318 | 1085 | 747 | 2222 | 2321 | 1372 | 15499 | 184 | 145 | 326 | 430 | 175804 | 51896 | 0.406 |
| 429 | 437.57 | 264554 | 1.37 | 151 | 6058 | 78 | 0 | 0 | 1227 | 1868 | 1443 | 13359 | 127 | 459 | 4916 | 176728 | 1277 | 999 | 743 | 2168 | 2238 | 1406 | 18079 | 227 | 97 | 391 | 313 | 177231 | 52000 | 0.406 |
| 430 | 438.57 | 267421 | 1.36 | 205 | 5947 | 110 | 61 | 16 | 1125 | 1855 | 1488 | 14529 | 222 | 620 | 4893 | 187676 | 1210 | 1074 | 700 | 1794 | 1875 | 1839 | 16580 | 288 | 79 | 392 | 375 | 177117 | 51623 | 0.407 |
| 431 | 439.57 | 266274 | 1.32 | 193 | 5973 | 35 | 46 | 0 | 1295 | 1742 | 1474 | 13013 | 275 | 415 | 4256 | 184677 | 1248 | 1130 | 686 | 2329 | 2035 | 1539 | 15982 | 202 | 106 | 366 | 452 | 178657 | 52264 | 0.408 |
| 432 | 440.57 | 263892 | 1.26 | 139 | 6250 | 58 | 40 | 0 | 1235 | 1860 | 1468 | 13145 | 356 | 358 | 4195 | 173094 | 1275 | 1051 | 706 | 2584 | 2207 | 1578 | 16309 | 216 | 131 | 341 | 554 | 180069 | 52015 | 0.407 |
| 433 | 441.57 | 263630 | 1.43 | 207 | 6140 | 65 | 54 | 0 | 1233 | 1724 | 1466 | 15109 | 180 | 431 | 4126 | 171956 | 1164 | 1068 | 715 | 2298 | 2456 | 1545 | 15569 | 367 | 64 | 250 | 434 | 179759 | 51617 | 0.406 |
| 434 | 442.57 | 261644 | 1.32 | 186 | 6161 | 88 | 26 | 0 | 1208 | 1832 | 1433 | 15154 | 58 | 626 | 4042 | 162589 | 1361 | 1235 | 686 | 2397 | 2233 | 1452 | 16676 | 310 | 95 | 326 | 357 | 179256 | 52591 | 0.406 |
| 435 | 443.57 | 262391 | 1.29 | 201 | 6189 | 81 | 61 | 0 | 1203 | 1744 | 1477 | 14437 | 267 | 562 | 4549 | 169065 | 1212 | 1083 | 801 | 2564 | 2364 | 1420 | 16405 | 151 | 146 | 261 | 384 | 179212 | 52130 | 0.405 |
| 436 | 444.57 | 266372 | 1.31 | 125 | 6192 | 68 | 0 | 24 | 1197 | 1850 | 1496 | 12541 | 219 | 258 | 4303 | 175946 | 1391 | 1117 | 884 | 2359 | 2521 | 1375 | 17340 | 270 | 135 | 353 | 346 | 179279 | 52347 | 0.409 |
| 437 | 445.57 | 264626 | 1.24 | 179 | 6047 | 67 | 44 | 0 | 1188 | 1807 | 1396 | 18956 | 231 | 476 | 4428 | 171567 | 1388 | 1212 | 680 | 1884 | 2280 | 1237 | 17345 | 298 | 116 | 212 | 516 | 177210 | 51908 | 0.407 |
| 438 | 446.57 | 267384 | 1.35 | 205 | 6186 | 31 | 50 | 0 | 1182 | 1774 | 1762 | 12500 | 253 | 354 | 4783 | 175493 | 1337 | 1119 | 796 | 2500 | 2561 | 1308 | 19106 | 348 | 115 | 382 | 450 | 178742 | 52270 | 0.409 |
| 439 | 447.57 | 267362 | 1.37 | 237 | 5965 | 72 | 59 | 0 | 1213 | 1865 | 1593 | 13307 | 203 | 368 | 4355 | 179757 | 1358 | 1017 | 857 | 2527 | 2403 | 1780 | 16772 | 223 | 162 | 265 | 477 | 179176 | 51750 | 0.409 |
| 440 | 448.57 | 270578 | 1.33 | 207 | 5976 | 45 | 69 | 0 | 1187 | 1894 | 1465 | 13984 | 109 | 355 | 4450 | 188249 | 1306 | 1000 | 770 | 2328 | 2472 | 1706 | 17255 | 250 | 35 | 289 | 267 | 179210 | 52132 | 0.41 |
| 441 | 449.57 | 270522 | 1.31 | 221 | 6240 | 80 | 0 | 26 | 1230 | 1902 | 1518 | 14213 | 205 | 613 | 4531 | 178698 | 1373 | 1046 | 789 | 2353 | 2274 | 1153 | 16842 | 204 | 182 | 362 | 280 | 182347 | 52826 | 0.412 |
| 442 | 450.57 | 270456 | 1.35 | 164 | 5952 | 86 | 44 | 48 | 1195 | 1895 | 1518 | 14046 | 228 | 449 | 4618 | 197713 | 1156 | 1137 | 829 | 2364 | 2256 | 1374 | 16435 | 208 | 138 | 294 | 548 | 176388 | 51258 | 0.409 |
| 443 | 451.57 | 264736 | 1.38 | 255 | 5901 | 107 | 56 | 66 | 1212 | 1868 | 1886 | 14916 | 179 | 312 | 4905 | 182424 | 1289 | 962 | 679 | 2368 | 2184 | 1335 | 17288 | 228 | 220 | 354 | 499 | 176407 | 51078 | 0.405 |
| 444 | 452.57 | 265130 | 1.39 | 236 | 6068 | 79 | 42 | 28 | 1260 | 1967 | 1561 | 14118 | 321 | 319 | 4867 | 182367 | 1241 | 1121 | 691 | 2406 | 2229 | 1301 | 17131 | 297 | 119 | 430 | 417 | 176368 | 51694 | 0.406 |
| 445 | 453.57 | 266029 | 1.33 | 175 | 5951 | 56 | 46 | 0 | 1192 | 1804 | 1599 | 15512 | 262 | 385 | 4581 | 179688 | 1345 | 1084 | 610 | 2204 | 2403 | 1580 | 16636 | 409 | 65 | 349 | 278 | 178954 | 51685 | 0.407 |
| 446 | 454.57 | 266879 | 1.37 | 212 | 6137 | 87 | 41 | 0 | 1205 | 1844 | 1498 | 14789 | 261 | 459 | 3481 | 181411 | 1258 | 1092 | 822 | 2288 | 2417 | 1439 | 16096 | 233 | 152 | 298 | 467 | 178256 | 52380 | 0.408 |
| 447 | 455.57 | 276000 | 1.4 | 210 | 6130 | 33 | 15 | 0 | 1193 | 2011 | 1555 | 15200 | 316 | 832 | 3618 | 199779 | 1321 | 951 | 677 | 2651 | 2206 | 1454 | 17846 | 200 | 142 | 326 | 620 | 178114 | 51916 | 0.413 |
| 448 | 456.57 | 275815 | 1.33 | 234 | 6157 | 78 | 21 | 0 | 1152 | 1899 | 1413 | 14294 | 232 | 571 | 3557 | 202896 | 1276 | 1031 | 721 | 2448 | 2219 | 1775 | 18093 | 285 | 74 | 395 | 673 | 177603 | 52003 | 0.413 |
| 449 | 457.57 | 270010 | 1.33 | 179 | 6404 | 78 | 37 | 140 | 1198 | 1681 | 1490 | 12315 | 185 | 347 | 4517 | 183463 | 1251 | 1122 | 798 | 2565 | 2313 | 1331 | 15536 | 269 | 106 | 383 | 312 | 180374 | 51790 | 0.411 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 450 | 458.57 | 264055 | 1.38 | 173 | 5881 | 77 | 14 | 92 | 1237 | 1785 | 1442 | 12641 | 60 | 431 | 4289 | 175588 | 1167 | 1117 | 756 | 1952 | 2176 | 1494 | 16436 | 212 | 157 | 343 | 404 | 180185 | 52033 | 0.407 |
| 451 | 459.57 | 260269 | 1.35 | 216 | 6202 | 81 | 28 | 0 | 1183 | 1746 | 1474 | 12566 | 232 | 340 | 3972 | 165937 | 1370 | 1107 | 778 | 2328 | 2078 | 1424 | 16175 | 248 | 123 | 245 | 448 | 178324 | 51743 | 0.405 |
| 452 | 460.57 | 251768 | 1.3 | 236 | 6110 | 63 | 11 | 0 | 1206 | 1714 | 1346 | 13193 | 186 | 698 | 3962 | 161451 | 1263 | 998 | 740 | 2351 | 2132 | 1533 | 16701 | 97 | 171 | 317 | 89 | 173549 | 51027 | 0.398 |
| 453 | 461.57 | 259725 | 1.4 | 204 | 6275 | 99 | 13 | 125 | 1150 | 1792 | 1498 | 11315 | 253 | 427 | 4381 | 152354 | 1364 | 1041 | 799 | 2230 | 2382 | 1854 | 18772 | 154 | 160 | 298 | 411 | 180503 | 52251 | 0.407 |
| 454 | 462.57 | 263883 | 1.38 | 174 | 6358 | 122 | 37 | 120 | 1170 | 1747 | 1393 | 13115 | 127 | 415 | 5035 | 159495 | 1247 | 1040 | 666 | 1947 | 2522 | 1433 | 18204 | 186 | 138 | 246 | 457 | 180247 | 52907 | 0.409 |
| 455 | 463.57 | 265254 | 1.34 | 206 | 6446 | 136 | 22 | 44 | 1178 | 1718 | 1459 | 15386 | 336 | 521 | 4616 | 162052 | 1320 | 1183 | 629 | 2468 | 2579 | 1226 | 17801 | 190 | 138 | 311 | 410 | 181526 | 52996 | 0.41 |
| 456 | 464.57 | 267414 | 1.3 | 233 | 6328 | 53 | 37 | 134 | 1158 | 1905 | 1456 | 14211 | 208 | 262 | 4227 | 173698 | 1235 | 1009 | 774 | 1919 | 2206 | 1339 | 16773 | 247 | 96 | 384 | 428 | 180223 | 52599 | 0.41 |
| 457 | 465.57 | 263567 | 1.32 | 183 | 6588 | 86 | 14 | 0 | 1144 | 1817 | 1463 | 11481 | 306 | 353 | 3877 | 166139 | 1342 | 957 | 818 | 2377 | 2331 | 1271 | 17862 | 306 | 52 | 316 | 336 | 178867 | 52085 | 0.408 |
| 458 | 466.57 | 268788 | 1.4 | 185 | 6226 | 89 | 0 | 6 | 1230 | 1766 | 1423 | 14229 | 297 | 351 | 3834 | 195650 | 1228 | 1013 | 638 | 2048 | 2268 | 1417 | 17093 | 175 | 88 | 417 | 418 | 176089 | 51354 | 0.408 |
| 459 | 467.57 | 267412 | 1.43 | 181 | 6274 | 61 | 5 | 0 | 1140 | 1839 | 1570 | 14854 | 195 | 447 | 4195 | 174882 | 1341 | 933 | 684 | 2082 | 2495 | 1555 | 18448 | 190 | 151 | 366 | 394 | 178757 | 52346 | 0.41 |
| 460 | 468.57 | 263652 | 1.37 | 239 | 6448 | 12 | 51 | 0 | 1185 | 1796 | 1586 | 13136 | 365 | 550 | 3756 | 159879 | 1333 | 1031 | 850 | 1968 | 2085 | 1390 | 18329 | 269 | 84 | 388 | 339 | 181770 | 52655 | 0.41 |
| 461 | 469.57 | 269070 | 1.28 | 179 | 6223 | 69 | 0 | 47 | 1179 | 1683 | 1456 | 14765 | 284 | 593 | 3684 | 181394 | 1340 | 1159 | 810 | 1737 | 1999 | 1723 | 17585 | 303 | 137 | 348 | 305 | 180303 | 52204 | 0.411 |
| 462 | 470.57 | 268142 | 1.32 | 215 | 6616 | 0 | 14 | 0 | 1196 | 1805 | 1425 | 14205 | 203 | 661 | 3687 | 169538 | 1294 | 1026 | 727 | 2173 | 2523 | 1499 | 18735 | 229 | 151 | 357 | 238 | 180133 | 53053 | 0.411 |
| 463 | 471.57 | 264987 | 1.35 | 227 | 6473 | 81 | 7 | 0 | 1169 | 1797 | 1409 | 14715 | 216 | 1147 | 3926 | 165433 | 1302 | 1165 | 695 | 2200 | 2558 | 1386 | 16523 | 270 | 101 | 290 | 290 | 180736 | 52218 | 0.41 |
| 464 | 472.57 | 265803 | 1.37 | 213 | 6284 | 71 | 43 | 33 | 1138 | 1808 | 1576 | 13594 | 133 | 469 | 3897 | 174214 | 1370 | 1113 | 601 | 2270 | 2345 | 1613 | 16773 | 267 | 84 | 327 | 327 | 180848 | 52340 | 0.409 |
| 465 | 473.57 | 263154 | 1.41 | 242 | 6380 | 106 | 37 | 0 | 1076 | 1734 | 1313 | 12848 | 270 | 394 | 3160 | 163884 | 1426 | 1094 | 725 | 1996 | 2303 | 1333 | 16681 | 286 | 70 | 299 | 401 | 181165 | 52235 | 0.409 |
| 466 | 474.57 | 265529 | 1.42 | 116 | 6499 | 71 | 0 | 18 | 1179 | 1859 | 1423 | 14140 | 336 | 321 | 3528 | 166598 | 1304 | 1032 | 593 | 1923 | 2284 | 1745 | 15979 | 153 | 122 | 306 | 506 | 181235 | 52571 | 0.41 |
| 467 | 475.57 | 268348 | 1.34 | 265 | 6612 | 72 | 39 | 527 | 1302 | 1788 | 1618 | 14223 | 224 | 428 | 4751 | 173994 | 1447 | 1252 | 744 | 2046 | 2527 | 1695 | 15202 | 319 | 123 | 322 | 449 | 182067 | 51848 | 0.411 |
| 468 | 476.57 | 263675 | 1.26 | 103 | 6717 | 60 | 0 | 0 | 1194 | 1814 | 1476 | 14916 | 173 | 496 | 2711 | 159046 | 1374 | 1208 | 699 | 2298 | 2117 | 1206 | 17543 | 251 | 176 | 366 | 104 | 181627 | 51833 | 0.409 |
| 469 | 477.57 | 271455 | 1.37 | 210 | 6837 | 36 | 28 | 0 | 1194 | 1807 | 1399 | 14030 | 229 | 353 | 2248 | 172261 | 1318 | 1082 | 748 | 2700 | 2443 | 1204 | 17607 | 312 | 117 | 385 | 393 | 183111 | 52707 | 0.414 |
| 470 | 478.57 | 265072 | 1.33 | 188 | 6547 | 102 | 22 | 0 | 1178 | 1770 | 1338 | 13139 | 179 | 369 | 2152 | 166669 | 1307 | 1029 | 704 | 1962 | 2409 | 1559 | 15661 | 227 | 119 | 307 | 249 | 183271 | 52687 | 0.409 |
| 471 | 479.57 | 267862 | 1.39 | 190 | 6961 | 97 | 0 | 0 | 1151 | 1799 | 1446 | 11948 | 222 | 400 | 1988 | 170207 | 1352 | 1112 | 851 | 2314 | 2357 | 1532 | 16425 | 181 | 195 | 328 | 277 | 182010 | 52733 | 0.412 |
| 472 | 480.57 | 271920 | 1.42 | 233 | 6616 | 66 | 0 | 0 | 1203 | 1801 | 1485 | 15148 | 263 | 629 | 2514 | 191973 | 1279 | 1003 | 732 | 2027 | 2375 | 1505 | 19925 | 296 | 108 | 344 | 463 | 176454 | 51723 | 0.411 |
| 473 | 481.57 | 273076 | 1.38 | 166 | 6498 | 38 | 12 | 0 | 1099 | 1848 | 1379 | 12619 | 273 | 486 | 2289 | 198370 | 1188 | 972 | 736 | 2633 | 2364 | 1412 | 18109 | 267 | 87 | 383 | 408 | 178428 | 51709 | 0.412 |
| 474 | 482.57 | 272415 | 1.31 | 190 | 6579 | 76 | 24 | 23 | 1172 | 1738 | 1477 | 15380 | 107 | 457 | 2143 | 188522 | 1303 | 958 | 712 | 2111 | 2370 | 1603 | 18209 | 281 | 120 | 310 | 308 | 179369 | 51955 | 0.412 |
| 475 | 483.57 | 269178 | 1.4 | 194 | 6334 | 68 | 37 | 0 | 1002 | 1835 | 1501 | 13236 | 199 | 308 | 2001 | 170712 | 1315 | 1100 | 793 | 1868 | 2420 | 1478 | 16234 | 216 | 153 | 329 | 349 | 182330 | 53246 | 0.414 |
| 476 | 484.57 | 275895 | 1.34 | 184 | 6666 | 116 | 50 | 0 | 1154 | 1848 | 1629 | 13555 | 314 | 296 | 2270 | 184769 | 1245 | 1237 | 678 | 2341 | 2401 | 1536 | 16051 | 275 | 131 | 301 | 518 | 182665 | 53212 | 0.417 |
| 477 | 485.57 | 279958 | 1.45 | 169 | 6480 | 84 | 24 | 0 | 1147 | 2034 | 1489 | 13880 | 210 | 407 | 2246 | 191232 | 1315 | 1119 | 725 | 2437 | 2404 | 1756 | 17114 | 257 | 125 | 390 | 348 | 183630 | 53216 | 0.419 |
| 478 | 486.57 | 290094 | 1.36 | 199 | 6480 | 45 | 7 | 0 | 1161 | 2011 | 1605 | 14205 | 346 | 564 | 2747 | 234444 | 1276 | 1166 | 864 | 2271 | 2533 | 1713 | 15215 | 320 | 118 | 447 | 570 | 179766 | 52107 | 0.421 |
| 479 | 487.57 | 276698 | 1.37 | 276 | 6391 | 81 | 63 | 0 | 1208 | 1935 | 1476 | 13936 | 198 | 452 | 2469 | 210605 | 1390 | 1119 | 956 | 2249 | 2145 | 1677 | 15898 | 200 | 120 | 370 | 597 | 177875 | 52083 | 0.413 |
| 480 | 488.57 | 262952 | 1.33 | 212 | 6265 | 53 | 17 | 0 | 1147 | 1878 | 1442 | 13147 | 282 | 597 | 1928 | 173387 | 1323 | 1071 | 713 | 2034 | 2392 | 1247 | 16907 | 226 | 195 | 336 | 341 | 176817 | 52449 | 0.406 |
| 481 | 489.57 | 269164 | 1.35 | 195 | 6033 | 54 | 78 | 0 | 1146 | 1872 | 1451 | 14109 | 329 | 388 | 2124 | 183020 | 1232 | 1031 | 711 | 2477 | 2527 | 1369 | 16200 | 239 | 45 | 313 | 432 | 179718 | 52281 | 0.413 |
| 482 | 490.57 | 276796 | 1.3 | 143 | 6273 | 37 | 5 | 143 | 1091 | 1979 | 1577 | 14027 | 153 | 362 | 2063 | 191231 | 1374 | 1041 | 778 | 2194 | 2527 | 1300 | 15717 | 216 | 132 | 239 | 448 | 183500 | 53282 | 0.417 |
| 483 | 491.57 | 281092 | 1.4 | 220 | 6471 | 53 | 28 | 23 | 1097 | 2013 | 1594 | 16119 | 330 | 391 | 2519 | 204304 | 1303 | 1101 | 901 | 2211 | 2382 | 1191 | 16641 | 262 | 127 | 309 | 454 | 180632 | 51874 | 0.418 |
| 484 | 492.57 | 264125 | 1.27 | 250 | 6270 | 90 | 19 | 0 | 1155 | 1896 | 1443 | 13738 | 319 | 222 | 1733 | 175850 | 1232 | 1061 | 840 | 1983 | 2235 | 1364 | 15611 | 246 | 60 | 312 | 437 | 180462 | 51573 | 0.408 |
| 485 | 493.57 | 252901 | 1.4 | 212 | 6114 | 120 | 76 | 0 | 1165 | 1799 | 1427 | 12945 | 341 | 399 | 1487 | 172996 | 1280 | 966 | 763 | 2300 | 2544 | 1218 | 16502 | 239 | 81 | 256 | 573 | 173693 | 50775 | 0.398 |
| 486 | 494.57 | 259497 | 1.39 | 212 | 5816 | 71 | 0 | 32 | 1063 | 1664 | 1484 | 13450 | 152 | 517 | 1678 | 171001 | 1317 | 1154 | 693 | 2211 | 2104 | 1377 | 16149 | 279 | 80 | 320 | 426 | 176386 | 51541 | 0.406 |
| 487 | 495.57 | 266730 | 1.4 | 279 | 6311 | 92 | 41 | 124 | 1174 | 1927 | 1537 | 15179 | 304 | 579 | 1973 | 172635 | 1364 | 1152 | 843 | 2289 | 2040 | 1235 | 17060 | 280 | 125 | 289 | 393 | 179358 | 52999 | 0.41 |
| 488 | 496.57 | 273439 | 1.38 | 171 | 6073 | 44 | 22 | 0 | 1147 | 1912 | 1458 | 13891 | 359 | 550 | 2207 | 202072 | 1390 | 1131 | 905 | 2423 | 2315 | 1162 | 16195 | 289 | 129 | 360 | 398 | 177371 | 52114 | 0.412 |
| 489 | 497.57 | 274072 | 1.22 | 246 | 6366 | 106 | 29 | 0 | 1188 | 2086 | 1484 | 12628 | 282 | 871 | 2228 | 200558 | 1398 | 1036 | 796 | 2340 | 2571 | 1484 | 16297 | 208 | 124 | 408 | 552 | 178391 | 52067 | 0.413 |
| 490 | 498.57 | 271558 | 1.35 | 195 | 6593 | 75 | 30 | 136 | 1146 | 2062 | 1519 | 13683 | 172 | 472 | 2121 | 180043 | 1311 | 1272 | 689 | 2090 | 2463 | 1577 | 16070 | 283 | 111 | 308 | 222 | 181672 | 52298 | 0.414 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 491 | 499.57 | 270209 | 1.41 | 211 | 6452 | 59 | 24 | 0 | 1191 | 2078 | 1435 | 13093 | 287 | 1566 | 2018 | 184360 | 1251 | 1054 | 903 | 2283 | 2502 | 1216 | 15554 | 235 | 99 | 324 | 185 | 179416 | 52257 | 0.411 |
| 492 | 500.57 | 264531 | 1.39 | 210 | 6192 | 27 | 10 | 51 | 1162 | 1960 | 1462 | 15102 | 181 | 440 | 1827 | 174916 | 1217 | 921 | 838 | 2291 | 2321 | 1607 | 14946 | 287 | 112 | 306 | 146 | 180235 | 52374 | 0.408 |
| 493 | 501.57 | 261701 | 1.37 | 186 | 6257 | 44 | 57 | 25 | 1169 | 1710 | 1445 | 15817 | 206 | 692 | 1788 | 176525 | 1294 | 1050 | 846 | 2219 | 2426 | 1104 | 15580 | 151 | 149 | 333 | 467 | 176720 | 51629 | 0.405 |
| 494 | 502.57 | 262475 | 1.48 | 219 | 6283 | 73 | 0 | 73 | 1146 | 1837 | 1467 | 14472 | 165 | 898 | 1783 | 176862 | 1375 | 1125 | 655 | 1970 | 2109 | 1190 | 16284 | 164 | 146 | 314 | 400 | 178169 | 51964 | 0.407 |
| 495 | 503.57 | 269635 | 1.31 | 201 | 6317 | 68 | 36 | 0 | 1162 | 1935 | 1478 | 13565 | 261 | 357 | 2012 | 190998 | 1311 | 1054 | 946 | 2381 | 2371 | 1478 | 15566 | 252 | 109 | 330 | 608 | 178905 | 52083 | 0.41 |
| 496 | 504.57 | 274535 | 1.32 | 176 | 5973 | 44 | 9 | 0 | 1156 | 2057 | 1478 | 13304 | 351 | 460 | 1865 | 208999 | 1286 | 1172 | 764 | 2288 | 2508 | 1235 | 15636 | 195 | 123 | 349 | 429 | 177488 | 51603 | 0.412 |
| 497 | 505.57 | 269171 | 1.37 | 183 | 6294 | 54 | 16 | 896 | 1178 | 1942 | 1654 | 14211 | 189 | 503 | 2026 | 179818 | 1316 | 1142 | 792 | 2248 | 2404 | 1331 | 18373 | 212 | 121 | 311 | 360 | 179234 | 52183 | 0.411 |
| 498 | 506.57 | 268502 | 1.41 | 235 | 6449 | 65 | 40 | 0 | 1171 | 1963 | 1430 | 14220 | 224 | 432 | 2616 | 179339 | 1253 | 1099 | 677 | 2254 | 2329 | 1303 | 17536 | 224 | 157 | 340 | 257 | 178108 | 51962 | 0.411 |
| 499 | 507.57 | 274694 | 1.4 | 272 | 6138 | 73 | 64 | 0 | 1125 | 1893 | 1424 | 13306 | 394 | 333 | 2637 | 239836 | 1112 | 944 | 653 | 2010 | 2055 | 1187 | 15995 | 203 | 101 | 252 | 527 | 167605 | 50323 | 0.407 |
| 500 | 508.57 | 263390 | 1.35 | 233 | 6401 | 107 | 31 | 14 | 1191 | 1940 | 1543 | 14182 | 192 | 436 | 1642 | 178842 | 1188 | 948 | 648 | 1912 | 2494 | 1270 | 16782 | 249 | 80 | 344 | 487 | 176582 | 51708 | 0.406 |
| 501 | 509.57 | 258102 | 1.37 | 227 | 6337 | 79 | 19 | 0 | 1164 | 1737 | 1279 | 13650 | 165 | 347 | 1615 | 170066 | 1281 | 1111 | 632 | 2188 | 2369 | 1022 | 16461 | 264 | 99 | 295 | 305 | 175671 | 51770 | 0.404 |
| 502 | 510.57 | 258097 | 1.3 | 238 | 6231 | 61 | 21 | 83 | 1195 | 1775 | 1456 | 12603 | 241 | 412 | 1629 | 171123 | 1152 | 1069 | 771 | 1954 | 2347 | 1325 | 17473 | 189 | 105 | 328 | 364 | 175144 | 51307 | 0.403 |
| 503 | 511.57 | 255094 | 1.34 | 188 | 6148 | 109 | 18 | 0 | 1176 | 1798 | 1396 | 11605 | 180 | 381 | 1783 | 169008 | 1399 | 1039 | 671 | 2139 | 2159 | 1663 | 16714 | 219 | 134 | 323 | 401 | 173683 | 50649 | 0.401 |
| 504 | 512.57 | 250574 | 1.36 | 162 | 6000 | 54 | 40 | 99 | 1167 | 1786 | 1312 | 12822 | 298 | 232 | 1756 | 155843 | 1227 | 1083 | 779 | 2285 | 2162 | 1388 | 18579 | 204 | 119 | 241 | 270 | 172226 | 51059 | 0.4 |
| 505 | 513.57 | 256933 | 1.37 | 184 | 6096 | 78 | 24 | 0 | 1121 | 1598 | 1388 | 12018 | 270 | 568 | 1890 | 161672 | 1329 | 920 | 817 | 2134 | 2538 | 1704 | 16871 | 220 | 80 | 272 | 425 | 177250 | 52291 | 0.405 |
| 506 | 514.57 | 263831 | 1.43 | 255 | 6093 | 106 | 57 | 0 | 1092 | 1809 | 1465 | 14746 | 277 | 518 | 1956 | 172526 | 1299 | 1053 | 801 | 2742 | 2427 | 1708 | 18145 | 150 | 190 | 285 | 408 | 177760 | 52086 | 0.408 |
| 507 | 515.57 | 265298 | 1.34 | 153 | 6234 | 88 | 27 | 236 | 1138 | 1943 | 1452 | 13949 | 310 | 338 | 2049 | 185439 | 1224 | 1113 | 768 | 2433 | 2441 | 1622 | 16512 | 274 | 111 | 363 | 679 | 175464 | 51617 | 0.407 |
| 508 | 516.57 | 262169 | 1.39 | 236 | 6204 | 23 | 24 | 55 | 1221 | 1871 | 1452 | 14394 | 272 | 378 | 1899 | 178073 | 1205 | 1011 | 854 | 2538 | 2182 | 1233 | 14656 | 217 | 112 | 269 | 371 | 177319 | 51743 | 0.405 |
| 509 | 517.57 | 267842 | 1.38 | 189 | 6302 | 71 | 66 | 22 | 1167 | 1909 | 1461 | 13408 | 299 | 613 | 1863 | 190485 | 1281 | 1073 | 789 | 2104 | 2388 | 1432 | 15608 | 225 | 127 | 308 | 473 | 177488 | 51658 | 0.409 |
| 510 | 518.57 | 268388 | 1.38 | 173 | 6325 | 126 | 26 | 309 | 1096 | 1932 | 1537 | 15610 | 207 | 656 | 1841 | 187823 | 1333 | 1010 | 754 | 2515 | 2297 | 1493 | 15938 | 275 | 83 | 291 | 299 | 177577 | 51678 | 0.409 |
| 511 | 519.57 | 265397 | 1.44 | 184 | 6421 | 54 | 30 | 0 | 1197 | 1935 | 1426 | 12666 | 89 | 584 | 1815 | 175382 | 1309 | 1164 | 848 | 2214 | 2470 | 1143 | 16168 | 345 | 31 | 331 | 521 | 179594 | 52218 | 0.409 |
| 512 | 520.57 | 264531 | 1.47 | 168 | 6240 | 79 | 9 | 21 | 1123 | 1861 | 1477 | 13508 | 220 | 403 | 1965 | 179501 | 1304 | 1081 | 890 | 2331 | 2292 | 1196 | 16841 | 201 | 116 | 298 | 416 | 176508 | 52106 | 0.409 |
| 513 | 521.57 | 266822 | 1.4 | 186 | 6287 | 90 | 18 | 72 | 1097 | 1949 | 1508 | 14665 | 312 | 334 | 1628 | 181252 | 1411 | 1061 | 718 | 2265 | 2305 | 1529 | 15580 | 311 | 91 | 229 | 370 | 177329 | 51588 | 0.41 |
| 514 | 522.57 | 273097 | 1.4 | 170 | 6154 | 125 | 19 | 7 | 1216 | 2044 | 1480 | 16008 | 380 | 438 | 1813 | 200675 | 1294 | 944 | 878 | 2102 | 2656 | 1764 | 16352 | 276 | 102 | 284 | 519 | 177179 | 50900 | 0.412 |
| 515 | 523.57 | 269868 | 1.34 | 201 | 6144 | 77 | 21 | 0 | 1095 | 2058 | 1552 | 14180 | 282 | 359 | 1904 | 187228 | 1260 | 1097 | 832 | 2193 | 2399 | 1343 | 16958 | 336 | 49 | 314 | 592 | 178782 | 52173 | 0.412 |
| 516 | 524.57 | 270394 | 1.41 | 238 | 6062 | 51 | 19 | 0 | 1090 | 2075 | 1508 | 13154 | 347 | 888 | 2705 | 191390 | 1279 | 1120 | 828 | 2227 | 2509 | 1171 | 15841 | 292 | 66 | 288 | 411 | 177722 | 52294 | 0.411 |
| 517 | 525.57 | 268186 | 1.35 | 237 | 6368 | 91 | 82 | 148 | 1110 | 1984 | 1466 | 13314 | 228 | 1352 | 2715 | 182647 | 1436 | 1084 | 718 | 2240 | 2447 | 1160 | 16562 | 169 | 121 | 314 | 652 | 178559 | 52152 | 0.41 |
| 518 | 526.57 | 269119 | 1.35 | 213 | 6683 | 60 | 5 | 91 | 1095 | 1975 | 1512 | 14137 | 404 | 297 | 2087 | 185008 | 1295 | 1112 | 707 | 2082 | 2295 | 1212 | 15733 | 163 | 182 | 281 | 510 | 180593 | 51434 | 0.411 |
| 519 | 527.57 | 266610 | 1.32 | 257 | 6140 | 76 | 35 | 69 | 1157 | 2159 | 1592 | 13803 | 248 | 381 | 2803 | 195657 | 1233 | 1117 | 741 | 2097 | 2266 | 1221 | 17563 | 234 | 95 | 339 | 725 | 173261 | 50842 | 0.406 |
| 520 | 528.57 | 259949 | 1.38 | 218 | 6430 | 96 | 38 | 14 | 1111 | 1923 | 1495 | 13354 | 185 | 330 | 1972 | 179939 | 1272 | 950 | 723 | 2273 | 2036 | 1470 | 16121 | 230 | 78 | 250 | 535 | 174327 | 50547 | 0.403 |
| 521 | 529.57 | 264419 | 1.34 | 235 | 6142 | 41 | 0 | 59 | 1066 | 2006 | 1581 | 12405 | 244 | 1608 | 2214 | 176379 | 1314 | 955 | 798 | 2564 | 2424 | 1264 | 17927 | 191 | 115 | 303 | 553 | 176333 | 51739 | 0.408 |
| 522 | 530.57 | 265848 | 1.35 | 178 | 6040 | 67 | 10 | 2239 | 1062 | 1778 | 2028 | 12453 | 237 | 521 | 2447 | 174747 | 1280 | 1026 | 876 | 2545 | 2424 | 1488 | 15906 | 184 | 120 | 312 | 433 | 178512 | 50759 | 0.41 |
| 523 | 531.57 | 266432 | 1.35 | 242 | 5827 | 31 | 0 | 45 | 1019 | 1932 | 1854 | 13670 | 329 | 367 | 2606 | 178998 | 1226 | 1035 | 713 | 2033 | 2236 | 1383 | 17263 | 280 | 119 | 243 | 646 | 175879 | 50836 | 0.409 |
| 524 | 532.57 | 267391 | 1.34 | 237 | 6133 | 96 | 40 | 35 | 1079 | 1928 | 1864 | 13197 | 333 | 445 | 2378 | 181348 | 1307 | 1006 | 662 | 2020 | 2325 | 1493 | 16746 | 222 | 113 | 311 | 400 | 177408 | 51720 | 0.409 |
| 525 | 533.57 | 274925 | 1.32 | 203 | 6010 | 78 | 42 | 0 | 1040 | 1934 | 1885 | 14174 | 283 | 559 | 2469 | 196120 | 1442 | 1121 | 861 | 2223 | 2376 | 1357 | 18305 | 232 | 74 | 313 | 378 | 176487 | 51731 | 0.414 |
| 526 | 534.57 | 278955 | 1.34 | 224 | 5564 | 66 | 48 | 64 | 1013 | 2105 | 1959 | 14181 | 396 | 457 | 2134 | 213215 | 1455 | 1088 | 785 | 2309 | 2620 | 1271 | 16296 | 261 | 124 | 395 | 608 | 177503 | 51408 | 0.415 |
| 527 | 535.57 | 273365 | 1.35 | 249 | 5956 | 71 | 78 | 183 | 1060 | 1932 | 1981 | 14562 | 205 | 317 | 1946 | 189071 | 1281 | 1038 | 683 | 2427 | 2209 | 1681 | 17868 | 292 | 55 | 362 | 543 | 177825 | 52309 | 0.414 |
| 528 | 536.57 | 274163 | 1.37 | 257 | 6002 | 97 | 38 | 37 | 1099 | 1921 | 1710 | 13234 | 304 | 509 | 2024 | 187282 | 1279 | 1045 | 873 | 2684 | 2518 | 1555 | 16018 | 202 | 120 | 313 | 501 | 181158 | 52431 | 0.416 |
| 529 | 537.57 | 279387 | 1.4 | 195 | 5824 | 70 | 0 | 118 | 1094 | 2098 | 1892 | 13954 | 279 | 713 | 1951 | 198963 | 1261 | 1145 | 746 | 2251 | 2298 | 1592 | 17675 | 222 | 97 | 329 | 474 | 181546 | 52297 | 0.418 |
| 530 | 538.57 | 272358 | 1.37 | 178 | 5779 | 116 | 7 | 20 | 1126 | 1995 | 1847 | 14054 | 134 | 514 | 1766 | 194931 | 1251 | 1118 | 761 | 2303 | 2347 | 1142 | 17475 | 185 | 114 | 322 | 347 | 179342 | 51501 | 0.413 |
| 531 | 539.57 | 270110 | 1.26 | 188 | 5905 | 110 | 60 | 71 | 1162 | 2084 | 1715 | 14152 | 243 | 902 | 1682 | 185703 | 1391 | 1082 | 708 | 2373 | 2428 | 1160 | 13757 | 204 | 121 | 243 | 375 | 184319 | 51791 | 0.412 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 532 | 540.57 | 274009 | 1.26 | 145 | 5242 | 75 | 56 | 65 | 1125 | 2086 | 1848 | 12209 | 150 | 353 | 3918 | 197642 | 1180 | 1176 | 619 | 2401 | 2266 | 1437 | 14433 | 202 | 98 | 288 | 662 | 181234 | 50644 | 0.413 |
| 533 | 541.57 | 272648 | 1.32 | 173 | 5533 | 61 | 56 | 20 | 1204 | 1911 | 1810 | 12817 | 359 | 334 | 3290 | 198985 | 1266 | 1147 | 708 | 2143 | 2227 | 1264 | 14448 | 222 | 54 | 305 | 647 | 179899 | 50646 | 0.411 |
| 534 | 542.57 | 272518 | 1.34 | 166 | 5339 | 88 | 60 | 17 | 1170 | 1942 | 1891 | 13660 | 186 | 384 | 3091 | 197889 | 1285 | 1195 | 865 | 2246 | 2233 | 1070 | 18047 | 204 | 134 | 338 | 601 | 175888 | 50616 | 0.411 |
| 535 | 543.57 | 268948 | 1.24 | 227 | 5782 | 89 | 71 | 161 | 1197 | 1898 | 1863 | 12434 | 190 | 394 | 4386 | 211908 | 1273 | 1146 | 562 | 2406 | 2584 | 1835 | 15692 | 302 | 84 | 282 | 655 | 171835 | 49579 | 0.405 |
| 536 | 544.57 | 270422 | 1.31 | 252 | 5998 | 79 | 51 | 132 | 1135 | 1977 | 1833 | 13292 | 216 | 360 | 3287 | 208450 | 1260 | 1103 | 636 | 2211 | 2389 | 1684 | 16780 | 230 | 98 | 259 | 800 | 174024 | 50408 | 0.408 |
| 537 | 545.57 | 271478 | 1.35 | 285 | 6092 | 71 | 7 | 185 | 1082 | 1815 | 1763 | 13371 | 177 | 380 | 1952 | 202075 | 1250 | 993 | 673 | 2388 | 2394 | 1570 | 16491 | 237 | 95 | 349 | 605 | 176271 | 51452 | 0.41 |
| 538 | 546.57 | 267898 | 1.3 | 215 | 5901 | 67 | 28 | 211 | 1065 | 1941 | 1718 | 13444 | 383 | 472 | 1679 | 203857 | 1152 | 935 | 725 | 2303 | 2366 | 1581 | 15062 | 203 | 65 | 271 | 482 | 172869 | 50857 | 0.407 |
| 539 | 547.57 | 266259 | 1.34 | 223 | 5908 | 73 | 49 | 0 | 1068 | 2004 | 1704 | 13900 | 351 | 656 | 1954 | 210426 | 1164 | 1003 | 748 | 1951 | 2243 | 1477 | 14242 | 203 | 140 | 360 | 471 | 173075 | 50675 | 0.405 |
| 540 | 548.57 | 261831 | 1.39 | 193 | 6117 | 63 | 29 | 0 | 1132 | 2072 | 1604 | 14729 | 305 | 466 | 1813 | 195915 | 1272 | 1070 | 599 | 2078 | 2302 | 1474 | 17052 | 296 | 79 | 377 | 219 | 170881 | 50614 | 0.402 |
| 541 | 549.57 | 258756 | 1.34 | 223 | 5945 | 83 | 11 | 0 | 1111 | 1918 | 1528 | 12615 | 305 | 343 | 1950 | 189621 | 1312 | 1196 | 819 | 2243 | 2463 | 1175 | 16534 | 168 | 134 | 329 | 372 | 172540 | 50563 | 0.4 |
| 542 | 550.57 | 264832 | 1.37 | 219 | 5890 | 41 | 53 | 145 | 1193 | 1926 | 1528 | 13402 | 181 | 554 | 1865 | 197230 | 1167 | 1175 | 942 | 2439 | 2329 | 1268 | 16310 | 327 | 25 | 299 | 425 | 175117 | 51227 | 0.405 |
| 543 | 551.57 | 268336 | 1.31 | 214 | 5941 | 91 | 37 | 0 | 1079 | 2277 | 1550 | 13679 | 336 | 728 | 2082 | 203205 | 1356 | 1032 | 574 | 2503 | 2363 | 1287 | 15520 | 286 | 122 | 383 | 529 | 173600 | 51248 | 0.407 |
| 544 | 552.57 | 266534 | 1.4 | 236 | 6273 | 100 | 29 | 0 | 1062 | 2056 | 1523 | 12483 | 217 | 350 | 1837 | 194539 | 1317 | 1066 | 864 | 2423 | 2348 | 1300 | 14753 | 218 | 146 | 447 | 216 | 176562 | 51261 | 0.407 |
| 545 | 553.57 | 266438 | 1.34 | 217 | 6149 | 50 | 34 | 0 | 1116 | 2012 | 1733 | 13453 | 332 | 778 | 1863 | 192420 | 1305 | 1034 | 844 | 2460 | 2467 | 1332 | 15742 | 168 | 141 | 291 | 301 | 176043 | 51326 | 0.407 |
| 546 | 554.57 | 269849 | 1.44 | 204 | 6138 | 50 | 9 | 0 | 1167 | 2045 | 1513 | 12893 | 373 | 456 | 1993 | 194285 | 1285 | 964 | 828 | 2535 | 2650 | 1473 | 15334 | 372 | 0 | 401 | 539 | 179197 | 52303 | 0.41 |
| 547 | 555.57 | 284243 | 1.45 | 231 | 5807 | 58 | 59 | 0 | 1188 | 2179 | 1657 | 13065 | 336 | 511 | 5401 | 230527 | 1169 | 1153 | 699 | 2462 | 2741 | 2149 | 16435 | 203 | 192 | 332 | 804 | 175858 | 51683 | 0.416 |
| 548 | 556.57 | 281309 | 1.41 | 221 | 5900 | 75 | 20 | 0 | 1135 | 2147 | 1671 | 12817 | 385 | 803 | 4515 | 223266 | 1282 | 1130 | 844 | 2630 | 3111 | 2332 | 16297 | 297 | 132 | 442 | 852 | 177193 | 51329 | 0.415 |
| 549 | 557.57 | 265201 | 1.32 | 236 | 6050 | 64 | 32 | 23 | 1052 | 1956 | 1498 | 13182 | 398 | 539 | 1938 | 210031 | 1116 | 1036 | 700 | 2046 | 2306 | 1714 | 15835 | 211 | 81 | 381 | 461 | 171074 | 50717 | 0.403 |
| 550 | 558.57 | 259765 | 1.33 | 242 | 5940 | 28 | 0 | 0 | 1093 | 1880 | 1579 | 13637 | 179 | 545 | 1913 | 195460 | 1337 | 1072 | 642 | 2016 | 2477 | 1387 | 16214 | 339 | 48 | 369 | 296 | 169964 | 49997 | 0.401 |
| 551 | 559.57 | 259242 | 1.36 | 187 | 5906 | 98 | 15 | 0 | 1107 | 1869 | 1574 | 17151 | 378 | 667 | 1936 | 182492 | 1315 | 1061 | 766 | 2140 | 2366 | 1320 | 15955 | 253 | 45 | 295 | 325 | 173134 | 50786 | 0.402 |
| 552 | 560.57 | 264039 | 1.45 | 240 | 6191 | 52 | 40 | 0 | 1125 | 2014 | 1552 | 13133 | 295 | 567 | 2349 | 196829 | 1178 | 1060 | 815 | 2517 | 2266 | 1194 | 15276 | 299 | 46 | 332 | 477 | 173892 | 50725 | 0.405 |
| 553 | 561.57 | 268291 | 1.36 | 236 | 5935 | 62 | 15 | 0 | 1163 | 1932 | 1440 | 12918 | 212 | 406 | 2682 | 200187 | 1314 | 957 | 745 | 2213 | 2432 | 1344 | 14796 | 312 | 75 | 333 | 419 | 176446 | 51204 | 0.408 |
| 554 | 562.57 | 270060 | 1.28 | 252 | 6221 | 78 | 34 | 0 | 1157 | 2083 | 1534 | 14757 | 226 | 447 | 2412 | 209644 | 1235 | 1075 | 763 | 1967 | 2144 | 1325 | 13902 | 212 | 88 | 379 | 427 | 175682 | 51272 | 0.407 |
| 555 | 563.57 | 266534 | 1.4 | 256 | 5989 | 95 | 7 | 0 | 1164 | 1912 | 1477 | 13363 | 205 | 473 | 2313 | 203525 | 1346 | 1097 | 816 | 2174 | 2342 | 1290 | 16727 | 144 | 145 | 252 | 446 | 172410 | 51434 | 0.405 |
| 556 | 564.57 | 261564 | 1.27 | 225 | 5880 | 43 | 27 | 0 | 1111 | 1735 | 1422 | 12288 | 317 | 411 | 2086 | 191503 | 1355 | 1167 | 834 | 2465 | 2792 | 1530 | 13817 | 113 | 118 | 371 | 591 | 175674 | 50697 | 0.404 |
| 557 | 565.57 | 265350 | 1.34 | 206 | 5952 | 84 | 41 | 0 | 1217 | 1994 | 1467 | 14109 | 270 | 329 | 2687 | 197168 | 1290 | 1016 | 732 | 2399 | 2173 | 1085 | 17476 | 193 | 158 | 356 | 891 | 171066 | 51107 | 0.405 |
| 558 | 566.57 | 257912 | 1.29 | 189 | 5873 | 77 | 19 | 0 | 1212 | 1865 | 1463 | 15146 | 210 | 308 | 1606 | 193636 | 1183 | 1053 | 697 | 1937 | 2189 | 1301 | 14266 | 154 | 127 | 405 | 185 | 172231 | 50745 | 0.398 |
| 559 | 567.57 | 250160 | 1.33 | 220 | 5803 | 82 | 36 | 0 | 1207 | 1736 | 1518 | 12799 | 272 | 783 | 1754 | 187297 | 1225 | 1091 | 644 | 2605 | 2282 | 1164 | 15085 | 281 | 62 | 384 | 353 | 169176 | 49881 | 0.393 |
| 560 | 568.57 | 253216 | 1.44 | 156 | 5699 | 30 | 13 | 0 | 1166 | 1760 | 1395 | 13314 | 261 | 389 | 1616 | 189996 | 1220 | 1017 | 613 | 2136 | 2232 | 1516 | 17517 | 257 | 162 | 376 | 307 | 168384 | 49363 | 0.396 |
| 561 | 569.57 | 251609 | 1.33 | 179 | 5679 | 75 | 53 | 109 | 1186 | 1753 | 1384 | 14334 | 256 | 390 | 1854 | 183756 | 1345 | 1089 | 751 | 2098 | 2280 | 1194 | 14966 | 197 | 76 | 299 | 307 | 169482 | 50074 | 0.395 |
| 562 | 570.57 | 258412 | 1.31 | 242 | 5753 | 98 | 66 | 626 | 1188 | 1829 | 1600 | 13621 | 309 | 231 | 2332 | 198589 | 1201 | 986 | 845 | 2123 | 2300 | 1042 | 14962 | 136 | 209 | 344 | 382 | 170145 | 50185 | 0.399 |
| 563 | 571.57 | 271637 | 1.4 | 211 | 6009 | 74 | 64 | 6 | 1153 | 1914 | 1536 | 13451 | 325 | 430 | 2917 | 214976 | 1225 | 1040 | 669 | 2470 | 2547 | 1280 | 16512 | 161 | 112 | 286 | 626 | 172474 | 50921 | 0.409 |
| 564 | 572.57 | 273943 | 1.5 | 249 | 5934 | 81 | 14 | 135 | 1079 | 2015 | 1632 | 14925 | 218 | 449 | 3037 | 228236 | 1138 | 1068 | 803 | 2566 | 2186 | 1224 | 14311 | 182 | 123 | 278 | 562 | 171940 | 49954 | 0.408 |
| 565 | 573.57 | 273202 | 1.24 | 192 | 5764 | 54 | 0 | 26 | 1107 | 2097 | 1568 | 13749 | 311 | 1165 | 3443 | 230464 | 1182 | 1032 | 784 | 2600 | 2471 | 1500 | 15759 | 301 | 105 | 294 | 538 | 170424 | 50243 | 0.406 |
| 566 | 574.57 | 272537 | 1.35 | 261 | 5702 | 97 | 51 | 35 | 1166 | 2113 | 1574 | 12897 | 407 | 509 | 4060 | 238289 | 1197 | 1034 | 850 | 2469 | 2519 | 1506 | 14320 | 219 | 100 | 451 | 515 | 169078 | 49832 | 0.405 |
| 567 | 575.57 | 267558 | 1.26 | 222 | 5694 | 69 | 22 | 0 | 1140 | 2055 | 1510 | 12849 | 260 | 413 | 3573 | 222949 | 1265 | 1013 | 779 | 2418 | 2481 | 1245 | 15218 | 323 | 27 | 280 | 478 | 169714 | 49957 | 0.403 |
| 568 | 576.57 | 274563 | 1.29 | 180 | 5741 | 67 | 48 | 0 | 1028 | 2082 | 1579 | 14431 | 432 | 362 | 3140 | 231658 | 1199 | 900 | 734 | 2624 | 2428 | 1200 | 15405 | 185 | 68 | 274 | 468 | 171304 | 50660 | 0.408 |
| 569 | 577.57 | 283370 | 1.45 | 231 | 5918 | 87 | 0 | 0 | 1124 | 2077 | 1603 | 13071 | 300 | 421 | 3649 | 254360 | 1319 | 1093 | 723 | 2637 | 2438 | 1069 | 14558 | 212 | 153 | 289 | 421 | 171364 | 49833 | 0.412 |
| 570 | 578.57 | 270960 | 1.41 | 193 | 5626 | 88 | 0 | 0 | 1123 | 2023 | 1564 | 12999 | 338 | 716 | 3789 | 227787 | 1190 | 1050 | 686 | 2571 | 2475 | 1382 | 16673 | 122 | 109 | 353 | 689 | 169400 | 50210 | 0.405 |
| 571 | 579.57 | 278029 | 1.33 | 289 | 5677 | 121 | 0 | 23 | 1185 | 2037 | 1618 | 15948 | 356 | 347 | 3689 | 233934 | 1210 | 1092 | 744 | 2414 | 2266 | 1395 | 16267 | 212 | 181 | 382 | 691 | 171254 | 50315 | 0.41 |
| 572 | 580.57 | 281645 | 1.31 | 218 | 5692 | 58 | 5 | 0 | 1072 | 2180 | 1662 | 14099 | 288 | 642 | 3622 | 248297 | 1202 | 1109 | 803 | 2134 | 2365 | 1179 | 15041 | 338 | 78 | 363 | 453 | 172817 | 49912 | 0.412 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 573 | 581.57 | 277150 | 1.32 | 242 | 5758 | 40 | 50 | 0 | 1018 | 2079 | 1586 | 14470 | 371 | 335 | 2440 | 222425 | 1281 | 929 | 835 | 2426 | 2303 | 1484 | 16214 | 287 | 7 | 389 | 624 | 174653 | 50528 | 0.412 |
| 574 | 582.57 | 275201 | 1.32 | 209 | 5807 | 63 | 21 | 0 | 1130 | 2055 | 1623 | 14975 | 317 | 1834 | 2523 | 212871 | 1331 | 1018 | 807 | 2271 | 2573 | 1177 | 15136 | 178 | 114 | 322 | 544 | 175283 | 51288 | 0.412 |
| 575 | 583.57 | 280109 | 1.35 | 227 | 5783 | 71 | 14 | 456 | 1151 | 2051 | 1616 | 13799 | 277 | 479 | 2624 | 239503 | 1267 | 941 | 822 | 2352 | 2469 | 1409 | 15744 | 172 | 151 | 371 | 371 | 173378 | 50627 | 0.411 |
| 576 | 584.57 | 275063 | 1.41 | 215 | 5780 | 81 | 56 | 143 | 1124 | 2119 | 1600 | 14503 | 376 | 588 | 2964 | 220485 | 1248 | 1079 | 840 | 2266 | 2986 | 1134 | 16519 | 223 | 153 | 434 | 642 | 173324 | 51089 | 0.41 |
| 577 | 585.57 | 281647 | 1.39 | 288 | 5593 | 73 | 35 | 67 | 1163 | 2362 | 1753 | 15756 | 270 | 398 | 2649 | 244285 | 1256 | 845 | 753 | 2497 | 2377 | 1616 | 13396 | 223 | 250 | 366 | 400 | 175159 | 50574 | 0.412 |
| 578 | 586.57 | 283418 | 1.33 | 195 | 5615 | 40 | 65 | 0 | 1119 | 2230 | 1669 | 14916 | 293 | 347 | 2050 | 248711 | 1393 | 1072 | 661 | 2778 | 2351 | 1364 | 16742 | 139 | 120 | 349 | 409 | 171293 | 50569 | 0.414 |
| 579 | 587.57 | 280103 | 1.32 | 262 | 5687 | 169 | 75 | 7 | 1130 | 2117 | 1583 | 15332 | 356 | 512 | 1930 | 240312 | 1158 | 1026 | 919 | 2492 | 2473 | 1525 | 15663 | 280 | 59 | 386 | 319 | 171858 | 50841 | 0.411 |
| 580 | 588.57 | 280342 | 1.45 | 178 | 5573 | 69 | 60 | 0 | 1148 | 2246 | 1589 | 15033 | 372 | 422 | 2557 | 242587 | 1198 | 1029 | 781 | 2505 | 2617 | 1302 | 15605 | 182 | 172 | 276 | 617 | 170444 | 50986 | 0.411 |
| 581 | 589.57 | 289977 | 1.33 | 182 | 5387 | 98 | 28 | 313 | 1075 | 2338 | 1719 | 13838 | 348 | 1077 | 5212 | 269508 | 1183 | 1100 | 702 | 2632 | 2470 | 1360 | 15572 | 367 | 65 | 419 | 597 | 170119 | 50540 | 0.415 |
| 582 | 590.57 | 289986 | 1.28 | 262 | 5334 | 98 | 28 | 48 | 1080 | 2473 | 1681 | 13537 | 352 | 541 | 5167 | 272004 | 1282 | 993 | 762 | 2472 | 2193 | 1415 | 17972 | 281 | 226 | 350 | 806 | 166311 | 49800 | 0.415 |
| 583 | 591.57 | 283036 | 1.38 | 277 | 5627 | 89 | 25 | 0 | 1063 | 2310 | 1624 | 15689 | 287 | 543 | 1854 | 242804 | 1327 | 1031 | 707 | 2529 | 2197 | 1646 | 15212 | 212 | 127 | 363 | 287 | 174196 | 50284 | 0.413 |
| 584 | 592.57 | 285520 | 1.35 | 273 | 5517 | 96 | 49 | 43 | 1116 | 2269 | 1845 | 13849 | 389 | 993 | 2132 | 248320 | 1290 | 1151 | 795 | 2367 | 2807 | 1818 | 15166 | 248 | 103 | 415 | 577 | 173809 | 50441 | 0.415 |
| 585 | 593.57 | 287750 | 1.35 | 241 | 5640 | 86 | 45 | 68 | 1123 | 2453 | 1585 | 14848 | 375 | 1154 | 1804 | 251987 | 1216 | 888 | 650 | 2768 | 2486 | 1338 | 14251 | 152 | 136 | 302 | 403 | 173755 | 51409 | 0.417 |
| 586 | 594.57 | 292242 | 1.41 | 267 | 5755 | 68 | 6 | 0 | 1140 | 2517 | 1583 | 17448 | 362 | 483 | 1932 | 250900 | 1145 | 1036 | 820 | 2779 | 2269 | 1474 | 15317 | 148 | 151 | 326 | 650 | 176148 | 51817 | 0.421 |
| 587 | 595.57 | 284363 | 1.38 | 280 | 5626 | 77 | 55 | 0 | 1119 | 2303 | 1540 | 14369 | 326 | 560 | 1782 | 245103 | 1211 | 1056 | 712 | 2540 | 2830 | 1160 | 17282 | 145 | 211 | 237 | 552 | 172503 | 50918 | 0.415 |
| 588 | 596.57 | 284841 | 1.38 | 271 | 5882 | 139 | 38 | 15 | 1055 | 2188 | 1693 | 14665 | 303 | 602 | 1864 | 239318 | 1306 | 1180 | 924 | 2197 | 2298 | 1359 | 18423 | 249 | 87 | 315 | 569 | 173376 | 51057 | 0.416 |
| 589 | 597.57 | 282909 | 1.41 | 267 | 5452 | 109 | 22 | 0 | 1070 | 2269 | 1617 | 14247 | 347 | 514 | 2960 | 250763 | 1278 | 1030 | 797 | 2570 | 2287 | 1358 | 16683 | 271 | 81 | 320 | 601 | 170310 | 50583 | 0.413 |
| 590 | 598.57 | 297296 | 1.4 | 270 | 4956 | 89 | 22 | 0 | 1154 | 2446 | 1624 | 15667 | 338 | 408 | 7078 | 296168 | 1185 | 1013 | 732 | 2513 | 2427 | 1373 | 14592 | 236 | 206 | 306 | 758 | 168915 | 49824 | 0.418 |
| 591 | 599.57 | 303711 | 1.29 | 264 | 5343 | 84 | 78 | 0 | 1099 | 2435 | 1648 | 14923 | 479 | 374 | 7956 | 300922 | 1288 | 940 | 796 | 2639 | 2374 | 1362 | 14454 | 203 | 197 | 334 | 980 | 170211 | 50713 | 0.423 |
| 592 | 600.57 | 304747 | 1.41 | 226 | 5776 | 38 | 81 | 150 | 1109 | 2479 | 1618 | 13682 | 385 | 420 | 5529 | 283368 | 1207 | 1124 | 982 | 2759 | 2724 | 1254 | 15842 | 222 | 167 | 277 | 901 | 175207 | 51185 | 0.426 |
| 593 | 601.57 | 284367 | 1.36 | 265 | 6076 | 47 | 10 | 202 | 1152 | 2297 | 1630 | 14175 | 442 | 372 | 1800 | 249781 | 1269 | 1135 | 711 | 2346 | 2336 | 1485 | 16119 | 296 | 98 | 352 | 472 | 173233 | 50366 | 0.414 |
| 594 | 602.57 | 266346 | 1.3 | 312 | 5420 | 78 | 0 | 0 | 1154 | 1965 | 1451 | 13995 | 298 | 415 | 1209 | 217352 | 1231 | 1104 | 776 | 2330 | 2140 | 1584 | 16585 | 173 | 158 | 306 | 340 | 168785 | 50123 | 0.404 |
| 595 | 603.57 | 273039 | 1.36 | 247 | 5650 | 88 | 32 | 0 | 1121 | 2135 | 1546 | 14770 | 314 | 493 | 1143 | 222663 | 1258 | 1018 | 828 | 2614 | 2465 | 1463 | 15049 | 263 | 65 | 275 | 708 | 171616 | 51101 | 0.409 |
| 596 | 604.57 | 281521 | 1.49 | 259 | 5629 | 105 | 67 | 0 | 1071 | 2212 | 1471 | 14155 | 283 | 517 | 1207 | 231194 | 1248 | 1042 | 918 | 2562 | 2515 | 1533 | 15608 | 195 | 101 | 317 | 429 | 174334 | 51194 | 0.415 |
| 597 | 605.57 | 276876 | 1.43 | 223 | 5697 | 73 | 27 | 0 | 1060 | 2011 | 1507 | 15035 | 313 | 345 | 1405 | 222453 | 1352 | 1048 | 803 | 2174 | 2667 | 1328 | 14071 | 138 | 180 | 338 | 507 | 176162 | 51239 | 0.413 |
| 598 | 606.57 | 273450 | 1.3 | 203 | 5829 | 84 | 65 | 5 | 1010 | 2135 | 1461 | 12742 | 360 | 940 | 1214 | 237623 | 1263 | 1033 | 692 | 2663 | 2309 | 1637 | 14856 | 132 | 149 | 288 | 691 | 169686 | 49757 | 0.407 |
| 599 | 607.57 | 283486 | 1.35 | 308 | 6062 | 62 | 54 | 0 | 1053 | 2379 | 1533 | 14203 | 311 | 450 | 1207 | 236554 | 1306 | 1209 | 862 | 2269 | 2630 | 1754 | 16370 | 321 | 51 | 371 | 572 | 174273 | 51099 | 0.416 |
| 600 | 608.57 | 281807 | 1.39 | 225 | 5967 | 61 | 25 | 0 | 1068 | 2331 | 1572 | 13363 | 418 | 272 | 1150 | 232613 | 1218 | 1124 | 858 | 2635 | 2460 | 1419 | 16314 | 188 | 142 | 379 | 512 | 173378 | 50716 | 0.416 |
| 601 | 609.57 | 278865 | 1.44 | 235 | 5753 | 86 | 48 | 5 | 1067 | 2213 | 1517 | 14894 | 223 | 491 | 1174 | 229439 | 1200 | 1043 | 898 | 2462 | 2445 | 1631 | 16325 | 226 | 259 | 353 | 517 | 173908 | 50691 | 0.413 |
| 602 | 610.57 | 279386 | 1.36 | 175 | 5904 | 117 | 32 | 0 | 992 | 2304 | 1528 | 13987 | 399 | 581 | 1183 | 229306 | 1362 | 968 | 826 | 2181 | 2415 | 1509 | 15619 | 237 | 116 | 295 | 531 | 175186 | 50945 | 0.413 |
| 603 | 611.57 | 275055 | 1.41 | 258 | 5830 | 103 | 37 | 0 | 1092 | 2307 | 1513 | 14466 | 264 | 273 | 1220 | 219326 | 1257 | 1047 | 752 | 2348 | 2394 | 1150 | 16786 | 150 | 142 | 250 | 512 | 173052 | 50300 | 0.41 |
| 604 | 612.57 | 279628 | 1.5 | 210 | 5895 | 60 | 23 | 26 | 1048 | 2257 | 1611 | 14366 | 427 | 479 | 1152 | 255293 | 1228 | 1110 | 838 | 2282 | 2677 | 1203 | 14551 | 158 | 181 | 269 | 721 | 168406 | 50451 | 0.409 |
| 605 | 613.57 | 273511 | 1.38 | 238 | 5890 | 84 | 25 | 0 | 1045 | 2154 | 1518 | 17361 | 306 | 382 | 1167 | 221273 | 1149 | 1142 | 751 | 2442 | 2610 | 1125 | 16276 | 299 | 135 | 351 | 594 | 170972 | 50279 | 0.409 |
| 606 | 614.57 | 277665 | 1.38 | 236 | 5842 | 33 | 60 | 19 | 1109 | 2231 | 1567 | 15870 | 358 | 442 | 1164 | 234924 | 1280 | 960 | 819 | 2422 | 2401 | 1486 | 14511 | 249 | 34 | 370 | 659 | 173133 | 50777 | 0.41 |
| 607 | 615.57 | 279153 | 1.36 | 290 | 5806 | 147 | 49 | 0 | 1035 | 2114 | 1562 | 14722 | 347 | 549 | 1041 | 235537 | 1331 | 1004 | 902 | 2669 | 2570 | 1888 | 14016 | 234 | 114 | 331 | 513 | 172981 | 50483 | 0.412 |
| 608 | 616.57 | 278473 | 1.35 | 228 | 5945 | 86 | 50 | 78 | 1125 | 2110 | 1597 | 14840 | 386 | 470 | 1014 | 224282 | 1271 | 1019 | 821 | 2513 | 2405 | 1176 | 17103 | 209 | 120 | 332 | 523 | 171326 | 51167 | 0.413 |
| 609 | 617.57 | 276321 | 1.37 | 225 | 6001 | 72 | 37 | 15 | 1100 | 2185 | 1501 | 14596 | 365 | 474 | 976 | 225195 | 1212 | 1035 | 680 | 2524 | 2243 | 1283 | 15195 | 222 | 93 | 279 | 592 | 173276 | 50866 | 0.411 |
| 610 | 618.57 | 276419 | 1.39 | 277 | 5860 | 127 | 63 | 23 | 1064 | 2303 | 1489 | 13617 | 241 | 489 | 846 | 217257 | 1354 | 936 | 853 | 2567 | 2503 | 1472 | 18239 | 218 | 182 | 312 | 412 | 173463 | 50659 | 0.414 |
| 611 | 619.57 | 276138 | 1.41 | 311 | 5846 | 100 | 13 | 39 | 1126 | 2254 | 1507 | 14748 | 314 | 647 | 1066 | 222201 | 1220 | 1163 | 835 | 2465 | 2388 | 1496 | 15066 | 205 | 115 | 362 | 496 | 173801 | 51427 | 0.411 |
| 612 | 620.57 | 274066 | 1.37 | 232 | 5683 | 72 | 25 | 0 | 1109 | 2153 | 1475 | 16330 | 377 | 516 | 1012 | 218850 | 1250 | 941 | 959 | 2339 | 2486 | 1226 | 15639 | 211 | 67 | 347 | 520 | 174812 | 51512 | 0.409 |
| 613 | 621.57 | 276889 | 1.42 | 255 | 5733 | 74 | 0 | 0 | 1079 | 2179 | 1479 | 15482 | 375 | 441 | 1082 | 224487 | 1218 | 987 | 897 | 2322 | 2420 | 1214 | 15622 | 109 | 213 | 363 | 574 | 173353 | 50203 | 0.412 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 614 | 622.57 | 273335 | 1.39 | 233 | 5804 | 77 | 33 | 12 | 1124 | 2166 | 1472 | 14291 | 437 | 850 | 1015 | 217905 | 1299 | 973 | 640 | 2457 | 2251 | 1599 | 14642 | 206 | 138 | 398 | 385 | 174914 | 50717 | 0.41 |
| 615 | 623.57 | 276169 | 1.41 | 262 | 5869 | 101 | 30 | 0 | 1058 | 2221 | 1489 | 14963 | 261 | 786 | 872 | 214020 | 1319 | 1066 | 739 | 2149 | 2250 | 1459 | 16474 | 342 | 113 | 311 | 523 | 173648 | 50989 | 0.413 |
| 616 | 624.57 | 277726 | 1.4 | 212 | 6031 | 36 | 51 | 34 | 1135 | 2135 | 1528 | 13195 | 326 | 397 | 798 | 206879 | 1334 | 1117 | 724 | 2433 | 2318 | 1508 | 17490 | 210 | 128 | 267 | 524 | 178423 | 52258 | 0.415 |
| 617 | 625.57 | 284264 | 1.34 | 240 | 6067 | 73 | 42 | 132 | 1074 | 2153 | 1591 | 13411 | 367 | 527 | 901 | 222433 | 1262 | 972 | 867 | 2562 | 2411 | 1737 | 17206 | 135 | 97 | 305 | 617 | 178867 | 51746 | 0.419 |
| 618 | 626.57 | 275507 | 1.42 | 212 | 6069 | 43 | 0 | 76 | 1072 | 2218 | 1570 | 13531 | 386 | 489 | 865 | 218028 | 1184 | 1094 | 932 | 2431 | 2392 | 1481 | 15258 | 189 | 144 | 281 | 371 | 176467 | 51520 | 0.411 |
| 619 | 627.57 | 266805 | 1.35 | 239 | 5544 | 117 | 54 | 5 | 1153 | 2108 | 1435 | 13765 | 198 | 1072 | 853 | 212505 | 1213 | 905 | 718 | 2392 | 2144 | 1284 | 15475 | 274 | 47 | 298 | 627 | 172713 | 49931 | 0.405 |
| 620 | 628.57 | 263758 | 1.52 | 271 | 5669 | 103 | 61 | 0 | 1072 | 1978 | 1447 | 14989 | 350 | 369 | 842 | 204707 | 1270 | 918 | 650 | 2277 | 2702 | 1673 | 15219 | 119 | 147 | 294 | 453 | 172163 | 50824 | 0.404 |
| 621 | 629.57 | 272006 | 1.45 | 248 | 5865 | 52 | 33 | 16 | 1087 | 2045 | 1386 | 14782 | 300 | 362 | 879 | 213873 | 1190 | 938 | 891 | 2326 | 2399 | 1129 | 17358 | 185 | 101 | 212 | 539 | 172337 | 50635 | 0.41 |
| 622 | 630.57 | 272439 | 1.46 | 286 | 5855 | 58 | 69 | 102 | 1033 | 2206 | 1476 | 14009 | 361 | 314 | 908 | 214787 | 1226 | 972 | 711 | 2311 | 2488 | 1184 | 15683 | 311 | 60 | 307 | 495 | 173217 | 50593 | 0.41 |
| 623 | 631.57 | 274915 | 1.38 | 228 | 5945 | 77 | 16 | 22 | 1053 | 2243 | 1408 | 15683 | 312 | 249 | 771 | 213578 | 1326 | 1003 | 839 | 2266 | 2337 | 1457 | 15021 | 165 | 124 | 350 | 404 | 174730 | 51254 | 0.411 |
| 624 | 632.57 | 283667 | 1.42 | 218 | 6183 | 75 | 43 | 0 | 1068 | 2226 | 1507 | 14886 | 363 | 384 | 873 | 226624 | 1166 | 947 | 802 | 2537 | 2547 | 1406 | 16221 | 193 | 86 | 342 | 469 | 177734 | 51909 | 0.418 |
| 625 | 633.57 | 282009 | 1.44 | 259 | 6193 | 60 | 0 | 0 | 980 | 2127 | 1640 | 13260 | 278 | 486 | 973 | 223390 | 1158 | 960 | 774 | 2524 | 2445 | 1359 | 16058 | 231 | 118 | 322 | 377 | 177518 | 51752 | 0.417 |
| 626 | 634.57 | 279039 | 1.36 | 244 | 5825 | 116 | 77 | 8 | 1082 | 2251 | 1566 | 12455 | 399 | 554 | 1073 | 224521 | 1300 | 930 | 783 | 2257 | 2456 | 1345 | 17475 | 261 | 80 | 391 | 388 | 174270 | 51331 | 0.414 |
| 627 | 635.57 | 283839 | 1.42 | 206 | 5889 | 53 | 6 | 0 | 1010 | 2311 | 1435 | 13687 | 328 | 321 | 1091 | 246061 | 1345 | 949 | 695 | 2680 | 2665 | 1477 | 17071 | 233 | 91 | 317 | 598 | 171861 | 50936 | 0.415 |
| 628 | 636.57 | 288356 | 1.32 | 265 | 5833 | 106 | 25 | 29 | 1064 | 2384 | 1556 | 13381 | 468 | 411 | 1288 | 259170 | 1284 | 922 | 554 | 2717 | 2666 | 1502 | 15942 | 248 | 140 | 342 | 609 | 172634 | 50565 | 0.417 |
| 629 | 637.57 | 280353 | 1.3 | 233 | 5877 | 98 | 44 | 30 | 1030 | 2210 | 1572 | 14160 | 401 | 614 | 1363 | 233124 | 1245 | 894 | 737 | 2686 | 2638 | 1399 | 15501 | 206 | 123 | 287 | 386 | 174016 | 51763 | 0.414 |
| 630 | 638.57 | 278050 | 1.39 | 329 | 5908 | 82 | 84 | 218 | 1055 | 2179 | 1541 | 15467 | 289 | 390 | 1119 | 228303 | 1236 | 1083 | 773 | 2246 | 2690 | 1404 | 15705 | 253 | 93 | 285 | 431 | 176833 | 51646 | 0.412 |
| 631 | 639.57 | 262741 | 1.43 | 222 | 5505 | 59 | 16 | 60 | 1132 | 2098 | 1507 | 12011 | 224 | 341 | 969 | 217352 | 1147 | 1078 | 698 | 2330 | 2507 | 1540 | 15577 | 173 | 120 | 326 | 353 | 170207 | 50855 | 0.399 |
| 632 | 640.57 | 262393 | 1.33 | 189 | 5689 | 65 | 9 | 201 | 1126 | 2054 | 1497 | 13540 | 126 | 372 | 1120 | 221082 | 1241 | 1022 | 716 | 2547 | 2401 | 1485 | 13350 | 218 | 72 | 237 | 385 | 169869 | 49660 | 0.398 |
| 633 | 641.57 | 257194 | 1.34 | 182 | 5092 | 68 | 0 | 32 | 1149 | 2036 | 1423 | 12541 | 360 | 595 | 1200 | 226193 | 1132 | 1025 | 686 | 2303 | 2354 | 1526 | 13464 | 137 | 76 | 331 | 568 | 165442 | 48874 | 0.393 |
| 634 | 642.57 | 264503 | 1.37 | 196 | 4720 | 115 | 7 | 6 | 1068 | 2179 | 1503 | 13557 | 378 | 392 | 1218 | 256582 | 1155 | 1060 | 659 | 2113 | 2163 | 1309 | 14387 | 154 | 128 | 362 | 528 | 162254 | 48108 | 0.396 |
| 635 | 643.57 | 274223 | 1.4 | 254 | 5141 | 137 | 43 | 16 | 1105 | 2302 | 1518 | 13182 | 383 | 518 | 1382 | 276342 | 1073 | 1041 | 800 | 2409 | 2710 | 1410 | 15097 | 95 | 110 | 401 | 675 | 159741 | 48511 | 0.4 |
| 636 | 644.57 | 283648 | 1.44 | 203 | 5155 | 62 | 22 | 9 | 1093 | 2383 | 1507 | 13182 | 354 | 568 | 1572 | 289673 | 1217 | 1018 | 874 | 2425 | 2601 | 1424 | 13364 | 228 | 128 | 379 | 766 | 164107 | 48936 | 0.407 |
| 637 | 645.57 | 285167 | 1.33 | 255 | 5471 | 112 | 51 | 234 | 1164 | 2419 | 1641 | 14433 | 202 | 582 | 1355 | 280912 | 1081 | 1002 | 770 | 2592 | 2631 | 1282 | 14271 | 160 | 155 | 376 | 566 | 167738 | 49196 | 0.409 |
| 638 | 646.57 | 293442 | 1.42 | 294 | 5426 | 73 | 24 | 17 | 1098 | 2521 | 1621 | 14889 | 370 | 877 | 1551 | 316588 | 1055 | 1019 | 885 | 2408 | 2635 | 1529 | 15809 | 288 | 81 | 396 | 684 | 161783 | 48721 | 0.409 |
| 639 | 647.57 | 296535 | 1.45 | 303 | 5129 | 80 | 59 | 99 | 1129 | 2646 | 1554 | 16141 | 303 | 596 | 1661 | 344953 | 1171 | 915 | 967 | 2878 | 2363 | 1312 | 14226 | 285 | 122 | 335 | 618 | 157243 | 48181 | 0.408 |
| 640 | 648.57 | 279875 | 1.31 | 266 | 5712 | 60 | 12 | 0 | 1080 | 2539 | 1618 | 13946 | 241 | 531 | 1512 | 268276 | 1068 | 1105 | 853 | 2765 | 2474 | 1706 | 12928 | 218 | 177 | 312 | 706 | 167464 | 50300 | 0.406 |
| 641 | 649.57 | 271802 | 1.36 | 196 | 5712 | 80 | 30 | 0 | 1119 | 2292 | 1457 | 14041 | 307 | 382 | 1101 | 239957 | 1227 | 1098 | 917 | 2388 | 2518 | 1449 | 14561 | 197 | 123 | 372 | 511 | 169427 | 50648 | 0.403 |
| 642 | 650.57 | 278002 | 1.38 | 233 | 5357 | 77 | 9 | 0 | 1202 | 2369 | 1506 | 14134 | 272 | 504 | 1271 | 265064 | 1117 | 1027 | 742 | 2714 | 2335 | 1187 | 14179 | 205 | 72 | 268 | 770 | 165978 | 49846 | 0.405 |
| 643 | 651.57 | 274394 | 1.31 | 254 | 5293 | 67 | 59 | 22 | 1104 | 2323 | 1603 | 14602 | 335 | 390 | 1223 | 248084 | 1172 | 1003 | 754 | 2065 | 2221 | 1413 | 16673 | 188 | 103 | 309 | 555 | 166117 | 49411 | 0.405 |
| 644 | 652.57 | 272536 | 1.38 | 248 | 5506 | 103 | 21 | 30 | 1050 | 2350 | 1463 | 14016 | 392 | 376 | 1230 | 241743 | 1333 | 1000 | 718 | 2265 | 2446 | 1253 | 17186 | 110 | 159 | 341 | 587 | 167013 | 49430 | 0.405 |
| 645 | 653.57 | 280391 | 1.45 | 253 | 5475 | 66 | 20 | 0 | 1041 | 2342 | 1454 | 14378 | 278 | 669 | 1473 | 260449 | 1222 | 998 | 787 | 2334 | 2427 | 1202 | 14098 | 321 | 64 | 417 | 590 | 166826 | 49324 | 0.409 |
| 646 | 654.57 | 279243 | 1.3 | 289 | 5573 | 64 | 0 | 0 | 1039 | 2265 | 1473 | 15159 | 366 | 583 | 2018 | 246173 | 1202 | 902 | 725 | 2402 | 2265 | 1467 | 14109 | 219 | 153 | 247 | 452 | 171721 | 50675 | 0.409 |
| 647 | 655.57 | 284059 | 1.49 | 246 | 5527 | 79 | 0 | 0 | 1060 | 2423 | 1551 | 15866 | 372 | 477 | 1713 | 254797 | 1214 | 953 | 591 | 2229 | 2415 | 1411 | 16580 | 235 | 102 | 338 | 541 | 168287 | 50304 | 0.413 |
| 648 | 656.57 | 280533 | 1.42 | 243 | 5720 | 86 | 27 | 223 | 1043 | 2271 | 1451 | 16149 | 311 | 395 | 1140 | 239856 | 1233 | 917 | 764 | 2125 | 2709 | 1567 | 15403 | 197 | 84 | 309 | 510 | 172797 | 51152 | 0.413 |
| 649 | 657.57 | 290964 | 1.41 | 255 | 5495 | 93 | 0 | 12 | 1034 | 2530 | 1588 | 14165 | 265 | 589 | 1265 | 276236 | 1309 | 961 | 987 | 2353 | 2350 | 1341 | 15935 | 244 | 53 | 309 | 597 | 169813 | 49861 | 0.416 |
| 650 | 658.57 | 281249 | 1.45 | 287 | 5775 | 96 | 27 | 54 | 1105 | 2281 | 1545 | 14951 | 339 | 625 | 1128 | 243517 | 1366 | 968 | 650 | 2278 | 2450 | 1592 | 16878 | 210 | 107 | 330 | 392 | 170467 | 50653 | 0.412 |
| 651 | 659.57 | 278228 | 1.33 | 246 | 5722 | 99 | 32 | 0 | 1058 | 2288 | 1465 | 13745 | 352 | 286 | 1134 | 239541 | 1229 | 994 | 860 | 2503 | 2300 | 1561 | 16804 | 131 | 167 | 316 | 581 | 170454 | 49930 | 0.411 |
| 652 | 660.57 | 276982 | 1.37 | 218 | 5753 | 99 | 59 | 0 | 987 | 2271 | 1509 | 12957 | 286 | 615 | 1090 | 237491 | 1252 | 1074 | 836 | 2525 | 2513 | 1403 | 15689 | 219 | 72 | 392 | 504 | 170274 | 50441 | 0.41 |
| 653 | 661.57 | 281727 | 1.43 | 230 | 5787 | 16 | 39 | 0 | 1065 | 2267 | 1574 | 14267 | 380 | 611 | 1124 | 244335 | 1333 | 1086 | 742 | 2219 | 2343 | 1494 | 15721 | 212 | 103 | 305 | 723 | 171384 | 50472 | 0.412 |
| 654 | 662.57 | 276872 | 1.35 | 260 | 5863 | 42 | 0 | 6 | 1033 | 2110 | 1510 | 13544 | 352 | 1189 | 1105 | 229587 | 1222 | 1029 | 762 | 2390 | 2415 | 1454 | 14605 | 327 | 46 | 302 | 397 | 172141 | 50829 | 0.411 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 655 | 663.57 | 275318 | 1.36 | 257 | 5839 | 79 | 29 | 0 | 1086 | 2145 | 1474 | 14483 | 292 | 426 | 1002 | 224696 | 1442 | 885 | 833 | 2357 | 2238 | 1218 | 14493 | 308 | 68 | 379 | 199 | 173777 | 51033 | 0.41 |
| 656 | 664.57 | 276835 | 1.29 | 292 | 5876 | 98 | 36 | 392 | 1009 | 2186 | 1544 | 12332 | 219 | 451 | 1137 | 226244 | 1301 | 1043 | 803 | 2376 | 2399 | 1079 | 16171 | 260 | 54 | 291 | 496 | 173704 | 51056 | 0.411 |
| 657 | 665.57 | 278088 | 1.38 | 174 | 5761 | 40 | 79 | 20 | 1131 | 2241 | 1442 | 13105 | 332 | 1123 | 1061 | 234582 | 1430 | 949 | 751 | 2554 | 2451 | 1326 | 15135 | 238 | 123 | 320 | 524 | 173245 | 51162 | 0.411 |
