Burrendong Wind Farm Amendment Report

APPENDIX L.1

Revised Aboriginal Cultural Heritage Assessment Report



Burrendong Wind Farm
Aboriginal Cultural Heritage Assessment

Burrendong Wind Farm Pty Ltd

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1300 646 131
www.ecoaus.com.au

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Project Manager	Daniel Magdi
Prepared by	Jennifer Norfolk
Reviewed by	Karyn McLeod, Warren McGrath
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Template 2.8.1

Executive Summary

Eco Logical Australia (ELA) has been engaged by Burrendong Wind Farm Pty Ltd (the Proponent) and Ark Energy to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for the Burrendong Wind Farm (the Project) Environmental Impact Statement (EIS). As the Project is a State Significant Development (SSD-8950984), this ACHA will fulfill the requirements of the Secretary's Environmental Assessment Requirements (SEARS).

The Project Site is located approximately 30km south-east of Wellington and 35km west of Mudgee adjacent to Burrendong Dam (Macquarie River) (Figure 1). The Development Corridor is approximately 1,318ha, which includes a preliminary layout for turbines, hardstands, tracks and ancillary infrastructure including Yarrabin Road upgrades. Proposed works include the construction, operation, and maintenance of up to 70 Wind Turbine Generators (WTGs), the construction of roads and tracks, the construction, operation and maintenance of electrical infrastructure, the construction, operation and maintenance of permanent ancillary infrastructure and the construction, operation, maintenance and decommission of temporary ancillary infrastructure. The Project Site falls within the Dubbo Regional Local Government Area (LGA) and the Mid-Western Regional LGA.

This ACHA has been undertaken to identify Aboriginal objects and other cultural heritage values within the Project Site to further inform and support the EIS. This updated ACHA considers the Aboriginal heritage impacts within the Development Footprint and the Development Corridor which accounts for potential micro-siting of the Development Footprint.

Aboriginal community consultation was undertaken for the project following the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010b). The consultation process resulted in the registration of seven Registered Aboriginal Parties (RAPs) for the Project.

Several archaeological surveys have been conducted over every landform to identify any Aboriginal sites, any sensitive landforms that may have archaeological potential, and areas of disturbance that would not indicate the presence of Aboriginal objects. The numerous surveys resulted in the identification of 110 Aboriginal sites including artefact scatters, large campsites, stone quarries and scarred trees. Areas of high cultural value have been identified through consultation and survey, these locations are restricted, and the project design has been changed to avoid impacts. While no areas of in situ archaeological deposit have been identified within the Development Footprint, there is potential deposit associated with several Aboriginal sites outside the current Development Footprint that would require test excavations to assess the nature and extent of the Aboriginal site. Test excavations will only be required if there is the potential for these Aboriginal sites to be impacted by the project due to future scope changes.

Forty three (43) Aboriginal sites are located within the current Development Footprint, thirty one (31) Aboriginal sites will be directly impacted by the proposed works and twelve (12) Aboriginal sites may be impacted by micro-sitting within the Development Corridor. The remaining sixty six (66) Aboriginal sites identified during the course of the surveys and desktop assessment are located outside the current Development Corridor but within the Project Site and impacts are not proposed.

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This ACHA complies with the *Guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW* (OEH 2011). Archaeological investigations have been conducted in accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DECCW, 2010) to inform the ACHA.

Summary of findings:

- A total of 110 Aboriginal sites were identified during the archaeological assessments for the Project, 43 of which have been identified within the Development Footprint, 31 will be directly impacted and the remaining 12 as within the Development Corridor which may be impacted by the Project.
- The majority of the Aboriginal sites within the Development Footprint have generally low density and shallow soils in a disturbed context such that there are no potential archaeological deposits. These sites have low overall significance, and movement of the Aboriginal objects by the RAPs is adequate mitigation prior to impacts (Table 13 and Table 15).
- Eighteen (18) Aboriginal sites have been assessed as having moderate or high overall significance. Two (2) moderate significant Aboriginal sites (BWF AS92 and AS96) will be directly impacted by the proposed works, BWF AS 94 will be indirectly impacted. Two (2) high overall significant Aboriginal sites (BWF AS14, BWF AS24) will be directly or indirectly impacted by the proposed works. Avoidance of impacts to these sites is the preferred management option however if avoidance is not feasible, mitigation measures should be implemented (Table 17).
- Subsurface investigations are not required at this stage of the investigations, no impacts are proposed for areas identified as having archaeological potential. If future micro sitting or changes to design may cause impact, then subsurface investigations and associated reporting and impact assessment will be required.
- Movement of Aboriginal objects is recommended as an appropriate mitigation by the Aboriginal community (Table 17).
- No intangible cultural values have been identified within the Development Footprint. The surrounding area has high social and cultural values associated with the Macquarie River and the resources the landscape would have provided. Culturally sensitive areas have been identified within the project boundary, and previous proposed development corridors had the potential to cause harm. The Development Footprint and Development Corridor have been amended to avoid harm and the current proposed development will not impact these culturally sensitive areas.
- BWF IF2 – Resource is of high cultural significance; avoidance has been achieved through realignment of the access tracks to WTG 49.
- The archaeological survey strategy was considered adequate to understand the archaeological potential for the Development Footprint and surrounding area. Areas that were not covered by the survey should be traversed to identify Aboriginal objects and to record them with AHIMS as a mitigation measure.
- There is the potential for further Aboriginal sites to be located within the Development Corridor. Therefore, prior to preliminary clearance and grading of the impact footprint the Aboriginal community should be provided the opportunity to identify any sites that may be present and to record and assess the Aboriginal cultural values and implement the mitigation measures prior to impacts.

- There is the potential for further Aboriginal sites to be located within the landscape outside the Development Footprint. Therefore, if the Development Footprint changes, further assessment will be required to identify any sites that may be present and to assess the Aboriginal cultural values and any potential impacts.

It is therefore recommended that:

- Avoidance and conservation should always be the preferred option for cultural management. If avoidance cannot be achieved, the mitigation measures outlined in Table 17 should be implemented.
- Ground disturbance should be kept to a minimum and be discrete where possible. Where possible, existing tracks, access corridors and access points should be used as they have previously been impacted.
- BWF IF2 – Resource should be avoided; this site is of high cultural significance due to the vegetation type. The amendments to the Development Footprint has included realignments to the access track which has avoided impacts to this Aboriginal site, conserving the cultural significance.
- Prior to clearance and construction activities, areas that could not be accessed during the archaeological surveys should be inspected, chance find sites recorded, and management measures proposed in section 8 should be implemented. If the significance of the sites are assessed as moderate to high, avoidance should be considered with micro siting the development. If avoidance is not possible then management of Aboriginal sites should be implemented.
- The proponent should develop a Cultural Heritage Management Plan (CHMP) which documents the procedures to be followed for impact mitigation and management.
    - The development of an appropriate CHMP should be undertaken in consultation with an Archaeologist, the Registered Aboriginal Parties (RAPs) and Heritage NSW
    - It would aim to provide clear guidance as to allowable impacts and to ensure the effectiveness and reliability of mitigation and management strategies which may include surface collection and movement of Aboriginal objects, if required
    - It will provide information on management of Aboriginal sites outside the Development Footprint.
    - It will provide management guidance of Aboriginal sites identified during pre-clearance mitigation measures within the Development Footprint.

Contents

Executive Summary ..... **iii**
1. Introduction **1**
1.1 Background 1
1.2 Project Site (Development Footprint) 1
1.3 Scope and approach 2
1.4 Investigators and contributors 2
1.5 Legislative context 4
2. Consultation **9**
2.1 Stage 1 – Notification of project proposal and registration of interest 9
2.1.1 Written request for information about Aboriginal organisations. 9
2.1.2 Placement of advertisement in local newspaper 9
2.1.3 Letters to Aboriginal organisations 10
2.2 Stage 2 and Stage 3 – Presentation of information about the proposed project and gathering information about cultural significance. 10
2.2.1 Project information and methodology 10
2.2.2 Archaeological survey 10
2.3 Stage 4 – Review of draft assessments 11
2.4 Project updates 12
2.5 Project updates post EIS submissions 13
3. Environmental context **15**
3.1 Soil Landscapes 16
3.2 Hydrology 17
3.3 Social and ethnographic considerations 20
3.4 Land use history and Aboriginal material evidence 23
4. Archaeological context **25**
4.1 AHIMS results 25
4.2 Previous archaeological assessments of the wider region 26
4.3 Regional character and predictive model 30
4.3.1 Regional character 30
4.3.2 Predictive models. 30
4.3.3 Site types 31
4.3.4 Site occurrence 32
5. Archaeological survey **34**
5.1 Purpose 34
5.2 Survey strategy 34

5.2.1 Landscape variables 35
5.2.2 Site definition and recording 35
5.2.3 Protocol for recording Potential Archaeological Deposits 36
5.3 Survey results 36
5.4 Analysis and discussion 53

6. Cultural heritage values and statement of significance 56
6.1 Description of cultural heritage values 56
6.2 Aboriginal cultural assessment 57
6.2.1 Social or cultural significance 57
6.2.2 Spiritual significance 57
6.2.3 Aesthetic significance 58
6.2.4 Historic significance 58
6.2.5 Scientific significance 58

7. Development proposal activity 60
7.1 Impacts of the proposed works 60
7.2 Consideration of ecologically sustainable development 66
7.2.1 Principles of ESD 66
7.2.2 The integration principle 67
7.2.3 The precautionary principle 67
7.2.4 The principle of intergenerational equity 67
7.2.5 Conservation of biological diversity and ecological integrity 67
7.2.6 Improved valuation, pricing, and incentive mechanisms 67
7.2.7 Cumulative Impact Assessment 68

8. Mitigation and management 69
8.1 Guiding principles 69
8.2 Management and Mitigation Strategies – Aboriginal Objects 69

9. Recommendations 80
References 82
Appendix A AHIMS Database Searches 84
Appendix B Survey Units and Aboriginal sites 91
Appendix C Artefact catalogue 268
Appendix D Record of Consultation Undertaken 287
Appendix E Movement of Aboriginal objects 1
Appendix F Chance find procedure 2

List of Figures

Figure 1: The Burrendong Wind Farm project layout, including road upgrades and switchyard connection 3
Figure 2: Registered Native title claim boundary 8
Figure 3: Soil landscape across the project site and Yarrabin Road 18
Figure 4: Hydrology across the project site 19
Figure 5: Hydrology along Yarrabin Road 20
Figure 6: Facing northwest along SU1, showing surface visibility and exposure along ridgeline, steep side slopes, exposed bedrock, and skeletal soils. 38
Figure 7: Facing west from ridgeline within SU1 showing views towards the Macquarie River. 38
Figure 8: SU5 Facing southeast showing the broad crest landform, cleared vegetation and grass growth with rocky outcropping. 38
Figure 9: SU5 Facing south from top of ridgeline, view of Macquarie River and adjacent crests and open depressions. 38
Figure 10: SU7 Facing west showing the broad crest landform, cleared vegetation and grass growth with rocky outcropping. View towards Macquarie River and adjacent ridgeline. 38
Figure 11: SU8 Facing west across well grassed open broad crest, rocky out cropping visible, ground surface visible. 38
Figure 12: SU6 Facing across the erosion scours on the lower slopes of the crest landforms. Aboriginal site BWF AS79 with intact shallow deposit. 39
Figure 13: Facing north-west showing location of artefact scatter exposed along ridgeline saddle landform 39
Figure 14: Facing northwest along SU9, showing surface visibility and rock exposures along narrow ridgeline, steep side slopes, exposed bedrock, and skeletal soils. 39
Figure 15: Facing south along SU10 showing views across surrounding landscape. Ridgeline with a series of peaks and saddles with rock outcropping. 39
Figure 16: Facing north showing heavily eroded vehicle tracks with high visibility and sloping landform and high exposures. 39
Figure 17: BWF IF2 – Resource and gathering site, grass trees. High Aboriginal significance. 39
Figure 18: SU 32 Large flat elevated landform/ crest. Facing northeast, rocky outcropping well grassed. 40
Figure 19: Basalt and quartz outcropping along SU13. 40
Figure 20: SU14 Facing south along narrow ridgeline, well vegetated, high erosion, and visibility along graded vehicle track. 40
Figure 21: SU15 Facing north-west showing high visibility and large exposed shallow soil sections BWF AS16. 40
Figure 22: Near SU14 facing west along ephemeral drainage line with formed dam, large areas of exposed deposit, BWF AS20. 40
Figure 23: SU18 Facing south showing high visibility and large exposed shallow soil sections across narrow ridgeline. 40
Figure 24: Location of survey units 92
Figure 25: Aboriginal sites identified through the archaeological investigations 93
Figure 26: Survey unit 1, tracks and Aboriginal sites 94

Figure 27: View southeast across ridge line showing steep slopes, fence lines and vehicle tracks. 96
Figure 28: Artefacts identified on eroded vehicle track showing brown clay loams and high gravel content. 96
Figure 29: View north across erosion exposure adjacent to vehicle track along property fence line. Artefacts located on surface. 96
Figure 30: View south across artefact scatter, shallow erosion, artefacts located along the edge of the vehicle track. 96
Figure 31: Basalt flake, primary reduction, located near property gate along vehicle track. 97
Figure 32: FGS flake located on surface amongst gravels. 97
Figure 33: Crystal quartz geometric microlith located along the vehicle track. 97
Figure 34: Location of BWF AS3 along ridgeline with views to the Macquarie River valley. 97
Figure 35: View east, erosion from vehicle damage and bedrock exposures shallow soils. Steep slopes, and narrow ridgeline. 98
Figure 36: Chert flake located on the vehicle track surface, brown loams. 98
Figure 37: Chert flake with primary reduction located on the vehicle access track surface, brown loams and gravels visible. 98
Figure 38: View west, typical crest landform. 98
Figure 39: Survey unit 2, tracks 99
Figure 40: Survey unit 4, tracks and Aboriginal sites 101
Figure 41: View north across the erosion scar with the low density scatter across the surface. 103
Figure 42: Basalt flake on brown loam surface. 103
Figure 43: View southeast across the lower slope landform showing relatively flat exposure. 103
Figure 44: Chert flake with unique colouring and pattern. 103
Figure 45: View east across the artefact scatter showing shallow brown loams above a red clay loam. 104
Figure 46: Yellow chert flakes with red and grey veins 104
Figure 47: FGS, basalt, chert and quartzite flakes. 104
Figure 48: Chert flakes and Bondi points, chalcedony flake. 104
Figure 49: Unfinished stone axe, flaked volcanic cobble. 105
Figure 50: Grey chalcedony flaked piece, FGS flake and basalt flakes. 105
Figure 51: Basalt flake cluster 105
Figure 52: Crystal quartz flake. 105
Figure 53: Survey unit 5 and 6, tracks and Aboriginal sites 106
Figure 54: View west across the scatter location of the upper slope of the saddle, showing shallow soils and exposed bedrock. 108
Figure 55: Example of basalt flakes identified on the surfaces in the shallow erosion scar. 108
Figure 56: View east, across proposed turbine pad, and location of BWF AS6. 109
Figure 57: Two flakes identified at location on eroded surface and exposed bedrock. 109
Figure 58: View southeast, across exposure of basalt along the ridgeline. 109
Figure 59: Close up of quality basalt surface, the material is flaking material and was sharp along edges. 109
Figure 60: View east, towards vehicle track and fence line showing the exposing eroding shale bedrock. 110
Figure 61: Milky quartz flakes exposed on the ground surface; brown clay loams exposed with high angular gravel content. 110

Figure 62: View west, erosion from vehicle damage and sheep movement, and vegetation clearance. Shallow brown loams exposed with high ironstone gravel content and bedrock visible. 112
Figure 63: View north across Aboriginal site showing gentle slope, fencing and location of Aboriginal objects. 112
Figure 64: Example of Aboriginal objects, backed quartz point. 112
Figure 65: Basalt flaked pieces, milky quartz pieces amongst ironstone gravels. 112
Figure 66: Survey unit 7, tracks and Aboriginal sites 113
Figure 67: View south across ridgeline and location of Aboriginal site adjacent to animal erosion. 115
Figure 68: Quartz flake located amongst exposed bedrock. 115
Figure 69: View north across gully erosion along the lower slope of ridgeline. Exposed Aboriginal site. 116
Figure 70: View east across artefact scatter, showing gully erosion. 116
Figure 71: Tip of ground edge axe, volcanic material, basalt or greywacke. 116
Figure 72: Basalt flakes and quartz flakes exposed in brown loams. 116
Figure 73: Basalt flakes, all tertiary reduction. 116
Figure 74: Basalt core and flake. 116
Figure 75: Survey unit 8, tracks and Aboriginal sites 117
Figure 76: Crystal quartz flakes. 119
Figure 77: View south east across exposed Aboriginal sites, bedrock visible and orange clay loams along vehicle track. 119
Figure 78: Basalt flakes exposed on orange clay loams. 119
Figure 79: View north west across ridgeline showing spread of scatter, bedrock exposed. 119
Figure 80: Survey unit 9, tracks and Aboriginal sites 120
Figure 81: View east, erosion from vehicle damage and bedrock exposure, shallow soils along cleared ridgeline. 122
Figure 82: Quartz flake located on exposed shale bedrock. 122
Figure 83: View south across the narrow ridgeline and location of quartz flake. 122
Figure 84: Survey unit 10, tracks and Aboriginal sites 123
Figure 85: View south across vehicle track and artefact scatter. 125
Figure 86: View east across scatter, exposed clay loams, ironstone gravel, and quartz flakes visible. 125
Figure 87: Sample of milky quartz flakes identified in a cluster on the edge of the vehicle track. Visible ironstone gravels and brown clay loams. 125
Figure 88: View south west across raised landform above the drainage line, exposed shale bedrock through drainage line. 125
Figure 84: Survey unit 10 and 11, tracks and Aboriginal sites 126
Figure 90: View across the community of grass trees growing along the sheltered crest. 128
Figure 91: Isolated quartz flake identified amongst the quartz seam debris 128
Figure 92: Survey unit 12, tracks and Aboriginal sites 129
Figure 93: View east across low lying crest landform above drainage line. The isolated find was identified on the edge of the gully erosion mid image. BWF IF 4 flagged. 131
Figure 94: Isolated quartz flake identified on animal tracks in a highly visible location with exposed bedrock. 131
Figure 95: Large basalt flake and quartz flakes identified on an animal track. 132
Figure 96: Chert flake with serrated margins. 132

Figure 97: View north west towards Isolated find near tree line. Water hole identified in an elevated depression between a ridgeline and a crest landform. 132
Figure 98: Basalt flake exposed on an animal track near the remnant tree line. 132
Figure 99: View east across the Aboriginal site, erosion scar adjacent to vehicle track. 133
Figure 100: Basalt and quartz flakes on the ground surface with ironstone gravels. 133
Figure 101: Basalt, quartz and chert flakes. 133
Figure 102: Green chert flake. 133
Figure 103: Survey unit 13, tracks and Aboriginal sites 134
Figure 104: View south east, along the edge of the outcrop where the high quality basalt was exposed. 136
Figure 105: View of exposed basalt, fresh natural fracturing. Fine grained, natural breaks have sharp edges. 136
Figure 106: View south east, across shallow erosion caused by vehicle movement exposing thin soils and artefacts. 137
Figure 107: Sample of chert basalt and quartz flakes and backed points exposed on the orange clays with high gravel content. 137
Figure 108: View north west across the most densely exposed section of scatter. 137
Figure 109: Quartz flakes and backed points exposed across natural sheet erosion amongst bedrock. 137
Figure 110: Survey unit 14, tracks and Aboriginal sites 138
Figure 111: View south across the location of artefacts. Sheet erosion from vehicle damage. 140
Figure 112: Milky quartz flakes, crystal quartz and a basalt flake. 140
Figure 113: View south along graded vehicle track, high gravel content, exposed bedrock. 140
Figure 114: Weathered chert core exposed on the track surface. 140
Figure 115: View north, across slope with high sheet erosion from vehicle damage and dam construction. 141
Figure 116: Backed basalt point with broken tip. 141
Figure 117: Basalt flakes and blade cores exposed on surface, north of dam. 141
Figure 118: South side of the dam construction, exposed deposits with artefacts eroding out of A horizon. 141
Figure 119: View west across ridgleline and exposed artefact scatter, soils were skeletal and exposed bedrock along vehicle track. 142
Figure 120: Basalt flakes exposed on the ground surface adjacent to vehicle track. 142
Figure 121: View west from eastern end of site, graded vehicle track and exposed basalt bedrock, moderate slope. 142
Figure 122: Chert core and basalt flake exposed on vehicle track. 142
Figure 123: View south across graded vehicle track, lithic pieces were scattered across surface and bedrock is visible. 143
Figure 124: Weathered basalt flakes similar to BWF AS26. 143
Figure 125: View south across an exposure with skeletal brown loams over orange clays with high gravel content. 144
Figure 126: Weathered basalt flakes exposed on the ground surface. 144
Figure 127: Survey unit 15, 16 and 17, tracks and Aboriginal sites 145
Figure 128: View east, across exposed scatter. 147

Figure 129: Two basalt flakes and milky quartz flakes on the exposed clay sandy loams with ironstone gravels. 147
Figure 130: View east across the sheet erosion and bioturbation. 148
Figure 131: Basalt flakes on the red clay loams with angular ironstone gravels. 148
Figure 132: View west across the crest line with exposed bedrock. 150
Figure 133: Crystal quartz flake on the ground surface. 150
Figure 134: Survey unit 18 and 39, tracks and Aboriginal sites 151
Figure 135: View north across the erosion from vehicle movement and natural processes, scatter exposed on surface. 154
Figure 136: Greywacke flake on red brown sandy loams. 154
Figure 137: View east across the ridgeline and location of artefacts. 155
Figure 138: Four chert flakes located on eroding bedrock. 155
Figure 139: View south west along the eroded ground surface with exposed eroding shales and basalt bedrock. 155
Figure 140: Basalt flake exposed on the ground surface on brown loams and fractured shales. 155
Figure 141: View south east across the graded vehicle track showing exposed and eroding bedrock. 156
Figure 142: Weathered silcrete flake on the vehicle access track, angular shale fragments abundant. 156
Figure 143: Survey unit 18, tracks and Aboriginal sites 157
Figure 144: Survey unit 19, tracks and Aboriginal sites 158
Figure 145: View west across the site on a moderate slope with high erosion and exposed bedrock. 160
Figure 146: Two quartz flakes distinguished amongst a high background scatter of eroding quartz material. 160
Figure 147: View south east across sheet erosion. 160
Figure 148: Aboriginal objects identified spread across the sheet erosion, basalt and quartz. 160
Figure 149: View east along the ridge line showing erosion scour adjacent to the fence line. 161
Figure 150: Red stained quartz, basalt and chert flakes on red earths. 161
Figure 151: Survey unit 13, tracks and Aboriginal sites 162
Figure 152: View east across the sheet eroded moderate slope above the drainage line. 164
Figure 153: Quartz flakes and a geometric microlith. 164
Figure 154: Survey unit 21, tracks and Aboriginal sites 165
Figure 155: View south across the rocky crest, an informal rocky vehicle track with exposed sandstone boulders and decomposing bedrock. 167
Figure 156: Basalt flake identified on the vehicle track. 167
Figure 157: Knapping or hammer stone with pitting and flake scars. Located on the brow loams. 168
Figure 158: Location of the hammer stone on a large sheet erosion scour, no other Aboriginal objects were visible. 168
Figure 159: View south across vehicle track, location of artefacts across road. 168
Figure 160: Two quartz flakes identified. 168
Figure 161: Survey unit 21, 22 and 38 tracks and Aboriginal sites 169
Figure 162: View southeast across the highly eroded ground surface from vehicle damage and Stock movement. 171
Figure 163: Two Basalt flakes and a white chert flake. 171
Figure 164: Quartz core and FGS flake. 171
Figure 165: Four Basalt flakes, tertiary and secondary reduction. 171

Figure 166: View north west across the artefact scatter in stock erosion. Shallow soils over clays. Large floating bedrock fragments. 172
Figure 167: Highly weathered ground edge stone axe, located on the surface north of the dam. 172
Figure 168: Basalt and FGS flakes located on the surface below the constructed dam 172
Figure 169: Basalt and quartz flakes spread across the surface of the eastern edge of the dam. 172
Figure 170: Survey unit 23 tracks and Aboriginal sites 174
Figure 171: View south along the narrow ridgeline quartz outcropping. 176
Figure 172: Quartz Bondi point. 176
Figure 173: View east, across site location, broad crest. 176
Figure 174: Quartz flake. 176
Figure 175: View south across the narrow ridgeline, showing extensive clearance, rocky outcropping and sparse tree cover. 177
Figure 176: Three quartz flakes located on the ground surface. 177
Figure 177: Survey unit 24 tracks and Aboriginal sites 178
Figure 178: View north west across the graded vehicle track. Exposed volcanic bedrock. 180
Figure 179: View west across the ridgeline, large exposed milky quartz outcropping. 181
Figure 180: Large river cobble manuport located on the narrow ridge line. 181
Figure 181: Survey unit 25 tracks. 182
Figure 182: Survey unit 26 tracks 184
Figure 183: View south across the animal track through remnant stand of native vegetation. 186
Figure 184: Basalt flakes and Bondi point. 186
Figure 185: View along the usually flooded banks of Oakey Creek and the location of the exposed scatter. 187
Figure 186: Flaked basalt river cobble, basalt flake and quartz flakes. 187
Figure 187: Survey unit 27 tracks and Aboriginal sites 188
Figure 188: View north across the sheet erosion on the crest of a low lying hill, location of AHIMS site. 190
Figure 189: Broken ground edge stone axe identified on the ground surface of the sheet erosion, adjacent to stone flakes. 190
Figure 190: View north across the sheet erosion on the terrace of Redbank Creek. 191
Figure 191: View north across vehicle track with exposed artefacts, western most edge of site extent. 191
Figure 192: Quartzite core and crystal quartz flake. 191
Figure 193: Crystal quartz flakes and chert flakes. 191
Figure 194: View east across the artefact scatter and the vehicle access track. 192
Figure 195: Basalt flake on sandy loams with high gravel content. 192
Figure 196: View north across the artefact scatter showing shallow brown loams above a red clay loam. 192
Figure 197: Highly significant war hammer river cobble. 192
Figure 198: View north across the artefact scatter showing shallow brown sandy clay loams and exposed bedrock. 193
Figure 199: Basalt flakes and a basalt core. 193
Figure 200: Quartzite Bondi point. 193
Figure 201: River cobble with pitting around narrow edge. 193

Figure 202: View south towards on a potential old homestead, sheet erosion across the vehicle track. 194
Figure 203: Sheet erosion across vehicle track, scatter across the entrance to property. 194
Figure 204: River cobble with pitting along narrow point and across broad surface. 194
Figure 205: Basalt backed blade. 194
Figure 206: FGS and chert flake. 195
Figure 207: Basalt rotated core. 195
Figure 208: Survey unit 28 tracks and Aboriginal sites 196
Figure 209: View north across sheet erosion, artefact scatter across ground surface. 198
Figure 210: Two basalt flakes and four quartz flakes. 198
Figure 211: View west across the scatter, sheet erosion has exposed the site, fractured shale bedrock scattered, across clay loams. 199
Figure 212: Large basalt flakes, weathered from exposure. 199
Figure 213: View north across sheet erosion across low lying crest adjacent to Oakey Creek. 199
Figure 214: Basalt and grey chert flakes on clay loams amongst ironstone gravels. 199
Figure 215: Basalt backed blade; site exposed along the fence line. 200
Figure 216: Basalt flakes. 200
Figure 217: View north across the sheet erosion along the fence line, Oakey Creek in the distance. 201
Figure 218: Basalt flakes and the crystal quartz geometric microlith. 201
Figure 219: View north across the sheet erosion, Oakey Creek in the distance. 201
Figure 220: Basalt flakes and red quartzite flakes. 201
Figure 221: Survey unit 30 and 31 tracks and Aboriginal sites 202
Figure 222: View south east, erosion from vehicle damage, shallow soils and exposed bedrock. 204
Figure 223: Grinding stone, broken. 204
Figure 224: View north west across the location of the small scatter exposed on ground surface. 206
Figure 225: Two basalt flakes on the ground surface and brown sandy loams. 206
Figure 226: View west across crest landform with sheet erosion exposing the artefact scatter. 207
Figure 227: Basalt flake/ blade, broken tip exposed on sandy loams. 207
Figure 228: View across graded vehicle track bedrock exposed, large bedrock fragments and sandy soils. 207
Figure 229: Two quartz flakes and a quartzite flake. 207
Figure 230: View east, across broad drainage valley on saddle landform, saturated from ground water. 208
Figure 231: Chert core on sandy soils with angular gravels. 208
Figure 232: View south east across eroded vehicle track with site location. 209
Figure 233: Large basalt flake and quartz flake. 209
Figure 234: View south east across eroded vehicle track with site location. 209
Figure 235: Large basalt flake and quartz flake. 209
Figure 236: Large basalt flaked piece 210
Figure 237: View south east across eroded vehicle track through a raised slope above a drainage line. Sheet erosion to the west. 211
Figure 238: Basalt flakes. 211
Figure 239: Basalt flakes, grey chert flake and milky quartz. 211
Figure 240: Crystal quartz flake. 211

Figure 241: View south east across eroded vehicle track through a raised slope above a drainage line. Gully erosion to the west. 212
Figure 242: Basalt flakes identified across the eroded vehicle track. 212
Figure 243: Basalt flakes identified across the diverted vehicle track. 212
Figure 244: View south east across graded vehicle track through a raised slope above a drainage line. 213
Figure 245: Two Basalt flakes identified on the verge of the vehicle access track. 213
Figure 246: Survey unit 32 tracks and Aboriginal sites 214
Figure 247: Three milky quartz flakes. 216
Figure 248: View east across the exposed bedrock and sheet erosion. 216
Figure 249: View west across the graded vehicle track with exposed clay loams and gravels. 217
Figure 250: Crystal quartz geometric microlith. 217
Figure 251: Survey unit 33 tracks and Aboriginal sites 218
Figure 252: view north set across the ridgeline showing the eroded vehicle track along the fence line, exposed bedrock and skeletal soils. 220
Figure 253: Split basalt flake, weathered located on the surface amongst ironstone gravels. 220
Figure 254: Milky quartz flakes exposed on the ground surface amongst ironstone gravels. 221
Figure 255: Basalt core. 221
Figure 256: Chert core, quartz flake and a basalt flake. 221
Figure 257: Basalt core with four basalt flakes. 221
Figure 258: View east, across new growth trees with limited exposures. 222
Figure 259: Quartz flake. 222
Figure 260: Basalt flake located on the eroded ground surface amongst decomposed bedrock and skeletal soils. 223
Figure 261: View north east across the site showing erosion and, vegetation clearance and the fence line. 223
Figure 262: Survey unit 34 tracks 224
Figure 263: Survey unit 35 tracks 226
Figure 264: Survey unit 35 tracks 229
Figure 265: Survey unit 35 tracks 230
Figure 266: View north along Yarrabin Road, graded road through moderate sloping hills and a narrow drainage line. 231
Figure 267: Quartz flake identified on mounded edge of graded road. 231
Figure 268: Survey unit 35 tracks and Aboriginal site 232
Figure 269: View north across the erosion scour on the edge of Yarrabin Road. 233
Figure 270: Backed basalt point. 233
Figure 271: Survey unit 35 tracks and Aboriginal site 234
Figure 272: View south across the site and Yarrabin Road, moderate sloping hills. 235
Figure 273: Basalt flakes located on the edge of the road on the north side of the bend. 235
Figure 274: Gully erosion on the south side of Yarrabin Road, thin A horizon of brown loams over an orange clay loam with large bedrock floaters. 235
Figure 275: Silcrete and quartz flake located on the eroding gully south of the road. 235
Figure 276: Survey unit 35 tracks 236
Figure 277: Survey unit 35 tracks 237
Figure 278: Survey unit 36 tracks and Aboriginal sites 238

Figure 279: View south towards the ridgeline, artefacts were exposed across the vehicle track and the large expanse of sheet erosion. 240
Figure 280: Basalt, ground edge axe, broken or shattered from use. Rough surface indicates a terrestrial source. 240
Figure 281: Quartzite and two grey silcrete flakes. 240
Figure 282: Grey silcrete flake. 240
Figure 283: View south across the vehicle track with skeletal soils and exposed bedrock. 241
Figure 284: Four grey FGS flakes. 241
Figure 285: Weathered FGS flake and a medial basalt flake. 241
Figure 286: Multicoloured chert or silcrete flakes and one scraper(left). 241
Figure 287: View south across the site through the gate access for vehicles. Exposed sandy loam and clays. 242
Figure 288: Basalt core and flake, grey silcrete flake on sandy loams. 242
Figure 289: Basalt flake, grey silcrete flake and medial FGS flake. 242
Figure 290: Unique lithic material beige brown with black veins, either chert or petrified wood. 242
Figure 291: View west across the sheet erosion and vehicle damage across the gate entrance. Brown loams and high gravel content. 243
Figure 292: Unique lithic material beige brown with black veins, either chert or petrified wood. 243
Figure 293: FGS flakes on sandy brown loams. 243
Figure 294: FGS flakes. 243
Figure 295: View north east across the highly eroded vehicle track artefacts washed into gully erosion. 244
Figure 296: Chert flakes identified in the sheet erosion washed into vehicle track, unique chert pattern identified on Mudgee side of dam. 244
Figure 297: Survey unit 37 tracks and Aboriginal site 245
Figure 298: View north across the access vehicle track on the lower slope of a steep ridge line, red brown clay loams with gravel. 247
Figure 299: Four quartz flakes located on the graded vehicle access track. 247
Figure 300: Survey unit 40 tracks and Aboriginal sites 248
Figure 301: View south east, showing a graded vehicle track through the site. Artefacts located to the right under the trees. 250
Figure 302: Example of basalt flakes uncovered by the track grading. 250
Figure 303: View south across the lower slopes of the ridgeline looking towards Oakey Creek. 251
Figure 304: Base of the scar, clean cut mark into the heartwood during scar creation. 251
Figure 305: Survey unit 41 tracks and Aboriginal sites 252
Figure 306: View north across the artefact scatter across the vehicle track and sheet erosion. 254
Figure 307: Chert core and flake, including basalt flakes. 254
Figure 308: Milky quartz and chert flake. 254
Figure 309: Milky quartz and chert flake. 254
Figure 310: View south west across the location of the small scatter. Sheet erosion from vehicle damage, graving and vegetation clearance. 255
Figure 311: FGS flake located in a large sheet erosion adjacent to the vehicle track. 255
Figure 312: Ground edge stone axe, rounded river cobble with smooth sharped end, pitting from use. 255
Figure 313: Hammer stone, rounded river cobble with pitting at the short end. 255

Figure 314: View north west across the location of the isolated find. The isolated basalt flake was in a location of high disturbance with mixed loams and clays. 256
Figure 315: Basalt flake located at the base of a tree. 256
Figure 316: Survey unit 41 tracks and Aboriginal sites 257
Figure 317: View south across the gully erosion from land clearance an unstable soil structure. 258
Figure 318: Basalt flakes and core, evidence of a chance find knapping event. 258
Figure 319: Aboriginal sites along access track through Lot 3-5, 12 DP 756872 259
Figure 320: View south east across the moderate slope showing the graded vehicle track cut into the slope 260
Figure 321: Quartz flakes. 260
Figure 322: View south across the gully erosion from land clearance an unstable soil structure. 261
Figure 323: Basalt flakes and core, evidence of a chance find knapping event. 261
Figure 324: Basalt core, flaking along one margin 261
Figure 325: Basalt flakes and a small chalcedony flake. 261
Figure 326: View south east across the moderate slope showing the grade vehicle track cut into the slope 262
Figure 327: Basalt flakes and a basalt core. 262
Figure 328: View south across the gully erosion from land clearance an unstable soil structure. 263
Figure 329: Basalt flakes and a quartz flake 263
Figure 330: View north across the gully erosion along the drainage line and the remnant archaeological deposit. 263
Figure 331: Basalt flakes and chert flakes. 263
Figure 332: Basalt flakes and a basalt core 264
Figure 333: Basalt flakes on brown silty loam ground surface 264
Figure 334: Aboriginal sites along the Cudgegong River access track 265
Figure 335: View south east across the gully eroded road with red clay loams and ironstone gravels. 266
Figure 336: Basalt flake and quartz flake on the road surface. 266
Figure 337: View south across the site towards the ridgeline in the distance 267
Figure 338: Basalt core, evidence of a knapping event. 267
Figure 339: View south across the lower slopes of the looking the scarred face of the tree. 267
Figure 340: View north from the scarred tree towards BWF 76 and the Cudgegong River. 267

List of Tables

Table 1: Registered Aboriginal Parties 10
Table 2: Registered Aboriginal Parties who participated in the field survey. 10
Table 3: Aboriginal stakeholder responses to draft ACHA 11
Table 4: Registered Aboriginal Parties participation in field survey 12
Table 5: Aboriginal stakeholder responses to draft ACHA 12
Table 6: Registered Aboriginal Parties participation in field survey 13
Table 7: Aboriginal stakeholder responses to draft ACHA 14
Table 8: Southwestern Slopes bioregion summary (source: NSW Department of Planning, Industry and Environment) 15

Table 9: Search Parameters for the AHIMS database used for predictive modelling 25
Table 10: Search Parameters for the AHIMS database used for predictive modelling 25
Table 11: AHIMS site types recorded within 30 km radius of the Project site November 2024. 26
Table 12: Predictive model for the occurrence of archaeological site types in the study area 32
Table 13: Survey unit description summary..... 41
Table 14: Survey coverage and associated Aboriginal sites identified. 46
Table 15: Aboriginal sites identified during field survey..... 49
Table 16: Impact assessment for Aboriginal sites 60
Table 17: Management and mitigations for Aboriginal sites within the Development Footprint 73

Abbreviations

Abbreviation	Description
ACHA	Aboriginal Cultural Heritage Assessment
AHC Act	*Australian Heritage Council Act*
AHIP	Aboriginal Heritage Impact Permit
AHIMS	Aboriginal Heritage Information Management System
ALR Act	*Aboriginal Land Rights Act 1983*
CHL	Commonwealth Heritage List
DECCW	(Former) Department of Environment Climate Change and Water
EIS	Environmental Impact Statement
ELA	Eco Logical Australia Pty Ltd
EPBC Act	*Environment Protection and Diversity Conservation Act 1999*
EP&A Act	*Environmental Planning and Assessment Act 1979*
ESD	Ecological Sustainable Development
FGS	Fined grained siliceous
Heritage NSW	Heritage NSW, Department of Premier and Cabinet
GPS	Global Positioning System
IHO	Interim Heritage Orders
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area
MNES	Matters of National Environmental Significance
NHL	National Heritage List
NPW Act	*National Parks and Wildlife Act* 1974
NSW	New South Wales
NTSCORP Limited	Native Title Services Corporation Limited
OEH	NSW Office of Environment and Heritage
PAD	Potential Archaeological Deposit
Project	Burrendong Wind Farm
Proponent	Burrendong Wind Farm Pty Ltd
RAPs	Registered Aboriginal Parties
RNE	Register of the National Estate
SEARs	Secretary's Environmental Assessment Requirements
SHI	State Heritage Inventory
SHR	State Heritage Register
SSD	State Significant Development

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WHL	World Heritage List
WTG	Wind Turbine Generator
WVWAC	Wellington Valley Wiradjuri Aboriginal Corporation

1. Introduction

1.1 Background

Eco Logical Australia (ELA) was engaged by Burrendong Wind Farm Pty Ltd (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for the Burrendong Wind Farm (the Project) Environmental Impact Statement (EIS). As the Burrendong Wind Farm is a State Significant Development (SSD-8950984), an EIS is being prepared to meet the requirements under Part 8, Division 5 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation). The EIS must be prepared to identify the potential environmental impacts associated with the Project. The ACHA will fulfill requirements of the Secretary's Environmental Assessment Requirements (SEARS), which were reissued[1] 30 September 2022, relating to Aboriginal cultural heritage and consultation.

The SEARs requirements relevant to this assessment require:

- An assessment of the impact to Aboriginal cultural heritage items (archaeological and cultural) in accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales (NSW)* (OEH, 2011) and the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DECCW, 2010), including results of archaeological test excavations (if required).
- Evidence of consultation with Aboriginal communities in determining and assessing impacts, developing options, and selecting options and mitigation measures (including the final proposed measures), having regard to the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010).

1.2 Project Site (Development Footprint)

The Project Site is approximately 30km south-east of Wellington and east of Lake Burrendong (Figure 1). It sits within both the Dubbo Regional Local Government Area (LGA) and the Mid-Western Regional LGA.

The Project Site occupies approximately an area of 26,933ha. The Development Corridor is 1,318 ha which places an approximate buffer of 20 m around the Development Footprint. The Development Footprint includes the Wind Turbine Generators (WTGs), hardstands, access tracks and ancillary infrastructure, road upgrade areas and southern transmission line option. The Development Footprint is between 732ha (Option A) and 732ha (Option B). Proposed works include:

- Construction, operation, and maintenance of 70 WTGs.
- Construction of roads and tracks.
- Construction, operation and maintenance of electrical infrastructure.
- Construction, operation and maintenance of permanent ancillary infrastructure.
- Construction, operation, maintenance and decommission of temporary ancillary infrastructure.

[1] An updated SEARs were sought to increase the estimated capacity and number of turbines to be assessed.

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1.3 Scope and approach

According to Heritage NSW, Department of Premier and Cabinet (Heritage NSW), the investigation and assessment of Aboriginal cultural heritage is undertaken to explore the harm of a proposed activity on Aboriginal objects and declared Aboriginal places and to clearly set out which impacts are avoidable, and which are not. Harm to significant Aboriginal objects and declared Aboriginal places should always be avoided wherever possible. Where such harm cannot be avoided, proposals that reduce the extent and severity of this harm should be developed.

This ACHA has been prepared in accordance with the following requirements and guidelines:

- Secretary's Environmental Assessment Requirements (SEARs SSD-8950984)
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (Code of Practice) (Department of Environment, Climate Change & Water [DECCW] 2010)
- *The Burra Charter* (ICOMOS 2013)
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment & Heritage [OEH] 2011)

Aboriginal community consultation was undertaken for the project following the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010) (Heritage NSW consultation requirements). The consultation process resulted in the registration of seven Registered Aboriginal Parties (RAPs) for the Project.

This ACHA presents the results of the assessment and recommendations for actions to be taken before, during and after an activity, to manage and protect Aboriginal objects and declared Aboriginal places identified by the investigation and assessment.

1.4 Investigators and contributors

This ACHA has been prepared by Jennifer Norfolk ELA Associate Archaeologist, with oversight and review by ELA Principal Heritage Consultant Karyn McLeod.

Jennifer Norfolk has an MSc. (Marine Archaeology) from Southampton University. Karyn McLeod has BA (Hons Archaeology) from University of Sydney and a MA (Cultural Heritage) from Deakin University.

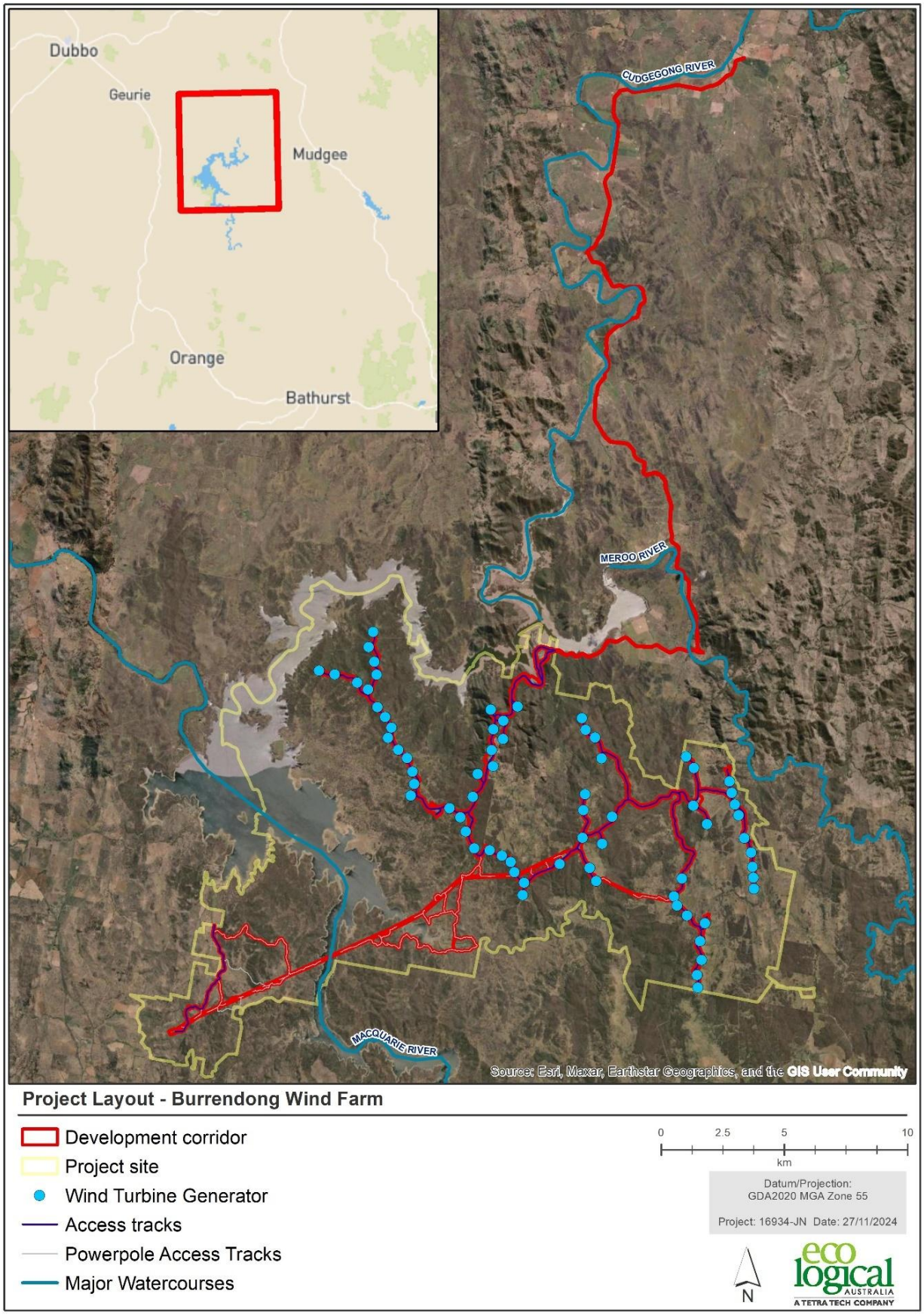


Figure 1: The Burrendong Wind Farm project layout, including road upgrades and switchyard connection

1.5 Legislative context

NATIONAL PARKS AND WILDLIFE ACT 1974

Aboriginal cultural heritage in NSW is afforded protection under the provisions of the *National Parks and Wildlife Act 1974* (NSW) [NPW Act]. The Act is administered by Heritage NSW, which has responsibilities under the legislation for the proper care, preservation, and protection of Aboriginal objects and Aboriginal places.

Under the provisions of the NPW Act, all Aboriginal objects are protected irrespective of their level of significance or issues of land tenure. Aboriginal objects are defined by the Act as *any deposit, object, or material evidence (that is not a handicraft made for sale) relating to Aboriginal habitation of NSW, before or during the occupation of that area by persons of non-Aboriginal extraction (and includes Aboriginal remains).* Aboriginal objects are limited to physical evidence and may be referred to as 'Aboriginal sites,' 'relics' or 'cultural material.' Aboriginal objects can include scarred trees, artefact scatters, middens, rock art and engravings, as well as post-contact sites and activities such as fringe camps and stockyards. Heritage NSW must be notified about the discovery of Aboriginal objects under section 89A of the NPW Act.

The Code of Practice (DECCW 2010a) assists in establishing the requirements for undertaking archaeological investigation without an AHIP or establishing the requirements that must be followed when conducting archaeological investigation in NSW where an application for an AHIP is likely to be made. Heritage NSW recommends that the requirements of this Code also be followed where a proponent may be uncertain about whether or not their proposed activity may have the potential to harm Aboriginal objects or declared Aboriginal places.

The Guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW (OEH 2011) sets out the requirements for investigation and assessment of Aboriginal cultural heritage. The assessment is undertaken to explore the harm of a proposed activity on Aboriginal objects and declared Aboriginal places and to clearly set out which impacts are avoidable, and which are not. Harm to significant Aboriginal objects and declared Aboriginal places should always be avoided wherever possible. Where harm to Aboriginal objects and declared Aboriginal places cannot be avoided, proposals that reduce the extent and severity of harm to significant Aboriginal objects and declared Aboriginal places should be developed.

The Aboriginal cultural heritage assessment is used typically to support applications that you may make to Heritage NSW for, and an AHIP prepared, where harm cannot be avoided. In this case, as the Project is proposal is an SSD, an AHIP is not required, as it is managed through the EIS process.

HERITAGE ACT 1977 (NSW)

The *Heritage Act 1977* (NSW) is a statutory tool designed to conserve the environmental heritage of NSW and is used to regulate development impacts on the state's heritage places, buildings, works, relics, moveable objects or precincts that are important to the people of NSW. These include items of Aboriginal and non-Aboriginal heritage significance. Where these items have particular importance to the state of NSW, they are listed on the State Heritage Register (SHR).

Identified heritage items may be protected by means of either Interim Heritage Orders (IHO) or by listing on the SHR. Proposals to alter, damage, move or destroy places, buildings, works, relics; moveable objects or precincts protected by an IHO or listed on the SHR require an approval under section 60.

Archaeological features and deposits are afforded statutory protection by the 'relics provision section 139[1]' of the Act (as amended in 1999). Under this section it is illegal to disturb or excavate any land knowing or suspecting that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed. In such cases, an excavation permit under section 140 is required. Note that no formal listing is required for archaeological relics; they are automatically protected if they are of local significance or higher.

HERITAGE REGISTERS

The Heritage Division of the Department of Premier and Cabinet maintains registers of heritage sites that are of State or local significance to NSW. The SHR is the statutory register under Part 3A of the Heritage Act. The State Heritage Inventory (SHI) is an amalgamated register of items on the SHR, items listed on LEPs and/or on a State Government Agency's Section 170 register and may include items that have been identified as having state or local level significance. If a particular site does not appear on either the SHR or SHI this does not mean that the site does not have heritage significance as many sites within NSW have not been assessed to determine their heritage significance. Sites that appear on either the SHR or SHI have a defined level of statutory protection. Key Aboriginal sites, including post contact sites, can be protected by inclusion on the SHR. The Heritage Council nominates sites for consideration by the Minister for Environment and Heritage.

Searches of the Australian Heritage Database, the SHR was conducted on 31 January 2023 in order to determine if any places of archaeological significance are located within the study area.

The search identified that the Project site is adjacent to several local significant items that have no Aboriginal significance. This ACHA focusses solely on the Aboriginal heritage potential and cultural values of the project area. It is outside of the scope of this report to address the historical heritage items. The locally significant items that were identified include:

- Ben Buckley Homestead and Woolshed – LEP I998
- Morrowolga homestead – LEP I369
- Yamble homestead and outbuildings – LEP I421.

ABORIGINAL LAND RIGHTS ACTS 1983

The *Aboriginal Land Rights Act 1983* (ALR Act) established Aboriginal Land Councils (at State and Local levels). Division 1A outlines the functions of Local Aboriginal Land Councils and their statutory obligation under the ALR Act to:

> *(a) take action to protect the culture and heritage of Aboriginal persons in the council's area, subject to any other law, and*
> *(b) promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area.*

The Project site extends across the boundary of the Mudgee and Wellington Local Aboriginal Land Councils (LALC).

The project site is partially within a registered Native Title Claim – Warrabinga- Wiradjuri #7 (NC2018/002). The Native Title Claim has not had a determination, and native title is extinguished on freehold land and extinguished on Crown Land where that land is used for a public purpose.

ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979

The *Environmental Planning and Assessment Act 1979 (*NSW) [EP&A Act] requires that consideration be given to environmental impacts as part of the land use planning process. In NSW, environmental impacts are interpreted as including cultural heritage impact. Proposed activities and development are considered under different parts of the EP&A Act, including:

- Major projects (State Significant Development under Part 4.1 and State Significant Infrastructure under Part 5.1), requiring the approval of the Minister for Planning.
- Minor or routine developments, requiring local council consent, are usually undertaken under Part 4. In limited circumstances, projects may require the Minister's consent.
- Part 5 activities which do not require development consent. These are often infrastructure projects approved by local councils or the State agency undertaking the project.

The EP&A Act provides a framework for the overall environmental planning and assessment of proposals. Part 4 of the EP&A Act provides for the assessment of development that requires consent. Part 4 Division 4.7 of the EP&A Act establishes an approval regime for development that is declared to be SSD by either a SEPP or Ministerial Order.

The Project is an SSD (SSD-8950984) and an EIS must be prepared to meet the requirements under Part 8, Division 5 of the EP&A Regulation. It must have regard to the SSD Guidelines and the NSW Wind Energy Framework.

NATIONAL HERITAGE LEGISLATION

The *Environment and Heritage Legislation Amendment Act (No.1) 2003* amends the *Environment Protection and Diversity Conservation Act 1999* (EPBC Act) to include 'national heritage' as a Matter of National Environmental Significance (MNES) and protects listed National Heritage Listed places. It also establishes the National Heritage List (NHL) and the Commonwealth Heritage List (CHL).

The *Australian Heritage Council Act 2003* (AHC Act) establishes a new heritage advisory body - the Australian Heritage Council (AHC), to the Minister for the Environment and Heritage and retains the Register of the National Estate (RNE).

The *Australian Heritage Council (Consequential and Transitional Provisions) Act* 2003 repeals the *Australian Heritage Commission Act 1975*, amends various Acts as a consequence of this repeal and allows the transition to the current heritage system.

Together the above three Acts provide protection for Australia's natural, Aboriginal, and historical heritage. The new features include:

- A new NHL of places of national heritage significance.
- A new CHL of heritage places owned or managed by the Commonwealth.
- The creation of the AHC, an independent expert body to advise the Minster on the listing and protection of heritage places.

- Continued management of the RNE.

The primary Commonwealth heritage Act, *Aboriginal and Torres Strait Islander Heritage Protection Act 1984,* deals with Aboriginal cultural property in a wider sense, encompassing the protection of any areas and objects that 'are of particular significance to Aboriginals in accordance with Aboriginal tradition'. In most cases, archaeological sites and objects registered under the State Act will also be Aboriginal places subject to the provisions of the Commonwealth Act. The Commonwealth Act takes precedence over State cultural heritage legislation where there is conflict. The responsible Minister may make a declaration under Section 10 of the Commonwealth Act in situations where state or territory laws do not provide adequate protection of heritage places.

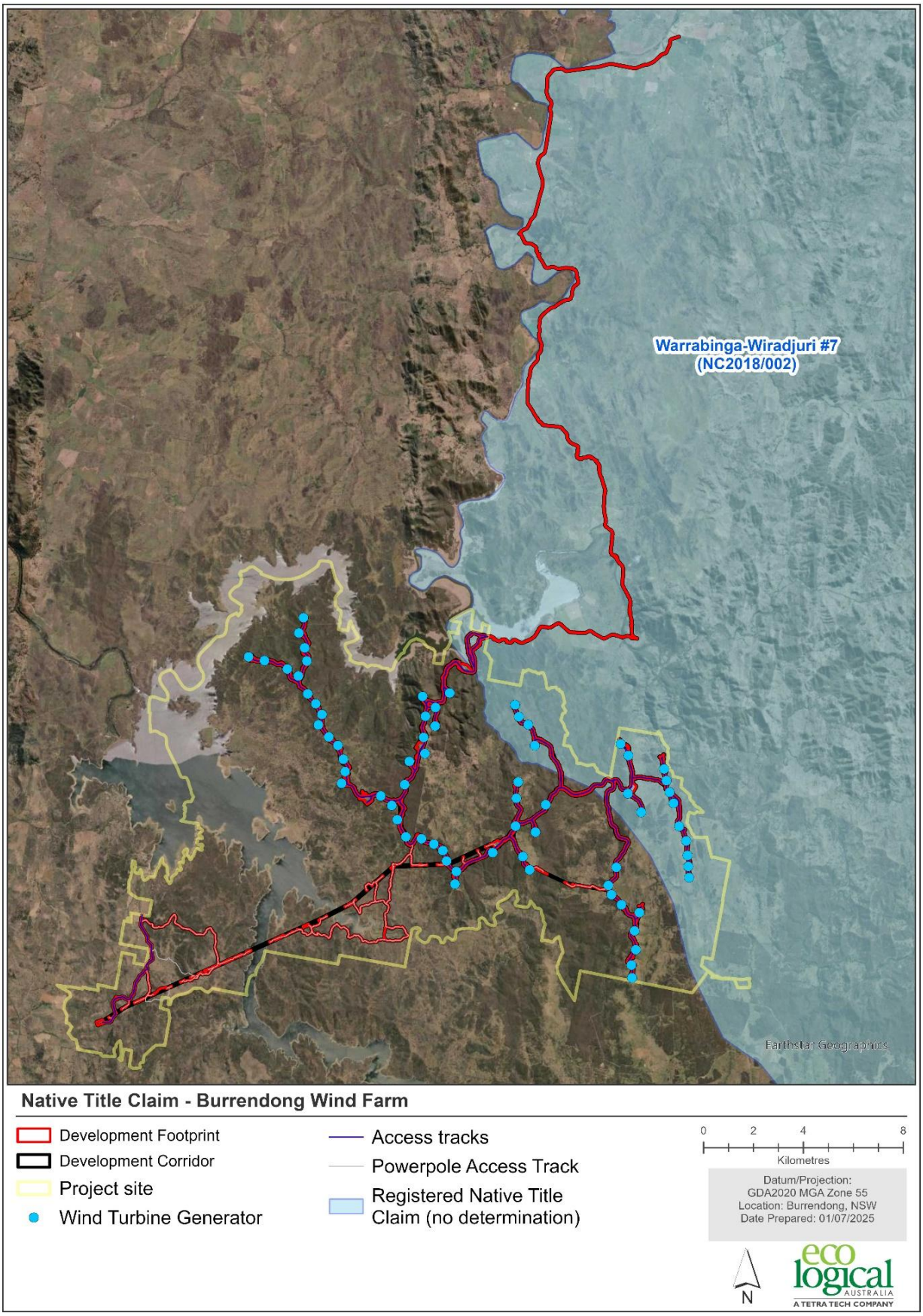


Figure 2: Registered Native title claim boundary

2. Consultation

As part of the ACHA process for the proposed works, Aboriginal consultation has been undertaken and is ongoing. Consultation with RAPs for this ACHA has been conducted in line with Heritage NSW consultation requirements (DECCW 2010b). This has ensured that Aboriginal stakeholders have been able to register and therefore be fully engaged on all aspects relating to cultural heritage for this project.

Heritage NSW consultation requirements follow four clear consultation stages. The following chapter outlines the process ELA used to fully consult with Aboriginal people on this development proposal.

2.1 Stage 1 – Notification of project proposal and registration of interest

2.1.1 Written request for information about Aboriginal organisations.

ELA on behalf of the Proponent undertook a registration process for Aboriginal people with knowledge of the area. ELA wrote to the following organisations (as per 4.1.2 of the Heritage NSW consultation requirements) on 2 December 2020, to identify Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects:

- Heritage NSW, Department of Premier and Cabinet
- Mudgee Local Aboriginal Land Council
- Wellington Local Aboriginal Land Council
- The Registrar, Aboriginal Land Rights Act 1983
- National Native Title Tribunal
- Native Title Services Corporation Limited (NTSCORP Limited)
- Mid-Western Regional Council
- Dubbo Regional Council
- Local Land Services, Central West.

Details of the letters and organisational responses are included in Appendix D.

Native title Claim Warrabinga-Wiradjuri #7 (NC2018/002) was identified through the government responses as being within the project area. Contact details were not provided for the group. They did not register for this project to be involved in consultation. Native Title has not been determined.

The Proponent as part of project community engagement have been providing project updates and information to the Warrabinga-Wiradjuri #7 claimants representative. Email provided in Appendix D.

Jamie Gray (Binjang Wellington Wiradjuri Heritage Survey) is a claimant of the Warrabinga-Wiradjuri #7 Native Title Claim. Jamie was registered for consultation with the project and was involved in the survey effort over the proposed footprint within the Native Title boundary.

2.1.2 Placement of advertisement in local newspaper

An advertisement was placed in the Dubbo Daily Liberal on 21 December 2020 by ELA, inviting interested Aboriginal stakeholders to register to be consulted in relation to the Project.

2.1.3 Letters to Aboriginal organisations

As per 4.1.3 of the Heritage NSW consultation requirements, ELA wrote to the Aboriginal organisations identified through the above process on 22 December 2020, inviting them to register an interest in the Project. The registration closing date was set as 15 January 2021.

Details of the letters, advertisement, and responses are included in Appendix D.

All registrants became the RAPs for the Project (Table 1). It should be noted that it has always been ELA's policy that the LALC is registered regardless of receiving a response.

Table 1: Registered Aboriginal Parties

Organisation	Contact Name
Mudgee LALC	Tony Lonsdale
Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson
Gunjeewong	Cherie Carroll-Turrise
Murong Gialinga Aboriginal & Torres Strait Islander Corporation	Debbie Foley
Wellington Valley Wiradjuri Aboriginal Corporation (WVWAC)	Bradley Bliss
Binjang Wellington Wiradjuri Heritage Survey	Jamie Grey
Wellington Aboriginal Action Party	Kerryann Stanley

Section 4.1.4 of the Heritage NSW consultation requirements necessitate a minimum of 14 days for Aboriginal stakeholders to register their interest to be consulted for an ACHA. However, it has always and will continue to be ELA's policy to register all individuals/groups regardless of the mandatory closing date of registration.

2.2 Stage 2 and Stage 3 – Presentation of information about the proposed project and gathering information about cultural significance.

2.2.1 Project information and methodology

Following the registration of Aboriginal parties, ELA provided the RAPs with the project information and survey sampling strategy and ACHA methodology on 3 May 2021. No written responses were received from RAPs.

2.2.2 Archaeological survey

ELA archaeologists and representatives of the RAPs undertook survey of the study area. The survey was conducted over a four-week period spanning a time period from 3-14 May 2021, 21-25 June 2021, and 18-22 October 2021.

Table 2: Registered Aboriginal Parties who participated in the field survey.

Organisation	Contact Name
Mudgee LALC	Jamie Williams
Murong Gialinga Aboriginal & Torres Strait Islander Corporation	Steven Flick
Wellington Valley Wiradjuri Aboriginal Corporation	Bradley Bliss
Binjang Wellington Wiradjuri Heritage Survey	Jamie Grey

2.3 Stage 4 – Review of draft assessments

A copy of the draft ACHA was provided to RAPs for a minimum 28-day review and comment period closing 28 January 2022, an extension was provided until 11 February 2022. ELA received response from two of the seven RAP groups, found in the table below. All responses can also be found in Appendix D.