| 658 | 666.57 | 276572 | 1.31 | 220 | 5867 | 105 | 62 | 0 | 1129 | 2178 | 1343 | 14439 | 260 | 287 | 1097 | 225887 | 1337 | 1043 | 964 | 2133 | 2286 | 1445 | 14181 | 216 | 161 | 230 | 662 | 175878 | 51435 | 0.411 |
| 659 | 667.57 | 270883 | 1.34 | 200 | 5965 | 38 | 33 | 27 | 1057 | 2125 | 1396 | 14876 | 235 | 461 | 979 | 205990 | 1351 | 871 | 652 | 2122 | 2547 | 1375 | 16622 | 185 | 120 | 273 | 549 | 174274 | 51152 | 0.409 |
| 660 | 668.57 | 267441 | 1.42 | 232 | 6312 | 76 | 75 | 5 | 1142 | 2181 | 1470 | 12892 | 396 | 482 | 1053 | 199949 | 1251 | 1147 | 778 | 2406 | 2540 | 1414 | 17531 | 195 | 101 | 326 | 513 | 173307 | 50409 | 0.406 |
| 661 | 669.57 | 269190 | 1.39 | 195 | 6078 | 61 | 25 | 0 | 1122 | 2160 | 1454 | 13977 | 345 | 1014 | 980 | 201470 | 1331 | 986 | 882 | 2434 | 2346 | 1228 | 16028 | 125 | 101 | 314 | 531 | 173957 | 51345 | 0.409 |
| 662 | 670.57 | 270759 | 1.38 | 257 | 6116 | 113 | 0 | 18 | 1087 | 2021 | 1372 | 17071 | 286 | 526 | 1009 | 204939 | 1264 | 973 | 741 | 2335 | 2387 | 1095 | 17087 | 227 | 118 | 324 | 538 | 172733 | 51396 | 0.409 |
| 663 | 671.57 | 270208 | 1.31 | 207 | 5920 | 104 | 0 | 20 | 1028 | 2079 | 1384 | 15446 | 201 | 883 | 1062 | 207023 | 1112 | 958 | 624 | 2335 | 2424 | 1522 | 15483 | 208 | 140 | 321 | 392 | 174315 | 50857 | 0.409 |
| 664 | 672.57 | 272934 | 1.35 | 235 | 6002 | 81 | 25 | 60 | 1074 | 2086 | 1494 | 13692 | 425 | 342 | 1025 | 216705 | 1382 | 1094 | 746 | 2366 | 2606 | 1331 | 15613 | 253 | 127 | 368 | 664 | 173385 | 51286 | 0.409 |
| 665 | 673.57 | 272857 | 1.42 | 238 | 5962 | 40 | 49 | 211 | 1121 | 2041 | 1531 | 12138 | 471 | 470 | 997 | 218653 | 1306 | 980 | 748 | 2528 | 2434 | 1537 | 15716 | 212 | 123 | 339 | 296 | 173580 | 50459 | 0.409 |
| 666 | 674.57 | 281771 | 1.33 | 275 | 5666 | 100 | 71 | 13 | 1114 | 2211 | 1400 | 13712 | 303 | 542 | 1116 | 245307 | 1341 | 1020 | 751 | 1964 | 2271 | 1662 | 16821 | 174 | 153 | 319 | 247 | 170862 | 51145 | 0.413 |
| 667 | 675.57 | 281973 | 1.35 | 173 | 5631 | 77 | 46 | 23 | 1104 | 2319 | 1453 | 14196 | 328 | 402 | 1125 | 241773 | 1372 | 1025 | 779 | 2473 | 2367 | 1439 | 16222 | 211 | 75 | 349 | 561 | 172432 | 50430 | 0.414 |
| 668 | 676.57 | 284696 | 1.4 | 247 | 5792 | 104 | 46 | 0 | 1101 | 2187 | 1448 | 15187 | 324 | 529 | 1103 | 239553 | 1291 | 1095 | 789 | 2584 | 2657 | 1618 | 16051 | 224 | 109 | 347 | 396 | 174893 | 50874 | 0.416 |
| 669 | 677.57 | 282864 | 1.48 | 268 | 6099 | 49 | 79 | 32 | 1034 | 2295 | 1511 | 14898 | 355 | 386 | 1057 | 230036 | 1385 | 1025 | 1025 | 2100 | 2481 | 1917 | 16155 | 221 | 75 | 392 | 548 | 175644 | 51075 | 0.416 |
| 670 | 678.57 | 280830 | 1.37 | 243 | 6158 | 83 | 0 | 0 | 1045 | 2216 | 1438 | 14356 | 346 | 374 | 1002 | 228604 | 1337 | 1139 | 723 | 2112 | 2282 | 1437 | 15061 | 190 | 93 | 333 | 512 | 176545 | 51347 | 0.414 |
| 671 | 679.57 | 274785 | 1.54 | 258 | 5959 | 103 | 67 | 0 | 1045 | 2184 | 1561 | 14191 | 338 | 422 | 1038 | 223302 | 1275 | 973 | 680 | 2367 | 2311 | 1549 | 16428 | 243 | 154 | 273 | 488 | 172686 | 50071 | 0.409 |
| 672 | 680.57 | 274934 | 1.43 | 245 | 5986 | 68 | 19 | 0 | 1025 | 2300 | 1446 | 13444 | 353 | 524 | 996 | 219069 | 1248 | 1022 | 886 | 2345 | 2530 | 1365 | 15473 | 245 | 116 | 414 | 433 | 174532 | 51298 | 0.411 |
| 673 | 681.57 | 282377 | 1.43 | 266 | 6054 | 51 | 0 | 32 | 994 | 2287 | 1531 | 13900 | 400 | 360 | 1138 | 229585 | 1191 | 1075 | 724 | 2096 | 2368 | 1481 | 17596 | 253 | 152 | 326 | 374 | 173047 | 50967 | 0.416 |
| 674 | 682.57 | 280820 | 1.33 | 329 | 6036 | 80 | 63 | 0 | 1092 | 2245 | 1395 | 14346 | 343 | 523 | 1468 | 233034 | 1314 | 1037 | 721 | 2161 | 2251 | 1328 | 14469 | 204 | 131 | 346 | 530 | 174239 | 51277 | 0.414 |
| 675 | 683.57 | 285757 | 1.4 | 211 | 5535 | 91 | 9 | 0 | 1117 | 2464 | 1541 | 14622 | 371 | 542 | 1993 | 249007 | 1308 | 944 | 730 | 2597 | 2347 | 1584 | 15505 | 243 | 131 | 349 | 495 | 173282 | 50060 | 0.414 |
| 676 | 684.57 | 287486 | 1.44 | 180 | 5474 | 139 | 45 | 280 | 1063 | 2350 | 1601 | 14781 | 294 | 1853 | 3723 | 256319 | 1282 | 979 | 827 | 2561 | 2374 | 1485 | 16639 | 225 | 175 | 425 | 669 | 171761 | 50594 | 0.415 |
| 677 | 685.57 | 288207 | 1.32 | 203 | 5592 | 69 | 10 | 0 | 1084 | 2480 | 1548 | 13507 | 392 | 558 | 2831 | 252643 | 1264 | 1048 | 668 | 2640 | 2352 | 1203 | 16111 | 235 | 146 | 331 | 632 | 172540 | 51108 | 0.417 |
| 678 | 686.57 | 297416 | 1.33 | 234 | 5518 | 81 | 35 | 59 | 1067 | 2349 | 1649 | 15102 | 403 | 1202 | 3391 | 273666 | 1166 | 953 | 793 | 2475 | 2519 | 1437 | 15090 | 350 | 187 | 340 | 851 | 174410 | 51127 | 0.421 |
| 679 | 687.57 | 293120 | 1.4 | 277 | 5567 | 101 | 35 | 6 | 1103 | 2412 | 1523 | 13767 | 412 | 1188 | 3268 | 265626 | 1306 | 995 | 763 | 2430 | 2599 | 1540 | 15344 | 224 | 111 | 329 | 487 | 173701 | 51167 | 0.419 |
| 680 | 688.57 | 286574 | 1.4 | 263 | 5562 | 48 | 56 | 36 | 1119 | 2385 | 1524 | 15468 | 287 | 427 | 6305 | 258694 | 1323 | 1020 | 767 | 2393 | 2305 | 1631 | 15630 | 183 | 182 | 410 | 709 | 170693 | 50935 | 0.414 |
| 681 | 689.57 | 279752 | 1.32 | 227 | 5792 | 31 | 56 | 0 | 1083 | 2279 | 1565 | 13283 | 304 | 533 | 3186 | 242402 | 1195 | 1112 | 770 | 2492 | 2676 | 1264 | 14913 | 262 | 118 | 301 | 514 | 171679 | 50002 | 0.411 |
| 682 | 690.57 | 278092 | 1.39 | 233 | 5979 | 59 | 29 | 0 | 1085 | 2298 | 1504 | 14079 | 365 | 396 | 1364 | 228582 | 1255 | 930 | 656 | 2270 | 2503 | 1478 | 17939 | 183 | 145 | 336 | 632 | 172139 | 51175 | 0.411 |
| 683 | 691.57 | 282965 | 1.44 | 246 | 5787 | 107 | 0 | 0 | 1085 | 2231 | 1431 | 13711 | 399 | 545 | 2499 | 240849 | 1238 | 1102 | 896 | 2468 | 2657 | 1520 | 17213 | 294 | 101 | 374 | 450 | 173483 | 50950 | 0.413 |
| 684 | 692.57 | 315220 | 1.36 | 258 | 5126 | 71 | 42 | 0 | 1110 | 2459 | 1606 | 16303 | 441 | 1304 | 8903 | 370470 | 1027 | 1150 | 729 | 2515 | 2373 | 1821 | 12341 | 246 | 117 | 434 | 748 | 161731 | 47891 | 0.42 |
| 685 | 693.57 | 286413 | 1.29 | 275 | 5361 | 49 | 18 | 0 | 1142 | 2399 | 1551 | 13865 | 324 | 802 | 8951 | 266677 | 1296 | 1125 | 727 | 2494 | 2546 | 1226 | 13596 | 175 | 170 | 355 | 527 | 169771 | 49897 | 0.41 |
| 686 | 694.57 | 291669 | 1.38 | 192 | 5235 | 87 | 53 | 35 | 1120 | 2479 | 1627 | 15044 | 378 | 1182 | 10982 | 281058 | 1200 | 927 | 972 | 2360 | 2731 | 1693 | 14563 | 195 | 257 | 364 | 813 | 169311 | 49412 | 0.412 |
| 687 | 695.57 | 295768 | 1.4 | 307 | 5242 | 63 | 68 | 19 | 1083 | 2511 | 1712 | 16931 | 363 | 561 | 7923 | 289993 | 1185 | 913 | 714 | 2296 | 2456 | 1593 | 14167 | 303 | 151 | 331 | 805 | 166926 | 49637 | 0.416 |
| 688 | 696.57 | 296799 | 1.41 | 252 | 5110 | 47 | 47 | 0 | 1071 | 2543 | 1531 | 13607 | 504 | 486 | 5096 | 285697 | 1319 | 1040 | 976 | 2435 | 2507 | 1649 | 15628 | 147 | 174 | 294 | 976 | 170419 | 50749 | 0.418 |
| 689 | 697.57 | 296534 | 1.48 | 227 | 5193 | 102 | 41 | 148 | 1037 | 2412 | 1706 | 15147 | 327 | 481 | 4228 | 283846 | 1311 | 1123 | 911 | 2549 | 2438 | 1246 | 14703 | 291 | 131 | 357 | 724 | 170750 | 50183 | 0.418 |
| 690 | 698.57 | 300158 | 1.44 | 238 | 4974 | 68 | 44 | 14 | 1052 | 2543 | 1669 | 16205 | 457 | 611 | 4239 | 302866 | 1224 | 1053 | 902 | 2334 | 2551 | 1620 | 15197 | 288 | 151 | 369 | 796 | 168122 | 49965 | 0.419 |
| 691 | 699.57 | 297993 | 1.35 | 254 | 5208 | 123 | 68 | 0 | 1038 | 2485 | 1613 | 13093 | 414 | 487 | 3057 | 291751 | 1220 | 840 | 788 | 2300 | 2365 | 1576 | 15574 | 233 | 86 | 363 | 587 | 169999 | 50117 | 0.419 |
| 692 | 700.57 | 296070 | 1.44 | 196 | 5442 | 100 | 46 | 111 | 1046 | 2470 | 1567 | 14243 | 328 | 448 | 2993 | 277555 | 1244 | 978 | 673 | 2558 | 2378 | 1885 | 15812 | 188 | 134 | 386 | 597 | 171965 | 50488 | 0.42 |
| 693 | 701.57 | 290681 | 1.38 | 227 | 5788 | 21 | 51 | 40 | 1090 | 2368 | 1466 | 15275 | 365 | 450 | 2518 | 252392 | 1257 | 1044 | 787 | 1966 | 2235 | 1481 | 15643 | 356 | 105 | 310 | 574 | 174734 | 51246 | 0.419 |
| 694 | 702.57 | 299391 | 1.37 | 274 | 5593 | 77 | 94 | 11 | 1133 | 2366 | 1528 | 12888 | 317 | 512 | 1691 | 283003 | 1302 | 1025 | 732 | 2240 | 2307 | 1642 | 15127 | 280 | 69 | 308 | 517 | 174897 | 51111 | 0.422 |
| 695 | 703.57 | 287280 | 1.38 | 217 | 5899 | 47 | 23 | 0 | 1122 | 2324 | 1416 | 13540 | 341 | 754 | 1333 | 237483 | 1162 | 1152 | 852 | 2145 | 2486 | 1416 | 17744 | 180 | 88 | 263 | 447 | 173966 | 50745 | 0.419 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 696 | 704.57 | 292399 | 1.4 | 237 | 5701 | 131 | 34 | 15 | 1101 | 2300 | 1368 | 15227 | 297 | 657 | 1553 | 258618 | 1279 | 1013 | 728 | 2075 | 2262 | 1428 | 14597 | 177 | 137 | 302 | 532 | 175610 | 51383 | 0.421 |
| 697 | 705.57 | 298428 | 1.27 | 272 | 5714 | 78 | 20 | 46 | 1101 | 2298 | 1452 | 14581 | 363 | 390 | 1222 | 258540 | 1204 | 1046 | 689 | 2183 | 2691 | 1542 | 17252 | 326 | 78 | 301 | 460 | 176968 | 52421 | 0.426 |
| 698 | 706.57 | 293531 | 1.24 | 217 | 6440 | 45 | 0 | 44 | 1148 | 2394 | 1589 | 14478 | 264 | 1132 | 963 | 227047 | 1280 | 1089 | 820 | 2422 | 2528 | 1648 | 18065 | 338 | 59 | 301 | 357 | 182042 | 52738 | 0.426 |
| 699 | 707.57 | 285900 | 1.34 | 256 | 6435 | 95 | 56 | 0 | 1320 | 2400 | 1483 | 15555 | 190 | 352 | 859 | 227753 | 1283 | 1192 | 832 | 2467 | 2613 | 1460 | 15423 | 303 | 54 | 315 | 488 | 178167 | 51711 | 0.419 |
| 700 | 708.57 | 280608 | 1.3 | 243 | 5832 | 145 | 49 | 0 | 1174 | 2469 | 1482 | 13546 | 349 | 422 | 968 | 235489 | 1241 | 1119 | 844 | 2431 | 2298 | 1712 | 16060 | 189 | 129 | 340 | 428 | 176468 | 51571 | 0.412 |
| 701 | 709.57 | 272744 | 1.41 | 211 | 5640 | 86 | 15 | 0 | 1102 | 2232 | 1344 | 13335 | 415 | 422 | 821 | 223694 | 1232 | 1051 | 829 | 2447 | 2472 | 1289 | 16268 | 244 | 98 | 252 | 380 | 171994 | 50505 | 0.408 |
| 702 | 710.57 | 267915 | 1.34 | 198 | 5945 | 129 | 24 | 22 | 1131 | 2185 | 1397 | 13456 | 333 | 342 | 754 | 207740 | 1147 | 941 | 768 | 1875 | 2158 | 1374 | 16366 | 135 | 122 | 276 | 342 | 172331 | 50901 | 0.407 |
| 703 | 711.57 | 272270 | 1.39 | 265 | 6202 | 86 | 24 | 0 | 1057 | 2131 | 1432 | 14475 | 402 | 325 | 732 | 212430 | 1290 | 1040 | 839 | 2131 | 2569 | 1385 | 15851 | 284 | 74 | 295 | 409 | 174820 | 51767 | 0.409 |
| 704 | 712.57 | 267219 | 1.37 | 271 | 6272 | 47 | 22 | 69 | 1064 | 2196 | 1411 | 14061 | 201 | 809 | 707 | 195502 | 1336 | 1165 | 813 | 1992 | 2249 | 1365 | 17092 | 339 | 91 | 325 | 418 | 174823 | 51076 | 0.408 |
| 705 | 713.57 | 263433 | 1.37 | 204 | 6101 | 99 | 43 | 0 | 1054 | 2063 | 1293 | 14656 | 334 | 523 | 710 | 197071 | 1200 | 1086 | 657 | 2150 | 2299 | 1221 | 15461 | 217 | 64 | 272 | 361 | 174338 | 51352 | 0.405 |
| 706 | 714.57 | 262118 | 1.48 | 233 | 6178 | 83 | 61 | 0 | 1104 | 2022 | 1324 | 15578 | 227 | 268 | 602 | 187491 | 1320 | 1092 | 818 | 2113 | 2132 | 1570 | 16955 | 248 | 42 | 296 | 347 | 173061 | 50674 | 0.405 |
| 707 | 715.57 | 267586 | 1.44 | 206 | 6395 | 135 | 80 | 0 | 1125 | 2125 | 1298 | 14035 | 291 | 354 | 691 | 196879 | 1228 | 920 | 813 | 2096 | 2318 | 1341 | 16468 | 250 | 110 | 229 | 316 | 177284 | 51069 | 0.408 |
| 708 | 716.57 | 269822 | 1.44 | 228 | 6618 | 66 | 25 | 0 | 1045 | 2071 | 1359 | 13141 | 216 | 1213 | 774 | 189139 | 1214 | 1091 | 674 | 2389 | 2262 | 1680 | 16846 | 194 | 141 | 361 | 105 | 178293 | 51880 | 0.411 |
| 709 | 717.57 | 274053 | 1.38 | 283 | 6542 | 52 | 15 | 0 | 1189 | 2105 | 1282 | 14847 | 290 | 515 | 663 | 192288 | 1376 | 1047 | 862 | 2408 | 2223 | 1258 | 15845 | 259 | 73 | 313 | 392 | 179876 | 53083 | 0.415 |
| 710 | 718.57 | 279228 | 1.41 | 248 | 6438 | 107 | 44 | 0 | 1117 | 2258 | 1401 | 13896 | 382 | 450 | 716 | 199047 | 1303 | 1356 | 857 | 2409 | 2382 | 1465 | 16525 | 291 | 88 | 321 | 273 | 184002 | 53387 | 0.418 |
| 711 | 719.57 | 264724 | 1.33 | 228 | 6221 | 60 | 103 | 11 | 1259 | 2177 | 1263 | 14278 | 297 | 520 | 758 | 206808 | 1147 | 1172 | 737 | 2029 | 2071 | 1211 | 15859 | 273 | 26 | 289 | 488 | 171273 | 50663 | 0.403 |
| 712 | 720.57 | 246749 | 1.35 | 209 | 5607 | 48 | 37 | 28 | 1211 | 1881 | 1324 | 11326 | 247 | 238 | 657 | 179058 | 1182 | 1032 | 641 | 1983 | 2180 | 1347 | 17314 | 183 | 81 | 301 | 294 | 168009 | 49473 | 0.393 |
| 713 | 721.57 | 261827 | 1.33 | 230 | 6060 | 63 | 25 | 0 | 1074 | 2044 | 1406 | 13640 | 245 | 555 | 705 | 201587 | 1152 | 1129 | 840 | 2211 | 2404 | 1377 | 16138 | 312 | 73 | 411 | 552 | 172430 | 49945 | 0.401 |
| 714 | 722.57 | 258995 | 1.28 | 242 | 5926 | 50 | 73 | 0 | 1124 | 2017 | 1250 | 13628 | 262 | 361 | 832 | 194099 | 1182 | 971 | 717 | 2127 | 2081 | 1409 | 17310 | 216 | 113 | 298 | 372 | 170257 | 50511 | 0.401 |
| 715 | 723.57 | 257292 | 1.42 | 167 | 5897 | 7 | 8 | 0 | 1205 | 2008 | 1319 | 13126 | 335 | 552 | 720 | 184421 | 1127 | 1109 | 844 | 2239 | 2374 | 1418 | 16836 | 181 | 105 | 320 | 353 | 172079 | 50816 | 0.402 |
| 716 | 724.57 | 263097 | 1.38 | 204 | 6124 | 34 | 0 | 0 | 1092 | 2147 | 1321 | 15508 | 285 | 730 | 712 | 192404 | 1326 | 991 | 702 | 2062 | 2309 | 1766 | 16254 | 250 | 83 | 294 | 395 | 172314 | 50803 | 0.404 |
| 717 | 725.57 | 269882 | 1.38 | 168 | 5990 | 54 | 15 | 0 | 1169 | 2220 | 1377 | 12996 | 269 | 408 | 713 | 212708 | 1283 | 1079 | 765 | 2169 | 2288 | 1731 | 16209 | 200 | 168 | 363 | 414 | 173231 | 50940 | 0.407 |
| 718 | 726.57 | 264545 | 1.46 | 221 | 6167 | 48 | 5 | 0 | 1129 | 2132 | 1331 | 13716 | 218 | 351 | 654 | 196659 | 1273 | 1064 | 723 | 2205 | 2475 | 1430 | 18256 | 224 | 84 | 323 | 410 | 172559 | 51070 | 0.405 |
| 719 | 727.57 | 266660 | 1.39 | 208 | 6232 | 40 | 50 | 26 | 1146 | 2075 | 1351 | 16092 | 240 | 630 | 686 | 192869 | 1358 | 1050 | 718 | 2448 | 2543 | 1253 | 17449 | 222 | 159 | 325 | 409 | 174970 | 51613 | 0.408 |
| 720 | 728.57 | 268802 | 1.35 | 239 | 6408 | 66 | 61 | 6 | 1159 | 2079 | 1323 | 13677 | 283 | 384 | 612 | 195209 | 1288 | 1139 | 770 | 2145 | 2251 | 1304 | 15898 | 270 | 86 | 326 | 259 | 177971 | 51678 | 0.409 |
| 721 | 729.57 | 263967 | 1.39 | 221 | 6208 | 59 | 0 | 0 | 1171 | 2145 | 1422 | 13054 | 269 | 725 | 725 | 187753 | 1359 | 1150 | 736 | 2019 | 2439 | 1371 | 17220 | 156 | 106 | 353 | 486 | 174587 | 51241 | 0.406 |
| 722 | 730.57 | 267498 | 1.41 | 207 | 6247 | 45 | 33 | 0 | 1114 | 2077 | 1354 | 13273 | 359 | 619 | 725 | 192907 | 1304 | 1115 | 716 | 2290 | 2300 | 1480 | 15893 | 253 | 63 | 415 | 462 | 176973 | 51359 | 0.408 |
| 723 | 731.57 | 269265 | 1.45 | 264 | 6232 | 62 | 36 | 0 | 1107 | 2218 | 1318 | 13099 | 321 | 367 | 713 | 201182 | 1395 | 1102 | 817 | 1995 | 2476 | 1912 | 16710 | 264 | 88 | 310 | 475 | 176286 | 51289 | 0.409 |
| 724 | 732.57 | 273396 | 1.35 | 186 | 6277 | 87 | 47 | 0 | 1125 | 2160 | 1334 | 14249 | 330 | 361 | 748 | 208935 | 1228 | 1033 | 665 | 2549 | 2291 | 1467 | 15553 | 282 | 28 | 455 | 279 | 175041 | 51056 | 0.41 |
| 725 | 733.57 | 276510 | 1.33 | 222 | 6252 | 101 | 7 | 0 | 1102 | 2281 | 1378 | 13309 | 268 | 697 | 837 | 218673 | 1237 | 1096 | 783 | 2228 | 2444 | 1831 | 15284 | 279 | 53 | 319 | 306 | 177220 | 51305 | 0.412 |
| 726 | 734.57 | 276370 | 1.37 | 244 | 6052 | 67 | 41 | 24 | 1101 | 2301 | 1568 | 14557 | 359 | 557 | 791 | 219471 | 1381 | 1082 | 882 | 2256 | 2459 | 1806 | 15764 | 250 | 101 | 342 | 434 | 175214 | 51733 | 0.412 |
| 727 | 735.57 | 272639 | 1.39 | 254 | 5804 | 30 | 0 | 0 | 1022 | 2257 | 1339 | 13503 | 306 | 492 | 845 | 225887 | 1241 | 976 | 887 | 2355 | 2449 | 1770 | 16793 | 235 | 138 | 266 | 675 | 170779 | 50101 | 0.408 |
| 728 | 736.57 | 272489 | 1.38 | 196 | 5730 | 70 | 0 | 0 | 1115 | 2323 | 1397 | 14494 | 329 | 535 | 845 | 220572 | 1439 | 933 | 825 | 1933 | 2494 | 1639 | 15654 | 239 | 151 | 395 | 492 | 172534 | 51012 | 0.408 |
| 729 | 737.57 | 274657 | 1.34 | 228 | 6160 | 75 | 79 | 31 | 1147 | 2166 | 1546 | 14612 | 256 | 601 | 856 | 217692 | 1379 | 949 | 681 | 2079 | 2466 | 1536 | 18110 | 192 | 132 | 406 | 567 | 173588 | 50567 | 0.41 |
| 730 | 738.57 | 272627 | 1.35 | 251 | 6146 | 51 | 12 | 0 | 1125 | 2232 | 1414 | 14159 | 292 | 591 | 831 | 209934 | 1357 | 1218 | 839 | 2411 | 2548 | 1348 | 15917 | 107 | 182 | 330 | 391 | 174323 | 51242 | 0.41 |
| 731 | 739.57 | 275547 | 1.4 | 181 | 6111 | 69 | 23 | 0 | 1135 | 2507 | 1392 | 13944 | 324 | 1180 | 737 | 216973 | 1154 | 1091 | 707 | 2539 | 2672 | 1740 | 13737 | 302 | 38 | 358 | 508 | 177401 | 51445 | 0.411 |
| 732 | 740.57 | 278318 | 1.37 | 274 | 6128 | 82 | 26 | 0 | 1113 | 2224 | 1378 | 14282 | 481 | 337 | 811 | 227507 | 1241 | 902 | 931 | 2443 | 2498 | 1782 | 16136 | 262 | 34 | 296 | 398 | 172635 | 50880 | 0.412 |
| 733 | 741.57 | 275876 | 1.34 | 244 | 6001 | 84 | 57 | 0 | 1186 | 2268 | 1508 | 13404 | 391 | 281 | 835 | 236356 | 1357 | 966 | 923 | 2767 | 2350 | 1459 | 15813 | 196 | 76 | 266 | 605 | 170796 | 50053 | 0.408 |
| 734 | 742.57 | 276334 | 1.34 | 222 | 6309 | 95 | 48 | 32 | 1125 | 2315 | 1486 | 12162 | 438 | 443 | 847 | 232611 | 1263 | 1054 | 904 | 2177 | 2422 | 1679 | 16453 | 245 | 161 | 384 | 623 | 171113 | 50655 | 0.409 |
| 735 | 743.57 | 268830 | 1.43 | 188 | 6362 | 30 | 39 | 0 | 1143 | 2232 | 1431 | 15754 | 296 | 361 | 853 | 219878 | 1209 | 995 | 744 | 2532 | 2431 | 1420 | 16230 | 202 | 123 | 353 | 635 | 169488 | 50126 | 0.404 |
| 736 | 744.57 | 270426 | 1.42 | 250 | 6314 | 76 | 38 | 9 | 1184 | 2291 | 1417 | 15794 | 296 | 363 | 803 | 216281 | 1144 | 974 | 744 | 2205 | 2433 | 1507 | 14836 | 182 | 183 | 303 | 514 | 170751 | 50110 | 0.406 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 737 | 745.57 | 273893 | 1.38 | 215 | 6205 | 93 | 0 | 0 | 1116 | 2276 | 1421 | 14525 | 265 | 474 | 831 | 223826 | 1339 | 939 | 787 | 2289 | 2542 | 1388 | 16081 | 270 | 73 | 341 | 359 | 171665 | 50912 | 0.408 |
| 738 | 746.57 | 274734 | 1.36 | 235 | 6079 | 83 | 49 | 0 | 1085 | 2170 | 1452 | 13734 | 352 | 651 | 793 | 225637 | 1300 | 1026 | 808 | 2469 | 2189 | 1445 | 16115 | 270 | 97 | 374 | 539 | 171651 | 50757 | 0.409 |
| 739 | 747.57 | 280350 | 1.32 | 289 | 5995 | 61 | 24 | 0 | 1129 | 2382 | 1558 | 13137 | 407 | 653 | 961 | 236372 | 1157 | 956 | 847 | 2267 | 2520 | 1618 | 16613 | 297 | 47 | 371 | 320 | 173055 | 50919 | 0.412 |
| 740 | 748.57 | 282974 | 1.4 | 198 | 5843 | 119 | 25 | 0 | 1108 | 2413 | 1555 | 14402 | 408 | 496 | 1201 | 244871 | 1178 | 1033 | 784 | 2394 | 2517 | 1676 | 15347 | 129 | 141 | 382 | 577 | 173076 | 51099 | 0.413 |
| 741 | 749.57 | 284160 | 1.43 | 231 | 5888 | 61 | 24 | 0 | 1095 | 2279 | 1346 | 13932 | 356 | 494 | 987 | 238958 | 1256 | 1061 | 862 | 2664 | 2668 | 1961 | 16246 | 270 | 63 | 365 | 551 | 174967 | 51065 | 0.415 |
| 742 | 750.57 | 288801 | 1.35 | 197 | 5591 | 46 | 0 | 16 | 1120 | 2407 | 1538 | 13768 | 342 | 459 | 993 | 259696 | 1260 | 958 | 768 | 2189 | 2542 | 1843 | 15821 | 251 | 150 | 437 | 371 | 172993 | 51060 | 0.416 |
| 743 | 751.57 | 293178 | 1.38 | 216 | 5647 | 45 | 27 | 35 | 1061 | 2572 | 1454 | 14700 | 480 | 547 | 1173 | 275665 | 1166 | 990 | 765 | 2444 | 2619 | 1521 | 14659 | 162 | 163 | 298 | 495 | 172124 | 49689 | 0.418 |
| 744 | 752.57 | 290036 | 1.4 | 334 | 5625 | 109 | 67 | 35 | 1109 | 2414 | 1496 | 15092 | 337 | 629 | 1079 | 266960 | 1212 | 980 | 807 | 2527 | 2398 | 1473 | 13385 | 244 | 120 | 312 | 590 | 174118 | 50363 | 0.416 |
| 745 | 753.57 | 288983 | 1.42 | 254 | 5794 | 83 | 23 | 38 | 1070 | 2275 | 1476 | 13300 | 229 | 496 | 1233 | 253092 | 1281 | 980 | 840 | 2448 | 2350 | 2021 | 17359 | 149 | 160 | 417 | 761 | 172449 | 50594 | 0.417 |
| 746 | 754.57 | 284339 | 1.4 | 247 | 5987 | 69 | 12 | 0 | 1007 | 2349 | 1540 | 14701 | 427 | 512 | 1047 | 239840 | 1451 | 1069 | 1008 | 2346 | 2507 | 1474 | 15706 | 189 | 194 | 308 | 592 | 172564 | 51167 | 0.415 |
| 747 | 755.57 | 290315 | 1.47 | 237 | 5933 | 114 | 67 | 77 | 1011 | 2364 | 1498 | 13777 | 380 | 878 | 1227 | 261924 | 1262 | 1082 | 774 | 2404 | 2444 | 1297 | 17768 | 218 | 119 | 294 | 504 | 169429 | 50294 | 0.417 |
| 748 | 756.57 | 300233 | 1.39 | 288 | 5415 | 82 | 40 | 0 | 1088 | 2538 | 1600 | 14278 | 559 | 757 | 1845 | 296834 | 1180 | 890 | 730 | 2581 | 2746 | 1122 | 15089 | 257 | 133 | 263 | 647 | 168642 | 50525 | 0.42 |
| 749 | 757.57 | 307711 | 1.37 | 308 | 5209 | 77 | 7 | 0 | 1091 | 2705 | 1671 | 14551 | 370 | 727 | 1650 | 313227 | 1201 | 1058 | 883 | 2763 | 2594 | 1508 | 16044 | 358 | 32 | 340 | 671 | 167611 | 49629 | 0.424 |
| 750 | 758.57 | 297471 | 1.42 | 297 | 5464 | 113 | 48 | 0 | 1121 | 2502 | 1550 | 13079 | 497 | 558 | 1314 | 275849 | 1202 | 1019 | 842 | 2377 | 2626 | 1468 | 14697 | 260 | 165 | 329 | 519 | 174746 | 51244 | 0.422 |
| 751 | 759.57 | 297183 | 1.43 | 308 | 5808 | 75 | 44 | 0 | 1049 | 2359 | 1547 | 15297 | 351 | 545 | 1375 | 261465 | 1345 | 1049 | 826 | 2459 | 2635 | 1952 | 14663 | 279 | 135 | 333 | 439 | 174915 | 51647 | 0.423 |
| 752 | 760.57 | 315129 | 1.47 | 259 | 6441 | 84 | 43 | 0 | 1043 | 2531 | 1493 | 16340 | 375 | 793 | 1644 | 276859 | 1252 | 979 | 823 | 2310 | 2809 | 1899 | 15663 | 293 | 118 | 393 | 687 | 181726 | 52988 | 0.436 |
| 753 | 761.57 | 314032 | 1.45 | 224 | 6324 | 88 | 34 | 11 | 1102 | 2756 | 1620 | 17047 | 320 | 487 | 1407 | 284019 | 1325 | 1133 | 861 | 2507 | 2654 | 1855 | 16791 | 305 | 147 | 377 | 718 | 178141 | 52033 | 0.434 |
| 754 | 762.57 | 298641 | 1.42 | 302 | 5753 | 88 | 33 | 17 | 1115 | 2399 | 1541 | 15930 | 379 | 447 | 1197 | 261299 | 1197 | 1032 | 766 | 2253 | 2908 | 1635 | 18614 | 298 | 76 | 381 | 669 | 173471 | 51626 | 0.425 |
| 755 | 763.57 | 299558 | 1.38 | 266 | 5905 | 59 | 29 | 0 | 989 | 2417 | 1419 | 16258 | 376 | 666 | 1015 | 247091 | 1317 | 1018 | 899 | 2513 | 2626 | 1485 | 18025 | 232 | 131 | 369 | 519 | 179081 | 53127 | 0.428 |
| 756 | 764.57 | 299399 | 1.46 | 264 | 6004 | 86 | 84 | 0 | 996 | 2408 | 1480 | 14396 | 342 | 483 | 1247 | 250206 | 1353 | 996 | 779 | 2700 | 2610 | 1422 | 15855 | 204 | 127 | 313 | 459 | 180346 | 52460 | 0.428 |
| 757 | 765.57 | 291563 | 1.29 | 254 | 6268 | 107 | 78 | 33 | 1075 | 2496 | 1522 | 13812 | 372 | 719 | 1291 | 248433 | 1328 | 1058 | 892 | 2271 | 2533 | 1938 | 14939 | 206 | 118 | 218 | 548 | 178002 | 51869 | 0.42 |
| 758 | 766.57 | 277555 | 1.35 | 149 | 6361 | 74 | 43 | 0 | 1085 | 2501 | 1453 | 13942 | 374 | 369 | 1345 | 256858 | 1315 | 864 | 711 | 2274 | 2451 | 1623 | 14873 | 267 | 121 | 306 | 613 | 168716 | 49144 | 0.406 |
| 759 | 767.57 | 258582 | 1.35 | 271 | 6070 | 57 | 59 | 0 | 1074 | 2252 | 1474 | 12658 | 392 | 426 | 1186 | 229851 | 1131 | 1007 | 685 | 1922 | 2285 | 1460 | 15781 | 131 | 121 | 335 | 407 | 162584 | 48149 | 0.393 |
| 760 | 768.57 | 254976 | 1.3 | 270 | 5974 | 98 | 96 | 0 | 1089 | 2099 | 1306 | 12803 | 357 | 394 | 1231 | 210148 | 1166 | 938 | 738 | 1824 | 2402 | 1325 | 13747 | 225 | 128 | 196 | 523 | 165414 | 48795 | 0.394 |
| 761 | 769.57 | 263553 | 1.36 | 234 | 5997 | 97 | 33 | 0 | 1021 | 2090 | 1332 | 12812 | 346 | 408 | 1198 | 203282 | 1235 | 996 | 900 | 2030 | 2429 | 1568 | 14642 | 189 | 152 | 296 | 437 | 173249 | 50453 | 0.403 |
| 762 | 770.57 | 267216 | 1.37 | 279 | 6616 | 61 | 20 | 13 | 1060 | 2061 | 1446 | 12566 | 263 | 469 | 1090 | 202882 | 1136 | 984 | 797 | 2368 | 2265 | 1340 | 16379 | 229 | 69 | 391 | 575 | 173712 | 50933 | 0.406 |
| 763 | 771.57 | 255153 | 1.39 | 201 | 5628 | 81 | 25 | 47 | 1125 | 2105 | 1266 | 12030 | 304 | 532 | 1000 | 206460 | 1100 | 932 | 746 | 2044 | 2280 | 1600 | 16719 | 236 | 109 | 350 | 512 | 164826 | 48496 | 0.395 |
| 764 | 772.57 | 262003 | 1.47 | 243 | 5652 | 57 | 89 | 0 | 1083 | 2153 | 1409 | 13890 | 253 | 378 | 1291 | 222781 | 1252 | 986 | 754 | 2127 | 2422 | 1339 | 15396 | 224 | 151 | 276 | 478 | 165539 | 49597 | 0.398 |
| 765 | 773.57 | 274254 | 1.46 | 183 | 5697 | 140 | 12 | 0 | 1095 | 2257 | 1366 | 13071 | 304 | 564 | 1657 | 233395 | 1170 | 1043 | 695 | 2395 | 2327 | 1495 | 17108 | 250 | 196 | 361 | 419 | 167771 | 50241 | 0.408 |
| 766 | 774.57 | 275013 | 1.29 | 290 | 5764 | 95 | 40 | 0 | 1031 | 2211 | 1401 | 14509 | 202 | 409 | 1681 | 242198 | 1229 | 878 | 644 | 2374 | 2495 | 1557 | 14739 | 282 | 49 | 395 | 738 | 171283 | 49737 | 0.407 |
| 767 | 775.57 | 281727 | 1.35 | 267 | 5760 | 73 | 42 | 0 | 1072 | 2194 | 1358 | 13177 | 374 | 540 | 1372 | 248446 | 1248 | 965 | 706 | 2312 | 2443 | 1386 | 16739 | 217 | 97 | 325 | 760 | 170721 | 50462 | 0.412 |
| 768 | 776.57 | 283099 | 1.43 | 220 | 5721 | 79 | 0 | 0 | 1069 | 2366 | 1407 | 13762 | 370 | 551 | 1647 | 244436 | 1166 | 951 | 748 | 2361 | 2488 | 1452 | 16531 | 235 | 71 | 400 | 372 | 172468 | 51483 | 0.414 |
| 769 | 777.57 | 285283 | 1.46 | 275 | 5727 | 40 | 38 | 0 | 1038 | 2451 | 1467 | 13046 | 336 | 464 | 1841 | 256986 | 1345 | 954 | 865 | 2436 | 2483 | 1649 | 15196 | 302 | 88 | 347 | 581 | 171979 | 50600 | 0.414 |
| 770 | 778.57 | 280255 | 1.32 | 201 | 5912 | 106 | 75 | 0 | 1093 | 2178 | 1527 | 13267 | 228 | 479 | 1560 | 236658 | 1226 | 1005 | 842 | 2120 | 2354 | 1596 | 16609 | 132 | 138 | 369 | 602 | 171570 | 51687 | 0.413 |
| 771 | 779.57 | 279113 | 1.41 | 214 | 5805 | 135 | 53 | 37 | 1041 | 2333 | 1400 | 14343 | 345 | 429 | 1306 | 231494 | 1160 | 929 | 792 | 2484 | 2275 | 1308 | 15432 | 123 | 192 | 286 | 455 | 172501 | 50851 | 0.412 |
| 772 | 780.57 | 290030 | 1.38 | 235 | 5471 | 103 | 57 | 0 | 1022 | 2502 | 1672 | 14254 | 313 | 1334 | 2780 | 271538 | 1210 | 1005 | 772 | 2293 | 2760 | 2501 | 15028 | 224 | 256 | 392 | 884 | 170424 | 49251 | 0.415 |
| 773 | 781.57 | 288329 | 1.38 | 264 | 5262 | 65 | 33 | 179 | 1036 | 2379 | 1517 | 16517 | 329 | 463 | 3121 | 281848 | 1056 | 978 | 824 | 2376 | 2401 | 1655 | 14359 | 323 | 144 | 354 | 813 | 167665 | 49486 | 0.411 |
| 774 | 782.57 | 286940 | 1.42 | 194 | 5160 | 71 | 24 | 9 | 1125 | 2353 | 1492 | 13419 | 348 | 454 | 1835 | 281915 | 1226 | 1008 | 923 | 1993 | 2574 | 1468 | 13994 | 313 | 91 | 365 | 544 | 168218 | 49374 | 0.412 |
| 775 | 783.57 | 285416 | 1.35 | 242 | 5267 | 57 | 30 | 0 | 1068 | 2413 | 1417 | 13541 | 341 | 350 | 1782 | 268214 | 1166 | 840 | 875 | 2478 | 2547 | 1593 | 15948 | 273 | 119 | 307 | 595 | 168892 | 49539 | 0.412 |
| 776 | 784.57 | 296041 | 1.47 | 277 | 5424 | 100 | 50 | 0 | 1038 | 2541 | 1520 | 14545 | 430 | 499 | 1508 | 300152 | 1144 | 1034 | 814 | 2396 | 2534 | 1743 | 15593 | 249 | 122 | 370 | 580 | 167675 | 50193 | 0.417 |
| 777 | 785.57 | 290116 | 1.45 | 234 | 5477 | 75 | 35 | 0 | 1156 | 2414 | 1487 | 15497 | 319 | 432 | 1400 | 282324 | 1185 | 990 | 720 | 2209 | 2338 | 1663 | 17311 | 271 | 28 | 445 | 420 | 167617 | 49583 | 0.413 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 778 | 786.57 | 286872 | 1.4 | 237 | 5177 | 71 | 58 | 0 | 1094 | 2398 | 1410 | 14158 | 320 | 518 | 1436 | 274670 | 1190 | 954 | 835 | 2379 | 2643 | 1632 | 16186 | 202 | 163 | 345 | 712 | 169068 | 49708 | 0.412 |
| 779 | 787.57 | 287341 | 1.4 | 243 | 5284 | 118 | 46 | 15 | 1077 | 2450 | 1582 | 12790 | 429 | 421 | 1281 | 276322 | 1263 | 1043 | 927 | 2162 | 2463 | 1391 | 14709 | 206 | 179 | 351 | 635 | 168534 | 50293 | 0.413 |
| 780 | 788.57 | 284235 | 1.37 | 225 | 5418 | 74 | 27 | 42 | 1097 | 2356 | 1401 | 13187 | 440 | 519 | 1162 | 263239 | 1262 | 999 | 855 | 1926 | 2319 | 1517 | 15347 | 215 | 130 | 258 | 445 | 168909 | 50387 | 0.412 |
| 781 | 789.57 | 274246 | 1.43 | 237 | 5939 | 87 | 26 | 0 | 1014 | 2137 | 1416 | 12359 | 426 | 429 | 1079 | 222397 | 1306 | 1076 | 743 | 2102 | 2403 | 1697 | 15772 | 318 | 63 | 409 | 286 | 174666 | 50367 | 0.41 |
| 782 | 790.57 | 272000 | 1.4 | 232 | 5955 | 72 | 0 | 0 | 1065 | 2230 | 1399 | 13031 | 326 | 463 | 949 | 213780 | 1302 | 985 | 792 | 1995 | 2622 | 1482 | 14717 | 252 | 155 | 321 | 481 | 174776 | 50609 | 0.409 |
| 783 | 791.57 | 274471 | 1.52 | 191 | 5872 | 57 | 25 | 10 | 1125 | 2363 | 1433 | 14668 | 331 | 355 | 1078 | 219856 | 1407 | 816 | 687 | 2252 | 2561 | 1465 | 15514 | 312 | 47 | 332 | 351 | 172953 | 50802 | 0.409 |
| 784 | 792.57 | 280511 | 1.43 | 230 | 5904 | 94 | 31 | 0 | 1073 | 2225 | 1294 | 15265 | 286 | 401 | 911 | 238436 | 1318 | 978 | 830 | 2355 | 2319 | 1346 | 13890 | 316 | 77 | 346 | 535 | 172219 | 51110 | 0.412 |
| 785 | 793.57 | 286728 | 1.44 | 254 | 5895 | 95 | 26 | 0 | 1041 | 2295 | 1407 | 14984 | 398 | 637 | 1013 | 252579 | 1149 | 1009 | 848 | 2260 | 2766 | 1684 | 15756 | 251 | 91 | 349 | 655 | 171026 | 50875 | 0.416 |
| 786 | 794.57 | 281866 | 1.28 | 227 | 6208 | 94 | 4 | 0 | 995 | 2328 | 1339 | 15169 | 363 | 560 | 764 | 228930 | 1123 | 1073 | 779 | 2328 | 3589 | 1598 | 17571 | 218 | 87 | 261 | 513 | 173880 | 51771 | 0.416 |
| 787 | 795.57 | 278729 | 1.47 | 241 | 6519 | 73 | 34 | 10 | 1076 | 2119 | 1273 | 14198 | 314 | 1306 | 647 | 213882 | 1291 | 907 | 1009 | 2164 | 2361 | 1319 | 17294 | 239 | 95 | 253 | 607 | 174786 | 51625 | 0.415 |
| 788 | 796.57 | 272667 | 1.4 | 242 | 6553 | 78 | 20 | 1094 | 1094 | 2164 | 1574 | 15069 | 435 | 885 | 759 | 202908 | 1239 | 987 | 984 | 2124 | 2362 | 1994 | 16537 | 132 | 96 | 337 | 444 | 173341 | 50791 | 0.411 |
| 789 | 797.57 | 283588 | 1.37 | 146 | 5973 | 43 | 51 | 0 | 1101 | 2279 | 1417 | 15243 | 243 | 1041 | 1162 | 242312 | 1170 | 930 | 808 | 2246 | 2475 | 1595 | 15396 | 301 | 104 | 278 | 447 | 173379 | 51556 | 0.414 |
| 790 | 798.57 | 288338 | 1.39 | 255 | 5790 | 108 | 22 | 0 | 1096 | 2300 | 1347 | 13190 | 384 | 566 | 1289 | 248329 | 1266 | 979 | 840 | 2049 | 2536 | 1448 | 16712 | 156 | 69 | 377 | 873 | 174008 | 51632 | 0.419 |
| 791 | 799.57 | 292229 | 1.49 | 236 | 5671 | 94 | 40 | 0 | 1083 | 2489 | 1374 | 14397 | 450 | 631 | 1670 | 256889 | 1224 | 1130 | 704 | 2596 | 2494 | 1413 | 16920 | 281 | 101 | 293 | 599 | 172503 | 51479 | 0.42 |
| 792 | 800.57 | 284614 | 1.38 | 248 | 5688 | 102 | 13 | 0 | 1074 | 2529 | 1402 | 13394 | 371 | 482 | 1511 | 256216 | 1248 | 1138 | 714 | 2270 | 2440 | 1628 | 16763 | 262 | 126 | 331 | 773 | 170882 | 50578 | 0.413 |
| 793 | 801.57 | 287400 | 1.39 | 237 | 5523 | 98 | 57 | 0 | 1094 | 2585 | 1511 | 15197 | 356 | 654 | 1534 | 274068 | 1343 | 982 | 749 | 2370 | 2447 | 1557 | 14093 | 291 | 85 | 354 | 666 | 168058 | 49872 | 0.411 |
| 794 | 802.57 | 296732 | 1.45 | 292 | 5225 | 84 | 89 | 23 | 1057 | 2586 | 1531 | 14951 | 491 | 813 | 1701 | 296860 | 1175 | 1018 | 810 | 2504 | 2689 | 1382 | 15714 | 171 | 158 | 433 | 503 | 167233 | 49746 | 0.416 |
| 795 | 803.57 | 292818 | 1.33 | 194 | 5558 | 113 | 30 | 20 | 1030 | 2597 | 1533 | 14962 | 315 | 1011 | 1380 | 289349 | 1189 | 903 | 1008 | 2469 | 2658 | 1429 | 15738 | 264 | 98 | 404 | 605 | 167572 | 49428 | 0.414 |
| 796 | 804.57 | 288683 | 1.51 | 300 | 5352 | 87 | 23 | 0 | 1114 | 2502 | 1405 | 15737 | 482 | 544 | 1386 | 286715 | 1284 | 947 | 1028 | 2723 | 2537 | 1249 | 14107 | 214 | 171 | 373 | 659 | 165238 | 49027 | 0.411 |
| 797 | 805.57 | 297543 | 1.41 | 264 | 4928 | 75 | 32 | 0 | 1018 | 2529 | 1467 | 14812 | 477 | 346 | 1587 | 306924 | 1325 | 1098 | 874 | 2633 | 2625 | 1333 | 15622 | 227 | 116 | 385 | 552 | 166016 | 49002 | 0.417 |
| 798 | 806.57 | 302198 | 1.37 | 265 | 5129 | 89 | 57 | 5 | 1060 | 2688 | 1554 | 16061 | 399 | 811 | 1950 | 311590 | 1202 | 924 | 853 | 2771 | 2824 | 1623 | 14162 | 128 | 147 | 355 | 787 | 166172 | 49568 | 0.419 |
| 799 | 807.57 | 304461 | 1.49 | 286 | 5065 | 70 | 74 | 21 | 1117 | 2729 | 1548 | 14597 | 340 | 450 | 2907 | 326707 | 1205 | 928 | 690 | 2391 | 2777 | 1153 | 13498 | 270 | 125 | 353 | 813 | 165909 | 49276 | 0.419 |
| 800 | 808.57 | 301424 | 1.36 | 269 | 5172 | 79 | 30 | 25 | 1128 | 2601 | 1596 | 15617 | 333 | 640 | 2194 | 313606 | 1073 | 971 | 772 | 2272 | 2711 | 1752 | 14529 | 274 | 106 | 367 | 796 | 167807 | 49798 | 0.419 |
| 801 | 809.57 | 296282 | 1.42 | 233 | 4960 | 49 | 0 | 127 | 1127 | 2533 | 1599 | 14474 | 357 | 1353 | 1316 | 319721 | 1143 | 1046 | 802 | 2600 | 2499 | 1344 | 14638 | 228 | 145 | 378 | 662 | 163497 | 49175 | 0.414 |
| 802 | 810.57 | 293805 | 1.38 | 319 | 5136 | 54 | 51 | 0 | 1067 | 2664 | 1427 | 12666 | 451 | 432 | 1011 | 305201 | 1186 | 983 | 776 | 2449 | 2598 | 1425 | 14261 | 221 | 30 | 253 | 655 | 165887 | 49368 | 0.414 |
| 803 | 811.57 | 303205 | 1.41 | 310 | 5189 | 119 | 51 | 17 | 1091 | 2608 | 1575 | 14075 | 326 | 420 | 1015 | 315467 | 1208 | 1116 | 815 | 2562 | 2828 | 1475 | 13818 | 167 | 174 | 401 | 703 | 169213 | 50792 | 0.42 |
| 804 | 812.57 | 302264 | 1.34 | 323 | 4851 | 146 | 29 | 14 | 1107 | 2676 | 1525 | 15511 | 411 | 428 | 960 | 319833 | 1199 | 1063 | 829 | 2394 | 2752 | 1500 | 15887 | 112 | 178 | 318 | 557 | 166570 | 49675 | 0.419 |
| 805 | 813.57 | 290273 | 1.42 | 253 | 5157 | 106 | 66 | 5 | 1146 | 2672 | 1412 | 12603 | 332 | 439 | 1039 | 291320 | 1222 | 932 | 889 | 2244 | 2638 | 1472 | 15535 | 214 | 125 | 305 | 470 | 167288 | 49531 | 0.413 |
| 806 | 814.57 | 289350 | 1.37 | 304 | 5276 | 64 | 57 | 0 | 1109 | 2547 | 1427 | 15580 | 306 | 462 | 1034 | 287018 | 1126 | 1086 | 725 | 2304 | 2491 | 1528 | 15934 | 295 | 81 | 370 | 678 | 165938 | 49923 | 0.412 |
| 807 | 815.57 | 285088 | 1.39 | 294 | 5183 | 118 | 76 | 23 | 1098 | 2451 | 1476 | 14493 | 309 | 459 | 868 | 278695 | 1181 | 962 | 784 | 2279 | 2421 | 1405 | 16760 | 275 | 67 | 274 | 462 | 166854 | 50149 | 0.41 |
| 808 | 816.57 | 279428 | 1.32 | 208 | 5477 | 90 | 0 | 19 | 1039 | 2420 | 1456 | 14501 | 258 | 730 | 885 | 261990 | 1201 | 994 | 760 | 1931 | 2645 | 1133 | 16396 | 211 | 78 | 387 | 415 | 167694 | 48736 | 0.407 |
| 809 | 817.57 | 280885 | 1.29 | 232 | 5236 | 79 | 41 | 150 | 1085 | 2315 | 1384 | 12853 | 418 | 555 | 976 | 278232 | 1139 | 1043 | 937 | 2284 | 2601 | 1404 | 14240 | 257 | 97 | 349 | 349 | 165660 | 49279 | 0.405 |
| 810 | 818.57 | 277529 | 1.31 | 241 | 5628 | 56 | 8 | 21 | 1013 | 2439 | 1443 | 15268 | 483 | 587 | 993 | 274839 | 1120 | 970 | 890 | 2158 | 2355 | 1326 | 14635 | 301 | 88 | 329 | 478 | 161957 | 48687 | 0.403 |
| 811 | 819.57 | 284043 | 1.46 | 286 | 5270 | 84 | 45 | 27 | 1091 | 2521 | 1519 | 16532 | 472 | 708 | 1078 | 288803 | 1264 | 961 | 941 | 2397 | 2692 | 1901 | 14553 | 222 | 162 | 358 | 808 | 162312 | 49057 | 0.406 |
| 812 | 820.57 | 298669 | 1.41 | 192 | 5199 | 80 | 30 | 0 | 972 | 2779 | 1634 | 14290 | 438 | 339 | 1217 | 309663 | 1208 | 995 | 849 | 2712 | 2576 | 1591 | 15417 | 308 | 114 | 359 | 622 | 165399 | 48978 | 0.417 |
| 813 | 821.57 | 304212 | 1.4 | 330 | 5052 | 107 | 51 | 40 | 1012 | 2608 | 1542 | 13592 | 500 | 486 | 1233 | 307752 | 1325 | 1085 | 832 | 2757 | 2680 | 1386 | 16852 | 230 | 157 | 400 | 664 | 168329 | 50983 | 0.422 |
| 814 | 822.57 | 301748 | 1.36 | 267 | 5391 | 95 | 41 | 7 | 1038 | 2891 | 1515 | 16870 | 325 | 877 | 1212 | 321199 | 1157 | 1078 | 865 | 2363 | 2768 | 1444 | 14203 | 337 | 106 | 250 | 702 | 165555 | 49723 | 0.417 |
| 815 | 823.57 | 302679 | 1.33 | 235 | 5146 | 100 | 87 | 29 | 1114 | 2692 | 1680 | 14192 | 385 | 543 | 1158 | 315660 | 1132 | 983 | 835 | 2275 | 2820 | 1633 | 15570 | 258 | 138 | 274 | 543 | 167385 | 49561 | 0.42 |
| 816 | 824.57 | 306925 | 1.51 | 313 | 5146 | 86 | 65 | 41 | 1098 | 2880 | 1755 | 14799 | 397 | 1209 | 1234 | 328191 | 1195 | 992 | 1041 | 2499 | 2668 | 1846 | 13518 | 377 | 109 | 458 | 597 | 168201 | 50135 | 0.421 |
| 817 | 825.57 | 304297 | 1.42 | 343 | 4919 | 112 | 47 | 23 | 961 | 2913 | 1611 | 14382 | 451 | 2325 | 1340 | 329567 | 1356 | 994 | 753 | 2845 | 2684 | 1563 | 13890 | 212 | 151 | 313 | 696 | 165013 | 49304 | 0.419 |
| 818 | 826.57 | 295700 | 1.45 | 420 | 4720 | 120 | 30 | 149 | 962 | 2648 | 1583 | 12917 | 356 | 558 | 1118 | 311087 | 1164 | 934 | 711 | 2553 | 2726 | 1424 | 16972 | 273 | 57 | 329 | 480 | 163487 | 49017 | 0.416 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 819 | 827.57 | 308843 | 1.39 | 298 | 4953 | 113 | 90 | 14 | 997 | 2766 | 1623 | 14030 | 416 | 552 | 1180 | 328248 | 1289 | 918 | 746 | 2894 | 2607 | 1622 | 16495 | 220 | 194 | 298 | 559 | 167609 | 49904 | 0.423 |
| 820 | 828.57 | 301724 | 1.41 | 245 | 4922 | 64 | 46 | 0 | 1049 | 2702 | 1555 | 15245 | 452 | 576 | 1504 | 312789 | 1216 | 932 | 752 | 2492 | 2740 | 1588 | 15608 | 196 | 145 | 322 | 614 | 168318 | 50153 | 0.419 |
| 821 | 829.57 | 287045 | 1.39 | 324 | 4972 | 112 | 58 | 5 | 965 | 2598 | 1576 | 12984 | 295 | 454 | 1122 | 293074 | 1118 | 759 | 859 | 2716 | 2610 | 1674 | 14292 | 257 | 79 | 308 | 535 | 166030 | 49347 | 0.41 |
| 822 | 830.57 | 286451 | 1.35 | 315 | 5370 | 72 | 30 | 93 | 1017 | 2543 | 1489 | 12404 | 522 | 634 | 1053 | 294710 | 1138 | 1080 | 823 | 2883 | 2453 | 1440 | 16397 | 271 | 99 | 258 | 728 | 161988 | 48762 | 0.409 |
| 823 | 831.57 | 285814 | 1.3 | 297 | 5109 | 122 | 48 | 57 | 968 | 2442 | 1505 | 13362 | 495 | 470 | 1121 | 287432 | 1207 | 922 | 671 | 2429 | 2697 | 1624 | 17091 | 253 | 120 | 375 | 464 | 164393 | 48810 | 0.41 |
| 824 | 832.57 | 287899 | 1.46 | 256 | 6053 | 127 | 54 | 11 | 994 | 2437 | 1501 | 15021 | 446 | 426 | 1188 | 279018 | 1229 | 1095 | 738 | 2435 | 2425 | 1127 | 14266 | 183 | 132 | 353 | 509 | 167420 | 49850 | 0.412 |
| 825 | 833.57 | 274451 | 1.39 | 271 | 5930 | 47 | 9 | 0 | 1072 | 2371 | 1379 | 13879 | 452 | 426 | 928 | 247817 | 1237 | 1006 | 735 | 2127 | 2536 | 1569 | 15626 | 145 | 141 | 430 | 531 | 167060 | 49866 | 0.405 |
| 826 | 834.57 | 268575 | 1.45 | 191 | 5757 | 88 | 84 | 28 | 1047 | 2233 | 1337 | 13795 | 270 | 963 | 757 | 216894 | 1135 | 1073 | 730 | 2323 | 2817 | 1707 | 17552 | 255 | 164 | 348 | 417 | 169069 | 50116 | 0.406 |
| 827 | 835.57 | 275414 | 1.48 | 208 | 6420 | 49 | 19 | 0 | 992 | 2253 | 1366 | 14004 | 373 | 835 | 918 | 217872 | 1182 | 1016 | 828 | 2291 | 2617 | 1826 | 19272 | 290 | 81 | 344 | 423 | 171232 | 51372 | 0.411 |
| 828 | 836.57 | 282694 | 1.44 | 193 | 6200 | 86 | 30 | 10 | 965 | 2494 | 1381 | 15412 | 383 | 715 | 1093 | 248640 | 1216 | 963 | 771 | 2335 | 2423 | 1453 | 16251 | 145 | 189 | 269 | 426 | 169849 | 50739 | 0.412 |
| 829 | 837.57 | 308494 | 1.45 | 286 | 5519 | 49 | 92 | 24 | 1042 | 2780 | 1464 | 14776 | 408 | 396 | 1105 | 326830 | 1098 | 971 | 806 | 1904 | 2944 | 1846 | 14667 | 278 | 72 | 308 | 589 | 169171 | 50388 | 0.423 |
| 830 | 838.57 | 299926 | 1.48 | 282 | 5047 | 90 | 13 | 0 | 991 | 2620 | 1383 | 16045 | 333 | 643 | 1034 | 344164 | 1150 | 989 | 727 | 2227 | 2596 | 1396 | 13813 | 184 | 124 | 367 | 571 | 160275 | 48792 | 0.412 |
| 831 | 839.57 | 274574 | 1.31 | 335 | 4592 | 97 | 0 | 10 | 954 | 2460 | 1315 | 12028 | 277 | 350 | 1381 | 307578 | 1057 | 756 | 658 | 2154 | 2348 | 1317 | 14038 | 71 | 176 | 225 | 667 | 155697 | 47745 | 0.397 |
| 832 | 840.57 | 270061 | 1.48 | 346 | 4796 | 120 | 45 | 26 | 948 | 2489 | 1298 | 11670 | 277 | 670 | 1435 | 277523 | 1113 | 746 | 664 | 2586 | 2438 | 1506 | 16323 | 177 | 86 | 366 | 778 | 157812 | 47717 | 0.396 |
| 833 | 841.57 | 277416 | 1.38 | 234 | 5521 | 97 | 63 | 10 | 996 | 2551 | 1427 | 13543 | 542 | 849 | 1356 | 267606 | 1089 | 917 | 922 | 2527 | 2500 | 1790 | 15289 | 133 | 173 | 275 | 688 | 164697 | 48817 | 0.405 |
| 834 | 842.57 | 283701 | 1.42 | 284 | 5327 | 66 | 94 | 29 | 1001 | 2562 | 1418 | 12717 | 320 | 515 | 1603 | 286584 | 1113 | 889 | 717 | 2059 | 2538 | 1439 | 13796 | 343 | 126 | 328 | 603 | 164199 | 49268 | 0.406 |
| 835 | 843.57 | 282018 | 1.34 | 280 | 5542 | 109 | 0 | 0 | 962 | 2513 | 1399 | 14089 | 353 | 637 | 1394 | 265400 | 1137 | 802 | 711 | 2406 | 2403 | 1302 | 14981 | 199 | 81 | 348 | 685 | 166303 | 49813 | 0.409 |
| 836 | 844.57 | 302624 | 1.4 | 314 | 5228 | 58 | 45 | 0 | 910 | 2619 | 1438 | 13960 | 359 | 976 | 1457 | 348356 | 1096 | 940 | 769 | 2171 | 2490 | 1504 | 15086 | 267 | 143 | 383 | 525 | 159634 | 48261 | 0.414 |
| 837 | 845.57 | 317384 | 1.49 | 310 | 4765 | 92 | 46 | 13 | 966 | 2803 | 1468 | 14613 | 462 | 1155 | 1411 | 381579 | 1112 | 1023 | 740 | 1988 | 2400 | 1572 | 15748 | 229 | 87 | 457 | 480 | 158657 | 48814 | 0.422 |
| 838 | 846.57 | 302633 | 1.36 | 323 | 5089 | 98 | 46 | 39 | 1002 | 2741 | 1521 | 15247 | 383 | 1429 | 1046 | 323401 | 1065 | 837 | 900 | 2252 | 2701 | 1777 | 14770 | 334 | 46 | 330 | 565 | 163630 | 49706 | 0.419 |
| 839 | 847.57 | 300040 | 1.35 | 344 | 5153 | 57 | 11 | 0 | 970 | 2511 | 1487 | 13578 | 515 | 704 | 1139 | 315053 | 1203 | 910 | 703 | 2298 | 2432 | 1387 | 16251 | 409 | 52 | 500 | 755 | 163606 | 49677 | 0.418 |
| 840 | 848.57 | 301451 | 1.47 | 288 | 5102 | 67 | 0 | 0 | 1030 | 2510 | 1473 | 13266 | 534 | 520 | 1016 | 314149 | 1235 | 905 | 696 | 2200 | 2703 | 1509 | 17611 | 278 | 74 | 326 | 734 | 163343 | 49950 | 0.42 |
| 841 | 849.57 | 293125 | 1.39 | 239 | 5442 | 39 | 20 | 0 | 947 | 2344 | 1336 | 14045 | 400 | 536 | 997 | 285725 | 1188 | 762 | 789 | 2380 | 2508 | 1244 | 15112 | 303 | 24 | 364 | 545 | 167321 | 50218 | 0.417 |
| 842 | 850.57 | 287458 | 1.37 | 259 | 5613 | 64 | 14 | 0 | 977 | 2370 | 1352 | 16605 | 379 | 489 | 944 | 265147 | 1140 | 913 | 726 | 2316 | 2587 | 1655 | 16691 | 330 | 60 | 312 | 585 | 168778 | 50365 | 0.415 |
| 843 | 851.57 | 284654 | 1.44 | 230 | 5492 | 46 | 9 | 0 | 943 | 2335 | 1457 | 12536 | 502 | 457 | 948 | 260444 | 1280 | 967 | 831 | 2499 | 2463 | 1903 | 16341 | 308 | 48 | 397 | 645 | 168760 | 50759 | 0.413 |
| 844 | 852.57 | 300033 | 1.43 | 235 | 5154 | 119 | 46 | 22 | 924 | 2560 | 1454 | 13451 | 548 | 654 | 1066 | 317208 | 1164 | 884 | 850 | 2324 | 2448 | 1493 | 16104 | 234 | 60 | 414 | 500 | 165306 | 49335 | 0.418 |
| 845 | 853.57 | 302235 | 1.46 | 271 | 5229 | 70 | 36 | 0 | 929 | 2631 | 1547 | 13432 | 416 | 925 | 1058 | 314679 | 1076 | 814 | 767 | 2753 | 2687 | 1530 | 16764 | 346 | 0 | 343 | 724 | 165521 | 49640 | 0.42 |
| 846 | 854.57 | 297730 | 1.38 | 282 | 4933 | 126 | 44 | 125 | 960 | 2689 | 1351 | 13468 | 453 | 555 | 1025 | 320816 | 1204 | 1027 | 930 | 2418 | 2447 | 1162 | 15748 | 190 | 136 | 351 | 752 | 163071 | 49166 | 0.414 |
| 847 | 855.57 | 296202 | 1.38 | 267 | 5062 | 98 | 51 | 0 | 1014 | 2699 | 1414 | 14232 | 492 | 873 | 1080 | 321519 | 1189 | 925 | 863 | 2614 | 2540 | 1619 | 12749 | 241 | 96 | 357 | 500 | 162950 | 48927 | 0.412 |
| 848 | 856.57 | 314511 | 1.38 | 322 | 4622 | 117 | 88 | 0 | 1002 | 2963 | 1519 | 13672 | 530 | 687 | 1258 | 383219 | 1082 | 925 | 759 | 2339 | 2312 | 1595 | 16165 | 201 | 165 | 394 | 783 | 156235 | 47329 | 0.419 |
| 849 | 857.57 | 320177 | 1.39 | 344 | 4482 | 111 | 50 | 29 | 952 | 2977 | 1610 | 15424 | 513 | 674 | 1395 | 399503 | 1013 | 824 | 690 | 2598 | 2580 | 1525 | 12438 | 254 | 80 | 354 | 637 | 158137 | 48103 | 0.421 |
| 850 | 858.57 | 327836 | 1.49 | 372 | 4559 | 135 | 89 | 72 | 941 | 3138 | 1616 | 15962 | 523 | 837 | 1413 | 422344 | 1057 | 876 | 781 | 2657 | 2653 | 1667 | 13990 | 439 | 72 | 391 | 760 | 154602 | 47744 | 0.424 |
| 851 | 859.57 | 335328 | 1.39 | 342 | 4311 | 93 | 68 | 0 | 937 | 3277 | 1594 | 16329 | 551 | 656 | 1565 | 439457 | 1061 | 909 | 776 | 2590 | 2793 | 1733 | 14952 | 349 | 129 | 459 | 643 | 153943 | 47476 | 0.428 |
| 852 | 860.57 | 341215 | 1.5 | 294 | 4293 | 112 | 61 | 109 | 985 | 3273 | 1531 | 15054 | 516 | 1018 | 1345 | 449327 | 1012 | 835 | 794 | 2698 | 2678 | 1293 | 14781 | 341 | 87 | 321 | 575 | 154357 | 48181 | 0.432 |
| 853 | 861.57 | 326898 | 1.42 | 310 | 4559 | 86 | 58 | 0 | 869 | 3165 | 1497 | 15604 | 528 | 682 | 1123 | 396768 | 1032 | 889 | 880 | 2837 | 2870 | 1566 | 13947 | 224 | 98 | 378 | 679 | 160549 | 49243 | 0.428 |
| 854 | 862.57 | 329113 | 1.35 | 299 | 4639 | 112 | 23 | 7 | 905 | 3020 | 1487 | 15876 | 521 | 598 | 1089 | 394462 | 1182 | 866 | 690 | 2597 | 2625 | 2217 | 15431 | 278 | 88 | 355 | 738 | 161016 | 48708 | 0.431 |
| 855 | 863.57 | 334728 | 1.42 | 245 | 4851 | 110 | 32 | 203 | 886 | 3268 | 1501 | 13861 | 640 | 635 | 1213 | 403765 | 1042 | 996 | 913 | 2679 | 2538 | 1838 | 14144 | 228 | 68 | 407 | 592 | 162838 | 49738 | 0.434 |
| 856 | 864.57 | 344219 | 1.5 | 283 | 5255 | 110 | 44 | 19 | 852 | 3210 | 1625 | 15333 | 382 | 885 | 1419 | 421880 | 1131 | 1069 | 964 | 2941 | 2510 | 1724 | 15273 | 374 | 52 | 382 | 833 | 161217 | 49125 | 0.439 |
| 857 | 865.57 | 316288 | 1.48 | 296 | 4982 | 131 | 59 | 0 | 900 | 2966 | 1438 | 14253 | 379 | 631 | 1259 | 377131 | 1048 | 731 | 823 | 2371 | 2327 | 1614 | 16647 | 259 | 134 | 341 | 674 | 156337 | 48415 | 0.422 |
| 858 | 866.57 | 316841 | 1.62 | 316 | 4169 | 94 | 66 | 47 | 751 | 2794 | 1396 | 12021 | 473 | 593 | 1178 | 375702 | 1063 | 799 | 941 | 2475 | 2517 | 1815 | 15358 | 241 | 68 | 287 | 847 | 159687 | 49617 | 0.426 |
| 859 | 867.57 | 339862 | 1.56 | 322 | 4916 | 106 | 56 | 25 | 766 | 2904 | 1441 | 17962 | 675 | 612 | 1441 | 384468 | 1060 | 799 | 886 | 2719 | 2728 | 1762 | 17141 | 226 | 80 | 247 | 857 | 167734 | 50967 | 0.442 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 860 | 868.57 | 325438 | 1.48 | 275 | 5971 | 91 | 33 | 6 | 846 | 2755 | 1372 | 13677 | 416 | 735 | 1398 | 333155 | 1161 | 934 | 833 | 2302 | 2777 | 1620 | 16509 | 243 | 91 | 370 | 763 | 173208 | 51983 | 0.437 |
| 861 | 869.57 | 300829 | 1.45 | 333 | 6429 | 87 | 9 | 152 | 849 | 2456 | 1533 | 15606 | 347 | 678 | 1536 | 301132 | 1210 | 1030 | 834 | 2599 | 2563 | 1726 | 16706 | 315 | 125 | 381 | 782 | 167275 | 50174 | 0.42 |
| 862 | 870.57 | 255948 | 1.4 | 232 | 5904 | 115 | 34 | 31 | 922 | 2082 | 1225 | 12310 | 428 | 506 | 994 | 224221 | 1099 | 895 | 766 | 1744 | 2179 | 1398 | 16597 | 255 | 63 | 289 | 822 | 160954 | 48830 | 0.394 |
| 863 | 871.57 | 282752 | 1.45 | 268 | 6197 | 125 | 26 | 0 | 863 | 2204 | 1297 | 15173 | 388 | 815 | 1041 | 250580 | 1361 | 949 | 943 | 2259 | 2616 | 1571 | 18323 | 254 | 71 | 323 | 387 | 168534 | 51203 | 0.412 |
| 864 | 872.57 | 305760 | 1.43 | 295 | 5612 | 71 | 40 | 0 | 861 | 2532 | 1353 | 15594 | 339 | 495 | 1239 | 317535 | 1110 | 923 | 752 | 2174 | 2521 | 1534 | 16697 | 232 | 100 | 296 | 751 | 165667 | 50323 | 0.422 |
| 865 | 873.57 | 296692 | 1.37 | 268 | 5350 | 67 | 17 | 0 | 966 | 2640 | 1416 | 13262 | 379 | 461 | 935 | 312626 | 999 | 844 | 600 | 2422 | 2821 | 1876 | 17716 | 82 | 198 | 319 | 490 | 161618 | 49319 | 0.415 |
| 866 | 874.57 | 288313 | 1.47 | 276 | 5454 | 51 | 54 | 0 | 1015 | 2410 | 1294 | 13801 | 371 | 446 | 902 | 303654 | 1041 | 859 | 675 | 2159 | 2604 | 1602 | 14645 | 201 | 121 | 279 | 571 | 163306 | 49551 | 0.41 |
| 867 | 875.57 | 296865 | 1.38 | 233 | 5728 | 109 | 32 | 0 | 944 | 2547 | 1280 | 13459 | 375 | 1076 | 811 | 291324 | 1237 | 901 | 626 | 2217 | 2583 | 1482 | 17223 | 262 | 172 | 298 | 405 | 167674 | 50846 | 0.419 |
| 868 | 876.57 | 297013 | 1.5 | 308 | 6098 | 66 | 54 | 0 | 930 | 2485 | 1236 | 14459 | 258 | 474 | 910 | 272126 | 1145 | 862 | 789 | 2656 | 2676 | 1536 | 16473 | 196 | 98 | 357 | 517 | 171850 | 51610 | 0.423 |
| 869 | 877.57 | 295916 | 1.28 | 217 | 6380 | 69 | 43 | 6 | 853 | 2403 | 1315 | 12948 | 494 | 490 | 881 | 257615 | 1248 | 1000 | 810 | 2090 | 2843 | 1582 | 16322 | 267 | 79 | 391 | 747 | 176226 | 52391 | 0.424 |
| 870 | 878.57 | 294177 | 1.37 | 306 | 6397 | 96 | 24 | 0 | 952 | 2384 | 1281 | 14400 | 389 | 460 | 885 | 265102 | 1128 | 1003 | 941 | 2354 | 2455 | 1533 | 17131 | 220 | 110 | 287 | 514 | 171932 | 51444 | 0.421 |
| 871 | 879.57 | 292372 | 1.42 | 260 | 6363 | 109 | 74 | 0 | 969 | 2494 | 1276 | 13502 | 401 | 576 | 869 | 272936 | 1214 | 921 | 779 | 2321 | 2589 | 1649 | 16632 | 207 | 92 | 309 | 646 | 169886 | 50137 | 0.417 |
| 872 | 880.57 | 293513 | 1.31 | 217 | 5640 | 99 | 43 | 20 | 965 | 2588 | 1326 | 15242 | 408 | 548 | 939 | 304102 | 1164 | 1035 | 760 | 2575 | 2846 | 1326 | 15356 | 166 | 128 | 302 | 624 | 165569 | 49139 | 0.413 |
| 873 | 881.57 | 280478 | 1.32 | 249 | 5248 | 82 | 46 | 0 | 954 | 2447 | 1246 | 13352 | 411 | 451 | 839 | 312587 | 1071 | 801 | 790 | 2037 | 2215 | 1366 | 15024 | 292 | 68 | 337 | 614 | 156907 | 47990 | 0.4 |
| 874 | 882.57 | 288565 | 1.46 | 241 | 4954 | 115 | 0 | 22 | 947 | 2560 | 1297 | 15253 | 434 | 562 | 1011 | 344034 | 1030 | 948 | 861 | 2098 | 2224 | 1276 | 14226 | 267 | 71 | 356 | 698 | 153020 | 46691 | 0.402 |
| 875 | 883.57 | 321447 | 1.39 | 287 | 4516 | 99 | 7 | 0 | 893 | 2880 | 1381 | 14676 | 549 | 604 | 1174 | 423921 | 1046 | 820 | 773 | 2332 | 2416 | 1244 | 13507 | 257 | 57 | 390 | 629 | 152708 | 45445 | 0.419 |
| 876 | 884.57 | 325158 | 1.5 | 292 | 4952 | 92 | 39 | 9 | 872 | 2958 | 1473 | 16347 | 520 | 550 | 1141 | 408505 | 1086 | 892 | 823 | 2772 | 2604 | 1683 | 15330 | 300 | 116 | 444 | 659 | 157073 | 47389 | 0.424 |
| 877 | 885.57 | 336499 | 1.43 | 350 | 4606 | 66 | 79 | 0 | 851 | 2993 | 1395 | 14113 | 521 | 614 | 1038 | 438808 | 1000 | 900 | 862 | 2257 | 2566 | 1472 | 16405 | 225 | 84 | 360 | 557 | 154119 | 46779 | 0.431 |
| 878 | 886.57 | 326322 | 1.5 | 269 | 4809 | 86 | 23 | 29 | 933 | 3011 | 1445 | 15909 | 460 | 777 | 1053 | 408315 | 1071 | 858 | 928 | 2474 | 2524 | 1685 | 14995 | 308 | 68 | 381 | 930 | 157885 | 47974 | 0.426 |
| 879 | 887.57 | 315839 | 1.44 | 271 | 4721 | 145 | 52 | 0 | 904 | 2732 | 1280 | 14087 | 384 | 636 | 954 | 371879 | 1148 | 766 | 797 | 2584 | 2596 | 2491 | 14935 | 278 | 67 | 311 | 655 | 161539 | 48534 | 0.424 |
| 880 | 888.57 | 317098 | 1.36 | 310 | 5370 | 90 | 65 | 77 | 907 | 2753 | 1390 | 15129 | 408 | 608 | 924 | 347572 | 1208 | 935 | 783 | 2394 | 2786 | 1738 | 15905 | 324 | 119 | 360 | 726 | 165050 | 49800 | 0.428 |
| 881 | 889.57 | 294012 | 1.34 | 248 | 6001 | 115 | 58 | 0 | 898 | 2368 | 1181 | 12835 | 285 | 756 | 708 | 262875 | 1182 | 935 | 856 | 2258 | 2567 | 1887 | 17112 | 343 | 70 | 335 | 547 | 173810 | 51453 | 0.422 |
| 882 | 890.57 | 283117 | 1.37 | 205 | 6527 | 71 | 31 | 0 | 871 | 2181 | 1219 | 14070 | 471 | 319 | 613 | 225197 | 1257 | 1038 | 788 | 1942 | 2620 | 1542 | 18743 | 256 | 91 | 324 | 496 | 175055 | 52218 | 0.418 |
| 883 | 891.57 | 292395 | 1.47 | 190 | 6493 | 68 | 53 | 0 | 860 | 2260 | 1238 | 16161 | 307 | 316 | 706 | 248844 | 1213 | 934 | 792 | 2569 | 2815 | 1559 | 18927 | 199 | 188 | 263 | 544 | 174086 | 51424 | 0.421 |
| 884 | 892.57 | 299771 | 1.45 | 228 | 6406 | 59 | 0 | 0 | 927 | 2554 | 1292 | 15351 | 360 | 478 | 1011 | 288231 | 1219 | 844 | 847 | 2485 | 2592 | 1571 | 16403 | 318 | 64 | 367 | 496 | 170184 | 50081 | 0.421 |
| 885 | 893.57 | 292807 | 1.41 | 310 | 6033 | 79 | 44 | 0 | 888 | 2493 | 1295 | 14091 | 471 | 478 | 1205 | 291780 | 1276 | 841 | 852 | 2443 | 2585 | 1609 | 15736 | 294 | 61 | 368 | 632 | 165959 | 49835 | 0.415 |
| 886 | 894.57 | 282024 | 1.4 | 248 | 5123 | 111 | 66 | 24 | 934 | 2248 | 1323 | 12988 | 323 | 611 | 908 | 282652 | 1191 | 990 | 842 | 2268 | 2270 | 1448 | 15473 | 221 | 117 | 241 | 619 | 163564 | 49632 | 0.408 |
| 887 | 895.57 | 285195 | 1.44 | 272 | 4739 | 97 | 33 | 9 | 816 | 2474 | 1772 | 12355 | 339 | 811 | 940 | 287695 | 1213 | 805 | 1010 | 2557 | 2506 | 1123 | 13413 | 207 | 113 | 352 | 668 | 163674 | 48968 | 0.41 |