Table 3: Aboriginal stakeholder responses to draft ACHA

Aboriginal Organisation	Draft ACHA responses
WVWAC	WVWAC, through consultation with other Traditional Elders and Traditional Community with cultural knowledge, have the following comments and or recommendations: • Not all access tracks to be used or impacted for the project were surveyed by pedestrian assessment, most were driven over and only stopped at areas where turbines were planned, this needs to be rectified, and all tracks MUST be surveyed by walking to identify cultural sites that will be impacted. • It is also noted that the few Tracks that were surveyed on foot by RAP's, in most cases Cultural Heritage Sites were identified. • WVWAC notes that the access route into the project area has not been surveyed, this being via Twelve Mile Road and or Yarrabin Road. • This area has significant "Song lines" through it and spiritually the impact that this project will cause is High. • There are two burial locations known to WVWAC Elders and Members close to this project location, both at this stage are outside of any project related impacts, however if this were to change with access tracks in the Gundowda Road area, in depth discussions with WVWAC Elders and Members will be required. There is also a Third burial site known, however this is further outside the project area and may only be impacted if powerline easements are in the vicinity. • Table 11 pp. 52-55 (now Table 12 pp.53-56). Relating to the column Significance: Most sites were given the Significance classification as Low, culturally WVWAC, Elders and our members do not agree with this as Culturally ALL of our ancestral sites are Highly Significant, and the more sites destroyed through development mean the greater the significance to our people for the sites that do remain. Mitigation Measures – for sites: BWF AS10, BWF AS11, BWF IF2-RG, BWF IF5, BWF AS14, BWF AS17 and BWF AS38 – Avoid and Redesign project around these Significant Cultural Sites. If sites identified above are impacted WVWAC and other Traditional Owners groups must be negotiated with to achieve an agreed outcome, alternatively WVWAC and other Traditional Owners groups will seek to have this project not approved by the Department of Planning. Mitigation Measures – for remaining sites: These cultural sites Must be salvaged by surface collection and where appropriate sub surface, where deposits exist.
Murong Gialinga Aboriginal & Torres Strait Islander Corporation	Murong Gialinga have a few concerns they are as follows: We are concerned that not every access track to be used/ impacted was surveyed by foot they were driven over and only stopped in areas where turbines were planned. These areas need to be surveyed by RAPs walking over the areas as Aboriginal objects/ sites may be identified as they could be impacted on, most of the areas that were surveyed by foot by the RAPs identified sites. Murong Gialinga feels it is insulting when most of the sites were given a low significant, to our Wiradjuri people all sites and Aboriginal objects are of high significant as our ancestors made and used them. Mitigation Measures around these sites as follows BWF AS10, BWF AS11, BWF IF2-RG, BWF IF15, BWF AS14, BWF AS 17, BWF AS38 should be avoided and redesigning at all costs around these significant sites. If any of these sites are impacted All Registered Aboriginal Stakeholders must be notified and a meeting, take place to achieve an agreed outcome. Mitigation Measures for remaining sites to be salvaged by a surface collection and where appropriate sub surface where deposits exist.

2.4 Project updates

To keep consultation current, an email was sent to the RAPs 28 July 2022 and 6 October 2022 informing them the EIS preparation was still ongoing and that the project SEARs had lapsed and was reissued. The Aboriginal Heritage assessment requirements to inform the EIS have not changed.

ADDITIONAL ARCHAEOLOGICAL SURVEY

Changes to turbine layout required additional survey. A Project update with methodology for additional survey was provided to the RAPs in December 2022 and reminded 10 January 2023.

ELA archaeologists and representatives of the RAPs undertook survey of the project area. The survey was conducted over a week from 13-17 February 2023.

Table 4: Registered Aboriginal Parties participation in field survey

Organisation	Contact Name
Mudgee LALC	Unknown
Murong Gialinga Aboriginal & Torres Strait Islander Corporation	Steven Flick
Wellington Valley Wiradjuri Aboriginal Corporation	Bradley Bliss

ACHA RAP REVIEW

A copy of the draft ACHA was provided to RAPs for a minimum 28-day review and comment period closing 12 May 2023, an extension was provided until 19 May 2023. ELA received response from one of the seven RAP groups, found in the table below. All responses can also be found in Appendix D.

Table 5: Aboriginal stakeholder responses to draft ACHA

Aboriginal Organisation	Draft ACHA responses
WVWAC	Wellington Valley Wiradjuri Aboriginal Corporation (WVWAC) would like to thank you for your invitation to provide a response for This Aboriginal Cultural Heritage issue relevant to obligations to protect our Heritage within our Traditional Lands. Wellington Valley Wiradjuri represent traditional families with identified apical ancestry pre-European occupation with our known Traditional Lands. We know our culture, country and continue with our association with our traditional lands (Ngurangbang). WVWAC object to any other non-traditional Aboriginal organizations or people taking part in site surveys, consultation and assessments within our defined Traditional Lands. These non-traditional people and groups are outsiders under Traditional Lore and have no right to advise on or to be present during consultation or site visits as they do not possess the specific traditional knowledge in relation to these lands or sites. These participants may be Indigenous and may live locally within the region however, this still does not give them the right to disregard Traditional Lore and values. WVWAC have through consultation with other Traditional Elders and Traditional Community with cultural knowledge have the following comments and or recommendations: • Not all internal access tracks to be used or impacted for the project were surveyed by pedestrian assessment, most were driven over and only stopped at areas where turbines were planned, this regardless of existing tracks or not should be surveyed by walking to identify any remaining cultural sites that will be impacted. It is also noted that the few Tracks that were surveyed on foot by RAP's, in most cases Cultural Heritage Sites were identified. • This project area has significant "Song lines" through it and aesthetically and spiritually the impact that this project will cause is High.

Aboriginal Organisation	Draft ACHA responses

	• There are two burial locations known to WVWAC Elders and Members close to this project location, both at this stage are outside of any project related impacts, however if this were to change, in depth negotiations with WVWAC Elders and Members will be required.
	  ○ Table 14 pp. 57-60 Relating to the column Significance: Most sites were given the Significance classification as Low, culturally WVWAC, Elders and our members do not agree with this as Culturally ALL of our ancestral sites are Highly Significant, and the more sites destroyed through development mean the greater the significance to our people for the sites that do remain.
	  ○ Mitigation Measures – for six (6) sites: BWF AS10, AS11, AS14, AS38, AS86, AS88 and IF5 – Avoid and Redesign project around these Significant Cultural Sites.
	  ○ If sites identified above are impacted WVWAC and other Traditional Owners groups must be negotiated with to achieve a mutually agreed outcome and management plan
	  ○ As for the remaining sites: These are listed as having "Unmitigated impacts" and as cultural sites Must be salvaged by surface collection and where appropriate sub-surface, where deposits exist.
	  ○ Non-salvage of impacted sites is unacceptable.
	• All Cultural Material collected through surface collection or sub-surface investigations is to be returned to site and buried in areas close to where the materials originated from the project area. This is to ensure no singular RAP group obtains this material and also ensures that the material is retained within the project area. Due to the size and scope of the project, this will require potentially up to ten or more locations and must be in areas where this or any other future development or property owner activity will not disturb the re-burial location.

2.5 Project updates post EIS submissions

To keep consultation current, an email was sent to the RAPs September 2023 informing them the EIS preparation was still ongoing and that the project SEARs had lapsed and had been reissued. An update was sent December 2023 informing them we had received feedback from government agencies and public submissions. The Aboriginal Heritage assessment requirements to inform the EIS have not changed.

ADDITIONAL ARCHAEOLOGICAL SURVEY

Changes to turbine layout and request for further information and sample surveying by Heritage NSW required additional survey. A Project update for additional survey was provided to the RAPs 19 June 2024. ELA archaeologists and representatives of the RAPs undertook survey of the project area. The survey was conducted over a week from 8-12 July 2024.

Table 6: Registered Aboriginal Parties participation in field survey

Organisation	Contact Name
Mudgee LALC	Unknown
Murong Gialinga Aboriginal & Torres Strait Islander Corporation	Steven Flick
Wellington Valley Wiradjuri Aboriginal Corporation	Bradley Bliss

ACHA RAP REVIEW

A copy of the draft ACHA was provided to RAPs for a minimum 28-day review and comment period 3 September 2024 closing 4 October 2024. ELA received response from one of the seven RAP groups, found in the table below. All responses can also be found in Appendix D.

Table 7: Aboriginal stakeholder responses to draft ACHA

Aboriginal Organisation	Draft ACHA responses
WVWAC	Hi Jennifer, I have discussed the updated report for Burrendong Wind Farm with Wellington Valley Wiradjuri Aboriginal Corporation Elders, Knowledge Holders, Field Officers and Members. From this in person meeting and numerous telephone conversations I have been asked to provide the following comments and or recommendations 1. All unmitigated impact sites MUST be collected. 2. Site AS24 which holds Extremely High Cultural Significance and Value must remain unimpacted. This area must be fenced off with a minimum 20m buffer zone around it. If any impacts to this specific site, surface collection and full archaeological salvage including extensive excavations must be undertaken to the impacted area or areas of the site. 3. It is recommended that site SU38 in the vicinity of the Temporary Accommodation area be assessed by test pits to establish the extent of the site and ensure development of the temporary accommodation area does not impact SU38. This site must also be fenced off with a 10m buffer zone to avoid impact once it's extent has been determined. 4. The Temporary Accommodation area and the compacted fill/hard standing area must be properly assessed by test pitting and surface collection to ensure our Heritage items are not destroyed and we gain valuable Anthropological and Archaeological information about our Ancestral land use in this specific area. 5. All cultural heritage material obtained from archaeological surface salvage and or test pitting must be returned to site and reburied within close proximity to the original source location as practically possible. Cultural smoking of the locations and artefacts must occur to Culturally cleanse the sites and artefacts.

** Comments and recommendations were implemented into the final ACHA

3. Environmental context

An understanding of the physical landscape and environment is vital to understand the archaeology of an area. The natural environment influences the distribution of archaeological material in a variety of ways. The availability and distribution of resources influenced past land use. People need access to resources of freshwater and food (edible plants and animals), plants for medicinal use, timber for woodworking and quarry sites for tool manufacture.

Since the time of Aboriginal occupation, the environment and resources in many places is likely to have changed. As such, archaeologists cannot always draw direct inferences from the current environment. Historical land use and environmental degradation have impacted on the survival of material remains. Acidic soils, if present, are less likely to have preserved fragile organic materials such as bone or shell. Areas of heavy erosion, some agricultural practices or other earth disturbances are less likely to contain in situ deposits of archaeological material. These factors need to be considered when undertaking archaeological assessment and predictive modelling.

The Project Site is situated within the Southwestern Slopes bioregion of NSW. The Project will be located along the elevated ridgelines and crest that have been heavily dissected by drainage lines. The landform is undulating ranges with narrow ridges alternating between peaks and saddles and long broad spurs branching off from the ridgelines. The slopes are moderate to steep, with undulating plains between ridges. The geology of the Project Site is dominated by silicious volcanics, occasional basalt caps, intrusive granite slopes and valleys with folded and faulted sedimentary sequences.

A summary of the geology, landforms, soils, and vegetation typical within this subregion is provided in Table 8 below.

Table 8: Southwestern Slopes bioregion summary (source: NSW Department of Planning, Industry and Environment)

South-Western Slopes Bioregion	Upper Slopes	Lower Slopes
Geology	Ordovician to Devonian folded and faulted sedimentary sequences with inter-bedded volcanic rocks and large areas of intrusive granites.	Similar to upper slopes but with larger areas of Tertiary and Quaternary alluvium.
Characteristic Landforms	Steep, hilly, and undulating ranges and granite basins. Occasional basalt caps, confined river valleys with terrace remnants.	Undulating and hilly ranges and isolated peaks set in wide valleys at the apices of the Riverina alluvial fans.
Typical Soils	Shallow stony soils on steep slopes, texture contrast soils grading from red subsoils on upper slopes to yellow subsoils on lower slopes. Alluvial sands, loams, and clays.	Similar to the Upper Slopes but with more extensive red-brown earths on undulating plains and more extensive grey clays on alluvium.
Vegetation	Open forests and woodlands. Red stringybark on upper slopes with black cypress pine, kurrajong, red ironbark, white gum, white box, yellow box, and Blakely's red gum on lower slopes. Merging west to yellow box, grey box, and white cypress pine. Rough-barked apple on flats with river oak on upper tributaries and river red gum on lower and larger streams.	Dwyer's gum on granite, red ironbark on sedimentary rocks Hill red gum, white cypress pine and red stringybark in the ranges. Grey box woodlands with yellow box, white cypress pine and belah on lower areas. Poplar box, kurrajong, wilga and red box in the north, limited areas of bull mallee, blue mallee, green mallee and congoo mallee in the central west. Myall,

South-Western Slopes Bioregion	Upper Slopes	Lower Slopes
		rosewood and yarran on grey clays, yellow box, polar box, and belah on alluvial loams. River red gum on all streams with black box in the west with some lignum and river cooba.

3.1 Soil Landscapes

The Project Site covers six soil landscapes: Mullion Creek (mu), Mookerawa (mk), Burrendong (bd), Collingwood (cg), Erudgerie (er) and Cudgegong (cd) (Figure 3). Characteristics of these soil landscapes are:

MOOKERAWA

Mookerawa soil landscape occurs on undulating to rolling low hills with slopes 8-30%, but less than 15%. Sheet erosion occurs on the lower slopes and there are copious quartz gravels. The geology of the soil landscape is characterised by slate, greywacke, shale, acid and siliceous volcanics. Yellow soloths and solodic soils occur on lower slopes and drainage depressions. Red podzolic soils occur on upper slopes and crests and some shallow, brown loams and sandy loams occur on some crests. PH levels are neutral (6-6.5).

This soil landscape has a high erosional hazard indicating a limited potential for in situ archaeological deposits to be present.

BURRENDONG

The Burrendong soil landscape is found in scattered areas between Wellington and Mudgee and in some north-west to south-east trending ridges in the vicinity of Burrendong Dam. Characterised by rolling to steep hills with slopes ranging from 20-50%, rocky outcrops are common, and the soils are shallow, with red podzolic soils on mid-slopes and yellow solodic soils occurring along drainage lines. The soils are hard setting and often very stony and skeletal due to the slope and high erodibility. PH levels range between 5.5 to 7.0 which ranges from slightly acidic to neutral.

This soil landscape has moderate to high erodibility and are often skeletal or absent due to slope with rock outcropping. This soil landscape has limited potential for in situ archaeological deposits to be present.

MULLION CREEK

Mullion Creek soil landscape occurs on undulating low hills often strewn with quartz gravel. Characterised by red podzolic soils on crests and upper slopes, yellow soloths and yellow solodic soils on mid to lower slopes and in drainage lines. There is a moderate to high erosion hazard and moderate acidity which does not present a high likelihood for the preservation of organic material. PH levels are neutral (6-6.5).

This soil landscape has moderate to high erodibility and are shallow on slopes. Lower slopes and depressions have the potential for slightly deeper soil profiles but can be subjected to severe gully erosion. This soil landscape has limited potential for in situ archaeological deposits to be present.

COLLINGWOOD

There is only a small portion of the Project site across this landscape, the access tracks for the switchyard. Collingwood soil landscape occurs on slopes and is characterised by red podzolic soils on upper and mid slopes, yellow podzolic soils on lower slopes and brown soils on crests drainage lines. There is a moderate to high erosion hazard when there is cultivation practices and low vegetation cover PH levels are neutral (6-6.5).

This soil landscape is located on slopes sufficient to have high erodibility and are shallow. This soil landscape has limited potential for in situ archaeological deposits to be present due to the fragile structure and high erodibility under the current pastoral use.

ERUDGERIE

There is only a small portion of the Project site across this landscape, the access tracks for the switchyard Erudgerie soil landscape occurs on undulating low hills of shale and sandstone. Characterised by yellow and red podzolic soils on mid and lower slopes with shallow brown soils on upper slopes. Alluvial loams on broad flats, copious amounts of ironstone gravels present on the surface and within the A2 horizon. Slopes are less than 5% which reduces the erosion hazard, but the erosion hazard is still moderate to high when the soil is cultivated, or surface cover is low. PH levels are acidic on the surface (6-6.5).

This soil landscape is susceptible to soil structure degradation and erosion hazards meaning they tend to be shallow. This soil landscape has limited potential for in situ archaeological deposits to be present, any evidence of Aboriginal occupation would be a surface expression.

CUDGEGONG

Cudgegong soil landscape occurs along the Cudgegong River, the landscape represents recent alluvial deposits, quaternary alluvium and recent alluvial deposits on the modern floodplain of the Cudgegong River. This landscape is mostly used as improved pastures and cropping. This landscape is subject to bank erosion

There is limited potential for in situ archaeological deposits to be present due to modern depositional activity that formed the profile. It is likely if Aboriginal sites are present, they would be on stable sections of the river system or Aboriginal objects have been reworked in the profile from fluvial actions.

3.2 Hydrology

The Project Site is within the Macquarie River catchment area (Figure 4). Burrendong Dam, to the west of the Project Site, was the original course of the Macquarie River with several smaller tributaries running through the landscape comprising of 1st, 2nd, 3rd and 4th order streams and ephemeral creeks. Cudgegong River to the north of the study area feeds into Burrendong Dam and is a major tributary that flows from the Blue Mountains through Mudgee and the landscape to the east. Meroo River a major tributary of Cudgegong River flows south to north near the east boundary of the Project Site.

The minor creeks dissecting the study area are Oakey Creek, Little Oakey Creek, Redbank Creek, Black Willow Creek, Sheas Creek and Gundowda Creek. All are fed by rain runoff and springs originating from the hilly landscape of the Project Site.

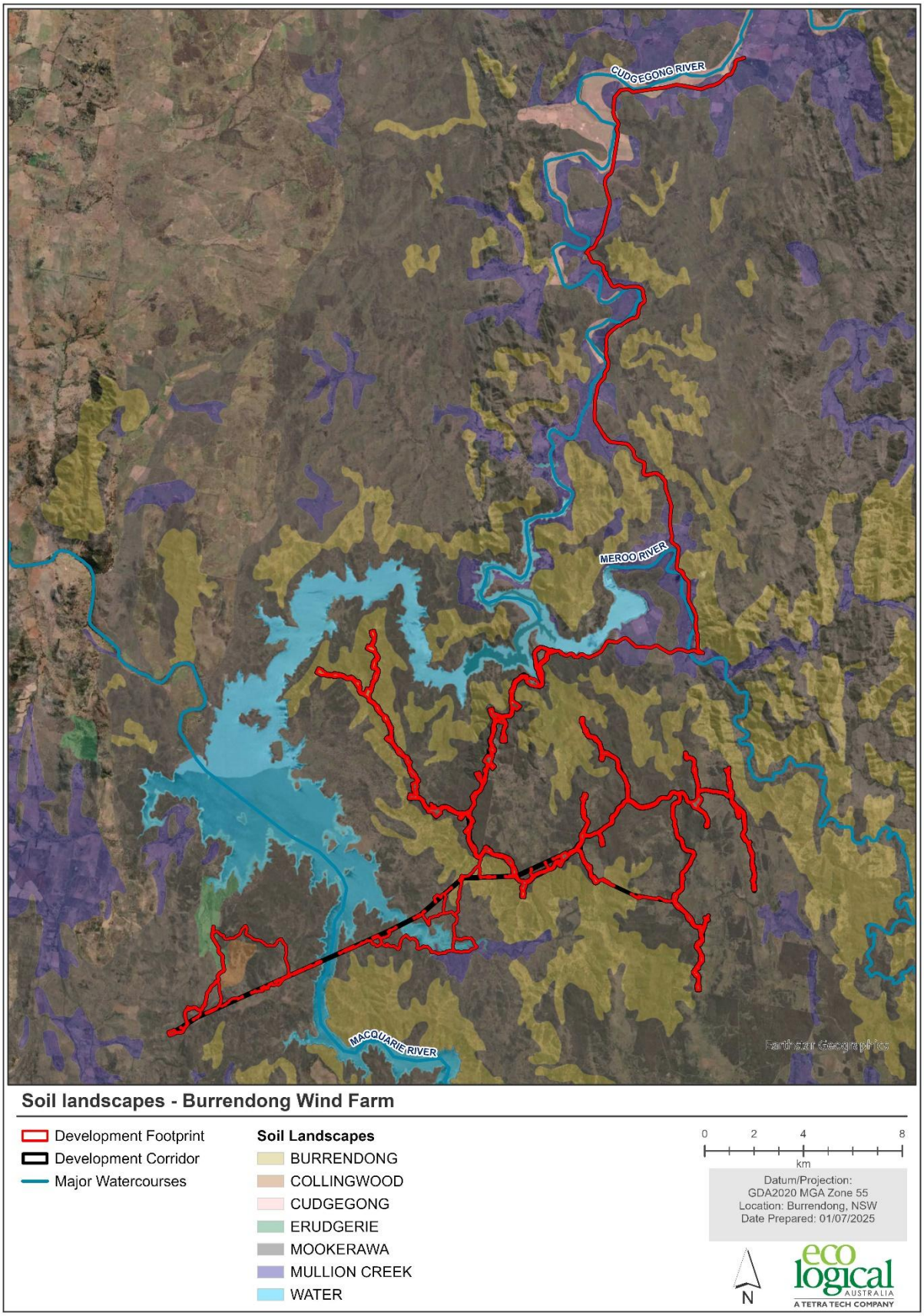


Figure 3: Soil landscape across the project site and Yarrabin Road

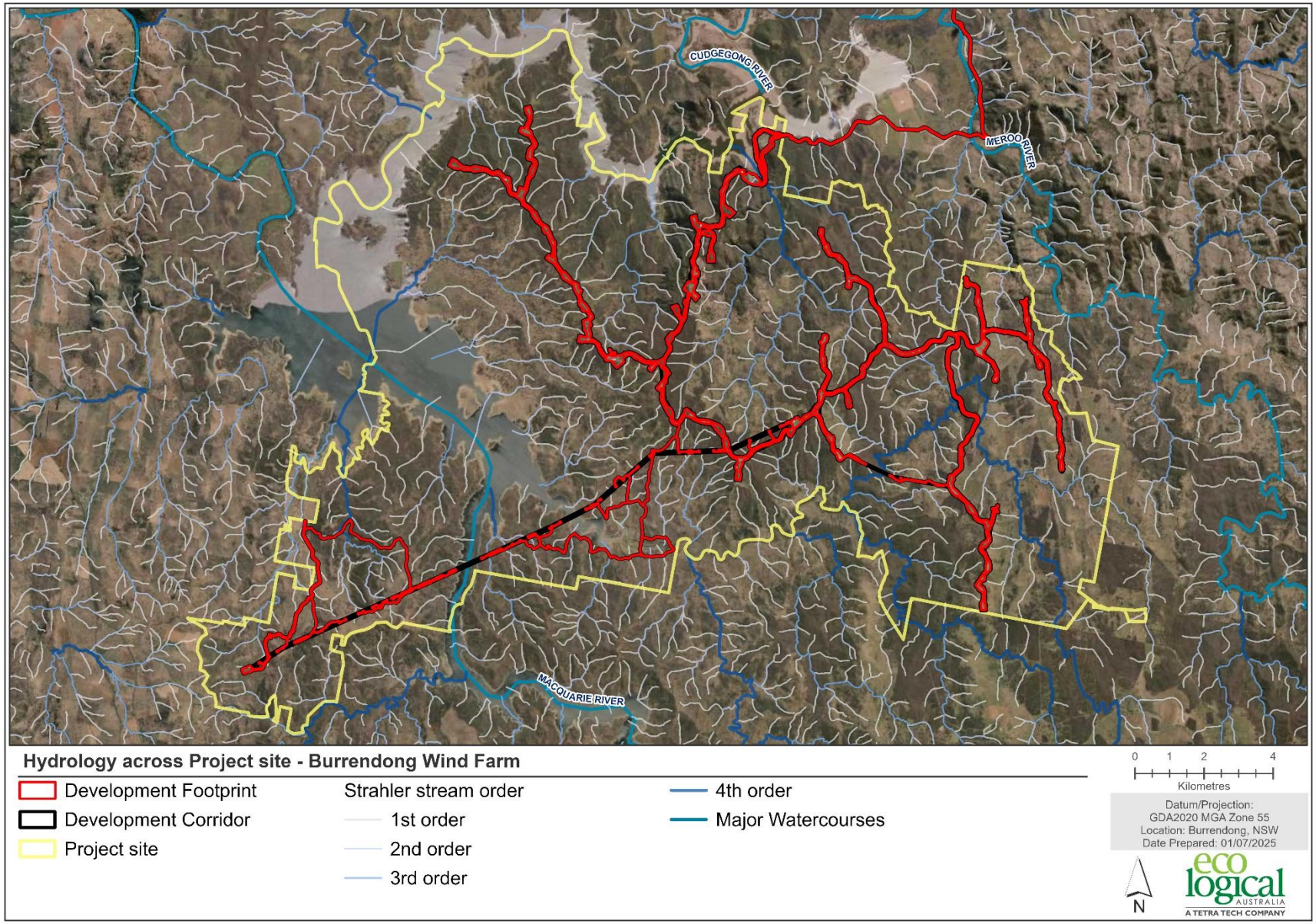


Figure 4: Hydrology across the project site

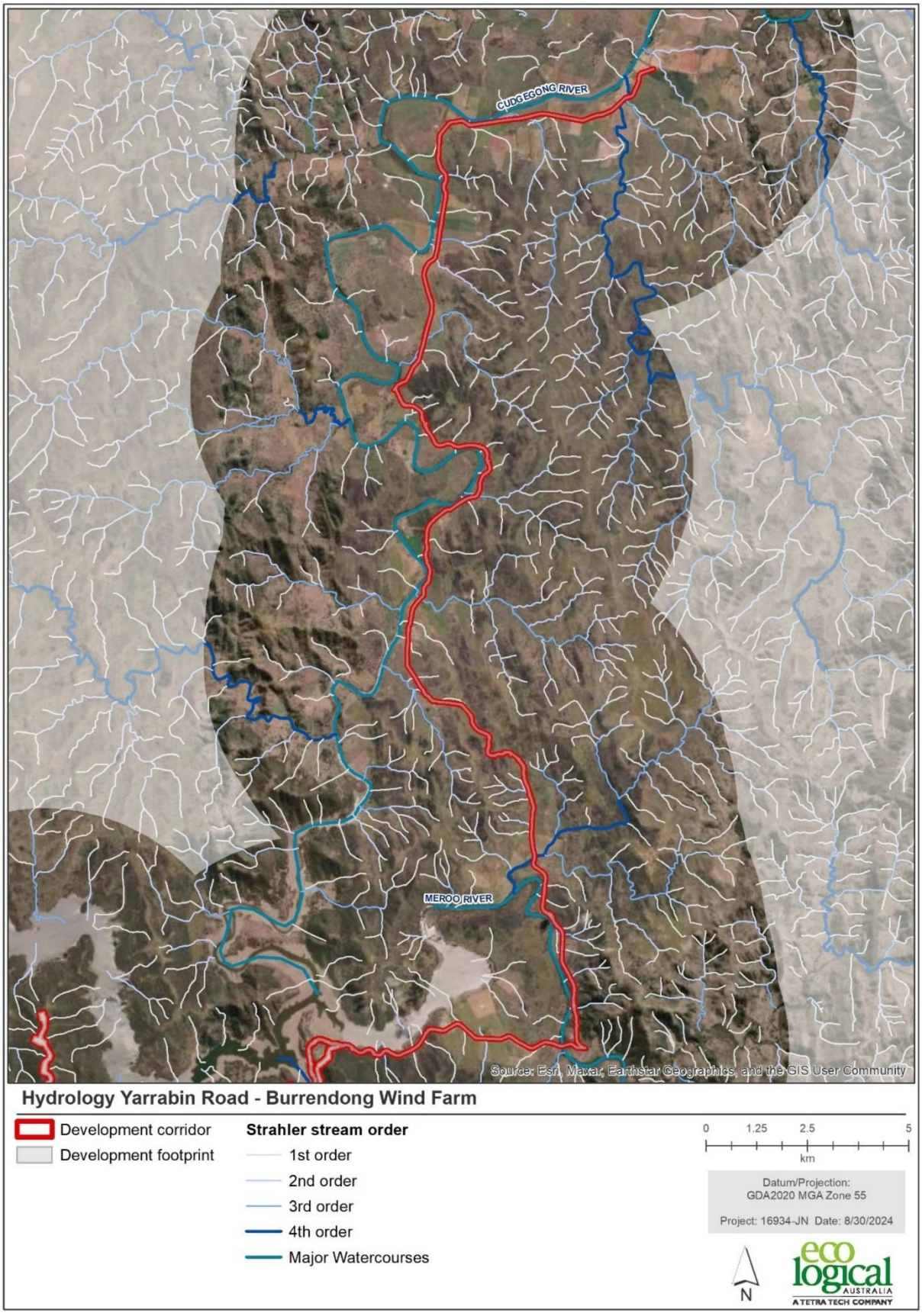


Figure 5: Hydrology along Yarrabin Road

3.3 Social and ethnographic considerations

Landscapes are not simply inert backdrops or containers for the arrangement of human artefacts; [they] are a product of a complex interaction between a symbolically and historically constituted human social world and a material environment (Godwin and Weiner 2006:124).

Although immensely informative in understanding how Aboriginal communities lived within and used the landscape, the above archaeological investigations are a cultural ecological perspective; that is, they focus on the subsistence and movement of groups as determined by environmental pressures. This approach has faced a considerable amount of critique (see David *et al.* 2006: Chapter 1), primarily because it marginalises the most crucial determinative factor in human life: that of the individual. The choice about where a community lives or what they eat may have varied based on environmental conditions and resource availability, but it also would have been determined by the social practices in play at the time.

Due to the impact of European colonisation and the limitations of ethnographic records, however, many of these social practices can only be theorised. Early ethnographers were primarily interested in documenting unusual events, with a focus on religious and social life, especially that of men (Boot 2002:58). As a result, the documentation of everyday events, such as those related to decisions made about food collection, and the (religious, social, and routine) activities engaged in by women and children did not occur. Moreover, ethnographic sources only record the events that were observed at the time of recording and those of the recent past (Boot 2002:58). Therefore, they should not be used to extrapolate or infer predictive models for earlier periods. It is unreasonable to assume that practices of Aboriginal life as recorded in the nineteenth century were the same as those that occurred prior to contact with Europeans.

An accurate reconstruction of past lifeways, technologies and land-use patterns of pre-colonial era First Australians can be flawed as it is often dependant on historical documents written by Europeans who held an ethnocentric bias concerning complex traditional cultures that they did not fully understand. When possible, Aboriginal oral history is an invaluable resource in understanding the past. Archaeological investigations, in conjunction with both Aboriginal oral history and European documentation, can inform these gaps in our understanding, and in many cases challenge the biased notions of early colonial accounts.

Aboriginal people have occupied NSW for more than 42,000 years, using the natural resources available to them (Bowler et al 2003). The Southwestern slopes region was the traditional country of the Wiradjuri speaking peoples who encompassed a wide area of inland NSW, extending between the Macquarie, Lachlan, Murrumbidgee, and Murray Rivers, within the regions of Dubbo, Wellington, and Mudgee (O'Rourke, 2009). The Wiradjuri people travelled to the alpine regions for annual summer feasts of Bogong moths and used the resources of the rivers which supplied a variety of consistent and abundant food, including shellfish and fish. This was supplemented in dry seasons by hunting for emus and possums and gathering fresh food like yam and other vegetables. The Wiradjuri people moved around in small groups, using river flats, open land, and waterways throughout the seasons. Major water courses were a vital part of a groups territory as it not only provided abundant resources but also served as a ceremonial meeting place (O'Rourke 1993).

It is estimated that around 10,000 Wiradjuri speaking individuals occupied the land comprising of the Project Site at the time of European invasion, though this is hard to ascertain as limited information remains pertaining to the patterns of movement of the Wiradjuri people over the course of the year (Macdonald 2011). Early explorers and settlers noted variation in the numbers of Indigenous that would gather for food procurement in the area during the different months of the year (Haglund 1985). In 1817, John Oxley, the first European to travel up the Macquarie River from the Wellington Valley, observed an 'abundance of fish and emus, swans, and ducks' along the river (Oxley 1820). He observed in the warmer month's large groups of Aboriginals of several hundred people would come together on one stretch of a major watercourse to exploit the fish, yabbies, and mussels. Fish net traps were made from the fibre of the Kurrajong bark. Short excursions away from the rivers and major creeks gave them access to the 'woodland foods' such as possums and honey while the women in particular would also gather plant foods. An important grass seed, ground on grindstones and cooked in the form of tiny loaves or cakes (O'Rourke 2009).

In the cooler months it was observed that the large groups would separate into smaller groups of one to two families approximately ten people. They would travel into the back country to allow the men to hunt land fauna such as kangaroos, wallabies, possums, emus. The women would hunt lesser animals such as bandicoots, lizards, snakes and procure plant foods such as yams and roots.

The first recorded contact between Europeans and the Wiradjuri people was in 1813 and initial relations between Europeans and the Wiradjuri are thought to have been amicable. This changed after 1821 when Governor Brisbane expanded the limits of the settlement, resulting in an increased population and large numbers of cattle and sheep. As a result, traditional land use practices shifted and interfered with access to social and sacred sites (Connor 2002). Soldiers and settlers made 'sweeps' on the Indigenous populations in 1824 and clashes between the settlers and local Aboriginal people became commonplace (O'Rourke 2009). In a letter to Governor Brisbane written on 7 February 1822, William Cox the road maker and grazier wrote in relation to land situated near present-day Mudgee:

My son, Mr Henry Cox is this instant returned from Bathurst (and so ill from the heat that he cannot proceed further) with information that the natives have driven away the persons who were in charge of the stock at the River Cudgegong with the exception of one man who it is supposed is killed; it also appears that the natives let the horned cattle out of the yards and got possession of the sheep that my sons kept there for rations, which they were killing when the men came away.

While Henry Cox had ridden to Windsor to inform his father of their misfortune, his brother George had headed to Bathurst to gather a party of men before returning to their stations to retrieve their cattle and take revenge on the Indigenous. These actions were the start of what became known as the 'Wiradjuri Wars' - a series of violent clashes between various Wiradjuri groups and the advancing European settlers, as the Wiradjuri fought to regain control of their land and its resources. Though successful at first, the Aboriginal peoples fought in much smaller groups and had a vastly different fighting style to the Europeans, and thus experienced large scale loss of life (Connor 2002).

Settlers' concerns about the dangers of Aboriginal people subsided during the 1840s and by the 1850s, the culture of the Aboriginal people living in the region had been drastically altered by diseases like smallpox, alcohol and mass European influx during settlement and gold rush periods. The identity of the Wiradjuri people remains strong today, despite the tragic events of their past (HO and DUAP 1996).

Taking into consideration the shortcomings of the cultural ecological perspective and a need to see Aboriginal subsistence as socially determined, only certain inferences stemming from the local resource availability can be made. The resources that would have been available to Aboriginal groups living around the Project Site:

- Freshwater fish, such as trout, cod, perch, and carp
- Other aquatic fauna, such as Platypus, Snake-necked turtle, eels and yabby or crayfish
- Terrestrial fauna and faunal products, such as *Phalangeriformes* spp. (Possums), *Macropodidae* spp. (Kangaroos), *Vombatus ursinus* (Common Wombat), Birds, *Varanus* spp. (Goanna), *Phascolarctos cinereus* (Koala), *Zaglossus bartoni* (Echidna), grubs, and honey
- Terrestrial flora, such as fruits from *Acrotriche* spp. (Currants) and *Leucopogon hookeri* (Mountain Beard Heath), the young fronds and rhizomes of *Pteridium esculentum* (Bracken Fern), the tubers of *Phragmites* spp. (Grasses), *Triglochin* spp. (Water Plantain), and *Microseris lanceolata* (Daisy Yam), *Acacia* spp. (Wattle) seeds*, Solanum aviculare* (Kangaroo Apple), *Astroloma humifusum* (Native Cranberry), *Lambertia* spp. (Honeysuckle), orchid tubers, and *Macrozamia* spp. (Cycads).

In combination with the resources available for consumption, a wide variety of materials were employed for medicinal purposes, social conventions, the manufacture of tools, and ceremonial events. These materials were usually sourced locally, but rarer items were also traded between groups across vast distances. Such items made by the local Aboriginal communities may have included (Flood 1996:24-25; Boot 2002:75; Saunders 2003:10):

- Tools made from organic materials, such as bark canoes, paddles, spears, waddies, spear throwers, digging sticks, boomerangs, fishhooks, bags, Coolamon, and bone awls and scrapers.
- Tools made from stone, such as hafted edge-ground hatchets, fish traps, stone heat retainers, hammerstones, grindstones, spears, and a variety of flakes.
- Personal decorative items, such as Kangaroo bone and teeth adornments, pierced nose adornments, necklaces made from fibres and decorated with beads and feathers, and Possum and Koala skin cloaks and belts.
- Other items made from organic materials, such as hammocks, nets, ropes, wraps for infants, torches, and string bags.
- Shelters made from bark and tree boughs.

The key theoretical critique leveraged at the cultural ecological perspective was the need for archaeologists to approach the Aboriginal past as socially dynamic, Aboriginal environments as socially constructed, Aboriginal landscapes as socially inscribed, and Aboriginal history as social agency. Their way of life was not dictated by the environment in which they lived. Rather, it both shaped and was shaped by the social customs that Aboriginal people engaged in.

3.4 Land use history and Aboriginal material evidence

The Project Site has been primarily used for stock grazing with limited timber getting. The majority of the Project Site and surrounds have not been extensively cleared due to the steep terrain and unfavourable prospects for agriculture cultivation. The gentle slopes, gullies and open valleys have been cleared with remnant trees and stands of woodland left to promote pasture and grazing.

The proposed location of the WTGs will be on the ridges and spur crests which are typically rocky and highly exposed to the elements which would have been unfavourable occupation locations. They would have been used for hunting gathering and as a means of travel through country. The steep slopes, rocky outcrops and skeletal soils would have supported a low biodiversity and there are limited water sources to support long term sustainable occupation. The rocky outcropping of basalts, and quartz would have been a desirable resource for stone tool manufacture. The evidence of Aboriginal utilisation is likely to be very low-density sites along ridgetops, ridgelines, and saddles. There are potentially moderate density sites near stone quarry/ resource points with access to springs and sheltered from the elements.

The lower slopes, drainage lines and valleys between ridgelines would have been the main focus for occupation due to the higher diversity of resources, had reliable water sources and would have provided protection from the elements. These areas are likely to have moderate to high density sites reflecting longer term occupation and utilisation of the environment. The Aboriginal sites will be higher density in close proximity to major water courses.

Due to the past land use many of the Aboriginal sites have been impacted by land clearance and stock erosion on the lower slopes and valleys adjacent to creeks. The shallow and skeletal soils on the upper slopes and ridgelines means if sites are present, they will be on the ground surface and can be located if the visibility is favourable.

4. Archaeological context

4.1 AHIMS results

The Aboriginal Heritage Information Management System (AHIMS) is a database maintained by Heritage NSW and regulated under Section 90Q of the NPW Act. AHIMS holds information and records regarding the registered Aboriginal archaeological sites (Aboriginal objects, as defined under the Act) and declared Aboriginal places that exist in NSW.

An extensive search of the AHIMS database conducted on 9 March 2021 (search ID 574648) was conducted to identify and inform the archaeological investigations for the ACHA process. The following AHIMS information from March 2021 was used to inform the predictive modelling for the archaeological investigations.

Table 9: Search Parameters for the AHIMS database used for predictive modelling

Search Parameters		Search results	
GDA Zone	55	Aboriginal sites	104
Eastings	691578 - 725578	Aboriginal Places	0
Northings	6365627 - 6399627		

The March 2021 search resulted in 104 Aboriginal sites and no Aboriginal places being previously identified within 30km surrounding the Project Site. AHIMS and Mudgee LALC were contacted to seek information regarding the location of the Restricted Sites, and whether they would be impacted by the proposed works. It was confirmed that AHIMS ID 36-5-0192, AHIMS ID 36-5-0197 and AHIMS ID 36-5-0196 were not located within the Project Site. The remaining five (5) Restricted sites was confirmed by Bradley Bliss, the recorder, that they are not located within the Project Site.

The majority of Aboriginal sites within the search parameters are artefact sites, identified as surface scatters (77%).

Updated AHIMS search was undertaken 25 August 2024 and final AHIMS search undertaken on 11 November 2024 (search ID 949227, 949228 and 949229 to identify all registered Aboriginal sites present within, or adjacent to, the Project Site to inform the impact assessment (Appendix A).

Table 10: Search Parameters for the AHIMS database used for predictive modelling

Search Parameters		Search results	
GDA Zone	55	Aboriginal sites	114
Eastings	693900 - 723900	Aboriginal Places	0
Northings	6368100 - 6381100		
Search Parameters		Search results	
GDA Zone	55	Aboriginal sites	66
Eastings	693900 - 723900	Aboriginal Places	0
Northings	6381100 - 6394100		

Search Parameters		Search results	
GDA Zone	55	Aboriginal sites	92
Eastings	703900 - 723900	Aboriginal Places	0
Northings	6394100 - 6413100		
		Total	272

11 November 2024 searches resulted in 272 Aboriginal sites within a 30km radius. Seven AHIMS sites are Restricted, AHIMS was contacted to seek information regarding the location of the Restricted Sites, and whether they were located within the Project site. It was confirmed that **AHIMS ID 36-5-0191, AHIMS ID 36-5-0192, AHIMS ID 36-5-0199, AHIMS ID 36-5-0081, AHIMS ID 36-5-0085, AHIMS ID 36-5-0086 and AHIMS ID 36-5-0087** were not located within the Project Site. These sites have been removed from the total.

AHIMS ID 36-5-0223 was identified within the Project site as part of the Phoenix Power Project. The AHIMS site is known as Long Tom Ridge OS1 and consists of a low density surface artefact scatter. The AHIMS site is not within the development corridor.

The majority of Aboriginal sites within the search parameters are artefact sites, identified as surface scatters or isolated finds (>90%). All AHIMS sites within the Development Footprint have been identified as part of this assessment and are mapped in Appendix B.

Table 11: AHIMS site types recorded within 30 km radius of the Project site November 2024.

Site Type	Number of sites	Percentage of all sites (%)
Artefact	239	90.2
Artefact, Stone Quarry	5	1.9
Artefact, Hearth	2	0.75
Artefact, Hearth, Burial	1	0.4
Artefact, PAD	1	0.4
Aboriginal resource and Gathering, Artefact	1	0.4
Modified Tree	4	1.5
Modified Tree, Burial	1	0.4
Stone quarry	6	2.3
Ochre Quarry	1	0.4
Potential Archaeological Deposit (PAD)	3	1.1
Water Hole	1	0.4
Total number of sites	265	100

4.2 Previous archaeological assessments of the wider region

There have been a number of archaeological investigations conducted within the wider region over the past 40 years, with substantially increased archaeological sites being recorded due to the increased development and demand on the renewables sector. These findings led researchers to suggest that the

dominant subsistence strategy utilised rich sources along major creek lines in the region. The most relevant investigations to the Project Site are summarised below.

PEARSON, 1981.

In 1981, Pearson conducted a regionally based investigation of Aboriginal and early European settlement patterns in the Upper Macquarie River region. He excavated three rock shelters which revealed Aboriginal occupation of the area, dating from 7,000 years BP, and conducted sample surface surveys for Aboriginal sites in the Mudgee areas. Pearson observed that access to water, good drainage, level ground for sleeping, elevation above areas of winter cold air pooling, sufficient exposure to cool breezes, a sunlit leeward aspect and access to adequate fuel influenced campsite locations. In the sample survey, areas which afforded such conditions were noted as being located on gentle hillslopes and undulating ground, flat sections on ridges particularly at lower elevations and creek banks and river flats which had access to water but no other advantageous features. Pearson characterised Aboriginal site patterning as follows:

- Aboriginal sites were strongly related to water sources. Distance to water varied from 10 to 500 m and generally the average distance to water decreased as site size increased.
- Sites were located on hilly and undulating landforms rather than on river flats or the banks of waterways. However, the regional incidence of landform variation biased this sample.
- Site location was influenced by good drainage and views over water courses and river flats.
- Most sites were located in open woodland contexts with smaller numbers being present in grassland or forest contexts.
- Burial sites and grinding grooves were situated close to habitation areas.
- Ceremonial sites were located away from habitation areas.
- Stone arrangements were located away from campsites in isolated places; they are associated with small hills and knolls or flat land.
- Quarry sites were located where suitable sources were present and reasonably accessible.

Pearson suggested the region was inhabited by a small number of clan groups, comprised of 80 to 150 people which were divided into smaller units of up to twenty people who moved between camp sites, accounting for the artefact scatters along creeks. Pearson presented ethnographic evidence which suggested that camp sites were not used for longer than three nights and that large sites therefore probably represented accumulations of short-term visits.

Pearson argued that rather than a reliance on a singular food type, a wider based economy was practised with the implication that such a non-specialised economy would probably not have been affected by periodic shortfalls in certain foods and that human movement would have been similarly unaffected. Pearson excavated the Botobolar 5 rock shelter, approximately fifteen kilometres east of Mudgee and about 40m from Bara Creek and 100m from a grinding groove. The shelter itself has extensive art in the form of a large frieze of engravings across a 12 x 1.5 metre panel on the wall, which includes over 123 pecked motifs, primarily of 'animal track' design. In addition, there are four white and one red hand stencils plus, immediately to the south of the main shelter, a rock slab which features more engravings and grinding grooves. Pearson excavated a 3 x 1 metre trench and cultural material was found to a depth of 0.55 metres, with one excavation unit extending to a depth of 0.7 metres. Radiocarbon dating obtained gave dates of 5,590±190 BP and 5,770±100 BP. A total of 2,975 stone artefacts were retrieved

in the excavation, which was dominated by quartz (50%). Some of the retrieved material was small flaking debitage and implements comprised a low proportion, and included Bondi points, an elouera, geometric microliths, thumbnail scrapers, utilised cores, utilised flakes and pieces, a ground edged flake and a grinding slab. Other material recovered from the excavation included kangaroo, wallaby, possum, bandicoot, and reptile bone in the upper levels, as well as macrozamia pods, gum nuts, geebung, and some mussel shell fragment.

KOETTIG, 1985.

Koettig undertook a study relating to Aboriginal occupation of the Dubbo area. Following a desktop review, a systematic survey of a variety of landform units and stream orders was conducted to assess the relationship of site type and site location to specific environmental settings within three principal physiographic zones. As a result of this study, it was proposed that, Aboriginal sites will be distributed throughout all landscape units. Open artefact scatters scarred or carved trees and grinding grooves are the most common site types. The location and comparative size of sites is principally determined by environmental and social influences. While site location dictated by social determinants cannot be predicted, some modelling of site type and site location in relation to environmental factors may be made. Those factors include:

- Proximity to water: - although sites were found in all landscape settings including hills and ridges distant from water, the largest campsites were located close to permanent watercourses.
- Availability of food resources: - While the widest range of foods was found along major watercourses in association with the available permanent water, some foods were seasonal and located away from permanent watercourses.
- Geological formation: - Certain site types occur in particular settings. Grinding grooves are located where there are suitable sandstone outcrops, while quarries are found where there is a useable and accessible stone resource. Burials are most likely to be found in sandy deposits such as those that exist on alluvial flats.

HAGLUND, 1985.

Haglund conducted a desktop study of the Aboriginal heritage resources of the Mudgee shire, collating information from previous archaeological assessments, as well as information available in the OEH sites register. Limited investigations had been carried out, but seventy sites were recorded on the register as being located within the Mudgee Shire. Of these, twenty-nine were listed as open sites, twenty were identified as being rock shelters, including two which contained both art and deposit, and fifteen which had art only. Other sites included two quarries, two wells, eleven grinding groove sites, three stone arrangements, four scarred trees, two bora grounds and one burial.

NAVIN, 1990.

A desktop study by Navin in relation to three prospective sites selected for the purpose of power generation, located at Broke, Gunnedah and Ulan. Navin found that 580 Aboriginal sites had been identified within a 50 km radius of Ulan, of which 47% were rock shelters with archaeological deposit, 30% of sites were artefact scatters, 11% rock shelters with art, 9% grinding grooves, and 3% scarred trees. The least common site types were bora grounds, rock engravings, burial sites, carved trees, quarries, fish traps, stone arrangements, and waterhole/well sites. The predictive model for the region identified a high archaeological potential, with the likelihood for artefact scatters to occur on flats

associated with valley corridors and adjacent sandstone slopes that occur within sandstone ranges, as well as along adjoining watercourses - particularly alongside those which are reliable water sources. The potential for artefact scatters to exist along ridge crests was considered to be moderate, with shelter sites expected to potentially occur in the same landform element.

KUSKIE, 2009. ULAN COAL OPERATIONS, ULAN

Kuskie conducted a comprehensive assessment of the proposed Ulan Coal – Continued Operations and surveyed approximately 88% of an overall study area measuring 5,431 hectares. Around 709 Aboriginal heritage sites were recorded including:

- 558 open artefact sites
- 9 grinding groove sites
- 128 rock shelters with artefacts, art and/or grinding grooves.
- 5 scarred trees
- 5 stone arrangements
- 2 ochre quarries
- 1 waterhole/well
- 1 combined grinding groove and artefact site.

Kuskie suggested that artefacts occur at the very low mean density of 0.0176 artefacts per square metre of effective survey coverage, which is consistent with background discard, and interspersed by occasional focalised areas of higher artefact density where activities or repeated activities occurred. This indicates that Aboriginal use of the area was generally of low intensity which is probably due to a lack of higher order water courses.

DIBDEN 2011. BODANGORA WIND FARM, WELLINGTON, DIBDEN 2012. CRUDINE WIND FARM, HILL END

Dibden assessed the proposed Bodangora Wind Farm and found high levels of ground cover severely hampered the detection of Aboriginal sites. However, based on environmental grounds the area was assessed to be of low archaeological potential. Dibden also conducted the assessment of the Crudine Ridge Wind Farm located to the southeast of Mudgee. A development corridor measuring 52 kilometres long by approximately 200 metres wide was inspected during the field survey. At the time ground exposure was reasonably high. Forty-four Aboriginal object locales with stone artefacts were recorded. All artefact locales were calculated to be very low-density artefact distributions (taking into consideration ground exposure and archaeological visibility). The artefact locales were considered to be representative of the artefact distribution and density within the entire Survey Unit in which they are situated. That is, they did not appear to be representative of discrete artefact locales but instead, they form part of the very low density 'background scatter' which is present across the landscape. The behavioural context of their deposition (or discard) was interpreted to be spatially unfocused. However, some locales did seem to be more discrete and, furthermore, these are tethered to particular areas. There is some tendency for these locales to be on the eastern side of the plateau and, also, to be associated with springs.

DIBDEN 2013, UUNGULA WIND FARM, TWELVE MILE

Dibden assessed the Uungula Wind Farm north of Burrendong Dam and straddling the Cudgegong River. The majority of the assessment was undertaken on ridge crests and covered a total of 153 kilometres of

turbine alignments, roads, and transmission lines. The survey units identified highly eroded landforms that were found to be of very low cultural and archaeological sensitivity and significance. Aboriginal site recordings were sparse and only 33 Aboriginal objects sites were identified comprising low density stone artefacts on ridge, spur crest and upper slopes. It was concluded they were all in a highly disturbed context and that all crest landforms were highly eroded with no archaeological potential.

The impact areas on the lower slopes, flats and valleys were found to be eroded and highly disturbed, the assessment considered them to be of generally low cultural and archaeological significance. A total of 18 low density stone artefact sites were identified on the lower slopes and flats near the lower order streams. The levee on the floodplain adjacent to Cudgegong River was found to be of relatively higher cultural and archaeological potential.

Overall, the assessment identified low density stone artefact sites across the ridge tops, crests and on the lower slopes near lower order streams. It was found the sites were of low cultural and archaeological significance due to the levels of disturbance and exposure. The lower slopes and flats adjacent to Cudgegong Creek were assessed as having a higher potential for cultural and archaeological significance.

4.3 Regional character and predictive model

4.3.1 Regional character

Previous archaeological assessments across the region provide important data on Aboriginal archaeological site distribution and typology from which an understanding of the archaeological landscape within the Project Site can be developed.

Stone artefact sites are the most common evidence of Aboriginal presence identified within the wider region surrounding the Project Site. Previous archaeological studies have identified the relationship between these sites, stone artefact density and their location within different landforms and the proximity to water sources.

Quartz is the predominant raw material of stone artefacts found in the region with various other volcanic materials such as basalts, cherts and silcrete making up portions of the assemblage. The percentage and types of stone material found will be reflective of the available stone source to the area. Many sites have been found in eroded exposed contexts likely due to past land disturbance but also likely due to the shallow skeletal soils present across many of the assessment areas. The regional archaeological landscape has been variably impacted by historical and current land use practices as well as by natural processes.

4.3.2 Predictive models

A commonly utilised tool in the planning and management of Aboriginal cultural heritage are predictive models. These models aim to identify specific landforms and places within the landscape which may contain archaeological material. They usually begin as geographically broad models, constructed through extensive reviews of the available literature to determine basic patterns of site distribution, before being refined according to the specific landform and environmental characteristics of the study area.

Predictive models are almost solely based upon a cultural ecological perspective of the landscape: landforms and environmental characteristics provided a distinct set of subsistence constraints, meaning

the landscape could only be occupied in particular ways in order to minimise distance to potable water, maximise biodiversity, and provide shelter from the elements. Accordingly, there is an expectation that land use patterns vary between separate environmental zones due to differing constraints and that this will manifest in alternate spatial distributions of archaeological material. Moreover, while some social factors may have influenced communities to venture through certain landscapes, other social factors may have resulted in the avoidance of landscapes, regardless of environmental conditions. Due to this, to understand the cultural context of a certain landscape consultation with local Aboriginal knowledge holders and community members is essential.

A regional predictive model can be used to provide a preliminary indication of the archaeological 'character' (or the type and frequency of archaeological material) that could be expected to be associated with landscape features. This, considered with an analysis of landform and geomorphology specific to a study area, can also guide targeted field investigation.

Regionally, archaeological studies suggest that site distribution is characterised by proximity to permanent reliable water sources that would support a rich biodiversity. Archaeological evidence in the vicinity of higher order creek lines may comprise larger artefact scatters with evidence of repeat occupation. Additionally, elevated areas adjacent to creek lines and spurs/crests can be archaeologically sensitive landforms. Ridgelines and crests are likely to contain modified trees, low density artefact scatters due to the transient nature of the landform.

4.3.3 Site types

There are several common Aboriginal cultural heritage site types that may be found in the Project Site based on the findings of archaeological assessments in the surrounding region.

Open camp sites / stone artefact scatters represent past Aboriginal subsistence and stone knapping activities and may include archaeological remains such as stone artefacts and hearths. This site type usually appears as surface artefact scatters in areas where vegetation is limited, and ground surface visibility is high. They are also often exposed by erosion, agricultural events (such as ploughing), and the creation of informal, unsealed vehicle access tracks and walking paths. Open campsites are often located on dry, relatively flat land along or adjacent to rivers and creeks. Sites that contain surface or subsurface deposits resulting from repeated or continuous occupation are more likely to occur on elevated ground near permanent, reliable water sources. Flat, open areas associated with creeks and their resource-rich environments would have offered ideal camping areas to the Aboriginal inhabitants of the local area.

Isolated artefacts may represent a single item discard event or the result of limited stone knapping activity. The identification of isolated artefacts may indicate the presence of a more extensive, subsurface in situ archaeological deposit, or a larger deposit obscured by low ground visibility. Isolated artefacts are likely to be located on landforms associated with a range of activities, such as ridge lines that would have provided ease of movement through the area and level areas with access to a water source. Artefact scatters and isolated artefacts are the most common site types found in association with fresh water and/or food resource gathering areas.

Potential Archaeological Deposit (PAD) are areas where there is no surface expression of stone artefacts, but, due to a landscape feature or isolated artefact, there is a strong likelihood that the area will contain subsurface *in situ* archaeological deposits. Landscape features that may indicate a PAD

include proximity to reliable water sources, particularly terraces and flats, ridge lines and ridge tops, and sand dune systems.

Culturally modified trees exhibit evidence of the deliberate removal of the *periderm* (outer bark), *phloem* (inner bark), and, in some cases, the sapwood. These materials can be used to manufacture a variety of items, including shields, Coolamon (bowls or trays), watercraft, containers, and a range of wooden tools and implements. Trees may also have been scarred in order to gain access to food resources (such as cutting toeholds so as to climb the tree and catch possums or birds) or to mark locations (such as tribal territories). In some instances, Aboriginal people marked important features or locations (such as ceremonial grounds) by carving patterns or motifs into the sapwood of established trees or bending and grafting the branches of saplings to create rings.

Grinding grooves are the physical evidence of tool making or food processing activities undertaken by Aboriginal people. The manual rubbing of stones against other stones creates grooves in the rock; these are usually found on flat areas of abrasive rock such as sandstone in close proximity to water courses.

Bora grounds / ceremonial sites are locations that have spiritual or ceremonial values to Aboriginal people. Such sites may comprise natural or altered landforms and, in some cases, will also contain archaeological material. For example, bora grounds are a ceremonial site type usually consisting of a cleared area around one or more raised earth circles connected by a pathway. Bora grounds are often accompanied by ground drawings or mouldings of people, animals or deities, or geometrically carved designs on the surrounding trees.

Burials often took place in proximity to camp sites, as most people tended to die in or close to camp and it is difficult to move a body over a long distance. Soft, sandy soils on or close to rivers and creeks allowed for easier removal of earth for burial. Similarly, rock shelters or middens also provided accessible burial places. Burial sites may be marked by stone cairns, modified trees, or a natural landmark. They may also be identified through historic records or oral histories.

Contact / historical sites can include a wide variety of sites and may be identified through artefactual evidence or oral histories. Artefacts located at such sites may involve the use of introduced materials such as glass or ceramics or may have social significance regarding the interaction between Aboriginal people and European settlers.

4.3.4 Site occurrence

Based on the results produced from the landscape assessment, searches of the AHIMS and state heritage registers, and examination of the regional and local Aboriginal archaeological context, the below predictive model (Table 12) has been designed for the Project Site.

Table 12: Predictive model for the occurrence of archaeological site types in the study area

Site Type	Description	Likelihood of occurrence
Open camp sites / stone artefact scatters / isolated finds	Artefact scatters and isolated artefacts are the most common site types found in association with fresh water, and/or food resource gathering areas. Artefact scatters and isolated finds are reported to be the most common archaeological site type in the surrounding region with volcanics and quartz the dominant raw material types.	High

Site Type	Description	Likelihood of occurrence
Potential Archaeological Deposits	The Project site is a landform that is unlikely to be considered potentially archaeologically sensitive due to the shallow skeletal soils present and the high erosion susceptibility. There is a low likelihood of PAD being identified on flat areas with limited disturbance.	Low
Culturally modified trees	Culturally modified trees may be present wherever tree specimens of an appropriate age are present. Widespread land clearing has been undertaken on the flats and valleys within the study area. Large areas on the steep slopes have not been cleared but it is unlikely this site type would occur.	Low
Axe grinding grooves	Although the Project site is in proximity to major watercourses, the underlying geology is predominately silicious volcanics and are not suitable surfaces for grinding.	Low
Bora grounds / ceremonial sites	There is a low reported incidence of ceremonial sites in proximity to the Project site. However, this site type is often restricted information or not recorded to protect the locations. This site type will be identified through consultation.	Low - Moderate
Burials	There is reported incidence of burial sites in proximity to the Project site. They have been restricted but are located in areas close to major waterways with sufficient soil depth or on areas between tributaries. The Project site does not have deep soils and the high acidity and erosion hazard means the organic remains are unlikely to survive.	Low
Contact / historical sites	Contact sites may occur in any area where Aboriginal people encountered early European settlers. This site type will be identified through consultation.	Moderate

5. Archaeological survey

5.1 Purpose

The purpose of the archaeological survey is to assist in identifying the existing and potential Aboriginal sites located within the impact area that have not been previously recorded. This archaeological investigation proposes to conduct a sample survey of the areas of proposed development to understand the presence, nature, extent and inform significance of the archaeological resource.

5.2 Survey strategy

The survey was informed by the preliminary scoping study undertaken for the Project (2020) which addressed the site types and their likely location and density in the vicinity of the Project Site. The Project Site contains three of the four landforms defined as archaeologically sensitive by the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (DECWW 2010) which indicates the following landforms to be archaeologically sensitive:

- Within 200 metres of waters – large portions of the Project Site are within 200 metres of water.
- Located on a ridge top, ridgeline, or headland – the proposed WTG locations access tracks and powerline locations will be located along ridgeline and ridge tops.

The survey sampling strategy was to inspect all potentially sensitive landforms in the Project Site. In addition, the predictive model identified that surface and sub-surface stone artefact scatters would be the most common site type found. Therefore, the survey targeted areas of ground surface exposure to determine if stone artefact scatters were present as well as identifying landforms with PAD which might contain sub-surface stone artefact scatters. These site types are likely to be located on flat to gentle sloping surfaces. Steep slopes were sampled as the gradient is likely to be subject to high levels of erosion and is unlikely to contain evidence of Aboriginal objects.

The archaeological survey was conducted on foot and aided by vehicles to traverse the expanse of the Project Site. The majority of the proposed impacts for access tracks within the footprint will cover areas heavily disturbed by existing graded vehicle tracks, survey across these areas were sampled, in accordance with the Code of Practice. A handheld Global Positioning System (GPS) was used to track the survey area covered and record the location of key features (disturbances, areas of archaeological sensitivity/potential). The coordinate system projection used for all site recording was GDA94 MGA 55.

The field survey methodology was as follows:

- The field survey involved a pedestrian survey to identify any unrecorded sites, areas of archaeological potential, and any areas of historical land use/disturbance.
- All landform units within the impact area were sampled as part of the field survey. A full coverage survey targeted the WTG locations and power pole locations.
- Record the land surface and vegetation conditions encountered and how these may impact on visibility of objects.
- Documentation of cultural information as provided by Aboriginal representatives.
- Any Aboriginal sites and / or PADs identified within the impact area were recorded using a GPS and photographed.

- Any new Aboriginal sites be recorded on AHIMS (AHIMS Site Card) as required by Heritage NSW.

All visible ground surfaces and exposures were examined for Aboriginal objects (stone artefacts, imported shell, or other traces of Aboriginal occupation). An attempt was made to identify and examine stone outcrops and old growth trees were examined for signs of cultural scarring and marking.

A photographic record was kept during the survey. Photographs were taken to record aspects of survey units including vegetation and disturbance. Scales were used for photographs where appropriate.

5.2.1 Landscape variables

Numerous archaeological surveys in the wider region have recorded and assessed the archaeological landscape with the following elements, landform type, slope, geology, soils. These have been used to build on the predictive model for identifying Aboriginal sites and the likely size density and significance. For consistency, the same predictive factors were addressed to build a landscape context within the survey units. Landforms that were assessed included:

- Ridgeline – a chain of hills or peaks that form a continuous elevation for some distance. The ridgelines are narrow along the top with sloping sides either steep or moderate. The peaks and hills are joined by saddles that can be narrow with steep slopes or broad and shallow. Characteristically have high rock out cropping occurrences.
- Crests – are similar to ridgelines in that they are elevated in the landscape, however they are broad convex features that have an overall gentle to moderate sloping gradient.
- Flats or open depression – is the large gently sloping or flat areas at the lower elevations or upper elevations between ridgelines. They are often dissected by creeks and are often disturbed from farming/ agriculture activities.
- Slope Gradients - Very gentle 1-3%, gentle 3-10%, moderate 10-32% and steep is greater than 32%.