(All Sample Surface=NaN; Validity=1, E-Gain=0.10504; E-offset=0.01625;  F-slope= 0.009944; E-offset= 0.074833

# Appendix 4-2. OSL Report

AUSTRALIAN RESEARCH COUNCIL
**Centre of Excellence for Australian Biodiversity and Heritage**

# OSL dating report LHBH19

**14 August 2019**

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University of Wollongong

# Abstract

Optically stimulated luminescence (OSL) dating was applied to individual grains of quartz extracted from 10 samples collected from the Eastern Creek site, Lightning Horse bypass research area in the greater Sydney area, Australia. All samples responded very well to OSL measurement. The dose rates obtained for samples from both test pits show an increase with an increase in depth. This may be due to disequilibrium in the uranium-decay series or changes in sediment characteristics. The equivalent dose distributions show a high degree of mixing for all samples due to bioturbation of the sediments. The upper samples in both test pits are clearly affected by rootlet activity (Fig. 1) and the incorporation of grains (~25% of the grains measured) from the modern surface. From 20-30 cm below modern surface, there is a steep drop-off in modern grain contamination, but continuous mixing occurs right to at least 60 cm depth. From 75 cm depth the $D_e$ distributions suggest that most of the sample material are derived from the host sediment dated to ~25 ka, with evidence for incorporation of some younger grains from the overlying sediments. We suggest that the sediments down to a depth of ~60-75 cm were bioturbated after deposition, resulting in loss of stratigraphic integrity of the sediment and any artefacts contained within. For such continuous mixtures, only minimum and maximum age estimates can be calculated to bracket the age of sediments incorporated into the mixtures. Approximate ages for the host sediment could be obtained for the uppermost samples (OSL3 and OSL9) using the *Min* ages of ~100-200 years ago, and the lowermost samples (OSL7 and OSL8), using the *Max* ages of ~25 ka.


# Introduction

A total of 10 samples from the Eastern Creek site was submitted for single-grain OSL dating by Laressa Barry from Extent Heritage. All OSL dating work was carried out at the University of Wollongong (UOW) luminescence dating laboratory in the Australian Research Council Centre of Excellence for Australian Biodiversity and Heritage (CABAH). Upon arrival at the laboratory, samples were allocated UOW numbers (Table 1), for archival purpose. This report provides a brief summary of the procedures employed and results obtained for the samples.

# Site and sample locations

Samples were collected at the site by Laressa Barry from Extent Heritage. Sample positions are shown on photographs in Fig. 1 and sample field and lab codes together with approximate depths are provided in Table 1. All samples were collected using opaque plastic tubes ~10 cm in diameter and 20 cm long that were hammered into the cleaned northern section wall of TP151 and TP57. It is assumed that samples were collected appropriately and that the samples were not exposed the sunlight during or after the sampling procedure and during transportation to the laboratory. No problems were detected with the samples upon opening of the plastic tubes in the laboratory.

## Optically stimulated luminescence (OSL) dating

OSL dating provides a means of determining burial ages for sediments and associated artefacts and fossils (Huntley et al., 1985; Aitken, 1998; Duller, 2004; Jacobs and Roberts, 2007; Wintle, 2014; Roberts et al., 2015; Athanassas and Wagner, 2016). The method is based on the time-dependent increase in the number of trapped electrons induced in mineral grains—such as quartz—by low levels of ionising radiation from the decay of natural uranium, thorium and potassium in the surrounding deposits, and from cosmic rays. The time elapsed since the light-sensitive electron traps were emptied can be determined from measurements of the luminescence signals from quartz (optically stimulated luminescence, OSL) from which the equivalent dose ($D_e$) is estimated, together with determinations of the radioactivity of the sample and the material surrounding it to a distance of ~30 cm (the environmental dose rate). The luminescence 'clock' is reset by just a few seconds (quartz) of exposure to sunlight. The $D_e$ divided by the environmental dose rate gives the burial time of the grains in calendar years ago.

We exploited the inherent benefits of single-grain dating that include the identification and elimination of individual grains that exhibit aberrant luminescence characteristics (Jacobs et al., 2006; Jacobs and Roberts, 2007; Duller, 2008) and the use of $D_e$ distributions to investigate the potential impact that depositional and post-depositional processes, such as sediment mixing or insufficient exposure to sunlight (partial bleaching), may have on age determination.

## Sample preparation and analytical facilities

All of the samples were prepared using routine optical dating procedures (Aitken, 1998). Samples were first treated with HCl acid and $H_2O_2$ solution to remove carbonates and organic matter, respectively. The remaining sediment was then dried and sieved to obtain a range of sand-sized grain fractions. Grains of 180–212 µm in diameter were used for dating. The quartz grains were separated from heavy minerals in the sample using a sodium polytungstate solution of density 2.70 g/cm$^3$. The quartz grains were etched using 40% HF acid for 45 min to dissolve any remaining feldspar grains that may be present in the quartz separates, and to remove the alpha-irradiated layer around the surface of each grain. The HF-etched quartz grains were then rinsed in HCl acid to remove any precipitated fluorides and sieved again. Quartz grains were abundant for measurement of the luminescence signals.

Single-grain OSL measurements of $D_e$ were made for all quartz samples. OSL measurements were made on an automated Risø TL-DA-20 C/D luminescence reader equipped with a focused green (532 nm) laser for single-grain stimulation (Bøtter-Jensen et al., 2003). Luminescence emissions were detected using a 9107Q-AP-TTL-03 photomultiplier tube. The OSL signals were detected through Hoya U-340 filters. Single-grain measurements were made using gold-plated aluminium discs drilled with 100 holes, each 300 µm in diameter and 300 µm deep (Bøtter-Jensen et al., 2003). Irradiations were carried out inside the luminescence reader using a $^{90}Sr/^{90}Y$ beta source that has been calibrated using a range of known gamma-irradiated quartz samples. Spatial variations in beta dose rate to individual grain positions were taken into account for $D_e$ determination (Ballarini et al., 2006).

# Equivalent dose ($D_e$) determination

All single-grain quartz measurements were made using the single-aliquot regenerative-dose (SAR) procedure (Galbraith et al., 1999; Murray and Wintle, 2000). The SAR procedure involves measuring the OSL signals from the natural (burial) dose ($L_n$) and from a series of regenerative doses ($L_x$) that adequately bracket the $D_e$ value (given in the laboratory by means of the calibrated $^{90}Sr/^{90}Y$ beta source) (Fig. 2). Grains were preheated at 220°C for 10 s prior to optical stimulation by an intense, green (532 nm) laser beam for 2 s at 125°C. A fixed test dose (~9 Gy, preheated at 160°C for 5 s) was given after each natural and regenerative dose, and the induced OSL signals ($T_n$ and $T_x$) were used to correct for any sensitivity changes during the SAR sequence. A duplicate regenerative dose was included in the sequence to check on the adequacy of this sensitivity correction, and a 'zero regenerative dose' (0 Gy) measurement cycle was included to monitor the extent of any 'recuperation' induced by the preheat treatment. As a check on possible contamination of the acid-etched quartz grains by other mineral inclusions, we also applied the OSL IR depletion ratio test (Duller, 2003) to each grain at the end of the SAR sequence, using an infrared exposure of 40 s at 50°C.

A total of 5,000 individual quartz grains were measured; 500 grains for each of the samples. Aberrant grains were rejected using quality-assurance criteria similar to (acobs et al. (2006) and Li et al. (2017). Grains were rejected for the following reasons:

1. Initial $T_n$ signal is less than 3σ above the corresponding background count, or the relative error on $T_n$ is >25%.
2. Recycling ratio (i.e., the ratio of $L_x/T_x$ values for the duplicate regenerative doses) is not consistent with unity at 2σ.
3. OSL IR depletion ratio is more than 2σ less than unity.
4. Recuperation ratio (i.e., the ratio of the $L_x/T_x$ values for the 0 Gy and maximum regenerative doses) is >5%.
5. $L_x/T_x$ ratios are too scattered to be reliably fitted with a curve, or have a large figure-of-merit (FOM) value (Balian and Eddy, 1977; Peng et al., 2016).
6. $D_e$ value is obtained by extrapolation of the fitted DRC, rather than interpolation among the regenerative-dose signals or the $L_n/T_n$ ratio is statistically consistent with, or higher than, the saturation level of the corresponding DRC, so that a finite $D_e$ value and error estimate could not be obtained.

Table 2 lists the numbers of individual grains measured, rejected and accepted for $D_e$ determination for each of the samples, and the reasons for grain rejection.

$L_n$, $L_x$, $T_n$ and $T_x$ values were estimated from the first 0.22 s of OSL decay, with the mean count recorded over the last 0.3 s subtracted as background. Sensitivity-corrected ($L_x/T_x$) DRCs were then constructed from the $L_x$ and $T_x$ OSL signals, using a general-order kinetic (GOK) function (Guralnik et al., 2015), and the sensitivity-corrected natural OSL signal ($L_n/T_n$) was projected onto the fitted DRC to estimate the $D_e$ value by interpolation. All data analyses, including curve fitting, $D_e$ determination and error estimations, were achieved using the functions implemented in the R-package 'numOSL' (Peng et al., 2013).

Fig. 3a shows a natural and regenerative dose OSL decay curve for a representative quartz grain from sample LHBH19-OSL8, following a preheat of 220°C for 10 s. The grains have very high luminescence sensitivities, resulting in a large number of grains (60-70%) with a detectable luminescence signal. Most grains that were rejected failed criterion (1) with smaller numbers of grains rejected on the basis of criteria (2) to (6) (Table 2). The OSL decay curves exhibit a range of shapes, but are generally quite reproducible and decay rapidly to instrumental background, with less than ~5% of the initial signal remaining after 0.3 s of optical stimulation (Fig. 3a). Fig. 3b shows the corresponding DRCs for the same grain. The majority of the DRCs have very similar shapes up to a dose of ~60 Gy, after which some of the curves continue to grow with increasing dose while others begin to saturate. This is very typical for quartz grains.

The performance of the single-grain OSL procedure was tested using a dose recovery test (Galbraith et al., 1999) on one sample: LHBH19-OSL10. The grains were first bleached for two days in natural sunlight and then given a beta dose 250 s as a surrogate 'natural' dose. Five-hundred grains were measured using the procedure outlined above. The dose recovery ratio (i.e., the ratio of measured dose to given dose) of 0.98 ± 0.01 is entirely consistent with unity at 2σ, demonstrating that the single-grain OSL procedure can produce reliable estimates of measured dose for the LHBH19 samples. The dose recovery results are shown as a radial plots in Fig. 3 where the measured/given dose ratios are presented as a radial plot. The overdispersion value is 7.4 ± 1.1%.

## $D_e$ results

Information about the numbers of grains measured and used for $D_e$ determination are provided in Table 2. Between 40 and 50% of the measured grains gave meaningful $D_e$ values.

It is commonplace in single-grain OSL dating for there to be some spread in the data due to natural variability and other complicating factors. To quantify the degree of spread, we routinely calculate the overdispersion (OD) values for the $D_e$ distributions of each sample. OD represent the relative standard deviation (i.e., the coefficient of variation) of the $D_e$ distribution after accounting for the various measurement uncertainties (Galbraith et al., 2005; Galbraith and Roberts, 2012). Even for samples that have been well-bleached (zeroed by sunlight) prior to deposition and that remained undisturbed since burial, some degree of OD are present; typical values for such samples range between ~10 and 30%. The laboratory-controlled dose recovery test for LHBH19-OSL10 (Fig. 3) gave an OD value of ~7%, which represent the best-case scenario of samples from Eastern Creek. The OD values for each of the samples are provided in Table 3. The OD values range between 67 ± 4% (#OSL8) and 118 ± 9% (#OSL3) and are clearly much higher than the 10-30% expected for well-bleached an undisturbed samples. The highest OD values are from the uppermost samples, suggesting a decrease in mixing with an increase in depth. A key question is, therefore, what causes this extra amount of spread (OD) in the samples?

We can get some information by looking at the shape and patterns of the $D_e$ distributions for each sample when plotted as a radial plot. Radial plots for all samples are presented in Fig. 4a (TP151 samples) and 4b (TP57 samples). In such plots, each point represents a single grain, for which the $D_e$ can be read by extending a line from the 'standardised estimate' axis on the left-hand side to

intersect the radial axis on the right; the point of intersection is the $D_e$. The uncertainty on this estimate can be read by extending a line vertically from the data point to intersect the horizontal axis running along the bottom of the plot. This axis shows the relative standard error in % (i.e., the standard error, in Gy, divided by the $D_e$ estimate, in Gy, multiplied by 100) and its reciprocal (the 'precision'). In such plots, the most precise estimates fall to the right and the least precise to the left. If the $D_e$ values were consistent with statistical expectation, then 95% of the points should scatter within any chosen band of width ±2 units projecting from the left-hand axis, and 0% overdispersion will be obtained. See Fig. 3 for the laboratory-controlled dose recovery results for LHBH19-OSL10 as an example of what an ideal sample will look like when displayed as a radial plot.

The radial plots in Fig. 4a and 4b clearly show very broad and continuous mixtures of $D_e$ values and it is clear that in none of the samples the individual $D_e$ values are consistent with each other. The latter will be the case if most grains fall within the width of the ±2 standardised error band that can be drawn from the left hand axis onto the radial axis. Such spread in $D_e$ values can be due to a number of different factors (see Jacobs and Roberts, 2007), including incomplete bleaching before deposition, sediment mixing after deposition, and variation in the beta dose rates received by individual grains in the natural environment (also known as beta dose microdosimetry).

Incomplete bleaching of the grains is unlikely to be the dominant sources of OD in such open, sand settings. Spatial variations in beta dose rate cannot quantitatively account for the extent of the observed OD. The most probable cause of the OD and continuous smear of $D_e$ values when displayed as radial plots, is post-depositional mixing due to bioturbation. In such circumstances, it may not be possible to obtain a finite age estimate for the sediment grains or any associated artefacts, because the sample could consist of grains derived from the original 'host' deposit mixed with 'intrusive' grains from the overlying (younger) and/or underlying (older) deposits. In some situations, such mixing can be untangled if the $D_e$ distributions forms discrete dose components due to limited amount of mixing between, for example, two strata of significantly different ages (see examples in Jacobs and Roberts, 2007). Unfortunately, this is not the case for the samples from Eastern Creek where the radial plots mostly show a continuous mixture of grains.

So, the best we can do for the samples from Eastern Creek is to take a conservative approach to determining the "$D_e$ value" of each sample by calculating the minimum and maximum $D_e$ values for each sample from which we can then determine bracketing age estimates. The quotation marks are to emphasise that each sample consists of grains that were last exposed to sunlight at various times in the past and, therefore, does not estimate the depositional age of the sample *per se*.

To provide an estimate of the oldest likely $D_e$ estimates for the deposit or any associated artefacts found at this depth, we calculated a maximum $D_e$ value (shown as *Max* in Table 3) using the maximum age model of Olley et al. (2006). The maximum $D_e$ value is represented by the upper grey band in each of the radial plots in Fig. 4. The presence of the oldest grains in each sample indicates either that the host deposits were of this age or that grains of this age have intruded into predominantly younger deposits. These *Max* ages do not necessarily shed any light on the original time of deposition—or redeposition—of the sediment or artefacts contained within. To provide an estimates of the youngest likely age estimates for the deposit or any associated artefacts for each sample, we calculated minimum $D_e$ values (shown as *Min* in Table 3) using the minimum age model of Galbraith et al. (1999). The minimum $D_e$ value is represented by the lowermost grey band in each

of the radial plots in Fig. 4 that encapsulates the population of grains with the smallest $D_e$ values. For some of the samples we also calculated an additional *Max1* or *Min1* $D_e$ value to better constrain the bulk of the $D_e$ values and the weighted mean $D_e$ values are indicated as green lines in Fig. 4. There are also a large number of grains that fall between the minimum and maximum $D_e$ values and that are not captured by either of the grey bands, indicating that they are statistically different from either value. The final Min and Max De values together with the ± 1 sigma uncertainties are provided in Table 3 for each of the samples.

There are some broad patterns that can be discerned from the radial plots in Fig. 4.

(1) About 25% of the grains in the uppermost samples in both test pits at 10 cm (LHBH19-OSL9) and 15 cm (LHBH19-OSL3) depth below surface are consistent with them being modern in age. There is clear evidence in the photographs in Fig. 1 of rootlets that may be the source of mixing of such young grains into slightly older deposits. The majority of the grains in these two samples are cluster in a range between ~0 and 4 Gy, with only a few older intrusive grains. For these samples the *Min* $D_e$ value may provide a reliable estimate of the time of sediment deposition.
(2) In contrast, the lowermost samples at 90 cm (LHBH19-OSL8) and 75 cm (LHBH19-OSL7) depth below surface are clearly dominated by an older population of grains centred on ~50-60 Gy (i.e., the same in both samples). This may represent the host deposit for this layer, with the smaller number of younger grains intrusive to these deposits. For these samples the *Max* $D_e$ value may represent a reliable estimate of the time of sediment deposition.
(3) Samples at depths of 20 cm (LHBH19-OSL10), 30 cm (LHBH19-OSL11 and LHBH19-OSL4), 40 cm (LHBH19-OSL12) and 45 cm (LHBH19-OSL5) show values that fall between and include those recorded for the upper- and lowermost samples with a change in the proportion of younger vs. older grains as one move up the sequence. This is very typical for bioturbated sediments for which the stratigraphic integrity is compromised and is indicative of continuous mixing through time through this profile. For these samples, neither the *Min* or the Max necessarily shed any light on the original time of deposition of the sediments or artefacts or the redeposition of associated artefacts.

# Environmental dose rate determination and results

The total environmental dose rate consists of contributions from beta, gamma and cosmic radiation external to the grains, plus a small alpha dose rate due to the radioactive decay of uranium and thorium inclusions inside sand-sized grains of quartz. To calculate the OSL ages, we have assumed that the present-day radionuclide activities and dose rates have prevailed throughout the period of sample burial.

We estimated the beta and gamma dose rates from activities of radionuclides that were measured by inductively coupled plasma mass spectrometry (ICP-MS) to obtain estimates of uranium and thorium or inductively couple plasma optical emission spectroscopy (ICP-OES) to obtain estimates of potassium. Radionuclide activities were converted to beta and gamma dose rates using the conversion factors of Guérin et al. (2012) and corrected for the effect of moisture content (Nathan and Mauz, 2008). Water contents were based on the measured water contents (provided in

brackets in Table 3); an estimate of 12 ± 3% was used for all of the samples from TP151 (except OSL8 for which we used 20 ± 5% and an estimate of of 10 ± 2% was used for all samples from TP57. This value represents the assumed long-term water content (i.e., averaged over the entire period of sample burial) with an uncertainty sufficient to accommodate the likely range of water contents experienced by these deposits; the OSL ages increase by ~1% for each 1% increase in water content. For all samples, allowance was also made for the effect of grain size (Brennan, 2003) and HF acid etching (Bell and Zimmerman, 1978) on beta-dose attenuation. We assumed an effective internal alpha dose rate of 0.03 ± 0.01 Gy/ka, based on measurements made previously on quartz grains from southeastern Australia (Bowler *et al*., 2003). The cosmic-ray dose rates were calculated following Prescott and Hutton (1994), and adjusted for water content (Readhead, 1987).

The dose rate data together with the total dose rates are provided in Table 3. The total dose rates exhibit a systematic increase down-profile in each of the Test Units, ranging from 1.83 ± 0.06 to 2.27 ± 0.09 Gy/ka in TP151 and from 2.21 ± 0.07 to 2.50 ± 0.08 in TP57. Also, the dose rates are systematically higher in TP57 compared to TP151. The reason for the increase in dose rate with depth is not fully understood. It may relate to changes in sedimentary characteristics (e.g., increase in clay content), changes in moisture content over time, or some issues with disequilibrium in the uranium decay series. We assume that the effects will be relatively insignificant and captured within the uncertainty estimates of the ages.

# Age estimates

The final minimum and maximum OSL ages for all samples are listed in Table 3, together with the supporting $D_e$ and dose rate estimates. Uncertainties on the ages are given at 1σ (the standard error on the mean) and were estimated by combining, in quadrature, all known and estimated sources of random and systematic error. Ages are presented in depth order for each of the test pits.

Given the predicament faced at this site, as discussed above in the section on equivalent dose results, we have taken a conservative approach to determining the "age" of each sample. We provide an age range for the samples through quantification of the maximum and minimum ages of the sediments in each of the samples and use the shapes of the radial plots and the relative number of grains that are associated with either the *Min* or *Max* ages to interpret their more likely age, with the caveat that these are approximate ages for the sediments. The most parsimonious age for each sample is provide in bold and italics in Table 3. For most samples the mixing is so extensive and continuous that neither age estimate is more likely than another, indicating that the sediments were continuously turned over, obliterating any stratigraphic information. The best we can do for such samples is to provide the age range, with the additional caveat that the stratigraphic integrity of any artefacts contained within is highly questionable.

The maximum age of the deposit appears to be relatively well constrained to ~25 ka. Samples at depths of 30-90 cm all have grains associated with this age, initially as a small proportion of the sample, but increasing with depth until it is dominating the deepest samples; *Max* ages range from 20.2 ± 1.8 ka (OSL11) to 30.7 ± 2.5 ka (OSL5). Only the two deepest samples (OSL7 and OSL8) at 75 and 90 cm depth appear to be dominated by grains of this age (Fig. 4a). We infer that the sediment deposit at these depths are of this age, but with evidence of some younger intrusive grains.

The minimum age of the deposit is well constrained near the top of the deposit to ~100-200 years (OSL3 and OSL9). These samples, however, contain a large proportion of grains (~25%) that are consistent with them being modern in age. The modern grains disappear almost entirely at depths of 20 cm and deeper. The minimum ages increase with depth and from ~60 cm depth the minimum age are between 3-4 ka and these young ages are only a minor component in the deepest samples.

# Conclusions

The 10 samples measured from two different test pits are all affected by post-depositional mixing. The general similarity in minimum and maximum ages between the samples collected from comparable depths in the two test pits is consistent with there being a common cause of sediment mixing. Various turbation agencies—fauna, flora, or human activities—could be responsible, with the net result being the loss of stratigraphic integrity to a depth of at least 60 cm, but with some mixing still visible, albeit to lesser extent for samples at depths of 75 and 90 cm. This decrease in mixing is consistent with the general hypothesis that mixing will decrease with depth if biological activity and physical reworking are responsible for the bioturbation, since such activity will be greatest closest to the modern ground surface. As far as the age of the sediments are concerned, we can infer that the oldest sediments are ~25 ka and the youngest ~100-200 years. These age estimates are likely to be broadly appropriate for the deepest and shallowest samples, respectively and the archaeology contained within. The sediment and associated archaeological remains at intermediate depths, however, has been obscured by extensive subterranean mixing of the sediment.

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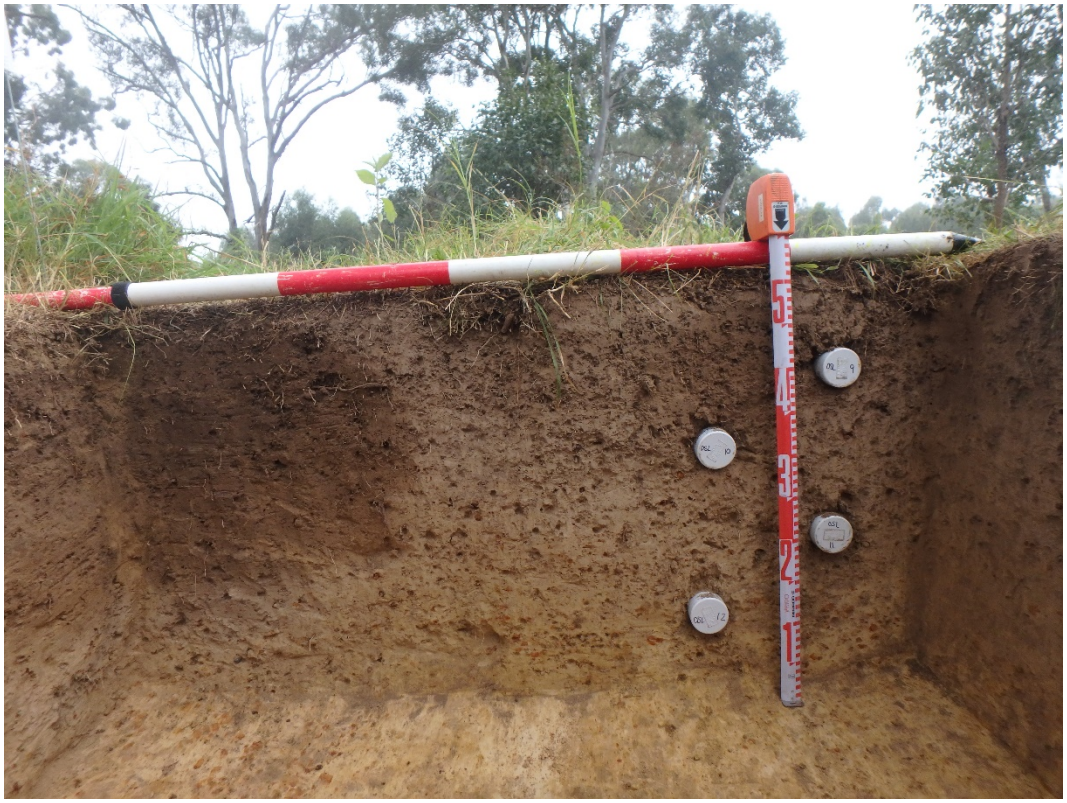

***Figure 1:*** *Photographs of OSL samples collected from the northern section wall of two different test pits (a) TP151 and (b) TP57. The numbers on the tube ends correspond to the OSL sample number in Table 1.*

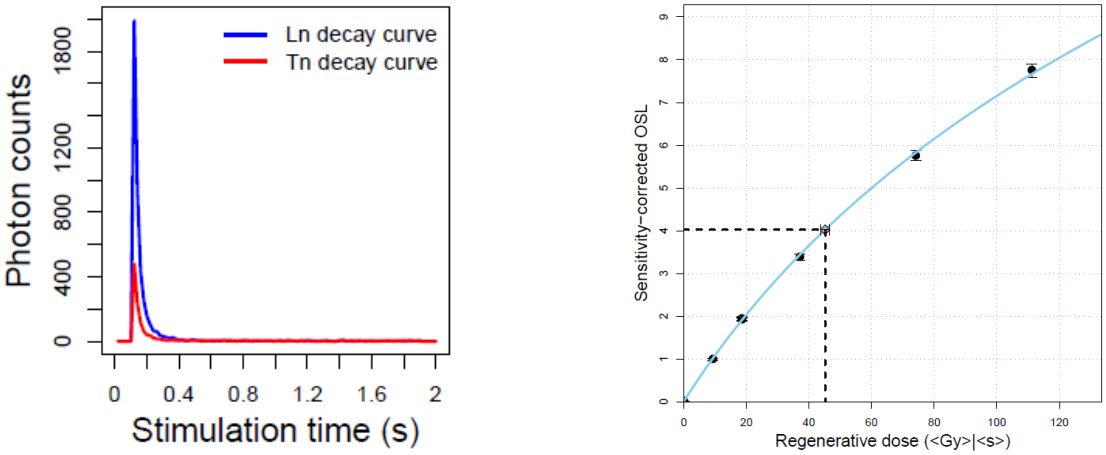


*Figure 2: (a) Representative OSL decay curve for the natural dose (blue) and test dose (~9 Gy; red) for one bright grain and (b) its full dose response curve for one grain from sample LHBH19-OSL8.*

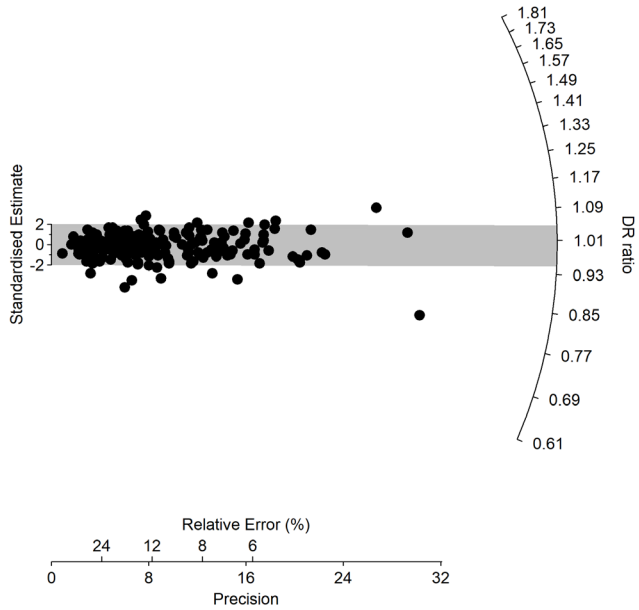


*Figure 3: Given over measured dose values (DR ratios) for 201 individual grains from sample LHBH19-OSL10 that were first exposed to natural sunlight for two days and then given a known beta dose of 250 s. Grains were measured as for the natural samples in this study. All grains consistent with the given dose fall within the grey band that is centred on a value of unity.*

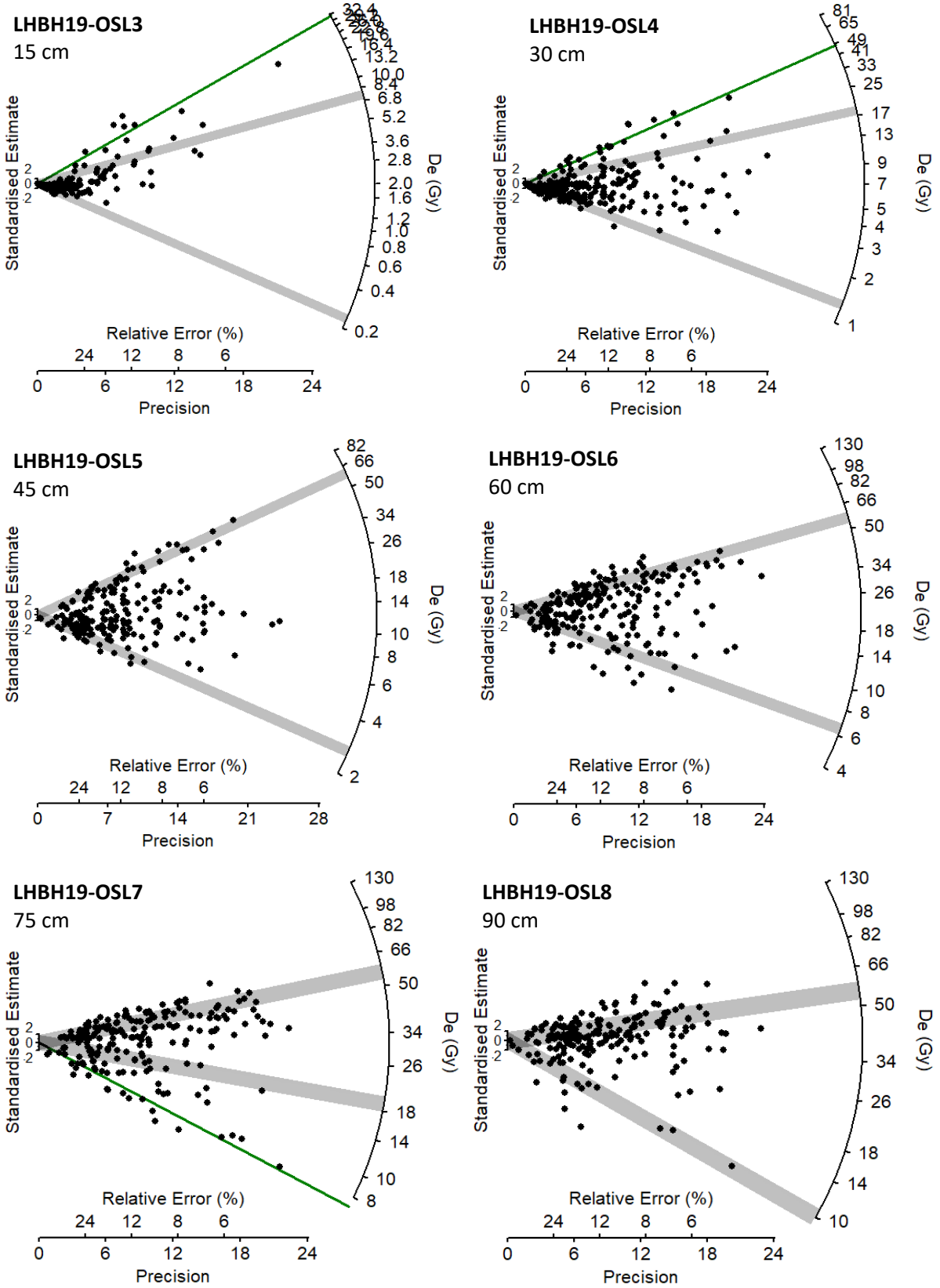


Figure 4a: *Radial plots for the six samples measured from TP151. The maximum and minimum age models were applied to each of the samples. The grey bands are centred on the Max and Min $D_e$ values to bracket the $D_e$ distributions from which maximum and minimum ages can be calculated. The green line shows a second Max $D_e$ value for those distributions that have a separate discrete (not continuous) dose component.*

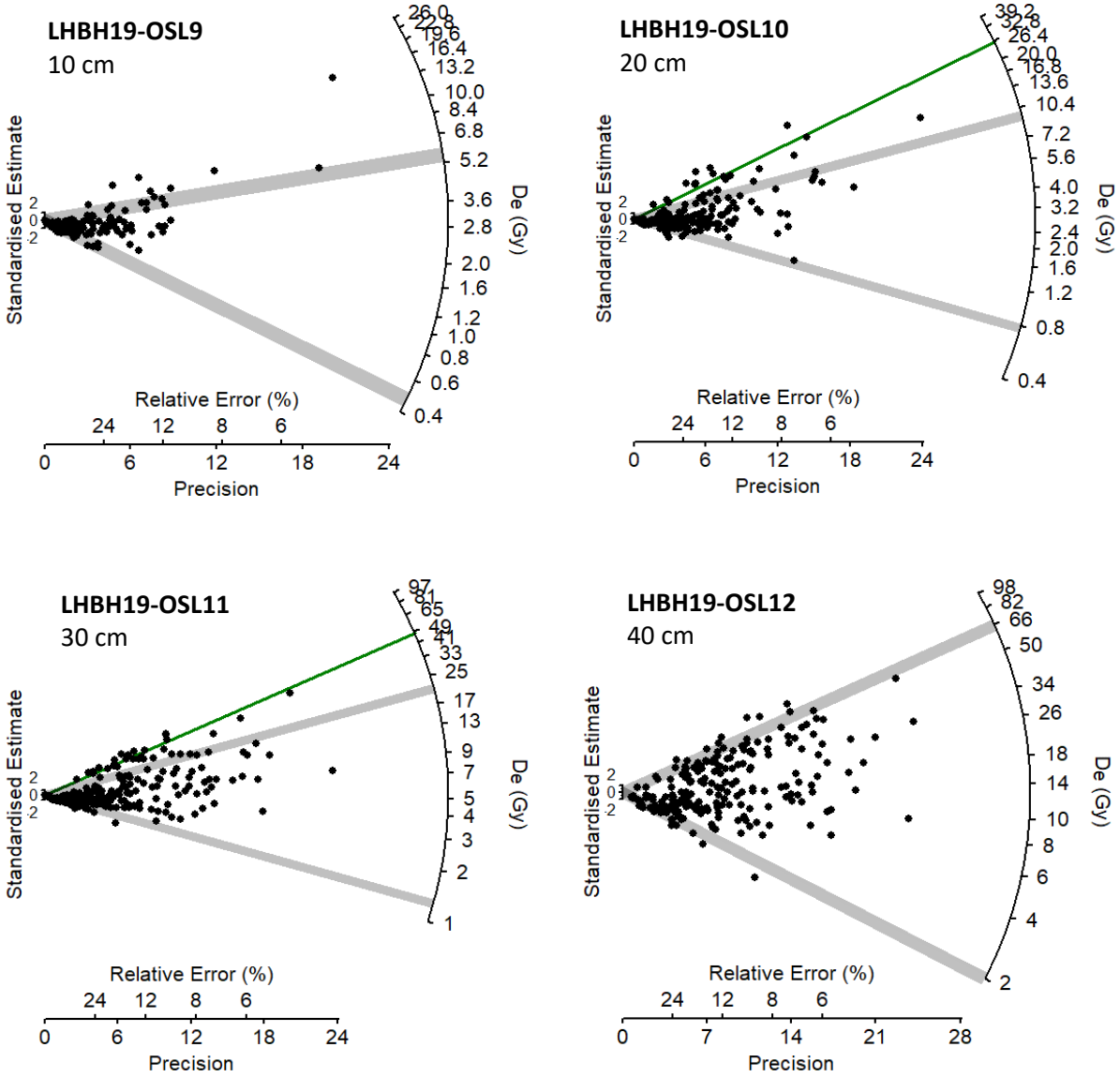


Figure 4b: *Radial plots for the four samples measured from TP57. The maximum and minimum age models were applied to each of the samples. The grey bands are centred on the Max and Min $D_e$ values to bracket the $D_e$ distributions from which maximum and minimum ages can be calculated. The green line shows captures a second Max De value for those distirbutions that show a separate discrete (not continuous) dose component.*

***Table 1:*** *Sample field and lab codes and other information*

| Field Code | UOW code | Depth below datum (cm) | Test unit |
|---|---|---|---|
| LHBH19_ OSL3 | UOW-2825 | 15 | TP151 |
| LHBH19_ OSL4 | UOW-2826 | 30 | TP151 |
| LHBH19_ OSL5 | UOW-2827 | 45 | TP151 |
| LHBH19_ OSL6 | UOW-2828 | 60 | TP151 |
| LHBH19_ OSL7 | UOW-2829 | 75 | TP151 |
| LHBH19_ OSL8 | UOW-2830 | 90 | TP151 |
| LHBH19_ OSL9 | UOW-2831 | 10 | TP57 |
| LHBH19_ OSL10 | UOW-2832 | 20 | TP57 |
| LHBH19_ OSL11 | UOW-2833 | 30 | TP57 |
| LHBH19_ OSL12 | UOW-2832 | 40 | TP57 |

***Table 2:*** *Number of individual quartz grains measured, rejected and accepted for each, together with the reasons for grain rejection (see text for reference to numbers).*

| Sample | No. of grains measured | Rejection criteria (see footnotes) | | | | | | Sum of grains rejected | No. of grains accepted |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | | |
| **LHBH19_OSL3** | 500 | 187 | 20 | 4 | 14 | 39 | 0 | 264 | 236 |
| **LHBH19_OSL4** | 500 | 157 | 13 | 4 | 21 | 47 | 1 | 243 | 257 |
| **LHBH19_OSL5** | 500 | 201 | 20 | 3 | 19 | 51 | 3 | 297 | 203 |
| **LHBH19_OSL6** | 500 | 195 | 13 | 8 | 16 | 35 | 16 | 283 | 217 |
| **LHBH19_OSL7** | 500 | 200 | 13 | 6 | 17 | 41 | 17 | 294 | 206 |
| **LHBH19_OSL8** | 500 | 189 | 11 | 9 | 19 | 54 | 22 | 304 | 196 |
| **LHBH19_OSL9** | 500 | 162 | 16 | 5 | 19 | 48 | 0 | 250 | 250 |
| **LHBH19_OSL10** | 500 | 185 | 13 | 3 | 11 | 44 | 2 | 258 | 242 |
| **LHBH19_OSL11** | 500 | 176 | 20 | 9 | 15 | 46 | 2 | 268 | 232 |
| **LHBH19_OSL12** | 500 | 187 | 11 | 3 | 10 | 57 | 12 | 280 | 220 |

***Table 3:*** *Dose rate data, equivalent dose ($D_e$) and overdispersion (OD) values, and ages.*

| Sample (LHBH19_) | Water (%) | External dose rate (Gy/ka) | | | Total | $D_e$ (Gy) | OD (%) | Model | Age (ka) |
|---|---|---|---|---|---|---|---|---|---|
| | | Beta | Gamma | Cosmic | | | | | |
| **TP151** | | | | | | | | | |
| **OSL3** | 12 ± 3 (10) | 0.86 ± 0.04 | 0.75 ± 0.04 | 0.184 | 1.83 ± 0.06 | 31.6 ± 3.7 | 118 ± 9 | *Max1* | 17.3 ± 2.1 |
| | | | | | | 7.6 ± 0.8 | | *Max* | 4.1 ± 0.5 |
| | | | | | | *0.24 ± 0.10* | | *Min* | ***0.132 ± 0.054*** |
| **OSL4** | 12 ± 3 (10) | 0.89 ± 0.04 | 0.76 ± 0.04 | 0.182 | 1.88 ± 0.06 | *47.5 ± 3.9* | 113 ± 6 | *Max1* | 25.3 ± 2.3 |
| | | | | | | *18.1 ± 1.3* | | *Max* | 9.7 ± 0.8 |
| | | | | | | 1.13 ± 0.15 | | *Min* | 0.601 ± 0.087 |
| **OSL5** | 12 ± 3 (10) | 0.93 ± 0.04 | 0.80 ± 0.04 | 0.180 | 1.94 ± 0.06 | *59.6 ± 4.2* | 106 ± 6 | *Max* | 30.7 ± 2.5 |
| | | | | | | 2.67 ± 0.27 | | *Min* | 1.38 ± 0.15 |
| **OSL6** | 12 ± 3 (11) | 0.98 ± 0.05 | 0.84 ± 0.04 | 0.179 | 2.03 ± 0.07 | *56.2 ± 2.7* | 99 ± 5 | *Max* | 27.7 ± 1.7 |
| | | | | | | 6.47 ± 0.55 | | *Min* | 3.18 ± 0.03 |
| **OSL7** | 12 ± 3 (11) | 1.01 ± 0.05 | 0.86 ± 0.04 | 0.177 | 2.07 ± 0.07 | *55.7 ± 1.9* | 78 ± 4 | *Max* | ***26.9 ± 1.4*** |
| | | | | | | *18.9 ± 1.3* | | *Min* | *9.1 ± 0.7* |
| | | | | | | *7.21 ± 0.99* | | *Min1* | *3.48 ± 0.49* |
| **OSL8** | 20 ± 5 (17) | 1.17 ± 0.07 | 0.90 ± 0.06 | 0.162 | 2.27 ± 0.09 | *55.8 ± 1.7* | 67 ± 4 | *Max* | ***24.6 ± 1.4*** |
| | | | | | | 10.0 ± 6.5 | | *Min* | 4.4 ± 2.9 |
| **TP57** | | | | | | | | | |
| **OSL9** | 10 ± 3 (9) | 1.08 ± 0.05 | 0.91 ± 0.04 | 0.188 | 2.21 ± 0.07 | *5.6 ± 0.5* | 98 ± 7 | *Max* | *2.53 ± 0.25* |
| | | | | | | *0.47 ± 0.12* | | *Min* | ***0.220 ± 0.053*** |
| **OSL10** | 10 ± 3 (8) | 1.10 ± 0.05 | 0.94 ± 0.04 | 0.187 | 2.25 ± 0.07 | *25.8 ± 2.5* | 107 ± 6 | *Max1* | 11.5 ± 1.2 |
| | | | | | | *9.4 ± 0.7* | | *Max* | 4.16 ± 0.36 |
| | | | | | | 0.78 ± 0.13 | | *Min* | 0.344 ± 0.058 |
| **OSL11** | 10 ± 3 (7) | 1.15 ± 0.05 | 0.97 ± 0.04 | 0.186 | 2.34 ± 0.07 | *47.2 ± 3.9* | 114 ± 6 | *Max1* | 20.2 ± 1.8 |
| | | | | | | *21.0 ± 1.6* | | *Max* | 9.0 ± 0.8 |
| | | | | | | 1.26 ± 0.17 | | *Min* | 0.541 ± 0.075 |
| **OSL12** | 10 ± 3 (8) | 1.24 ± 0.05 | 1.05 ± 0.05 | 0.185 | 2.50 ± 0.08 | 65.4 ± 7.6 | 113 ± 6 | *Max* | 26.2 ± 3.2 |
| | | | | | | 2.1 ± 0.21 | | *Min* | 0.818 ± 0.090 |

# Appendix 4-3. Lithic analysis report

# ARTEFACT ANALYSIS OF LIGHTHORSE BUSINESS HUB

Dr Trudy Doelman

# Introduction

This report provides an analysis of a stone artefact assemblage excavated from Lighthorse Business Hub, western Sydney, NSW. The lithic analysis addresses a series of research questions:

- **Spatial Distribution.** How were stone artefacts distributed across Lighthorse Business Hub and in what densities?

- **Site chronology**. When was the site occupied? Was the assemblage the product of repeated occupations or a single event?

- **Lithic procurement.** Which raw material resources were used? What types of raw material sources were used (primary and secondary)? Does a preference for a raw material occur? Can we infer the distance from the sources based on artefact size, frequency and amount of cortex?

- **Stone reduction technology.** How were cores prepared and worked? Were systematic core reduction strategies employed? What types of tools were manufactured? The analysis was broken down into descriptions of the:
    - Assemblage Composition
    - Core attributes
    - Flake attributes
    - Tools
- Spatial Patterning of Activities and Site Function. What types of activities occurred on-site? Do discrete areas of stone working occur? Do differences occur in the placement of activities and are these related to site function?

- **Post-depositional influences.** What is the nature and integrity of the sub-surface deposits? What post-depositional influences have impacted on the assemblage? Are there areas of European disturbance?

- **Regional Comparisons.** How does this site compare with others in the surrounding region?

# Analysis Methodology

Artefacts were cleaned, given a unique ID, individually analysed and entered into the software program E4 loaded with a configuration file written for this specific purpose. This program prompts the user to record all relevant attributes through a series of menus based on the artefact type (e.g. core, complete flake, complete tool etc) and stores the information in a Microsoft Access database. In this way a comprehensive typological, technological and metrical analysis of the assemblage of the excavated assemblage was undertaken. The location of the artefacts was recorded by spit and excavation square. Analysis was aided by the use of a 10x hand lens and a standard digital vernier calliper (measured to 1 decimal mm). A definition of the terms used for the artefact types and their attributes can be found in Appendix A-D of this report.