Identifying Aboriginal objects is dependent on two variables ground/ surface visibility and exposure which must be described in terms of the erosion process responsible for its creation or other contributing factors. Each variable must be independently described to understand the effective survey coverage.

5.2.2 Site definition and recording

An Aboriginal site is generally defined as an Aboriginal object or place. An Aboriginal object is the material evidence of Aboriginal land use, such as stone tools, scarred trees, or rock art. Some sites, or Aboriginal places can also be intangible, and although they might not be visible, these places have cultural significance to Aboriginal people.

The Heritage NSW guidelines state, in regard to site definition, that one or more of the following criteria must be used when recording material traces of Aboriginal land use:

- The spatial extent of the visible objects, or direct evidence of their location
- Obvious physical boundaries where present, e.g., mound site and middens (if visibility is good), a ceremonial ground.
- Identification by the Aboriginal community on the basis of cultural information.

For the purposes of this study an Aboriginal site would be defined by recording the spatial extent of visible traces or the direct evidence of their location.

Stone artefacts are the most likely site type and site density will be considered as follows based on other assessments in the region:

- Very low - <1 artefact per sqm
- Low – 1-10 artefacts per sqm
- Moderate – 10-20 artefacts per sqm
- High - > 20 artefacts per sqm.

5.2.3 Protocol for recording Potential Archaeological Deposits

Where areas of PAD are identified towards the margins of each survey unit, efforts must made by the survey team to delineate each area of potential beyond the survey unit. Where the extent of the PAD extends beyond the survey unit, efforts must be made to map the extent of that feature up to approximately 60 m outside the survey unit. If it is likely that these PADs continue beyond that point, the survey team must justify that the distance is adequate to provide an accurate representation of the PAD with regard to future planning and design for the Project.

5.3 Survey results

The Project Site has been sampled and 41 Survey Units were traversed on foot and access between transects were by vehicle, these Survey Units are described in Table 11; their descriptions, locations and survey coverage are shown in Appendix B. Figures for the survey units and landscape context are below (Figures 6-23).

Surveys were carried out by ELA archaeologists and member of the registered Aboriginal groups who hold cultural knowledge of the project site. Surveys were carried out on 3-7 May 2021, 10-14 May 2021, 21-25 June 2021, 18-22 October 2021, 13-17 February 2023 and 8-12 July 2024.

The majority of Survey Units are located along the ridgelines and broad long crests within the assessment area, many of the access tracks proposed for the wind farm will be located on the top of these landforms connecting the WTG pads. The watercourses which drain the landforms are mostly low order streams. In proposed turbine areas, these are 1st order and, accordingly, ephemeral and are unlikely to hold water, even immediately after rain. Given the absence of any obvious potable water in these proposed activity areas, it is predicted that Aboriginal land use would have been restricted to activities such as hunting and gathering forays, conducted away from base camps and areas of more permanent habitations on the lowland flats. The nature of such activities results in low to very low-density sites. Artefact complexity may also be generally restricted, reflecting the limited range of activities being undertaken in such areas.

The access tracks between ridgelines and crests cut across large open depressions, the watercourse that drain through this landform are higher order creeks which hold water seasonally or permanently. Aboriginal land use around these areas is likely to be longer term or more intense, this will reflect in the archaeological record as higher density sites.

At the time of the field survey, ground surfaces were generally well covered with grasses, invasive weed growth and vegetation debris. The Project Site was found to have undergone varying levels of prior

disturbance. Original land clearance and subsequent grazing practices have impacted the open depressions and flats adjacent to the larger creek lines as well as many of the larger broad low-lying crests. Graded tracks for providing access within properties are common, and frequently traverse the length of entire crest and ridge landforms. The majority of impact areas are eroded to bedrock.

Ground exposure was frequently found across the entire Project Site, graded, and eroded vehicle tracks exposed the shallow soils and bedrock present across much of the ridgelines and crest. Vehicle tracks and cattle yards along the open depressions and gentle slopes near creeks exposed the bedrock and shallow soil profiles. Along ephemeral drainage lines formed dams provided large exposures of shallow silty sandy soil profiles above decomposed eroding bedrock. Rock outcropping was also prevalent across the Project Site, along the slopes, crests, and ridgelines.

The landscape can be summarised as;

- rocky and steep along the upper elevations;
- gently sloping, shallow soils across open depressions near drainage lines and creeks.

All soils were shallow or absent with limited potential for sequenced archaeological deposits, a few pockets of deep soils were exposed along Oakey Creek, one of the major tributaries of the Macquarie River. Aboriginal objects were identified across ridgelines and lower slopes adjacent to water courses where there was high visibility and exposed deposits. Low density artefact scatters were identified along the ridgeline and crests with moderate density scatters near stone sources and on sheltered saddles. It is likely that artefact densities along ridgelines are from transient/ temporary campsites due to the low-density nature of sites. Aboriginal sites on ridgelines that did not follow this trend were located in close proximity to lithic sources (quartz and basalt out cropping). Larger sites with moderate to high density were more often located across saddles, or large open flat / gentle sloping landforms adjacent to permanent water sources or higher resource zones. These larger density lithic object sites are an accumulation from multiple occurrences (long term recurrent occupation sites). Due to the shallow soils and rocky nature of the study area it is considered an effective coverage of the Project Site was undertaken to understand the nature and extent of Aboriginal cultural values.

The archaeological potential across the majority of the project area was low, no areas of archaeological potential were identified within the development corridor.





Figure 6: Facing northwest along SU1, showing surface visibility and exposure along ridgeline, steep side slopes, exposed bedrock, and skeletal soils.



Figure 7: Facing west from ridgeline within SU1 showing views towards the Macquarie River.



Figure 8: SU5 Facing southeast showing the broad crest landform, cleared vegetation and grass growth with rocky outcropping.



Figure 9: SU5 Facing south from top of ridgeline, view of Macquarie River and adjacent crests and open depressions.



Figure 10: SU7 Facing west showing the broad crest landform, cleared vegetation and grass growth with rocky outcropping. View towards Macquarie River and adjacent ridgeline.



Figure 11: SU8 Facing west across well grassed open broad crest, rocky out cropping visible, ground surface visible.



Figure 12: SU6 Facing across the erosion scours on the lower slopes of the crest landforms. Aboriginal site BWF AS79 with intact shallow deposit.

Figure 13: Facing north-west showing location of artefact scatter exposed along ridgeline saddle landform.



Figure 14: Facing northwest along SU9, showing surface visibility and rock exposures along narrow ridgeline, steep side slopes, exposed bedrock, and skeletal soils.



Figure 15: Facing south along SU10 showing views across surrounding landscape. Ridgeline with a series of peaks and saddles with rock outcropping.



Figure 16: Facing north showing heavily eroded vehicle tracks with high visibility and sloping landform and high exposures.



Figure 17: BWF IF2 – Resource and gathering site, grass trees. High Aboriginal significance.



Figure 18: SU 32 Large flat elevated landform/ crest. Facing northeast, rocky outcropping well grassed.



Figure 19: Basalt and quartz outcropping along SU13.



Figure 20: SU14 Facing south along narrow ridgeline, well vegetated, high erosion, and visibility along graded vehicle track.



Figure 21: SU15 Facing north-west showing high visibility and large exposed shallow soil sections BWF AS16.



Figure 22: Near SU14 facing west along ephemeral drainage line with formed dam, large areas of exposed deposit, BWF AS20.



Figure 23: SU18 Facing south showing high visibility and large exposed shallow soil sections across narrow ridgeline.

Table 13: Survey unit description summary

Survey Unit	Landform	Geology	Soils	Vegetation	Geomorphology	Disturbance
SU1	Ridgeline – narrow crest with steep side slopes, peaks, and saddles	Uplifted Sedimentary – shales with volcanic outcropping	Skeletal to shallow brown loams	Open woodland partially cleared for grazing, sparsely grassed	Eroded – sheet, human and animal	High disturbance -grazing, clearance, track grading and natural erosion
SU2	Ridgeline –steep side slopes and saddles	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Skeletal to shallow brown loams – shattered rock and gravels	Open woodland, understorey scrub	Eroded – wind, human and animal	High disturbance - track grading, minor fencing, and natural erosion
SU3	Slope – moderate to steep slope	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Skeletal red podsols– shattered rock and gravels	Open woodland, understorey scrub	Eroded – wind, human and animal	High disturbance - track grading, minor fencing, and natural erosion
SU4	Crest – steep sloping broad crest down to open depression	Sedimentary – shales	Shallow brown sandy loams on the lower slopes and yellow soloths on mid slopes and crests	Sparse trees, well grassed	Eroded – sheet, human and animal	High disturbance -grazing, clearance, track grading, minor fencing, and natural erosion
SU5	Crest – broad undulating with moderate to steep side slopes	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Shallow brown sandy loams on saddles and brown loams on upper slopes and crests	Open woodland partially cleared for grazing, sparsely grassed	Eroded – sheet, human and animal	High disturbance -grazing, clearance, and natural erosion
SU6	Undulating open depression dissected by ephemeral drainage lines – not permanent water	Volcanic - outcropping granites greywacke and quartz	Skeletal to shallow brown loams	Open woodland partially cleared for grazing, sparsely grassed	Eroded – sheet, human and animal	High disturbance -grazing, clearance, track grading, dams, and natural erosion
SU7	Ridgeline –steep side slopes and saddles	Volcanic - outcropping granites greywacke and quartz	Skeletal to shallow brown loams	Open woodland partially cleared for grazing, sparsely grassed	Eroded – sheet, human and animal	High disturbance -grazing, clearance, track grading, dams, and natural erosion
SU8	Ridgeline – narrow crest with steep side slopes, peaks, and saddles	Uplifted Sedimentary – shales with volcanic outcropping/ seams	skeletal to shallow brown sandy loams on saddles and brown loams on upper slopes and crests	Open woodland partially cleared for grazing, sparsely grassed	Eroded – sheet, human and animal	High disturbance -grazing, clearance, track grading, dams, and natural erosion

Survey Unit	Landform	Geology	Soils	Vegetation	Geomorphology	Disturbance
SU9	Ridgeline –narrow, steep side slopes and saddles	Volcanic - outcropping granites greywacke and quartz	Skeletal to shallow brown loams	Open woodland, understorey scrub	Eroded – wind, human and animal	Moderate disturbance - track grading, minor fencing, and natural erosion
SU10	Crest – broad undulating with moderate to steep side slopes, long flat saddles between hills	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Shallow brown sandy loams on saddles and brown loams on upper slopes and crests	Sparse trees, well grassed	Eroded – sheet, human and animal	High disturbance -grazing, clearance, track grading, minor fencing, and natural erosion
SU11	Ridgeline –steep side slopes and saddles	Volcanic - outcropping granites greywacke and quartz	Skeletal to shallow brown loams	Open woodland partially cleared for grazing, sparsely grassed	Eroded – sheet, human and animal	High disturbance -grazing, clearance, track grading, dams, and natural erosion
SU12	Open depression with gentle slopes, permanent water creek and springs	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Skeletal to shallow brown loams	Sparse trees, well grassed	Eroded – sheet erosion, human and animal	High disturbance -grazing, clearance, track grading, and natural erosion
SU13	Crest – broad undulating with moderate to steep side slopes	Volcanic - outcropping granites, basalt, and quartz common	Skeletal to shallow brown loams	Sparse trees, well grassed	Eroded – sheet erosion, human and animal	High disturbance -grazing, clearance, track grading, and natural erosion
SU14	Ridgeline – narrow crest with steep side slopes, peaks, and saddles	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Skeletal red podsols– shattered rock and gravels	Open woodland, understorey scrub	Eroded – sheet and human	High disturbance - track grading, and natural erosion
SU15	Crest – broad undulating with moderate to steep side slopes, long flat saddles between hills	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Shallow brown sandy loams on saddles and brown loams on upper slopes and crests	Open woodland, understorey scrub	Eroded – sheet and human	Moderate disturbance – tree clearance and natural erosion
SU16	Crest – broad undulating with moderate to steep side slopes, long flat saddles between hills	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Shallow brown sandy loams on saddles and brown loams on upper slopes and crests	Open woodland, understorey scrub	Eroded – sheet and human	Moderate disturbance - track grading, minor fencing, and natural erosion

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Survey Unit	Landform	Geology	Soils	Vegetation	Geomorphology	Disturbance
SU17	Ridgeline –steep side slopes and saddles	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Skeletal to shallow brown loams	Open woodland, understorey scrub	Eroded – sheet erosion, human	High disturbance - track grading, and natural erosion
SU18	Ridgeline – narrow crest with steep side slopes, peaks, and saddles	Volcanic - outcropping granites greywacke and quartz	Skeletal to shallow brown loams	Open woodland, understorey scrub	Eroded – sheet erosion, human	High disturbance - track grading, and natural erosion
SU19	Ridgeline – narrow crest with steep side slopes, peaks, and saddles	Volcanic - outcropping granites, basalt, and quartz common	Skeletal to shallow brown loams	Open woodland, understorey scrub	Eroded – sheet erosion, human	High disturbance - track grading, and natural erosion
SU20	Ridgeline – narrow crest with steep side slopes, peaks, and saddles	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Skeletal to shallow brown loams	Open woodland, understorey scrub	Eroded – sheet erosion, human	High disturbance - track grading, and natural erosion
SU21	Crest – broad undulating with moderate to steep side slopes	Volcanic - outcropping granites, basalt, and quartz common	Shallow brown sandy loams on saddles and brown loams on upper slopes and crests	Open woodland, partially cleared understorey scrub	Eroded – sheet erosion, human and animal	High disturbance - clearance, track grading, and natural erosion
SU22	Slope – moderate to steep slope down to creek with permanent water	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Skeletal red podsols– shattered rock and gravels	Open woodland, partially cleared understorey scrub	Eroded – sheet erosion, human	High disturbance - clearance, track grading, and natural erosion
SU23	Ridgeline – narrow crest with steep side slopes, peaks, and saddles	Uplifted Sedimentary – shales with volcanic outcropping	Skeletal to shallow brown loams	Open woodland partially cleared, sparsely grassed	Eroded – sheet erosion, human and animal	High disturbance - clearance, track grading, and natural erosion
SU24	Ridgeline – narrow crest with steep side slopes, peaks, and saddles	Uplifted Sedimentary – shales with volcanic outcropping	Skeletal to shallow brown loams	Open woodland partially cleared, sparsely grassed	Eroded – sheet erosion, human and animal	High disturbance - clearance, track grading, and natural erosion
SU25	Ridgeline – narrow crest with steep side slopes, peaks, and saddles	Uplifted Sedimentary – shales with volcanic outcropping	Skeletal to shallow brown loams	Open woodland partially cleared for grazing, sparsely grassed	Eroded – sheet erosion, human and animal	High disturbance -grazing, clearance, track grading, and natural erosion

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Survey Unit	Landform	Geology	Soils	Vegetation	Geomorphology	Disturbance
SU26	Open depression – flat to gentle undulating	Volcanic - outcropping granites, basalt, and quartz common	Skeletal to shallow brown sandy loams	Sparse trees, well grassed	Eroded – sheet erosion, human and animal	High disturbance -grazing, clearance, track grading, and natural erosion
SU27	Open depression gently sloping to steep side slopes	Volcanic - outcropping granites, basalt, and quartz common	Skeletal to shallow brown sandy loams high gravel content	Open woodland partially cleared for grazing, well grassed	Eroded – sheet erosion, human and animal	High disturbance -grazing, clearance, dams, minor fencing, and natural erosion
SU28	Open depression – flat to gentle undulating, dissected by low lying spurs and ephemeral drainage lines	Volcanic - outcropping granites, basalt, and quartz common	Skeletal to shallow brown sandy loams high gravel content	Open woodland, understorey scrub, well grass	Eroded – sheet erosion, human and animal	High disturbance -grazing, clearance, dams, track grading, minor fencing, and natural erosion
SU29	Slope –steep side slope	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Skeletal red podsols– shattered rock and gravels	Open woodland partially cleared	Eroded – sheet erosion, human	High disturbance – track and vehicle usage/ grading, minor fencing, and natural erosion
SU30	Open depression – flat to gentle undulating, dissected by low lying spurs and ephemeral drainage lines	Volcanic - outcropping granites, basalt, and quartz common	Shallow brown sandy loams on saddles and brown loams on upper slopes and crests	Open woodland partially cleared for grazing, sparsely grassed	Eroded – sheet erosion, human and animal	High disturbance -grazing, clearance, dams, track grading, minor fencing, and natural erosion
SU31	Open depression – flat to gentle undulating, dissected by low lying spurs and ephemeral drainage lines	Volcanic - outcropping granites, basalt, and quartz common	Shallow brown sandy loams on saddles and brown loams on upper slopes and crests	Open woodland, understorey scrub, sparse grass	Eroded – wind, human and animal	Moderate disturbance - grazing, dams, track grading, minor fencing, and natural erosion
SU32	Crest – broad undulating with moderate to steep side slopes	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Skeletal to shallow brown sandy loams high gravel content	Open woodland partially cleared for grazing, sparsely grassed	Eroded – wind, human and animal	High disturbance -grazing, clearance, dams, and natural erosion
SU33	Crest – broad undulating with moderate to steep side slopes	Volcanic - outcropping granites, basalt, and quartz common	Shallow brown sandy loams on saddles and brown loams on upper slopes and crests	Open woodland, partially cleared understorey scrub	Eroded – sheet erosion, human and animal	High disturbance - clearance, track grading, and natural erosion

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Survey Unit	Landform	Geology	Soils	Vegetation	Geomorphology	Disturbance
SU34	Open depression – flat to gentle undulating, dissected by low lying spurs and ephemeral drainage lines	Volcanic - outcropping basalt, and quartz common	Shallow brown sandy loams on saddles and brown loams on upper slopes and crests	Open woodland partially cleared for grazing, sparsely grassed	Eroded – sheet erosion, human and animal	High disturbance -grazing, clearance, dams, track grading, minor fencing, and natural erosion
SU35 Road	Open depressions – flat to gentle undulating, Steep slopes road cutting	Volcanic - outcropping basalt, and quartz common	Shallow brown sandy loams on saddles and brown loams on upper slopes and crests. Clay rich soils along creeks and valleys.	Open woodland partially cleared for grazing, sparsely grassed	Eroded – sheet erosion, human and animal	High disturbance -grazing, clearance, Yarrabin Road cutting, minor fencing, and natural erosion
SU36	Slope – moderate to steep slope down to Drainage lines	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Skeletal red podsols– shattered rock and gravels	Open woodland, partially cleared understorey scrub	Eroded – sheet erosion, human	High disturbance - clearance, track grading, and natural erosion
SU37	Ridgeline –steep side slopes and saddles Open depression gently sloping to steep side slopes	Uplifted Sedimentary – shales with volcanic outcropping/ seams Volcanic - outcropping granites, basalt, and quartz common	Skeletal to shallow brown loams high gravel content	Open woodland, understorey scrub. Partially cleared for grazing, well grassed	Eroded – sheet erosion, human and animal	High disturbance - track grading, grazing, clearance, dams, minor fencing, and natural erosion
SU38	Open depression – flat to gentle undulating, dissected by low lying spurs and ephemeral drainage lines	Volcanic - outcropping basalt, and quartz common	Shallow brown sandy loams on the lower slopes and yellow soloths on mid slopes and crests	Sparse trees, well grassed	Eroded – sheet erosion, human and animal	Moderate disturbance - grazing, clearance, dams, track grading, minor fencing, and natural erosion
SU39	Ridgeline – narrow crest with steep side slopes, peaks, and saddles	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Skeletal to shallow brown sandy loams on saddles and brown loams on upper slopes and crests	Open woodland partially cleared for grazing, sparsely grassed	Eroded – sheet, human and animal	High disturbance -grazing, clearance, track grading, dams, and natural erosion

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Survey Unit	Landform	Geology	Soils	Vegetation	Geomorphology	Disturbance
SU40	Crest – broad undulating with moderate to steep side slopes, long flat saddles between hills	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Shallow brown sandy loams on saddles and brown loams on upper slopes and crests	Sparse trees, well grassed	Eroded – sheet, human and animal	High disturbance -grazing, clearance, track grading, minor fencing, and natural erosion
SU41	Crest – broad undulating with moderate to steep side slopes, long flat saddles between hills Open depression gently sloping to steep side slopes	Uplifted Sedimentary – shales with volcanic outcropping/ seams	Shallow brown sandy loams on saddles and brown loams on upper slopes and crests	Sparse trees, well grassed	Eroded – sheet, human and animal	High disturbance -grazing, clearance, track grading, minor fencing, and natural erosion

Table 14: Survey coverage and associated Aboriginal sites identified.

Survey Unit	Length (m)	SU Area (m^2)	Area Inspected	Visibility (V) %	Exposure (E) %	Effective coverage area	Effective coverage %	Predicted artefact density	Aboriginal site recordings
SU1	2,670	209,804	10,680	25	80	10,680	20	Low	BWF AS1, BWF AS2, BWF AS3 and BWF AS4
SU2	2,835	264,748	45,360	10	80	3,628	8	Very low	
SU3	2,080	170,965	208	10	10	208	1	Low	
SU4	1,424	94,397	28,680	20	60	1,768	12	Low	BWF AS23 and AS24
SU5	3,126	288,473	62,412	30	15	2,808	5	Moderate	BWF AS5, BWF AS6, BWF AS7 and BWF SQ1
SU6	1,853	208,321	37,060	30	20	2,223	6	Low	BWF AS10
SU7	2,163	172,171	43,260	25	10	1,081	2.5	Low	BWF AS8 *BWF AS9
SU8	2,673	220,672	53,460	50	20	5,346	10	Low to Moderate	BWF AS11
SU9	2,245	323,095	44,900	40	20	3,592	8	Very low	BWF AS12 and BWF IF1
SU10	1,983	446,723	39,660	20	10	793.2	2	Very low	

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Survey Unit	Length (m)	SU Area (m^2)	Area Inspected	Visibility (V) %	Exposure (E) %	Effective coverage area	Effective coverage %	Predicted artefact density	Aboriginal site recordings
SU11	1,249	193,707	24,980	30	40	2,997.6	12	Very low	BWF IF2 -RG
SU12	2,979	111,186	59,580	60	50	17,874	30	Moderate to High	BWF AS25, BWF IF3, BWF IF4 and BWF IF5
SU13	1,265	151,965	25,300	30	40	3,036	12	Low	BWF AS14 and BWF SQ2
SU14	2,993	356,402	59,860	60	20	7,183.2	12	Low	BWF AS26, BWF IF 6, BWF AS80 and BWF AS81 *BWF AS19 and BWF AS20
SU15	693	69,689	13,860	25	10	346.5	2.5	Very low	BWF AS16
SU16	544	48,462	10,880	25	70	1,904	17.5	Very Low	BWF AS17
SU17	1,824	182,941	36,480	25	70	6,384	17.5	Very low	BWF AS18
SU18	2,383	584,050	47,660	60	50	14,298	30	Very low	BWF AS21, BWF AS22 and BWF AS70
SU19	1,371	209,334	27,420	20	10	548.4	2	Low	BWF AS27, BWF AS28 * BWF AS29
SU20	2,602	397,010	52,040	30	40	6,244.8	12	Very low	BWF AS30
SU21	4,976	651,031	99,520	50	80	39,808	40	Very low	BWF IF8 and BWF AS32 * BWF AS31 *BWF AS32 - destroyed by recent track grading*
SU22	1,408	118,543	4,928	50	70	4,928	35	Low	
SU23	2,648	246,213	52,960	20	40	4,236	8	Very low	BWF IF9, BWF IF10 and BWF AS33
SU24	1,701	289,793	34,020	20	40	2,721.6	8	Very low	BWF AS34 and BWF AS35
SU25	2,144	471,269	42,880	20	40	3,430.4	8	Very low	
SU26	3,047	89,804	60,940	20	40	4,875.2	8	Moderate to high	*BWF AS36, BWF AS56
SU27	1,016	49,127	20,320	40	70	5,689.6	28	Low to moderate	BWF AS37 and BWF AS38

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Survey Unit	Length (m)	SU Area (m^2)	Area Inspected	Visibility (V) %	Exposure (E) %	Effective coverage area	Effective coverage %	Predicted artefact density	Aboriginal site recordings
SU28	3,097	96,692	61,940	80	40	19,820.8	32	Low to moderate	BWF AS39 and BWF AS40 * BWF AS42, BWF AS43, BWF AS44
SU30	1,926	99,754	38,520	30	20	2,311.2	6	Low to moderate	BWF AS45
SU31	4,074	133,527	81,480	20	10	1,629.6	2	Low	BWF AS46, BWF AS47, BWF AS48 and BWF AS49 * BWF AS59, BWF AS60, BWF AS61, BWF AS62, BWF AS63, BWF AS64 and BWF AS65
SU32	1,814	175,027	36,280	20	30	2,176.8	6	Very low	BWF AS51 *BWF AS50
SU33	5,646	283,957	1,511	60	30	1,511	18	Very low	BWF AS13, BWF AS52, BWF AS53, BWF AS54 and BWF AS55
SU34	6,378	446,723	127,560	20	10	2,551.2	2	Low	
SU35	7,460	130,800	74,600	50	20	7,460	10	Low	BWFAS83, BWFAS84 and BWF AS85
SU36	1,852	126,863	4,444	60	20	4,444	12	Low	BWF AS82, BWF AS86, BWF AS87, BWF AS88 and BWF AS89
SU37	658	42,591	13,160	20	30	789.6	6	Low	BWF AS90 and BWF AS91
SU38	1,013	67,236	20,260	30	10	607.8	3	Low	BWF AS92 and BWF AS93
SU39	1,487	114,722	29,740	20	20	1,189.6	4	Low	
SU40	3,588	241,371	35,880	20	30	2,152.8	6	Low	BWF AS94 and BWF CMT2
SU41	4,529	521,085	90,580	20	25	4,529	5	Moderate	BWF AS95, BWF AS96, BWF AS97 and BWF IF11

*Aboriginal sites identified between survey units

Table 15: Aboriginal sites identified during field survey.

Aboriginal site	Survey unit	Artefacts density/ site type and location	GDA2020 z55 Easting	GDA2020 z55 Northing
BWF AS1	SU1	Low density on eroded vehicle track on ridge line	710665	6370387
BWF AS2	SU1	Low density on eroded vehicle track on ridge line	710956	6370010
BWF AS3	SU1	Very low density on eroded vehicle track on ridge line	711141	6369745
BWF AS4	SU1	Very low density on eroded vehicle track on ridge line	711578	6369600
BWF AS5	SU5	Low density on eroded vehicle track on saddle	715676	6369732
BWF AS6	SU5	Very low density on eroded vehicle track on ridge line	715671	6369653
BWF AS7	SU5	Very low density on eroded vehicle track on ridge line	714885	6370626
BWF SQ1	SU5	Exposed basalt/ rhyolite on crest	715674	6369949
BWF AS8	SU7	Very low density on slope of broad crest, exposed bedrock	715004	6375521
BWF AS9	*	Moderate density on lower slope, drainage erosion	715028	6373330
BWF AS10	SU6	Low to moderate density on eroded raised area next to drainage line and vehicle track	714896	6371214
BWF AS11	SU8	Moderate density on eroded vehicle track on broad crest	712776	6372370
BWF AS12	SU9	Very low density on eroded vehicle track on ridge line	712049	6373283
BWF AS13	SU33	Very low density on eroded vehicle track along a narrow ridgeline	717487	6377496
BWF IF1	SU9	Very low density on eroded vehicle track on ridge line	712422	6374209
BWF IF2-RG	SU11	Very low density next to exposed quartz outcrop and surrounded by mature grass trees (resource) (*Xanthorroea australis*)	717852	6383489
BWF IF3	SU12	Very low density on eroded vehicle tracks next to drainage line in open depression	718601	6382308
BWF IF4	SU12	Very low density on eroded vehicle tracks next to drainage line in open depression	718703	6382276
BWF IF5	SU12	Very low density on eroded animal tracks next to drainage line in open depression. Potential campsite with deposit next to freshwater spring	719179	6382162
BWF AS14	SU13	High density on eroded vehicle track on ridge line next to quartz and basalt outcrop	713499	6379485
BWF SQ2	SU13	Exposed basalt/ rhyolite on crest	713760	6379128
BWF AS16	SU15	Low density on eroded saddle on ridge line	714886	6384770
BWF AS17	SU16	Moderate density on eroded vehicle track on ridge line	714926	6384198
BWF AS18	SU17	Very low density on eroded vehicle track on ridge line	714105	6383817
BWF AS19	*	Very low density on eroded vehicle track on crest landform	713793	6380992
BWF AS20	*	Moderate density on eroded banks of drainage line, adjacent to dam construction	713979	6380758
BWF IF6	SU18	Very low density on eroded vehicle tracks on narrow ridgeline	713471	6380160
BWF IF7	*	Very low density on eroded vehicle tracks on narrow ridgeline	712348	6380176
BWF AS21	SU18	Very low density on eroded vehicle tracks on narrow ridgeline	711510	6378810

Aboriginal site	Survey unit	Artefacts density/ site type and location	GDA2020 z55 Easting	GDA2020 z55 Northing
BWF AS22	SU18	Very low density on eroded vehicle tracks on narrow ridgeline	711169	6378556
BWF AS23	*	Low density on eroded vehicle track on lower slope near drainage line	709043	6376229
BWF AS24	*	High density on heavily eroded vehicle track and cattle yard adjacent to major creek line	709328	6375981
BWF AS25	SU12	Low density on eroded raised slope next to drainage line in open depression	718436	6382314
BWF AS26	SU14	Low density on eroded and graded vehicle track near basalt outcrop	713737	6380478
BWF AS27	SU19	Very low density on eroded vehicle tracks on narrow ridgeline adjacent to large quartz outcrop	709099	6379941
BWF AS28	*	Very low density on eroded vehicle track on gentle sloping valley between ridgelines	708927	6380421
BWF AS29	*	Very low density on eroded vehicle track on property boundary, edge of ridgeline	708671	6380119
BWF AS30	SU20	Very low density on eroded crest	707657	6381301
BWF AS31	*	Very low density on eroded lower slope, valley	710179	6384836
BWF IF8	SU21	Very low density on eroded vehicle tracks on broad gently sloping crest	710309	6384714
BWF AS32	SU21	Very low density on large, eroded vehicle tracks	709965	6385200
BWF IF9	SU23	Very low density on eroded vehicle tracks on broad gently sloping crest	704974	6388196
BWF IF10	SU23	Very low density on eroded vehicle tracks on broad gently sloping crest	704925	6388071
BWF AS33	SU23	Very low density on eroded vehicle tracks on narrow ridgeline	709965	6385200
BWF AS34	SU24	Very low density on eroded vehicle tracks on narrow ridgeline	704412	6386529
BWF AS35	SU24	Very low density on eroded vehicle tracks on narrow ridgeline	705444	6385316
BWF AS36	*	Low density on eroded cattle track at the high water mark adjacent to major creek line	708698	6375808
BWF AS37	SU26	Very low density on eroded raised area in open depression adjacent to ephemeral drainage line	709664	6374683
BWF AS38	SU26	Moderate density on eroded vehicle tracks on flat landform adjacent permanent water course	709899	6374749
BWF AS39	SU27	Low density on eroded exposed flat near permanent watercourse	710236	6374703
BWF AS40	SU27	Low density on eroded gentle slope in open depression	710306	6374774
BWF AS41	*	Low density on eroded gentle slope in open depression	710199	6375511
BWF AS42	*	Low density in an erosion scour adjacent to property fence line	710853	6375508
BWF AS43	*	Moderate density on eroded vehicle track adjacent to property boundary	710863	6375572
BWF AS44	*	Low density on eroded gentle slope in open depression	710744	6375605

Aboriginal site	Survey unit	Artefacts density/ site type and location	GDA2020 z55 Easting	GDA2020 z55 Northing
BWF AS45	SU30	Very low density on eroded vehicle track on a moderate sloping landform	717434	6382018
BWF AS46	SU31	Very low density on eroded animal track on a moderate sloping landform adjacent ephemeral drainage line	716847	6381981
BWF AS47	SU31	Low density on eroded animal track on a moderate sloping landform adjacent ephemeral drainage line	716407	6381744
BWF AS48	SU31	Very low density on eroded and graded vehicle track on a moderate sloping landform	716146	6381791
BWF AS49	SU31	Very low density on eroded animal track next to an open flat swamp/ ephemeral drainage line	715944	6381812
BWF AS50	*	Very low density on eroded vehicle tracks on broad gently sloping crest	717563	6382256
BWF AS51	SU32	Very low density on eroded vehicle tracks on broad gently sloping crest	718032	6381482
BWF AS52	SU33	Very low density on eroded vehicle tracks on broad gently sloping crest	717973	6379748
BWF AS53	SU33	Low density on eroded vehicle tracks on broad gently sloping crest	717981	6379670
BWF AS54	SU33	Low density on eroded vehicle tracks on broad gently sloping crest	717911	6379543
BWF AS55	SU33	Very low density on heavily eroded vehicle tracks on moderate slope	717725	6379209
BWF AS56	*	Very low density on heavily eroded vehicle tracks on moderate slope	709257	6375638
BWF AS57	*	Very low density on heavily eroded vehicle tracks on gentle slope, stone axe	709504	6375679
BWF AS58	*	Moderate density scatter on an eroded moderate slope above a flood plain and Oakey Creek	709617	6375654
BWF AS59	*	Very low density on heavily eroded vehicle tracks on gentle slope	716194	6381735
BWF AS60	*	Very low density on heavily eroded vehicle tracks on gentle slope	716301	6381647
BWF AS61	*	Very low density on eroded vehicle tracks on relatively flat landform adjacent to converging minor water courses	716391	6381532
BWF AS62	*	Moderate density on eroded vehicle tracks on relatively flat landform adjacent to converging minor water courses	716397	6381452
BWF AS63	*	Very low density on heavily eroded vehicle tracks on gentle slope	716394	6381379
BWF AS64	*	Very low density on heavily eroded vehicle tracks on gentle slope	716423	6381357
BWF AS65	*	Low density on heavily eroded vehicle track on raised gentle slope above a wide drainage line	716681	6381058
BWF AS66	*	Low density on eroded vehicle tracks on broad gently sloping crest	710875	6381535
BWF AS67	*	Low density on eroded vehicle tracks on broad gently sloping crest	711033	6381416
BWF AS68	*	Low density on eroded vehicle tracks on broad gently sloping crest	711330	6381354
BWF AS69	*	Low density on eroded vehicle tracks on moderate slope	711928	6380751

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Aboriginal site	Survey unit	Artefacts density/ site type and location	GDA2020 z55 Easting	GDA2020 z55 Northing
BWF AS70	SU18	Very low density on eroded vehicle tracks on ridgeline	712333	6380206
BWF AS72	*	Low density on eroded vehicle tracks on broad gently sloping crest	710787	6382256
BWF AS73	*	Moderate density spread across graded track and raised lower crest adjacent to drainage lines.	710772	6382356
BWF AS74	*	Moderate density spread across graded track and raised lower crest adjacent to drainage lines.	710739	6382421
BWF AS75	*	Low density on an eroded gentle slope near homestead above Oakey Creek	710092	6375731
BWF AS76	*	Very low density on gentle slope on bank of a drainage line	709570	6387088
BWF CMT1	*	Scarred tree opposite an artefact scatter overlooking the Cudgegong River.	709553	6387064
BWF AS77	*	Very low density on eroded vehicle track on minor drainage line of Cudgegong River	708761	6385539
BWF AS79	*	Low density scatter spread across a large erosion scour and vehicle track on raised slope above drainage line	719192	6379681
BWF AS80	SU18	Very low density on eroded vehicle tracks on broad gently sloping crest	713545	6380401
BWF AS81	SU14	Very low density on heavily eroded vehicle tracks on moderate slope	714185	6380545
BWF AS82	SU36	Low density on eroded vehicle tracks on broad gently sloping crest	698630	6374494
BWF AS83	SU35	Low density on edge of graded Yarrabin Road on broad gently sloping crest on drainage line	715982	6402478
BWF AS84	SU35	Very low density on Yarrabin Road on broad gently lower slope	716040	6395039
BWF AS85	SU35	Very low density on Yarrabin Road on broad gently sloping crest	714434	6399272
BWF AS86	SU36	Low density on eroded vehicle tracks on broad gently sloping crest	697395	6373157
BWF AS87	SU36	Low density on eroded vehicle tracks on broad gentle slope	697480	6372796
BWF AS88	SU36	Low density on highly eroded vehicle track on broad gently sloping crest	697406	6372650
BWF AS89	SU36	Low density on highly eroded vehicle track on broad gently sloping crest	697156	6372473
BWF AS90	SU37	Low density on highly eroded vehicle track on creek bank	708242	6375895
BWF AS91	SU37	Low density on highly eroded vehicle track in gully	704830	6376350
BWF AS92	SU38	Moderate density spread across a highly eroded gentle slope, vehicle access to sheep facilities.	711494	6386663
BWF AS93	SU38	Low density on highly eroded edge of dam, near Cudgegong River	711434	6386801
BWF AS94	SU40	Low density spread across graded track and raised lower crest adjacent to drainage lines.	707942	6378021
BWF AS95	SU41	Very low density on eroding drainage line, moderate slope	700123	6374131
BWF AS96	SU41	Moderate density spread across eroded vehicle track on low hill above flood plain	700839	6374379

Aboriginal site	Survey unit	Artefacts density/ site type and location	GDA2020 z55 Easting	GDA2020 z55 Northing
BWF AS97	SU41	Stone axe, grinding stone on edge of graded vehicle track lower slope above drainage line	701577	6374764
BWF IF11	SU41	Very low density located in a pine plantation, highly disturbed crest	700365	6374242
BWF CMT2	*	Scarred tree on raised lower crest adjacent to drainage lines.	707961	6377829

* Aboriginal sites identified outside the surveyed areas, along property access tracks.

5.4 Analysis and discussion

The majority of the proposed Development Footprint covers steep to moderately sloping landforms that are very unlikely to contain Aboriginal objects. The steep and moderate slopes were traversed by vehicle, a few moderate slopes were traversed on foot. The majority of WTG envelopes were surveyed including WTGs that have now been removed from the current development scope. Approximately 118 km was traversed and an area of approximately 340sqkm surveyed, this coverage includes survey units that covered portions that are no longer part of the current scope of works. Aboriginal sites were also identified along the tracks between survey units. Overhead transmission line corridors were not surveyed due to time limitations and access to the steep terrain.

At the time of the field surveys ground visibility and exposure was relatively high, along the ridge lines and in the high country there has been very little disturbance or land clearance. Along the lower elevations the visibility was lower due to recent rains and dense grass cover, however there were large expanses of exposure from erosional processes. The proposed access tracks for the WTGs will follow existing vehicle tracks that cover most of the Development Footprint. The survey focused on the most likely impact areas for access and the location of each WTG footprint. The ground visibility and exposure were quite high across the surveyed area which meant the was a relatively high effective coverage. The geomorphological context was found to be eroded in the majority of areas, even along drainage lines, creek lines and open depressions the exposed soil profiles were shallow and exposed bedrock was visible across much of the Development Footprint. Ground surfaces with high visibility usually presented a relatively high exposure rate as the soils across the Development Footprint are skeletal with frequent rock outcropping. The archaeological potential of the Development Footprint is very unlikely with discrete sites being identified as containing potential archaeological deposit.

Stone artefacts were the most abundant material evidence of Aboriginal occupation/ utilisation of the Project Site (Appendix C). Pearson (1981) conducted a regionally based investigation of Aboriginal settlement patterns in the Upper Macquarie River region and conducted sample surface surveys for Aboriginal sites in the Mudgee area. Pearson observed that access to water, good drainage, level ground for sleeping, elevation above areas of winter cold air pooling, sufficient exposure to cool breezes, a sunlit leeward aspect and access to adequate fuel influenced campsite locations. In the sample survey, areas which afforded such conditions were noted as being located on gentle hillslopes and undulating ground, flat sections on ridges particularly at lower elevations and creek banks and river flats which had access to water but no other advantageous features. This regional analysis is comparative to the findings of the survey for Burrendong which is located on the Macquarie River. The Aboriginal object sites are considered to be representative of the artefact distribution and density previously investigated in the region by Pearson. Similarly, Koettig (1985) determined the location and comparative size of sites is

principally determined by environmental and social influences. Koettig predicted site type and site location in relation to proximity to water, availability of food resources and geological formation. Although sites were found in all landscape settings, including hills and ridges distant from water, the largest campsites were located close to permanent watercourses. The widest range of foods was found along major watercourses in association with the available permanent water, some foods were seasonal and located away from permanent watercourses. Certain site types occur in particular settings, quarries are found where there is a useable and accessible stone resource.

The vast majority of Aboriginal objects sites were assessed to be very low-density artefact distributions and were distributed across the ridge lines and broad crests. These low-density sites are "background scatter' regionally identified in these landforms. The low-density nature is due to the distance from permanent water source and are likely representative of transient camp locations between larger occupation sites and resource zones. Pearson presented ethnographic evidence which suggested that camp sites were not used for longer than three nights and that large sites therefore probably represented accumulations of short-term visits. Focus of Aboriginal occupation and activity within the current assessment was identified near areas of permanent water sources and resource gathering zones Moderate to high density sites were identified adjacent to Oakey Creek and other tributaries of the Macquarie River and in open depressions and on flat raised landforms similar to Pearson's regional study. One high density site was identified on a ridgeline at a considerable distance to permanent water sources but adjacent to a quartz outcrop and basalt stone quarry.

It is noted that while every effort was made to record ground exposure and archaeological visibility accurately, these estimations are inherently problematic and, accordingly, comparisons of artefact density between locales may not be sensible. All artefact locales are highly disturbed, primarily by erosional process and likely to be initiated by agricultural activities, intensive grazing, and vehicle access tracks. The majority are located on skeletal soils with the bedrock exposed and they do not have the potential to contain archaeological deposit.

Most stone artefacts are quartz and basalt, this is understandable as it is the most abundant lithic material due to the geology of the Project site. Minor frequencies of other materials occurring included cherts and fined grained siliceous (FGS). In some Survey Units quartz background was high and, accordingly, detecting artefacts made from that material was difficult under survey conditions. The occurrence of chert was expected but the colour variation was considered to be unusual by the RAPs, and it is believed they have been brought in or traded from the wider region. The majority of artefacts are flakes, flake fragments and other debitage such as cores. Numerous retouched artefacts and backed blades were also recorded indicating some complexity in artefact related activities. Crystal quartz was a frequent occurrence, several geometric microliths were recorded, these were for ceremonial/ scarification purposes. Several hammerstones and broken ground edge axes were recorded. One rare specimen was identified as a 'Warhammer' by the RAPs, the river pebble had been ground to a point at one end and there was a groove across the middle for lashing a handle.

Site frequency was relative to other assessments in the region, likely due to the relatively high visibility and frequent exposures along the surveyed area and along tracks between survey units. A total of 108 Aboriginal sites were identified over the course of the assessment, with 43 of these Aboriginal sites identified within the current Development Footprint. However, the difference between the Project site and other surveys in the area was the individual site density. Kuskie (2009) identified a higher frequency

of Aboriginal sites at Ulan with a wider variety of site types, yet the density overall was found to be low. He concluded sites were part of the very low density 'background scatter' present across the landscape. Kuskie theorised it was probably due to a lack of higher order water courses. Dibden (2011) assessed the Bodangora Wind Farm and had a comparatively similar result with high visibility across the 52 kilometres of survey area, identifying 44 Aboriginal sites. All those sites were calculated to be very low density and the behavioural context of their deposition (or discard) was interpreted to be spatially unfocused.

The overall result of the assessment undertaken at Burrendong Wind Farm Project site is that the identified Aboriginal sites, types and densities are typical of the previous assessments undertaken in the surrounding region. The Project site's proximity to major permanent watercourses, resource rich zones along the flats and tributaries and the sought after geological resource outcrops along the ridgelines provided all three key factors for Aboriginal occupation and utilisation. The site types and densities are well represented in the regional context. The frequency of Aboriginal sites identified during the course of the archaeological investigations indicates that there is a high likelihood for further Aboriginal sites to be identified across the Project site that has not been subjected to investigation.

The archaeological potential across the majority of the Project sitewas low, no areas of archaeological potential were identified within the development corridor. Earlier phases of the project design included wind turbines south of Oakey Creek, several sites in the vicinity of these turbines and the access corridors had the potential for subsurface Aboriginal objects. Thes locations will no longer be impacted, therefore there is no necessity for test excavations within the projects site.

6. Cultural heritage values and statement of significance

The *Australia ICOMOS Burra Charter 1999* provides guidance for the assessment, conservation, and management of places of cultural significance. Cultural significance is defined in the Burra Charter as 'a concept which helps in estimating the value of places.' The places that are likely to be of significance are those which help an understanding of the past or enrich the present, and which will be of value to future generations" (ICOMOS Burra Charter 1988:12). The Burra Charter provides a definition of cultural significance as "aesthetic, historic, scientific, social or spiritual value for past, present or future generations." Aboriginal cultural heritage sites can be assessed through the application of these five principle values.

- Social or cultural value (assessed only by Aboriginal people)
- Historical value
- Scientific/archaeological value (assessed mostly by archaeologists/heritage consultants)
- Aesthetic value
- Spiritual value.

The following section presents an assessment of Aboriginal cultural heritage values based on these principles.

6.1 Description of cultural heritage values

The review of background information and information gained through consultation with Aboriginal people should provide insight into past events. These include how the landscape was used and why the potential Aboriginal objects are in this location, along with contemporary uses of the land. The following descriptions of cultural heritage values are drawn from the *Guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW* (OEH 2011).

Social or cultural value refers to the spiritual, traditional, historical, or contemporary associations and attachments the place or area has for Aboriginal people. Social or cultural value is how people express their connection with a place and the meaning that place has for them.

Historic value refers to the associations of a place with a historically important person, event, phase, or activity in an Aboriginal community. Historic places do not always have physical evidence of their historical importance (such as structures, planted vegetation or landscape modifications). They may have 'shared' historic values with other (non-Aboriginal) communities and include places of post-contact Aboriginal history.

Scientific (archaeological) value refers to the importance of a landscape, area, place or object because of its rarity, representativeness, and the extent to which it may contribute to further understanding and information (Australian ICOMOS 1988).

Aesthetic value refers to the sensory, scenic, architectural, and creative aspects of the place. It is often closely linked with the social values. It may consider form, scale, colour, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use (Australian ICOMOS 1988).

Spiritual value is a more recent inclusion in the Burra Charter, dating from 1999. Australia ICOMOS has not defined this value.

6.2 Aboriginal cultural assessment

6.2.1 Social or cultural significance

Aboriginal cultural values can only be determined through consultation with the Aboriginal community. All Aboriginal sites are considered to have cultural significance to the Aboriginal community as they provide physical evidence of past Aboriginal use and occupation of the area. Aboriginal cultural significance may include social, spiritual, historic, and archaeological values, and is determined by the Aboriginal community.

The Macquarie River and its higher order tributaries were identified to be of high cultural and archaeological potential because they are a permanent source of water and a rich biodiverse focal point in the surrounding landscape and are likely to have sustained greater levels of occupation. Artefact density along Oakey Creek was found to be high and artefact complexity was greater than on other landforms. The Project will mostly avoid this area; however, the revised Development Footprint will dissect this area to allow access to the southern arms of the Project. The revised Development Footprint will avoid the highest density Aboriginal sites.

The ridgeline locations of the proposed turbines have cultural significance providing corridors for movement through the landscape, for hunting and gathering activities and as vantage viewpoints of the surrounding landscape.

Mature grass trees (*Xanthorrhoea australis*) were identified within the Development Footprint, these plants are of high cultural value as a resource. The trunk has resin that is useful for fire lighting, and glue, the leaves were woven for different purposes. The flower stem was a source of sweetness and were fashioned into spears by hardening in the fire.

Culturally sensitive areas have been identified during the course of the field survey through consultation. These areas are of high importance to the Wiradjuri community, the Development Footprint has been modified to avoid harm to these areas.

Murong Gialinga and WVWAC have through consultation with their community identified all Aboriginal objects and all sites to be of high cultural significance to the Wiradjuri people.

6.2.2 Spiritual significance

WVWAC – The Burrendong area has been identified by the elders as having significant “Song lines” through it and spiritually the impact that this project will cause is High.

The ‘song lines’ or travelling routes have been mapped across the project site by WVWAC but for cultural reasons this information is restricted and will not be provided for general viewing. A highly significant culturally sensitive area is located within the project site. This high culturally sensitive area will not be impacted by the project, the Development Footprint has been changed to avoid harm and to conserve the cultural values.

6.2.3 Aesthetic significance

As noted above aesthetic significance is often closely linked to social and cultural significance. Generally aesthetic significance is considered to mean the visual beauty of a place. Examples of archaeological sites that may have high aesthetic values include rock art sites or sites located in visually pleasing environments (NSW NPWS 1997: 11).

The Project Site and surrounding region have been impacted by current and previous historical land use, however there is a spectacular undisturbed view of the surrounding landscape from the top of the ridgelines and crest. This view is very aesthetically similar to what it would have been prior to historical disturbance.

These vantage points still provide cultural views of significant landforms and pathways relevant to the cultural values of the Aboriginal community.

6.2.4 Historic significance

No historic associations with 'place' were identified during the course of the background research and field survey specific to the Development Footprint.

There are historical Aboriginal records of their utilisation of the Macquarie River and of conflicts between the local families and landowners.

Aboriginal historical burials have been recorded outside the Development Footprint. These Aboriginal burials are of high significance to the Aboriginal community and the surviving descendants.

6.2.5 Scientific significance

As with cultural, historic, and aesthetic significance; scientific significance can be difficult to establish. Certain criteria must therefore be addressed in order to assess the scientific significance of archaeological sites. Scientific significance contains four subsets: research potential, representativeness, rarity, and educational potential. These are outlined below.

Research Potential: the ability of a site to contribute to our understanding of Aboriginal occupation locally and on a regional scale. The potential for the site to build a chronology, the level of disturbance within a site, and the relationship between the site and other sites in the archaeological landscape are factors which are considered when determining the research potential of a site.

Representativeness: is defined as the level of how well or how accurately something reflects upon a sample. The objective of this criterion is to determine if the class of site being assessed should be conserved in order to ensure that a representative sample of the archaeological record be retained. The conservation objective which underwrites the 'representativeness' criteria is that such a sample should be conserved (NSW NPWS 1997: 7-9).

Rarity: This criterion is similar to that of representativeness, it is defined as something rare, unusual, or uncommon. If a site is uncommon or rare it will fulfil the criterion of representativeness. The criterion of rarity may be assessed at a range of levels including local, regional, state, national and global (NSW NPWS 1997: 10).

Educational Potential: This criterion relates to the ability of the cultural heritage item or place to inform and/or educate people about one or other aspects of the past. It incorporates notions of intactness,

relevance, interpretative value, and accessibility. Where archaeologists or others carrying out cultural heritage assessments are promoting/advocating the educational value of a cultural heritage item or place it is imperative that public input and support for this value is achieved and sought. Without public input and support the educative value of the items/places is likely to not ever be fully realised (NSW NPWS 1997: 10).

The Aboriginal cultural value of the landscape in general, as well as the Aboriginal objects it contains, is considerably higher than the scientific value. Both the landscape and the objects which are encompassed within it are material testament to the lives of people's ancestors and the focus of their current identity, concerns, and aspirations. Therefore, the proposal would have an impact on the cultural significance which attaches to the area.

Low scientific significance has been attributed to all very low to low density stone artefact sites (Table 15) where site integrity was low, being located on either a disturbed or eroded landscape or having low subsurface archaeological potential. These sites are generally isolated find spots or artefact scatters where within a disturbed/eroded landscape where further investigations of the area would not contribute to our understanding of Aboriginal landscape use in the area. Based on the intactness, representativeness, and research potential, these sites are determined to have low scientific significance.

Moderate to high scientific significance has been attributed to all surface artefacts located on a landscape exhibiting moderate to high density and may have potential to contain a subsurface archaeological deposit where identified in an erosion scour. These sites generally consist of artefact scatters on a relatively undisturbed landscape. Subsequently, moderate to high scientific significance is attributed to sites where detailed investigations of the Aboriginal site would contribute to our understanding of the Aboriginal landscape use of the area. The detailed investigations may require test excavations where deposit is present in order to understand the nature and extent of the Aboriginal site, or where the eroded deposit has exposed the scatter on the surface, a detailed recording and analysis of the assemblage present would contribute to the understanding of the site context and cultural practices. Based on the intactness, representativeness, and research potential, these sites are determined to have moderate to high scientific significance (Table 15).

7. Development proposal activity

Burrendong Wind Farm Pty Ltd are proposing the development of Project. This is a State Significant Development (SSD 8950984). Activities associated with the proposed works include bulk earthworks and landscape modifications.

Proposed Impacts would involve the construction, operation, and decommissioning of the Project. The proposal would involve the following construction and/or impacts:

- The installation of 70 WTGs. The ground disturbance associated with each turbine would be determined based on ground stability. A WTG assembly/crane hardstand area adjacent to the WTG footings could measure up to 40 x 80 metres.
- Electrical connections between wind turbines and on-site substations, which would be a combination of underground cable and overhead power lines.
- Various other substations and site compounds, lay down areas including site operations facilities and services buildings.
- Access roads, in addition to minor upgrades to access on farm tracks, as required, for the installation and maintenance of WTGs.

Assessed impacts to Aboriginal sites identified within the Development corridor are shown below.

7.1 Impacts of the proposed works

The impact assessment of tangible values is based on the Development Footprint which has been provided by the Proponent, and assumptions area made on the potential impacts as the final designs and layout of the Project have not been provided. Aboriginal objects are considered to be of high cultural significance however the table below bases the overall significance of the tangible values based on the average significance across the cultural, social, spiritual, historical, aesthetic and scientific values identified.

Table 16: Impact assessment for Aboriginal sites

Aboriginal site AHIMS ID	Overall Significance	Potential impacts	Type of harm	Degree of harm	Consequence of harm
BWF AS1 36-5-0261	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS2 36-5-0262	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS3 36-5-0263	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS4 36-5-0264	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS5 36-5-0265	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value

Aboriginal site AHIMS ID	Overall Significance	Potential impacts	Type of harm	Degree of harm	Consequence of harm
BWF AS6 36-5-0266	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS7 36-5-0267	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF SQ1 36-5-0337	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS8 36-5-0268	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS9 36-5-0338	Moderate	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS10 36-5-0269	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS11 36-5-0270	Moderate	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS12 36-5-0271	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS13 36-5-0374	Low	Access tracks/ land clearance, associated turbine infrastructure	Direct	Total	Total loss of value
BWF IF1 36-5-0272	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF IF2-RG 36-5-0241	High	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF IF3 36-5-0242	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF IF4 36-5-0243	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF IF5 36-5-0244	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS14 36-5-0252	High	Access tracks/ land clearance, associated turbine infrastructure	Direct	Partial	Partial loss of value
BWF SQ2 36-5-0340	Low	Turbine Pad Access tracks/ land clearance, associated turbine infrastructure	Direct	Total	Total loss of value
BWF AS16 36-5-0246	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS17 36-5-0247	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS18 36-5-0248	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value

Aboriginal site AHIMS ID	Overall Significance	Potential impacts	Type of harm	Degree of harm	Consequence of harm
BWF AS19 36-5-0341	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS20 36-5-0342	High	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS21 36-5-0253	Low	Access tracks/ land clearance, associated turbine infrastructure	Direct	Total	Total loss of value
BWF AS22 36-5-0254	Low	Access tracks/ land clearance, associated turbine infrastructure	Direct	Total	Total loss of value
BWF AS23 36-5-0336	Low	Access tracks	Direct	Partial	Partial loss of value
BWF AS24 36-5-0379	High	Not within Development Footprint, no proposed impacts, may be indirectly impacted by vehicle access	Indirect	Partial	Partial loss of value
BWF AS25 36-5-0251	Low	Access tracks/ land clearance, associated turbine infrastructure	Direct	Partial	Partial loss of value
BWF AS26 36-5-0245	Low	Within Development Footprint, no impacts proposed	None	None	No loss of value
BWF AS27 36-5-0255	Low	Access tracks/ land clearance, associated turbine infrastructure	Direct	Total	Total loss of value
BWF IF6 36-5-0249	Low	Access tracks/ land clearance, associated turbine infrastructure	Direct	Total	Total loss of value
BWF IF7 36-5-0250	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF IF8 36-5-0257	Low	Access tracks/ land clearance, associated turbine infrastructure	Direct	Total	Total loss of value
BWF IF9 36-5-0260	Low	Access tracks/ land clearance, associated turbine infrastructure	Direct	Total	Total loss of value
BWF IF10 36-5-0259	Low	Access tracks/ land clearance, associated turbine infrastructure	Indirect	Total	Total loss of value
BWF AS28 36-5-0346	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS29 36-5-0347	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS30 36-5-0256	Low	Land clearance associated turbine facilities	Direct	Total	Total loss of value
BWF AS31 36-5-0348	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS32 36-5-0258	Low	Access tracks/ land clearance, associated turbine infrastructure	Direct	Total	Total loss of value

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Aboriginal site AHIMS ID	Overall Significance	Potential impacts	Type of harm	Degree of harm	Consequence of harm
BWF AS33 36-5-0224	Low	Within Development Footprint, no impacts proposed	None	None	No loss of value
BWF AS34 36-5-0225	Low	Access tracks/ land clearance, associated turbine infrastructure	Direct	Total	Total loss of value
BWF AS35 36-5-0226	Low	Access tracks/ land clearance, associated turbine infrastructure	Direct	Total	Total loss of value
BWF AS36 36-5-0392	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS37 36-5-0227	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS38 36-5-0228	Moderate	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS39 36-5-0230	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS40 36-5-0229	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS41 36-5-0373	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS42 36-5-0372	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS43 36-5-0371	Moderate	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS44 36-5-0370	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS45 36-5-0231	Low	Access tracks/ land clearance, associated turbine infrastructure	Indirect	Total	Total loss of value
BWF AS46 36-5-0232	Low	Access tracks/ land clearance, associated turbine infrastructure	Direct	Total	Total loss of value
BWF AS47 36-5-0233	Low	Within Development Footprint, no impacts proposed	None	None	No loss of value
BWF AS48 36-5-0234	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS49 36-5-0237	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS50 36-5-0380	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS51 36-5-0235	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value

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Aboriginal site AHIMS ID	Overall Significance	Potential impacts	Type of harm	Degree of harm	Consequence of harm
BWF AS52 36-5-0236	Low	Within Development Footprint, no impacts proposed	None	None	No loss of value
BWF AS53 36-5-0238	Low	Within Development Footprint, no impacts proposed	None	None	No loss of value
BWF AS54 36-5-0240	Low	Within Development Footprint, no impacts proposed	None	None	No loss of value
BWF AS55 36-5-0239	Low	Within Development Footprint, no impacts proposed	None	None	No loss of value
BWF AS56 36-5-0375	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS57 36-5-0376	High	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS58 36-5-0377	High	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS59 36-5-0363	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS60 36-5-0364	Low	Within Development Footprint, no impacts proposed	None	None	No loss of value
BWF AS61 36-5-0365	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS62 36-5-0368	Moderate	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS63 36-5-0367	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS64 36-5-0366	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS65 36-5-0369	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS66 36-5-0382	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS67 36-5-0381	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS68 36-5-0389	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS69 36-5-0388	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS70 36-5-0345	Low	Within Development Footprint, no impacts proposed	None	None	No loss of value

Aboriginal site AHIMS ID	Overall Significance	Potential impacts	Type of harm	Degree of harm	Consequence of harm
BWF AS72 36-5-0387	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS73 36-5-0386	Moderate	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS74 36-5-0383	Moderate	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS75 36-5-0378	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS76 36-5-0384	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF CMT1 36-5-0390	High	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS77 36-5-0385	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS79 36-5-0339	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS80 36-5-0343	Low	Access tracks/ land clearance, associated turbine infrastructure	Direct	Total	Total loss of value
BWF AS81 36-5-0344	Low	Access tracks/ land clearance, associated turbine infrastructure	Direct	Total	Total loss of value
BWF AS82 36-5-0359	Low	Access tracks/ land clearance for switchyard	Direct	Total	Total loss of value
BWF AS83 36-2-0811	Low	Yarrabin Road works	Direct	Total	Total loss of value
BWF AS84 36-5-0352	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS85 36-5-0353	Low	Yarrabin Road works	Direct	Total	Total loss of value
BWF AS86 36-2-0813	Low	Access tracks/ land clearance for switchyard	Direct	Total	Total loss of value
BWF AS87 36-5-0362	Low	Access tracks/ land clearance for switchyard	Direct	Total	Total loss of value
BWF AS88 36-5-0361	Low	Access tracks/ land clearance for switchyard	Direct	Total	Total loss of value
BWF AS89 36-5-0360	Low	Access tracks/ land clearance for switchyard	Indirect	Total	Total loss of value
BWF AS90 36-5-0391	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value

Aboriginal site AHIMS ID	Overall Significance	Potential impacts	Type of harm	Degree of harm	Consequence of harm
BWF AS91 36-5-0349	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF AS92 36-5-0350	Moderate	Land clearance associated turbine facilities	Direct	Total	Total loss of value
BWF AS93 36-5-0351	Low	Within Development Footprint, no impacts proposed	None	None	No loss of value
BWF AS94 36-5-0357	Moderate	Partially across vehicle access track	Indirect	Partial	Partial loss of value
BWF AS95 36-5-0354	Low	Within Development Footprint, no impacts proposed	None	None	No loss of value
BWF CMT2 36-5-0358	High	Not within Development Footprint, no potential impacts	None	None	No loss of value
BWF IF 11 36-2-0812	Low	Turbine Pad Access tracks/ land clearance, associated turbine infrastructure	Direct	Total	Total loss of value
BWF AS96 36-5-0356	Moderate	Access tracks/ land clearance, associated turbine infrastructure	Direct	Partial	Partial loss of value
BWF AS97 36-5-0355	Low	Partially across vehicle access track	Indirect	Total	Total loss of value
Long Tom Ridge OS1 36-5-0223	Low	Not within Development Footprint, no potential impacts	None	None	No loss of value

7.2 Consideration of ecologically sustainable development

7.2.1 Principles of ESD

The NSW *Guide to Investigating, Assessing, and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011) specifies that Ecological Sustainable Development (ESD) must be considered when assessing harm and recommending mitigation measures in relation to Aboriginal objects and sites.

The ESD principles listed below are relevant to the current assessment, and are outlined in Section 3A of the Commonwealth EPBC Act:

a) The integration principle – decision-making processes should effectively integrate both long-term and short-term economic, environmental, social, and equitable considerations.
b) The precautionary principle — namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
c) The inter-generational equity principle — the present generation should ensure that the health, diversity, and productivity of the environment are maintained or enhanced for the benefit of future generations.

d) Conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration.
e) Improved valuation, pricing, and incentive mechanisms—environmental factors should be included in and considered during the valuation of assets and services.