# Artefact Analysis

### *Assemblage Distribution*

A total of 275 heat shattered fragments (n=23) and artefacts (n=252) were recovered from the excavation of 256 50cm x 50cm test pits (Table 1 and Table 2). Three test pits were expanded to 1m x 1m (TP57, TP137 and TP151), totalling an excavated area of 66.25m (Table 2). Most of the artefacts were concentrated in TP57 and TP151 (TP57 n=49, 19.4%; TP151 n=23, 9.1%). One further test pit, TP137 (n=5, 2%), was also expanded due to the nature of the stratigraphy. In general, the artefact density is low across the study area with a density of 3.8 artefacts/ $m^2$. Of the 256 pits excavated 91 had artefacts (35.5%) with 41 (16%) of those only recovering 1 artefact and 165 had no artefacts (64.5%).

Table 3 shows the number of artefacts from each spit in each area. The highest concentration of artefacts occurs in Spits 1 (n=84) and 2 (n=99). No significant differences in maximum length occurs between in the spits 1 and 2 ($t$=1.679, $df$=181, $p$=0.0949) and spits 2 and 3 ($t$=0.0, $df$=99, $p$>0.999). The total amount of weight shows the greatest density of artefacts is in spit 2 while the mean weight is much smaller in spit 1 (Table 3).

Table 1. The counts and distribution of artefacts throughout the excavated test pits.

| *TP* | *Count* | *TP* | *Count* | *TP* | *Count* | *TP* | *Count* | *TP* | *Count* |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 2 | 109 | 1 | 169 | 1 | 222 | 3 | 270 | 6 |
| 18 | 1 | 115 | 1 | 170 | 1 | 223 | 2 | *Expanded pits* | |
| 22 | 1 | 118 | 3 | 171 | 1 | 224 | 1 | 57 | 49 |
| 25 | 3 | 119 | 1 | 172 | 1 | 231 | 1 | 137 | 5 |
| 36 | 2 | 122 | 1 | 174 | 4 | 232 | 1 | 151 | 23 |
| 50 | 2 | 124 | 6 | 176 | 4 | 233 | 2 | | |
| 51 | 2 | 119 | 1 | 181 | 1 | 238 | 1 | | |
| 68 | 2 | 122 | 1 | 184 | 3 | 239 | 1 | | |
| 71 | 1 | 124 | 6 | 189 | 1 | 241 | 4 | | |
| 72 | 1 | 130 | 1 | 198 | 5 | 247 | 1 | | |
| 73 | 1 | 135 | 1 | 199 | 7 | 253 | 3 | | |
| 78 | 2 | 136 | 6 | 200 | 3 | 256 | 1 | | |
| 82 | 1 | 139 | 1 | 209 | 2 | 260 | 6 | | |
| 86 | 1 | 147 | 1 | 210 | 1 | 261 | 4 | | |
| 87 | 2 | 152 | 1 | 211 | 2 | 263 | 3 | | |
| 90 | 1 | 154 | 1 | 212 | 1 | 264 | 1 | | |
| 91 | 2 | 157 | 1 | 217 | 1 | 265 | 1 | | |
| 92 | 3 | 160 | 7 | 218 | 1 | 267 | 5 | | |
| 105 | 2 | 163 | 2 | 219 | 1 | 268 | 4 | | |
| 106 | 1 | 165 | 5 | 220 | 2 | 269 | 3 | | |

Table 2. The artefact counts in the extended excavated areas around TP151, TP57 and TP137.

| *Test Pit* | *Count* | *Test Pit* | *Count* | *Test Pit* | *Count* |
|---|---|---|---|---|---|
| 151a | 8 | 57a | 19 | 137a | 2 |
| 151b | 2 | 57b | 5 | 137b | 1 |
| 151c | 10 | 57c | 21 | 137c | 0 |
| 151d | 3 | 57d | 4 | 137d | 2 |
| **Total** | 23 | | 49 | | 5 |

Table 3. The frequency and size of artefacts by spit.

| *Spit* | *Count* | *Mean Maximum Dimension (mm)* | *Std dev.* | *Mean Weight (g)* | *Std dev.* | *Sum of Weight (g)* |
|---|---|---|---|---|---|---|
| 1 | 84 | 16.5 | 6.5 | 1.4 | 2.0 | 114.3 |
| 2 | 99 | 18.3 | 8.0 | 2.2 | 3.8 | 221.1 |
| 3 | 48 | 18.0 | 8.9 | 2.2 | 5.5 | 106.3 |
| 4 | 17 | 16.5 | 5.2 | 1.1 | 1.3 | 18.6 |
| 5 | 3 | 17.6 | 9.1 | 1.0 | 1.5 | 3.1 |
| 6 | 1 | 9.2 | | 0.1 | | 0.1 |
| Total | 252 | | | | | 463.5 |

***Site Chronology***

A useful guide for assessing site age is the presence or absence of backed artefacts. These artefacts are typically only found in mid to late Holocene sites (<5000 years bp) throughout most of Australia (Attenbrow 2002: 115-159, Hiscock 2008). The presence of backed artefacts is compared with depth to establish the timing of occupation at the Lighthorse Business Hub (Table 4). The results are used to identify whether the assemblage should be analysed as a whole or as a series of discrete occupations discarded over time. Table 4 clearly shows that backed artefacts, although dominant in Spit 1, do extend throughout the excavation sequence into Spit 3. It is likely that the assemblage found during Lighthorse Business Hub excavation can be typologically dated to <5000 years bp. Furthermore, comparing the maximum lengths of the artefacts by spit shows that the size of the artefacts is consistent across depth (Table 3). Typically, a variety of post-depositional processes (e.g. trampling and bioturbation) can lead to the downwards displacement of artefacts through sediments (Richardson 1992). Small artefacts are more likely to be affected by size sorting i.e. larger numbers of smaller artefacts will occur at the base of an excavation (Baker 1978). It is also possible that post-depositional factors, such as ploughing, impacted on the size of the artefacts in spit 1 i.e. artefacts were broken and hence smaller at or near the surface. However, as already noted the sizes were not statistically different. These results indicate that it is appropriate to analyse the assemblage as a whole.

Table 4. The number of backed artefacts by spit.

| *Spit* | *Count* |
|---|---|
| 1 | 5 |
| 2 | 3 |
| 3 | 1 |

## Lithic Procurement

The cortex (or weathered exterior of the parent rock) provides information about the type of stone sources used (i.e. a primary or secondary source). Artefacts with a rough cortex were acquired from a primary source (or an *in situ* outcrop). Artefacts with a smooth or water-rolled cortex originate from a secondary source (e.g. a cobble from a waterway). In the Cumberland Plain the identification of cortex is more complex for two reasons. Firstly, silcrete can be derived from both paleo-channel sources (ancient waterways) and flowing waterways (Doelman et al. 2015). Paleo-channels sources typically have a smooth rind or a more, rough, weathered rind dependent on the time each cobble was exposed at the surface. Secondly, these paleo-channel sources were affected by bush fires which have created crazed surfaces on the exterior of the cobbles and these have sometimes been subsequently flaked. Post-depositional burning can also influence artefacts and the controlled heat treatment, using fire, is sometimes used to improve the fracture properties of silcrete (Flenniken and White. 1983). A cortex category, crazed, was used to assess whether cobbles/cores were burnt prior to flaking.

The amount of cortex on an artefact often indicates the distance artefacts were transported from the source (Hiscock and Mitchell 1993:12-17). A high percentage of cortex on an artefact indicates that the source of stone was nearby while artefacts with less cortex or no cortex were transported further from the source. Equally, as cores are transported away from the source they are typically highly reduced and the resulting flakes are also smaller.

Most of the artefacts at Lighthorse Business Hub have no cortex (Table 5). Those with cortex often have a crazed surface (Table 5). A crazed surface indicates burning which can be prior to or after flaking. However, the location of the cortex (i.e. on the platform of a flake or dorsal surface of a flake) shows that some cobbles were burnt prior to flaking. The artefacts with a rough or rind cortex were made from cobbles acquired from a paleo-channel. Two types of silcrete sources were used at Lighthorse Business Hub; paleo-channels and secondary sources from nearby waterways. It is rare in the Cumberland Plain to see silcrete artefacts with a water-rolled cortex from a secondary source (n=5) and these are all medium-silcrete. FGS and tuff artefacts were also from water-rolled sources.

Table 5. The amount and type of cortex on the silcrete artefacts, excluding heat shatter.

| *Cortex %* | *Count* | *%* | *Cortex Types* | *Count* | *%* |
|---|---|---|---|---|---|
| 0% | 162 | 73.0 | Crazed | 33 | 54.1 |
| 1-25% | 40 | 18.0 | Rind | 17 | 27.9 |
| 26-50% | 11 | 5.0 | Rough | 6 | 9.8 |
| 51-99% | 5 | 2.3 | Smooth | 5 | 8.2 |
| 100% | 4 | 1.8 | | | |
| **Total** | 222 | | | 61 | 27.5 |

Altogether five raw material types were found in the excavation. Silcrete dominates the assemblage at 88.1% (n=222). Silcrete can be divided into medium-grained and fine-grained. Fine-grained silcrete was preferred for making artefacts as it is easier to flake and retains a sharper and stronger working

edge (Doelman et al. 2001). A selection for fine-grained silcrete is evident in the Lighthorse Business Hub assemblage with 74.6% (n=188) of the artefacts made from this raw material type. FGS, tuff and milky quartz artefacts are present in considerably lower numbers when compared to the silcrete artefacts (Table 6). These other raw material types account for just 11.9% of the assemblage (Table 6). The mean sizes of all the raw material types are also small with only four flakes larger than 30 mm (Table 7).

Colour was also analysed to distinguish possible sources of silcrete and establish the presence of heat treated artefacts. During heat treatment silcrete can change from yellow to red (Corkill 1999; Domanski et al. 1994; Flenniken and White 1983). The silcrete artefacts at Lighthorse Business Hub were red, pink, yellow, red/yellow or grey (Table 8). The most common colour was red with 57.2% (n=125) of the silcrete artefacts this colour. Relatively large numbers of yellow silcrete artefacts were also found (Table 8). It is unlikely that the colours of the silcrete artefacts represent individual sources as these colours have been observed together, although in different frequencies, in many locations throughout the Cumberland Plain (Doelman et al. 2015). A geoarchaeological survey undertaken to assess the physical variation between the sources found that the most common colour of the cobbles from the paleo-channel sources was yellow (Doelman et al. 2015). This is not in keeping with the colour of the artefacts found at Lighthorse Business Hub and it is likely that the red silcrete artefacts represent both heat damage of cobbles, controlled heat treatment of artefacts and post-depositional burning of artefacts after discard.

Table 6. Raw Material Types and total weights (g).

| *Material* | *Count* | *%* | *Sum of Weight (g)* |
|---|---|---|---|
| Fine Grained Silcrete | 188 | 74.6 | 331.6 |
| Medium Grained Silcrete | 34 | 13.5 | 83.8 |
| **Sub-Total** | 222 | 88.1 | 415.4 |
| Silicified Wood | 2 | 0.8 | 2.8 |
| Tuff | 22 | 8.7 | 38.9 |
| Milky Quartz | 2 | 0.8 | 0.4 |
| FGS | 4 | 1.6 | 6 |
| **Total** | 252 | | 463.5 |

Table 7. Counts of Raw Material Types for complete flakes and the mean axial length and standard deviations.

| *Material* | *Count* | *Mean Axial Length (mm)* | *Std Dev.* |
|---|---|---|---|
| FGS | 1 | 13.6 | |
| Fine Silcrete | 40 | 14.8 | 6.8 |
| Medium Silcrete | 7 | 20.4 | 7.8 |
| Milky Quartz | 1 | 7.43 | |
| Tuff | 5 | 16.7 | 11.0 |

Table 8. Counts of Raw Material Types for complete flakes and the mean axial length and standard deviations.

| *Colour* | *Count* | *%* |
|---|---|---|
| Grey | 12 | 5.4 |
| Pink | 20 | 9.0 |
| Red/Yellow | 7 | 3.2 |
| Red | 127 | 57.2 |
| Yellow | 56 | 25.2 |
| **Total** | 222 | |

## Stone Reduction Technology

The types of artefacts and their characteristics are used to establish how sources were worked, used and discarded on-site. Artefacts were classified as cores or flakes, broken or complete and retouched (tools) or non-retouched (Table 9). Artefacts that were shattered through extreme heat and could not be identified by type but had a flaked surface were called a heat-fractured artefact. Heat shattered fragments were typically made from silcrete but had no identifiable artefactual features. These fragments were included in the analysis as they represent post-depositional influences on the assemblage and do not occur naturally on-site. By-products of flaking include angular fragments (blocks). The composition of the assemblage will firstly be compared followed by an analysis of the cores, flakes and tools.

***Assemblage Composition***

The excavated assemblage is dominated singularly by broken (medial) flakes (Table 9). All broken flakes (including proximal, broken, distal and complete splits) account for 44.0% (n=121) of the assemblage. Using the MNF (Minimum Number of Flakes) Index (Hiscock 2002: 254) which takes into account the number of proximal fragments, complete flakes and complete splits a MNF of 68 complete flakes occur in the assemblage. A total of 17 cores and five core fragments were found (Table 9). A relatively high number of tools (n=19, 6.9%) were also found. Most of the tools were made on complete flakes (n=9, 50.0%). A high frequency of proximal flakes with lateral breaks (n=19, 6.9%) and angular fragments were present (10.9%, n=30) in the assemblage. Considerable evidence for burning was seen in the presence of the heat shattered artefacts and heat shattered fragments.

Ratios of complete flakes:cores show that a high frequency of cores occurs in the assemblage (3.2:1) coupled with a high number of complete splits to complete flakes (1:6) and tools to complete flakes (1:3). A low frequency of broken flakes is shown by the ratio of broken flakes:complete flakes (2.2:1). This result suggests the assemblage is not highly fragmented, with the exception of spit 1. Broken flakes may be a result of breakage during manufacture, post-depositional breakage (ploughing, treadage or heat-shattering) or the deliberate snapping of complete flakes during the manufacture of particular tools, such as geometric microliths (Boot 1987: 10-15; Holdaway and Stern 2004: 133-135). It is likely that the high number of proximal flakes at Lighthorse Business Hub resulted from deliberate breaks made during the manufacture of backed artefacts when the platform is usually removed prior to backing.

Table 9. Composition of the excavated assemblage.

| *Artefact Type* | *Count* | *%* |
|---|---|---|
| Core | 17 | 6.2 |
| Core Fragment | 5 | 1.8 |
| **Sub-total** | 22 | 8.0 |
| Complete Flake | 54 | 19.6 |
| Complete Split | 9 | 3.3 |
| Proximal Flake | 19 | 6.9 |
| Broken Flake | 62 | 22.5 |
| Distal Flake | 30 | 10.9 |
| **Sub-total** | 121 | 44.0 |
| Complete Tool | 9 | 3.3 |
| Proximal Tool | 6 | 2.2 |
| Broken Tool | 1 | 0.4 |
| Distal Tool | 3 | 1.1 |
| **Sub-total** | 18 | 6.9 |
| Angular Fragments | 30 | 10.9 |
| Heat Shattered fragment | 23 | 8.4 |
| Heat Shattered artefact | 3 | 1.1 |
| Other | 4 | 1.5 |
| **Total** | 275 | |

***Cores***

A total of 17 cores and five core fragments were found in the assemblage (Table 9). Most of the cores (n=9, 52.9%) were found in TP57, 57a, 57c and 57d. These cores tend to occur in Spit 1 (n=7) and Spit 2 (n=6). Most of the cores were made from fine-grained silcrete (n=15) and are yellow (n=11).

Most of the cores have elongated flake scars (Table 10). The cores show some evidence of platform preparation i.e. overhang removal or faceting. In general, the cores are either highly reduced or abrupt failures after attempts to remove flakes resulted in step or hinge terminations. The mean length, width and thickness of the cores indicate that they are very small with the largest core only 37.8 mm in length (Table 11). Given the small sizes of the cores they were anvil-rested and flaked using a bipolar technique. Only one core has more than five flake scars. Table 11 shows the core size decreasing with the number of flakes removed. Six cores were made on flakes and one FGS core made from a water-rolled nodule. No tuff cores were found.

Table 10. Characteristics of the cores by raw material type.

| *Core Type* | *Material* | *Colour* | *Cortex* | *Cortex Type* | *Core body* | *Scar form* | *Platform preparation* | *Platform Number* | *Step terminations* | *Hinge terminations* | *Exhausted* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alternate-Blade | Fine Silcrete | yellow | 0% | | Block | Elongated | Faceted | 1 | 0 | 0 | Yes |
| Alternate-Blade | | yellow | 0% | | Block | Elongated | Overhang | 2 | 2 | 0 | Yes |
| Alternate-Blade | | yellow | 1-25% | Rough | Block | Elongated | Both | 2 | 1 | 0 | Yes |
| Burin-Blade | | yellow | 1-25% | Rind | Flake | Elongated | None | 1 | 0 | 0 | No |
| Burin-Blade | | red | 26-50% | Craze | Block | Elongated | Facet | 2 | 0 | 0 | Yes |
| Burin-Blade | | yellow | 26-50% | Rough | Flake | Elongated | Overhang | 1 | 1 | 0 | Yes |
| Bi-Directional | | yellow | 0% | | Block | Elongated | Overhang | 2 | 2 | 1 | Yes |
| Bifacial | | yellow | 1-25% | Rough | Block | Elongated | Facet | 2 | 1 | 1 | Yes |
| Bipolar | | red | 1-25% | Craze | Block | Elongated | None | 2 | 0 | 1 | Yes |
| Multi-Directional | | yellow | 1-25% | Rough | Block | Mixed | Facet | 3 | 1 | 1 | No |
| Sub-Prismatic | | yellow | 0% | | Flake | Elongated | Both | 3 | 2 | 1 | Yes |
| Tranchet | | yellow | 0% | | Flake | Mixed | None | 1 | 2 | 0 | Yes |
| Uni-Directional | | red | 1-25% | Craze | Flake | Mixed | None | 1 | 0 | 0 | No |
| Uni-Directional | | red | 1-25% | Craze | Flake | Mixed | None | 1 | 0 | 1 | No |
| Uni-Directional | | y/r | 1-25% | Rind | Block | Expanding | None | 1 | 0 | 0 | No |
| Uni-Directional | Medium Silcrete | red | 1-25% | Craze | Block | Expanding | None | 1 | 0 | 1 | Yes |
| Test | FGS | yellow | 26-50% | Water-Rolled | Nodule | Expanding | None | 1 | 0 | 0 | Yes |

Table 11. Dimensions of the fine silcrete cores.

| *Dimension* | |
|---|---|
| Mean Length (mm) | 23.3 |
| Std Dev. | 5.7 |
| Mean Width (mm) | 17.6 |
| Std Dev. | 5.8 |
| Mean Thickness (mm) | 10.9 |
| Std Dev. | 4.2 |
| Mean Core Face Length (mm) | 21.3 |
| Std Dev. | 5.8 |
| Mean Scar Length (mm) | 15.9 |
| Std Dev. | 4.4 |
| Mean Scar Width (mm) | 9.0 |
| Std Dev. | 4.5 |
| **Number of Core Scars** | |
| 1-2 Scars (n=6) Mean length | 25.4 |
| Std Dev. | 7.6 |
| 3-5 Scars (n=10) Mean Width (mm) | 22.6 |
| Std Dev. | 4.1 |
| 6-10 Scars (n=1) Mean thickness (mm) | 20.1 |
| Std Dev. | |

Evidence of some systematic core reduction at the Lighthorse Business Hub is seen by the presence of three atypical burin–blade cores, a sub-prismatic core and alternate-blade cores (Plate 1). These burin-blade cores were made on two forms; block or a flake. They show the deliberate removal of flakes along the lateral margin. This is one way of manufacturing elongated flakes of the same size. Burin-blade cores are generally made on a large flake, typically one of the margins was prepared as a platform for the removal of flakes, usually across the termination of the original flake (Holdaway and Stern 2004:205-206). This technique has also been called the Redbank A Strategy and was observed in Hunter Valley assemblages (Hiscock 1993). The blades produced will have a similar size in length and width. Burin-blade cores from the Lighthorse Business Hub were typically made on angular fragments struck along a lateral margin.

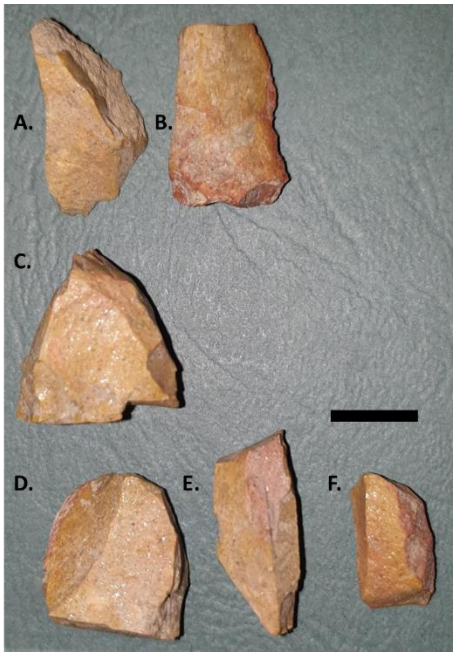


Plate 1. Cores in the Lighthorse Business Hub assemblage. Atypical Burin-blade cores, A. Id=19, TP57c, spit 2 B. Id=21, 57d, spit 4; Sub-prismatic blade core, C. Id=199, TP57, spit 1; Alternate-blade core, D. Id=254, TP57c, spit 3, E. Id=31, TP57c, spit 2, F. Id=252, TP57, spit 1.

Two further strategies were used to manufacture elongated flakes used for backed artefact manufacture; the alternate-blade core (e.g. IDs=21, 31) and prismatic blade core (ID=199). These strategies were all found in and around TP57 (TP 57c and TP 57d).

***Flakes***

The characteristics of the complete flakes are used to support and further enhance the results of the core analysis.

The form of the complete flakes is used to determine how cores were reduced and what was manufactured on site. Expanding and intermediate flakes dominate the assemblage (Table 12). This result does not correlate with the form of the flake scars on the cores which are mainly elongated. Only three broken flakes were defined as having a blade form. It is possible that flakes of these forms, blade or elongated, were either manufactured into tools or removed from the site for later use. Within this assemblage three flakes have hinge terminations and two have step terminations. These types of

terminations are usually the result of a steep platform angle generally produced at the end of a core's uselife (Holdaway and Stern 2004:130). The presence of four platform rejuvenation flakes indicates that the uselife of cores was sometimes extended on-site. Platform rejuvenation flakes (also known as a core rejuvenation flake) were used to both create a new platform and to limit flaking mistakes by reducing the angle of the striking platform thereby extending the life of a core (Odell 2003: 121). The additional presence of complete split flakes (which only occur during flaking) also shows that core reduction occurred on-site (Table 9). These types of flakes usually occur early in core reduction when the aim is to remove a large flake and can be considered a flaking error produced when the force used to strike the core is too great and it is hit at an incorrect angle.

There are two ridge-straightening flakes (ID=24 and ID=89) both found in Spit 2 of TP57c. ID=89 is associated with the preparation of a core face typically seen in blade manufacture. This elongated flake (also called a crested blade), with previous parallel flake removals from a single ridge, is used to establish the parallel ridges needed for blade removal. In contrast, ID=24 is an example of cleaning an old core face to rejuvenate a core and extend its uselife (Plate 2).

Table 12. Form of the complete flakes in the excavated assemblage.

| *Form* | *Silcrete* | | *Tuff* | |
|---|---|---|---|---|
| Block | 2 | 4.3 | 1 | 20 |
| Elongated | 9 | 19.1 | 1 | 20 |
| Expanding | 14 | 29.8 | 2 | 40 |
| Indeterminate | 15 | 31.9 | 1 | 20 |
| Platform Rejuvenation Flake | 5 | 10.6 | | |
| Ridge-Straightening Flake | 2 | 4.3 | | |
| **Total** | 47 | | 5 | |

Table 13. Characteristics of the complete flakes in the excavated assemblage.

| **Termination** | **Count** | **%** | **Platform Type** | **Count** | **%** |
|---|---|---|---|---|---|
| Abrupt | 5 | 10.6 | Cortical | 5 | 10.6 |
| Crushed | 1 | 2.1 | Crazed | 1 | 2.1 |
| Feather | 33 | 70.2 | Crushed | 7 | 14.9 |
| Hinge | 3 | 6.4 | Facet | 4 | 8.5 |
| Platform | 2 | 4.3 | Flaked | 3 | 6.4 |
| Plunge | 1 | 2.1 | Missing | 2 | 4.3 |
| Step | 2 | 4.3 | Unifacial | 25 | 53.2 |
| **Cortex %** | | | **Exterior Platform Preparation** | | |
| 0% | 34 | 72.3 | No | 36 | 76.6 |
| 1-25% | 5 | 10.6 | Yes | 11 | 23.4 |
| 26-50% | 4 | 8.5 | **No. of Scars** | | |
| 51-99% | 2 | 4.3 | 0 | 2 | 4.3 |
| **100%** | | | <5 | 45 | 95.7 |
| **Scar Direction** | | | | | |
| 0 | 27 | 57.4 | **Dimensions (mm)** | **Mean** | **STD** |
| 180 | 5 | 10.6 | Maximum Length | 17.8 | 7.2 |
| 90 | 8 | 17.0 | Axial Length | 15.7 | 7.1 |
| NA | 5 | 10.6 | Width | 12.4 | 4.6 |
| Radial | 2 | 4.3 | Thickness | 4.2 | 2.8 |

| | | |
|---|---|---|
| Platform Width | 6.5 | 4.3 |
| Platform Thickness | 2.6 | 2.1 |
| Weight (g) | 1.3 | 1.6 |

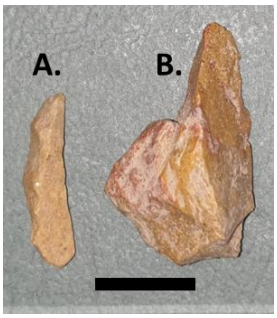


Plate 2. Ridge-straightening flakes in the Lighthorse Business Hub assemblage. A. Id=89, TP57c, spit 2 B. Id=24, 57c, spit 2.

Core rotation is shown by the dorsal scars of the complete flakes (Table 13). Most of the cores were flaked in one direction (n=27, 57.4%). This result is reflected in the high number of unifacial platform types (n=25, 53.2%). Some platform preparation, indicating systematic core reduction, occurred in the assemblage as shown by the presence of overhang removal and facetted platforms. Comparing the platform types in and around TP57 (TP57a, b, c and d) there is a higher frequency of facetted (n=7) and flaked platforms (n=7) on the complete flakes and proximal flakes when compared to the entire assemblage (n=2, n=5 respectively). Attempts were made to remove thin flakes (core trimming or blade production) shown by the platforms that were crushed during removal (Table 13). The low number of highly cortical flakes indicates that initial core reduction was infrequent. The presence of a crazed platform indicates the flaking of burnt cobbles used as cores. It is also possible that these were subject to heat treatment prior to flaking.

The size of the complete flakes varies considerably shown by the large standard deviations (Tables 13 and 14; Figure 1). However, most of the complete flakes are very small between 0-5mm (n=12, 30.0%). Only one complete flake is larger than 30mm (2.5%). The maximum size of the complete flakes is 31.2mm. The large numbers of small complete flakes may indicate platform preparation on the cores (overhang removal) or it could simply reflect the small size of the cores when discarded. It is also possible that these are the products of resharpening tools. Considering the low number of cortical/crazed flakes it is reasonable to assume that initial core preparation did not occur at the site.

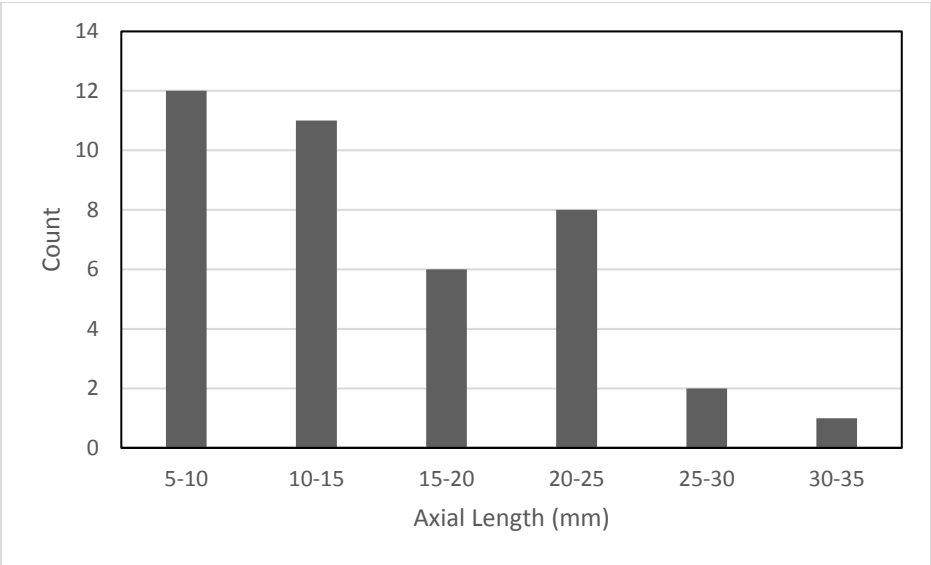


Figure 1. Histogram of the axial lengths of the complete flakes in the excavated assemblage.

There is no significant difference between the axial lengths of the fine-grained silcrete and tuff complete flakes ($t$=0.5492, $df$=43, $p$=0.5857) but the width is significantly different ($t$=2.746, $df$=43, $p$=0.088). These results indicate that the flakes were products of different activities. The elongated flakes of silcrete were made for backed artefact manufacture while the expanding flakes of tuff could be retouching/resharpening flakes from scrapers.

Table 14. Axial length and counts of the complete flakes by material type in the excavated assemblage.

| | *Count* | *Mean Axial Length (mm)* | *Std Dev.* | *Mean Width (mm)* | *Std Dev.* |
|---|---|---|---|---|---|
| FGS | 1 | 13.6 | | 9.6 | |
| Fine-Grained Silcrete | 40 | 14.8 | 6.8 | 11.9 | 4.3 |
| Medium-Grained Silcrete | 7 | 20.4 | 7.8 | 15.5 | 5.5 |
| Tuff | 5 | 16.7 | 11.0 | 18.3 | 9.0 |
| Milky Quartz | 1 | 7.4 | | 8.6 | |

***Tools***

A total of 19 tools were found in the excavated areas. Most of these were made on complete flakes (n=9, 45.0%). The complete tools are larger than the unretouched complete flakes indicating a selection for size (complete flakes=15.6±7.4mm, complete tools=24.0±7.5). Backing was the dominant retouch type (n=12, 60.0**%).** The backed artefacts are complete, broken or unfinished bondi points and geometric microliths (Plate 3). A relatively high frequency of broken flakes (n=5, 26.3%) occur with backing retouch. The remaining backed artefacts are proximal fragments, possibly broken bondi points (n=3), or a distal flake (n=1). The distal fragment is the broken tip from a bondi point. It is likely that this point was broken in use as it is the only artefact from TP135 (ID=218). There are two finished bondi points and a number of broken bondi points (Plate 3). Three of these occur in and around TP57. Id=99 appears to have been broken during manufacture in an attempt to make a bondi point. There

is only one finished geometric microlith made from fine-grained silcrete in TP136 (ID=157) and another bondi point in TP270 which also appears to represent random loses. Given the relatively high frequency of backed artefacts and the appearance of unfinished tools it is likely that these were systematically made on-site on and around TP57.

Relatively few scrapers and notched artefacts were found in the assemblage (Plate 4). Both notched tools had only one retouched edge. One of the straight scrapers had two retouched edges. An unusual tool, rarely found, is a drill (Plate 4). These results indicate that the tools were not intensively used. The presence of tools made from FGS and tuff indicates the transport of these artefacts to Lighthorse Business Hub as sources of these raw material types are not located nearby.

Table 15. Tools found in the excavated assemblage.

| *Material Type* | | *Count* | *%* |
|---|---|---|---|
| **Scalar Retouch** | | | |
| Tuff | Straight Scraper | 1 | 5.3 |
| Fine Silcrete | Straight Scraper | 1 | 5.3 |
| Fine Silcrete | End-Scraper | 1 | 5.3 |
| | | 3 | 15.8 |
| **Backed Artefact** | | | |
| Medium Silcrete | Geometric microlith | 1 | 5.3 |
| Medium Silcrete | Elouera | 1 | 5.3 |
| Medium Silcrete | Bondi | 1 | 5.3 |
| Fine Silcrete | Bondi | 3 | 15.8 |
| Fine Silcrete | Backed Fragment | 5 | 26.3 |
| | | 11 | 57.9 |
| **Other** | | | |
| Medium Silcrete | Notch | 2 | 10.5 |
| Fine Silcrete | Usewear | 2 | 10.5 |
| Fine Silcrete | Drill | 1 | 5.3 |
| | | 19 | |

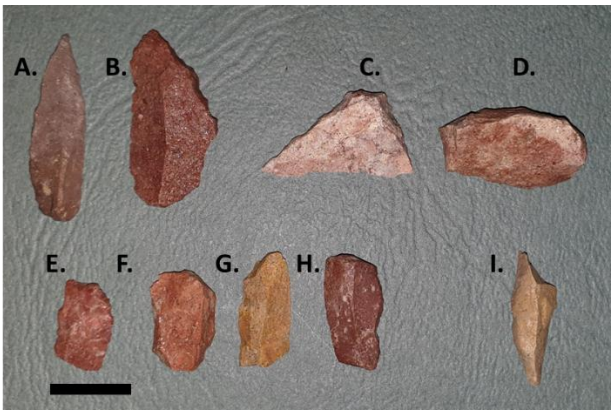


Plate 3. Examples of backed artefacts at Lighthorse Business Hub., A. Id=41, TP270, spit 1, B. Id=30, TP165, spit 1; Geometric microlith C. Id= 157, TP136, spit 2; Elouera Id= 215, TP174, spit 2; Broken proximal backed flakes, D. id=99, TP199, spit 1, E. Id=228, TP57, spit 1, F. Id=93, TP57c, spit 2, G. Id=2, TP149, spit 1; H. Distal tip of bondi point Id=218, TP135, spit 2.

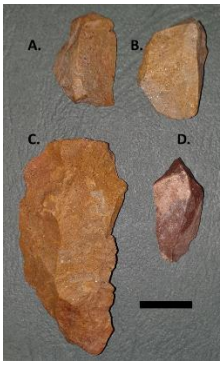


Plate 4. Examples of other tool types at Lighthorse Business Hub. Scrapers A. Id= 60, TP57c, spit 2 B. Id=12, TP57, spit 2; Notch Id=56, TP189, spit 3; Drill Id=144, TP73, spit 1.

One type of adze flake was also identified (Plate 3). The elouera is a tool type often found in assemblages from the Sydney Basin (Attenbrow 2002). This tool has a backed lateral margin with a crescent-like form (Holdaway and Stern 2004:264). It was hafted and transported. The elouera were made from pink, medium-grained silcrete in TP174. In this test pit only four artefacts were found. It is likely that this tool type was continuously transported and used before being discarded or lost at the Lighthorse Business Hub. The elouera is described below.

| | |
|---|---|
| TP174, Spit 2<br>Id=215 | Elouera on proximal flake made from pink, medium-grained silcrete. Both proximal and right lateral margin is backed. Breakage during use at distal end. |

## Post Depositional Influences

Many processes affect archaeological remains after their initial discard. In this report the influence of heat damage and vertical displacement through conjoin analysis are considered. Conjoins were also noted if they were a recent break.

### *Heat Damage vs Heat Treatment*

A total of 67 artefacts (26.6%) were heat damaged (e.g. blackening, cracking, pot-lidding, crazing) in the assemblage. Whether this is deliberate or accidental burning needs to be considered. The controlled heating of stone is a technique used by Aboriginal people to improve the flaking qualities of the stone prior to manufacture (e.g. Flenniken and White 1983). This technique has been recognised as occurring in assemblages in the area along Caddies Creek (MacDonald and Rich 1993:42).

Heat damage has influenced the assemblage in two ways. 1. Heat was responsible for shattering unworked cobbles/blocky fragments at outcrops. Crazed platforms and heat damage on the dorsal surfaces of flakes (in association flake scars) also suggests that burning occurred prior to flaking. Outcrops with heat shattered rock have been identified in the Cumberland Plain. These outcrops typically have red silcrete (Doelman et al. 2015). At the Lighthorse Business Hub 23 heat shattered fragments were identified. 2. Artefacts were also burnt after manufacture. The type of damage generally indicates an uncontrolled, post-depositional burning possibly the result of bush fires or from hearths. This was seen in the presence of artefacts with pot-lids on their ventral surface (e.g. ID=106) and also heat-shattered artefacts (pot-lids, crazing, colour change).

By looking at the distribution of burnt artefacts it is possible to see if heat damage was localised or continuous across the excavated squares. Table 16 compares the distribution of heat shattered fragments with heat damaged artefacts. If localised it may equate to heat treatment and/or found in association with a hearth. If continuous it may be due to heat damage from bush fires. Only 40 (15.9%) squares had any burnt artefacts. Only four squares had more than four burnt artefacts. The location of the burnt artefacts and heat shattered fragments is highly concentrated in and around TP151. This location is found near farm buildings and is most likely the result of post-depositional burning. This may also be the case with TP160 which is in a highly disturbed location. TP198 has burnt artefacts and heat shattered fragments. The artefacts in this location are all red silcrete. One artefact (ID=10) is a complete flake which was burnt before it was flaked. It is possible that this area reflects heat treatment.

Table 16. Location of the burnt artefacts and heat shatter in the assemblage.

| *TP* | *Burnt Artefacts* | *Total Artefacts* | *Count of Heat shatter* |
|---|---|---|---|
| 137b | 0 | 1 | 1 |
| 151 | 4 | 8 | 6 |
| 151b | 2 | 2 | 1 |
| 151c | 7 | 10 | 3 |
| 151d | 2 | 3 | 4 |
| 198 | 4 | 5 | 2 |
| 209 | 0 | 2 | 2 |
| 160 | 4 | 7 | 0 |
| 210 | 0 | 1 | 2 |
| 53 | 1 | 2 | 1 |
| 6 | 0 | 0 | 1 |

A discrepancy occurs between artefact colours, dominated by red, and the colour of the available cobbles in the paleo-channels, dominated by yellow. This observation, coupled with the high number of backed artefacts, suggests that heat treatment may have occurred at or near Lighthorse Business Hub.

### *Conjoin Analysis (Refitting)*

Conjoining (or refitting artefacts) was not systematically undertaken across the assemblage but sometimes recognised during the analysis. This analysis can be used to assess a downward movement of artefacts. Three sets of conjoining artefacts were observed in total (Table 17). If conjoins are present in the same spit then there is little evidence of for the downward movement of larger artefacts. In addition, at TP57, TP57a, TP57b, TP57c and TP57c a concentration of yellow, fine silcrete was found (n=44). These artefacts include cores, flakes, unfinished backed artefacts and together indicate a working area. Most of these artefacts occur in spits 1, 2 and 3 (n=40, 90.1%). A systematic study of this area may show conjoins and indicate which artefacts were removed from the site. A similar concentration of artefacts was found in spit 2 of TP124. Here six artefacts of pink, fine-silcrete were found.

Table 17. Conjoins in the Assemblage.

| Conjoin IDs | Artefact Type |
|---|---|
| IDs=101, 65 | TP261, spit 2 - complete flake of tuff (id=65) and weathered broken flake (id=101) |
| IDs=161, 211 | TP211, spit 2 - red, fine silcrete, break down lateral margin of proximal (id=161) and broken flake (id=211) |
| IDs=29, 63 | TP261, spit 2 - grey, fine silcrete, proximal and distal tool. Proximal snap and distal tool has backing along break. Unfinished geometric microlith. |

## Spatial Distribution and Site Occupation

To examine whether spatial differences in reduction activities occur the location of the cores/core fragments, tools, raw material colour and flake form were compared. Two areas were highlighted at TP151 and TP57. TP57 has the highest intensity of use on the eastern side of Lighthorse Business Hub. In and around TP57 (TP57a, TP57b, TP57c, TP57d) is the highest density of artefacts (n=49, 19.4%).

### *TP57 and Adjacent Pits*

In TP57 and the surrounding pits (TP57a, TP57b, TP57c, TP57d) artefacts made from a distinctive yellow, fine-grained silcrete were observed throughout the spits (n=44). It is likely that some post-depositional disturbance, such as ploughing, resulted in the breakage of artefacts and the number of artefacts in the lower spits. Most of the cores (n=9) in the entire assemblage were found here and these show a number of different flaking strategies (atypical burin-blade, sub-prismatic, alternate-blade cores). The cores are heavily reduced, all less than 25mm in length, and used to produce the elongated flakes required for backed artefact manufacture. There are two broken, backed artefacts in this assemblage which both indicate breakage during manufacture and one unfinished bondi point. The form of the flakes also show blades, high numbers of elongated flakes, ridge-straightening and platform rejuvenation. There are also a higher frequency of flaked and facetted platforms. Together, the core, flake and tool characteristics represent a systematic working area. In addition, two scrapers were found indicating some processing activities.

No heat shatter, angular fragments and only two burnt artefacts were found in this area. These test pits are located at the intersection of two waterways making it ideal for occupation. However, this assemblage is more likely to represent one single, reduction event. The purpose was to produce elongated flakes for replacement parts in weaponry.

### *TP151 and Adjacent Pits*

In TP151 and the surrounding squares 37 artefacts/heat shattered fragments were found. Of these, one core, one complete flake and 11 broken flakes show heat damage. The area also includes angular fragments, heat shattered fragments, two spalls and three heat shattered artefacts. There is no doubt that this area was impacted by post-deposition fire artificially inflating the artefact numbers. Its location, close to farm buildings, make it more likely to have been influenced by recent agricultural activities.

# Archaeological Potential

The results from the Lighthorse Business Hub excavation are compared against similar sites within the Cumberland Plain. The aim of this investigation is to better understand the significance of the archaeological deposit at Lighthorse Business Hub

### *Comparative Analysis*

The area with the highest archaeological potential is the eastern side of Lighthorse Business Hub around TP57. Here cores were worked, tools made, used and discarded. Its location and assemblage composition shows the systematic knapping events and the manufacture of backed artefacts. It is likely that this was a one-off but intensive, gearing up event which has created a working floor. The cores were prepared, worked until spent and used to produce elongated flakes. One core retains a large, original flake platform indicating that large flakes were brought to the site and used as cores. This yellow, fine-silcrete was of high quality suitable for backed artefacts. Few angular fragments, typically found at locations where initial core reduction has occurred (such as quarries) were found at Lighthorse Business Hub. The small size and lack of cortex on the artefacts also supports this result.

Assemblage differences become clear when comparisons are made to other sites in the region (Table 18). The density of artefacts is much lower when compared to RH/SP9 and RH/CC2. However, the frequency of cores to complete flakes at the Lighthorse Business Hub is much higher when compared to the other sites. This result reflects the influence of the assemblage at and around TP57. Lighthorse Business Hub also has a high frequency of tools and most of these are broken backed artefacts, also influenced by TP57, and generally lower amounts of cortex compared to most other sites. The mean axial length of the complete flakes, although small, is larger than other sites.

Table 18. *Comparison of Lighthorse Business Hub to other sites in the Cumberland Plain.*

| | Lighthorse Business Hub | RH/SP17 | Caddies Creek | Riverstone West | Western Orbital (Zone 1) | Cowpasture Rd (AHMS) | RH/SP9 | RH/CC2 | Greenway Dr, Austral | Oran Park and Turner Rd | HPR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Density per m$^2$** | 4 | 54 | 13.5 | 6.5 | 1.0 | 15 | 79 | 84.9 | 14.9 | 7.4 | 4.0 |
| **Material type (% of silcrete)** | 88.1 | 92.8 | 79.6 | 83.2 | 92.0 | 83.0 | 60.3 | 58.3 | 63.2 | 70.2 | 47.5 |
| **% of silcrete artefacts with no cortex** | 73.0 | 75.6 | 52.0 | 52.0 | 53.3 | 90.9 | 89.7 | 93.4 | 82 | * | 84 |
| **Mean Flake Length (mm)** | 15.6 | * | 13.1 | 15.1 | 12.6 | 9.3 | * | * | 9.8 | * | 18.7 |
| **Ratio of complete flakes:cores** | 3.2:1 | 6.6:1 | 6:1 | 12:1 | 35:1 | 20:1 | * | * | 24:1 | 12:1 | 6:1 |
| **% of Tools** | 6.9 | 4.4 | 7.9 | 2.7 | 1.3 | 7.2 | 2.0 | 2.0 | 4.3 | 4.9 | 3.2 |

*unknown

## Summary

It is now possible to return to the questions posed in the research design.

- ***Source Information***. Which raw material resources were used?

The assemblage was dominated by fine-grained silcrete artefacts. Two types of raw material sources were used: paleo-channels (only the fine-grained and medium-grained silcrete), and secondary from a waterway (tuff, silcrete, milky quartz). It is possible that the silcrete sources were subject to considerable damage, through uncontrolled bush fires or other farming activities. Fire, at times, has damaged the naturally occurring silcrete cobbles, prior to flaking, and the artefacts after discard. Although red silcrete is known to occur at sources the frequency of this colour is low. Most of the cobbles at sources are yellow. Colour change is known to occur when silcrete is heated (changing from yellow to red). The high frequency of red artefacts at Lighthorse Business Hub is unusual in this regard. It is likely that controlled heat treatment of cores/large flakes occurred and these artefacts were subsequently transported. This may also account for the presence of flakes with crazed platforms.

The small size of the artefacts, in this case, does reflect the distance from the source but also the reduction strategies employed. The distance from Lighthorse Business Hub to the closest known source of silcrete at Dean Park is ~8km. However, it is predicted that silcrete may occur closer, as it is known to occur along the 60asl contour line (Doelman et al. 2015).

Small numbers of silicified wood, milky quartz and tuff artefacts were found.

- ***Stone reduction technology*.** How was the stone worked and used? Can the function of the site be inferred from the artefact assemblage?

Little or no evidence occurred for initial core acquisition, preparation or reduction. Cores were very small and generally lacked a large amount of cortex. Evidence for 'systematic' reduction of cores occurred on site (i.e. the manufacture of elongated/blade flakes from prepared cores) and these concentrate in TP57. The presence of atypical burin-blade cores represents a systematic core reduction similar to the Redbank A strategy observed by Hiscock (1993) in the Hunter Valley. This strategy was also indicated by a number of other artefact characteristics e.g. facetted platforms, overhang removal and flakes with a blade/elongated form. Most of the cores represent a late stage failure and discard. Given the size of cores it is likely they were flaked using an anvil-rested, bipolar technique. Cores were made on flakes or blocky, heat damaged fragments. The later was probably an opportunistic use of available material. These two forms were the most advantageous to heat treat as they are used to produce the blanks needed to make geometric microliths and bondi points. Heat treatment not only helps when flaking cores but also in backing artefacts.

The tools are dominated by finished bondi points and broken backed fragments. Only one complete geometric microlith and a single elourea were found which indicate random loses. It is likely that backed artefacts were made on-site due to the presence of unfinished backed artefacts at TP57.

The small numbers of tuff artefacts were produced from different reduction activities. These flakes are expanding in form and either retouching flakes used to manufacture a working edge of a scraper or from overhang removal.

- ***Post-depositional influences*.** What post-depositional influences have impacted on the assemblage?

The assemblage was impacted by heat damage, from fires, across all the excavated pits, but especially at and around TP151. This area is located near farm buildings and it is likely that the assemblage was impacted by post-depositional burning. Heat has shattered many of the artefacts after discard and is responsible for increasing the artefact numbers at the site (i.e. the number of broken flakes shatter by heated). It is possible that ploughing also is responsible for a higher number of broken artefacts. However, there is some evidence for heat treatment i.e. seen in the high frequency of red artefacts. It is possible that in TP198 an area of heat treatment occurred. Artefacts in and around TP57 of the same material were found in spits 1-4 and suggests surface disturbance e.g. ploughing. At Lighthorse Business Hub smaller artefacts are found in spits 1 which may again show ploughing. Conjoins do occur within the spits.

Size-sorting has not affected the assemblage.

- ***Site chronology***. When was the site occupied? Was the assemblage the product of repeated occupations or a single event? Does any spatial patterning occur in the assemblage?

The site was occupied between 5000 to contact based on the tool types i.e. the backed artefacts. It is likely that occupation was short-term, single events but repeated over time – seen in the different areas of tool use, artefact colours and raw material types. In the area around TP57 the largest concentration of yellow artefacts occurs as a single discard event. These may possibly conjoin but a systematic study would need to be undertaken. In this area the largest concentration of cores and tools also occurs. This area warrants further investigation.

- ***Comparative Analysis*.** How does this site compare with others in the surrounding region?

The analysis of this assemblage has added to our understanding of the archaeology of the Cumberland Plain. Lighthorse Business Hub has a high frequency of cores and tools when compared to other sites in the region. The low frequency of other processing tools types (e.g. usewear, notched and scraper) suggests that this location, especially at TP57, was primarily used to 'gear-up' i.e. an area used for the manufacture of particular tool types. This result is also reflected in the presence of broken backed artefacts. Tools were made, transported and used when necessary to maintain and replace broken parts of weaponry. It was also important to make time, prior to hunting, to have operational equipment. The area around TP57 represents a single, gearing-up, event where time was taken to intensively reduce cores, produce elongated flakes and make the tools required.

***Conclusion***

The characteristics of the cores, flakes and tools in the assemblage indicates that cores were procured and initial core preparation (i.e. the removal of cortex) occurred elsewhere prior to being transported to the site. The large flakes and angular fragments were brought to the site, possibly heat treated, prepared and used as burin-blade, alternate-blade and prismatic cores at TP57. The main aim was to manufacture elongated/blades. Many of these artefacts were firstly snapped, the platforms removed, and then fashioned into backed, bondi points. This manufacturing process accounts for the high number of proximal flakes in the TP57 assemblage. The presence of backed artefacts suggests that the

site was occupied within the last 5000 years. On the whole the assemblage represents the background accumulation of artefacts over time rather than concentrated occupation events. This is best represented by ID=41 which is a bondi point, possibly heat treated, finely backed and perfectly finished which was presumably lost at TP270.

The sizes of the artefacts are very small and have relatively low amounts of cortex. It is likely that once cores were prepared they were worked till exhausted or potentially also prepared and removed from the site for later use. The low frequency of other tools types (e.g. usewear, notched and scarper) suggests that this location was a primarily used to 'gear-up' i.e. an area used for the manufacture of particular tool types i.e. backed artefacts. Some spatial variation in occupation behaviours occur across the excavated pits. Of these, the area around TP57 is the most interesting location in terms of the assemblage composition, cores and tool types.

This report provides some understanding of site chronology, raw material selection, core preparation and reduction strategies and tool manufacture that contributes to understanding the archaeology of a region.

# Appendix A: Recorded artefact attributes

| Term | Attributes |
|---|---|
| **Technological class** | Artefact type (e.g. core, complete flake, longitudinal split, flake fragmentation, retouch, angular fragments/lithic fragments, other (axe, grindstone etc) |
| **Material** | Raw Material type (silcrete tuff, chert, quartz, quartzite etc) |
| **Colour** | Raw Material colour |
| **Cortex** | Percentage of cortex (if on a flake – amount on the dorsal surface of a flake) |
| **Cortex Type** | Type of cortex (rough/terrestrial, water-rolled/tabular) |
| **Platform Type** | Unifacial, crushing/missing, Flaked (>2 flake scars), Facetted (3 or more small, systematic flake removals), Cortical (with cortex), n/a |
| **Initiation Type** | Bending, heritzan, bipolar, wedging, unclear |
| **Termination Type** | Feather, hinge, step, overshot, step |
| **Tool Type** | Select the type of tool – usewear, concave scraper, convex scraper, straight scraper, elouera (backed artefact), notched scraper, endscraper, saw, stepped scraper, drill, backed (generic), Bondi point, thumbnail scraper, denticulate, burin, geometric microlith, nosed scraper |
| **Maximum Dimension** | All artefacts (in size groupings) |
| **Length Complete Flake** | Axial length of the complete flake/complete tool (in mm to 1 dp) |
| **Weight** | Weight of the artefact in grams to 1dp |
| **Complete and Broken Flakes** | **Attributes** |
| Form | Form of the flake – Indeterminate, Expanding, Block (angular Fragment), Blade, N/A, Platform Rejuvenation Flake (tablet), Bipolar, Errailure, Ridge straightening flake, elongated flake. These attributes reflect core reduction strategies. |
| **Complete Flakes** | Showing intensity of retouch or systematic core preparation |
| Flake Scars | The number of flake scars on the dorsal surface of the flake |
| Overhang removal | Exterior platform preparation indicates systematic core reduction (complete flakes and proximal flakes) |
| Scar Direction | The direction of the dorsal flake scars – 1 (initiated from the platform only), 90 (initiated at right angles to the platform), 180 (initiated at the distal end of the flake), radial (initiated from 90 and 270 degrees from the platform) |
| **Complete Tools** | (examines measures of curation) |
| Retouch Edge | The number of retouched quadrants (on complete tools only) |
| Retouch Type 1, 2, 3, 4 | Select the retouch type for quadrants 1, 2, 3 and 4 |
| **Cores** | Identifying technological strategies and intensity of reduction |
| Core Type | Unidirectional, bidirectional, bifacial, multiplatform, prismatic, burin-blade core, test, bipolar |
| Core Body | Core body form – block, flake, nodule, non-diagnostic |
| Core Section | Core cross section – square, rectangular, lenticular, conical, non-diagnostic |

| Term | Attributes |
|---|---|
| Scar Form | Primary scar form? – elongated, expanding, blade, mixed |
| Core Platform No. | Number of platforms on the core |
| Step Termination | Number of step terminations on the core |
| Hinge Termination | Number of hinge terminations on the core |
| Core scar Length | Length of the longest core scar |
| Core scar Width | Width of the longest core scar at maximum |
| Number of Core Scars | Number of core scars |
| **Metrical Attributes** | (in mm to 1 dp) |
| Length Complete Flake | Axial length of the complete flake/complete tool |
| Width | Maximum width of the complete flake/tool/core |
| Thickness | Maximum thickness of the complete flake/tool/core at mid-point |
| Core Length | Maximum length from the working platform |
| Platform width | Platform width – proximal and complete flakes and tools |
| Platform Thickness | Platform thickness – proximal and complete flakes and tools (and complete |
| Weight | Weight of the artefact in grams to 1dp |

# Appendix B: General artefact abbreviations

| Artefact class abbreviations | |
|---|---|
| **AXEFRAG** | axe fragment |
| **ANGULARFRAG/TL** | block/angular fragment/TL |
| **MEDFLAKE** | broken flake |
| **MEDTOOL** | broken tool |
| **COMPFLAKE** | complete flake |
| **COMPSPLIT/TL** | complete split/tool |
| **COMPTOOL** | compete tool |
| **COREFRAG/TL** | core fragment/tool |
| **DISTFLAKE** | distal fragment |
| **DISTTOOL** | distal tool |
| **HAMSTONE** | hammer stone |
| **CF** | heat fracture cobble |
| **PROXFLAKE** | proximal flake |
| **PROXTOOL** | proximal tool |
| **FGS** | cryptocrystalline quartz |
| **SWOOD** | silicified wood |
| **VOL** | volcanic |
| **ELONG** | elongated |
| **EXPAND** | expanding |
| **INDETER** | indeterminate |
| **PLATREJUV** | platform rejuvenation |
| **RIDGESTRAT** | ridge straightening |
| **SPLITPEB** | split pebble |

# Appendix C: Backed artefact abbreviations

| | |
|---|---|
| **GEOM** | geometric microlith |
| **BONDI** | Bondi point |

# Appendix D: Core abbreviations

| Core abbreviations | |
|---|---|
| **BIDIR** | bi-directional |
| **BURINBL** | burin-blade |
| **MULTI** | multi-directional |
| **SUBPRIS** | sub-prismatic |
| **UNIDIR** | uni-directional |

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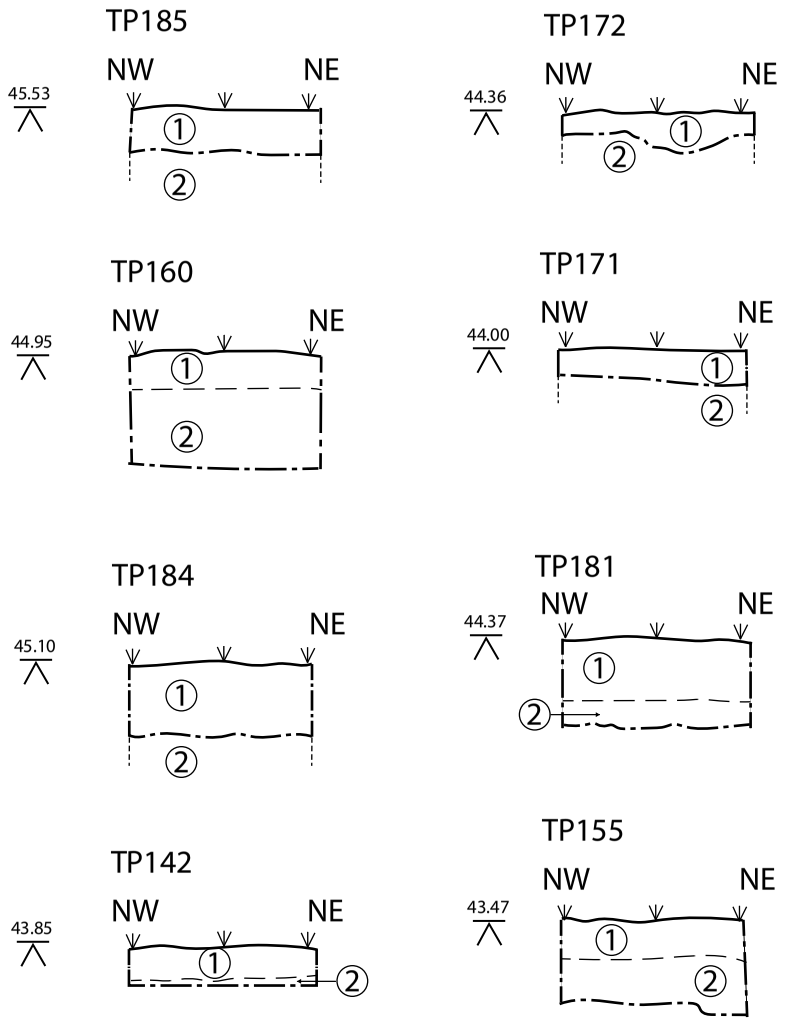
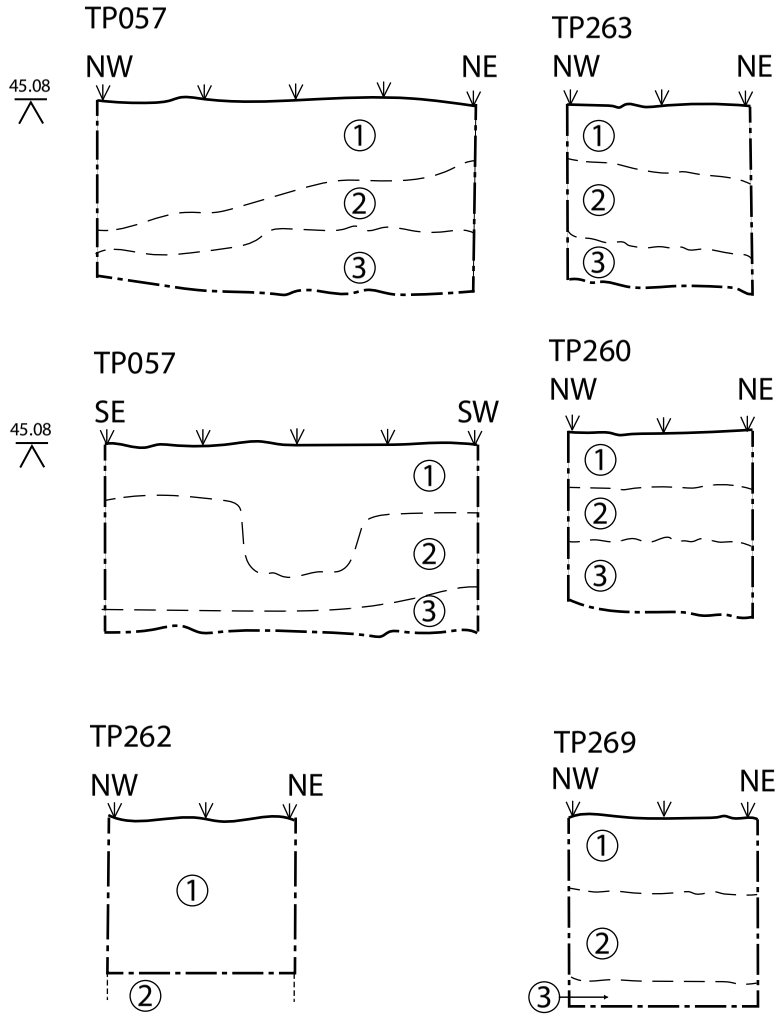
# Appendix 4-4. Section Drawings



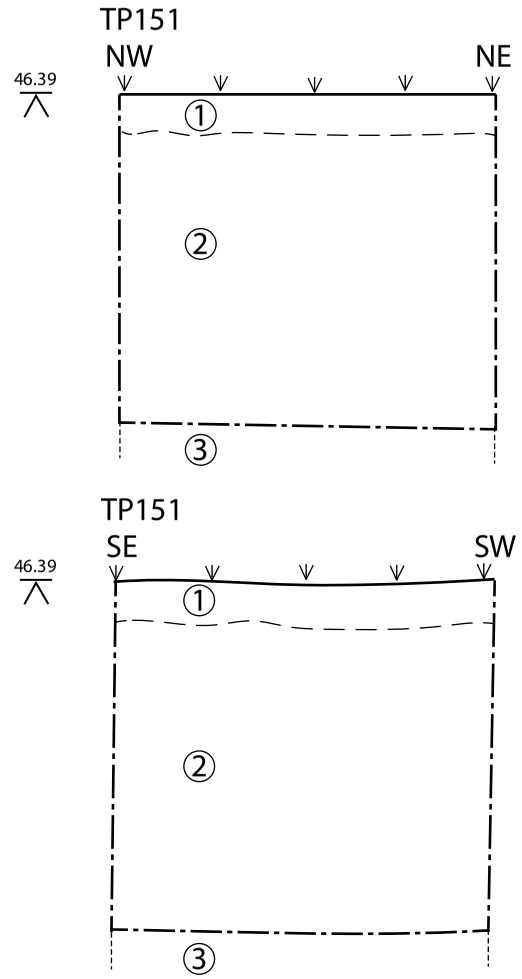

## SOIL DESCRIPTIONS

1. Mid brown silty clay loam.
2. Pale brown to orange brown medium clay



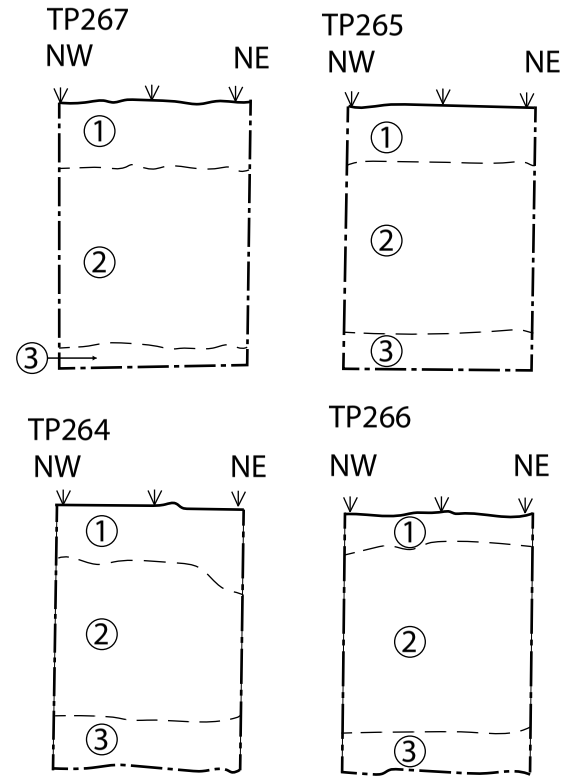

## SOIL DESCRIPTIONS

1. Mid to pale brown silty loam.
2. Pale brown-grey silty clay loam. Common ironstone inclusions.
3. Yellow brown medium clay. Few ironstone inclusions.



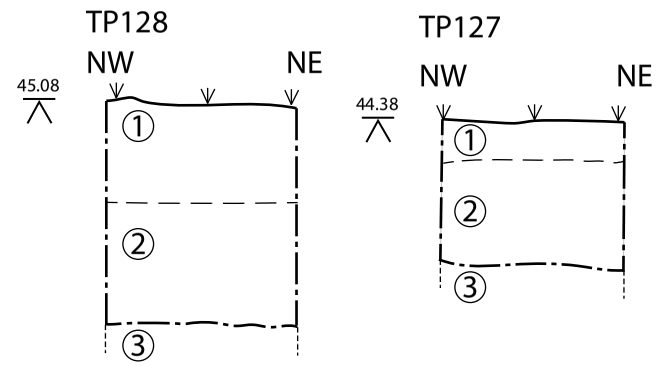

## SOIL DESCRIPTIONS

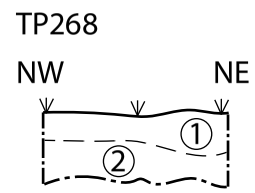
1. Mid brown silty loam.
2. Yellow-brown loam. Few ironstone inclusions
3. Yellow brown medium clay.




## SOIL DESCRIPTIONS

1. Mid brown silty loam.
2. Orange-brown fine sandy clay loam. Frequent ironstone and clay inclusions.
3. Mottled orange-grey fine sandy clay




## SOIL DESCRIPTIONS

1. Dark brown silty clay loam.
2. Dark grey silty clay loam.
3. Yellow-brown medium clay.

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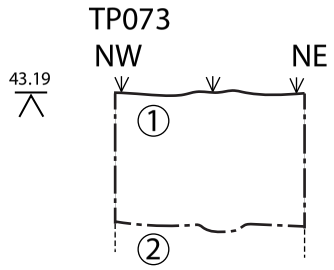
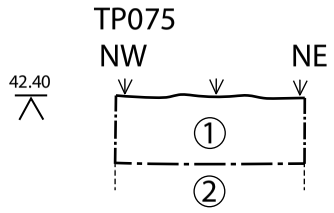
Lighthorse Business Hub
Aboriginal Test Excavation
LHBH-19

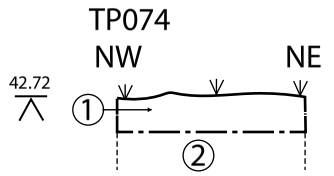
Date: 19.08.2019
Drawn: Extent Heritage Pty Ltd

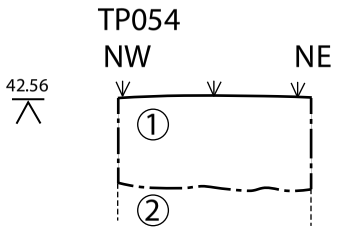
Legend
- Clay
- Iron stone
X - Burnt Clay
- Charcoal
- Tree Root

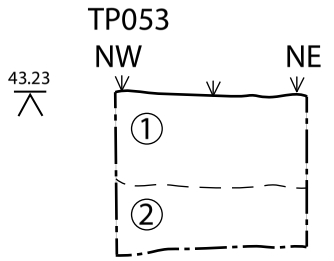
0 100
Centimetres

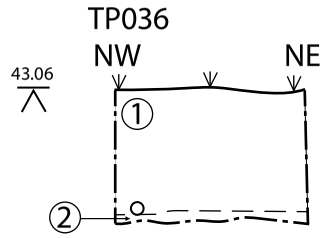


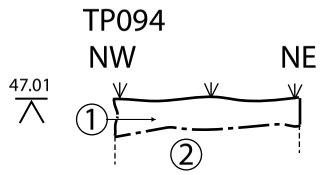



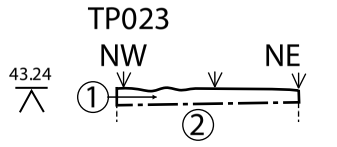



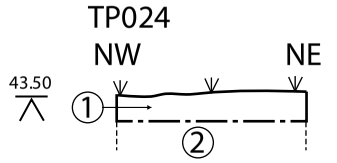



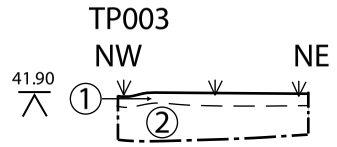



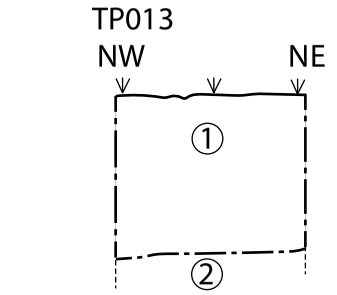



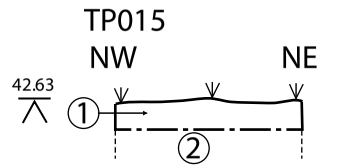



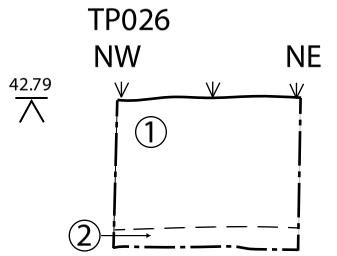



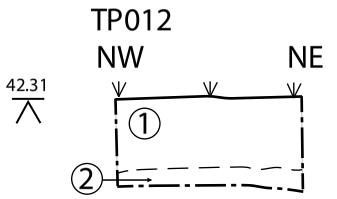



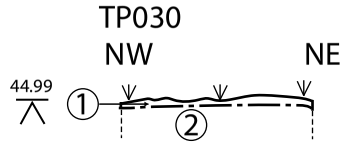



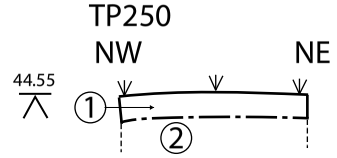



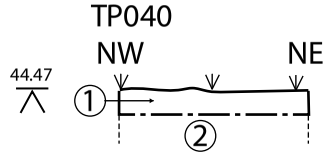



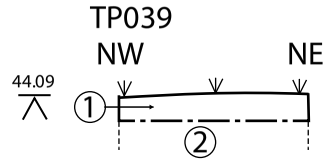



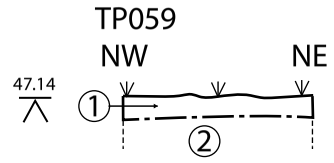



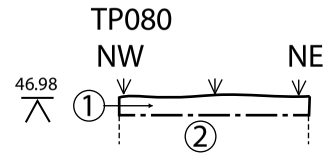



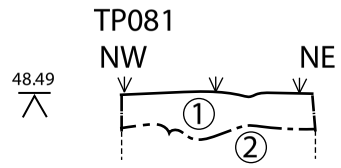



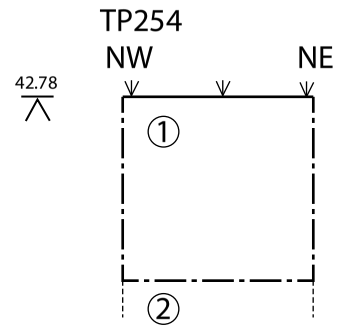



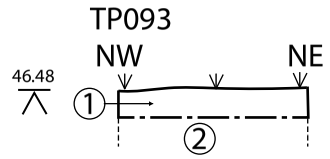



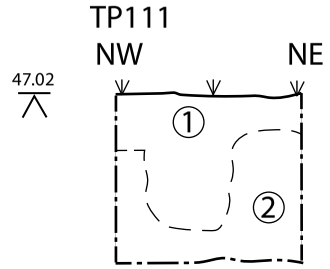



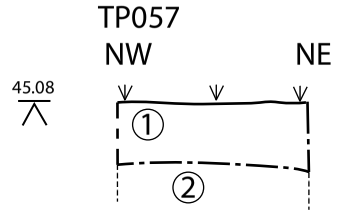



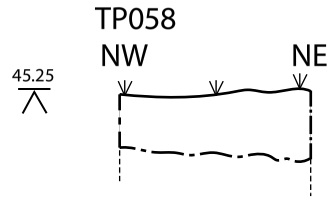



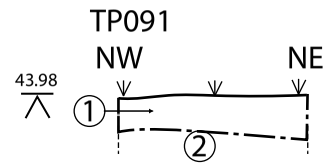



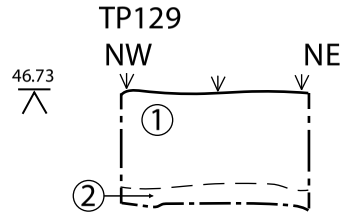



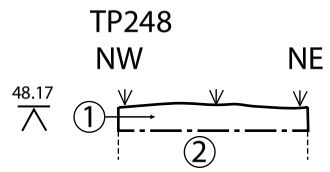



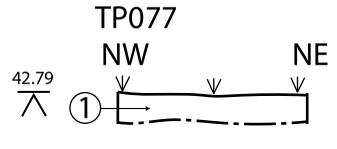



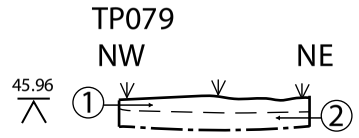



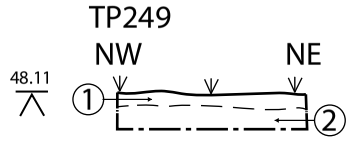



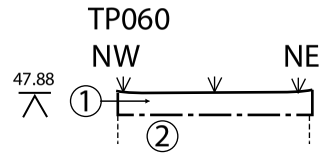



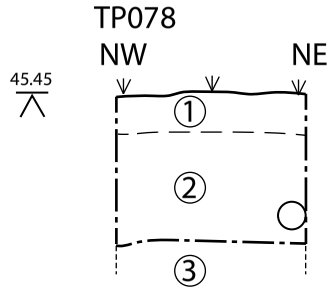



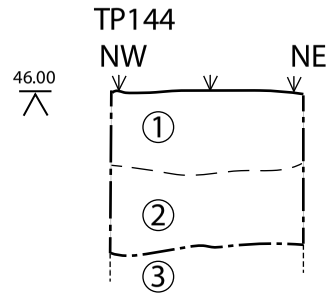



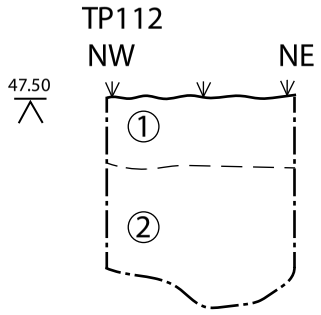



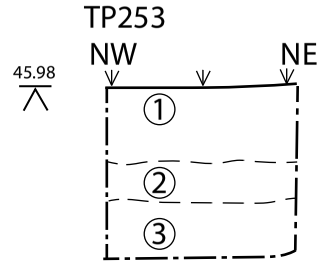



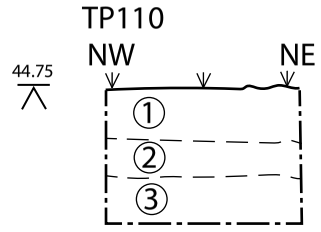

## SOIL DESCRIPTIONS

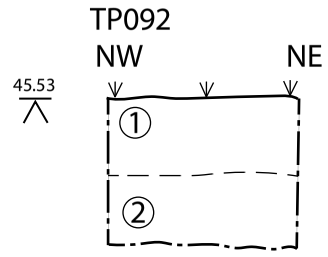
1. Mid brown silty clay loam.
2. Pale brown to orange medium clay.

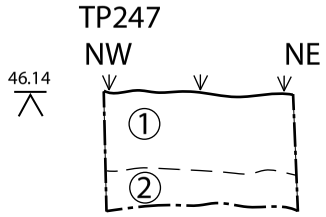


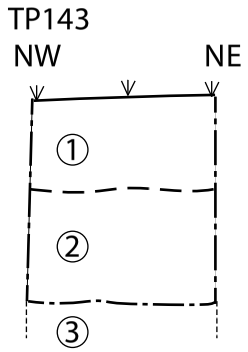




## SOIL DESCRIPTIONS

1. Mid brown silty clay loam.
2. Yellow brown loamy clay




## SOIL DESCRIPTIONS

1. Orange-brown loamy clay.
2. Dark brown mid clay.
3. Yellow-brown heavy clay

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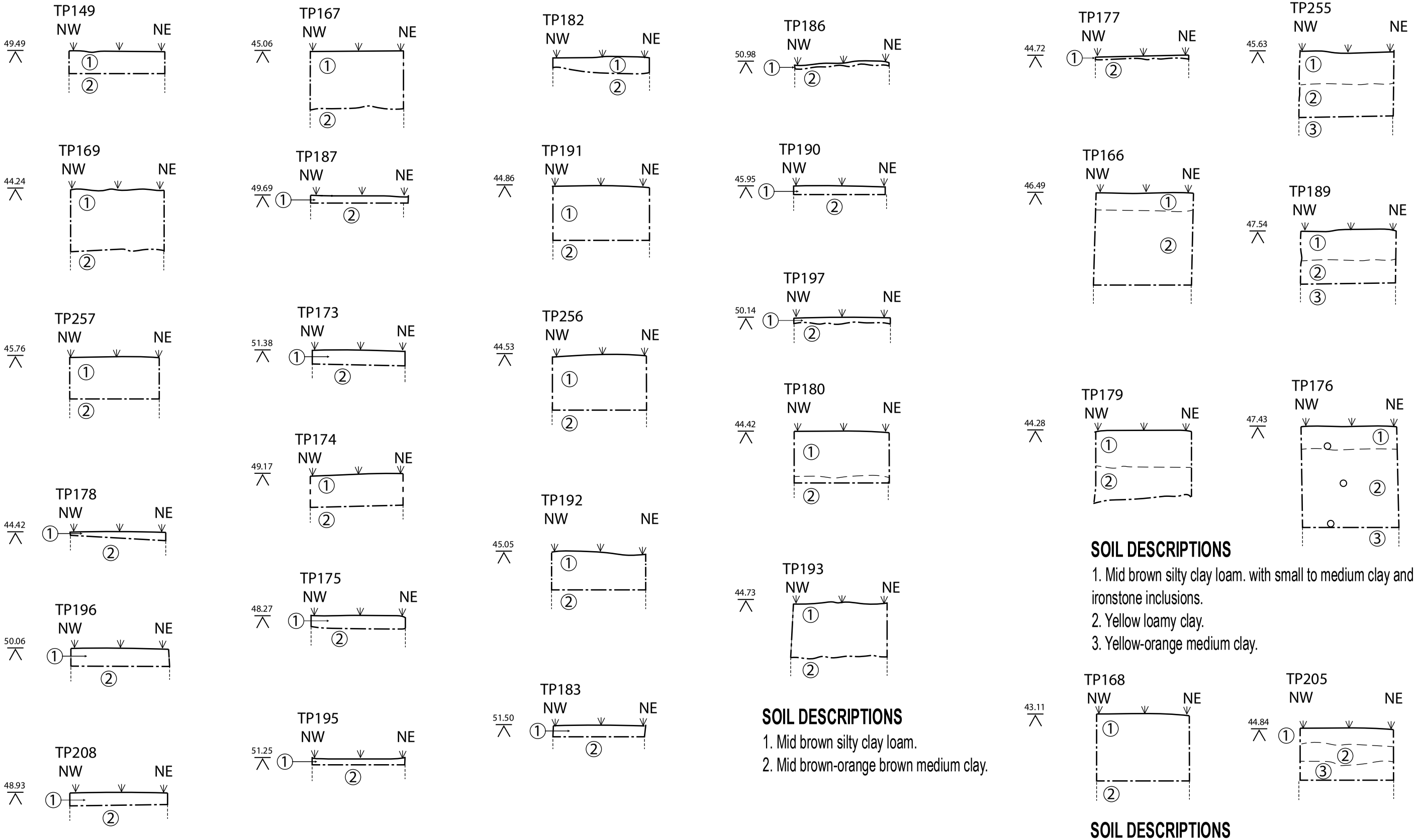
Incorporating AHMS and Futurepast

Lighthorse Business Hub
Aboriginal Test Excavation
LHBH-19

Date: 19.08.2019
Drawn: Extent Heritage Pty Ltd

Legend
- Clay
- Iron stone
X - Burnt Clay
- Charcoal
- Tree Root

0 100
Centimetres




## SOIL DESCRIPTIONS

1. Mid brown silty clay loam.
2. Mid brown-orange brown medium clay.

## SOIL DESCRIPTIONS

1. Mid brown silty clay loam. with small to medium clay and ironstone inclusions.
2. Yellow loamy clay.
3. Yellow-orange medium clay.

## SOIL DESCRIPTIONS

1. Mid brown silty clay loam.
2. Mid brown silty clay with abundant fine gravel.
3. Mid brown-orange brown medium clay.

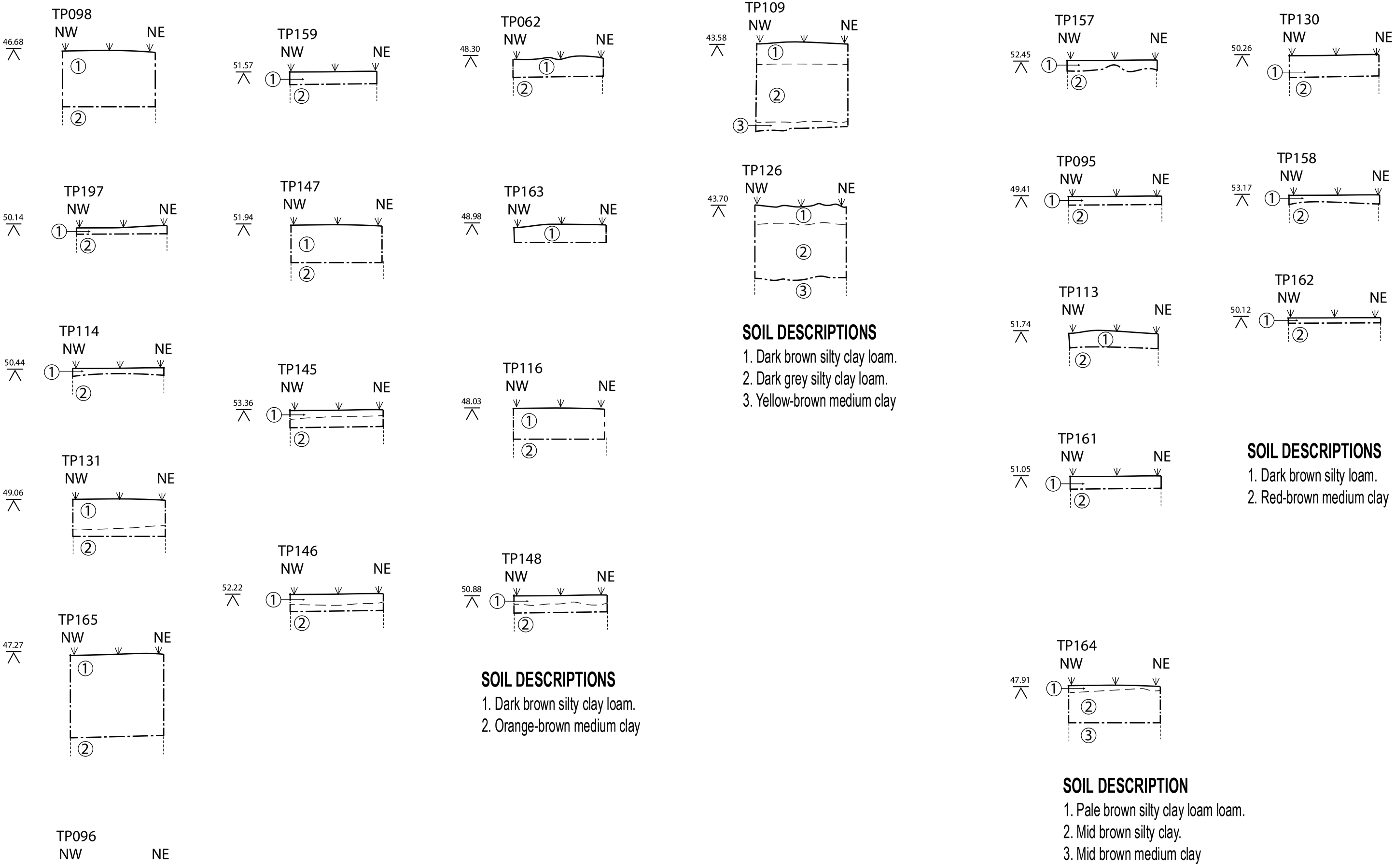
EXTENT
HERITAGE ADVISORS
TO AUSTRALIA AND
THE ASIA PACIFIC
Incorporating AHMS and Futurepast

Lighthorse Business Hub
Aboriginal Test Excavation
LHBH-19

Date: 01.05.2019
Drawn: Extent Heritage Pty Ltd

Legend
- Clay
- Iron stone
X - Burnt Clay
- Charcoal
- Tree Root

0 100
Centimetres




**SOIL DESCRIPTIONS**

1. Dark brown silty clay loam.
2. Dark grey silty clay loam.
3. Yellow-brown medium clay

**SOIL DESCRIPTIONS**

1. Dark brown silty loam.
2. Red-brown medium clay

**SOIL DESCRIPTIONS**

1. Dark brown silty clay loam.
2. Orange-brown medium clay

**SOIL DESCRIPTION**

1. Pale brown silty clay loam loam.
2. Mid brown silty clay.
3. Mid brown medium clay

EXTENT
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Incorporating AHMS and Futurepast

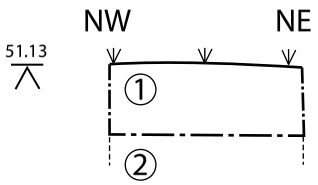
Lighthorse Business Hub
Aboriginal Test Excavation
LHBH-19

Date: 14.08.2019
Drawn: Extent Heritage Pty Ltd

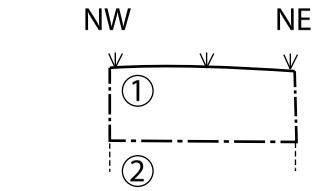
Legend
- Clay
- Iron stone
X - Burnt Clay
- Charcoal
- Tree Root

0 100
Centimetres

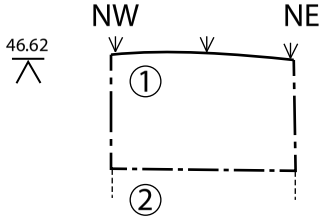
TP217



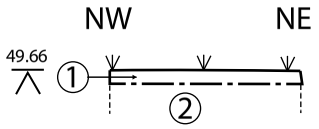

TP239



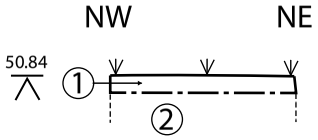

TP234



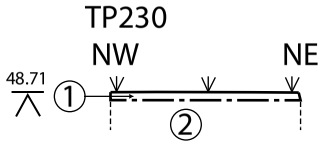

TP229



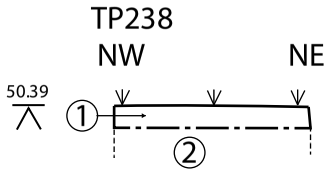

TP228



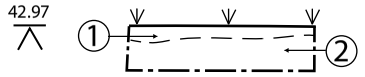

TP230



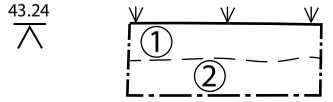

TP238



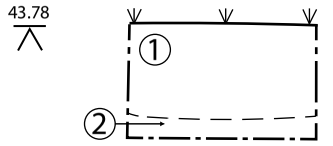

TP089



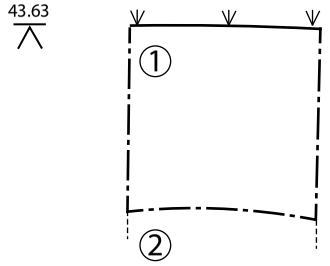

TP125



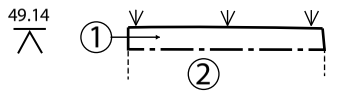

TP140



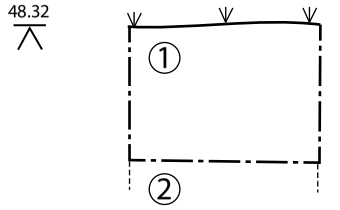

TP153



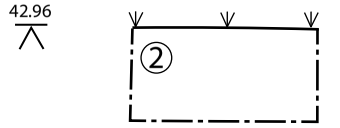

TP240



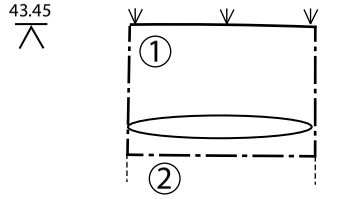

TP231



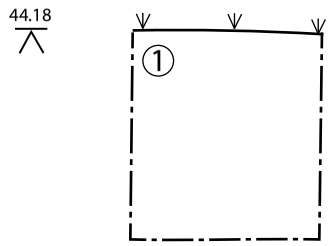

TP107



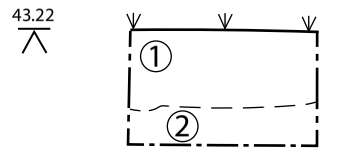

TP090




TP154



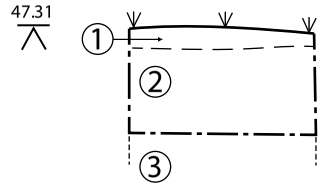

TP108



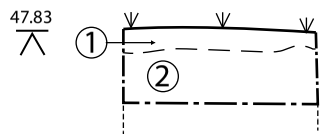

## SOIL DESCRIPTIONS

1. Mid brown silty clay loam.
2. Pale brown to orange medium clay.

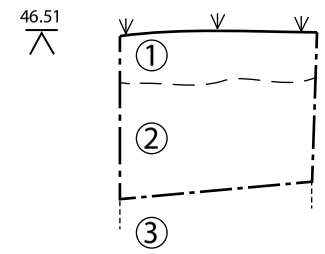
TP233



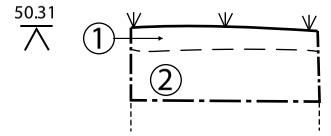

TP232



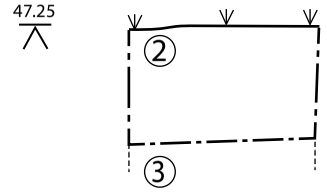

TP223




TP218



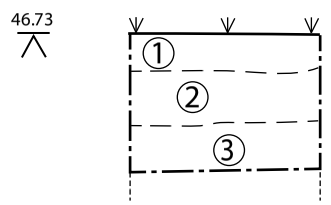

TP242




## SOIL DESCRIPTIONS

1. Mid brown silty clay loam.
2. Mid brown silty clay loam with common ironstone inclusions.
3. Pale brown to orange medium clay.

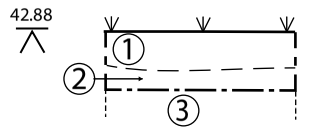
TP243




## SOIL DESCRIPTIONS

1. Yellow brown silty clay with very few inclusions.
2. Mid brown-grey mottled silty clay.
3. Dark grey heavy clay.

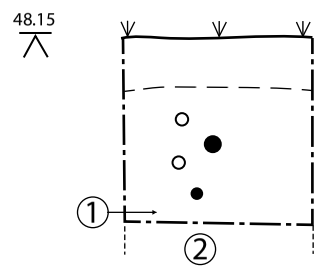
TP088




## SOIL DESCRIPTIONS

1. Mid brown silty clay loam.
2. Charcoal layer (burnt root).
3. Pale brown to orange medium clay.

TP241




## SOIL DESCRIPTIONS

1. Mid brown silty loam with common coarse gravel.
2. Orange brown loam with few charcal and ironstone inclusions.
3. Orange brown loamy clay.

EXTENT
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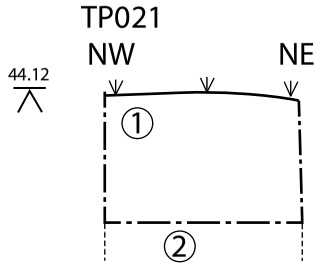
Lighthorse Business Hub
Aboriginal Test Excavation
LHBH-19

Date: 13.08.2019
Drawn: Extent Heritage Pty Ltd

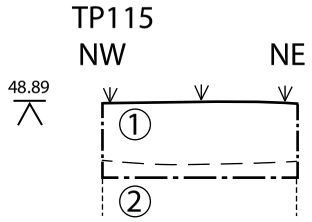
Legend
- Clay
- Iron stone
X - Burnt Clay
- Charcoal
- Tree Root

0 100
Centimetres

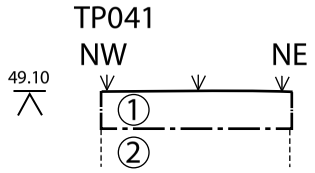
TP021



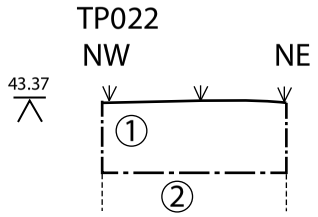

TP115



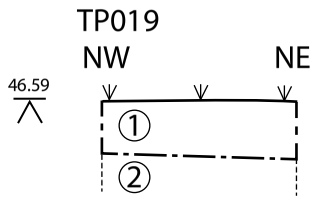

TP041



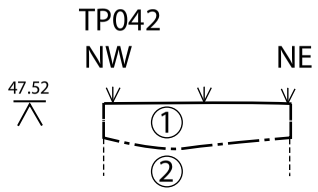

TP022



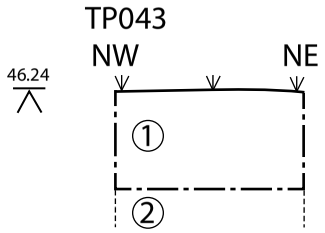

TP019



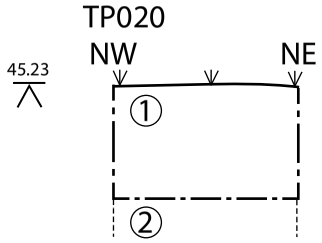

TP042



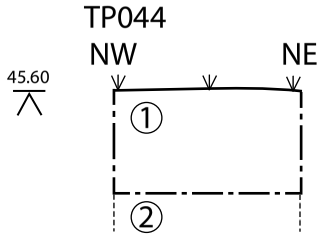

TP043




TP020




TP044

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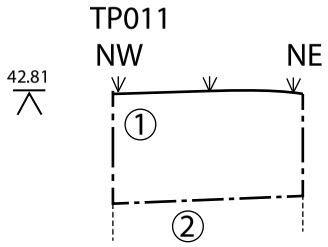
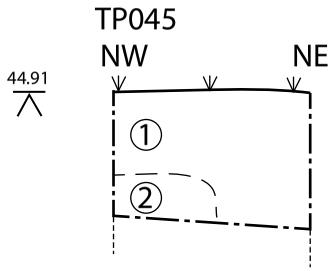



TP045

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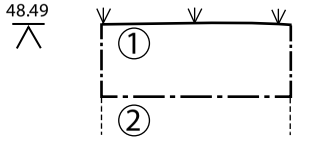
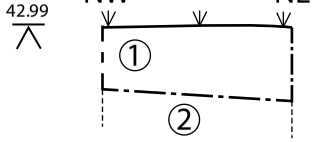
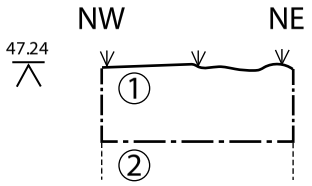


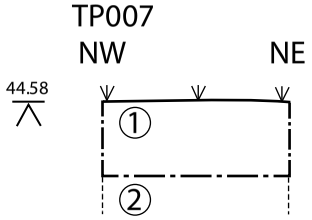

TP009



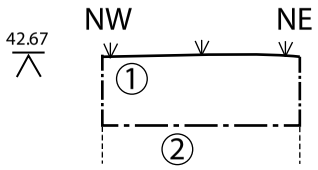

TP005



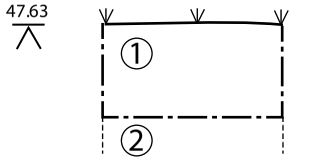

TP007



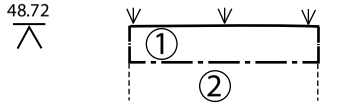

TP002



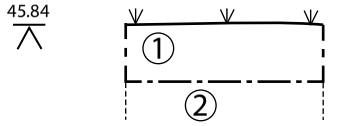

TP018



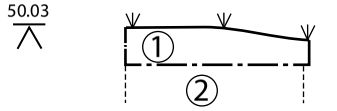

TP017



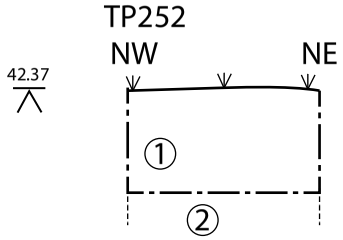

TP006




TP016



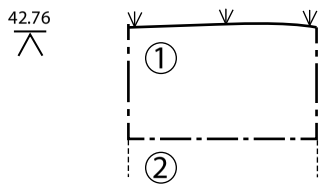

TP252




## SOIL DESCRIPTIONS

1. Mid brown silty clay loam.
2. Pale brown-orange medium clay with very few charcoal inclusions

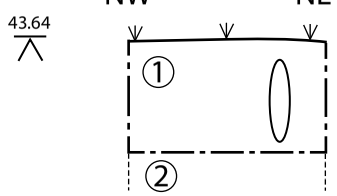
TP025




## SOIL DESCRIPTIONS

1. Dark brown silty clay.
2. Heavy dark brown clay

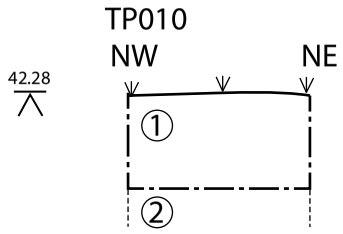
TP008




## SOIL DESCRIPTIONS

1. Pale yellow silty clay.
2. Yellow and white medium clay

TP010




## SOIL DESCRIPTIONS

1. Light grey silty clay loam with few fine to medium gravel inclusions.
2. Mid brown silty clay loam wih few fine to medium gravels.
3. Pale brown to orange medium clay.

EXTENT
HERITAGE ADVISORS
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THE ASIA PACIFIC
Incorporating AHMS and Futurepast

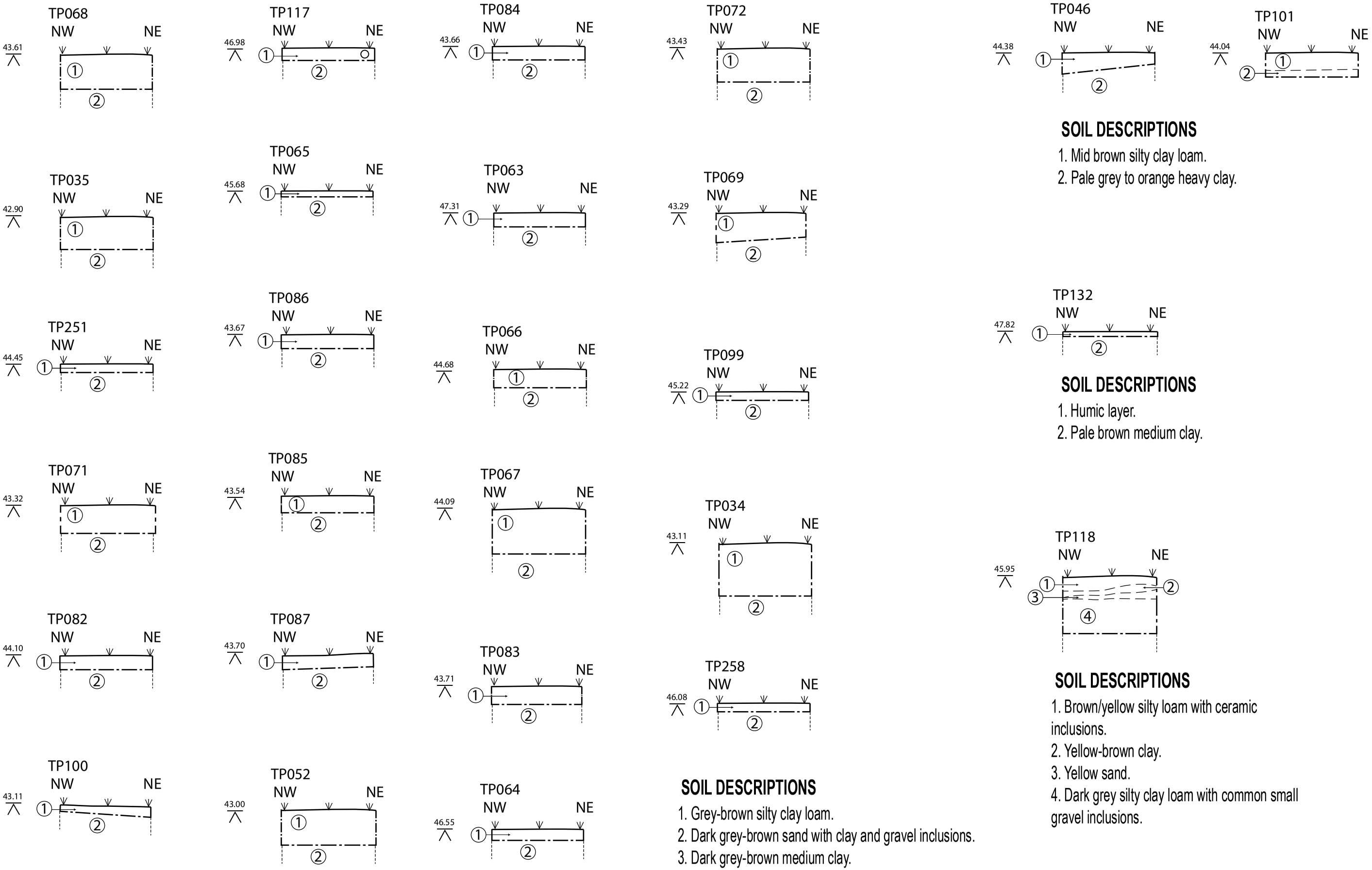
Lighthorse Business Hub
Aboriginal Test Excavation
LHBH-19

Date: 14.08.2019
Drawn: Extent Heritage Pty Ltd

Legend

- Clay
- Iron stone
X - Burnt Clay
- Charcoal
- Tree Root

0 100
Centimetres




## SOIL DESCRIPTIONS

1. Mid brown silty clay loam.
2. Pale grey to orange heavy clay.

## SOIL DESCRIPTIONS

1. Humic layer.
2. Pale brown medium clay.

## SOIL DESCRIPTIONS

1. Brown/yellow silty loam with ceramic inclusions.
2. Yellow-brown clay.
3. Yellow sand.
4. Dark grey silty clay loam with common small gravel inclusions.

## SOIL DESCRIPTIONS

1. Grey-brown silty clay loam.
2. Dark grey-brown sand with clay and gravel inclusions.
3. Dark grey-brown medium clay.

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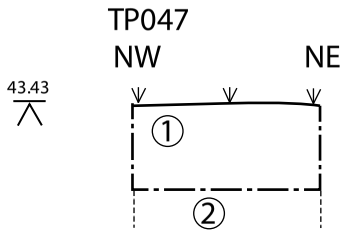
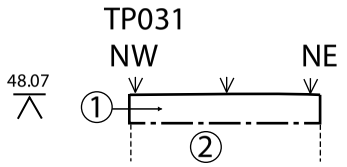
Lighthorse Business Hub
Aboriginal Test Excavation
LHBH-19

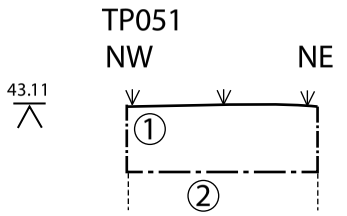
Date: 14.08.2019
Drawn: Extent Heritage Pty Ltd

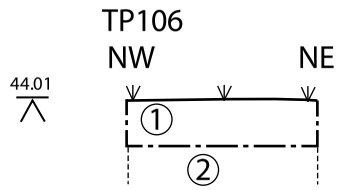
Legend
- Clay
- Charcoal
- Iron stone
- Tree Root
X - Burnt Clay

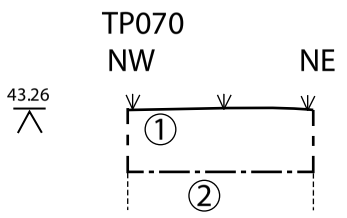
0 100
Centimetres

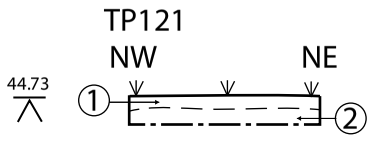


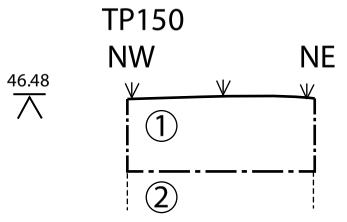



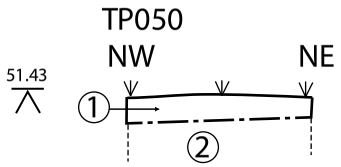



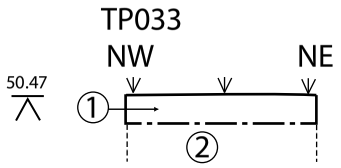



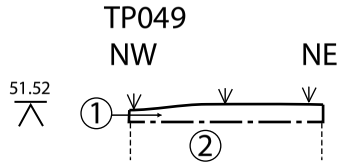



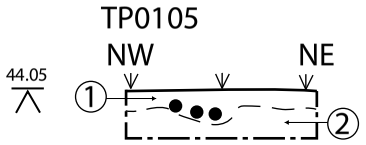



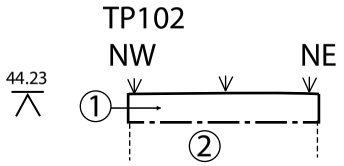



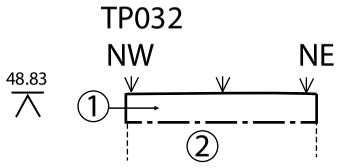



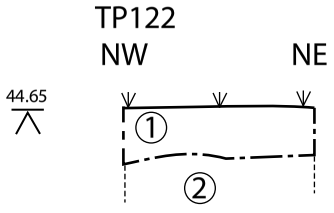



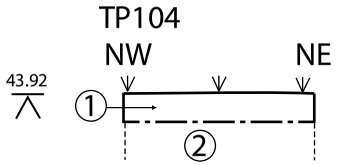



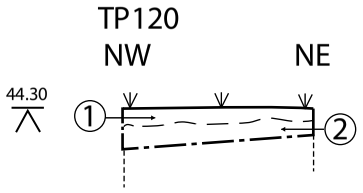



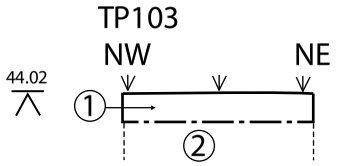



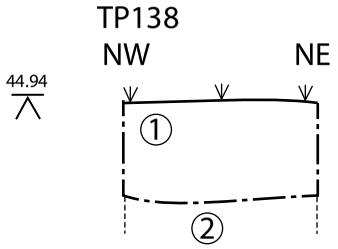



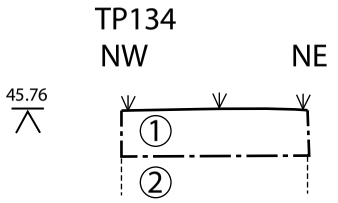



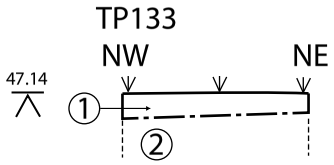



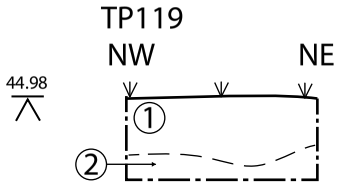



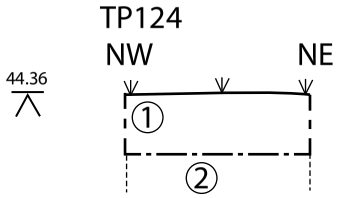



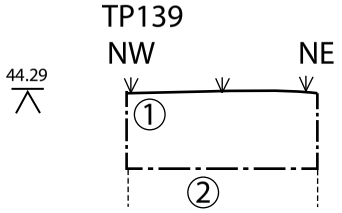



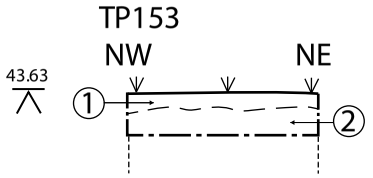



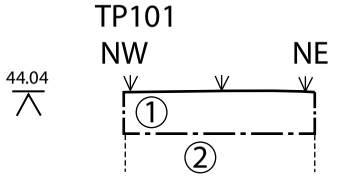



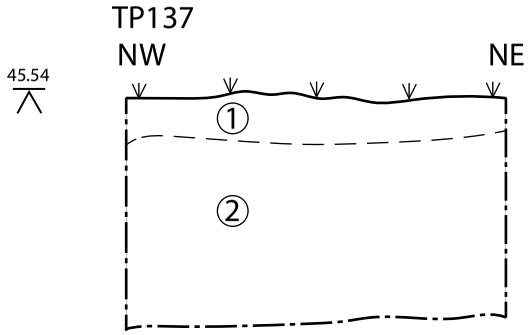



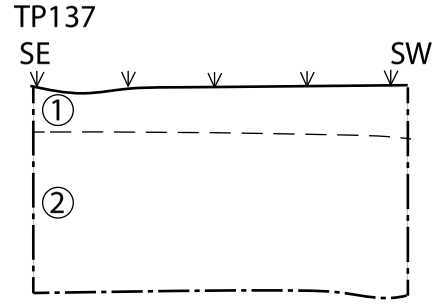



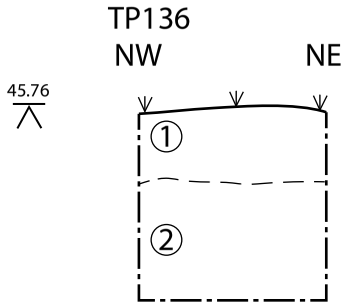



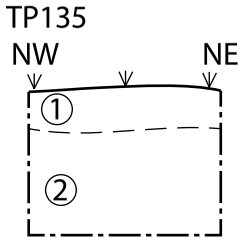

## SOIL DESCRIPTIONS

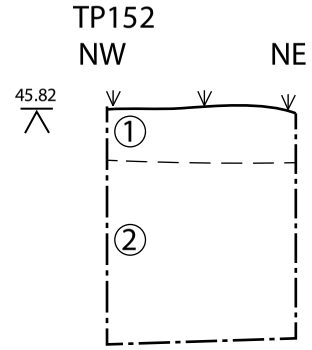
1. Mid brown silty clay loam.
2. Pale brown/orange brown medium clay.



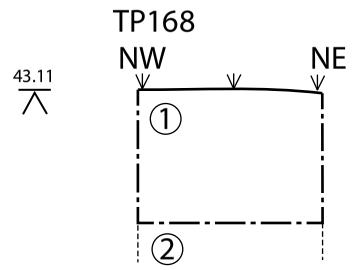



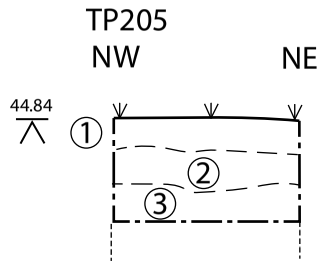




## SOIL DESCRIPTIONS

1. Mid brown silty clay loam.
2. Mid brown to orange-yellow loam with ironstone inclusions.




## SOIL DESCRIPTIONS

1. Mid brown silty clay loam.
2. Mid brown silty clay with abundant fine gravel.
3. Mid brown-orange brown medium clay.

EXTENT
HERITAGE ADVISORS
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THE ASIA PACIFIC
Incorporating AHMS and Futurepast

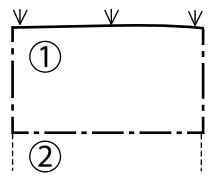
Lighthorse Business Hub
Aboriginal Test Excavation
LHBH-19

Date: 13.08.2019
Drawn: Extent Heritage Pty Ltd

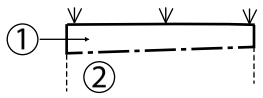
Legend
- Clay
- Iron stone
X - Burnt Clay
- Charcoal
- Tree Root

0 100
Centimetres

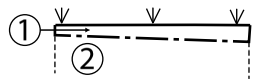
TP204
NW NE
44.87



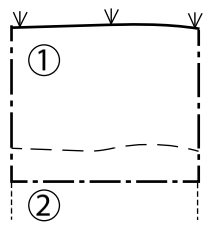

TP246
NW NE
46.07



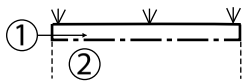

TP236
NW NE
45.85



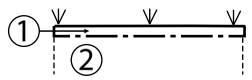

TP200
NW NE
46.77



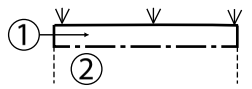

TP226
NW NE
45.32



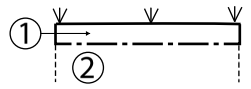

TP203
NW NE
45.20



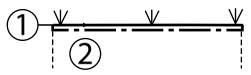

TP216
NW NE
50.89



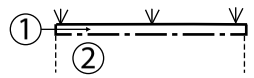

TP213
NW NE
45.67



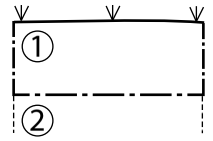

TP225
NW NE
45.74



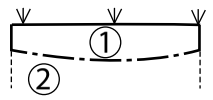

TP244
NW NE
46.40



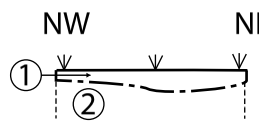

TP210
NW NE
47.51



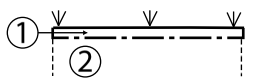

TP202
NW NE
45.38



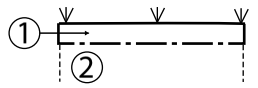

TP245
NW NE
46.45



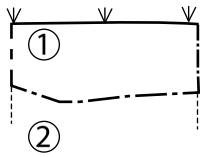

TP227
NW NE
45.30



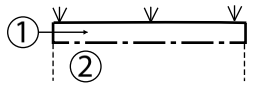

TP215
NW NE
45.03



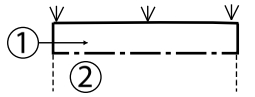

TP209
NW NE
48.37



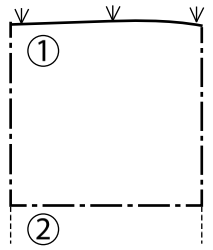

TP206
NW NE
50.48



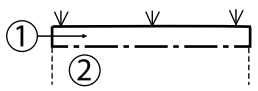

TP207
NW NE
49.57



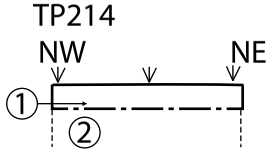

TP222
NW NE
47.93



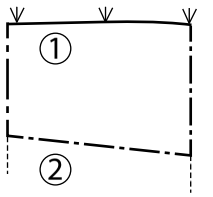

TP237
NW NE
45.61



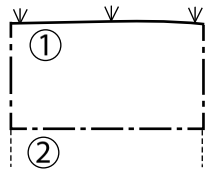

TP214
NW NE
45.32



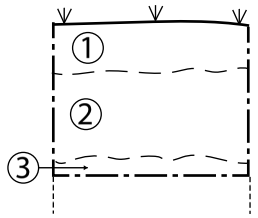

TP212
NW NE
45.52



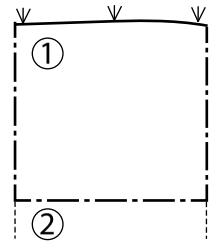

TP199
NW NE
47.96




TP219
NW NE
49.55




TP220
NW NE
48.93



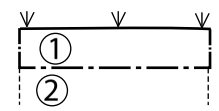

TP224
NW NE
45.70




## SOIL DESCRIPTIONS

1. Mid brown silty clay loam.
2. Pale brown/orange brown medium clay.

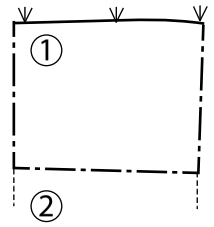
TP201
NW NE
48.15



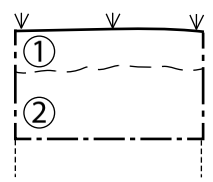

## SOIL DESCRIPTIONS

1. Mid brown silt with many glass, brick and ceramic inclusions.
2. Yellow-orange heavy clay.

TP211
NW NE
46.59



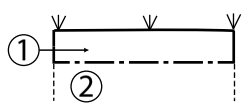

TP221
NW NE
48.25




## SOIL DESCRIPTIONS

1. Mid brown silty clay loam.
2. Orange brown silty clay loam with common ironstone inclusions.
3. Pale brown/orange brown medium clay.

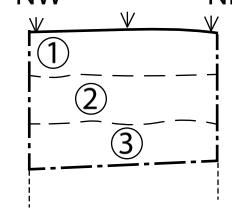
TP235
NW NE
46.26




## SOIL DESCRIPTIONS

1. Dark brown silty loam with very few inclusions.
2. Pale brown to orange medium clay.

TP198
NW NE
49.25




## SOIL DESCRIPTIONS

1.Dark brown silty loam.
2. Mid brown grey silty clay loam.
3. Yellow brown silty clay loam.

EXTENT
HERITAGE ADVISORS
TO AUSTRALIA AND
THE ASIA PACIFIC
Incorporating AHMS and Futurepast