7.2.2 The integration principle

The Project would comply with the integration principle in regard to Aboriginal heritage. This assessment, in partnership with the project RAPs, has identified and considered the Aboriginal heritage values present within the Project Site, and sufficient assessment / investigation of Aboriginal sites within the proposed works area has been undertaken and consideration of the significance of the site by both ELA and the project RAPs.

Artefact scatters assessed as having low-moderate scientific significance will be recommended for surface collection and movement prior to the proposed impacts. Where impacts are proposed to Aboriginal sites identified as having moderate to high scientific significance further assessment will be required.

7.2.3 The precautionary principle

The proposed movement of surface artefacts and the requirement of further assessment represent a precautionary measure to harm to archaeological material at the identified Aboriginal sites. The recorded finds from these actions will inform on past human behaviour and the subsequent written record created through the recording process will create new knowledge. The knowledge generated through the reporting process acts as a measure to mitigate harm.

7.2.4 The principle of intergenerational equity

The proposed works adhere to the principle of intergenerational equity as close as practicable by collating scientific and cultural information on former Aboriginal occupation of the Project Site through survey and RAP review of the ACHA for this Project. The collation of this data has enhanced the intergenerational equity of this proposal and benefits future generations.

7.2.5 Conservation of biological diversity and ecological integrity

Cultural values and their relation to biodiversity are intertwined with the lives of Aboriginal people and their use of the landscape. RAP groups have been provided the opportunity to comment on these cultural values throughout the ACHA process for this project. However, it is beyond the scope of this assessment to directly assess the biological impacts of the Project.

7.2.6 Improved valuation, pricing, and incentive mechanisms

The proponent for this project is bound by the development and planning controls enforced by Dubbo Regional/Mid-Western Regional Councils. Cultural heritage protection requirements constitute a key component of these planning controls, and privately-owned developments within these LGA's are required to assess all environmental / cultural heritage impacts, avoid said impacts (where possible), work with the community / relevant stakeholder groups, and implement mitigation and management measures which strike a balance between a proposed development and protecting Aboriginal cultural heritage values.

7.2.7 Cumulative Impact Assessment

Cumulative impact of any development on Aboriginal sites assesses the extent of the proposed impact on the site and how this will affect both the proportion of this type of Aboriginal site in the area and the impact this destruction will have on Aboriginal cultural heritage values generally in the area. For example, if an artefact scatter is destroyed in the course of a proposed development, how many site artefact scatters are likely to remain in that area and how will the destruction of that site affect the overall archaeological evidence remaining in that area. If a site type that was once common in an area becomes rare, the loss of that site (and site type) will affect our ability to understand past Aboriginal land uses, will result in an incomplete archaeological record and will negatively affect intergenerational equity.

EFFECT ON THE PROPORTION OF THIS TYPE OF ABORIGINAL SITE IN THE AREA

One method of calculating the proportion of this site type remaining in the area is to use the results of an AHIMS search. A search of the AHIMS register was undertaken by ELA on the 11 November 2024 to capture the full archaeological record within he Project site and in the vicinity (see section 4.1 for full details). The search resulted in the identification of 272 sites, 7 are restricted and not located within the Project site. Giving a total of 265 Aboriginal sites within a 30km radius, of the 265 only 110 are located within the Project site, of these 110 only 33 Aboriginal sites, all artefact scatters or isolated finds will be impacted by the current design and proposed works.

Site Type	Number of sites	Percentage of all sites (%)
Artefact	239	90.2
Artefact, Stone Quarry	5	1.9
Artefact, Hearth	2	0.75
Artefact, Hearth, Burial	1	0.4
Artefact, PAD	1	0.4
Aboriginal resource and Gathering, Artefact	1	0.4
Modified Tree	4	1.5
Modified Tree, Burial	1	0.4
Stone quarry	6	2.3
Ochre Quarry	1	0.4
Potential Archaeological Deposit (PAD)	3	1.1
Water Hole	1	0.4
Total number of sites	**265**	**100**

Stone artefact scatters are the most abundant site type in the archaeological record for the region, the effect on the proportion of Aboriginal site types would not be detrimental to the knowledge and understanding of Aboriginal land use. These site types have been recorded during the archaeological survey and site information has been registered with AHIMS.

8. Mitigation and management

8.1 Guiding principles

The overall guiding principle for cultural heritage management is that where possible Aboriginal sites should be conserved. If conservation is not practicable, measures should be taken to mitigate against impacts to Aboriginal sites.

The nature of the mitigation measures recommended is based on the assessed significance of the sites. The final recommendations would also be informed by cultural significance, which will be discussed by the Aboriginal community in their responses during the next stage of consultation.

8.2 Management and Mitigation Strategies – Aboriginal Objects

CONSERVATION/ AVOIDANCE

Conservation is a preferred management option in any situation, however, is not always feasible to achieve. Such a strategy is generally adopted in relation to sites which are assessed to be of high cultural and scientific significance but can be adopted in relation to any site type.

When conservation is adopted as a management option it may be necessary to implement various strategies to ensure Aboriginal object locales are not inadvertently destroyed or disturbed during construction works or within the context of the life of the development project. Such procedures are essential when development works are to proceed within close proximity to identified sites.

All Aboriginal sites located outside the Development Footprint will be avoided and a construction management plan should be implemented, and a Heritage induction be provided to construction staff and contractors.

BWF IF2 - RG is of high cultural significance and is located outside the Development Footprint. It was identified within the ACHA Report prepared as part of the EIS to avoid this site. The Development Footprint was amended to avoid the impacts to the Aboriginal site, conserving the cultural resource.

BWF AS14 is a high significance site in close proximity to a quartz seam and a Basalt out crop. This site had a range of lithic materials and tool types exposed across a vehicle track and a sheet eroded surface. This site will be partially impacted by the development corridor. The larger significant portion of the Aboriginal site is located outside the Development Footprint and will not be impacted by the proposed works. Movement of Aboriginal objects should be the mitigation measure and the remaining portion of the Aboriginal site should be flagged to protect from indirect impacts.

BWF AS24 is a high significant camp site on a raised landform adjacent to Oakey Creek and tributary of the Macquarie River. This site had a range of lithic materials and tool types exposed across a vehicle track and a sheet eroded surface. This site is not located within the development corridor but is in close proximity to the proposed vehicle access for the powerline easement on the southern side of Oakey Creek. This close proximity has the potential for indirect impacts and management measures need to be implemented for conservation. Protective fencing and signage needs to be in place prior to any activities being undertaken for the proposed development. Culture awareness needs to be provided to any contractors working on the project site to ensure cultural sites are protected.

BWF AS20 is moderate density artefact scatter with high cultural significance due to the range of lithic material and high density of backed points. The Aboriginal site has been previously impacted by the construction of a dam but there is potential for intact deposits. This site is not within the current Development Footprint and should be conserved. If it was to be impacted, then further subsurface investigations will be required. Surface collection would also be required to mitigate impacts.

BWF AS58 is a moderate density artefact scatter with high cultural significance on an elevated landform adjacent to a floodplain and in close proximity to Oakey Creek. This Aboriginal site is an exposed artefact scatter on an eroded landform with no archaeological potential. The site is in proximity to BWF AS24 and both Aboriginal sites could be representative of a continuous seasonal cultural landscape. This site is within the Project site but outside the Development Footprint, there are no proposed impacts.

BWF CMT1 and BWF CMT2 are high significance culturally scarred trees located within the project site. Both culturally modified trees are not within the development corridor and no impacts area proposed. Culture awareness needs to be provided to any contractors working on the project site to ensure cultural sites are protected.

BWF AS57 is a low density artefact scatter located at the junction of two existing property access tracks. This site has been heavily eroded and disturbed by past land use however the site is of high cultural significance because of a rare stone implement and close proximity to BWF AS24 and BWF AS58. Located within the project site but outside the development corridor, there are no proposed impacts. Culture awareness needs to be provided to any contractors working on the project site to ensure cultural sites are protected.

BWF AS38 is moderate density artefact scatter and due to the raised landform adjacent to permanent water there is potential for intact deposits. This site is not within the current Development Footprint and should be avoided. If it was to be impacted, then further subsurface investigations will be required. Surface collection would also be required to mitigate impacts.

BWF AS9, BWF AS11, BWF AS43, BWF AS62, BWF AS73, BWF AS74, and BWF AS94 are moderate significance sites. They will not be impacted by the current Development Footprint. If there are changes to the Development Footprint then 'Movement of Aboriginal objects' by the RAPs and a qualified archaeologist would be required to mitigate impacts.

All other Aboriginal sites within the Development Footprint have an overall low significance, but hold high cultural value to the Wiradjuri people, therefore it is recommended that impacts to these be avoided where possible.

FURTHER INVESTIGATION IF IMPACTS ARE PROPOSED IN FUTURE

The field survey has been focused on recording lithic material present on visible ground surfaces. Further archaeological investigation would entail subsurface investigations undertaken as a test excavation program for the purposes of identifying the presence of artefact bearing soil deposits and understanding their nature, extent, integrity, and significance.

Further archaeological investigation in the form of subsurface test excavation is necessary when it can be demonstrated that sub-surface Aboriginal objects with potential conservation values have a high

probability of being present in an area, or if and when the area cannot be substantially avoided by a proposed activity (NSW DECCW 2010: 24).

Several Aboriginal sites (BWF AS9, BWF AS20, BWF AS38, BWF AS62, and BWF AS93) located within the Project site have been identified as having potential archaeological deposits. There are no proposed impacts to these Aboriginal sites, if changes to the Development Footprint will impact these Aboriginal sites, further archaeological investigations would be required to understand the nature and extent of the Aboriginal sites.

BWF AS9 was identified on lower slope of a low lying spur. The gentle slope has been subjected to erosional process from land clearance. An artefact scatter was exposed eroding out of the A1 horizon of the solodic soils. The exposed soil profile indicates there is potentially intact archaeological deposit surrounding the scatter with an average depth of 200mm. Key stone tools included backed basalt points and a broken ground edge axe. This Aboriginal site was identified between survey units and is located outside the development corridor, there are no proposed impacts.

BWF AS20 is a high density artefact scatter exposed by the construction of a dam. The Aboriginal site has been heavily disturbed by this construction and natural erosional processes. The scatter is located within an open depression between two ridgelines and intact soil profile was visible on the lower slopes. There is the potential for further Aboriginal objects to be identified insitu. This Aboriginal site was identified between survey units and is located outside the development corridor, there are no proposed impacts.

BWF AS38 was an artefact scatter identified on and eroded vehicle track with further Aboriginal objects scattered in a wider extent. The location of this Aboriginal site is on a gentle sloping landform adjacent to a tributary of Oakey Creek. The scatter is on a raised bank and is very similar to larger Aboriginal sites such as BWF AS24 and BWF AS58. There is the potential for a larger Aboriginal campsite to be present. The sheltered location is close to natural resources. This Aboriginal site was identified within an earlier version of the development corridor and test excavations were recommended to understand the nature and extent of the archaeological resource. BWF AS38 is not located within the current Development Footprint and there are no proposed impacts.

BWF AS62 was an artefact scatter identified in an open flat valley landform between two ridgelines. The scatter is in a similar gentle sloping landform to BWF AS20. Several minor drainage lines converged in the vicinity. The archaeological deposit would likely be shallow, but the location appeared relatively undisturbed. Backed basalt points and crystal quartz flakes were amongst the assemblage. This Aboriginal site was identified between survey units and is located outside the development corridor, there are no proposed impacts.

BWF AS93 is a low density artefact scatter identified in a gully erosion caused by a dam construction and stock impacts. The soil profile is shallow and has been heavily disturbed by the grazing activities. The presence of this scatter indicates a larger campsite may be present in the vicinity. The landform is gently sloping to relatively flat in close proximity to the Cudgegong River. Any archaeological resource within the development corridor has been disturbed, subsurface investigations within the footprint would not provide knowledge to the nature and extent of the Aboriginal site. There is potential intact archaeological deposit within the high water mark of Burrendong Dam beyond the development corridor. This Aboriginal site was identified within the development corridor, there are no proposed

impacts, the potential archaeological deposit is located outside the development corridor. If changes to the Development Footprint will likely impact this Aboriginal site further archaeological investigations would be required to understand the nature and extent of the archaeological resource.

BWF IF5 was an isolated basalt flake identified on a moderate slope within an eroded animal track. The isolated find is located downslope from a relatively flat depression between two low lying rocky outcrops. The Aboriginal representatives identified this location as a potential campsite with a natural fresh water source. The area identified as being a potential campsite is not located within the development corridor and no impacts are proposed. If changes to the Development Footprint will likely impact this Aboriginal site further archaeological investigations would be required to understand the nature and extent of the archaeological resource.

MITIGATED IMPACTS

Mitigated impact usually takes the form of partial impacts only (i.e., conservation of part of an artefact locale or Survey Unit) and/or salvage in the form of further research and archaeological analysis prior to impacts. Such a management strategy is generally appropriate when Aboriginal objects are assessed to be of moderate or high significance to the scientific and/or Aboriginal community and when avoidance of impacts and hence full conservation is not feasible. Salvage can include the surface collection or subsurface excavation of Aboriginal objects and subsequent research and analysis.

Aboriginal object locales in exposed areas should be subject to 'Movement of Aboriginal object only' whereby the Aboriginal community is given the opportunity to collect the visible surface expression of the Aboriginal site and relocate it to a safe place beyond the impact footprint, but keeping the cultural values on country. It would also be culturally appropriate to salvage artefacts from certain sites of high significance and certain Aboriginal objects can used for cultural teaching and training future generations.

Prior to movement of the Aboriginal objects, detailed analysis should be undertaken by a qualified person to well document the Aboriginal site prior to impacts. The information can be used for improving our understanding the cultural landscape.

The archaeological investigations sampled the project site with the main focus to identify the cultural values within the development corridor. There were limitations to the accessibility of several turbine and power pole locations. Areas of the development corridor that have not been subject to archaeological survey should be inspected prior to development impacts to record Aboriginal objects and register the information with AHIMS. If sites of moderate to high significance are identified, then further mitigations may be required.

A chance find procedure should be implemented to assess the significance of an Aboriginal site identified following approvals and in consultation with the registered Aboriginal groups the appropriate management or mitigation measure should be undertaken (Appendix F).

UNMITIGATED IMPACTS

Unmitigated impact to Aboriginal objects can be given consideration when they are assessed to be of low archaeological and cultural significance, and otherwise in situations where conservation or limiting the extent of impacts is simply not feasible. All sites have had some level of mitigation implemented.

Archaeological field survey has recorded information on existing Aboriginal objects within the Development Footprint. For low significance isolated finds in a disturbed context this is adequate mitigation.

A detailed list of recommended mitigation and management measures for the sites will be outlined below. All Aboriginal sites identified by this assessment will be registered with AHIMS.

Table 17: Management and mitigations for Aboriginal sites within the Development Footprint

Aboriginal site AHIMS ID	Overall Significance	Potential impacts	Mitigation measures
BWF AS1 36-5-0261	Low	Not within Development Footprint, no potential impacts	None
BWF AS2 36-5-0262	Low	Not within Development Footprint, no potential impacts	None
BWF AS3 36-5-0263	Low	Not within Development Footprint, no potential impacts	None
BWF AS4 36-5-0264	Low	Not within Development Footprint, no potential impacts	None
BWF AS5 36-5-0265	Low	Not within Development Footprint, no potential impacts	None
BWF AS6 36-5-0266	Low	Not within Development Footprint, no potential impacts	None
BWF AS7 36-5-0267	Low	Not within Development Footprint, no potential impacts	None
BWF SQ1 36-5-0337	Low	Not within Development Footprint, no potential impacts	None
BWF AS8 36-5-0268	Low	Not within Development Footprint, no potential impacts	None
BWF AS9 36-5-0338	Moderate	Not within Development Footprint, no potential impacts	None
BWF AS10 36-5-0269	Low	Not within Development Footprint, no potential impacts	None
BWF AS11 36-5-0270	Moderate	Not within Development Footprint, no potential impacts	None
BWF AS12 36-5-0271	Low	Not within Development Footprint, no potential impacts	None
BWF AS13 36-5-0374	Low	Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF IF1 36-5-0272	Low	Not within Development Footprint, no potential impacts	None

Aboriginal site AHIMS ID	Overall Significance	Potential impacts	Mitigation measures
BWF IF2-RG 36-5-0241	High	Not within Development Footprint, no potential impacts	None
BWF IF3 36-5-0242	Low	Not within Development Footprint, no potential impacts	None
BWF IF4 36-5-0243	Low	Not within Development Footprint, no potential impacts	None
BWF IF5 36-5-0244	Low	Not within Development Footprint, no potential impacts	None
BWF AS14 36-5-0252	High	Access tracks/ land clearance, associated turbine infrastructure	Avoidance, If cannot be avoided, then movement of Aboriginal objects and detailed recording on AHIMS.
BWF SQ2 36-5-0340	Low	Turbine Pad Access tracks/ land clearance, associated turbine infrastructure	Unmitigated impacts Site cannot be moved; Aboriginal representatives may be given the option to salvage some of the lithic resource for personal use or teaching.
BWF AS16 36-5-0246	Low	Not within Development Footprint, no potential impacts	None
BWF AS17 36-5-0247	Low	Not within Development Footprint, no potential impacts	None
BWF AS18 36-5-0248	Low	Not within Development Footprint, no potential impacts	None
BWF AS19 36-5-0341	Low	Not within Development Footprint, no potential impacts	None
BWF AS20 36-5-0342	High	Not within Development Footprint, no potential impacts	None
BWF AS21 36-5-0253	Low	Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS22 36-5-0254	Low	Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS23 36-5-0336	Low	Access tracks	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS24 36-5-0379	High	Not within Development Footprint, no proposed impacts, may be indirectly impacted by vehicle access	Signage and fencing should be erected around the Aboriginal during works to ensure no harm.
BWF AS25 36-5-0251	Low	Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.

Aboriginal site AHIMS ID	Overall Significance	Potential impacts	Mitigation measures
BWF AS26 36-5-0245	Low	Within Development Footprint, no impacts proposed	Signage to avoid site. If change in design plans, then movement of Aboriginal objects and detailed recording on AHIMS.
BWF AS27 36-5-0255	Low	Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF IF6 36-5-0249	Low	Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF IF7 36-5-0250	Low	Not within Development Footprint, no potential impacts	None
BWF IF8 36-5-0257	Low	Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF IF9 36-5-0260	Low	Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF IF10 36-5-0259	Low	Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS28 36-5-0346	Low	Not within Development Footprint, no potential impacts	None
BWF AS29 36-5-0347	Low	Not within Development Footprint, no potential impacts	None
BWF AS30 36-5-0256	Low	Land clearance associated turbine facilities	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS31 36-5-0348	Low	Not within Development Footprint, no potential impacts	None
BWF AS32 36-5-0258	Low	Access tracks/ land clearance, associated turbine infrastructure	** this site has been destroyed by recent road grading; no mitigations required
BWF AS33 36-5-0224	Low	Within Development Footprint, no impacts proposed	Signage to avoid site If change in design plans, then movement of Aboriginal objects and detailed recording on AHIMS.
BWF AS34 36-5-0225	Low	Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS35 36-5-0226	Low	Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS36 36-5-0392	Low	Not within Development Footprint, no potential impacts	None

Aboriginal site AHIMS ID	Overall Significance	Potential impacts	Mitigation measures
BWF AS37 36-5-0227	Low	Not within Development Footprint, no potential impacts	None
BWF AS38 36-5-0228	Moderate	Not within Development Footprint, no potential impacts	None
BWF AS39 36-5-0230	Low	Not within Development Footprint, no potential impacts	None
BWF AS40 36-5-0229	Low	Not within Development Footprint, no potential impacts	None
BWF AS41 36-5-0373	Low	Not within Development Footprint, no potential impacts	None
BWF AS42 36-5-0372	Low	Not within Development Footprint, no potential impacts	None
BWF AS43 36-5-0371	Moderate	Not within Development Footprint, no potential impacts	None
BWF AS44 36-5-0370	Low	Not within Development Footprint, no potential impacts	None
BWF AS45 36-5-0231	Low	Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS46 36-5-0232	Low	Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS47 36-5-0233	Low	Within Development Footprint, no impacts proposed	Signage to avoid site If change in design plans, then movement of Aboriginal objects and detailed recording on AHIMS.
BWF AS48 36-5-0234	Low	Not within Development Footprint, no potential impacts	None
BWF AS49 36-5-0237	Low	Not within Development Footprint, no potential impacts	None
BWF AS50 36-5-0380	Low	Not within Development Footprint, no potential impacts	None
BWF AS51 36-5-0235	Low	Not within Development Footprint, no potential impacts	None
BWF AS52 36-5-0236	Low	Within Development Footprint, no impacts proposed	Signage to avoid site
BWF AS53 36-5-0238	Low	Within Development Footprint, no impacts proposed	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.

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Aboriginal site AHIMS ID	Overall Significance	Potential impacts	Mitigation measures
BWF AS54 36-5-0240	Low	Within Development Footprint, no impacts proposed	Signage to avoid site
BWF AS55 36-5-0239	Low	Within Development Footprint, no impacts proposed	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS56 36-5-0375	Low	Not within Development Footprint, no potential impacts	None
BWF AS57 36-5-0376	Low	Not within Development Footprint, no potential impacts	None
BWF AS58 36-5-0377	High	Not within Development Footprint, no potential impacts	None
BWF AS59 36-5-0363	Low	Not within Development Footprint, no potential impacts	None
BWF AS60 36-5-0364	Low	Within Development Footprint, no impacts proposed	None
BWF AS61 36-5-0365	Low	Not within Development Footprint, no potential impacts	None
BWF AS62 36-5-0368	Moderate	Not within Development Footprint, no potential impacts	None
BWF AS63 36-5-0367	Low	Not within Development Footprint, no potential impacts	None
BWF AS64 36-5-0366	Low	Not within Development Footprint, no potential impacts	None
BWF AS65 36-5-0369	Low	Not within Development Footprint, no potential impacts	None
BWF AS66 36-5-0382	Low	Not within Development Footprint, no potential impacts	None
BWF AS67 36-5-0381	Low	Not within Development Footprint, no potential impacts	None
BWF AS68 36-5-0389	Low	Not within Development Footprint, no potential impacts	None
BWF AS69 36-5-0388	Low	Not within Development Footprint, no potential impacts	None
BWF AS70 36-5-0345	Low	Within Development Footprint, no impacts proposed	Signage to avoid site If change in design plans, then movement of Aboriginal objects and detailed recording on AHIMS.
BWF AS72 36-5-0387	Low	Not within Development Footprint, no potential impacts	None

Aboriginal site AHIMS ID	Overall Significance	Potential impacts	Mitigation measures
BWF AS73 36-5-0386	Moderate	Not within Development Footprint, no potential impacts	None
BWF AS74 36-5-0383	Moderate	Not within Development Footprint, no potential impacts	None
BWF AS75 36-5-0378	Low	Not within Development Footprint, no potential impacts	None
BWF AS76 36-5-0384	Low	Not within Development Footprint, no potential impacts	None
BWF CMT1 36-5-0390	High	Not within Development Footprint, no potential impacts	None
BWF AS77 36-5-0385	Low	Not within Development Footprint, no potential impacts	None
BWF AS79 36-5-0339	Low	Not within Development Footprint, no potential impacts	None
BWF AS80 36-5-0343	Low	Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS81 36-5-0344	Low	Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS82 36-5-0359	Low	Access tracks/ land clearance for switchyard	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS83 36-2-0811	Low	Yarrabin Road works	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS84 36-5-0352	Low	Not within Development Footprint, no potential impacts	None
BWF AS85 36-5-0353	Low	Yarrabin Road works	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS86 36-2-0813	Low	Access tracks/ land clearance for switchyard	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS87 36-5-0362	Low	Access tracks/ land clearance for switchyard	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS88 36-5-0361	Low	Access tracks/ land clearance for switchyard	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.

Aboriginal site AHIMS ID	Overall Significance	Potential impacts	Mitigation measures
BWF AS89 36-5-0360	Low	Access tracks/ land clearance for switchyard	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS90 36-5-0391	Low	Not within Development Footprint, no potential impacts	None
BWF AS91 36-5-0349	Low	Not within Development Footprint, no potential impacts	None
BWF AS92 36-5-0350	Moderate	Land clearance associated turbine facilities	Avoidance, If cannot be avoided, then movement of Aboriginal objects and detailed recording on AHIMS.
BWF AS93 36-5-0351	Low	Within Development Footprint, no impacts proposed	None
BWF AS94 36-5-0357	Moderate	Within Development Footprint, will be partially impacted by use of vehicle track	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS95 36-5-0354	Low	Within Development Footprint, no impacts proposed	None
BWF CMT2 36-5-0358	High	Not within Development Footprint, no potential impacts	None
BWF IF 11 36-2-0812	Low	Turbine Pad Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS96 36-5-0356	Moderate	Access tracks/ land clearance, associated turbine infrastructure	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.
BWF AS97 36-5-0355	Low	Within Development Footprint, may be impacted by use and maintenance of vehicle access track	Movement of Aboriginal objects across the vehicle track and detailed recording on AHIMS.

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9. Recommendations

The following recommendations are based on consideration of:

- Statutory requirements under the NPW Act as amended.
- The results of the Aboriginal archaeological survey
- The interests of the Aboriginal stakeholder groups
- The proposed impacts of the project works.

Summary of findings:

- A total of 110 Aboriginal sites were identified during the archaeological assessments for the Project, 43 of which have been identified within the Development Footprint, 31 will be directly impacted and the remaining 12 may be impacted by the Project.
- The majority of the Aboriginal sites within the Development Footprint have generally low density and shallow soils in a disturbed context such that there are no potential archaeological deposits. These sites have low overall significance and movement of the Aboriginal objects by the RAPs is adequate mitigation prior to impacts (Table 15 and Table 17).
- Eighteen (18) Aboriginal sites have been assessed as having moderate or high overall significance. Two (2) moderate significant Aboriginal sites (BWF AS92 and AS96) will be directly impacted by the proposed works, BWF AS 94 will be indirectly impacted. Two (2) high overall significant Aboriginal sites (BWF AS14 and BWF AS24) will be directly or indirectly impacted by the proposed works. Avoidance of impacts to these sites is the preferred management option however if avoidance is not feasible, mitigation measures should be implemented (Table 17)
- Subsurface investigations are not required at this stage of the investigations, no impacts are proposed for areas identified as having archaeological potential. If future micro sitting or changes to design may cause impact, then subsurface investigations and associated reporting and impact assessment will be required.
- Movement of Aboriginal objects is recommended as an appropriate mitigation by the Aboriginal community, see Table 17.
- No intangible cultural values have been identified within the Development Footprint. The surrounding area has high social and cultural values associated with the Macquarie River and the resources the landscape would have provided. Culturally sensitive areas have been identified within the project boundary, earlier development corridors had the potential to cause harm. The Development Footprint has been amended to avoid harm and the current proposed development will not impact these culturally sensitive areas.
- The archaeological survey strategy was considered adequate to understand the archaeological potential for the Development Footprint and surrounding area. Areas that were not covered by the survey should be traversed to identify Aboriginal objects and to record them with AHIMS as a mitigation measure.
- There is the potential for further Aboriginal sites to be located within Development Footprint. Therefore, prior to preliminary clearance and grading of the impact footprint the Aboriginal community should be provided the opportunity to identify any sites that may be present and to

record and assess the Aboriginal cultural values and implement the mitigation measures prior to impacts.

- There is the potential for further Aboriginal sites to be located within the landscape outside the Development Footprint. Therefore, if the Development Footprint changes, further assessment will be required to identify any sites that may be present and to assess the Aboriginal cultural values and any potential impacts.

It is therefore recommended that:

RECOMMENDATION 1 – AVOIDANACE AND CONSERVATION

- Avoidance and conservation should always be the preferred option for cultural management. If avoidance cannot be achieved, then mitigation measures outlined in Table 17 should be implemented.
- Ground disturbance should be kept to a minimum and be discrete where possible. Where possible existing tracks, access corridors and access points should be used as they have previously been impacted.

RECOMMENDATION 2 – MANAGEMENT AND MITIGATIONS

- It is recommended that prior to clearance and construction activities, areas that could not be accessed during the archaeological surveys should be inspected, chance find sites recorded and management measures proposed in section 8 should be implemented. If sites are assessed as moderate to high, avoidance should be considered with micro siting the development. If avoidance is not possible then management of Aboriginal sites should be implemented.
- The proponent should develop a Cultural Heritage Management Plan (CHMP) which documents the procedures to be followed for impact mitigation and management.
    - The development of an appropriate CHMP should be undertaken in consultation with an archaeologist, the Registered Aboriginal Parties and Heritage NSW
    - It would aim to provide clear guidance as to allowable impacts and to ensure the effectiveness and reliability of mitigation and management strategies which may include surface collection and movement of Aboriginal objects, if required
    - It will provide information on management of Aboriginal sites outside the Development Footprint.
    - It will provide management guidance of Aboriginal sites identified during pre-clearance mitigation measures within the Development Footprint.