Lighthorse Business Hub
Aboriginal Test Excavation
LHBH-19

Date: 13.08.2019
Drawn: Extent Heritage Pty Ltd

Legend
- Clay
- Iron stone
X - Burnt Clay
- Charcoal
- Tree Root

0 100
Centimetres

# Appendix 4-5. Photographic Catalogue

# Lighthorse Business Hub – Aboriginal Test Excavation
# Photography Digital Image Catalogue Sheet

| PROJECT NAME | LHBH19 – Aboriginal Test Excavation |
|---|---|
| **CLIENT** | Western Sydney Parklands Trust |
| **CAMERA SPECIFICATIONS** | **Camera ID: OLYTG**<br>Type: Olympus TG-870 Stylus, 3.74-18.7mm Lens |
| | **Camera ID: CAN5D**<br>Type: Canon EOS 5D Mark II, EF Lens, 36x24mm Sensor |
| | **Camera ID: SAMS8**<br>Type: Samsung Galaxy S8, 12 MP AF, f/1.7, 1/2.55", 1.4µm |
| **PHOTOGRAPHER** | Laressa Barry (LB)<br>Megan Sheppard Brennand (MSB)<br>Coral Hardwick (CH)<br>Matthew Byron (MB) |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1 | SAMS8 | 09/05/19 | TP145 Pre-Excavation Tag | N | LB |
| 2 | SAMS8 | 09/05/19 | TP145 Pre-Excavation Location Shot | N | LB |
| 3 | SAMS8 | 09/05/19 | TP146 Pre-Excavation Tag | N | LB |
| 4 | SAMS8 | 09/05/19 | TP146 Pre-Excavation Location Shot | N | LB |
| 5 | OLYTG | 13/05/19 | TP98 Pre-Excavation Tag | N | MSB |
| 6 | OLYTG | 13/05/19 | TP98 Pre-Excavation Location Shot | N | MSB |
| 7 | OLYTG | 13/05/19 | TP116 Pre-Excavation Tag | N | MSB |
| 8 | OLYTG | 13/05/19 | TP116 Pre-Excavation Location Shot | N | MSB |
| 9 | OLYTG | 13/05/19 | TP131 Pre-Excavation Tag | N | MSB |
| 10 | OLYTG | 13/05/19 | TP131 Pre-Excavation Location Shot | N | MSB |
| 11 | OLYTG | 13/05/19 | TP149 Pre-Excavation Tag | N | MSB |
| 12 | OLYTG | 13/05/19 | TP149 Pre-Excavation Location Shot | N | MSB |
| 13 | OLYTG | 13/05/19 | TP147 Pre-Excavation Tag | N | MSB |
| 14 | OLYTG | 13/05/19 | TP1457 Pre-Excavation Location Shot | N | MSB |
| 15 | OLYTG | 13/05/19 | TP146 Pre-Excavation Tag (repeat) | N | MSB |
| 16 | OLYTG | 13/05/19 | TP146 Pre-Excavation Location Shot (repeat) | N | MSB |
| 17 | OLYTG | 13/05/19 | TP114 Pre-Excavation Tag | N | MSB |
| 18 | OLYTG | 13/05/19 | TP114 Pre-Excavation Location Shot | N | MSB |
| 19 | CAN5D | 13/05/19 | TP98 Post-Excavation Tag | N | CH |
| 20 | CAN5D | 13/05/19 | TP98 Post-Excavation Location Shot | N | CH |
| 21 | CAN5D | 13/05/19 | TP98 Post-Excavation Overview | N | CH |
| 22 | CAN5D | 13/05/19 | TP98 Post-Excavation Overview | N | CH |
| 23 | CAN5D | 13/05/19 | TP98 North Section | N | CH |
| 24 | CAN5D | 13/05/19 | TP98 East Section | E | CH |
| 25 | CAN5D | 13/05/19 | TP98 South Section | S | CH |
| 26 | OLYTG | 13/05/19 | TP62 Pre-Excavation Tag | N | MSB |
| 27 | CAN5D | 13/05/19 | TP98 West Section | W | CH |
| 28 | OLYTG | 13/05/19 | TP62 Pre-Excavation Location Shot | N | MSB |
| 29 | OLYTG | 13/05/19 | TP96 Pre-Excavation Tag | N | MSB |
| 30 | OLYTG | 13/05/19 | TP96 Pre-Excavation Location Shot | N | MSB |
| 31 | OLYTG | 13/05/19 | TP97 Pre-Excavation Tag | N | MSB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 32 | OLYTG | 13/05/19 | TP96 Pre-Excavation Location Shot | N | MSB |
| 33 | CAN5D | 13/05/19 | TP116 Post-Excavation Tag | N | CH |
| 34 | CAN5D | 13/05/19 | TP116 Post-Excavation Location Shot | N | CH |
| 35 | CAN5D | 13/05/19 | TP116 Post-Excavation Overview | N | CH |
| 36 | CAN5D | 13/05/19 | TP116 North Section | N | CH |
| 37 | CAN5D | 13/05/19 | TP116 East Section | E | CH |
| 38 | CAN5D | 13/05/19 | TP116 South Section | S | CH |
| 39 | CAN5D | 13/05/19 | TP116 West Section | W | CH |
| 40 | OLYTG | 13/05/19 | TP64 Pre-Excavation Tag | N | MSB |
| 41 | OLYTG | 13/05/19 | TP64 Pre-Excavation Location Shot | N | MSB |
| 42 | OLYTG | 13/05/19 | TP63 Pre-Excavation Tag | N | MSB |
| 43 | OLYTG | 13/05/19 | TP63 Pre-Excavation Location Shot | N | MSB |
| 44 | OLYTG | 13/05/19 | TP115 Pre-Excavation Tag | N | MSB |
| 45 | OLYTG | 13/05/19 | TP115 Pre-Excavation Location Shot | N | MSB |
| 46 | CAN5D | 13/05/19 | TP149 Mid-Excavation Tag (Asbestos) | N | CH |
| 47 | CAN5D | 13/05/19 | TP149 Mid-Excavation Location Shot (Asbestos) | N | CH |
| 48 | CAN5D | 13/05/19 | TP149 Mid-Excavation (Asbestos) | N | CH |
| 49 | OLYTG | 13/05/19 | TP130 Pre-Excavation Tag | N | MSB |
| 50 | OLYTG | 13/05/19 | TP130 Pre-Excavation Location Shot | N | MSB |
| 51 | CAN5D | 13/05/19 | TP149 Mid-Excavation (Asbestos) | N | MSB |
| 52 | OLYTG | 13/05/19 | TP148 Pre-Excavation Tag | N | MSB |
| 53 | OLYTG | 13/05/19 | TP148 Pre-Excavation Location Shot | N | MSB |
| 54 | OLYTG | 13/05/19 | TP163 Pre-Excavation Tag | N | MSB |
| 55 | OLYTG | 13/05/19 | TP163 Pre-Excavation Location Shot | N | MSB |
| 56 | OLYTG | 13/05/19 | TP164 Pre-Excavation Tag | N | MSB |
| 57 | OLYTG | 13/05/19 | TP164 Pre-Excavation Location Shot | N | MSB |
| 58 | OLYTG | 13/05/19 | TP165 Pre-Excavation Tag | N | MSB |
| 59 | OLYTG | 13/05/19 | TP165 Pre-Excavation Location Shot | N | MSB |
| 60 | OLYTG | 13/05/19 | TP145 Pre-Excavation Tag | N | MSB |
| 61 | OLYTG | 13/05/19 | TP145 Pre-Excavation Location Shot | N | MSB |
| 62 | OLYTG | 13/05/19 | TP161 Pre-Excavation Tag | N | MSB |
| 63 | OLYTG | 13/05/19 | TP161 Pre-Excavation Location Shot | N | MSB |
| 64 | OLYTG | 13/05/19 | TP159 Pre-Excavation Tag | N | MSB |
| 65 | OLYTG | 13/05/19 | TP159 Pre-Excavation Location Shot | N | MSB |
| 66 | OLYTG | 13/05/19 | TP158 Pre-Excavation Tag | N | MSB |
| 67 | OLYTG | 13/05/19 | TP158 Pre-Excavation Location Shot | N | MSB |
| 68 | OLYTG | 13/05/19 | TP157 Pre-Excavation Tag | N | MSB |
| 69 | OLYTG | 13/05/19 | TP157 Pre-Excavation Location Shot | N | MSB |
| 70 | OLYTG | 13/05/19 | TP113 Pre-Excavation Tag | N | MSB |
| 71 | OLYTG | 13/05/19 | TP113 Pre-Excavation Location Shot | N | MSB |
| 72 | OLYTG | 13/05/19 | TP95 Pre-Excavation Tag | N | MSB |
| 73 | OLYTG | 13/05/19 | TP95 Pre-Excavation Location Shot | N | MSB |
| 74 | OLYTG | 13/05/19 | TP65 Pre-Excavation Tag | N | MSB |
| 75 | OLYTG | 13/05/19 | TP65 Pre-Excavation Location Shot | N | MSB |
| 76 | OLYTG | 13/05/19 | TP45 Pre-Excavation Tag | N | MSB |
| 77 | OLYTG | 13/05/19 | TP45 Pre-Excavation Location Shot | N | MSB |
| 78 | OLYTG | 13/05/19 | TP44 Pre-Excavation Tag | N | MSB |
| 79 | OLYTG | 13/05/19 | TP44 Pre-Excavation Location Shot | N | MSB |
| 80 | OLYTG | 13/05/19 | TP43 Pre-Excavation Tag | N | MSB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 81 | OLYTG | 13/05/19 | TP43 Pre-Excavation Location Shot | N | MSB |
| 82 | OLYTG | 13/05/19 | TP42 Pre-Excavation Tag | N | MSB |
| 83 | OLYTG | 13/05/19 | TP42 Pre-Excavation Location Shot | N | MSB |
| 84 | OLYTG | 13/05/19 | TP41 Pre-Excavation Tag | N | MSB |
| 85 | OLYTG | 13/05/19 | TP41 Pre-Excavation Location Shot | N | MSB |
| 86 | OLYTG | 13/05/19 | TP16 Pre-Excavation Tag | N | MSB |
| 87 | OLYTG | 13/05/19 | TP16 Pre-Excavation Location Shot | N | MSB |
| 88 | OLYTG | 13/05/19 | TP17 Pre-Excavation Tag | N | MSB |
| 89 | OLYTG | 13/05/19 | TP17 Pre-Excavation Location Shot | N | MSB |
| 90 | CAN5D | 13/05/19 | TP131 Post-Excavation Tag | N | CH |
| 91 | CAN5D | 13/05/19 | TP131 Post-Excavation Location Shot | N | CH |
| 92 | CAN5D | 13/05/19 | TP131 Post-Excavation Overview | N | CH |
| 93 | CAN5D | 13/05/19 | TP131 North Section | N | CH |
| 94 | CAN5D | 13/05/19 | TP131 East Section | E | CH |
| 95 | CAN5D | 13/05/19 | TP131 South Section | S | CH |
| 96 | CAN5D | 13/05/19 | TP131 West Section | W | CH |
| 97 | OLYTG | 13/05/19 | TP18 Pre-Excavation Tag | N | MSB |
| 98 | OLYTG | 13/05/19 | TP18 Pre-Excavation Location Shot | N | MSB |
| 99 | OLYTG | 13/05/19 | TP19 Pre-Excavation Tag | N | MSB |
| 100 | OLYTG | 13/05/19 | TP19 Pre-Excavation Location Shot | N | MSB |
| 101 | OLYTG | 13/05/19 | TP20 Pre-Excavation Tag | N | MSB |
| 102 | OLYTG | 13/05/19 | TP20 Pre-Excavation Location Shot | N | MSB |
| 103 | CAN5D | 13/05/19 | TP163 Post-Excavation Tag | N | MB |
| 104 | CAN5D | 13/05/19 | TP163 Post-Excavation Location Shot | N | MB |
| 105 | CAN5D | 13/05/19 | TP163 Post-Excavation Overview | N | MB |
| 106 | CAN5D | 13/05/19 | TP163 North Section | N | MB |
| 107 | CAN5D | 13/05/19 | TP163 East Section | E | MB |
| 108 | CAN5D | 13/05/19 | TP163 South Section | S | MB |
| 109 | CAN5D | 13/05/19 | TP163 West Section | W | MB |
| 110 | OLYTG | 13/05/19 | TP21 Pre-Excavation Tag | N | MSB |
| 111 | OLYTG | 13/05/19 | TP21 Pre-Excavation Location Shot | N | MSB |
| 112 | OLYTG | 13/05/19 | TP22 Pre-Excavation Tag | N | MSB |
| 113 | OLYTG | 13/05/19 | TP22 Pre-Excavation Location Shot | N | MSB |
| 114 | OLYTG | 13/05/19 | TP9 Pre-Excavation Tag | N | MSB |
| 115 | OLYTG | 13/05/19 | TP9 Pre-Excavation Location Shot | N | MSB |
| 116 | CAN5D | 13/05/19 | TP164 Post-Excavation Tag | N | CH |
| 117 | CAN5D | 13/05/19 | TP164 Post-Excavation Location Shot | N | CH |
| 118 | CAN5D | 13/05/19 | TP164 Post-Excavation Overview | N | CH |
| 119 | CAN5D | 13/05/19 | TP164 North Section | N | CH |
| 120 | OLYTG | 13/05/19 | TP8 Pre-Excavation Tag | N | MSB |
| 121 | OLYTG | 13/05/19 | TP8 Pre-Excavation Location Shot | N | MSB |
| 122 | CAN5D | 13/05/19 | TP164 East Section | E | CH |
| 123 | CAN5D | 13/05/19 | TP164 South Section | S | CH |
| 124 | CAN5D | 13/05/19 | TP164 West Section | W | CH |
| 125 | OLYTG | 13/05/19 | TP7 Pre-Excavation Tag | N | MSB |
| 126 | OLYTG | 13/05/19 | TP7 Pre-Excavation Location Shot | N | MSB |
| 127 | OLYTG | 13/05/19 | TP6 Pre-Excavation Tag | N | MSB |
| 128 | OLYTG | 13/05/19 | TP6 Pre-Excavation Location Shot | N | MSB |
| 129 | CAN5D | 13/05/19 | TP148 Post-Excavation Tag | N | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 130 | CAN5D | 13/05/19 | TP148 Post-Excavation Location Shot | N | MB |
| 131 | CAN5D | 13/05/19 | TP148 Post-Excavation Overview | N | MB |
| 132 | CAN5D | 13/05/19 | TP148 North Section | N | MB |
| 133 | CAN5D | 13/05/19 | TP148 East Section | E | MB |
| 134 | CAN5D | 13/05/19 | TP148 South Section | S | MB |
| 135 | OLYTG | 13/05/19 | TP5 Pre-Excavation Tag | N | MSB |
| 136 | OLYTG | 13/05/19 | TP5 Pre-Excavation Location Shot | N | MSB |
| 137 | CAN5D | 13/05/19 | TP148 West Section | W | MB |
| 138 | OLYTG | 13/05/19 | TP4 Pre-Excavation Tag | N | MSB |
| 139 | OLYTG | 13/05/19 | TP4 Pre-Excavation Location Shot | N | MSB |
| 140 | CAN5D | 13/05/19 | TP146 Post-Excavation Tag | N | CH |
| 141 | CAN5D | 13/05/19 | TP146 Post-Excavation Location Shot | N | CH |
| 142 | CAN5D | 13/05/19 | TP146 Post-Excavation Overview | N | CH |
| 143 | CAN5D | 13/05/19 | TP146 North Section | N | CH |
| 144 | CAN5D | 13/05/19 | TP146 East Section | E | CH |
| 145 | CAN5D | 13/05/19 | TP146 South Section | S | CH |
| 146 | CAN5D | 13/05/19 | TP146 West Section | W | CH |
| 147 | CAN5D | 13/05/19 | TP145 Post-Excavation Tag | N | MB |
| 148 | CAN5D | 13/05/19 | TP145 Post-Excavation Location Shot | N | MB |
| 149 | CAN5D | 13/05/19 | TP145 Post-Excavation Overview | N | MB |
| 150 | CAN5D | 13/05/19 | TP145 North Section | N | MB |
| 151 | CAN5D | 13/05/19 | TP145 East Section | E | MB |
| 152 | CAN5D | 13/05/19 | TP145 South Section | S | MB |
| 153 | CAN5D | 13/05/19 | TP145 West Section | W | MB |
| 154 | CAN5D | 13/05/19 | TP114 Post-Excavation Tag | N | CH |
| 155 | CAN5D | 13/05/19 | TP114 Post-Excavation Location Shot | N | CH |
| 156 | CAN5D | 13/05/19 | TP114 Post-Excavation Overview | N | CH |
| 157 | CAN5D | 13/05/19 | TP114 North Section | N | CH |
| 158 | CAN5D | 13/05/19 | TP114 East Section | E | CH |
| 159 | CAN5D | 13/05/19 | TP114 South Section | S | CH |
| 160 | CAN5D | 13/05/19 | TP114 West Section | W | CH |
| 161 | CAN5D | 13/05/19 | TP96 Post-Excavation Tag | N | MB |
| 162 | CAN5D | 13/05/19 | TP96 Post-Excavation Location Shot | N | MB |
| 163 | CAN5D | 13/05/19 | TP96 Post-Excavation Overview | N | MB |
| 164 | CAN5D | 13/05/19 | TP96 North Section | N | MB |
| 165 | CAN5D | 13/05/19 | TP96 East Section | E | MB |
| 166 | CAN5D | 13/05/19 | TP96 South Section | S | MB |
| 167 | CAN5D | 13/05/19 | TP96 West Section | W | MB |
| 168 | CAN5D | 13/05/19 | TP62 Post-Excavation Tag | N | CH |
| 169 | CAN5D | 13/05/19 | TP62 Post-Excavation Location Shot | N | CH |
| 170 | CAN5D | 13/05/19 | TP62 Post-Excavation Overview | N | CH |
| 171 | CAN5D | 13/05/19 | TP62 North Section | N | CH |
| 172 | CAN5D | 13/05/19 | TP62 East Section | E | CH |
| 173 | CAN5D | 13/05/19 | TP62 South Section | S | CH |
| 174 | CAN5D | 13/05/19 | TP62 West Section | W | CH |
| 175 | CAN5D | 13/05/19 | TP97 Post-Excavation Tag | N | MB |
| 176 | CAN5D | 13/05/19 | TP97 Post-Excavation Location Shot | N | MB |
| 177 | CAN5D | 13/05/19 | TP97 Post-Excavation Overview | N | MB |
| 178 | CAN5D | 13/05/19 | TP97 North Section | N | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 179 | CAN5D | 13/05/19 | TP97 East Section | E | MB |
| 180 | CAN5D | 13/05/19 | TP97 South Section | S | MB |
| 181 | CAN5D | 13/05/19 | TP97 West Section | W | MB |
| 182 | CAN5D | 14/05/19 | TP147 Post-Excavation Tag | N | CH |
| 183 | CAN5D | 14/05/19 | TP147 Post-Excavation Location Shot | N | CH |
| 184 | CAN5D | 14/05/19 | TP147 Post-Excavation Overview | N | CH |
| 185 | CAN5D | 14/05/19 | TP147 North Section | N | CH |
| 186 | CAN5D | 14/05/19 | TP147 East Section | E | CH |
| 187 | CAN5D | 14/05/19 | TP147 South Section | S | CH |
| 188 | CAN5D | 14/05/19 | TP147 West Section | W | CH |
| 189 | CAN5D | 14/05/19 | TP95 Post-Excavation Tag | N | MB |
| 190 | CAN5D | 14/05/19 | TP95 Post-Excavation Location Shot | N | MB |
| 191 | CAN5D | 14/05/19 | TP95 Post-Excavation Overview | N | MB |
| 192 | CAN5D | 14/05/19 | TP95 North Section | N | MB |
| 193 | CAN5D | 14/05/19 | TP95 East Section | E | MB |
| 194 | CAN5D | 14/05/19 | TP95 South Section | S | MB |
| 195 | CAN5D | 14/05/19 | TP95 West Section | W | MB |
| 196 | CAN5D | 14/05/19 | TP113 Post-Excavation Tag | N | CH |
| 197 | CAN5D | 14/05/19 | TP113 Post-Excavation Location Shot | N | CH |
| 198 | CAN5D | 14/05/19 | TP113 Post-Excavation Overview | N | CH |
| 199 | CAN5D | 14/05/19 | TP113 North Section | N | CH |
| 200 | CAN5D | 14/05/19 | TP113 East Section | E | CH |
| 201 | CAN5D | 14/05/19 | TP113 South Section | S | CH |
| 202 | CAN5D | 14/05/19 | TP113 West Section | W | CH |
| 203 | CAN5D | 14/05/19 | TP158 Post-Excavation Tag | N | MB |
| 204 | CAN5D | 14/05/19 | TP158 Post-Excavation Location Shot | N | MB |
| 205 | CAN5D | 14/05/19 | TP158 Post-Excavation Overview | N | MB |
| 206 | CAN5D | 14/05/19 | TP158 North Section | N | MB |
| 207 | CAN5D | 14/05/19 | TP158 East Section | E | MB |
| 208 | CAN5D | 14/05/19 | TP158 South Section | S | MB |
| 209 | CAN5D | 14/05/19 | TP158 West Section | W | MB |
| 210 | CAN5D | 14/05/19 | TP157 Post-Excavation Tag | N | CH |
| 211 | CAN5D | 14/05/19 | TP157 Post-Excavation Location Shot | N | CH |
| 212 | CAN5D | 14/05/19 | TP157 Post-Excavation Overview | N | CH |
| 213 | CAN5D | 14/05/19 | TP157 North Section | N | CH |
| 214 | CAN5D | 14/05/19 | TP157 East Section | E | CH |
| 215 | CAN5D | 14/05/19 | TP157 South Section | S | CH |
| 216 | CAN5D | 14/05/19 | TP157 West Section | W | CH |
| 217 | CAN5D | 14/05/19 | TP159 Post-Excavation Tag | N | MB |
| 218 | CAN5D | 14/05/19 | TP159 Post-Excavation Location Shot | N | MB |
| 219 | CAN5D | 14/05/19 | TP159 Post-Excavation Overview | N | MB |
| 220 | CAN5D | 14/05/19 | TP159 North Section | N | MB |
| 221 | CAN5D | 14/05/19 | TP159 East Section | E | MB |
| 222 | CAN5D | 14/05/19 | TP159 South Section | S | MB |
| 223 | CAN5D | 14/05/19 | TP159 West Section | W | MB |
| 224 | CAN5D | 14/05/19 | TP161 Post-Excavation Tag | N | CH |
| 225 | CAN5D | 14/05/19 | TP161 Post-Excavation Location Shot | N | CH |
| 226 | CAN5D | 14/05/19 | TP161 Post-Excavation Overview | N | CH |
| 227 | CAN5D | 14/05/19 | TP161 North Section | N | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 228 | CAN5D | 14/05/19 | TP161 East Section | E | CH |
| 229 | CAN5D | 14/05/19 | TP161 South Section | S | CH |
| 230 | CAN5D | 14/05/19 | TP161 West Section | W | CH |
| 231 | CAN5D | 14/05/19 | TP162 Pre-Excavation Tag | N | MSB |
| 232 | CAN5D | 14/05/19 | TP162 Pre-Excavation Location Shot | N | MSB |
| 233 | CAN5D | 14/05/19 | TP162 Post-Excavation Tag | N | MB |
| 234 | CAN5D | 14/05/19 | TP162 Post-Excavation Location Shot | N | MB |
| 235 | CAN5D | 14/05/19 | TP162 Post-Excavation Overview | N | MB |
| 236 | CAN5D | 14/05/19 | TP162 North Section | N | MB |
| 237 | CAN5D | 14/05/19 | TP162 East Section | E | MB |
| 238 | CAN5D | 14/05/19 | TP162 South Section | S | MB |
| 239 | CAN5D | 14/05/19 | TP162 West Section | W | MB |
| 240 | CAN5D | 14/05/19 | TP165 Post-Excavation Tag | N | CH |
| 241 | CAN5D | 14/05/19 | TP165 Post-Excavation Location Shot | N | CH |
| 242 | CAN5D | 14/05/19 | TP165 Post-Excavation Overview | N | CH |
| 243 | CAN5D | 14/05/19 | TP165 North Section | N | CH |
| 244 | CAN5D | 14/05/19 | TP165 East Section | E | CH |
| 245 | CAN5D | 14/05/19 | TP165 South Section | S | CH |
| 246 | CAN5D | 14/05/19 | TP165 West Section | W | CH |
| 247 | CAN5D | 14/05/19 | TP130 Post-Excavation Tag | N | MB |
| 248 | CAN5D | 14/05/19 | TP130 Post-Excavation Location Shot | N | MB |
| 249 | CAN5D | 14/05/19 | TP130 North Section | N | MB |
| 250 | CAN5D | 14/05/19 | TP130 East Section | E | MB |
| 251 | CAN5D | 14/05/19 | TP130 South Section | S | MB |
| 252 | CAN5D | 14/05/19 | TP130 West Section | W | MB |
| 253 | CAN5D | 14/05/19 | TP115 Post-Excavation Tag | N | CH |
| 254 | CAN5D | 14/05/19 | TP115 Post-Excavation Location Shot | N | CH |
| 255 | CAN5D | 14/05/19 | TP115 Post-Excavation Overview | N | CH |
| 256 | CAN5D | 14/05/19 | TP115 North Section | N | CH |
| 257 | CAN5D | 14/05/19 | TP115 East Section | E | CH |
| 258 | CAN5D | 14/05/19 | TP115 South Section | S | CH |
| 259 | CAN5D | 14/05/19 | TP115 West Section | W | CH |
| 260 | CAN5D | 14/05/19 | TP41 Post-Excavation Tag | N | MB |
| 261 | CAN5D | 14/05/19 | TP41 Post-Excavation Location Shot | N | MB |
| 262 | CAN5D | 14/05/19 | TP41 Post-Excavation Overview | N | MB |
| 263 | CAN5D | 14/05/19 | TP41 North Section | N | MB |
| 264 | CAN5D | 14/05/19 | TP41 East Section | E | MB |
| 265 | CAN5D | 14/05/19 | TP41 South Section | S | MB |
| 266 | CAN5D | 14/05/19 | TP41 West Section | W | MB |
| 267 | CAN5D | 14/05/19 | TP42 Post-Excavation Tag | N | CH |
| 268 | CAN5D | 14/05/19 | TP42 Post-Excavation Location Shot | N | CH |
| 269 | CAN5D | 14/05/19 | TP42 Post-Excavation Overview | N | CH |
| 270 | CAN5D | 14/05/19 | TP42 North Section | N | CH |
| 271 | CAN5D | 14/05/19 | TP42 East Section | E | CH |
| 272 | CAN5D | 14/05/19 | TP42 South Section | S | CH |
| 273 | CAN5D | 14/05/19 | TP42 West Section | W | CH |
| 274 | CAN5D | 14/05/19 | TP43 Post-Excavation Tag | N | MB |
| 275 | CAN5D | 14/05/19 | TP43 Post-Excavation Location Shot | N | MB |
| 276 | CAN5D | 14/05/19 | TP43 Post-Excavation Overview | N | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 277 | CAN5D | 14/05/19 | TP43 North Section | N | MB |
| 278 | CAN5D | 14/05/19 | TP43 East Section | E | MB |
| 279 | CAN5D | 14/05/19 | TP43 South Section | S | MB |
| 280 | CAN5D | 14/05/19 | TP43 West Section | W | MB |
| 281 | SAMS8 | 14/05/19 | TP10 Tag Details | N | LB |
| 282 | SAMS8 | 15/05/19 | TP252 Tag Details | N | LB |
| 283 | CAN5D | 15/05/19 | TP44 Post-Excavation Tag | N | CH |
| 284 | CAN5D | 15/05/19 | TP44 Post-Excavation Location Shot | N | CH |
| 285 | CAN5D | 15/05/19 | TP44 Post-Excavation Overview | N | CH |
| 286 | CAN5D | 15/05/19 | TP44 North Section | N | CH |
| 287 | CAN5D | 15/05/19 | TP44 East Section | E | CH |
| 288 | CAN5D | 15/05/19 | TP44 South Section | S | CH |
| 289 | CAN5D | 15/05/19 | TP44 West Section | W | CH |
| 290 | OLYTG | 15/05/19 | TP2 Pre-Excavation Tag | N | MSB |
| 291 | OLYTG | 15/05/19 | TP2 Pre-Excavation Location Shot | N | MSB |
| 292 | OLYTG | 15/05/19 | TP10 Pre-Excavation Tag | N | MSB |
| 293 | OLYTG | 15/05/19 | TP10 Pre-Excavation Location Shot | N | MSB |
| 294 | CAN5D | 15/05/19 | TP45 Post-Excavation Tag | N | MB |
| 295 | CAN5D | 15/05/19 | TP45 Post-Excavation Location Shot | N | MB |
| 296 | CAN5D | 15/05/19 | TP45 Post-Excavation Overview | N | MB |
| 297 | CAN5D | 15/05/19 | TP45 North Section | N | MB |
| 298 | CAN5D | 15/05/19 | TP45 East Section | E | MB |
| 299 | CAN5D | 15/05/19 | TP45 South Section | S | MB |
| 300 | OLYTG | 15/05/19 | TP252 Pre-Excavation Tag | N | MSB |
| 301 | OLYTG | 15/05/19 | TP252 Pre-Excavation Location Shot | N | MSB |
| 302 | CAN5D | 15/05/19 | TP45 West Section | W | MB |
| 303 | OLYTG | 15/05/19 | TP11 Pre-Excavation Tag | N | MSB |
| 304 | CAN5D | 15/05/19 | TP20 Post-Excavation Tag | N | CH |
| 305 | CAN5D | 15/05/19 | TP20 Post-Excavation Location Shot | N | CH |
| 306 | CAN5D | 15/05/19 | TP20 Post-Excavation Overview | N | CH |
| 307 | CAN5D | 15/05/19 | TP20 North Section | N | CH |
| 308 | CAN5D | 15/05/19 | TP20 East Section | E | CH |
| 309 | CAN5D | 15/05/19 | TP20 South Section | S | CH |
| 310 | CAN5D | 15/05/19 | TP20 West Section | W | CH |
| 311 | CAN5D | 15/05/19 | TP19 Post-Excavation Tag | N | MB |
| 312 | CAN5D | 15/05/19 | TP19 Post-Excavation Location Shot | N | MB |
| 313 | CAN5D | 15/05/19 | TP19 Post-Excavation Overview | N | MB |
| 314 | CAN5D | 15/05/19 | TP19 North Section | N | MB |
| 315 | CAN5D | 15/05/19 | TP19 East Section | E | MB |
| 316 | CAN5D | 15/05/19 | TP19 South Section | S | MB |
| 317 | CAN5D | 15/05/19 | TP19 West Section | W | MB |
| 318 | CAN5D | 15/05/19 | TP18 Post-Excavation Tag | N | CH |
| 319 | CAN5D | 15/05/19 | TP18 Post-Excavation Location Shot | N | CH |
| 320 | CAN5D | 15/05/19 | TP18 Post-Excavation Overview | N | CH |
| 321 | CAN5D | 15/05/19 | TP18 North Section | N | CH |
| 322 | CAN5D | 15/05/19 | TP18 East Section | E | CH |
| 323 | CAN5D | 15/05/19 | TP18 South Section | S | CH |
| 324 | CAN5D | 15/05/19 | TP18 West Section | W | CH |
| 325 | CAN5D | 15/05/19 | TP17 Post-Excavation Tag | N | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 326 | CAN5D | 15/05/19 | TP17 Post-Excavation Location Shot | N | MB |
| 327 | CAN5D | 15/05/19 | TP17 Post-Excavation Overview | N | MB |
| 328 | CAN5D | 15/05/19 | TP17 North Section | N | MB |
| 329 | CAN5D | 15/05/19 | TP17 East Section | E | MB |
| 330 | CAN5D | 15/05/19 | TP17 South Section | S | MB |
| 331 | CAN5D | 15/05/19 | TP17 West Section | W | MB |
| 332 | OLYTG | 15/05/19 | TP66 Pre-Excavation Tag | N | MSB |
| 333 | OLYTG | 15/05/19 | TP66 Pre-Excavation Location Shot | N | MSB |
| 334 | CAN5D | 15/05/19 | TP16 Post-Excavation Tag | N | CH |
| 335 | CAN5D | 15/05/19 | TP16 Post-Excavation Location Shot | N | CH |
| 336 | CAN5D | 15/05/19 | TP16 Post-Excavation Overview | N | CH |
| 337 | CAN5D | 15/05/19 | TP16 North Section | N | CH |
| 338 | OLYTG | 15/05/19 | TP99 Pre-Excavation Tag | N | MSB |
| 339 | CAN5D | 15/05/19 | TP16 East Section | E | CH |
| 340 | OLYTG | 15/05/19 | TP99 Pre-Excavation Location Shot | N | MSB |
| 341 | CAN5D | 15/05/19 | TP16 South Section | S | CH |
| 342 | OLYTG | 15/05/19 | TP258 Pre-Excavation Tag | N | MSB |
| 343 | OLYTG | 15/05/19 | TP258 Pre-Excavation Location Shot | N | MSB |
| 344 | OLYTG | 15/05/19 | TP117 Pre-Excavation Tag | N | MSB |
| 345 | OLYTG | 15/05/19 | TP117 Pre-Excavation Location Shot | N | MSB |
| 346 | OLYTG | 15/05/19 | TP132 Pre-Excavation Tag | N | MSB |
| 347 | OLYTG | 15/05/19 | TP132 Pre-Excavation Location Shot | N | MSB |
| 348 | OLYTG | 15/05/19 | TP118 Pre-Excavation Tag | N | MSB |
| 349 | OLYTG | 15/05/19 | TP118 Pre-Excavation Location Shot | N | MSB |
| 350 | OLYTG | 15/05/19 | TP251 Pre-Excavation Tag | N | MSB |
| 351 | OLYTG | 15/05/19 | TP251 Pre-Excavation Location Shot | N | MSB |
| 352 | OLYTG | 15/05/19 | TP100 Pre-Excavation Tag | N | MSB |
| 353 | OLYTG | 15/05/19 | TP100 Pre-Excavation Location Shot | N | MSB |
| 354 | OLYTG | 15/05/19 | TP82 Pre-Excavation Tag | N | MSB |
| 355 | OLYTG | 15/05/19 | TP82 Pre-Excavation Location Shot | N | MSB |
| 356 | OLYTG | 15/05/19 | TP83 Pre-Excavation Tag | N | MSB |
| 357 | OLYTG | 15/05/19 | TP83 Pre-Excavation Location Shot | N | MSB |
| 358 | OLYTG | 15/05/19 | TP84 Pre-Excavation Tag | N | MSB |
| 359 | OLYTG | 15/05/19 | TP84 Pre-Excavation Location Shot | N | MSB |
| 360 | OLYTG | 15/05/19 | TP85 Pre-Excavation Tag | N | MSB |
| 361 | OLYTG | 15/05/19 | TP85 Pre-Excavation Location Shot | N | MSB |
| 362 | OLYTG | 15/05/19 | TP86 Pre-Excavation Tag | N | MSB |
| 363 | OLYTG | 15/05/19 | TP86 Pre-Excavation Location Shot | N | MSB |
| 364 | OLYTG | 15/05/19 | TP87 Pre-Excavation Tag | N | MSB |
| 365 | OLYTG | 15/05/19 | TP87 Pre-Excavation Location Shot | N | MSB |
| 366 | OLYTG | 15/05/19 | TP72 Pre-Excavation Tag | N | MSB |
| 367 | OLYTG | 15/05/19 | TP72 Pre-Excavation Location Shot | N | MSB |
| 368 | OLYTG | 15/05/19 | TP69 Pre-Excavation Tag | N | MSB |
| 369 | OLYTG | 15/05/19 | TP69 Pre-Excavation Location Shot | N | MSB |
| 370 | OLYTG | 15/05/19 | TP71 Pre-Excavation Tag | N | MSB |
| 371 | OLYTG | 15/05/19 | TP71 Pre-Excavation Location Shot | N | MSB |
| 372 | OLYTG | 15/05/19 | TP71 Pre-Excavation Location Shot (repeat) | N | MSB |
| 373 | OLYTG | 15/05/19 | TP51 Pre-Excavation Location Shot | N | MSB |
| 374 | OLYTG | 15/05/19 | TP51 Pre-Excavation Location Shot | N | MSB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 375 | OLYTG | 15/05/19 | TP52 Pre-Excavation Tag | N | MSB |
| 376 | OLYTG | 15/05/19 | TP52 Pre-Excavation Location Shot | N | MSB |
| 377 | OLYTG | 15/05/19 | TP35 Pre-Excavation Tag | N | MSB |
| 378 | OLYTG | 15/05/19 | TP35 Pre-Excavation Location Shot | N | MSB |
| 379 | OLYTG | 15/05/19 | TP67 Pre-Excavation Tag | N | MSB |
| 380 | OLYTG | 15/05/19 | TP67 Pre-Excavation Location Shot | N | MSB |
| 381 | OLYTG | 15/05/19 | TP68 Pre-Excavation Tag | N | MSB |
| 382 | OLYTG | 15/05/19 | TP68 Pre-Excavation Location Shot | N | MSB |
| 383 | OLYTG | 15/05/19 | TP46 Pre-Excavation Tag | N | MSB |
| 384 | OLYTG | 15/05/19 | TP46 Pre-Excavation Location Shot | N | MSB |
| 385 | OLYTG | 15/05/19 | TP47 Pre-Excavation Tag | N | MSB |
| 386 | OLYTG | 15/05/19 | TP47 Pre-Excavation Location Shot | N | MSB |
| 387 | OLYTG | 15/05/19 | TP34 Pre-Excavation Tag | N | MSB |
| 388 | OLYTG | 15/05/19 | TP34 Pre-Excavation Location Shot | N | MSB |
| 389 | OLYTG | 15/05/19 | TP25 Pre-Excavation Tag | N | MSB |
| 390 | OLYTG | 15/05/19 | TP25 Pre-Excavation Location Shot | N | MSB |
| 391 | CAN5D | 16/05/19 | TP16 West Section | W | CH |
| 392 | CAN5D | 16/05/19 | TP4 Post-Excavation Tag | N | MB |
| 393 | CAN5D | 16/05/19 | TP4 Post-Excavation Location Shot | N | MB |
| 394 | CAN5D | 16/05/19 | TP4 Post-Excavation Overview | N | MB |
| 395 | CAN5D | 16/05/19 | TP4 North Section | N | MB |
| 396 | CAN5D | 16/05/19 | TP4 East Section | E | MB |
| 397 | CAN5D | 16/05/19 | TP4 South Section | S | MB |
| 398 | CAN5D | 16/05/19 | TP4 West Section | W | MB |
| 399 | CAN5D | 16/05/19 | TP5 Post-Excavation Tag | N | CH |
| 400 | CAN5D | 16/05/19 | TP5 Post-Excavation Location Shot | N | CH |
| 401 | CAN5D | 16/05/19 | TP5 North Section | N | CH |
| 402 | CAN5D | 16/05/19 | TP5 East Section | E | CH |
| 403 | CAN5D | 16/05/19 | TP5 South Section | S | CH |
| 404 | CAN5D | 16/05/19 | TP5 West Section | W | CH |
| 405 | CAN5D | 16/05/19 | TP6 Post-Excavation Tag | N | MB |
| 406 | CAN5D | 16/05/19 | TP6 Post-Excavation Location Shot | N | MB |
| 407 | CAN5D | 16/05/19 | TP6 Post-Excavation Overview | N | MB |
| 408 | CAN5D | 16/05/19 | TP6 North Section | N | MB |
| 409 | CAN5D | 16/05/19 | TP6 East Section | E | MB |
| 410 | CAN5D | 16/05/19 | TP6 South Section | S | MB |
| 411 | CAN5D | 16/05/19 | TP6 West Section | W | MB |
| 412 | CAN5D | 16/05/19 | TP7 Post-Excavation Tag | N | CH |
| 413 | CAN5D | 16/05/19 | TP7 Post-Excavation Location Shot | N | CH |
| 414 | CAN5D | 16/05/19 | TP7 Post-Excavation Overview | N | CH |
| 415 | CAN5D | 16/05/19 | TP7 North Section | N | CH |
| 416 | CAN5D | 16/05/19 | TP7 East Section | E | CH |
| 417 | CAN5D | 16/05/19 | TP7 South Section | S | CH |
| 418 | CAN5D | 16/05/19 | TP7 West Section | W | CH |
| 419 | CAN5D | 16/05/19 | TP7 Post-Excavation Tag | N | MB |
| 420 | CAN5D | 16/05/19 | TP8 Post-Excavation Location Shot | N | MB |
| 421 | CAN5D | 16/05/19 | TP8 Post-Excavation Overview | N | MB |
| 422 | CAN5D | 16/05/19 | TP8 North Section | N | MB |
| 423 | CAN5D | 16/05/19 | TP8 East Section | E | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 424 | CAN5D | 16/05/19 | TP8 South Section | S | MB |
| 425 | CAN5D | 16/05/19 | TP8 West Section | W | MB |
| 426 | CAN5D | 16/05/19 | TP9 Post-Excavation Tag | N | CH |
| 427 | CAN5D | 16/05/19 | TP9 Post-Excavation Location Shot | N | CH |
| 428 | CAN5D | 16/05/19 | TP9 Post-Excavation Overview | N | CH |
| 429 | CAN5D | 16/05/19 | TP9 North Section | N | CH |
| 430 | CAN5D | 16/05/19 | TP9 East Section | E | CH |
| 431 | CAN5D | 16/05/19 | TP9 South Section | S | CH |
| 432 | CAN5D | 16/05/19 | TP9 West Section | W | CH |
| 433 | CAN5D | 16/05/19 | TP2 Post-Excavation Tag | N | MB |
| 434 | CAN5D | 16/05/19 | TP2 Post-Excavation Location Shot | N | MB |
| 435 | CAN5D | 16/05/19 | TP2 Post-Excavation Overview | N | MB |
| 436 | CAN5D | 16/05/19 | TP2 North Section | N | MB |
| 437 | CAN5D | 16/05/19 | TP2 East Section | E | MB |
| 438 | CAN5D | 16/05/19 | TP2 South Section | S | MB |
| 439 | CAN5D | 16/05/19 | TP2 West Section | W | MB |
| 440 | CAN5D | 16/05/19 | TP10 Post-Excavation Tag | N | CH |
| 441 | CAN5D | 16/05/19 | TP10 Post-Excavation Location Shot | N | CH |
| 442 | CAN5D | 16/05/19 | TP10 Post-Excavation Overview | N | CH |
| 443 | CAN5D | 16/05/19 | TP10 North Section | N | CH |
| 444 | CAN5D | 16/05/19 | TP10 East Section | E | CH |
| 445 | CAN5D | 16/05/19 | TP10 South Section | S | CH |
| 446 | CAN5D | 16/05/19 | TP10 West Section | W | CH |
| 447 | CAN5D | 16/05/19 | TP252 Post-Excavation Tag | N | MB |
| 448 | CAN5D | 16/05/19 | TP252 Post-Excavation Location Shot | N | MB |
| 449 | CAN5D | 16/05/19 | TP252 Post-Excavation Overview | N | MB |
| 450 | CAN5D | 16/05/19 | TP252 North Section | N | MB |
| 451 | CAN5D | 16/05/19 | TP252 East Section | E | MB |
| 452 | CAN5D | 16/05/19 | TP252 South Section | S | MB |
| 453 | CAN5D | 16/05/19 | TP252 West Section | W | MB |
| 454 | CAN5D | 16/05/19 | TP25 Post-Excavation Tag | N | CH |
| 455 | CAN5D | 16/05/19 | TP25 Post-Excavation Location Shot | N | CH |
| 456 | CAN5D | 16/05/19 | TP25 Post-Excavation Overview | N | CH |
| 457 | CAN5D | 16/05/19 | TP25 North Section | N | CH |
| 458 | CAN5D | 16/05/19 | TP25 East Section | E | CH |
| 459 | CAN5D | 16/05/19 | TP25 South Section | S | CH |
| 460 | CAN5D | 16/05/19 | TP25 West Section | W | CH |
| 461 | CAN5D | 16/05/19 | TP11 Post-Excavation Tag | N | MB |
| 462 | CAN5D | 16/05/19 | TP11 Post-Excavation Location Shot | N | MB |
| 463 | CAN5D | 16/05/19 | TP11 Post-Excavation Overview | N | MB |
| 464 | CAN5D | 16/05/19 | TP11 North Section | N | MB |
| 465 | CAN5D | 16/05/19 | TP11 East Section | E | MB |
| 466 | CAN5D | 16/05/19 | TP11 South Section | S | MB |
| 467 | CAN5D | 16/05/19 | TP11 West Section | W | MB |
| 468 | CAN5D | 16/05/19 | TP22 Post-Excavation Tag | N | CH |
| 469 | CAN5D | 16/05/19 | TP22 Post-Excavation Location Shot | N | CH |
| 470 | CAN5D | 16/05/19 | TP22 Post-Excavation Overview | N | CH |
| 471 | CAN5D | 16/05/19 | TP22 North Section | N | CH |
| 472 | CAN5D | 16/05/19 | TP22 East Section | E | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 473 | CAN5D | 16/05/19 | TP22 South Section | S | CH |
| 474 | CAN5D | 16/05/19 | TP22 West Section | W | CH |
| 475 | CAN5D | 16/05/19 | TP21 Post-Excavation Tag | N | MB |
| 476 | CAN5D | 16/05/19 | TP21 Post-Excavation Location Shot | N | MB |
| 477 | CAN5D | 16/05/19 | TP21 Post-Excavation Overview | N | MB |
| 478 | CAN5D | 16/05/19 | TP21 North Section | N | MB |
| 479 | CAN5D | 16/05/19 | TP21 East Section | E | MB |
| 480 | CAN5D | 16/05/19 | TP21 South Section | S | MB |
| 481 | CAN5D | 16/05/19 | TP21 West Section | W | MB |
| 482 | CAN5D | 16/05/19 | TP68 Post-Excavation Tag | N | CH |
| 483 | CAN5D | 16/05/19 | TP68 Post-Excavation Location Shot | N | CH |
| 484 | CAN5D | 16/05/19 | TP68 Post-Excavation Overview | N | CH |
| 485 | CAN5D | 16/05/19 | TP68 North Section | N | CH |
| 486 | CAN5D | 16/05/19 | TP68 East Section | E | CH |
| 487 | CAN5D | 16/05/19 | TP68 South Section | S | CH |
| 488 | CAN5D | 16/05/19 | TP68 West Section | W | CH |
| 489 | CAN5D | 16/05/19 | TP67 Post-Excavation Tag | N | MB |
| 490 | CAN5D | 16/05/19 | TP67 Post-Excavation Location Shot | N | MB |
| 491 | CAN5D | 16/05/19 | TP67 Post-Excavation Overview | N | MB |
| 492 | CAN5D | 16/05/19 | TP67 North Section | N | MB |
| 493 | CAN5D | 16/05/19 | TP67 East Section | E | MB |
| 494 | CAN5D | 16/05/19 | TP67 South Section | S | MB |
| 495 | CAN5D | 16/05/19 | TP67 West Section | W | MB |
| 496 | CAN5D | 16/05/19 | TP46 Post-Excavation Tag | N | CH |
| 497 | CAN5D | 16/05/19 | TP46 Post-Excavation Location Shot | N | CH |
| 498 | CAN5D | 16/05/19 | TP46 Post-Excavation Overview | N | CH |
| 499 | CAN5D | 16/05/19 | TP46 North Section | N | CH |
| 500 | CAN5D | 16/05/19 | TP46 East Section | E | CH |
| 501 | CAN5D | 16/05/19 | TP46 South Section | S | CH |
| 502 | CAN5D | 16/05/19 | TP46 West Section | W | CH |
| 503 | CAN5D | 16/05/19 | TP66 Post-Excavation Tag | N | MB |
| 504 | CAN5D | 16/05/19 | TP66 Post-Excavation Location Shot | N | MB |
| 505 | CAN5D | 16/05/19 | TP66 Post-Excavation Overview | N | MB |
| 506 | CAN5D | 16/05/19 | TP66 North Section | N | MB |
| 507 | CAN5D | 16/05/19 | TP66 East Section | E | MB |
| 508 | CAN5D | 16/05/19 | TP66 South Section | S | MB |
| 509 | CAN5D | 16/05/19 | TP66 West Section | W | MB |
| 510 | CAN5D | 16/05/19 | TP65 Post-Excavation Tag | N | CH |
| 511 | CAN5D | 16/05/19 | TP65 Post-Excavation Location Shot | N | CH |
| 512 | CAN5D | 16/05/19 | TP65 Post-Excavation Overview | N | CH |
| 513 | CAN5D | 16/05/19 | TP65 North Section | N | CH |
| 514 | CAN5D | 16/05/19 | TP65 East Section | E | CH |
| 515 | CAN5D | 16/05/19 | TP65 South Section | S | CH |
| 516 | CAN5D | 16/05/19 | TP65 West Section | W | CH |
| 517 | CAN5D | 16/05/19 | TP64 Post-Excavation Tag | N | MB |
| 518 | CAN5D | 16/05/19 | TP64 Post-Excavation Location Shot | N | MB |
| 519 | CAN5D | 16/05/19 | TP64 Post-Excavation Overview | N | MB |
| 520 | CAN5D | 16/05/19 | TP64 North Section | N | MB |
| 521 | CAN5D | 16/05/19 | TP64 East Section | E | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 522 | CAN5D | 16/05/19 | TP64 South Section | S | MB |
| 523 | CAN5D | 16/05/19 | TP64 West Section | W | MB |
| 524 | CAN5D | 16/05/19 | TP63 Post-Excavation Tag | N | CH |
| 525 | CAN5D | 16/05/19 | TP63 Post-Excavation Location Shot | N | CH |
| 526 | CAN5D | 16/05/19 | TP63 Post-Excavation Overview | N | CH |
| 527 | CAN5D | 16/05/19 | TP63 North Section | N | CH |
| 528 | CAN5D | 16/05/19 | TP63 East Section | E | CH |
| 529 | CAN5D | 16/05/19 | TP63 South Section | S | CH |
| 530 | CAN5D | 16/05/19 | TP63 West Section | W | CH |
| 531 | CAN5D | 16/05/19 | TP99 Post-Excavation Tag | N | MB |
| 532 | CAN5D | 16/05/19 | TP99 Post-Excavation Location Shot | N | MB |
| 533 | CAN5D | 16/05/19 | TP99 Post-Excavation Overview | N | MB |
| 534 | CAN5D | 16/05/19 | TP99 North Section | N | MB |
| 535 | CAN5D | 16/05/19 | TP99 East Section | E | MB |
| 536 | CAN5D | 16/05/19 | TP99 South Section | S | MB |
| 537 | CAN5D | 16/05/19 | TP99 West Section | W | MB |
| 538 | CAN5D | 16/05/19 | TP258 Post-Excavation Tag | N | CH |
| 539 | CAN5D | 16/05/19 | TP258 Post-Excavation Location Shot | N | CH |
| 540 | CAN5D | 16/05/19 | TP258 Post-Excavation Overview | N | CH |
| 541 | CAN5D | 16/05/19 | TP258 North Section | N | CH |
| 542 | CAN5D | 16/05/19 | TP258 East Section | E | CH |
| 543 | CAN5D | 16/05/19 | TP258 South Section | S | CH |
| 544 | CAN5D | 16/05/19 | TP258 West Section | W | CH |
| 545 | CAN5D | 16/05/19 | TP117 Post-Excavation Tag | N | MB |
| 546 | CAN5D | 16/05/19 | TP117 Post-Excavation Location Shot | N | MB |
| 547 | CAN5D | 16/05/19 | TP117 North Section | N | MB |
| 548 | CAN5D | 16/05/19 | TP117 East Section | E | MB |
| 549 | CAN5D | 16/05/19 | TP117 South Section | S | MB |
| 550 | CAN5D | 16/05/19 | TP117 West Section | W | MB |
| 551 | CAN5D | 16/05/19 | TP132 Post-Excavation Tag | N | CH |
| 552 | CAN5D | 16/05/19 | TP132 Post-Excavation Location Shot | N | CH |
| 553 | CAN5D | 16/05/19 | TP132 Post-Excavation Overview | N | CH |
| 554 | CAN5D | 16/05/19 | TP132 North Section | N | CH |
| 555 | CAN5D | 16/05/19 | TP132 East Section | E | CH |
| 556 | CAN5D | 16/05/19 | TP132 South Section | S | CH |
| 557 | CAN5D | 16/05/19 | TP132 West Section | W | CH |
| 558 | CAN5D | 16/05/19 | TP118 Post-Excavation Tag | N | MB |
| 559 | CAN5D | 16/05/19 | TP118 Post-Excavation Location Shot | N | MB |
| 560 | CAN5D | 16/05/19 | TP118 Post-Excavation Overview | N | MB |
| 561 | CAN5D | 16/05/19 | TP118 North Section | N | MB |
| 562 | CAN5D | 16/05/19 | TP118 East Section | E | MB |
| 563 | CAN5D | 16/05/19 | TP118 South Section | S | MB |
| 564 | CAN5D | 16/05/19 | TP118 West Section | W | MB |
| 565 | CAN5D | 16/05/19 | TP251 Post-Excavation Tag | N | CH |
| 566 | CAN5D | 16/05/19 | TP251 Post-Excavation Location Shot | N | CH |
| 567 | CAN5D | 16/05/19 | TP251 Post-Excavation Overview | N | CH |
| 568 | CAN5D | 16/05/19 | TP251 North Section | N | CH |
| 569 | CAN5D | 16/05/19 | TP251 East Section | E | CH |
| 570 | CAN5D | 16/05/19 | TP251 South Section | S | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 571 | CAN5D | 16/05/19 | TP251 West Section | W | CH |
| 572 | OLYTG | 17/05/19 | TP98 Pre-Excavation Location Shot | N | MSB |
| 573 | OLYTG | 17/05/19 | TP98 Pre-Excavation Tag | N | MSB |
| 574 | OLYTG | 17/05/19 | TP101 Pre-Excavation Tag | N | MSB |
| 575 | OLYTG | 17/05/19 | TP101 Pre-Excavation Location Shot | N | MSB |
| 576 | SAMS8 | 17/05/19 | TP120 Tag Details | N | LB |
| 577 | SAMS8 | 17/05/19 | TP119 Tag Details | N | LB |
| 578 | OLYTG | 17/05/19 | TP102 Pre-Excavation Tag | N | MSB |
| 579 | OLYTG | 17/05/19 | TP102 Pre-Excavation Location Shot | N | MSB |
| 580 | OLYTG | 17/05/19 | TP103 Pre-Excavation Tag | N | MSB |
| 581 | OLYTG | 17/05/19 | TP103 Pre-Excavation Location Shot | N | MSB |
| 582 | OLYTG | 17/05/19 | TP104 Pre-Excavation Tag | N | MSB |
| 583 | OLYTG | 17/05/19 | TP104 Pre-Excavation Location Shot | N | MSB |
| 584 | OLYTG | 17/05/19 | TP105 Pre-Excavation Tag | N | MSB |
| 585 | OLYTG | 17/05/19 | TP105 Pre-Excavation Location Shot | N | MSB |
| 586 | OLYTG | 17/05/19 | TP106 Pre-Excavation Tag | N | MSB |
| 587 | OLYTG | 17/05/19 | TP106 Pre-Excavation Location Shot | N | MSB |
| 588 | OLYTG | 17/05/19 | TP124 Pre-Excavation Tag | N | MSB |
| 589 | OLYTG | 17/05/19 | TP124 Pre-Excavation Location Shot | N | MSB |
| 590 | OLYTG | 17/05/19 | TP123 Pre-Excavation Tag | N | MSB |
| 591 | OLYTG | 17/05/19 | TP123 Pre-Excavation Location Shot | N | MSB |
| 592 | OLYTG | 17/05/19 | TP122 Pre-Excavation Tag | N | MSB |
| 593 | OLYTG | 17/05/19 | TP122 Pre-Excavation Location Shot | N | MSB |
| 594 | OLYTG | 17/05/19 | TP121 Pre-Excavation Tag | N | MSB |
| 595 | OLYTG | 17/05/19 | TP121 Pre-Excavation Location Shot | N | MSB |
| 596 | OLYTG | 17/05/19 | TP120 Pre-Excavation Tag | N | MSB |
| 597 | OLYTG | 17/05/19 | TP120 Tag Details | N | MSB |
| 598 | OLYTG | 17/05/19 | TP120 Pre-Excavation Location Shot | N | MSB |
| 599 | CAN5D | 17/05/19 | TP101 Post-Excavation Tag | N | MB |
| 600 | CAN5D | 17/05/19 | TP101 Post-Excavation Location Shot | N | MB |
| 601 | CAN5D | 17/05/19 | TP101 Post-Excavation Overview | N | MB |
| 602 | CAN5D | 17/05/19 | TP101 North Section | N | MB |
| 603 | CAN5D | 17/05/19 | TP101 East Section | E | MB |
| 604 | CAN5D | 17/05/19 | TP101 South Section | S | MB |
| 605 | CAN5D | 17/05/19 | TP101 West Section | W | MB |
| 606 | CAN5D | 17/05/19 | TP101 Post-Excavation Tag | N | CH |
| 607 | CAN5D | 17/05/19 | TP100 Post-Excavation Location Shot | N | CH |
| 608 | OLYTG | 17/05/19 | TP119 Pre-Excavation Tag | N | MSB |
| 609 | CAN5D | 17/05/19 | TP100 Post-Excavation Overview | N | CH |
| 610 | CAN5D | 17/05/19 | TP100 North Section | N | CH |
| 611 | OLYTG | 17/05/19 | TP119 Pre-Excavation Location Shot | N | MSB |
| 612 | CAN5D | 17/05/19 | TP100 East Section | E | CH |
| 613 | CAN5D | 17/05/19 | TP100 South Section | S | CH |
| 614 | CAN5D | 17/05/19 | TP100 West Section | W | CH |
| 615 | CAN5D | 17/05/19 | TP82 Post-Excavation Tag | N | MB |
| 616 | CAN5D | 17/05/19 | TP82 Post-Excavation Location Shot | N | MB |
| 617 | CAN5D | 17/05/19 | TP82 Post-Excavation Overview | N | MB |
| 618 | CAN5D | 17/05/19 | TP82 North Section | N | MB |
| 619 | OLYTG | 17/05/19 | TP133 Pre-Excavation Tag | N | MSB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 620 | CAN5D | 17/05/19 | TP82 East Section | E | MB |
| 621 | OLYTG | 17/05/19 | TP133 Pre-Excavation Location Shot | N | MSB |
| 622 | CAN5D | 17/05/19 | TP82 South Section | S | MB |
| 623 | CAN5D | 17/05/19 | TP82 West Section | W | MB |
| 624 | OLYTG | 17/05/19 | TP150 Pre-Excavation Tag | N | MSB |
| 625 | OLYTG | 17/05/19 | TP150 Pre-Excavation Location Shot | N | MSB |
| 626 | CAN5D | 17/05/19 | TP83 Post-Excavation Tag | N | CH |
| 627 | OLYTG | 17/05/19 | TP134 Pre-Excavation Tag | N | MSB |
| 628 | OLYTG | 17/05/19 | TP134 Pre-Excavation Location Shot | N | MSB |
| 629 | CAN5D | 17/05/19 | TP83 Post-Excavation Location Shot | N | CH |
| 630 | CAN5D | 17/05/19 | TP83 Post-Excavation Overview | N | CH |
| 631 | CAN5D | 17/05/19 | TP83 North Section | N | CH |
| 632 | CAN5D | 17/05/19 | TP83 East Section | E | CH |
| 633 | CAN5D | 17/05/19 | TP83 South Section | S | CH |
| 634 | CAN5D | 17/05/19 | TP83 West Section | W | CH |
| 635 | CAN5D | 17/05/19 | TP84 Post-Excavation Tag | N | MB |
| 636 | CAN5D | 17/05/19 | TP84 Post-Excavation Location Shot | N | MB |
| 637 | CAN5D | 17/05/19 | TP84 Post-Excavation Overview | N | MB |
| 638 | CAN5D | 17/05/19 | TP84 North Section | N | MB |
| 639 | CAN5D | 17/05/19 | TP84 East Section | E | MB |
| 640 | CAN5D | 17/05/19 | TP84 South Section | S | MB |
| 641 | CAN5D | 17/05/19 | TP84 West Section | W | MB |
| 642 | CAN5D | 17/05/19 | TP85 Post-Excavation Tag | N | CH |
| 643 | CAN5D | 17/05/19 | TP85 Post-Excavation Location Shot | N | CH |
| 644 | CAN5D | 17/05/19 | TP85 Post-Excavation Overview | N | CH |
| 645 | CAN5D | 17/05/19 | TP85 North Section | N | CH |
| 646 | CAN5D | 17/05/19 | TP85 East Section | E | CH |
| 647 | CAN5D | 17/05/19 | TP85 South Section | S | CH |
| 648 | CAN5D | 17/05/19 | TP85 West Section | W | CH |
| 649 | CAN5D | 17/05/19 | TP86 Post-Excavation Tag | N | MB |
| 650 | CAN5D | 17/05/19 | TP86 Post-Excavation Location Shot | N | MB |
| 651 | CAN5D | 17/05/19 | TP86 Post-Excavation Overview | N | MB |
| 652 | CAN5D | 17/05/19 | TP86 North Section | N | MB |
| 653 | CAN5D | 17/05/19 | TP86 East Section | E | MB |
| 654 | CAN5D | 17/05/19 | TP86 South Section | S | MB |
| 655 | CAN5D | 17/05/19 | TP86 West Section | W | MB |
| 656 | CAN5D | 17/05/19 | TP87 Post-Excavation Tag | N | CH |
| 657 | CAN5D | 17/05/19 | TP87 Post-Excavation Location Shot | N | CH |
| 658 | CAN5D | 17/05/19 | TP87 Post-Excavation Overview | N | CH |
| 659 | CAN5D | 17/05/19 | TP87 North Section | N | CH |
| 660 | CAN5D | 17/05/19 | TP87 East Section | E | CH |
| 661 | OLYTG | 17/05/19 | TP165 Pre-Excavation Tag | N | MSB |
| 662 | CAN5D | 17/05/19 | TP87 South Section | S | CH |
| 663 | CAN5D | 17/05/19 | TP87 West Section | W | CH |
| 664 | OLYTG | 17/05/19 | TP165 Pre-Excavation Overview | N | MSB |
| 665 | CAN5D | 17/05/19 | TP72 Post-Excavation Tag | N | MB |
| 666 | CAN5D | 17/05/19 | TP72 Post-Excavation Location Shot | N | MB |
| 667 | CAN5D | 17/05/19 | TP72 Post-Excavation Overview | N | MB |
| 668 | CAN5D | 17/05/19 | TP72 North Section | N | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 669 | CAN5D | 17/05/19 | TP72 East Section | E | MB |
| 670 | CAN5D | 17/05/19 | TP72 South Section | S | MB |
| 671 | CAN5D | 17/05/19 | TP72 West Section | W | MB |
| 672 | CAN5D | 17/05/19 | TP69 Post-Excavation Tag | N | CH |
| 673 | CAN5D | 17/05/19 | TP69 Post-Excavation Location Shot | N | CH |
| 674 | CAN5D | 17/05/19 | TP69 Post-Excavation Location Shot (repeat) | N | CH |
| 675 | CAN5D | 17/05/19 | TP69 Post-Excavation Overview | N | CH |
| 676 | CAN5D | 17/05/19 | TP69 North Section | N | CH |
| 677 | CAN5D | 17/05/19 | TP69 East Section | E | CH |
| 678 | CAN5D | 17/05/19 | TP69 South Section | S | CH |
| 679 | CAN5D | 17/05/19 | TP69 West Section | W | CH |
| 680 | OLYTG | 20/05/19 | TP137 Pre-Excavation Tag | N | MSB |
| 681 | OLYTG | 20/05/19 | TP137 Pre-Excavation Location Shot | N | MSB |
| 682 | OLYTG | 20/05/19 | TP136 Pre-Excavation Tag | N | MSB |
| 683 | OLYTG | 20/05/19 | TP136 Pre-Excavation Location Shot | N | MSB |
| 684 | OLYTG | 20/05/19 | TP135 Pre-Excavation Tag | N | MSB |
| 685 | OLYTG | 20/05/19 | TP135 Pre-Excavation Location Shot | N | MSB |
| 686 | OLYTG | 20/05/19 | TP138 Pre-Excavation Tag | N | MSB |
| 687 | OLYTG | 20/05/19 | TP138 Pre-Excavation Location Shot | N | MSB |
| 688 | OLYTG | 20/05/19 | TP139 Pre-Excavation Tag | N | MSB |
| 689 | OLYTG | 20/05/19 | TP139 Pre-Excavation Location Shot | N | MSB |
| 690 | OLYTG | 20/05/19 | TP152 Pre-Excavation Tag | N | MSB |
| 691 | OLYTG | 20/05/19 | TP152 Pre-Excavation Location Shot | N | MSB |
| 692 | OLYTG | 20/05/19 | TP151 Pre-Excavation Tag | N | MSB |
| 693 | OLYTG | 20/05/19 | TP151 Pre-Excavation Location Shot | N | MSB |
| 694 | CAN5D | 21/05/19 | TP71 Post-Excavation Tag | N | MB |
| 695 | CAN5D | 21/05/19 | TP71 Post-Excavation Location Shot | N | MB |
| 696 | CAN5D | 21/05/19 | TP71 Post-Excavation Overview | N | MB |
| 697 | CAN5D | 21/05/19 | TP71 North Section | N | MB |
| 698 | CAN5D | 21/05/19 | TP71 East Section | E | MB |
| 699 | CAN5D | 21/05/19 | TP71 South Section | S | MB |
| 700 | CAN5D | 21/05/19 | TP71 West Section | W | MB |
| 701 | OLYTG | 21/05/19 | TP157 Pre-Excavation Tag | N | MSB |
| 702 | OLYTG | 21/05/19 | TP157 Pre-Excavation Location Shot | N | MSB |
| 703 | CAN5D | 21/05/19 | TP252 Post-Excavation Tag | N | CH |
| 704 | CAN5D | 21/05/19 | TP252 Post-Excavation Location Shot | N | CH |
| 705 | OLYTG | 21/05/19 | TP166 Pre-Excavation Tag | N | MSB |
| 706 | OLYTG | 21/05/19 | TP166 Pre-Excavation Location Shot | N | MSB |
| 707 | CAN5D | 21/05/19 | TP252 Post-Excavation Overview | N | CH |
| 708 | CAN5D | 21/05/19 | TP252 North Section | N | CH |
| 709 | CAN5D | 21/05/19 | TP252 East Section | E | CH |
| 710 | CAN5D | 21/05/19 | TP252 South Section | S | CH |
| 711 | CAN5D | 21/05/19 | TP252 West Section | W | CH |
| 712 | OLYTG | 21/05/19 | TP168 Pre-Excavation Tag | N | MSB |
| 713 | OLYTG | 21/05/19 | TP168 Pre-Excavation Location Shot | N | MSB |
| 714 | CAN5D | 21/05/19 | TP35 Post-Excavation Tag | N | MB |
| 715 | CAN5D | 21/05/19 | TP35 Post-Excavation Location Shot | N | MB |
| 716 | CAN5D | 21/05/19 | TP35 Post-Excavation Overview | N | MB |
| 717 | CAN5D | 21/05/19 | TP35 North Section | N | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 718 | CAN5D | 21/05/19 | TP35 East Section | E | MB |
| 719 | CAN5D | 21/05/19 | TP35 South Section | S | MB |
| 720 | CAN5D | 21/05/19 | TP35 West Section | W | MB |
| 721 | OLYTG | 21/05/19 | TP169 Pre-Excavation Tag | N | MSB |
| 722 | OLYTG | 21/05/19 | TP169 Pre-Excavation Tag | N | MSB |
| 723 | OLYTG | 21/05/19 | TP169 Pre-Excavation Location Shot | N | MSB |
| 724 | OLYTG | 21/05/19 | TP167 Pre-Excavation Tag | N | MSB |
| 725 | OLYTG | 21/05/19 | TP167 Pre-Excavation Location Shot | N | MSB |
| 726 | CAN5D | 21/05/19 | TP34 Post-Excavation Tag | N | CH |
| 727 | CAN5D | 21/05/19 | TP34 Post-Excavation Location Shot | N | CH |
| 728 | CAN5D | 21/05/19 | TP34 Post-Excavation Overview | N | CH |
| 729 | CAN5D | 21/05/19 | TP34 North Section | N | CH |
| 730 | CAN5D | 21/05/19 | TP34 East Section | E | CH |
| 731 | CAN5D | 21/05/19 | TP34 South Section | S | CH |
| 732 | OLYTG | 21/05/19 | TP180 Pre-Excavation Tag | N | MSB |
| 733 | CAN5D | 21/05/19 | TP34 West Section | W | CH |
| 734 | OLYTG | 21/05/19 | TP180 Pre-Excavation Location Shot | N | MSB |
| 735 | OLYTG | 21/05/19 | TP179 Pre-Excavation Tag | N | MSB |
| 736 | OLYTG | 21/05/19 | TP179 Pre-Excavation Location Shot | N | MSB |
| 737 | CAN5D | 21/05/19 | TP47 Post-Excavation Tag | N | MB |
| 738 | CAN5D | 21/05/19 | TP47 Post-Excavation Location Shot | N | MB |
| 739 | OLYTG | 21/05/19 | TP178 Pre-Excavation Tag | N | MSB |
| 740 | OLYTG | 21/05/19 | TP178 Pre-Excavation Location Shot | N | MSB |
| 741 | CAN5D | 21/05/19 | TP47 Post-Excavation Overview | N | MB |
| 742 | CAN5D | 21/05/19 | TP47 North Section | N | MB |
| 743 | CAN5D | 21/05/19 | TP47 East Section | E | MB |
| 744 | OLYTG | 21/05/19 | TP177 Pre-Excavation Tag | N | MSB |
| 745 | CAN5D | 21/05/19 | TP47 South Section | S | MB |
| 746 | CAN5D | 21/05/19 | TP47 West Section | W | MB |
| 747 | OLYTG | 21/05/19 | TP177 Pre-Excavation Location Shot | N | MSB |
| 748 | CAN5D | 21/05/19 | TP51 Post-Excavation Tag | N | CH |
| 749 | CAN5D | 21/05/19 | TP51 Post-Excavation Location Shot | N | CH |
| 750 | CAN5D | 21/05/19 | TP51 Post-Excavation Overview | N | CH |
| 751 | CAN5D | 21/05/19 | TP51 North Section | N | CH |
| 752 | CAN5D | 21/05/19 | TP51 East Section | E | CH |
| 753 | CAN5D | 21/05/19 | TP51 South Section | S | CH |
| 754 | CAN5D | 21/05/19 | TP51 West Section | W | CH |
| 755 | CAN5D | 21/05/19 | TP70 Post-Excavation Tag | N | MB |
| 756 | CAN5D | 21/05/19 | TP70 Post-Excavation Location Shot | N | MB |
| 757 | CAN5D | 21/05/19 | TP70 Post-Excavation Overview | N | MB |
| 758 | CAN5D | 21/05/19 | TP70 North Section | N | MB |
| 759 | CAN5D | 21/05/19 | TP70 East Section | E | MB |
| 760 | CAN5D | 21/05/19 | TP70 South Section | S | MB |
| 761 | CAN5D | 21/05/19 | TP70 West Section | W | MB |
| 762 | CAN5D | 21/05/19 | TP50 Pre-Excavation Tag | N | MSB |
| 763 | CAN5D | 21/05/19 | TP50 Pre-Excavation Location Shot | N | MSB |
| 764 | CAN5D | 21/05/19 | TP49 Pre-Excavation Tag | N | MSB |
| 765 | CAN5D | 21/05/19 | TP49 Pre-Excavation Location Shot | N | MSB |
| 766 | CAN5D | 21/05/19 | TP33 Pre-Excavation Tag | N | MSB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 767 | CAN5D | 21/05/19 | TP33 Pre-Excavation Location Shot | N | MSB |
| 768 | CAN5D | 21/05/19 | TP32 Pre-Excavation Tag | N | MSB |
| 769 | CAN5D | 21/05/19 | TP32 Pre-Excavation Location Shot | N | MSB |
| 770 | CAN5D | 21/05/19 | TP31 Pre-Excavation Tag | N | MSB |
| 771 | CAN5D | 21/05/19 | TP31 Pre-Excavation Location Shot | N | MSB |
| 772 | CAN5D | 21/05/19 | TP30 Pre-Excavation Tag | N | MSB |
| 773 | CAN5D | 21/05/19 | TP30 Pre-Excavation Location Shot | N | MSB |
| 774 | OLYTG | 21/05/19 | TP255 Pre-Excavation Tag | N | MSB |
| 775 | OLYTG | 21/05/19 | TP255 Pre-Excavation Location Shot | N | MSB |
| 776 | OLYTG | 21/05/19 | TP176 Pre-Excavation Tag | N | MSB |
| 777 | OLYTG | 21/05/19 | TP176 Pre-Excavation Location Shot | N | MSB |
| 778 | OLYTG | 21/05/19 | TP175 Pre-Excavation Tag | N | MSB |
| 779 | OLYTG | 21/05/19 | TP175 Pre-Excavation Location Shot | N | MSB |
| 780 | OLYTG | 21/05/19 | TP174 Pre-Excavation Tag | N | MSB |
| 781 | OLYTG | 21/05/19 | TP174 Pre-Excavation Location Shot | N | MSB |
| 782 | CAN5D | 21/05/19 | TP50 Post-Excavation Tag | N | CH |
| 783 | OLYTG | 21/05/19 | TP173 Pre-Excavation Tag | N | MSB |
| 784 | CAN5D | 21/05/19 | TP50 Post-Excavation Location Shot | N | CH |
| 785 | OLYTG | 21/05/19 | TP173 Pre-Excavation Location Shot | N | MSB |
| 786 | CAN5D | 21/05/19 | TP50 Post-Excavation Overview | N | CH |
| 787 | CAN5D | 21/05/19 | TP50 North Section | N | CH |
| 788 | CAN5D | 21/05/19 | TP50 East Section | E | CH |
| 789 | CAN5D | 21/05/19 | TP50 South Section | S | CH |
| 790 | CAN5D | 21/05/19 | TP50 West Section | W | CH |
| 791 | OLYTG | 21/05/19 | TP183 Pre-Excavation Tag | N | MSB |
| 792 | OLYTG | 21/05/19 | TP183 Pre-Excavation Location Shot | N | MSB |
| 793 | CAN5D | 21/05/19 | TP33 Post-Excavation Tag | N | MB |
| 794 | CAN5D | 21/05/19 | TP33 Post-Excavation Location Shot | N | MB |
| 795 | CAN5D | 21/05/19 | TP33 Post-Excavation Overview | N | MB |
| 796 | CAN5D | 21/05/19 | TP33 North Section | N | MB |
| 797 | CAN5D | 21/05/19 | TP33 East Section | E | MB |
| 798 | CAN5D | 21/05/19 | TP33 South Section | S | MB |
| 799 | CAN5D | 21/05/19 | TP33 West Section | W | MB |
| 800 | CAN5D | 21/05/19 | TP49 Post-Excavation Tag | N | CH |
| 801 | CAN5D | 21/05/19 | TP49 Post-Excavation Location Shot | N | CH |
| 802 | CAN5D | 21/05/19 | TP49 Post-Excavation Overview | N | CH |
| 803 | CAN5D | 21/05/19 | TP49 North Section | N | CH |
| 804 | CAN5D | 21/05/19 | TP49 East Section | E | CH |
| 805 | CAN5D | 21/05/19 | TP49 South Section | S | CH |
| 806 | CAN5D | 21/05/19 | TP49 West Section | W | CH |
| 807 | CAN5D | 21/05/19 | TP32 Post-Excavation Tag | N | MB |
| 808 | CAN5D | 21/05/19 | TP32 Post-Excavation Location Shot | N | MB |
| 809 | CAN5D | 21/05/19 | TP32 North Section | N | MB |
| 810 | CAN5D | 21/05/19 | TP32 East Section | E | MB |
| 811 | CAN5D | 21/05/19 | TP32 South Section | S | MB |
| 812 | CAN5D | 21/05/19 | TP32 West Section | W | MB |
| 813 | CAN5D | 21/05/19 | TP31 Post-Excavation Tag | N | CH |
| 814 | CAN5D | 21/05/19 | TP31 Post-Excavation Location Shot | N | CH |
| 815 | CAN5D | 21/05/19 | TP31 Post-Excavation Overview | N | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 816 | CAN5D | 21/05/19 | TP31 North Section | N | CH |
| 817 | CAN5D | 21/05/19 | TP31 East Section | E | CH |
| 818 | CAN5D | 21/05/19 | TP31 South Section | S | CH |
| 819 | CAN5D | 21/05/19 | TP31 West Section | W | CH |
| 820 | CAN5D | 22/05/19 | TP106 Post-Excavation Tag | N | MB |
| 821 | CAN5D | 22/05/19 | TP106 Post-Excavation Location Shot | N | MB |
| 822 | CAN5D | 22/05/19 | TP106 Post-Excavation Overview | N | MB |
| 823 | CAN5D | 22/05/19 | TP106 North Section | N | MB |
| 824 | CAN5D | 22/05/19 | TP106 East Section | E | MB |
| 825 | CAN5D | 22/05/19 | TP106 South Section | S | MB |
| 826 | CAN5D | 22/05/19 | TP106 West Section | W | MB |
| 827 | CAN5D | 22/05/19 | TP105 Post-Excavation Tag | N | CH |
| 828 | CAN5D | 22/05/19 | TP105 Post-Excavation Location Shot | N | CH |
| 829 | CAN5D | 22/05/19 | TP105 Post-Excavation Overview | N | CH |
| 830 | CAN5D | 22/05/19 | TP105 North Section | N | CH |
| 831 | CAN5D | 22/05/19 | TP105 East Section | E | CH |
| 832 | CAN5D | 22/05/19 | TP105 South Section | S | CH |
| 833 | CAN5D | 22/05/19 | TP105 West Section | W | CH |
| 834 | CAN5D | 22/05/19 | TP104 Post-Excavation Tag | N | MB |
| 835 | CAN5D | 22/05/19 | TP104 Post-Excavation Location Shot | N | MB |
| 836 | CAN5D | 22/05/19 | TP104 Post-Excavation Overview | N | MB |
| 837 | CAN5D | 22/05/19 | TP104 North Section | N | MB |
| 838 | CAN5D | 22/05/19 | TP104 East Section | E | MB |
| 839 | CAN5D | 22/05/19 | TP104 South Section | S | MB |
| 840 | CAN5D | 22/05/19 | TP104 West Section | W | MB |
| 841 | CAN5D | 22/05/19 | TP103 Post-Excavation Tag | N | CH |
| 842 | CAN5D | 22/05/19 | TP103 Post-Excavation Location Shot | N | CH |
| 843 | CAN5D | 22/05/19 | TP103 Post-Excavation Overview | N | CH |
| 844 | CAN5D | 22/05/19 | TP103 North Section | N | CH |
| 845 | CAN5D | 22/05/19 | TP103 East Section | E | CH |
| 846 | CAN5D | 22/05/19 | TP103 South Section | S | CH |
| 847 | CAN5D | 22/05/19 | TP103 West Section | W | CH |
| 848 | CAN5D | 22/05/19 | TP102 Post-Excavation Tag | N | MB |
| 849 | CAN5D | 22/05/19 | TP102 Post-Excavation Location Shot | N | MB |
| 850 | CAN5D | 22/05/19 | TP102 Post-Excavation Overview | N | MB |
| 851 | CAN5D | 22/05/19 | TP102 North Section | N | MB |
| 852 | CAN5D | 22/05/19 | TP102 East Section | E | MB |
| 853 | CAN5D | 22/05/19 | TP102 South Section | S | MB |
| 854 | CAN5D | 22/05/19 | TP102 West Section | W | MB |
| 855 | CAN5D | 22/05/19 | TP101 Post-Excavation Tag | N | CH |
| 856 | CAN5D | 22/05/19 | TP101 Post-Excavation Location Shot | N | CH |
| 857 | CAN5D | 22/05/19 | TP101 Post-Excavation Overview | N | CH |
| 858 | CAN5D | 22/05/19 | TP101 North Section | N | CH |
| 859 | CAN5D | 22/05/19 | TP101 East Section | E | CH |
| 860 | CAN5D | 22/05/19 | TP101 South Section | S | CH |
| 861 | CAN5D | 22/05/19 | TP101 West Section | W | CH |
| 862 | OLYTG | 22/05/19 | TP182 Pre-Excavation Tag | N | MSB |
| 863 | OLYTG | 22/05/19 | TP182 Pre-Excavation Location Shot | N | MSB |
| 864 | OLYTG | 22/05/19 | TP153 Pre-Excavation Tag | N | MSB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 865 | OLYTG | 22/05/19 | TP153 Pre-Excavation Location Shot | N | MSB |
| 866 | OLYTG | 22/05/19 | TP154 Pre-Excavation Tag | N | MSB |
| 867 | OLYTG | 22/05/19 | TP154 Pre-Excavation Location Shot | N | MSB |
| 868 | CAN5D | 22/05/19 | TP119 Post-Excavation Tag | N | MB |
| 869 | CAN5D | 22/05/19 | TP119 Post-Excavation Location Shot | N | MB |
| 870 | CAN5D | 22/05/19 | TP119 Post-Excavation Overview | N | MB |
| 871 | CAN5D | 22/05/19 | TP119 North Section | N | MB |
| 872 | CAN5D | 22/05/19 | TP119 East Section | E | MB |
| 873 | CAN5D | 22/05/19 | TP119 South Section | S | MB |
| 874 | CAN5D | 22/05/19 | TP119 West Section | W | MB |
| 875 | CAN5D | 22/05/19 | TP120 Post-Excavation Tag | N | CH |
| 876 | CAN5D | 22/05/19 | TP120 Post-Excavation Location Shot | N | CH |
| 877 | CAN5D | 22/05/19 | TP120 Post-Excavation Location Shot (repeat) | N | CH |
| 878 | CAN5D | 22/05/19 | TP120 Post-Excavation Overview | N | CH |
| 879 | CAN5D | 22/05/19 | TP120 North Section | N | CH |
| 880 | CAN5D | 22/05/19 | TP120 East Section | E | CH |
| 881 | CAN5D | 22/05/19 | TP120 South Section | S | CH |
| 882 | CAN5D | 22/05/19 | TP120 West Section | W | CH |
| 883 | CAN5D | 22/05/19 | TP121 Post-Excavation Tag | N | MB |
| 884 | CAN5D | 22/05/19 | TP121 Post-Excavation Location Shot | N | MB |
| 885 | CAN5D | 22/05/19 | TP121 Post-Excavation Overview | N | MB |
| 886 | CAN5D | 22/05/19 | TP121 North Section | N | MB |
| 887 | CAN5D | 22/05/19 | TP121 East Section | E | MB |
| 888 | CAN5D | 22/05/19 | TP121 South Section | S | MB |
| 889 | CAN5D | 22/05/19 | TP121 West Section | W | MB |
| 890 | CAN5D | 22/05/19 | TP122 Post-Excavation Tag | N | CH |
| 891 | CAN5D | 22/05/19 | TP122 Post-Excavation Location Shot | N | CH |
| 892 | CAN5D | 22/05/19 | TP122 Post-Excavation Overview | N | CH |
| 893 | CAN5D | 22/05/19 | TP122 North Section | N | CH |
| 894 | CAN5D | 22/05/19 | TP122 East Section | E | CH |
| 895 | CAN5D | 22/05/19 | TP122 South Section | S | CH |
| 896 | CAN5D | 22/05/19 | TP122 West Section | W | CH |
| 897 | CAN5D | 22/05/19 | TP123 Post-Excavation Tag | N | MB |
| 898 | CAN5D | 22/05/19 | TP123 Post-Excavation Location Shot | N | MB |
| 899 | CAN5D | 22/05/19 | TP123 Post-Excavation Overview | N | MB |
| 900 | CAN5D | 22/05/19 | TP123 North Section | N | MB |
| 901 | CAN5D | 22/05/19 | TP123 East Section | E | MB |
| 902 | CAN5D | 22/05/19 | TP123 South Section | S | MB |
| 903 | CAN5D | 22/05/19 | TP123 West Section | W | MB |
| 904 | CAN5D | 22/05/19 | TP124 Post-Excavation Tag | N | CH |
| 905 | CAN5D | 22/05/19 | TP124 Post-Excavation Location Shot | N | CH |
| 906 | CAN5D | 22/05/19 | TP124 Post-Excavation Overview | N | CH |
| 907 | CAN5D | 22/05/19 | TP124 North Section | N | CH |
| 908 | CAN5D | 22/05/19 | TP124 East Section | E | CH |
| 909 | CAN5D | 22/05/19 | TP124 South Section | S | CH |
| 910 | CAN5D | 22/05/19 | TP124 West Section | W | CH |
| 911 | CAN5D | 22/05/19 | TP139 Post-Excavation Tag | N | MB |
| 912 | CAN5D | 22/05/19 | TP139 Post-Excavation Location Shot | N | MB |
| 913 | CAN5D | 22/05/19 | TP139 Post-Excavation Overview | N | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 914 | CAN5D | 22/05/19 | TP139 North Section | N | MB |
| 915 | CAN5D | 22/05/19 | TP139 East Section | E | MB |
| 916 | CAN5D | 22/05/19 | TP139 South Section | S | MB |
| 917 | CAN5D | 22/05/19 | TP139 West Section | W | MB |
| 918 | CAN5D | 22/05/19 | TP138 Post-Excavation Tag | N | CH |
| 919 | CAN5D | 22/05/19 | TP138 Post-Excavation Location Shot | N | CH |
| 920 | CAN5D | 22/05/19 | TP138 Post-Excavation Overview | N | CH |
| 921 | CAN5D | 22/05/19 | TP138 North Section | N | CH |
| 922 | CAN5D | 22/05/19 | TP138 North Section | N | CH |
| 923 | CAN5D | 22/05/19 | TP138 East Section | E | CH |
| 924 | CAN5D | 22/05/19 | TP138 South Section | S | CH |
| 925 | CAN5D | 22/05/19 | TP138 West Section | W | CH |
| 926 | CAN5D | 22/05/19 | TP137 Post-Excavation Tag | N | MB |
| 927 | CAN5D | 22/05/19 | TP137 Post-Excavation Location Shot | N | MB |
| 928 | CAN5D | 22/05/19 | TP137 Post-Excavation Overview | N | MB |
| 929 | CAN5D | 22/05/19 | TP137 North Section | N | MB |
| 930 | CAN5D | 22/05/19 | TP137 East Section | E | MB |
| 931 | CAN5D | 22/05/19 | TP137 South Section | S | MB |
| 932 | CAN5D | 22/05/19 | TP137 West Section | W | MB |
| 933 | CAN5D | 22/05/19 | TP136 Post-Excavation Tag | N | CH |
| 934 | CAN5D | 22/05/19 | TP136 Post-Excavation Location Shot | N | CH |
| 935 | CAN5D | 22/05/19 | TP136 Post-Excavation Overview | N | CH |
| 936 | CAN5D | 22/05/19 | TP136 North Section | N | CH |
| 937 | CAN5D | 22/05/19 | TP136 East Section | E | CH |
| 938 | CAN5D | 22/05/19 | TP136 South Section | S | CH |
| 939 | CAN5D | 22/05/19 | TP136 West Section | W | CH |
| 940 | CAN5D | 22/05/19 | TP152 Post-Excavation Tag | N | MB |
| 941 | CAN5D | 22/05/19 | TP152 Post-Excavation Location Shot | N | MB |
| 942 | CAN5D | 22/05/19 | TP152 Post-Excavation Overview | N | MB |
| 943 | CAN5D | 22/05/19 | TP152 North Section | N | MB |
| 944 | CAN5D | 22/05/19 | TP152 East Section | E | MB |
| 945 | CAN5D | 22/05/19 | TP152 South Section | S | MB |
| 946 | CAN5D | 22/05/19 | TP152 West Section | W | MB |
| 947 | CAN5D | 22/05/19 | TP135 Post-Excavation Tag | N | CH |
| 948 | CAN5D | 22/05/19 | TP135 Post-Excavation Location Shot | N | CH |
| 949 | CAN5D | 22/05/19 | TP135 Post-Excavation Location Shot (repeat) | N | CH |
| 950 | CAN5D | 22/05/19 | TP135 Post-Excavation Overview | N | CH |
| 951 | CAN5D | 22/05/19 | TP135 North Section | N | CH |
| 952 | CAN5D | 22/05/19 | TP135 East Section | E | CH |
| 953 | CAN5D | 22/05/19 | TP135 South Section | S | CH |
| 954 | CAN5D | 22/05/19 | TP135 West Section | W | CH |
| 955 | CAN5D | 22/05/19 | TP134 Post-Excavation Tag | N | MB |
| 956 | CAN5D | 22/05/19 | TP134 Post-Excavation Location Shot | N | MB |
| 957 | CAN5D | 22/05/19 | TP134 Post-Excavation Overview | N | MB |
| 958 | CAN5D | 22/05/19 | TP134 North Section | N | MB |
| 959 | CAN5D | 22/05/19 | TP134 East Section | E | MB |
| 960 | CAN5D | 22/05/19 | TP134 South Section | S | MB |
| 961 | CAN5D | 22/05/19 | TP134 West Section | W | MB |
| 962 | CAN5D | 22/05/19 | TP150 Post-Excavation Tag | N | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 963 | CAN5D | 22/05/19 | TP150 Post-Excavation Location Shot | N | CH |
| 964 | CAN5D | 22/05/19 | TP150 Post-Excavation Location Shot | N | CH |
| 965 | CAN5D | 22/05/19 | TP150 Post-Excavation Overview | N | CH |
| 966 | CAN5D | 22/05/19 | TP150 North Section | N | CH |
| 967 | CAN5D | 22/05/19 | TP150 East Section | E | CH |
| 968 | CAN5D | 22/05/19 | TP150 South Section | S | CH |
| 969 | CAN5D | 22/05/19 | TP150 West Section | W | CH |
| 970 | CAN5D | 22/05/19 | TP133 Post-Excavation Tag | N | MB |
| 971 | CAN5D | 22/05/19 | TP133 Post-Excavation Location Shot | N | MB |
| 972 | CAN5D | 22/05/19 | TP133 Post-Excavation Overview | N | MB |
| 973 | CAN5D | 22/05/19 | TP133 North Section | N | MB |
| 974 | CAN5D | 22/05/19 | TP133 East Section | E | MB |
| 975 | CAN5D | 22/05/19 | TP133 South Section | S | MB |
| 976 | CAN5D | 22/05/19 | TP133 West Section | W | MB |
| 977 | OLYTG | 23/05/19 | TP186 Pre-Excavation Tag | N | MSB |
| 978 | OLYTG | 23/05/19 | TP186 Pre-Excavation Location Shot | N | MSB |
| 979 | OLYTG | 23/05/19 | TP187 Pre-Excavation Tag | N | MSB |
| 980 | OLYTG | 23/05/19 | TP187 Pre-Excavation Location Shot | N | MSB |
| 981 | OLYTG | 23/05/19 | TP188 Pre-Excavation Tag | N | MSB |
| 982 | OLYTG | 23/05/19 | TP188 Pre-Excavation Location Shot | N | MSB |
| 983 | OLYTG | 23/05/19 | TP189 Pre-Excavation Tag | N | MSB |
| 984 | OLYTG | 23/05/19 | TP189 Pre-Excavation Location Shot | N | MSB |
| 985 | OLYTG | 23/05/19 | TP190 Pre-Excavation Tag | N | MSB |
| 986 | OLYTG | 23/05/19 | TP190 Pre-Excavation Location Shot | N | MSB |
| 987 | OLYTG | 23/05/19 | TP191 Pre-Excavation Tag | N | MSB |
| 988 | OLYTG | 23/05/19 | TP191 Pre-Excavation Location Shot | N | MSB |
| 989 | OLYTG | 23/05/19 | TP192 Pre-Excavation Tag | N | MSB |
| 990 | OLYTG | 23/05/19 | TP192 Pre-Excavation Location Shot | N | MSB |
| 991 | OLYTG | 23/05/19 | TP193 Pre-Excavation Tag | N | MSB |
| 992 | OLYTG | 23/05/19 | TP193 Pre-Excavation Location Shot | N | MSB |
| 993 | OLYTG | 23/05/19 | TP194 Pre-Excavation Tag | N | MSB |
| 994 | OLYTG | 23/05/19 | TP194 Pre-Excavation Location Shot | N | MSB |
| 995 | OLYTG | 23/05/19 | TP256 Pre-Excavation Tag | N | MSB |
| 996 | OLYTG | 23/05/19 | TP256 Pre-Excavation Location Shot | N | MSB |
| 997 | OLYTG | 23/05/19 | TP204 Pre-Excavation Tag | N | MSB |
| 998 | OLYTG | 23/05/19 | TP204 Pre-Excavation Location Shot | N | MSB |
| 999 | OLYTG | 23/05/19 | TP205 Pre-Excavation Tag | N | MSB |
| 1000 | OLYTG | 23/05/19 | TP205 Pre-Excavation Location Shot | N | MSB |
| 1001 | OLYTG | 23/05/19 | TP203 Pre-Excavation Tag | N | MSB |
| 1002 | OLYTG | 23/05/19 | TP203 Pre-Excavation Location Shot | N | MSB |
| 1003 | OLYTG | 23/05/19 | TP202 Pre-Excavation Tag | N | MSB |
| 1004 | OLYTG | 23/05/19 | TP202 Pre-Excavation Location Shot | N | MSB |
| 1005 | OLYTG | 23/05/19 | TP201 Pre-Excavation Tag | N | MSB |
| 1006 | OLYTG | 23/05/19 | TP201 Pre-Excavation Location Shot | N | MSB |
| 1007 | OLYTG | 23/05/19 | TP200 Pre-Excavation Tag | N | MSB |
| 1008 | OLYTG | 23/05/19 | TP200 Pre-Excavation Location Shot | N | MSB |
| 1009 | OLYTG | 23/05/19 | TP199 Pre-Excavation Tag | N | MSB |
| 1010 | OLYTG | 23/05/19 | TP199 Pre-Excavation Location Shot | N | MSB |
| 1011 | OLYTG | 23/05/19 | TP198 Pre-Excavation Tag | N | MSB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1012 | OLYTG | 23/05/19 | TP198 Pre-Excavation Location Shot | N | MSB |
| 1013 | OLYTG | 23/05/19 | TP197 Pre-Excavation Tag | N | MSB |
| 1014 | OLYTG | 23/05/19 | TP197 Pre-Excavation Location Shot | N | MSB |
| 1015 | OLYTG | 23/05/19 | TP196 Pre-Excavation Tag | N | MSB |
| 1016 | OLYTG | 23/05/19 | TP196 Pre-Excavation Location Shot | N | MSB |
| 1017 | OLYTG | 23/05/19 | TP195 Pre-Excavation Tag | N | MSB |
| 1018 | OLYTG | 23/05/19 | TP195 Pre-Excavation Location Shot | N | MSB |
| 1019 | OLYTG | 23/05/19 | TP216 Pre-Excavation Tag | N | MSB |
| 1020 | OLYTG | 23/05/19 | TP216 Pre-Excavation Location Shot | N | MSB |
| 1021 | OLYTG | 23/05/19 | TP206 Pre-Excavation Tag | N | MSB |
| 1022 | OLYTG | 23/05/19 | TP206 Pre-Excavation Location Shot | N | MSB |
| 1023 | OLYTG | 23/05/19 | TP207 Pre-Excavation Tag | N | MSB |
| 1024 | OLYTG | 23/05/19 | TP207 Pre-Excavation Location Shot | N | MSB |
| 1025 | OLYTG | 23/05/19 | TP208 Pre-Excavation Tag | N | MSB |
| 1026 | OLYTG | 23/05/19 | TP208 Pre-Excavation Location Shot | N | MSB |
| 1027 | OLYTG | 23/05/19 | TP209 Pre-Excavation Tag | N | MSB |
| 1028 | OLYTG | 23/05/19 | TP209 Pre-Excavation Location Shot | N | MSB |
| 1029 | OLYTG | 23/05/19 | TP210 Pre-Excavation Tag | N | MSB |
| 1030 | OLYTG | 23/05/19 | TP210 Pre-Excavation Location Shot | N | MSB |
| 1031 | OLYTG | 23/05/19 | TP211 Pre-Excavation Tag | N | MSB |
| 1032 | OLYTG | 23/05/19 | TP211 Pre-Excavation Location Shot | N | MSB |
| 1033 | OLYTG | 23/05/19 | TP212 Pre-Excavation Tag | N | MSB |
| 1034 | OLYTG | 23/05/19 | TP212 Pre-Excavation Location Shot | N | MSB |
| 1035 | OLYTG | 23/05/19 | TP213 Pre-Excavation Tag | N | MSB |
| 1036 | OLYTG | 23/05/19 | TP213 Pre-Excavation Location Shot | N | MSB |
| 1037 | OLYTG | 23/05/19 | TP214 Pre-Excavation Tag | N | MSB |
| 1038 | OLYTG | 23/05/19 | TP214 Pre-Excavation Location Shot | N | MSB |
| 1039 | OLYTG | 23/05/19 | TP215 Pre-Excavation Tag | N | MSB |
| 1040 | OLYTG | 23/05/19 | TP215 Pre-Excavation Location Shot | N | MSB |
| 1041 | CAN5D | 24/05/19 | TP149 Post-Excavation Tag | N | CH |
| 1042 | CAN5D | 24/05/19 | TP149 Post-Excavation Location Shot | N | CH |
| 1043 | CAN5D | 24/05/19 | TP149 Post-Excavation Overview | N | CH |
| 1044 | CAN5D | 24/05/19 | TP149 North Section | N | CH |
| 1045 | CAN5D | 24/05/19 | TP149 East Section | E | CH |
| 1046 | CAN5D | 24/05/19 | TP149 South Section | S | CH |
| 1047 | CAN5D | 24/05/19 | TP149 West Section | W | CH |
| 1048 | CAN5D | 24/05/19 | TP257 Post-Excavation Tag | N | MB |
| 1049 | CAN5D | 24/05/19 | TP257 Post-Excavation Location Shot | N | MB |
| 1050 | CAN5D | 24/05/19 | TP257 Post-Excavation Overview | N | MB |
| 1051 | CAN5D | 24/05/19 | TP257 North Section | N | MB |
| 1052 | CAN5D | 24/05/19 | TP257 East Section | E | MB |
| 1053 | CAN5D | 24/05/19 | TP257 South Section | S | MB |
| 1054 | CAN5D | 24/05/19 | TP257 West Section | W | MB |
| 1055 | CAN5D | 24/05/19 | TP166 Post-Excavation Tag | N | CH |
| 1056 | CAN5D | 24/05/19 | TP166 Post-Excavation Location Shot | N | CH |
| 1057 | CAN5D | 24/05/19 | TP166 Post-Excavation Location Shot | N | CH |
| 1058 | CAN5D | 24/05/19 | TP166 Post-Excavation Overview | N | CH |
| 1059 | CAN5D | 24/05/19 | TP166 North Section | N | CH |
| 1060 | CAN5D | 24/05/19 | TP166 East Section | E | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1061 | CAN5D | 24/05/19 | TP166 South Section | S | CH |
| 1062 | CAN5D | 24/05/19 | TP166 West Section | W | CH |
| 1063 | CAN5D | 24/05/19 | TP167 Post-Excavation Tag | N | MB |
| 1064 | CAN5D | 24/05/19 | TP167 Post-Excavation Location Shot | N | MB |
| 1065 | CAN5D | 24/05/19 | TP167 Post-Excavation Overview | N | MB |
| 1066 | CAN5D | 24/05/19 | TP167 North Section | N | MB |
| 1067 | CAN5D | 24/05/19 | TP167 East Section | E | MB |
| 1068 | CAN5D | 24/05/19 | TP167 South Section | S | MB |
| 1069 | CAN5D | 24/05/19 | TP167 West Section | W | MB |
| 1070 | CAN5D | 24/05/19 | TP255 Post-Excavation Tag | N | CH |
| 1071 | CAN5D | 24/05/19 | TP255 Post-Excavation Location Shot | N | CH |
| 1072 | CAN5D | 24/05/19 | TP255 Post-Excavation Overview | N | CH |
| 1073 | CAN5D | 24/05/19 | TP255 North Section | N | CH |
| 1074 | CAN5D | 24/05/19 | TP255 East Section | E | CH |
| 1075 | CAN5D | 24/05/19 | TP255 South Section | S | CH |
| 1076 | CAN5D | 24/05/19 | TP255 West Section | W | CH |
| 1077 | OLYTG | 24/05/19 | TP176 Post-Excavation Tag | N | MB |
| 1078 | OLYTG | 24/05/19 | TP176 Post-Excavation Location Shot | N | MB |
| 1079 | OLYTG | 24/05/19 | TP176 Post-Excavation Overview | N | MB |
| 1080 | OLYTG | 24/05/19 | TP176 North Section | N | MB |
| 1081 | OLYTG | 24/05/19 | TP176 East Section | E | MB |
| 1082 | CAN5D | 24/05/19 | TP176 Post-Excavation Tag | N | CH |
| 1083 | CAN5D | 24/05/19 | TP176 Post-Excavation Location Shot | N | CH |
| 1084 | OLYTG | 24/05/19 | TP176 South Section | S | MB |
| 1085 | OLYTG | 24/05/19 | TP176 West Section | W | MB |
| 1086 | CAN5D | 24/05/19 | TP176 Post-Excavation Overview | N | CH |
| 1087 | CAN5D | 24/05/19 | TP176 North Section | N | CH |
| 1088 | CAN5D | 24/05/19 | TP176 East Section | E | CH |
| 1089 | CAN5D | 24/05/19 | TP176 South Section | S | CH |
| 1090 | CAN5D | 24/05/19 | TP176 West Section | W | CH |
| 1091 | OLYTG | 24/05/19 | TP175 Post-Excavation Tag | N | MB |
| 1092 | OLYTG | 24/05/19 | TP175 Post-Excavation Location Shot | N | MB |
| 1093 | OLYTG | 24/05/19 | TP175 Post-Excavation Overview | N | MB |
| 1094 | OLYTG | 24/05/19 | TP175 North Section | N | MB |
| 1095 | OLYTG | 24/05/19 | TP175 East Section | E | MB |
| 1096 | OLYTG | 24/05/19 | TP175 South Section | S | MB |
| 1097 | OLYTG | 24/05/19 | TP175 West Section | W | MB |
| 1098 | OLYTG | 24/05/19 | TP174 Post-Excavation Tag | N | CH |
| 1099 | OLYTG | 24/05/19 | TP174 Post-Excavation Location Shot | N | CH |
| 1100 | OLYTG | 24/05/19 | TP174 Post-Excavation Overview | N | CH |
| 1101 | OLYTG | 24/05/19 | TP174 North Section | N | CH |
| 1102 | OLYTG | 24/05/19 | TP174 East Section | E | CH |
| 1103 | OLYTG | 24/05/19 | TP174 South Section | S | CH |
| 1104 | OLYTG | 24/05/19 | TP174 West Section | W | CH |
| 1105 | OLYTG | 24/05/19 | TP173 Post-Excavation Tag | N | MB |
| 1106 | OLYTG | 24/05/19 | TP173 Post-Excavation Location Shot | N | MB |
| 1107 | OLYTG | 24/05/19 | TP173 Post-Excavation Overview | N | MB |
| 1108 | OLYTG | 24/05/19 | TP173 North Section | N | MB |
| 1109 | OLYTG | 24/05/19 | TP173 East Section | E | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1110 | OLYTG | 24/05/19 | TP173 South Section | S | MB |
| 1111 | OLYTG | 24/05/19 | TP173 West Section | W | MB |
| 1112 | OLYTG | 24/05/19 | TP183 Post-Excavation Tag | N | CH |
| 1113 | OLYTG | 24/05/19 | TP183 Post-Excavation Location Shot | N | CH |
| 1114 | OLYTG | 24/05/19 | TP183 Post-Excavation Overview | N | CH |
| 1115 | OLYTG | 24/05/19 | TP183 North Section | N | CH |
| 1116 | OLYTG | 24/05/19 | TP183 East Section | E | CH |
| 1117 | OLYTG | 24/05/19 | TP183 South Section | S | CH |
| 1118 | OLYTG | 24/05/19 | TP183 West Section | W | CH |
| 1119 | OLYTG | 24/05/19 | TP182 Post-Excavation Tag | N | MB |
| 1120 | OLYTG | 24/05/19 | TP182 Post-Excavation Location Shot | N | MB |
| 1121 | OLYTG | 24/05/19 | TP182 Post-Excavation Overview | N | MB |
| 1122 | OLYTG | 24/05/19 | TP182 North Section | N | MB |
| 1123 | OLYTG | 24/05/19 | TP182 East Section | E | MB |
| 1124 | OLYTG | 24/05/19 | TP182 South Section | S | MB |
| 1125 | OLYTG | 24/05/19 | TP182 West Section | W | MB |
| 1126 | OLYTG | 24/05/19 | TP195 Post-Excavation Tag | N | CH |
| 1127 | OLYTG | 24/05/19 | TP195 Post-Excavation Location Shot | N | CH |
| 1128 | OLYTG | 24/05/19 | TP195 Post-Excavation Overview | N | CH |
| 1129 | OLYTG | 24/05/19 | TP195 North Section | N | CH |
| 1130 | OLYTG | 24/05/19 | TP195 East Section | E | CH |
| 1131 | OLYTG | 24/05/19 | TP195 South Section | S | CH |
| 1132 | OLYTG | 24/05/19 | TP195 West Section | W | CH |
| 1133 | OLYTG | 24/05/19 | TP196 Post-Excavation Tag | N | MB |
| 1134 | OLYTG | 24/05/19 | TP196 Post-Excavation Location Shot | N | MB |
| 1135 | OLYTG | 24/05/19 | TP196 Post-Excavation Overview | N | MB |
| 1136 | OLYTG | 24/05/19 | TP196 Post-Excavation Overview (repeat) | N | MB |
| 1137 | OLYTG | 24/05/19 | TP196 North Section | N | MB |
| 1138 | OLYTG | 24/05/19 | TP196 East Section | E | MB |
| 1139 | OLYTG | 24/05/19 | TP196 South Section | S | MB |
| 1140 | OLYTG | 24/05/19 | TP196 West Section | W | MB |
| 1141 | OLYTG | 24/05/19 | TP208 Post-Excavation Tag | N | CH |
| 1142 | OLYTG | 24/05/19 | TP208 Post-Excavation Location Shot | N | CH |
| 1143 | OLYTG | 24/05/19 | TP208 Post-Excavation Overview | N | CH |
| 1144 | OLYTG | 24/05/19 | TP208 North Section | N | CH |
| 1145 | OLYTG | 24/05/19 | TP208 East Section | E | CH |
| 1146 | OLYTG | 24/05/19 | TP208 South Section | S | CH |
| 1147 | OLYTG | 24/05/19 | TP208 West Section | W | CH |
| 1148 | OLYTG | 24/05/19 | TP197 Post-Excavation Tag | N | MB |
| 1149 | OLYTG | 24/05/19 | TP197 Post-Excavation Location Shot | N | MB |
| 1150 | OLYTG | 24/05/19 | TP197 Post-Excavation Overview | N | MB |
| 1151 | OLYTG | 24/05/19 | TP197 North Section | N | MB |
| 1152 | OLYTG | 24/05/19 | TP197 East Section | E | MB |
| 1153 | OLYTG | 24/05/19 | TP197 South Section | S | MB |
| 1154 | OLYTG | 24/05/19 | TP197 West Section | W | MB |
| 1155 | OLYTG | 24/05/19 | TP186 Post-Excavation Tag | N | CH |
| 1156 | OLYTG | 24/05/19 | TP186 Post-Excavation Location Shot | N | CH |
| 1157 | OLYTG | 24/05/19 | TP186 Post-Excavation Overview | N | CH |
| 1158 | OLYTG | 24/05/19 | TP186 North Section | N | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1159 | OLYTG | 24/05/19 | TP186 East Section | E | CH |
| 1160 | OLYTG | 24/05/19 | TP186 East Section (repeat) | E | CH |
| 1161 | OLYTG | 24/05/19 | TP186 South Section | S | CH |
| 1162 | OLYTG | 24/05/19 | TP186 West Section | W | CH |
| 1163 | OLYTG | 24/05/19 | TP187 Post-Excavation Tag | N | MB |
| 1164 | OLYTG | 24/05/19 | TP187 Post-Excavation Location Shot | N | MB |
| 1165 | OLYTG | 24/05/19 | TP187 Post-Excavation Overview | N | MB |
| 1166 | OLYTG | 24/05/19 | TP187 Post-Excavation Overview (repeat) | N | MB |
| 1167 | OLYTG | 24/05/19 | TP187 North Section | N | MB |
| 1168 | OLYTG | 24/05/19 | TP187 East Section | E | MB |
| 1169 | OLYTG | 24/05/19 | TP187 South Section | S | MB |
| 1170 | OLYTG | 24/05/19 | TP187 West Section | W | MB |
| 1171 | OLYTG | 24/05/19 | TP188 Post-Excavation Tag | N | CH |
| 1172 | OLYTG | 24/05/19 | TP188 Post-Excavation Location Shot | N | CH |
| 1173 | OLYTG | 24/05/19 | TP188 Post-Excavation Overview | N | CH |
| 1174 | OLYTG | 24/05/19 | TP188 North Section | N | CH |
| 1175 | OLYTG | 24/05/19 | TP188 East Section | E | CH |
| 1176 | OLYTG | 24/05/19 | TP188 South Section | S | CH |
| 1177 | OLYTG | 24/05/19 | TP188 West Section | W | CH |
| 1178 | OLYTG | 24/05/19 | TP189 Post-Excavation Tag | N | MB |
| 1179 | OLYTG | 24/05/19 | TP189 Post-Excavation Location Shot | N | MB |
| 1180 | OLYTG | 24/05/19 | TP189 Post-Excavation Overview | N | MB |
| 1181 | OLYTG | 24/05/19 | TP189 North Section | N | MB |
| 1182 | OLYTG | 24/05/19 | TP189 East Section | E | MB |
| 1183 | OLYTG | 24/05/19 | TP189 South Section | S | MB |
| 1184 | OLYTG | 24/05/19 | TP189 West Section | W | MB |
| 1185 | OLYTG | 24/05/19 | TP190 Post-Excavation Tag | N | CH |
| 1186 | OLYTG | 24/05/19 | TP190 Post-Excavation Location Shot | N | CH |
| 1187 | OLYTG | 24/05/19 | TP190 Post-Excavation Overview | N | CH |
| 1188 | OLYTG | 24/05/19 | TP190 North Section | N | CH |
| 1189 | OLYTG | 24/05/19 | TP190 East Section | E | CH |
| 1190 | OLYTG | 24/05/19 | TP190 East Section (repeat) | E | CH |
| 1191 | OLYTG | 24/05/19 | TP190 South Section | S | CH |
| 1192 | OLYTG | 24/05/19 | TP190 West Section | W | CH |
| 1193 | OLYTG | 24/05/19 | TP191 Post-Excavation Tag | N | MB |
| 1194 | OLYTG | 24/05/19 | TP191 Post-Excavation Location Shot | N | MB |
| 1195 | OLYTG | 24/05/19 | TP191 Post-Excavation Overview | N | MB |
| 1196 | OLYTG | 24/05/19 | TP191 North Section | N | MB |
| 1197 | OLYTG | 24/05/19 | TP191 East Section | E | MB |
| 1198 | OLYTG | 24/05/19 | TP191 South Section | S | MB |
| 1199 | OLYTG | 24/05/19 | TP191 West Section | W | MB |
| 1200 | OLYTG | 24/05/19 | TP192 Post-Excavation Tag | N | CH |
| 1201 | OLYTG | 24/05/19 | TP192 Post-Excavation Location Shot | N | CH |
| 1202 | OLYTG | 24/05/19 | TP192 Post-Excavation Overview | N | CH |
| 1203 | OLYTG | 24/05/19 | TP192 North Section | N | CH |
| 1204 | OLYTG | 24/05/19 | TP192 East Section | E | CH |
| 1205 | OLYTG | 24/05/19 | TP192 South Section | S | CH |
| 1206 | OLYTG | 24/05/19 | TP192 West Section | W | CH |
| 1207 | OLYTG | 24/05/19 | TP193 Post-Excavation Tag | N | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1208 | OLYTG | 24/05/19 | TP193 Post-Excavation Location Shot | N | MB |
| 1209 | OLYTG | 24/05/19 | TP193 Post-Excavation Overview | N | MB |
| 1210 | OLYTG | 24/05/19 | TP193 North Section | N | MB |
| 1211 | OLYTG | 24/05/19 | TP193 East Section | E | MB |
| 1212 | OLYTG | 24/05/19 | TP193 South Section | S | MB |
| 1213 | OLYTG | 24/05/19 | TP193 West Section | W | MB |
| 1214 | OLYTG | 24/05/19 | TP194 Post-Excavation Tag | N | CH |
| 1215 | OLYTG | 24/05/19 | TP194 Post-Excavation Location Shot | N | CH |
| 1216 | OLYTG | 24/05/19 | TP194 Post-Excavation Overview | N | CH |
| 1217 | OLYTG | 24/05/19 | TP194 North Section | N | CH |
| 1218 | OLYTG | 24/05/19 | TP194 East Section | E | CH |
| 1219 | OLYTG | 24/05/19 | TP194 South Section | S | CH |
| 1220 | OLYTG | 24/05/19 | TP194 West Section | W | CH |
| 1221 | OLYTG | 24/05/19 | TP194 West Section (repeat) | W | MB |
| 1222 | OLYTG | 24/05/19 | TP256 Post-Excavation Tag | N | MB |
| 1223 | OLYTG | 24/05/19 | TP256 Post-Excavation Location Shot | N | MB |
| 1224 | OLYTG | 24/05/19 | TP256 Post-Excavation Overview | N | MB |
| 1225 | OLYTG | 24/05/19 | TP256 North Section | N | MB |
| 1226 | OLYTG | 24/05/19 | TP256 East Section | E | MB |
| 1227 | OLYTG | 24/05/19 | TP256 South Section | S | MB |
| 1228 | OLYTG | 24/05/19 | TP256 West Section | W | MB |
| 1229 | OLYTG | 24/05/19 | TP177 Post-Excavation Tag | N | CH |
| 1230 | OLYTG | 24/05/19 | TP177 Post-Excavation Location Shot | N | CH |
| 1231 | OLYTG | 24/05/19 | TP177 Post-Excavation Overview | N | CH |
| 1232 | OLYTG | 24/05/19 | TP177 North Section | N | CH |
| 1233 | OLYTG | 24/05/19 | TP177 East Section | E | CH |
| 1234 | OLYTG | 24/05/19 | TP177 South Section | S | CH |
| 1235 | OLYTG | 24/05/19 | TP177 West Section | W | CH |
| 1236 | OLYTG | 27/05/19 | TP217 Pre-Excavation Tag | N | MSB |
| 1237 | OLYTG | 27/05/19 | TP217 Pre-Excavation Location Shot | N | MSB |
| 1238 | OLYTG | 27/05/19 | TP218 Pre-Excavation Tag | N | MSB |
| 1239 | OLYTG | 27/05/19 | TP218 Pre-Excavation Location Shot | N | MSB |
| 1240 | CAN5D | 27/05/19 | TP179 Post-Excavation Tag | N | MB |
| 1241 | CAN5D | 27/05/19 | TP179 Post-Excavation Location Shot | N | MB |
| 1242 | CAN5D | 27/05/19 | TP179 Post-Excavation Overview | N | MB |
| 1243 | CAN5D | 27/05/19 | TP179 North Section | N | MB |
| 1244 | CAN5D | 27/05/19 | TP179 East Section | E | MB |
| 1245 | CAN5D | 27/05/19 | TP179 South Section | S | MB |
| 1246 | CAN5D | 27/05/19 | TP179 West Section | W | MB |
| 1247 | CAN5D | 27/05/19 | TP180 Post-Excavation Tag | N | CH |
| 1248 | CAN5D | 27/05/19 | TP180 Post-Excavation Location Shot | N | CH |
| 1249 | CAN5D | 27/05/19 | TP180 Post-Excavation Overview | N | CH |
| 1250 | CAN5D | 27/05/19 | TP180 North Section | N | CH |
| 1251 | CAN5D | 27/05/19 | TP180 East Section | E | CH |
| 1252 | CAN5D | 27/05/19 | TP180 South Section | S | CH |
| 1253 | CAN5D | 27/05/19 | TP180 West Section | W | CH |
| 1254 | OLYTG | 27/05/19 | TP219 Pre-Excavation Tag | N | MSB |
| 1255 | OLYTG | 27/05/19 | TP219 Pre-Excavation Location Shot | N | MSB |
| 1256 | OLYTG | 27/05/19 | TP220 Pre-Excavation Tag | N | MSB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1257 | OLYTG | 27/05/19 | TP220 Pre-Excavation Location Shot | N | MSB |
| 1258 | CAN5D | 27/05/19 | TP168 Post-Excavation Tag | N | MB |
| 1259 | CAN5D | 27/05/19 | TP168 Post-Excavation Location Shot | N | MB |
| 1260 | CAN5D | 27/05/19 | TP168 Post-Excavation Overview | N | MB |
| 1261 | CAN5D | 27/05/19 | TP168 North Section | N | MB |
| 1262 | CAN5D | 27/05/19 | TP168 East Section | E | MB |
| 1263 | CAN5D | 27/05/19 | TP168 South Section | S | MB |
| 1264 | OLYTG | 27/05/19 | TP221 Pre-Excavation Tag | N | MSB |
| 1265 | CAN5D | 27/05/19 | TP168 West Section | W | MB |
| 1266 | OLYTG | 27/05/19 | TP221 Pre-Excavation Location Shot | N | MSB |
| 1267 | OLYTG | 27/05/19 | TP222 Pre-Excavation Tag | N | MSB |
| 1268 | OLYTG | 27/05/19 | TP222 Pre-Excavation Location Shot | N | MSB |
| 1269 | CAN5D | 27/05/19 | TP169 Post-Excavation Tag | N | CH |
| 1270 | CAN5D | 27/05/19 | TP169 Post-Excavation Location Shot | N | CH |
| 1271 | CAN5D | 27/05/19 | TP169 Post-Excavation Location Shot (repeat) | N | CH |
| 1272 | CAN5D | 27/05/19 | TP169 Post-Excavation Overview | N | CH |
| 1273 | CAN5D | 27/05/19 | TP169 North Section | N | CH |
| 1274 | CAN5D | 27/05/19 | TP169 North Section (repeat) | N | CH |
| 1275 | OLYTG | 27/05/19 | TP Unknown Location Shot | N | LB |
| 1276 | CAN5D | 27/05/19 | TP169 East Section | E | CH |
| 1277 | CAN5D | 27/05/19 | TP169 South Section | S | CH |
| 1278 | CAN5D | 27/05/19 | TP169 West Section | W | CH |
| 1279 | OLYTG | 27/05/19 | TP225 Pre-Excavation Tag | N | MSB |
| 1280 | OLYTG | 27/05/19 | TP225 Pre-Excavation Location Shot | N | MSB |
| 1281 | OLYTG | 27/05/19 | TP226 Pre-Excavation Tag | N | MSB |
| 1282 | OLYTG | 27/05/19 | TP226 Pre-Excavation Location Shot | N | MSB |
| 1283 | OLYTG | 27/05/19 | TP227 Pre-Excavation Tag | N | MSB |
| 1284 | OLYTG | 27/05/19 | TP227 Pre-Excavation Location Shot | N | MSB |
| 1285 | OLYTG | 27/05/19 | TP237 Pre-Excavation Tag | N | MSB |
| 1286 | OLYTG | 27/05/19 | TP237 Pre-Excavation Location Shot | N | MSB |
| 1287 | CAN5D | 27/05/19 | TP178 Post-Excavation Tag | N | MB |
| 1288 | CAN5D | 27/05/19 | TP178 Post-Excavation Location Shot | N | MB |
| 1289 | CAN5D | 27/05/19 | TP178 Post-Excavation Overview | N | MB |
| 1290 | CAN5D | 27/05/19 | TP178 North Section | N | MB |
| 1291 | CAN5D | 27/05/19 | TP178 East Section | E | MB |
| 1292 | CAN5D | 27/05/19 | TP178 South Section | S | MB |
| 1293 | CAN5D | 27/05/19 | TP178 West Section | W | MB |
| 1294 | OLYTG | 27/05/19 | TP236 Pre-Excavation Tag | N | MSB |
| 1295 | OLYTG | 27/05/19 | VOID | - | - |
| 1296 | OLYTG | 27/05/19 | TP236 Pre-Excavation Location Shot | N | MSB |
| 1297 | OLYTG | 27/05/19 | TP246 Pre-Excavation Tag | N | MSB |
| 1298 | OLYTG | 27/05/19 | TP246 Pre-Excavation Location Shot | N | MSB |
| 1299 | OLYTG | 27/05/19 | TP245 Pre-Excavation Tag | N | MSB |
| 1300 | OLYTG | 27/05/19 | TP245 Pre-Excavation Location Shot | N | MSB |
| 1301 | OLYTG | 27/05/19 | TP235 Pre-Excavation Tag | N | MSB |
| 1302 | OLYTG | 27/05/19 | TP235 Pre-Excavation Location Shot | N | MSB |
| 1303 | CAN5D | 27/05/19 | TP205 Post-Excavation Tag | N | CH |
| 1304 | CAN5D | 27/05/19 | TP205 Post-Excavation Location Shot | N | CH |
| 1305 | CAN5D | 27/05/19 | TP205 Post-Excavation Overview | N | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1306 | CAN5D | 27/05/19 | TP205 North Section | N | CH |
| 1307 | CAN5D | 27/05/19 | TP205 East Section | E | CH |
| 1308 | CAN5D | 27/05/19 | TP205 South Section | S | CH |
| 1309 | CAN5D | 27/05/19 | TP205 West Section | W | CH |
| 1310 | OLYTG | 27/05/19 | TP244 Pre-Excavation Tag | N | MSB |
| 1311 | OLYTG | 27/05/19 | TP244 Pre-Excavation Location Shot | N | MSB |
| 1312 | CAN5D | 27/05/19 | TP204 Post-Excavation Tag | N | MB |
| 1313 | CAN5D | 27/05/19 | TP204 Post-Excavation Location Shot | N | MB |
| 1314 | CAN5D | 27/05/19 | TP204 Post-Excavation Overview | N | MB |
| 1315 | CAN5D | 27/05/19 | TP204 North Section | N | MB |
| 1316 | CAN5D | 27/05/19 | TP204 East Section | E | MB |
| 1317 | CAN5D | 27/05/19 | TP204 South Section | S | MB |
| 1318 | CAN5D | 27/05/19 | TP204 West Section | W | MB |
| 1319 | CAN5D | 27/05/19 | TP200 Post-Excavation Tag | N | CH |
| 1320 | CAN5D | 27/05/19 | TP200 Post-Excavation Location Shot | N | CH |
| 1321 | CAN5D | 27/05/19 | TP200 Post-Excavation Overview | N | CH |
| 1322 | CAN5D | 27/05/19 | TP200 North Section | N | CH |
| 1323 | CAN5D | 27/05/19 | TP200 East Section | E | CH |
| 1324 | CAN5D | 27/05/19 | TP200 South Section | S | CH |
| 1325 | CAN5D | 27/05/19 | TP200 West Section | W | CH |
| 1326 | OLYTG | 27/05/19 | TP234 Pre-Excavation Tag | N | MSB |
| 1327 | OLYTG | 27/05/19 | TP234 Tag Details | N | MSB |
| 1328 | OLYTG | 27/05/19 | TP234 Pre-Excavation Location Shot | N | MSB |
| 1329 | OLYTG | 27/05/19 | TP233 Pre-Excavation Tag | N | MSB |
| 1330 | OLYTG | 27/05/19 | TP233 Pre-Excavation Location Shot | N | MSB |
| 1331 | OLYTG | 27/05/19 | TP232 Pre-Excavation Tag | N | MSB |
| 1332 | OLYTG | 27/05/19 | TP232 Pre-Excavation Location Shot | N | MSB |
| 1333 | OLYTG | 27/05/19 | TP231 Pre-Excavation Tag | N | MSB |
| 1334 | OLYTG | 27/05/19 | TP231 Pre-Excavation Location Shot | N | MSB |
| 1335 | OLYTG | 27/05/19 | TP230 Pre-Excavation Tag | N | MSB |
| 1336 | OLYTG | 27/05/19 | TP230 Pre-Excavation Location Shot | N | MSB |
| 1337 | OLYTG | 27/05/19 | TP229 Pre-Excavation Tag | N | MSB |
| 1338 | OLYTG | 27/05/19 | TP229 Pre-Excavation Location Shot | N | MSB |
| 1339 | OLYTG | 27/05/19 | TP238 Pre-Excavation Tag | N | MSB |
| 1340 | OLYTG | 27/05/19 | TP238 Pre-Excavation Location Shot | N | MSB |
| 1341 | OLYTG | 27/05/19 | TP239 Pre-Excavation Tag | N | MSB |
| 1342 | OLYTG | 27/05/19 | TP239 Pre-Excavation Location Shot | N | MSB |
| 1343 | OLYTG | 27/05/19 | TP240 Pre-Excavation Tag | N | MSB |
| 1344 | OLYTG | 27/05/19 | TP240 Pre-Excavation Location Shot | N | MSB |
| 1345 | OLYTG | 27/05/19 | TP241 Pre-Excavation Tag | N | MSB |
| 1346 | OLYTG | 27/05/19 | TP242 Pre-Excavation Tag | N | MSB |
| 1347 | OLYTG | 27/05/19 | TP242 Pre-Excavation Location Shot | N | MSB |
| 1348 | OLYTG | 27/05/19 | TP243 Pre-Excavation Tag | N | MSB |
| 1349 | OLYTG | 27/05/19 | TP243 Pre-Excavation Location Shot | N | MSB |
| 1350 | OLYTG | 27/05/19 | TP228 Pre-Excavation Tag | N | MSB |
| 1351 | OLYTG | 27/05/19 | TP228 Pre-Excavation Location Shot | N | MSB |
| 1352 | CAN5D | 27/05/19 | TP203 Post-Excavation Tag | N | MB |
| 1353 | CAN5D | 27/05/19 | TP203 Post-Excavation Location Shot | N | MB |
| 1354 | CAN5D | 27/05/19 | TP203 North Section | N | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1355 | CAN5D | 27/05/19 | TP203 East Section | E | MB |
| 1356 | CAN5D | 27/05/19 | TP203 South Section | S | MB |
| 1357 | CAN5D | 28/05/19 | TP201 Post-Excavation Tag | N | CH |
| 1358 | CAN5D | 28/05/19 | TP201 Post-Excavation Location Shot | N | CH |
| 1359 | CAN5D | 28/05/19 | TP201 Post-Excavation Overview | N | CH |
| 1360 | CAN5D | 28/05/19 | TP201 North Section | N | CH |
| 1361 | CAN5D | 28/05/19 | TP201 East Section | E | CH |
| 1362 | CAN5D | 28/05/19 | TP201 South Section | S | CH |
| 1363 | CAN5D | 28/05/19 | TP201 West Section | W | CH |
| 1364 | CAN5D | 28/05/19 | TP246 Post-Excavation Tag | N | MB |
| 1365 | CAN5D | 28/05/19 | TP246 Post-Excavation Location Shot | N | MB |
| 1366 | CAN5D | 28/05/19 | TP246 Post-Excavation Overview | N | MB |
| 1367 | CAN5D | 28/05/19 | TP246 North Section | N | MB |
| 1368 | CAN5D | 28/05/19 | TP246 East Section | E | MB |
| 1369 | CAN5D | 28/05/19 | TP246 South Section | S | MB |
| 1370 | CAN5D | 28/05/19 | TP246 West Section | W | MB |
| 1371 | CAN5D | 28/05/19 | TP245 Post-Excavation Tag | N | CH |
| 1372 | CAN5D | 28/05/19 | TP245 Post-Excavation Location Shot | N | CH |
| 1373 | CAN5D | 28/05/19 | TP245 Post-Excavation Overview | N | CH |
| 1374 | CAN5D | 28/05/19 | TP245 North Section | N | CH |
| 1375 | CAN5D | 28/05/19 | TP245 East Section | E | CH |
| 1376 | CAN5D | 28/05/19 | TP245 South Section | S | CH |
| 1377 | CAN5D | 28/05/19 | TP245 West Section | W | CH |
| 1378 | CAN5D | 28/05/19 | TP244 Post-Excavation Tag | N | MB |
| 1379 | CAN5D | 28/05/19 | TP244 Post-Excavation Location Shot | N | MB |
| 1380 | CAN5D | 28/05/19 | TP244 Post-Excavation Overview | N | MB |
| 1381 | CAN5D | 28/05/19 | TP244 North Section | N | MB |
| 1382 | CAN5D | 28/05/19 | TP244 East Section | E | MB |
| 1383 | CAN5D | 28/05/19 | TP244 South Section | S | MB |
| 1384 | CAN5D | 28/05/19 | TP244 West Section | W | MB |
| 1385 | CAN5D | 28/05/19 | TP235 Post-Excavation Tag | N | CH |
| 1386 | CAN5D | 28/05/19 | TP235 Post-Excavation Location Shot | N | CH |
| 1387 | CAN5D | 28/05/19 | TP235 Post-Excavation Overview | N | CH |
| 1388 | CAN5D | 28/05/19 | TP235 North Section | N | CH |
| 1389 | CAN5D | 28/05/19 | TP235 East Section | E | CH |
| 1390 | CAN5D | 28/05/19 | TP235 South Section | S | CH |
| 1391 | CAN5D | 28/05/19 | TP235 West Section | W | CH |
| 1392 | CAN5D | 28/05/19 | TP236 Post-Excavation Tag | N | MB |
| 1393 | CAN5D | 28/05/19 | TP236 Post-Excavation Location Shot | N | MB |
| 1394 | CAN5D | 28/05/19 | TP236 Post-Excavation Overview | N | MB |
| 1395 | CAN5D | 28/05/19 | TP236 North Section | N | MB |
| 1396 | CAN5D | 28/05/19 | TP236 East Section | E | MB |
| 1397 | CAN5D | 28/05/19 | TP236 South Section | S | MB |
| 1398 | CAN5D | 28/05/19 | TP236 West Section | W | MB |
| 1399 | CAN5D | 28/05/19 | TP225 Post-Excavation Tag | N | CH |
| 1400 | CAN5D | 28/05/19 | TP225 Post-Excavation Location Shot | N | CH |
| 1401 | CAN5D | 28/05/19 | TP225 Post-Excavation Overview | N | CH |
| 1402 | CAN5D | 28/05/19 | TP225 North Section | N | CH |
| 1403 | CAN5D | 28/05/19 | TP225 East Section | E | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1404 | CAN5D | 28/05/19 | TP225 South Section | S | CH |
| 1405 | CAN5D | 28/05/19 | TP225 West Section | W | CH |
| 1406 | CAN5D | 28/05/19 | TP226 Post-Excavation Tag | N | CH |
| 1407 | CAN5D | 28/05/19 | TP226 Post-Excavation Location Shot | N | CH |
| 1408 | CAN5D | 28/05/19 | TP226 Post-Excavation Overview | N | CH |
| 1409 | CAN5D | 28/05/19 | TP226 North Section | N | CH |
| 1410 | CAN5D | 28/05/19 | TP226 East Section | E | CH |
| 1411 | CAN5D | 28/05/19 | TP226 South Section | S | CH |
| 1412 | CAN5D | 28/05/19 | TP226 West Section | W | CH |
| 1413 | CAN5D | 28/05/19 | TP215 Post-Excavation Tag | N | MB |
| 1414 | CAN5D | 28/05/19 | TP215 Post-Excavation Location Shot | N | MB |
| 1415 | CAN5D | 28/05/19 | TP215 Post-Excavation Overview | N | MB |
| 1416 | CAN5D | 28/05/19 | TP215 North Section | N | MB |
| 1417 | CAN5D | 28/05/19 | TP215 East Section | E | MB |
| 1418 | CAN5D | 28/05/19 | TP215 South Section | S | MB |
| 1419 | CAN5D | 28/05/19 | TP215 West Section | W | MB |
| 1420 | CAN5D | 28/05/19 | TP214 Post-Excavation Tag | N | CH |
| 1421 | CAN5D | 28/05/19 | TP214 Post-Excavation Location Shot | N | CH |
| 1422 | CAN5D | 28/05/19 | TP214 Post-Excavation Overview | N | CH |
| 1423 | CAN5D | 28/05/19 | TP214 North Section | N | CH |
| 1424 | CAN5D | 28/05/19 | TP214 East Section | E | CH |
| 1425 | CAN5D | 28/05/19 | TP214 South Section | S | CH |
| 1426 | CAN5D | 28/05/19 | TP214 West Section | W | CH |
| 1427 | CAN5D | 28/05/19 | TP213 Post-Excavation Tag | N | MB |
| 1428 | CAN5D | 28/05/19 | TP213 Post-Excavation Location Shot | N | MB |
| 1429 | CAN5D | 28/05/19 | TP213 Post-Excavation Overview | N | MB |
| 1430 | CAN5D | 28/05/19 | TP213 North Section | N | MB |
| 1431 | CAN5D | 28/05/19 | TP213 East Section | E | MB |
| 1432 | CAN5D | 28/05/19 | TP213 South Section | S | MB |
| 1433 | CAN5D | 28/05/19 | TP213 West Section | W | MB |
| 1434 | CAN5D | 28/05/19 | TP202 Post-Excavation Tag | N | CH |
| 1435 | CAN5D | 28/05/19 | TP202 Post-Excavation Location Shot | N | CH |
| 1436 | CAN5D | 28/05/19 | TP202 Post-Excavation Overview | N | CH |
| 1437 | CAN5D | 28/05/19 | TP202 North Section | N | CH |
| 1438 | CAN5D | 28/05/19 | TP202 East Section | E | CH |
| 1439 | CAN5D | 28/05/19 | TP202 South Section | S | CH |
| 1440 | CAN5D | 28/05/19 | TP202 West Section | W | CH |
| 1441 | CAN5D | 28/05/19 | TP203 Post-Excavation Tag | N | MB |
| 1442 | CAN5D | 28/05/19 | TP203 Post-Excavation Location Shot | N | MB |
| 1443 | CAN5D | 28/05/19 | TP203 Post-Excavation Overview | N | MB |
| 1444 | CAN5D | 28/05/19 | TP203 North Section | N | MB |
| 1445 | CAN5D | 28/05/19 | TP203 East Section | E | MB |
| 1446 | CAN5D | 28/05/19 | TP203 South Section | S | MB |
| 1447 | CAN5D | 28/05/19 | TP203 West Section | W | MB |
| 1448 | CAN5D | 28/05/19 | TP227 Post-Excavation Tag | N | CH |
| 1449 | CAN5D | 28/05/19 | TP227 Post-Excavation Location Shot | N | CH |
| 1450 | CAN5D | 28/05/19 | TP227 Post-Excavation Overview | N | CH |
| 1451 | CAN5D | 28/05/19 | TP227 North Section | N | CH |
| 1452 | CAN5D | 28/05/19 | TP227 East Section | E | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1453 | CAN5D | 28/05/19 | TP227 South Section | S | CH |
| 1454 | CAN5D | 28/05/19 | TP227 West Section | W | CH |
| 1455 | CAN5D | 28/05/19 | TP227 West Section (repeat) | W | MB |
| 1456 | CAN5D | 28/05/19 | TP237 Post-Excavation Tag | N | MB |
| 1457 | CAN5D | 28/05/19 | TP237 Post-Excavation Location Shot | N | MB |
| 1458 | CAN5D | 28/05/19 | TP237 Post-Excavation Overview | N | MB |
| 1459 | CAN5D | 28/05/19 | TP237 North Section | N | MB |
| 1460 | CAN5D | 28/05/19 | TP237 East Section | E | MB |
| 1461 | CAN5D | 28/05/19 | TP237 South Section | S | MB |
| 1462 | CAN5D | 28/05/19 | TP237 West Section | W | MB |
| 1463 | CAN5D | 28/05/19 | TP199 Post-Excavation Tag | N | CH |
| 1464 | CAN5D | 28/05/19 | TP199 Post-Excavation Location Shot | N | CH |
| 1465 | CAN5D | 28/05/19 | TP199 Post-Excavation Overview | N | CH |
| 1466 | CAN5D | 28/05/19 | TP199 North Section | N | CH |
| 1467 | CAN5D | 28/05/19 | TP199 East Section | E | CH |
| 1468 | CAN5D | 28/05/19 | TP199 South Section | S | CH |
| 1469 | CAN5D | 28/05/19 | TP199 West Section | W | CH |
| 1470 | CAN5D | 28/05/19 | TP198 Post-Excavation Tag | N | MB |
| 1471 | CAN5D | 28/05/19 | TP198 Post-Excavation Location Shot | N | MB |
| 1472 | CAN5D | 28/05/19 | TP198 Post-Excavation Overview | N | MB |
| 1473 | CAN5D | 28/05/19 | TP198 North Section | N | MB |
| 1474 | CAN5D | 28/05/19 | TP198 East Section | E | MB |
| 1475 | CAN5D | 28/05/19 | TP198 South Section | S | MB |
| 1476 | CAN5D | 28/05/19 | TP198 West Section | W | MB |
| 1477 | CAN5D | 29/05/19 | TP212 Post-Excavation Tag | N | CH |
| 1478 | CAN5D | 29/05/19 | TP212 Post-Excavation Location Shot | N | CH |
| 1479 | CAN5D | 29/05/19 | TP212 Post-Excavation Overview | N | CH |
| 1480 | CAN5D | 29/05/19 | TP212 North Section | N | CH |
| 1481 | CAN5D | 29/05/19 | TP212 East Section | E | CH |
| 1482 | CAN5D | 29/05/19 | TP212 South Section | S | CH |
| 1483 | CAN5D | 29/05/19 | TP212 West Section | W | CH |
| 1484 | CAN5D | 29/05/19 | TP211 Post-Excavation Tag | N | MB |
| 1485 | CAN5D | 29/05/19 | TP211 Post-Excavation Location Shot | N | MB |
| 1486 | CAN5D | 29/05/19 | TP211 Post-Excavation Overview | N | MB |
| 1487 | CAN5D | 29/05/19 | TP211 North Section | N | MB |
| 1488 | CAN5D | 29/05/19 | TP211 East Section | E | MB |
| 1489 | CAN5D | 29/05/19 | TP211 South Section | S | MB |
| 1490 | CAN5D | 29/05/19 | TP211 West Section | W | MB |
| 1491 | CAN5D | 29/05/19 | TP210 Post-Excavation Location Shot | N | CH |
| 1492 | CAN5D | 29/05/19 | TP210 Post-Excavation Overview | N | CH |
| 1493 | CAN5D | 29/05/19 | TP210 North Section | N | CH |
| 1494 | CAN5D | 29/05/19 | TP210 East Section | E | CH |
| 1495 | CAN5D | 29/05/19 | TP210 South Section | S | CH |
| 1496 | CAN5D | 29/05/19 | TP210 West Section | W | CH |
| 1497 | CAN5D | 29/05/19 | TP209 Post-Excavation Tag | N | MB |
| 1498 | CAN5D | 29/05/19 | TP209 Post-Excavation Location Shot | N | MB |
| 1499 | CAN5D | 29/05/19 | TP209 Post-Excavation Overview | N | MB |
| 1500 | CAN5D | 29/05/19 | TP209 North Section | N | MB |
| 1501 | CAN5D | 29/05/19 | TP209 East Section | E | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1502 | CAN5D | 29/05/19 | TP209 South Section | S | MB |
| 1503 | CAN5D | 29/05/19 | TP209 West Section | W | MB |
| 1504 | CAN5D | 29/05/19 | TP206 Post-Excavation Tag | N | CH |
| 1505 | CAN5D | 29/05/19 | TP206 Post-Excavation Location Shot | N | CH |
| 1506 | CAN5D | 29/05/19 | TP206 Post-Excavation Overview | N | CH |
| 1507 | CAN5D | 29/05/19 | TP206 North Section | N | CH |
| 1508 | CAN5D | 29/05/19 | TP206 East Section | E | CH |
| 1509 | CAN5D | 29/05/19 | TP206 South Section | S | CH |
| 1510 | CAN5D | 29/05/19 | TP206 West Section | W | CH |
| 1511 | CAN5D | 29/05/19 | TP207 Post-Excavation Tag | N | MB |
| 1512 | CAN5D | 29/05/19 | TP207 Post-Excavation Location Shot | N | MB |
| 1513 | CAN5D | 29/05/19 | TP207 Post-Excavation Overview | N | MB |
| 1514 | CAN5D | 29/05/19 | TP207 North Section | N | MB |
| 1515 | CAN5D | 29/05/19 | TP207 East Section | E | MB |
| 1516 | CAN5D | 29/05/19 | TP207 South Section | S | MB |
| 1517 | CAN5D | 29/05/19 | TP207 West Section | W | MB |
| 1518 | CAN5D | 29/05/19 | TP216 Post-Excavation Tag | N | CH |
| 1519 | CAN5D | 29/05/19 | TP216 Post-Excavation Location Shot | N | CH |
| 1520 | CAN5D | 29/05/19 | TP216 Post-Excavation Overview | N | CH |
| 1521 | CAN5D | 29/05/19 | TP216 North Section | N | CH |
| 1522 | CAN5D | 29/05/19 | TP216 East Section | E | CH |
| 1523 | CAN5D | 29/05/19 | TP216 South Section | S | CH |
| 1524 | CAN5D | 29/05/19 | TP216 West Section | W | CH |
| 1525 | CAN5D | 29/05/19 | TP224 Post-Excavation Tag | N | MB |
| 1526 | CAN5D | 29/05/19 | TP224 Post-Excavation Location Shot | N | MB |
| 1527 | CAN5D | 29/05/19 | TP224 Post-Excavation Overview | N | MB |
| 1528 | CAN5D | 29/05/19 | TP224 North Section | N | MB |
| 1529 | CAN5D | 29/05/19 | TP224 East Section | E | MB |
| 1530 | CAN5D | 29/05/19 | TP224 South Section | S | MB |
| 1531 | CAN5D | 29/05/19 | TP224 West Section | W | MB |
| 1532 | CAN5D | 29/05/19 | TP222 Post-Excavation Tag | N | CH |
| 1533 | CAN5D | 29/05/19 | TP222 Post-Excavation Location Shot | N | CH |
| 1534 | CAN5D | 29/05/19 | TP222 Post-Excavation Overview | N | CH |
| 1535 | CAN5D | 29/05/19 | TP222 North Section | N | CH |
| 1536 | CAN5D | 29/05/19 | TP222 East Section | E | CH |
| 1537 | CAN5D | 29/05/19 | TP222 South Section | S | CH |
| 1538 | CAN5D | 29/05/19 | TP222 West Section | W | CH |
| 1539 | SAMS8 | 29/05/19 | TP223 Pre-Excavation Tag | N | MSB |
| 1540 | SAMS8 | 29/05/19 | TP223 Pre-Excavation Location Shot | N | MSB |
| 1541 | CAN5D | 29/05/19 | TP221 Post-Excavation Tag | N | MB |
| 1542 | CAN5D | 29/05/19 | TP221 Post-Excavation Location Shot | N | MB |
| 1543 | CAN5D | 29/05/19 | TP221 Post-Excavation Overview | N | MB |
| 1544 | CAN5D | 29/05/19 | TP221 North Section | N | MB |
| 1545 | CAN5D | 29/05/19 | TP221 East Section | E | MB |
| 1546 | CAN5D | 29/05/19 | TP221 South Section | S | MB |
| 1547 | CAN5D | 29/05/19 | TP221 West Section | W | MB |
| 1548 | CAN5D | 29/05/19 | TP220 Post-Excavation Tag | N | CH |
| 1549 | CAN5D | 29/05/19 | TP220 Post-Excavation Location Shot | N | CH |
| 1550 | CAN5D | 29/05/19 | TP220 Post-Excavation Overview | N | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1551 | CAN5D | 29/05/19 | TP220 North Section | N | CH |
| 1552 | CAN5D | 29/05/19 | TP220 East Section | E | CH |
| 1553 | CAN5D | 29/05/19 | TP220 South Section | S | CH |
| 1554 | CAN5D | 29/05/19 | TP220 West Section | W | CH |
| 1555 | CAN5D | 29/05/19 | TP219 Post-Excavation Tag | N | MB |
| 1556 | CAN5D | 29/05/19 | TP219 Post-Excavation Location Shot | N | MB |
| 1557 | CAN5D | 29/05/19 | TP219 Post-Excavation Overview | N | MB |
| 1558 | CAN5D | 29/05/19 | TP219 North Section | N | MB |
| 1559 | CAN5D | 29/05/19 | TP219 East Section | E | MB |
| 1560 | CAN5D | 29/05/19 | TP219 South Section | S | MB |
| 1561 | CAN5D | 29/05/19 | TP219 West Section | W | MB |
| 1562 | OLYTG | 29/05/19 | TP218 Post-Excavation Tag | N | CH |
| 1563 | OLYTG | 29/05/19 | TP218 Post-Excavation Location Shot | N | CH |
| 1564 | OLYTG | 29/05/19 | TP218 Post-Excavation Overview | N | CH |
| 1565 | OLYTG | 29/05/19 | TP218 North Section | N | CH |
| 1566 | OLYTG | 29/05/19 | TP218 East Section | E | CH |
| 1567 | OLYTG | 29/05/19 | TP218 South Section | S | CH |
| 1568 | OLYTG | 29/05/19 | TP218 West Section | W | CH |
| 1569 | CAN5D | 29/05/19 | TP218 Post-Excavation Tag | N | MB |
| 1570 | CAN5D | 29/05/19 | TP218 Post-Excavation Location Shot | N | MB |
| 1571 | CAN5D | 29/05/19 | TP218 Post-Excavation Overview | N | MB |
| 1572 | CAN5D | 29/05/19 | TP218 North Section | N | MB |
| 1573 | OLYTG | 29/05/19 | TP217 Post-Excavation Tag | N | CH |
| 1574 | OLYTG | 29/05/19 | TP217 Post-Excavation Location Shot | N | CH |
| 1575 | OLYTG | 29/05/19 | TP217 Post-Excavation Overview | N | CH |
| 1576 | OLYTG | 29/05/19 | TP217 North Section | N | CH |
| 1577 | OLYTG | 29/05/19 | TP217 East Section | E | CH |
| 1578 | OLYTG | 29/05/19 | TP217 South Section | S | CH |
| 1579 | OLYTG | 29/05/19 | TP217 West Section | W | CH |
| 1580 | OLYTG | 29/05/19 | TP228 Post-Excavation Tag | N | MB |
| 1581 | OLYTG | 29/05/19 | TP228 Post-Excavation Location Shot | N | MB |
| 1582 | OLYTG | 29/05/19 | TP228 Post-Excavation Overview | N | MB |
| 1583 | OLYTG | 29/05/19 | TP228 North Section | N | MB |
| 1584 | OLYTG | 29/05/19 | TP228 East Section | E | MB |
| 1585 | OLYTG | 29/05/19 | TP228 South Section | S | MB |
| 1586 | OLYTG | 29/05/19 | TP228 West Section | W | MB |
| 1587 | OLYTG | 29/05/19 | TP238 Post-Excavation Tag | N | CH |
| 1588 | OLYTG | 29/05/19 | TP238 Post-Excavation Location Shot | N | CH |
| 1589 | OLYTG | 29/05/19 | TP238 Post-Excavation Overview | N | CH |
| 1590 | OLYTG | 29/05/19 | TP238 North Section | N | CH |
| 1591 | OLYTG | 29/05/19 | TP238 East Section | E | CH |
| 1592 | OLYTG | 29/05/19 | TP238 South Section | S | CH |
| 1593 | OLYTG | 29/05/19 | TP238 West Section | W | CH |
| 1594 | OLYTG | 29/05/19 | TP239 Post-Excavation Tag | N | MB |
| 1595 | OLYTG | 29/05/19 | TP239 Post-Excavation Location Shot | N | MB |
| 1596 | OLYTG | 29/05/19 | TP239 Post-Excavation Overview | N | MB |
| 1597 | OLYTG | 29/05/19 | TP239 North Section | N | MB |
| 1598 | OLYTG | 29/05/19 | TP239 East Section | E | MB |
| 1599 | OLYTG | 29/05/19 | TP239 South Section | S | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1600 | OLYTG | 29/05/19 | TP239 West Section | W | MB |
| 1601 | OLYTG | 29/05/19 | TP229 Post-Excavation Tag | N | CH |
| 1602 | OLYTG | 29/05/19 | TP229 Post-Excavation Location Shot | N | CH |
| 1603 | OLYTG | 29/05/19 | TP229 Post-Excavation Overview | N | CH |
| 1604 | OLYTG | 29/05/19 | TP229 North Section | N | CH |
| 1605 | OLYTG | 29/05/19 | TP229 East Section | E | CH |
| 1606 | OLYTG | 29/05/19 | TP229 South Section | S | CH |
| 1607 | OLYTG | 29/05/19 | TP229 West Section | W | CH |
| 1608 | SAMS8 | 30/05/19 | Site Location Shot | N | LB |
| 1609 | CAN5D | 30/05/19 | TP223 Post-Excavation Tag | N | MB |
| 1610 | CAN5D | 30/05/19 | TP223 Post-Excavation Location Shot | N | MB |
| 1611 | CAN5D | 30/05/19 | TP223 Post-Excavation Overview | N | MB |
| 1612 | CAN5D | 30/05/19 | TP223 North Section | N | MB |
| 1613 | CAN5D | 30/05/19 | TP223 East Section | E | MB |
| 1614 | CAN5D | 30/05/19 | TP223 South Section | S | MB |
| 1615 | CAN5D | 30/05/19 | TP223 West Section | W | MB |
| 1616 | CAN5D | 30/05/19 | TP234 Post-Excavation Tag | N | CH |
| 1617 | CAN5D | 30/05/19 | TP234 Post-Excavation Location Shot | N | CH |
| 1618 | CAN5D | 30/05/19 | TP234 Post-Excavation Overview | N | CH |
| 1619 | CAN5D | 30/05/19 | TP234 North Section | N | CH |
| 1620 | CAN5D | 30/05/19 | TP234 East Section | E | CH |
| 1621 | CAN5D | 30/05/19 | TP234 South Section | S | CH |
| 1622 | CAN5D | 30/05/19 | TP234 West Section | W | CH |
| 1623 | SAMS8 | 30/05/19 | TP73 Pre-Excavation Tag | N | LB |
| 1624 | SAMS8 | 30/05/19 | TP73 Pre-Excavation Location Shot | N | LB |
| 1625 | SAMS8 | 30/05/19 | TP74 Pre-Excavation Tag | N | LB |
| 1626 | SAMS8 | 30/05/19 | TP74 Pre-Excavation Location Shot | N | LB |
| 1627 | SAMS8 | 30/05/19 | TP75 Pre-Excavation Tag | N | LB |
| 1628 | SAMS8 | 30/05/19 | TP75 Pre-Excavation Location Shot | N | LB |
| 1629 | SAMS8 | 30/05/19 | TP89 Pre-Excavation Tag | N | LB |
| 1630 | CAN5D | 30/05/19 | TP233 Post-Excavation Tag | N | MB |
| 1631 | CAN5D | 30/05/19 | TP233 Post-Excavation Location Shot | N | MB |
| 1632 | SAMS8 | 30/05/19 | TP89 Pre-Excavation Location Shot | N | LB |
| 1633 | CAN5D | 30/05/19 | TP233 Post-Excavation Overview | N | MB |
| 1634 | CAN5D | 30/05/19 | TP233 North Section | N | MB |
| 1635 | CAN5D | 30/05/19 | TP233 East Section | E | MB |
| 1636 | CAN5D | 30/05/19 | TP233 South Section | S | MB |
| 1637 | CAN5D | 30/05/19 | TP233 West Section | W | MB |
| 1638 | SAMS8 | 30/05/19 | TP91 Pre-Excavation Tag | N | LB |
| 1639 | SAMS8 | 30/05/19 | TP91 Pre-Excavation Location Shot | N | LB |
| 1640 | SAMS8 | 30/05/19 | TP88 Pre-Excavation Tag | N | LB |
| 1641 | SAMS8 | 30/05/19 | TP88 Pre-Excavation Location Shot | N | LB |
| 1642 | CAN5D | 30/05/19 | TP232 Post-Excavation Tag | N | CH |
| 1643 | CAN5D | 30/05/19 | TP232 Post-Excavation Location Shot | N | CH |
| 1644 | CAN5D | 30/05/19 | TP232 Post-Excavation Overview | N | CH |
| 1645 | CAN5D | 30/05/19 | TP232 North Section | N | CH |
| 1646 | CAN5D | 30/05/19 | TP232 East Section | E | CH |
| 1647 | CAN5D | 30/05/19 | TP232 South Section | S | CH |
| 1648 | CAN5D | 30/05/19 | TP232 West Section | W | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1649 | CAN5D | 30/05/19 | TP231 Post-Excavation Tag | N | MB |
| 1650 | CAN5D | 30/05/19 | TP231 Post-Excavation Location Shot | N | MB |
| 1651 | CAN5D | 30/05/19 | TP231 Post-Excavation Overview | N | MB |
| 1652 | CAN5D | 30/05/19 | TP231 North Section | N | MB |
| 1653 | CAN5D | 30/05/19 | TP231 East Section | E | MB |
| 1654 | CAN5D | 30/05/19 | TP231 South Section | S | MB |
| 1655 | CAN5D | 30/05/19 | TP231 West Section | W | MB |
| 1656 | CAN5D | 30/05/19 | TP230 Post-Excavation Tag | N | CH |
| 1657 | CAN5D | 30/05/19 | TP230 Post-Excavation Location Shot | N | CH |
| 1658 | CAN5D | 30/05/19 | TP230 Post-Excavation Location Shot (repeat) | N | CH |
| 1659 | CAN5D | 30/05/19 | TP230 Post-Excavation Overview | N | CH |
| 1660 | CAN5D | 30/05/19 | TP230 North Section | N | CH |
| 1661 | CAN5D | 30/05/19 | TP230 East Section | E | CH |
| 1662 | CAN5D | 30/05/19 | TP230 South Section | S | CH |
| 1663 | CAN5D | 30/05/19 | TP230 West Section | W | CH |
| 1664 | CAN5D | 30/05/19 | TP240 Post-Excavation Tag | N | MB |
| 1665 | CAN5D | 30/05/19 | TP240 Post-Excavation Location Shot | N | MB |
| 1666 | CAN5D | 30/05/19 | TP240 Post-Excavation Overview | N | MB |
| 1667 | CAN5D | 30/05/19 | TP240 North Section | N | MB |
| 1668 | CAN5D | 30/05/19 | TP240 East Section | E | MB |
| 1669 | CAN5D | 30/05/19 | TP240 South Section | S | MB |
| 1670 | CAN5D | 30/05/19 | TP240 West Section | W | MB |
| 1671 | CAN5D | 30/05/19 | TP241 Post-Excavation Tag | N | CH |
| 1672 | CAN5D | 30/05/19 | TP241 Post-Excavation Location Shot | N | CH |
| 1673 | CAN5D | 30/05/19 | TP241 Post-Excavation Overview | N | CH |
| 1674 | CAN5D | 30/05/19 | TP241 North Section | N | CH |
| 1675 | CAN5D | 30/05/19 | TP241 North Section (repeat) | N | CH |
| 1676 | CAN5D | 30/05/19 | TP241 East Section | E | CH |
| 1677 | CAN5D | 30/05/19 | TP241 South Section | S | CH |
| 1678 | CAN5D | 30/05/19 | TP241 West Section | W | CH |
| 1679 | CAN5D | 30/05/19 | TP242 Post-Excavation Tag | N | MB |
| 1680 | CAN5D | 30/05/19 | TP242 Post-Excavation Location Shot | N | MB |
| 1681 | CAN5D | 30/05/19 | TP242 Post-Excavation Overview | N | MB |
| 1682 | CAN5D | 30/05/19 | TP242 North Section | N | MB |
| 1683 | CAN5D | 30/05/19 | TP242 East Section | E | MB |
| 1684 | CAN5D | 30/05/19 | TP242 South Section | S | MB |
| 1685 | CAN5D | 30/05/19 | TP242 West Section | W | MB |
| 1686 | CAN5D | 30/05/19 | TP243 Post-Excavation Tag | N | CH |
| 1687 | CAN5D | 30/05/19 | TP243 Post-Excavation Location Shot | N | CH |
| 1688 | CAN5D | 30/05/19 | TP243 Post-Excavation Overview | N | CH |
| 1689 | CAN5D | 30/05/19 | TP243 North Section | N | CH |
| 1690 | CAN5D | 30/05/19 | TP243 East Section | E | CH |
| 1691 | CAN5D | 30/05/19 | TP243 South Section | S | CH |
| 1692 | CAN5D | 30/05/19 | TP243 West Section | W | CH |
| 1693 | OLYTG | 30/05/19 | TP107 Pre-Excavation Tag | N | MSB |
| 1694 | OLYTG | 30/05/19 | TP107 Pre-Excavation Location Shot | N | MSB |
| 1695 | OLYTG | 30/05/19 | TP108 Pre-Excavation Tag | N | MSB |
| 1696 | OLYTG | 30/05/19 | TP108 Pre-Excavation Location Shot | N | MSB |
| 1697 | OLYTG | 30/05/19 | TP125 Pre-Excavation Tag | N | MSB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1698 | OLYTG | 30/05/19 | TP125 Pre-Excavation Location Shot | N | MSB |
| 1699 | OLYTG | 30/05/19 | TP140 Pre-Excavation Tag | N | MSB |
| 1700 | OLYTG | 30/05/19 | TP140 Pre-Excavation Location Shot | N | MSB |
| 1701 | OLYTG | 30/05/19 | TP53 Pre-Excavation Tag | N | MSB |
| 1702 | OLYTG | 30/05/19 | TP53 Pre-Excavation Location Shot | N | MSB |
| 1703 | OLYTG | 30/05/19 | TP54 Pre-Excavation Tag | N | MSB |
| 1704 | OLYTG | 30/05/19 | TP54 Pre-Excavation Location Shot | N | MSB |
| 1705 | OLYTG | 30/05/19 | TP36 Pre-Excavation Tag | N | MSB |
| 1706 | OLYTG | 30/05/19 | TP36 Pre-Excavation Location Shot | N | MSB |
| 1707 | OLYTG | 30/05/19 | TP26 Pre-Excavation Tag | N | MSB |
| 1708 | OLYTG | 30/05/19 | TP26 Pre-Excavation Location Shot | N | MSB |
| 1709 | OLYTG | 30/05/19 | TP13 Pre-Excavation Tag | N | MSB |
| 1710 | OLYTG | 30/05/19 | TP13 Pre-Excavation Location Shot | N | MSB |
| 1711 | OLYTG | 30/05/19 | TP3 Pre-Excavation Tag | N | MSB |
| 1712 | OLYTG | 30/05/19 | TP3 Pre-Excavation Location Shot | N | MSB |
| 1713 | OLYTG | 30/05/19 | TP12 Pre-Excavation Tag | N | MSB |
| 1714 | OLYTG | 30/05/19 | TP12 Pre-Excavation Location Shot | N | MSB |
| 1715 | OLYTG | 31/05/19 | TP30 Pre-Excavation Tag | N | MSB |
| 1716 | OLYTG | 31/05/19 | TP30 Pre-Excavation Location Shot | N | MSB |
| 1717 | OLYTG | 31/05/19 | TP24 Pre-Excavation Tag | N | MSB |
| 1718 | OLYTG | 31/05/19 | TP24 Pre-Excavation Location Shot | N | MSB |
| 1719 | OLYTG | 31/05/19 | TP23 Pre-Excavation Tag | N | MSB |
| 1720 | OLYTG | 31/05/19 | TP23 Pre-Excavation Location Shot | N | MSB |
| 1721 | OLYTG | 31/05/19 | TP254 Pre-Excavation Tag | N | MSB |
| 1722 | OLYTG | 31/05/19 | TP254 Pre-Excavation Location Shot | N | MSB |
| 1723 | OLYTG | 31/05/19 | TP15 Pre-Excavation Tag | N | MSB |
| 1724 | OLYTG | 31/05/19 | TP15 Pre-Excavation Location Shot | N | MSB |
| 1725 | OLYTG | 31/05/19 | TP40 Pre-Excavation Tag | N | MSB |
| 1726 | OLYTG | 31/05/19 | TP40 Pre-Excavation Location Shot | N | MSB |
| 1727 | OLYTG | 31/05/19 | TP39 Pre-Excavation Tag | N | MSB |
| 1728 | OLYTG | 31/05/19 | TP39 Pre-Excavation Location Shot | N | MSB |
| 1729 | OLYTG | 31/05/19 | TP250 Pre-Excavation Tag | N | MSB |
| 1730 | OLYTG | 31/05/19 | TP250 Pre-Excavation Location Shot | N | MSB |
| 1731 | CAN5D | 31/05/19 | TP153 Post-Excavation Tag | N | CH |
| 1732 | CAN5D | 31/05/19 | TP153 Post-Excavation Location Shot | N | CH |
| 1733 | CAN5D | 31/05/19 | TP153 Post-Excavation Overview | N | CH |
| 1734 | CAN5D | 31/05/19 | TP153 Post-Excavation Overview (repeat) | N | CH |
| 1735 | CAN5D | 31/05/19 | TP153 North Section | N | CH |
| 1736 | CAN5D | 31/05/19 | TP153 East Section | E | CH |
| 1737 | CAN5D | 31/05/19 | TP153 South Section | S | CH |
| 1738 | CAN5D | 31/05/19 | TP153 West Section | W | CH |
| 1739 | CAN5D | 31/05/19 | TP154 Post-Excavation Tag | N | MB |
| 1740 | CAN5D | 31/05/19 | TP154 Post-Excavation Location Shot | N | MB |
| 1741 | CAN5D | 31/05/19 | TP154 Post-Excavation Overview | N | MB |
| 1742 | CAN5D | 31/05/19 | TP154 North Section | N | MB |
| 1743 | CAN5D | 31/05/19 | TP154 East Section | E | MB |
| 1744 | CAN5D | 31/05/19 | TP154 South Section | S | MB |
| 1745 | CAN5D | 31/05/19 | TP154 West Section | W | MB |
| 1746 | CAN5D | 31/05/19 | TP125 Post-Excavation Tag | N | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1747 | CAN5D | 31/05/19 | TP125 Post-Excavation Location Shot | N | CH |
| 1748 | CAN5D | 31/05/19 | TP125 Post-Excavation Overview | N | CH |
| 1749 | CAN5D | 31/05/19 | TP125 North Section | N | CH |
| 1750 | CAN5D | 31/05/19 | TP125 East Section | E | CH |
| 1751 | CAN5D | 31/05/19 | TP125 South Section | S | CH |
| 1752 | CAN5D | 31/05/19 | TP125 West Section | W | CH |
| 1753 | CAN5D | 31/05/19 | Working Shot | - | LB |
| 1754 | CAN5D | 31/05/19 | TP140 Post-Excavation Tag | N | MB |
| 1755 | CAN5D | 31/05/19 | TP140 Post-Excavation Location Shot | N | MB |
| 1756 | CAN5D | 31/05/19 | TP140 Post-Excavation Overview | N | MB |
| 1757 | CAN5D | 31/05/19 | TP140 North Section | N | MB |
| 1758 | CAN5D | 31/05/19 | TP140 East Section | E | MB |
| 1759 | CAN5D | 31/05/19 | TP140 South Section | S | MB |
| 1760 | CAN5D | 31/05/19 | TP140 West Section | W | MB |
| 1761 | CAN5D | 31/05/19 | TP107 Post-Excavation Tag | N | CH |
| 1762 | CAN5D | 31/05/19 | TP107 Post-Excavation Location Shot | N | CH |
| 1763 | CAN5D | 31/05/19 | TP107 Post-Excavation Overview | N | CH |
| 1764 | CAN5D | 31/05/19 | TP107 North Section | N | CH |
| 1765 | CAN5D | 31/05/19 | TP107 East Section | E | CH |
| 1766 | CAN5D | 31/05/19 | TP107 South Section | S | CH |
| 1767 | CAN5D | 31/05/19 | TP107 West Section | W | CH |
| 1768 | CAN5D | 31/05/19 | TP108 Post-Excavation Tag | N | MB |
| 1769 | CAN5D | 31/05/19 | TP108 Post-Excavation Location Shot | N | MB |
| 1770 | CAN5D | 31/05/19 | TP108 Post-Excavation Overview | N | MB |
| 1771 | CAN5D | 31/05/19 | TP108 North Section | N | MB |
| 1772 | CAN5D | 31/05/19 | TP108 East Section | E | MB |
| 1773 | CAN5D | 31/05/19 | TP108 South Section | S | MB |
| 1774 | CAN5D | 31/05/19 | TP108 West Section | W | MB |
| 1775 | CAN5D | 31/05/19 | TP89 Post-Excavation Tag | N | CH |
| 1776 | CAN5D | 31/05/19 | TP89 Post-Excavation Location Shot | N | CH |
| 1777 | CAN5D | 31/05/19 | TP89 Post-Excavation Overview | N | CH |
| 1778 | CAN5D | 31/05/19 | TP89 North Section | N | CH |
| 1779 | CAN5D | 31/05/19 | TP89 East Section | E | CH |
| 1780 | CAN5D | 31/05/19 | TP89 South Section | S | CH |
| 1781 | CAN5D | 31/05/19 | TP89 West Section | W | CH |
| 1782 | CAN5D | 31/05/19 | TP90 Post-Excavation Tag | N | MB |
| 1783 | CAN5D | 31/05/19 | TP90 Post-Excavation Location Shot | N | MB |
| 1784 | CAN5D | 31/05/19 | TP90 Post-Excavation Overview | N | MB |
| 1785 | CAN5D | 31/05/19 | TP90 North Section | N | MB |
| 1786 | CAN5D | 31/05/19 | TP90 East Section | E | MB |
| 1787 | CAN5D | 31/05/19 | TP90 South Section | S | MB |
| 1788 | CAN5D | 31/05/19 | TP90 West Section | W | MB |
| 1789 | CAN5D | 31/05/19 | TP88 Post-Excavation Tag | N | CH |
| 1790 | CAN5D | 31/05/19 | TP88 Post-Excavation Location Shot | N | CH |
| 1791 | CAN5D | 31/05/19 | TP88 Post-Excavation Overview | N | CH |
| 1792 | CAN5D | 31/05/19 | TP88 North Section | N | CH |
| 1793 | CAN5D | 31/05/19 | TP88 East Section | E | CH |
| 1794 | CAN5D | 31/05/19 | TP88 South Section | S | CH |
| 1795 | CAN5D | 31/05/19 | TP88 West Section | W | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1796 | CAN5D | 31/05/19 | TP88 West Section (repeat) | W | CH |
| 1797 | CAN5D | 31/05/19 | TP73 Post-Excavation Tag | N | MB |
| 1798 | CAN5D | 31/05/19 | TP73 Post-Excavation Location Shot | N | MB |
| 1799 | CAN5D | 31/05/19 | TP73 Post-Excavation Overview | N | MB |
| 1800 | CAN5D | 31/05/19 | TP73 North Section | N | MB |
| 1801 | CAN5D | 31/05/19 | TP73 East Section | E | MB |
| 1802 | CAN5D | 31/05/19 | TP73 South Section | S | MB |
| 1803 | CAN5D | 31/05/19 | TP73 West Section | W | MB |
| 1804 | CAN5D | 31/05/19 | TP74 Post-Excavation Tag | N | CH |
| 1805 | CAN5D | 31/05/19 | TP74 Post-Excavation Location Shot | N | CH |
| 1806 | CAN5D | 31/05/19 | TP74 Post-Excavation Overview | N | CH |
| 1807 | CAN5D | 31/05/19 | TP74 North Section | N | CH |
| 1808 | CAN5D | 31/05/19 | TP74 East Section | E | CH |
| 1809 | CAN5D | 31/05/19 | TP74 South Section | S | CH |
| 1810 | CAN5D | 31/05/19 | TP74 West Section | W | CH |
| 1811 | CAN5D | 31/05/19 | TP151 Post-Excavation Tag | N | MB |
| 1812 | CAN5D | 31/05/19 | TP151 Post-Excavation Location Shot | N | MB |
| 1813 | CAN5D | 31/05/19 | TP151 Post-Excavation Overview | N | MB |
| 1814 | CAN5D | 31/05/19 | TP151 North Section | N | MB |
| 1815 | CAN5D | 31/05/19 | TP151 East Section | E | MB |
| 1816 | CAN5D | 31/05/19 | TP151 South Section | S | MB |
| 1817 | CAN5D | 31/05/19 | TP151 West Section | W | MB |
| 1818 | SAMS8 | 03/06/19 | TP151 OSL Samples Location | N | MSB |
| 1819 | SAMS8 | 03/06/19 | TP151 OSL Samples Location | N | MSB |
| 1820 | SAMS8 | 03/06/19 | TP151 OSL Samples Location | N | MSB |
| 1821 | SAMS8 | 03/06/19 | TP151 OSL Samples Location | N | MSB |
| 1822 | SAMS8 | 03/06/19 | TP151 OSL Samples Location | N | MSB |
| 1823 | CAN5D | 03/06/19 | TP75 Post-Excavation Tag | N | CH |
| 1824 | CAN5D | 03/06/19 | TP75 Post-Excavation Location Shot | N | CH |
| 1825 | CAN5D | 03/06/19 | TP75 Post-Excavation Overview | N | CH |
| 1826 | CAN5D | 03/06/19 | TP75 North Section | N | CH |
| 1827 | CAN5D | 03/06/19 | TP75 East Section | E | CH |
| 1828 | CAN5D | 03/06/19 | TP75 South Section | S | CH |
| 1829 | CAN5D | 03/06/19 | TP75 West Section | W | CH |
| 1830 | CAN5D | 03/06/19 | TP54 Post-Excavation Tag | N | MB |
| 1831 | CAN5D | 03/06/19 | TP54 Post-Excavation Location Shot | N | MB |
| 1832 | CAN5D | 03/06/19 | TP54 Post-Excavation Overview | N | MB |
| 1833 | CAN5D | 03/06/19 | TP54 North Section | N | MB |
| 1834 | CAN5D | 03/06/19 | TP54 East Section | E | MB |
| 1835 | CAN5D | 03/06/19 | TP54 South Section | S | MB |
| 1836 | CAN5D | 03/06/19 | TP54 West Section | W | MB |
| 1837 | CAN5D | 03/06/19 | TP53 Post-Excavation Tag | N | CH |
| 1838 | CAN5D | 03/06/19 | TP53 Post-Excavation Location Shot | N | CH |
| 1839 | CAN5D | 03/06/19 | TP53 Post-Excavation Overview | N | CH |
| 1840 | CAN5D | 03/06/19 | TP53 North Section | N | CH |
| 1841 | CAN5D | 03/06/19 | TP53 East Section | E | CH |
| 1842 | CAN5D | 03/06/19 | TP53 South Section | S | CH |
| 1843 | CAN5D | 03/06/19 | TP53 West Section | W | CH |
| 1844 | OLYTG | 03/06/19 | TP151 OSL Samples Location | N | MSB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1845 | CAN5D | 03/06/19 | TP36 Post-Excavation Tag | N | MB |
| 1846 | CAN5D | 03/06/19 | TP36 Post-Excavation Location Shot | N | MB |
| 1847 | CAN5D | 03/06/19 | TP36 Post-Excavation Overview | N | MB |
| 1848 | CAN5D | 03/06/19 | TP36 North Section | N | MB |
| 1849 | CAN5D | 03/06/19 | TP36 East Section | E | MB |
| 1850 | CAN5D | 03/06/19 | TP36 South Section | S | MB |
| 1851 | CAN5D | 03/06/19 | TP36 West Section | W | MB |
| 1852 | CAN5D | 03/06/19 | TP26 Post-Excavation Tag | N | CH |
| 1853 | CAN5D | 03/06/19 | TP26 Post-Excavation Location Shot | N | CH |
| 1854 | CAN5D | 03/06/19 | TP26 Post-Excavation Overview | N | CH |
| 1855 | CAN5D | 03/06/19 | TP26 North Section | N | CH |
| 1856 | CAN5D | 03/06/19 | TP26 East Section | E | CH |
| 1857 | CAN5D | 03/06/19 | TP26 South Section | S | CH |
| 1858 | CAN5D | 03/06/19 | TP26 West Section | W | CH |
| 1859 | CAN5D | 03/06/19 | TP12 Post-Excavation Tag | N | MB |
| 1860 | CAN5D | 03/06/19 | TP12 Post-Excavation Location Shot | N | MB |
| 1861 | CAN5D | 03/06/19 | TP12 Post-Excavation Overview | N | MB |
| 1862 | CAN5D | 03/06/19 | TP12 North Section | N | MB |
| 1863 | CAN5D | 03/06/19 | TP12 East Section | E | MB |
| 1864 | CAN5D | 03/06/19 | TP12 South Section | S | MB |
| 1865 | CAN5D | 03/06/19 | TP12 West Section | W | MB |
| 1866 | CAN5D | 03/06/19 | TP3 Post-Excavation Tag | N | CH |
| 1867 | CAN5D | 03/06/19 | TP3 Post-Excavation Location Shot | N | CH |
| 1868 | CAN5D | 03/06/19 | TP3 Post-Excavation Overview | N | CH |
| 1869 | CAN5D | 03/06/19 | TP3 North Section | N | CH |
| 1870 | CAN5D | 03/06/19 | TP3 East Section | E | CH |
| 1871 | CAN5D | 03/06/19 | TP3 South Section | S | CH |
| 1872 | CAN5D | 03/06/19 | TP3 West Section | W | CH |
| 1873 | CAN5D | 03/06/19 | TP13 Post-Excavation Tag | N | MB |
| 1874 | CAN5D | 03/06/19 | TP13 Post-Excavation Location Shot | N | MB |
| 1875 | CAN5D | 03/06/19 | TP13 Post-Excavation Overview | N | MB |
| 1876 | CAN5D | 03/06/19 | TP13 North Section | N | MB |
| 1877 | CAN5D | 03/06/19 | TP13 East Section | E | MB |
| 1878 | CAN5D | 03/06/19 | TP13 South Section | S | MB |
| 1879 | CAN5D | 03/06/19 | TP13 West Section | W | MB |
| 1880 | OLYTG | 03/06/19 | TP127 Pre-Excavation Tag | N | MSB |
| 1881 | OLYTG | 03/06/19 | TP127 Pre-Excavation Location Shot | N | MSB |
| 1882 | OLYTG | 03/06/19 | TP128 Pre-Excavation Tag | N | MSB |
| 1883 | OLYTG | 03/06/19 | TP128 Pre-Excavation Location Shot | N | MSB |
| 1884 | OLYTG | 03/06/19 | TP129 Pre-Excavation Tag | N | MSB |
| 1885 | OLYTG | 03/06/19 | TP129 Pre-Excavation Location Shot | N | MSB |
| 1886 | OLYTG | 03/06/19 | TP144 Pre-Excavation Tag | N | MSB |
| 1887 | OLYTG | 03/06/19 | TP144 Pre-Excavation Location Shot | N | MSB |
| 1888 | OLYTG | 03/06/19 | TP143 Pre-Excavation Tag | N | MSB |
| 1889 | OLYTG | 03/06/19 | TP143 Pre-Excavation Location Shot | N | MSB |
| 1890 | OLYTG | 03/06/19 | TP57 Pre-Excavation Tag | N | MSB |
| 1891 | OLYTG | 03/06/19 | TP57 Pre-Excavation Location Shot | N | MSB |
| 1892 | OLYTG | 03/06/19 | TP58 Pre-Excavation Tag | N | MSB |
| 1893 | OLYTG | 03/06/19 | TP58 Pre-Excavation Location Shot | N | MSB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1894 | OLYTG | 03/06/19 | TP59 Pre-Excavation Tag | N | MSB |
| 1895 | OLYTG | 03/06/19 | TP59 Pre-Excavation Location Shot | N | MSB |
| 1896 | OLYTG | 03/06/19 | TP60 Pre-Excavation Tag | N | MSB |
| 1897 | OLYTG | 03/06/19 | TP60 Pre-Excavation Location Shot | N | MSB |
| 1898 | OLYTG | 03/06/19 | TP249 Pre-Excavation Tag | N | MSB |
| 1899 | OLYTG | 03/06/19 | TP249 Pre-Excavation Location Shot | N | MSB |
| 1900 | SAMS8 | 05/06/19 | TP248 Pre-Excavation Tag | N | LB |
| 1901 | SAMS8 | 05/06/19 | TP248 Pre-Excavation Location Shot | N | LB |
| 1902 | SAMS8 | 05/06/19 | TP81 Pre-Excavation Tag | N | LB |
| 1903 | SAMS8 | 05/06/19 | TP81 Pre-Excavation Location Shot | N | LB |
| 1904 | SAMS8 | 05/06/19 | TP80 Pre-Excavation Tag | N | LB |
| 1905 | SAMS8 | 05/06/19 | TP80 Pre-Excavation Location Shot | N | LB |
| 1906 | SAMS8 | 05/06/19 | TP78 Pre-Excavation Tag | N | LB |
| 1907 | SAMS8 | 05/06/19 | TP78 Pre-Excavation Location Shot | N | LB |
| 1908 | SAMS8 | 05/06/19 | TP77 Pre-Excavation Tag | N | LB |
| 1909 | SAMS8 | 05/06/19 | TP77 Pre-Excavation Location Shot | N | LB |
| 1910 | SAMS8 | 05/06/19 | TP92 Pre-Excavation Tag | N | LB |
| 1911 | SAMS8 | 05/06/19 | TP92 Pre-Excavation Location Shot | N | LB |
| 1912 | SAMS8 | 05/06/19 | TP247 Pre-Excavation Tag | N | LB |
| 1913 | SAMS8 | 05/06/19 | TP247 Pre-Excavation Location Shot | N | LB |
| 1914 | SAMS8 | 05/06/19 | TP93 Pre-Excavation Tag | N | LB |
| 1915 | SAMS8 | 05/06/19 | TP93 Pre-Excavation Location Shot | N | LB |
| 1916 | SAMS8 | 05/06/19 | TP94 Pre-Excavation Tag | N | LB |
| 1917 | SAMS8 | 05/06/19 | TP94 Pre-Excavation Location Shot | N | LB |
| 1918 | SAMS8 | 05/06/19 | TP112 Pre-Excavation Tag | N | LB |
| 1919 | SAMS8 | 05/06/19 | TP112 Pre-Excavation Location Shot | N | LB |
| 1920 | SAMS8 | 05/06/19 | TP111 Pre-Excavation Tag | N | LB |
| 1921 | SAMS8 | 05/06/19 | TP111 Pre-Excavation Location Shot | N | LB |
| 1922 | SAMS8 | 05/06/19 | TP253 Pre-Excavation Tag | N | LB |
| 1923 | SAMS8 | 05/06/19 | TP253 Pre-Excavation Location Shot | N | LB |
| 1924 | SAMS8 | 05/06/19 | TP79 Pre-Excavation Tag | N | LB |
| 1925 | SAMS8 | 05/06/19 | TP79 Pre-Excavation Location Shot | N | LB |
| 1926 | SAMS8 | 05/06/19 | TP110 Pre-Excavation Tag | N | LB |
| 1927 | SAMS8 | 05/06/19 | TP110 Pre-Excavation Location Shot | N | LB |
| 1928 | SAMS8 | 05/06/19 | TP109 Pre-Excavation Tag | N | LB |
| 1929 | SAMS8 | 05/06/19 | TP109 Pre-Excavation Location Shot | N | LB |
| 1930 | SAMS8 | 05/06/19 | TP91 Pre-Excavation Tag | N | LB |
| 1931 | SAMS8 | 05/06/19 | TP91 Pre-Excavation Location Shot | N | LB |
| 1932 | SAMS8 | 05/06/19 | TP126 Pre-Excavation Tag | N | LB |
| 1933 | SAMS8 | 05/06/19 | TP126 Pre-Excavation Location Shot | N | LB |
| 1934 | SAMS8 | 05/06/19 | TP160 Pre-Excavation Tag | N | LB |
| 1935 | SAMS8 | 05/06/19 | TP160 Pre-Excavation Location Shot | N | LB |
| 1936 | SAMS8 | 05/06/19 | TP184 Pre-Excavation Tag | N | LB |
| 1937 | SAMS8 | 05/06/19 | TP184 Pre-Excavation Location Shot | N | LB |
| 1938 | SAMS8 | 05/06/19 | TP185 Pre-Excavation Tag | N | LB |
| 1939 | SAMS8 | 05/06/19 | TP185 Pre-Excavation Location Shot | N | LB |
| 1940 | SAMS8 | 05/06/19 | TP172 Pre-Excavation Tag | N | LB |
| 1941 | SAMS8 | 05/06/19 | TP172 Pre-Excavation Location Shot | N | LB |
| 1942 | SAMS8 | 05/06/19 | TP171 Pre-Excavation Tag | N | LB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1943 | SAMS8 | 05/06/19 | TP171 Pre-Excavation Location Shot | N | LB |
| 1944 | SAMS8 | 05/06/19 | TP170 Pre-Excavation Tag | N | LB |
| 1945 | SAMS8 | 05/06/19 | TP170 Pre-Excavation Location Shot | N | LB |
| 1946 | SAMS8 | 05/06/19 | TP181 Pre-Excavation Tag | N | LB |
| 1947 | SAMS8 | 05/06/19 | TP181 Pre-Excavation Location Shot | N | LB |
| 1948 | SAMS8 | 05/06/19 | TP156 Pre-Excavation Tag | N | LB |
| 1949 | SAMS8 | 05/06/19 | TP156 Pre-Excavation Location Shot | N | LB |
| 1950 | SAMS8 | 05/06/19 | TP141 Pre-Excavation Tag | N | LB |
| 1951 | SAMS8 | 05/06/19 | TP141 Pre-Excavation Location Shot | N | LB |
| 1952 | SAMS8 | 05/06/19 | TP155 Pre-Excavation Tag | N | LB |
| 1953 | SAMS8 | 05/06/19 | TP155 Pre-Excavation Location Shot | N | LB |
| 1954 | CAN5D | 05/06/19 | TP15 Post-Excavation Tag | N | CH |
| 1955 | CAN5D | 05/06/19 | TP15 Post-Excavation Location Shot | N | CH |
| 1956 | CAN5D | 05/06/19 | TP15 Post-Excavation Location Shot (repeat) | N | CH |
| 1957 | CAN5D | 05/06/19 | TP15 Post-Excavation Overview | N | CH |
| 1958 | CAN5D | 05/06/19 | TP15 North Section | N | CH |
| 1959 | CAN5D | 05/06/19 | TP15 East Section | E | CH |
| 1960 | CAN5D | 05/06/19 | TP15 South Section | S | CH |
| 1961 | CAN5D | 05/06/19 | TP15 West Section | W | CH |
| 1962 | CAN5D | 05/06/19 | TP254 Post-Excavation Tag | N | MB |
| 1963 | CAN5D | 05/06/19 | TP254 Post-Excavation Location Shot | N | MB |
| 1964 | CAN5D | 05/06/19 | TP254 Post-Excavation Overview | N | MB |
| 1965 | CAN5D | 05/06/19 | TP254 North Section | N | MB |
| 1966 | CAN5D | 05/06/19 | TP254 East Section | E | MB |
| 1967 | CAN5D | 05/06/19 | TP254 South Section | S | MB |
| 1968 | CAN5D | 05/06/19 | TP254 West Section | W | MB |
| 1969 | CAN5D | 05/06/19 | TP23 Post-Excavation Tag | N | CH |
| 1970 | CAN5D | 05/06/19 | TP23 Post-Excavation Location Shot | N | CH |
| 1971 | CAN5D | 05/06/19 | TP23 Post-Excavation Overview | N | CH |
| 1972 | CAN5D | 05/06/19 | TP23 North Section | N | CH |
| 1973 | CAN5D | 05/06/19 | TP23 East Section | E | CH |
| 1974 | CAN5D | 05/06/19 | TP23 South Section | S | CH |
| 1975 | CAN5D | 05/06/19 | TP23 West Section | W | CH |
| 1976 | CAN5D | 05/06/19 | TP23 West Section (repeat) | W | MB |
| 1977 | CAN5D | 05/06/19 | TP24 Post-Excavation Tag | N | MB |
| 1978 | CAN5D | 05/06/19 | TP24 Post-Excavation Location Shot | N | MB |
| 1979 | CAN5D | 05/06/19 | TP24 Post-Excavation Overview | N | MB |
| 1980 | CAN5D | 05/06/19 | TP24 North Section | N | MB |
| 1981 | CAN5D | 05/06/19 | TP24 East Section | E | MB |
| 1982 | CAN5D | 05/06/19 | TP24 South Section | S | MB |
| 1983 | CAN5D | 05/06/19 | TP24 West Section | W | MB |
| 1984 | CAN5D | 05/06/19 | TP30 Post-Excavation Tag | N | CH |
| 1985 | CAN5D | 05/06/19 | TP30 Post-Excavation Location Shot | N | CH |
| 1986 | CAN5D | 05/06/19 | TP30 Post-Excavation Overview | N | CH |
| 1987 | CAN5D | 05/06/19 | TP30 North Section | N | CH |
| 1988 | CAN5D | 05/06/19 | TP30 East Section | E | CH |
| 1989 | CAN5D | 05/06/19 | TP30 South Section | S | CH |
| 1990 | CAN5D | 05/06/19 | TP30 West Section | W | CH |
| 1991 | CAN5D | 05/06/19 | TP250 Post-Excavation Tag | N | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 1992 | CAN5D | 05/06/19 | TP250 Post-Excavation Location Shot | N | MB |
| 1993 | CAN5D | 05/06/19 | TP250 Post-Excavation Overview | N | MB |
| 1994 | CAN5D | 05/06/19 | TP250 North Section | N | MB |
| 1995 | CAN5D | 05/06/19 | TP250 East Section | E | MB |
| 1996 | CAN5D | 05/06/19 | TP250 South Section | S | MB |
| 1997 | CAN5D | 05/06/19 | TP250 West Section | W | MB |
| 1998 | CAN5D | 05/06/19 | TP40 Post-Excavation Tag | N | CH |
| 1999 | CAN5D | 05/06/19 | TP40 Post-Excavation Location Shot | N | CH |
| 2000 | CAN5D | 05/06/19 | TP40 Post-Excavation Overview | N | CH |
| 2001 | CAN5D | 05/06/19 | TP40 North Section | N | CH |
| 2002 | CAN5D | 05/06/19 | TP40 East Section | E | CH |
| 2003 | CAN5D | 05/06/19 | TP40 South Section | S | CH |
| 2004 | CAN5D | 05/06/19 | TP40 West Section | W | CH |
| 2005 | CAN5D | 05/06/19 | TP39 Post-Excavation Tag | N | MB |
| 2006 | CAN5D | 05/06/19 | TP39 Post-Excavation Overview | N | MB |
| 2007 | CAN5D | 05/06/19 | TP39 North Section | N | MB |
| 2008 | CAN5D | 05/06/19 | TP39 East Section | E | MB |
| 2009 | CAN5D | 05/06/19 | TP39 South Section | S | MB |
| 2010 | CAN5D | 05/06/19 | TP39 West Section | W | MB |
| 2011 | CAN5D | 06/06/19 | TP249 Post-Excavation Tag | N | CH |
| 2012 | CAN5D | 06/06/19 | TP249 Post-Excavation Location Shot | N | CH |
| 2013 | CAN5D | 06/06/19 | TP249 Post-Excavation Overview | N | CH |
| 2014 | CAN5D | 06/06/19 | TP249 North Section | N | CH |
| 2015 | CAN5D | 06/06/19 | TP249 East Section | E | CH |
| 2016 | CAN5D | 06/06/19 | TP249 South Section | S | CH |
| 2017 | CAN5D | 06/06/19 | TP249 West Section | W | CH |
| 2018 | CAN5D | 06/06/19 | TP60 Post-Excavation Tag | N | MB |
| 2019 | CAN5D | 06/06/19 | TP60 Post-Excavation Location Shot | N | MB |
| 2020 | CAN5D | 06/06/19 | TP60 Post-Excavation Overview | N | MB |
| 2021 | CAN5D | 06/06/19 | TP60 North Section | N | MB |
| 2022 | CAN5D | 06/06/19 | TP60 East Section | E | MB |
| 2023 | CAN5D | 06/06/19 | TP60 South Section | S | MB |
| 2024 | CAN5D | 06/06/19 | TP60 West Section | W | MB |
| 2025 | CAN5D | 06/06/19 | TP59 Post-Excavation Tag | N | CH |
| 2026 | CAN5D | 06/06/19 | TP59 Post-Excavation Location Shot | N | CH |
| 2027 | CAN5D | 06/06/19 | TP59 Post-Excavation Overview | N | CH |
| 2028 | CAN5D | 06/06/19 | TP59 North Section | N | CH |
| 2029 | CAN5D | 06/06/19 | TP59 East Section | E | CH |
| 2030 | CAN5D | 06/06/19 | TP59 South Section | S | CH |
| 2031 | CAN5D | 06/06/19 | TP59 West Section | W | CH |
| 2032 | CAN5D | 06/06/19 | TP80 Post-Excavation Tag | N | MB |
| 2033 | CAN5D | 06/06/19 | TP80 Post-Excavation Location Shot | N | MB |
| 2034 | CAN5D | 06/06/19 | TP80 Post-Excavation Overview | N | MB |
| 2035 | CAN5D | 06/06/19 | TP80 North Section | N | MB |
| 2036 | CAN5D | 06/06/19 | TP80 East Section | E | MB |
| 2037 | CAN5D | 06/06/19 | TP80 South Section | S | MB |
| 2038 | CAN5D | 06/06/19 | TP80 West Section | W | MB |
| 2039 | CAN5D | 06/06/19 | TP81 Post-Excavation Tag | N | CH |
| 2040 | CAN5D | 06/06/19 | TP81 Post-Excavation Location Shot | N | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 2041 | CAN5D | 06/06/19 | TP81 Post-Excavation Overview | N | CH |
| 2042 | CAN5D | 06/06/19 | TP81 North Section | N | CH |
| 2043 | CAN5D | 06/06/19 | TP81 East Section | E | CH |
| 2044 | CAN5D | 06/06/19 | TP81 South Section | S | CH |
| 2045 | CAN5D | 06/06/19 | TP81 West Section | W | CH |
| 2046 | CAN5D | 06/06/19 | TP248 Post-Excavation Tag | N | MB |
| 2047 | CAN5D | 06/06/19 | TP248 Post-Excavation Location Shot | N | MB |
| 2048 | CAN5D | 06/06/19 | TP248 Post-Excavation Overview | N | MB |
| 2049 | CAN5D | 06/06/19 | TP248 North Section | N | MB |
| 2050 | CAN5D | 06/06/19 | TP248 East Section | E | MB |
| 2051 | CAN5D | 06/06/19 | TP248 South Section | S | MB |
| 2052 | CAN5D | 06/06/19 | TP248 West Section | W | MB |
| 2053 | CAN5D | 06/06/19 | TP94 Post-Excavation Tag | N | CH |
| 2054 | CAN5D | 06/06/19 | TP94 Post-Excavation Location Shot | N | CH |
| 2055 | CAN5D | 06/06/19 | TP94 Post-Excavation Overview | N | CH |
| 2056 | CAN5D | 06/06/19 | TP94 North Section | N | CH |
| 2057 | CAN5D | 06/06/19 | TP94 East Section | E | CH |
| 2058 | CAN5D | 06/06/19 | TP94 South Section | S | CH |
| 2059 | CAN5D | 06/06/19 | TP94 West Section | W | CH |
| 2060 | CAN5D | 06/06/19 | TP93 Post-Excavation Tag | N | MB |
| 2061 | CAN5D | 06/06/19 | TP93 Post-Excavation Location Shot | N | MB |
| 2062 | CAN5D | 06/06/19 | TP93 Post-Excavation Overview | N | MB |
| 2063 | CAN5D | 06/06/19 | TP93 North Section | N | MB |
| 2064 | CAN5D | 06/06/19 | TP93 East Section | E | MB |
| 2065 | CAN5D | 06/06/19 | TP93 South Section | S | MB |
| 2066 | CAN5D | 06/06/19 | TP93 West Section | W | MB |
| 2067 | CAN5D | 06/06/19 | TP111 Post-Excavation Tag | N | CH |
| 2068 | CAN5D | 06/06/19 | TP111 Post-Excavation Location Shot | N | CH |
| 2069 | CAN5D | 06/06/19 | TP111 Post-Excavation Overview | N | CH |
| 2070 | CAN5D | 06/06/19 | TP111 North Section | N | CH |
| 2071 | CAN5D | 06/06/19 | TP111 East Section | E | CH |
| 2072 | CAN5D | 06/06/19 | TP111 South Section | S | CH |
| 2073 | OLYTG | 06/06/19 | TP111 West Section | W | CH |
| 2074 | OLYTG | 06/06/19 | TP112 Post-Excavation Tag | N | MB |
| 2075 | CAN5D | 06/06/19 | TP112 Post-Excavation Location Shot | N | MB |
| 2076 | CAN5D | 06/06/19 | TP112 Post-Excavation Overview | N | MB |
| 2077 | CAN5D | 06/06/19 | TP112 North Section | N | MB |
| 2078 | CAN5D | 06/06/19 | TP112 East Section | E | MB |
| 2079 | CAN5D | 06/06/19 | TP112 South Section | S | MB |
| 2080 | CAN5D | 06/06/19 | TP112 West Section | W | MB |
| 2081 | CAN5D | 06/06/19 | TP129 Post-Excavation Tag | N | CH |
| 2082 | CAN5D | 06/06/19 | TP129 Post-Excavation Location Shot | N | CH |
| 2083 | CAN5D | 06/06/19 | TP129 Post-Excavation Overview | N | CH |
| 2084 | CAN5D | 06/06/19 | TP129 North Section | N | CH |
| 2085 | CAN5D | 06/06/19 | TP129 East Section | E | CH |
| 2086 | CAN5D | 06/06/19 | TP129 South Section | S | CH |
| 2087 | CAN5D | 06/06/19 | TP129 West Section | W | CH |
| 2088 | CAN5D | 06/06/19 | TP144 Post-Excavation Tag | N | MB |
| 2089 | CAN5D | 06/06/19 | TP144 Post-Excavation Location Shot | N | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 2090 | CAN5D | 06/06/19 | TP144 Post-Excavation Overview | N | MB |
| 2091 | CAN5D | 06/06/19 | TP144 North Section | N | MB |
| 2092 | CAN5D | 06/06/19 | TP144 East Section | E | MB |
| 2093 | CAN5D | 06/06/19 | TP144 South Section | S | MB |
| 2094 | CAN5D | 06/06/19 | TP144 West Section | W | MB |
| 2095 | CAN5D | 06/06/19 | TP143 Post-Excavation Tag | N | CH |
| 2096 | CAN5D | 06/06/19 | TP143 Post-Excavation Location Shot | N | CH |
| 2097 | CAN5D | 06/06/19 | TP143 Post-Excavation Overview | N | CH |
| 2098 | CAN5D | 06/06/19 | TP143 Post-Excavation Overview | N | CH |
| 2099 | CAN5D | 06/06/19 | TP143 North Section | N | CH |
| 2100 | CAN5D | 06/06/19 | TP143 East Section | E | CH |
| 2101 | CAN5D | 06/06/19 | TP143 South Section | S | CH |
| 2102 | CAN5D | 06/06/19 | TP143 West Section | W | CH |
| 2103 | CAN5D | 06/06/19 | TP57 Post-Excavation Tag | N | MB |
| 2104 | CAN5D | 06/06/19 | TP57 Post-Excavation Location Shot | N | MB |
| 2105 | CAN5D | 06/06/19 | TP57 Post-Excavation Overview | N | MB |
| 2106 | CAN5D | 06/06/19 | TP57 North Section | N | MB |
| 2107 | CAN5D | 06/06/19 | TP57 East Section | E | MB |
| 2108 | CAN5D | 06/06/19 | TP57 South Section | S | MB |
| 2109 | CAN5D | 06/06/19 | TP57 West Section | W | MB |
| 2110 | CAN5D | 06/06/19 | TP58 Post-Excavation Tag | N | CH |
| 2111 | CAN5D | 06/06/19 | TP58 Post-Excavation Location Shot | N | CH |
| 2112 | CAN5D | 06/06/19 | TP58 Post-Excavation Overview | N | CH |
| 2113 | CAN5D | 06/06/19 | TP58 North Section | N | CH |
| 2114 | CAN5D | 06/06/19 | TP58 East Section | E | CH |
| 2115 | CAN5D | 06/06/19 | TP58 South Section | S | CH |
| 2116 | CAN5D | 06/06/19 | TP58 West Section | W | CH |
| 2117 | CAN5D | 06/06/19 | TP79 Post-Excavation Tag | N | MB |
| 2118 | CAN5D | 06/06/19 | TP79 Post-Excavation Location Shot | N | MB |
| 2119 | CAN5D | 06/06/19 | TP79 Post-Excavation Overview | N | MB |
| 2120 | CAN5D | 06/06/19 | TP79 North Section | N | MB |
| 2121 | CAN5D | 06/06/19 | TP79 East Section | E | MB |
| 2122 | CAN5D | 06/06/19 | TP79 South Section | S | MB |
| 2123 | CAN5D | 06/06/19 | TP79 West Section | W | MB |
| 2124 | CAN5D | 06/06/19 | TP78 Post-Excavation Tag | N | CH |
| 2125 | CAN5D | 06/06/19 | TP78 Post-Excavation Location Shot | N | CH |
| 2126 | CAN5D | 06/06/19 | TP78 Post-Excavation Overview | N | CH |
| 2127 | CAN5D | 06/06/19 | TP78 North Section | N | CH |
| 2128 | CAN5D | 06/06/19 | TP78 East Section | E | CH |
| 2129 | CAN5D | 06/06/19 | TP78 South Section | S | CH |
| 2130 | CAN5D | 06/06/19 | TP77 Post-Excavation Tag | N | MB |
| 2131 | CAN5D | 06/06/19 | TP77 Post-Excavation Location Shot | N | MB |
| 2132 | CAN5D | 06/06/19 | TP77 Post-Excavation Overview | N | MB |
| 2133 | CAN5D | 06/06/19 | TP77 North Section | N | MB |
| 2134 | CAN5D | 06/06/19 | TP77 East Section | E | MB |
| 2135 | CAN5D | 06/06/19 | TP77 South Section | S | MB |
| 2136 | CAN5D | 06/06/19 | TP77 West Section | W | MB |
| 2137 | CAN5D | 06/06/19 | TP91 Post-Excavation Tag | N | CH |
| 2138 | CAN5D | 06/06/19 | TP91 Post-Excavation Location Shot | N | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 2139 | CAN5D | 06/06/19 | TP91 Post-Excavation Location Shot | N | CH |
| 2140 | CAN5D | 06/06/19 | TP91 Post-Excavation Overview | N | CH |
| 2141 | CAN5D | 06/06/19 | TP91 North Section | N | CH |
| 2142 | CAN5D | 06/06/19 | TP91 East Section | E | CH |
| 2143 | CAN5D | 06/06/19 | TP91 South Section | S | CH |
| 2144 | CAN5D | 06/06/19 | TP91 West Section | W | CH |
| 2145 | CAN5D | 06/06/19 | TP92 Post-Excavation Tag | N | MB |
| 2146 | CAN5D | 06/06/19 | TP92 Post-Excavation Location Shot | N | MB |
| 2147 | CAN5D | 06/06/19 | TP92 Post-Excavation Overview | N | MB |
| 2148 | CAN5D | 06/06/19 | TP92 North Section | N | MB |
| 2149 | CAN5D | 06/06/19 | TP92 East Section | E | MB |
| 2150 | CAN5D | 06/06/19 | TP92 South Section | S | MB |
| 2151 | CAN5D | 06/06/19 | TP92 West Section | W | MB |
| 2152 | CAN5D | 06/06/19 | TP247 Post-Excavation Tag | N | CH |
| 2153 | CAN5D | 06/06/19 | TP247 Post-Excavation Location Shot | N | CH |
| 2154 | CAN5D | 06/06/19 | TP247 Post-Excavation Overview | N | CH |
| 2155 | CAN5D | 06/06/19 | TP247 North Section | N | CH |
| 2156 | CAN5D | 06/06/19 | TP247 East Section | E | CH |
| 2157 | CAN5D | 06/06/19 | TP247 South Section | S | CH |
| 2158 | CAN5D | 06/06/19 | TP247 West Section | W | CH |
| 2159 | CAN5D | 06/06/19 | TP253 Post-Excavation Tag | N | MB |
| 2160 | CAN5D | 06/06/19 | TP253 Post-Excavation Location Shot | N | MB |
| 2161 | CAN5D | 06/06/19 | TP253 Post-Excavation Overview | N | MB |
| 2162 | CAN5D | 06/06/19 | TP253 North Section | N | MB |
| 2163 | CAN5D | 06/06/19 | TP253 East Section | E | MB |
| 2164 | CAN5D | 06/06/19 | TP253 South Section | S | MB |
| 2165 | CAN5D | 06/06/19 | TP253 West Section | W | MB |
| 2166 | CAN5D | 06/06/19 | TP110 Post-Excavation Tag | N | CH |
| 2167 | CAN5D | 06/06/19 | TP110 Post-Excavation Location Shot | N | CH |
| 2168 | CAN5D | 06/06/19 | TP110 Post-Excavation Overview | N | CH |
| 2169 | CAN5D | 06/06/19 | TP110 North Section | N | CH |
| 2170 | CAN5D | 06/06/19 | TP110 East Section | E | CH |
| 2171 | CAN5D | 06/06/19 | TP110 South Section | S | CH |
| 2172 | CAN5D | 06/06/19 | TP110 West Section | W | CH |
| 2173 | CAN5D | 06/06/19 | TP142 Pre-Excavation Tag | N | MB |
| 2174 | CAN5D | 06/06/19 | TP142 Pre-Excavation Location Shot | N | MB |
| 2175 | CAN5D | 06/06/19 | TP109 Post-Excavation Tag | N | MB |
| 2176 | CAN5D | 06/06/19 | TP109 Post-Excavation Location Shot | N | MB |
| 2177 | CAN5D | 06/06/19 | TP109 Post-Excavation Overview | N | MB |
| 2178 | CAN5D | 06/06/19 | TP109 North Section | N | MB |
| 2179 | CAN5D | 06/06/19 | TP109 East Section | E | MB |
| 2180 | CAN5D | 06/06/19 | TP109 South Section | S | MB |
| 2181 | CAN5D | 06/06/19 | TP109 West Section | W | MB |
| 2182 | CAN5D | 06/06/19 | TP126 Post-Excavation Tag | N | CH |
| 2183 | CAN5D | 06/06/19 | TP126 Post-Excavation Location Shot | N | CH |
| 2184 | CAN5D | 06/06/19 | TP126 Post-Excavation Overview | N | CH |
| 2185 | CAN5D | 06/06/19 | TP126 North Section | N | CH |
| 2186 | CAN5D | 06/06/19 | TP126 East Section | E | CH |
| 2187 | CAN5D | 06/06/19 | TP126 South Section | S | CH |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 2188 | CAN5D | 06/06/19 | TP126 West Section | W | CH |
| 2189 | CAN5D | 06/06/19 | TP127 Post-Excavation Tag | N | MB |
| 2190 | CAN5D | 06/06/19 | TP127 Post-Excavation Location Shot | N | MB |
| 2191 | CAN5D | 06/06/19 | TP127 Post-Excavation Overview | N | MB |
| 2192 | CAN5D | 06/06/19 | TP127 North Section | N | MB |
| 2193 | CAN5D | 06/06/19 | TP127 East Section | E | MB |
| 2194 | CAN5D | 06/06/19 | TP127 South Section | S | MB |
| 2195 | CAN5D | 06/06/19 | TP127 West Section | W | MB |
| 2196 | CAN5D | 06/06/19 | TP128 Post-Excavation Tag | N | CH |
| 2197 | CAN5D | 06/06/19 | TP128 Post-Excavation Location Shot | N | CH |
| 2198 | CAN5D | 06/06/19 | TP128 Post-Excavation Overview | N | CH |
| 2199 | CAN5D | 06/06/19 | TP128 North Section | N | CH |
| 2200 | CAN5D | 06/06/19 | TP128 East Section | E | CH |
| 2201 | CAN5D | 06/06/19 | TP128 South Section | S | CH |
| 2202 | CAN5D | 06/06/19 | TP128 West Section | W | CH |
| 2203 | CAN5D | 07/06/19 | TP185 Post-Excavation Tag | N | MB |
| 2204 | CAN5D | 07/06/19 | TP185 Post-Excavation Location Shot | N | MB |
| 2205 | CAN5D | 07/06/19 | TP185 Post-Excavation Overview | N | MB |
| 2206 | CAN5D | 07/06/19 | TP185 North Section | N | MB |
| 2207 | CAN5D | 07/06/19 | TP185 East Section | E | MB |
| 2208 | CAN5D | 07/06/19 | TP185 South Section | S | MB |
| 2209 | CAN5D | 07/06/19 | TP185 West Section | W | MB |
| 2210 | CAN5D | 07/06/19 | TP184 Post-Excavation Tag | N | CH |
| 2211 | CAN5D | 07/06/19 | TP184 Post-Excavation Location Shot | N | CH |
| 2212 | CAN5D | 07/06/19 | TP184 Post-Excavation Overview | N | CH |
| 2213 | CAN5D | 07/06/19 | TP184 North Section | N | CH |
| 2214 | CAN5D | 07/06/19 | TP184 East Section | E | CH |
| 2215 | CAN5D | 07/06/19 | TP184 South Section | S | CH |
| 2216 | CAN5D | 07/06/19 | TP184 West Section | W | CH |
| 2217 | CAN5D | 07/06/19 | TP160 Post-Excavation Tag | N | MB |
| 2218 | CAN5D | 07/06/19 | TP160 Post-Excavation Location Shot | N | MB |
| 2219 | CAN5D | 07/06/19 | TP160 Post-Excavation Overview | N | MB |
| 2220 | CAN5D | 07/06/19 | TP160 North Section | N | MB |
| 2221 | CAN5D | 07/06/19 | TP160 East Section | E | MB |
| 2222 | CAN5D | 07/06/19 | TP160 South Section | S | MB |
| 2223 | CAN5D | 07/06/19 | TP160 West Section | W | MB |
| 2224 | CAN5D | 07/06/19 | TP172 Post-Excavation Tag | N | CH |
| 2225 | CAN5D | 07/06/19 | TP172 Post-Excavation Location Shot | N | CH |
| 2226 | CAN5D | 07/06/19 | TP172 Post-Excavation Overview | N | CH |
| 2227 | CAN5D | 07/06/19 | TP172 North Section | N | CH |
| 2228 | OLYTG | 07/06/19 | TP57 Pre-Excavation Tag | N | MSB |
| 2229 | CAN5D | 07/06/19 | TP172 East Section | E | CH |
| 2230 | OLYTG | 07/06/19 | TP57 Pre-Excavation Location Shot | N | MSB |
| 2231 | OLYTG | 07/06/19 | TP57 Pre-Excavation Location Shot (repeat) | N | MSB |
| 2232 | CAN5D | 07/06/19 | TP172 South Section | S | CH |
| 2233 | CAN5D | 07/06/19 | TP172 West Section | W | CH |
| 2234 | CAN5D | 07/06/19 | TP171 Post-Excavation Tag | N | MB |
| 2235 | CAN5D | 07/06/19 | TP171 Post-Excavation Location Shot | N | MB |
| 2236 | CAN5D | 07/06/19 | TP171 Post-Excavation Overview | N | MB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 2237 | CAN5D | 07/06/19 | TP171 North Section | N | MB |
| 2238 | CAN5D | 07/06/19 | TP171 East Section | E | MB |
| 2239 | CAN5D | 07/06/19 | TP171 South Section | S | MB |
| 2240 | CAN5D | 07/06/19 | TP171 West Section | W | MB |
| 2241 | CAN5D | 07/06/19 | TP181 Post-Excavation Tag | N | CH |
| 2242 | CAN5D | 07/06/19 | TP181 Post-Excavation Location Shot | N | CH |
| 2243 | CAN5D | 07/06/19 | TP181 Post-Excavation Overview | N | CH |
| 2244 | CAN5D | 07/06/19 | TP181 North Section | N | CH |
| 2245 | CAN5D | 07/06/19 | TP181 East Section | E | CH |
| 2246 | CAN5D | 07/06/19 | TP181 South Section | S | CH |
| 2247 | CAN5D | 07/06/19 | TP181 West Section | W | CH |
| 2248 | CAN5D | 07/06/19 | TP170 Post-Excavation Tag | N | MB |
| 2249 | CAN5D | 07/06/19 | TP170 Post-Excavation Location Shot | N | MB |
| 2250 | CAN5D | 07/06/19 | TP170 Post-Excavation Overview | N | MB |
| 2251 | CAN5D | 07/06/19 | TP170 North Section | N | MB |
| 2252 | CAN5D | 07/06/19 | TP170 East Section | E | MB |
| 2253 | CAN5D | 07/06/19 | TP170 South Section | S | MB |
| 2254 | CAN5D | 07/06/19 | TP170 West Section | W | MB |
| 2255 | CAN5D | 07/06/19 | TP155 Post-Excavation Tag | N | CH |
| 2256 | CAN5D | 07/06/19 | TP155 Post-Excavation Location Shot | N | CH |
| 2257 | CAN5D | 07/06/19 | TP155 Post-Excavation Location Shot (repeat) | N | CH |
| 2258 | CAN5D | 07/06/19 | TP155 Post-Excavation Overview | N | CH |
| 2259 | CAN5D | 07/06/19 | TP155 North Section | N | CH |
| 2260 | CAN5D | 07/06/19 | TP155 East Section | E | CH |
| 2261 | CAN5D | 07/06/19 | TP155 South Section | S | CH |
| 2262 | CAN5D | 07/06/19 | TP155 West Section | W | CH |
| 2263 | CAN5D | 07/06/19 | TP156 Post-Excavation Tag | N | MB |
| 2264 | CAN5D | 07/06/19 | TP156 Post-Excavation Location Shot | N | MB |
| 2265 | CAN5D | 07/06/19 | TP156 Post-Excavation Overview | N | MB |
| 2266 | CAN5D | 07/06/19 | TP156 North Section | N | MB |
| 2267 | CAN5D | 07/06/19 | TP156 East Section | E | MB |
| 2268 | CAN5D | 07/06/19 | TP156 South Section | S | MB |
| 2269 | CAN5D | 07/06/19 | TP156 West Section | W | MB |
| 2270 | CAN5D | 07/06/19 | TP141 Post-Excavation Tag | N | CH |
| 2271 | CAN5D | 07/06/19 | TP141 Post-Excavation Location Shot | N | CH |
| 2272 | CAN5D | 07/06/19 | TP141 Post-Excavation Overview | N | CH |
| 2273 | CAN5D | 07/06/19 | TP141 North Section | N | CH |
| 2274 | CAN5D | 07/06/19 | TP141 East Section | E | CH |
| 2275 | CAN5D | 07/06/19 | TP141 South Section | S | CH |
| 2276 | CAN5D | 07/06/19 | TP141 West Section | W | CH |
| 2277 | CAN5D | 07/06/19 | TP142 Post-Excavation Tag | N | MB |
| 2278 | CAN5D | 07/06/19 | TP142 Post-Excavation Location Shot | N | MB |
| 2279 | CAN5D | 07/06/19 | TP142 Post-Excavation Overview | N | MB |
| 2280 | CAN5D | 07/06/19 | TP142 North Section | N | MB |
| 2281 | CAN5D | 07/06/19 | TP142 East Section | E | MB |
| 2282 | CAN5D | 07/06/19 | TP142 South Section | S | MB |
| 2283 | CAN5D | 07/06/19 | TP142 West Section | W | MB |
| 2284 | OLYTG | 07/06/19 | TP260 Pre-Excavation Tag | N | MSB |
| 2285 | OLYTG | 07/06/19 | TP260 Pre-Excavation Location Shot | N | MSB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 2286 | SAMS8 | 07/06/19 | TP262 Pre-Excavation Tag | N | MSB |
| 2287 | SAMS8 | 07/06/19 | TP262 Pre-Excavation Location Shot | N | MSB |
| 2288 | OLYTG | 07/06/19 | TP261 Pre-Excavation Tag | N | MSB |
| 2289 | OLYTG | 07/06/19 | TP261 Pre-Excavation Location Shot | N | MSB |
| 2290 | OLYTG | 07/06/19 | TP260 Post-Excavation Tag | N | CH |
| 2291 | OLYTG | 07/06/19 | TP260 Post-Excavation Location Shot | N | CH |
| 2292 | OLYTG | 07/06/19 | TP260 Post-Excavation Overview | N | CH |
| 2293 | OLYTG | 07/06/19 | TP260 North Section | N | CH |
| 2294 | OLYTG | 07/06/19 | TP260 East Section | E | CH |
| 2295 | OLYTG | 07/06/19 | TP260 South Section | S | CH |
| 2296 | OLYTG | 07/06/19 | TP260 West Section | W | CH |
| 2297 | OLYTG | 07/06/19 | TP261 Post-Excavation Tag | N | MB |
| 2298 | OLYTG | 07/06/19 | TP261 Post-Excavation Location Shot | N | MB |
| 2299 | OLYTG | 07/06/19 | TP261 Post-Excavation Overview | N | MB |
| 2300 | OLYTG | 07/06/19 | TP261 North Section | N | MB |
| 2301 | OLYTG | 07/06/19 | TP261 East Section | E | MB |
| 2302 | OLYTG | 07/06/19 | TP261 South Section | S | MB |
| 2303 | OLYTG | 07/06/19 | TP261 West Section | W | MB |
| 2304 | OLYTG | 07/06/19 | TP57 Post-Excavation Tag | N | CH |
| 2305 | OLYTG | 07/06/19 | TP57 Post-Excavation Location Shot | N | CH |
| 2306 | OLYTG | 07/06/19 | TP57 Post-Excavation Overview | N | CH |
| 2307 | OLYTG | 07/06/19 | TP57 North Section | N | CH |
| 2308 | OLYTG | 07/06/19 | TP57 East Section | E | CH |
| 2309 | OLYTG | 07/06/19 | TP57 South Section | S | CH |
| 2310 | OLYTG | 07/06/19 | TP57 West Section | W | CH |
| 2311 | OLYTG | 07/06/19 | TP262 Post-Excavation Tag | N | MB |
| 2312 | OLYTG | 07/06/19 | TP262 Post-Excavation Location Shot | N | MB |
| 2313 | OLYTG | 07/06/19 | TP262 Post-Excavation Overview | N | MB |
| 2314 | OLYTG | 07/06/19 | TP262 North Section | N | MB |
| 2315 | OLYTG | 07/06/19 | TP262 East Section | E | MB |
| 2316 | OLYTG | 07/06/19 | TP262 South Section | S | MB |
| 2317 | OLYTG | 07/06/19 | TP262 West Section | W | MB |
| 2318 | OLYTG | 07/06/19 | TP263 Post-Excavation Tag | N | CH |
| 2319 | OLYTG | 07/06/19 | TP263 Post-Excavation Location Shot | N | CH |
| 2320 | OLYTG | 07/06/19 | TP263 Post-Excavation Overview | N | CH |
| 2321 | OLYTG | 07/06/19 | TP263 North Section | N | CH |
| 2322 | OLYTG | 07/06/19 | TP263 East Section | E | CH |
| 2323 | OLYTG | 07/06/19 | TP263 South Section | S | CH |
| 2324 | OLYTG | 07/06/19 | TP263 West Section | W | CH |
| 2325 | SAMS8 | 08/06/19 | TP57 Post-Excavation Location Shot | W | LB |
| 2326 | SAMS8 | 08/06/19 | TP57 Post-Excavation Location Shot | W | LB |
| 2327 | SAMS8 | 08/06/19 | TP57 Post-Excavation Location Shot | W | LB |
| 2328 | SAMS8 | 08/06/19 | TP57 Post-Excavation Location Shot | W | LB |
| 2329 | OLYTG | 08/06/19 | TP57 Post-Excavation Tag | N | MSB |
| 2330 | OLYTG | 08/06/19 | TP57 OSL Samples Location | N | MSB |
| 2331 | OLYTG | 08/06/19 | TP57 OSL Samples Location | N | MSB |
| 2332 | OLYTG | 08/06/19 | TP262 Post-Excavation Location Shot | N | LB |
| 2333 | OLYTG | 08/06/19 | TP262 Post-Excavation Location Shot | N | LB |
| 2334 | OLYTG | 08/06/19 | TP57 Post-Excavation Location Shot | NW | LB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 2335 | OLYTG | 08/06/19 | TP57 Post-Excavation Location Shot | NE | LB |
| 2336 | OLYTG | 08/06/19 | TP57 Post-Excavation Location Shot | NE | LB |
| 2337 | OLYTG | 08/06/19 | TP57 Post-Excavation Location Shot | NE | LB |
| 2338 | OLYTG | 08/06/19 | TP57 Post-Excavation Location Shot | N | LB |
| 2339 | OLYTG | 08/06/19 | TP57 Post-Excavation Location Shot | W | LB |
| 2340 | OLYTG | 08/06/19 | TP57 Post-Excavation Location Shot | W | LB |
| 2341 | OLYTG | 11/06/19 | TP264 Post-Excavation Tag | N | CH |
| 2342 | OLYTG | 11/06/19 | TP264 Post-Excavation Location Shot | N | CH |
| 2343 | OLYTG | 11/06/19 | TP264 Post-Excavation Location Shot (repeat) | N | CH |
| 2344 | OLYTG | 11/06/19 | TP264 Post-Excavation Overview | N | CH |
| 2345 | OLYTG | 11/06/19 | TP264 North Section | N | CH |
| 2346 | OLYTG | 11/06/19 | TP264 East Section | E | CH |
| 2347 | OLYTG | 11/06/19 | TP264 South Section | S | CH |
| 2348 | OLYTG | 11/06/19 | TP264 West Section | W | CH |
| 2349 | OLYTG | 11/06/19 | TP264 West Section (repeat) | W | CH |
| 2350 | OLYTG | 11/06/19 | TP267 Post-Excavation Tag | N | MB |
| 2351 | OLYTG | 11/06/19 | TP267 Post-Excavation Location Shot | N | MB |
| 2352 | OLYTG | 11/06/19 | TP267 Post-Excavation Overview | N | MB |
| 2353 | OLYTG | 11/06/19 | TP267 North Section | N | MB |
| 2354 | OLYTG | 11/06/19 | TP267 East Section | E | MB |
| 2355 | OLYTG | 11/06/19 | TP267 South Section | S | MB |
| 2356 | OLYTG | 11/06/19 | TP267 West Section | W | MB |
| 2357 | SAMS8 | 11/06/19 | TP268 Pre-Excavation Tag | N | MSB |
| 2358 | SAMS8 | 11/06/19 | TP268 Pre-Excavation Location Shot | N | MSB |
| 2359 | OLYTG | 11/06/19 | TP265 Post-Excavation Tag | N | CH |
| 2360 | OLYTG | 11/06/19 | TP265 Post-Excavation Location Shot | N | CH |
| 2361 | OLYTG | 11/06/19 | TP265 Post-Excavation Overview | N | CH |
| 2362 | OLYTG | 11/06/19 | TP265 North Section | N | CH |
| 2363 | OLYTG | 11/06/19 | TP265 East Section | E | CH |
| 2364 | OLYTG | 11/06/19 | TP265 South Section | S | CH |
| 2365 | OLYTG | 11/06/19 | TP265 West Section | W | CH |
| 2366 | SAMS8 | 12/06/19 | TP151 Post-Excavation Location Shot | N | LB |
| 2367 | SAMS8 | 12/06/19 | TP151 Post-Excavation Location Shot | N | LB |
| 2368 | SAMS8 | 12/06/19 | TP151 Post-Excavation Location Shot | W | LB |
| 2369 | CAN5D | 12/06/19 | TP268 Post-Excavation Tag | N | MB |
| 2370 | CAN5D | 12/06/19 | TP268 Post-Excavation Location Shot | N | MB |
| 2371 | CAN5D | 12/06/19 | TP268 Post-Excavation Overview | N | MB |
| 2372 | CAN5D | 12/06/19 | TP268 North Section | N | MB |
| 2373 | CAN5D | 12/06/19 | TP268 East Section | E | MB |
| 2374 | CAN5D | 12/06/19 | TP268 South Section | S | MB |
| 2375 | CAN5D | 12/06/19 | TP268 West Section | W | MB |
| 2376 | CAN5D | 12/06/19 | TP266 Post-Excavation Tag | N | CH |
| 2377 | CAN5D | 12/06/19 | TP266 Post-Excavation Location Shot | N | CH |
| 2378 | CAN5D | 12/06/19 | TP266 Post-Excavation Overview | N | CH |
| 2379 | CAN5D | 12/06/19 | TP266 North Section | N | CH |
| 2380 | CAN5D | 12/06/19 | TP266 East Section | E | CH |
| 2381 | CAN5D | 12/06/19 | TP266 South Section | S | CH |
| 2382 | CAN5D | 12/06/19 | TP266 West Section | W | CH |
| 2383 | OLYTG | 12/06/19 | TP270 Pre-Excavation Tag | N | MSB |

| IMAGE ID | CAMERA | DATE | DESCRIPTION | PHOTO FACING | PHOTO-GRAPHER |
|---|---|---|---|---|---|
| 2384 | OLYTG | 12/06/19 | TP270 Pre-Excavation Location Shot | N | MSB |
| 2385 | OLYTG | 12/06/19 | TP269 Pre-Excavation Tag | N | MSB |
| 2386 | OLYTG | 12/06/19 | TP269 Pre-Excavation Location Shot | N | MSB |
| 2387 | OLYTG | 12/06/19 | TP270 Post-Excavation Tag | N | MB |
| 2388 | OLYTG | 12/06/19 | TP270 Post-Excavation Location Shot | N | MB |
| 2389 | OLYTG | 12/06/19 | TP270 Post-Excavation Overview | N | MB |
| 2390 | OLYTG | 12/06/19 | TP270 North Section | N | MB |
| 2391 | OLYTG | 12/06/19 | TP270 East Section | E | MB |
| 2392 | OLYTG | 12/06/19 | TP270 South Section | S | MB |
| 2393 | OLYTG | 12/06/19 | TP270 West Section | W | MB |
| 2394 | OLYTG | 12/06/19 | TP269 Post-Excavation Tag | N | CH |
| 2395 | OLYTG | 12/06/19 | TP269 Post-Excavation Location Shot | N | CH |
| 2396 | OLYTG | 12/06/19 | TP269 Post-Excavation Overview | N | CH |
| 2397 | OLYTG | 12/06/19 | TP269 North Section | N | CH |
| 2398 | OLYTG | 12/06/19 | TP269 East Section | E | CH |
| 2399 | OLYTG | 12/06/19 | TP269 South Section | S | CH |
| 2400 | OLYTG | 12/06/19 | TP269 West Section | W | CH |

# Appendix 5: How Significance was Assessed

## General

While all Aboriginal objects in NSW are protected under NSW legislation, the NPW Act, 1974 recognises that the destruction of sites may be necessary to allow other activities or developments to proceed. In order for the State regulator to make informed decisions on such matters, a consideration of the significance of cultural heritage places and objects is an important element of the cultural heritage assessment process. The heritage significance of Aboriginal archaeological sites can be assessed using the four criteria outlined in the Burra Charter; aesthetic, historic, scientific, and social or spiritual (Australia ICOMOS, 2013).

## Significance Levels and Thresholds

Most cultural places and objects are of cultural value to at least some individuals or community groups. The assessment process requires the analysis and ranking of significance. Australia has a four tiered system of heritage protection that has been implemented across all levels of government i.e. Commonwealth, State and Local governments (see Appendix 1 for details on legislation). While heritage in NSW is managed under NSW legislation it is compliant with this four tiered system. Under this system, cultural heritage places and objects once identified are assessed according to their significance at World, National, State and Local levels and whether they are above or below threshold for listing or protection. For ease of discussion here we can set aside discussion of world heritage places as such places must meet a threshold of 'Outstanding Universal Value' (OUV) and such places are unlikely to occur in the study area. It is a requirement of this process that the higher levels will meet and exceed the thresholds for the level below. In other words a place or object of World Heritage Significance will also be of National significance and so on. This process can be visualised as shown in Figure 32 where each of the protected categories of Local, State and National are subset of each other and indeed a broader inventory of places that have been assessed and considered. It can be seen that places that meet the threshold for a particular level of significance will have met the thresholds for the levels below: e.g. nationally significant places will as a pre requisite have satisfied the thresholds for State significance and Local significance.

In NSW 'State heritage significance', in relation to a place, building, work, relic, moveable object or precinct, means significance to the State in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item, and 'Local heritage significance', in relation to a place, building, work, relic, moveable object or precinct, means significance to an area in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item (S 4A, NSW Heritage Act 1977).

In assessing the significance of sites aspects such as rarity and representativeness and the integrity (sometimes referred to as the intactness of the site) must be considered. Generally speaking a site or object that is rare will have a heightened significance although a site that is suitable of conservation as 'representative' of its type will also be significant. Conversely an extremely rare site may no longer be significant if its integrity has been sufficiently compromised. For example a rare Pleistocene era site that would normally be considered of high scientific significance may be below threshold if the site has suffered substantial subsurface damage.

A summary of these values is presented below.

Figure 32. A4-1. The tiered heritage system operating in Australia

## Aesthetic Significance

This criterion refers to aspects of sensory perception and the ability of the site to elicit emotional responses referred to as sensory or sensori-emotional values. The guidelines to the Burra Charter note that assessment may include consideration of the form, scale, colour, texture and material of the item or place, as well as sounds and smells. With regard to pre-contact Aboriginal cultural heritage sites, the placement within the landscape would be considered under this criterion as would memoryscapes and the ability of the site to transmit such memories. It is important to consider that sensori-emotional values are not always equated with “beauty”; for example massacre sites or sites of incarceration may have value under this criterion. Individual artefacts, sites and site features may also have aesthetic significance.

Table 13. A4-1. A summary of criteria and rankings used to determine a site's significance

| Criterion | Threshold indicators State | Threshold indicator local | Below threshold for significance |
|---|---|---|---|
| Aesthetic | The site or object elicits a strong emotional response and is part of a state or national narrative.<br><br>Is set within a landscape that inspires awe. | The site is known or suspected of eliciting strong responses from the local community.<br><br>While similar sites may exist elsewhere they are rare in the local area. | The site or object does not elicit a relevant sensori-emotional response; or<br><br>The site has been disturbed to the extent that it can no longer elicit a relevant sensori-emotional response. |
| Historic | The site or object is important in representing an aspect of history important to the State or National as reflected in the Australian (and State) Historical Thematic Framework | The site or object is rare in the local area; and<br><br>Would provide strong opportunities for interpretation to the public.<br><br>The site illustrates elements of the history of the local area | The site is common in the local area, does not provide opportunities for interpretation to the public and does not contribute substantially to an understanding the historic themes relevant to the local area and/or the State.<br><br>(Note – individuals may still feel attachment for sites below threshold) |
| Cultural and or spiritual | The site or object is important to an understanding of pre or post contact Aboriginal cultural life in NSW.<br><br>The site or object is part of a Dreaming story or track.<br><br>The site or object is part of ongoing ceremony or ritual.<br><br>Substantial cultural knowledge about this site exists within the relevant Aboriginal community or custodians for this site or has been previously documented. | The site is important to local Aboriginal community, or subset of the community, and this importance can be articulated. | There is little or no knowledge in the Aboriginal community about this site or object.<br><br>The knowledge that does exist falls into the category of family history and is not generally relevant to the broader Aboriginal community, and/or Aboriginal historical narrative.<br><br>(Note – individuals may still feel attachment for sites below threshold) |
| Scientific (archaeological) | The site or object has potential to answer key questions about Aboriginal culture and society in NSW or Australia as a whole pre or post contact. | The site or object is rare in the local area; and<br><br>It provides potential to learn more about a little understood aspect of Aboriginal cultural or | The site or object is common in the local area and/or the state.<br><br>The site does not have excavation /research potential or the site is common but has some |

| | | | |
|---|---|---|---|
| | The site or object is unique and/or rare and intact; or<br><br>The site is the best representative (and intact) example of a type of site that may be common, but not conserved elsewhere. | society in the local area.<br><br>The site has a high artefact density, and is large enough in size to be used to interpret larger scale questions about technology and occupation in the local area. | potential information to be salvaged. |

## Historic Significance

The guidelines to the Burra Charter include the following discussion of historic significance:

A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment.

In relation to Aboriginal cultural heritage, many post-contact places and sites would have historic value. Pre-contact places and items may also be significant according to this criterion, although the association with historic figures, events, phases or activities may be more difficult to establish. Places of historic significance may include sacred or ceremonial sites, sites of resistance battles and massacres, and archaeological sites with evidence of technological developments.

## Social and Spiritual Significance

In Aboriginal heritage this criterion concerns the relationship and importance of sites to the contemporary Aboriginal community. Aspects of social and spiritual significance include people's traditional and contemporary links with a place or object as well as an overall concern by Aboriginal people for sites and their continued protection. Aboriginal cultural values may partially reflect or follow on from archaeological values, historic values, aesthetic values or be tied to values associated with the natural environment. This criterion requires the active participation of Aboriginal people in the assessment process as it is their knowledge and values that must be articulated.

## Scientific Significance

Scientific value is associated with the research potential of a site. Rarity and representativeness are also related concepts that are taken into account. Research potential or demonstrated research importance, is considered according to the contribution that a heritage site can make to present understanding of human society and the human past. Heritage sites, objects or places of high scientific significance are those which provide an uncommon opportunity to provide information about the specific antiquity of people in an area, or a rare glimpse of artistic endeavour or a chronological record of cultural change of continuity through deep archaeological stratigraphy.

The comparative rarity of a site is a consideration in assessing scientific significance. A certain site type may be "one of a kind" in one region, but very common in another. Artefacts of a particular type may be common in one region, but outside the known distribution in another.

The integrity of a site is also a consideration in determining scientific significance. While disturbance of a topsoil deposit with artefacts does not entirely diminish research value, it may limit the types of questions that may be addressed. A heavily cultivated paddock may be unsuited to addressing research questions of small-scale site structure, but it may still be suitable for answering more general questions of implement distribution in a region and raw material logistics.

The capacity of a site to address research questions is predicated on a definition of what the key research issues are for a region. In the region including the study area, the key research issues revolve around the chronology of Aboriginal occupation and variability in stone artefact manufacturing technology. Sites with certain backed implements from the Holocene are very common, but sites with Pleistocene evidence are extremely rare, and hence of extremely high significance if found.