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Appendix A AHIMS Database Searches

Office of Environment & Heritage

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 16934 Burrendong
Client Service ID : 574648

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-5-0080	(refer to 36-5-0055)Open site 1/12 mile	AGD	55	714490	6396480	Open site	Deleted	Artefact : -		
	Contact	Recorders	NPWS - Bulga					Permits		
36-5-0082	LOC 5A and 6A	AGD	55	721310	6387759	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.David Maynard					Permits	1739	
36-5-0084	Leaning Oak Creek 3A	AGD	55	723100	6387700	Open site	Valid	Artefact : 38		98971
	Contact	Recorders	Murong Gialinga Aboriginal and Torres Strait Islander Corporation					Permits	1921	
36-5-0081	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	Contact	Recorders	Mr.David Maynard					Permits	1739	
36-5-0083	Yarrabin Rd Grattai	AGD	55	720520	6387102	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Giles (dup ID#12832) Hamm					Permits		
36-5-0105	Sport and Recreaction Burrendong 11	GDA	55	699287	6379291	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0106	Sport and Recreaction Burrendong 12	GDA	55	699056	6379537	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0098	Sport and Recreaction Burrendong 4	GDA	55	698947	6378844	Open site	Valid	Artefact : -, Stone Quarry : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0099	Sport and Recreaction Burrendong 5	GDA	55	699025	6378774	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0100	Sport and Recreaction Burrendong 6	GDA	55	699177	6378737	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0101	Sport and Recreaction Burrendong 7	GDA	55	699150	6378950	Open site	Valid	Water Hole : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0102	Sport and Recreaction Burrendong 8	GDA	55	699234	6379066	Open site	Valid	Artefact : -, Stone Quarry : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0103	Sport and Recreaction Burrendong 9	GDA	55	699407	6379257	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0104	Sport and Recreaction Burrendong 10	GDA	55	699411	6379273	Open site	Valid	Stone Quarry : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0198	Commissioners Lane-OS1	GDA	55	692596	6369047	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Miss.Stephanie Rusden					Permits		
36-5-0005	Burrandong;	AGD	55	696155	6379438	Open site	Valid	Modified Tree (Carved or Scarred) : -, Burial : -	Burial/s,Carved Tree	65

Report generated by AHIMS Web Service on 09/03/2021 for Charlotte Bradshaw for the following area at Datum :GDA, Zone : 55, Eastings : 691578 - 725578, Northings : 6365627 - 6399627 with a Buffer of 0 meters. Additional Info : ACHA. Number of Aboriginal sites and Aboriginal objects found is 104

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Page 1 of 7

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Extensive search - Site list report

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Client Service ID : 574648

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	David Bell,R Etheridge					Permits		
36-5-0009	Macquarie River;Gigmalarie Creek;	AGD	55	694457	6387889	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	G.W. Althofer,Michael Pearson					Permits		
36-5-0011	Ilgingerry Creek;	AGD	55	702555	6389003	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Mr.Warwick Pearson					Permits		
36-5-0016	Bonada Creek;	AGD	55	693989	6380178	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Mr.Warwick Pearson					Permits		
36-5-0047	BD2;	AGD	55	693045	6384040	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Jon Winston-Gregson					Permits		
36-5-0049	The Point;	AGD	55	698835	6379299	Open site	Valid	Ochre Quarry : -	Ochre Quarry	
	Contact	Recorders	Bill Allen					Permits		
36-5-0051	OC-OS-1;	AGD	55	692160	6371320	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
36-5-0019	Eagle Beagle Creek;Eagle Beagle Creek 1;	AGD	55	694872	6378102	Open site	Valid	Artefact : -	Open Camp Site	232,102800
	Contact	Recorders	L Cubis					Permits		
36-5-0032	Bonada Creek;Mumbil;	AGD	55	693076	6380212	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	ASRSYS					Permits		
36-5-0033	Dirt Hole Creek;Mumbil;	AGD	55	697919	6376798	Open site	Valid	Hearth : -, Artefact : -	Open Camp Site	
	Contact	Recorders	T.E. Whittingham					Permits		
36-5-0034	Sunnyside;Mumbil;	AGD	55	696673	6379842	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	ASRSYS					Permits		
36-5-0035	Tara Foreshores;Mumbil;	AGD	55	698180	6377882	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	T.E. Whittingham					Permits		
36-5-0036	Fashions Mount;Mumbil;	AGD	55	697844	6380688	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	ASRSYS					Permits		
36-5-0040	CM 1;	AGD	55	692189	6391834	Open site	Valid	Hearth : -, Artefact : -	Open Camp Site	1543
	Contact	Recorders	Mary Dallas Consulting Archaeologists (MDCA),Miss.Lisa Smith					Permits		
36-5-0041	CM 2;	AGD	55	692350	6392650	Open site	Valid	Artefact : -	Open Camp Site	1543
	Contact	Recorders	Mary Dallas Consulting Archaeologists (MDCA),Miss.Lisa Smith					Permits		
36-5-0046	BD1;	AGD	55	696967	6384237	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Jon Winston-Gregson					Permits		
36-5-0001	Burganbungie;Gigmalarie;	AGD	55	694445	6387728	Open site	Valid	Hearth : -, Artefact : -	Open Camp Site	102800
	Contact	Recorders	Robert "Ben" Gunn					Permits		
36-5-0002	Burrandong;Burrandong Arboretum;	AGD	55	697180	6379981	Open site	Valid	Hearth : 1, Burial : 1, Artefact : -	Burial/s,Open Camp Site	

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Page 2 of 7

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Client Service ID : 574648

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	G.W. Althofer					Permits		
36-5-0094	Sport and Recreaction Burrendong	GDA	55	699006	6379278	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0095	Sport and Recreaction Burrendong 1	GDA	55	698964	6379205	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0096	Sport and Recreaction Burrendong 2	GDA	55	698962	6379032	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0097	Sport and Recreaction Burrendong 3	GDA	55	698947	6378844	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0107	Sport and Recreaction Burrendong 13	GDA	55	698996	6379390	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0108	Sport and Recreaction Burrendong 14	GDA	55	699088	6379430	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0109	Sport and Recreaction Burrendong 15	GDA	55	699206	6379398	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0126	Sport and Recreaction Burrendong 32	GDA	55	699415	6380351	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0127	Sport and Recreaction Burrendong 33	GDA	55	699545	6380423	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0128	Sport and Recreaction Burrendong 34	GDA	55	699546	6380424	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0129	Sport and Recreaction Burrendong 35	GDA	55	699868	6380986	Open site	Valid	Stone Quarry : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0130	Sport and Recreaction Burrendong 36	GDA	55	699998	6381070	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0131	Sport and Recreaction Burrendong 37	GDA	55	699563	6381181	Open site	Valid	Artefact : -, Stone Quarry : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0132	Sport and Recreaction Burrendong 38	GDA	55	699316	6380681	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0191	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	Contact Mr.Bradley Bliss	Recorders	Mr.Bradley Bliss,Wellington Valley Wiradjuri Aboriginal Corporation					Permits		
36-5-0192	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	Contact Mr.Bradley Bliss	Recorders	Mr.Bradley Bliss,Wellington Valley Wiradjuri Aboriginal Corporation					Permits		

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36-5-0196	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	Contact	Recorders	Mr.Bradley Bliss,Wellington Valley Wiradjuri Aboriginal Corporation					Permits		
36-5-0197	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	Contact	Recorders	Mr.Bradley Bliss,Wellington Valley Wiradjuri Aboriginal Corporation					Permits		
36-5-0204	UWFSA11_AS1	GDA	55	703400	6398331	Open site	Valid	Artefact : -		
	Contact	Recorders	Austral Archaeology - Wollongong,Austral Archaeology - Wollongong,Mr.Ricardo S					Permits		
36-5-0205	UWFSA22_AS1	GDA	55	701385	6394602	Open site	Valid	Artefact : -		
	Contact	Recorders	Austral Archaeology - Wollongong,Austral Archaeology - Wollongong,Mr.Ricardo S					Permits		
36-5-0206	UWFSA22_IF4	GDA	55	701458	6394688	Open site	Valid	Artefact : -		
	Contact	Recorders	Austral Archaeology - Wollongong,Mr.Ricardo Servin					Permits		
36-5-0207	UWFSA22_IF5	GDA	55	701308	6394477	Open site	Valid	Artefact : -		
	Contact	Recorders	Austral Archaeology - Wollongong,Mr.Ricardo Servin					Permits		
36-5-0208	UWFSA11_ IF 3	GDA	55	702177	6398181	Open site	Valid	Artefact : -		
	Contact	Recorders	Austral Archaeology - Wollongong,Mr.Ricardo Servin					Permits		
36-5-0209	UWFSA11_ IF 4	GDA	55	703430	6397771	Open site	Valid	Artefact : -		
	Contact	Recorders	Austral Archaeology - Wollongong,Mr.Ricardo Servin					Permits		
36-5-0210	UWFSA11_ IF 1	GDA	55	703509	6398409	Open site	Valid	Artefact : -		
	Contact	Recorders	Austral Archaeology - Wollongong,Mr.Ricardo Servin					Permits		
36-5-0211	UWFSA11a_ IF 1	GDA	55	703775	6399006	Open site	Valid	Artefact : -		
	Contact	Recorders	Austral Archaeology - Wollongong,Mr.Ricardo Servin					Permits		
36-5-0212	UWFSA11a_ IF 2	GDA	55	703817	6398957	Open site	Valid	Artefact : -		
	Contact	Recorders	Austral Archaeology - Wollongong,Mr.Ricardo Servin					Permits		
36-5-0213	UWFSA12_AS1	GDA	55	704852	6397983	Open site	Valid	Artefact : -		
	Contact	Recorders	Austral Archaeology - Wollongong,Mr.Ricardo Servin					Permits		
36-5-0214	UWFSA11_AS3	GDA	55	702995	6398604	Open site	Valid	Artefact : -		
	Contact	Recorders	Austral Archaeology - Wollongong,Mr.Ricardo Servin					Permits		
36-5-0215	UWFSA11_AS5	GDA	55	702748	6398097	Open site	Valid	Artefact : -		
	Contact	Recorders	Austral Archaeology - Wollongong,Mr.Ricardo Servin					Permits		
36-5-0216	UWFSA11_ IF 2	GDA	55	702598	6398158	Open site	Valid	Artefact : -		
	Contact	Recorders	Austral Archaeology - Wollongong,Mr.Ricardo Servin					Permits		
36-5-0219	UWFSA24_IF1	GDA	55	697495	6395252	Open site	Valid	Artefact : -		
	Contact	Recorders	Austral Archaeology - Wollongong,Mr.Ricardo Servin					Permits		
36-5-0200	UWFSA24_AS1	GDA	55	697425	6395274	Open site	Valid	Artefact : -		

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Page 4 of 7

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Extensive search - Site list report

Your Ref/PO Number : 16934 Burrendong
Client Service ID : 574648

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Austral Archaeology - Wollongong,Austral Archaeology - Wollongong,Mr.Ricardo S					Permits		
36-5-0202	UWFSA11_AS2	GDA	55	702462	6398311	Open site	Valid	Artefact : -		
	Contact	Recorders	Austral Archaeology - Wollongong,Austral Archaeology - Wollongong,Mr.Ricardo S					Permits		
36-5-0203	UWFSA11_AS4	GDA	55	703221	6398706	Open site	Valid	Artefact : -		
	Contact	Recorders	Austral Archaeology - Wollongong,Austral Archaeology - Wollongong,Mr.Ricardo S					Permits		
36-5-0123	Sport and Recreaction Burrendong 29	GDA	55	699194	6380415	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0124	Sport and Recreaction Burrendong 30	GDA	55	699424	6380253	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0125	Sport and Recreaction Burrendong 31	GDA	55	699418	6380296	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0116	Sport and Recreaction Burrendong 22	GDA	55	698583	6379428	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0117	Sport and Recreaction Burrendong 23	GDA	55	698608	6379954	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0118	Sport and Recreaction Burrendong 24	GDA	55	698731	6379979	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0119	Sport and Recreaction Burrendong 25	GDA	55	699178	6380214	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0110	Sport and Recreaction Burrendong 16	GDA	55	699205	6379399	Open site	Valid	Stone Quarry : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0111	Sport and Recreaction Burrendong 17	GDA	55	699244	6378903	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0112	Sport and Recreaction Burrendong 18	GDA	55	699203	6379979	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0113	Sport and Recreaction Burrendong 19	GDA	55	699315	6380121	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0114	Sport and Recreaction Burrendong 20	GDA	55	699315	6380121	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0115	Sport and Recreaction Burrendong 21	GDA	55	699258	6380131	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0120	Sport and Recreaction Burrendong 26	GDA	55	699178	6380214	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		

Report generated by AHIMS Web Service on 09/03/2021 for Charlotte Bradshaw for the following area at Datum :GDA, Zone : 55, Eastings : 691578 - 725578, Northings : 6365627 - 6399627 with a Buffer of 0 meters. Additional Info : ACHA. Number of Aboriginal sites and Aboriginal objects found is 104

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Office of Environment & Heritage

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 16934 Burrendong

Client Service ID : 574648

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-5-0121	Sport and Recreaction Burrendong 27	GDA	55	699194	6380415	Open site	Destroyed	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0122	Sport and Recreaction Burrendong 28	GDA	55	699194	6380415	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.John Shipp					Permits		
36-5-0086	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	Contact T Russell	Recorders	Arthur Lee					Permits		
36-5-0087	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	Contact T Russell	Recorders	Mr.David Maynard					Permits		
36-5-0088	Leaning Oak Creek Loc 2B	AGD	55	720656	6387794	Open site	Valid	Artefact : 1		
	Contact T Russell	Recorders	Mr.Warren Mayers					Permits		
36-5-0089	Leaning Oak Creek Loc 3B	AGD	55	721250	6388022	Open site	Valid	Artefact : -, Stone Quarry : 1		
	Contact T Russell	Recorders	Mr.David Maynard					Permits		
36-5-0090	Leaning Oak Creek Loc 4B	AGD	55	723151	6388031	Open site	Valid	Artefact : -		
	Contact T Russell	Recorders	Mr.David Maynard					Permits		
36-5-0091	Leaning Oak Creek Loc 5B	AGD	55	723030	6387820	Open site	Valid	Artefact : -		
	Contact T Russell	Recorders	Mr.David Maynard					Permits		
36-5-0092	Leaning Oak Tree 1A	AGD	55	723046	6387657	Open site	Deleted	Artefact : 4		
	Contact T Russell	Recorders	Arthur Lee					Permits		
36-5-0093	Leaning Oak Creek 4A	AGD	55	723000	6387703	Open site	Valid	Artefact : 9		
	Contact T Russell	Recorders	Arthur Lee					Permits		
36-5-0085	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	Contact T Russell	Recorders	L Nolan					Permits		
36-5-0167	UWF SU20/L1	GDA	55	720538	6399589	Open site	Valid	Artefact : -		
	Contact	Recorders	Doctor.Julie Dibden					Permits		
36-5-0170	UWF SU22/L1	GDA	55	702596	6396808	Open site	Valid	Artefact : -		
	Contact	Recorders	Doctor.Julie Dibden					Permits		
36-5-0171	UWF SU24/L1	GDA	55	706049	6394103	Open site	Valid	Artefact : -		
	Contact	Recorders	Doctor.Julie Dibden					Permits		
36-5-0172	UWF SU26/L1	GDA	55	704363	6395945	Open site	Valid	Artefact : -		
	Contact	Recorders	Doctor.Julie Dibden					Permits		
36-5-0174	UWF SU32/L1	GDA	55	706660	6398830	Open site	Valid	Artefact : -		
	Contact	Recorders	Doctor.Julie Dibden					Permits		

Report generated by AHIMS Web Service on 09/03/2021 for Charlotte Bradshaw for the following area at Datum :GDA, Zone : 55, Eastings : 691578 - 725578, Northings : 6365627 - 6399627 with a Buffer of 0 meters. Additional Info : ACHA. Number of Aboriginal sites and Aboriginal objects found is 104

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NSW GOVERNMENT

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 16934 Burrendong
Client Service ID : 574648

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-5-0175	UWF SU34/L1	GDA	55	705929	6392887	Open site	Valid	Artefact : -		
	Contact	Recorders	Doctor.Julie Dibden					Permits		
36-5-0179	UWF SU44/L1	GDA	55	700681	6393326	Open site	Valid	Artefact : -		
	Contact	Recorders	Doctor.Julie Dibden					Permits		
36-5-0180	UWF SU44/L2	GDA	55	700738	6393527	Open site	Valid	Artefact : -		
	Contact	Recorders	Doctor.Julie Dibden					Permits		
36-5-0181	UWF SU44/L3	GDA	55	700901	6393784	Open site	Valid	Artefact : -		
	Contact	Recorders	Doctor.Julie Dibden					Permits		
36-5-0182	UWF SU44/L4	GDA	55	701428	6394094	Open site	Valid	Artefact : -		
	Contact	Recorders	Doctor.Julie Dibden					Permits		
36-5-0183	UWF SU46/L1	GDA	55	699686	6396742	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Christopher Dib					Permits		

Report generated by AHIMS Web Service on 09/03/2021 for Charlotte Bradshaw for the following area at Datum :GDA, Zone : 55, Eastings : 691578 - 725578, Northings : 6365627 - 6399627 with a Buffer of 0 meters. Additional Info : ACHA. Number of Aboriginal sites and Aboriginal objects found is 104

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Page 7 of 7

Appendix B Survey Units and Aboriginal sites

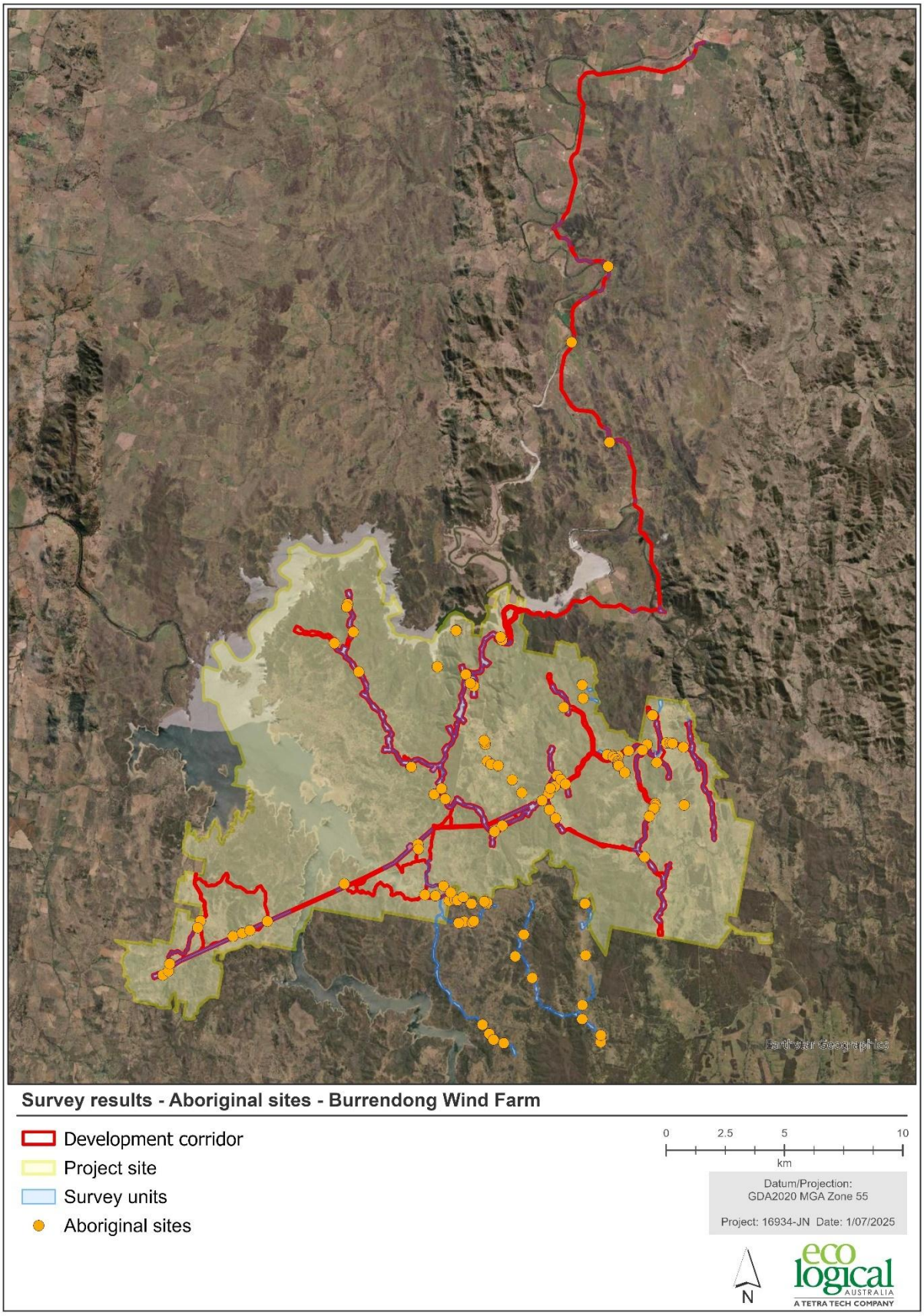


Figure 24: Location of survey units

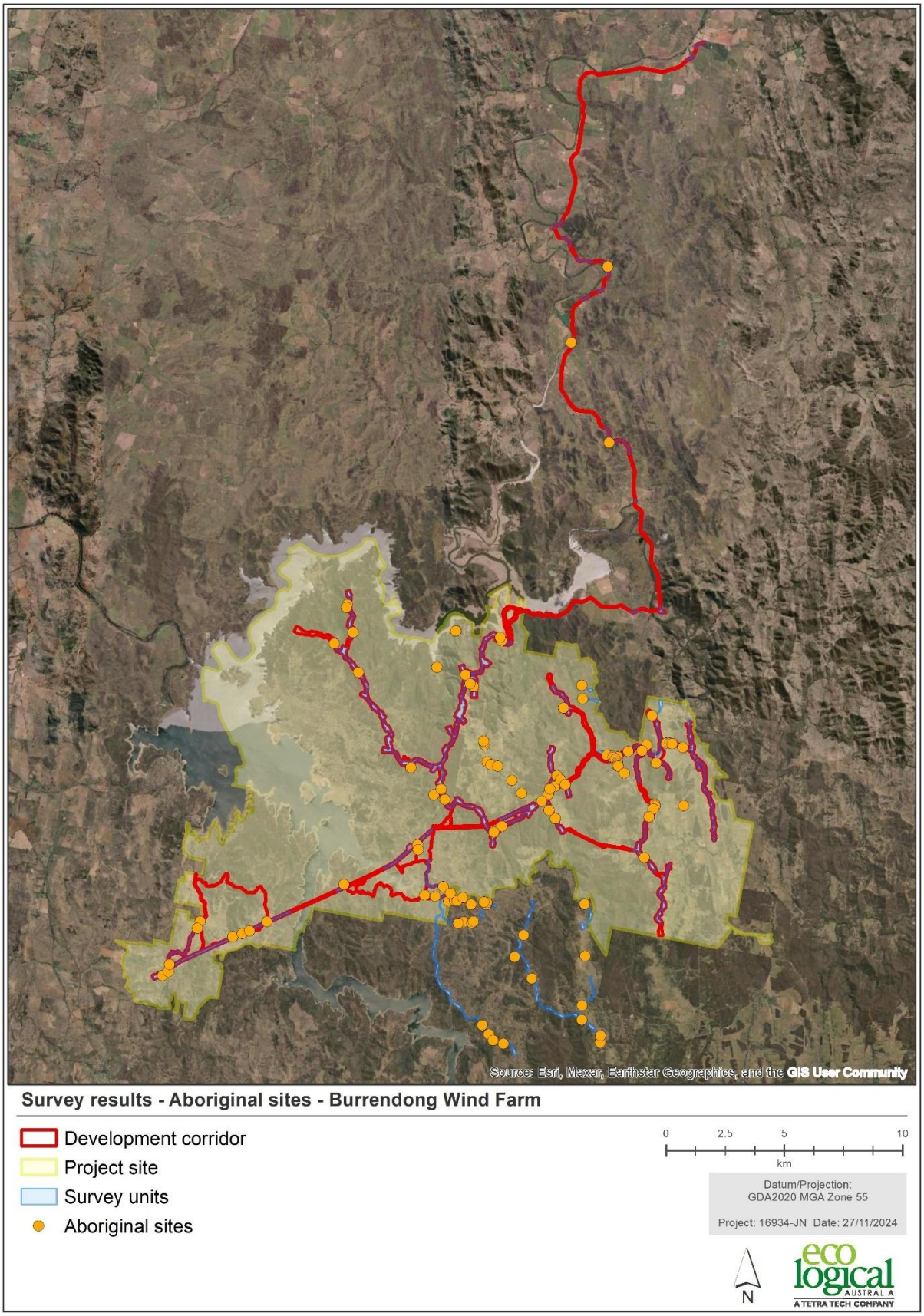


Figure 25: Aboriginal sites identified through the archaeological investigations

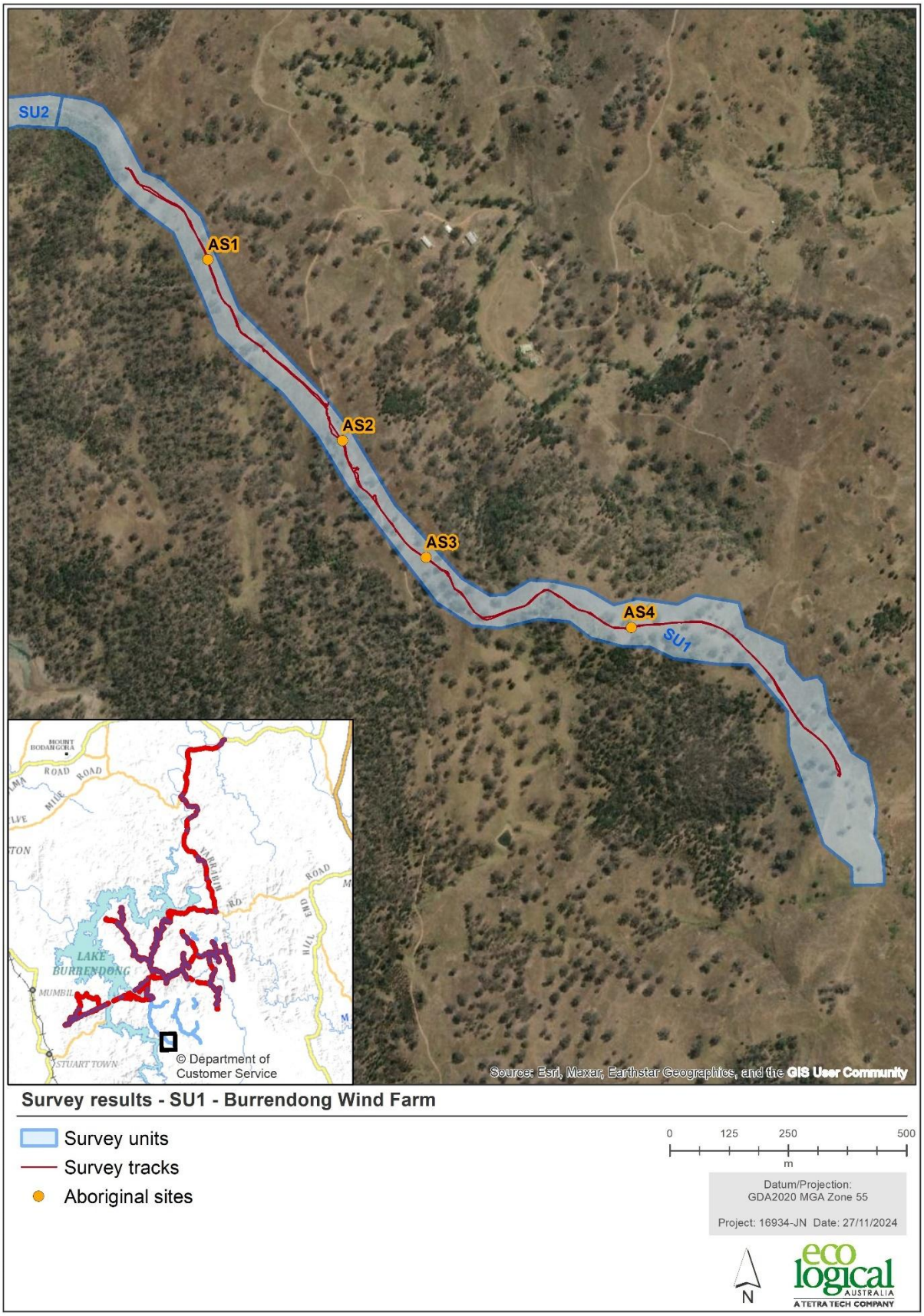


Figure 26: Survey unit 1, tracks and Aboriginal sites

Survey Unit 1	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline.
Characteristic Landforms	Ridgeline – narrow crest with steep side slopes, peaks, and saddles.
Typical Soils	Shallow stony soils on steep slopes, with shallow skeletal soils on ridgelines and crests. Soils were loamy sands; Yellowish brown sandy clay loam was visible with > 50% subrounded gravels.
Vegetation	Dry sclerophyll forest is a broad-leaved peppermint and scribbly gum community. Associated species include red stringybark on ridges, with candle bark and scribbly gum on slopes. Tumbledown red gum, grey box and yellow box grow on upper slopes.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. Aboriginal sites present will be exposed as a surface expression.



View northwest across ridge landform showing steep slopes, vehicle grading and remnant vegetation.



Common occurrence of rocky outcropping along ridgeline with minor fencing.

BWF AS1 (AHIMS ID 36-5-0261)

Site type: Transient campsite
Site features: Artefact Scatter
Coordinates: GDA 2020 Zone 55 710665 mE 6370387 mS
Site Extent: 5 m x 2 m

A very low density surface artefact scatter located on an eroded vehicle track along a narrow ridgeline (Lot 16 DP756915). The site was identified during the archaeological survey consisting of several quartz flakes three with distinguishable features on the ground surface.

The site is in a disturbed context with no archaeological potential. Bedrock was exposed along much of the eroded vehicle track, visible soils were brown clay loams with high gravel content. The site is either a product of track grading or an example of low density background scatters associated with a transient/ temporary campsite. The exposed location along the ridgeline is likely a travelling route between higher density occupation/ resource sites.

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Figure 27: View southeast across ridge line showing steep slopes, fence lines and vehicle tracks.



Figure 28: Artefacts identified on eroded vehicle track showing brown clay loams and high gravel content.

BWF AS2 (AHIMS ID 36-5-0262)

Site type: Transient campsite
Site features: Artefact Scatter
Coordinates: GDA 2020 Zone 55 710956 mE 6370010 mS
Site Extent: 10 m x 5 m

A low density surface artefact scatter located on an eroded vehicle track along a narrow ridgeline (Lot 16 DP756915). The site was identified during the archaeological survey consisting of 10 lithic pieces, basalt, chert and quartz.

The site is in a disturbed context with no archaeological potential. Bedrock was exposed along much of the eroded vehicle track, visible soils were shallow brown clay loams with high gravel content. The site is either a product of track grading or an example of low density background scatters associated with a transient/ temporary campsite. The exposed location along the ridgeline is likely a travelling route between higher density occupation/ resource sites.



Figure 29: View north across erosion exposure adjacent to vehicle track along property fence line. Artefacts located on surface.



Figure 30: View south across artefact scatter, shallow erosion, artefacts located along the edge of the vehicle track.

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Figure 31: Basalt flake, primary reduction, located near property gate along vehicle track.



Figure 32: FGS flake located on surface amongst gravels.

BWF AS3 (AHIMS ID 36-5-0263)

Site type: Transient find
Site features: Artefact Scatter
Coordinates: GDA 2020 Zone 55 711141 mE 6369600 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on an eroded vehicle track along a narrow ridgeline (Lot 16 DP756915). The site was identified during the archaeological survey consisting of quartz flakes and one crystal quartz geometric microlith. This tool type was identified by the Aboriginal community as having ceremonial use.

The site is in a disturbed context with no archaeological potential. Bedrock was exposed along much of the eroded vehicle track, skeletal soils were visible, and the exposed bedrock has clearly been graded by machinery. The site is likely a product of track grading and the low density background scatter is the result of loss through movement in the landscape rather than occupation. The exposed location along the ridgeline is likely a travelling route between higher density occupation/ resource sites. The presence of the ceremonial artefact could indicate a ceremonial route.



Figure 33: Crystal quartz geometric microlith located along the vehicle track.



Figure 34: Location of BWF AS3 along ridgeline with views to the Macquarie River valley.

BWF AS4 (AHIMS ID 36-5-0264)

Site type: Transient campsite
Site features: Artefact Scatter
Coordinates: GDA 2020 Zone 55 711578 mE 6369600 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on an eroded vehicle track along a narrow ridgeline (Lot 16 DP756915). The site was identified during the archaeological survey consisting of two chert flakes and one basalt flake on the ground surface in an erosion scar below remnant trees.

The site is in a disturbed context with no archaeological potential. Bedrock was exposed along much of the eroded vehicle track, visible soils were shallow brown clay loams with high gravel content. The site is either a product of track grading or an example of low density background scatters associated with a transient/ temporary campsite. The exposed location along the ridgeline is likely a travelling route between higher density occupation/ resource sites.



Figure 35: View east, erosion from vehicle damage and bedrock exposures shallow soils. Steep slopes, and narrow ridgeline.



Figure 36: Chert flake located on the vehicle track surface, brown loams.



Figure 37: Chert flake with primary reduction located on the vehicle access track surface, brown loams and gravels visible.



Figure 38: View west, typical crest landform.

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Figure 39: Survey unit 2, tracks

Survey Unit 2	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline.
Characteristic Landforms	Ridgeline – narrow crest with steep side slopes, peaks, and saddles.
Typical Soils	Shallow stony soils on steep slopes, with shallow skeletal soils on ridgelines and crests. Soils were loamy sands; Yellowish brown sandy clay loam was visible with > 50% subrounded gravels.
Vegetation	Dry sclerophyll forest is a broad-leaved peppermint and scribbly gum community. Associated species include red stringybark on ridges, with candle bark and scribbly gum on slopes. Tumbledown red gum, grey box and yellow box grow on upper slopes.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. Aboriginal sites present were exposed as a surface expression.



View northwest across ridge landform showing moderate to steep slopes, with remnant vegetation.



View east along eroded vehicle track exposing shallow loams and gravels, rock outcropping along edges.



View northwest across ridgeline showing narrow ridge with vegetation clearance.



View west towards the Macquarie River on a ridgetop, few stands of box.

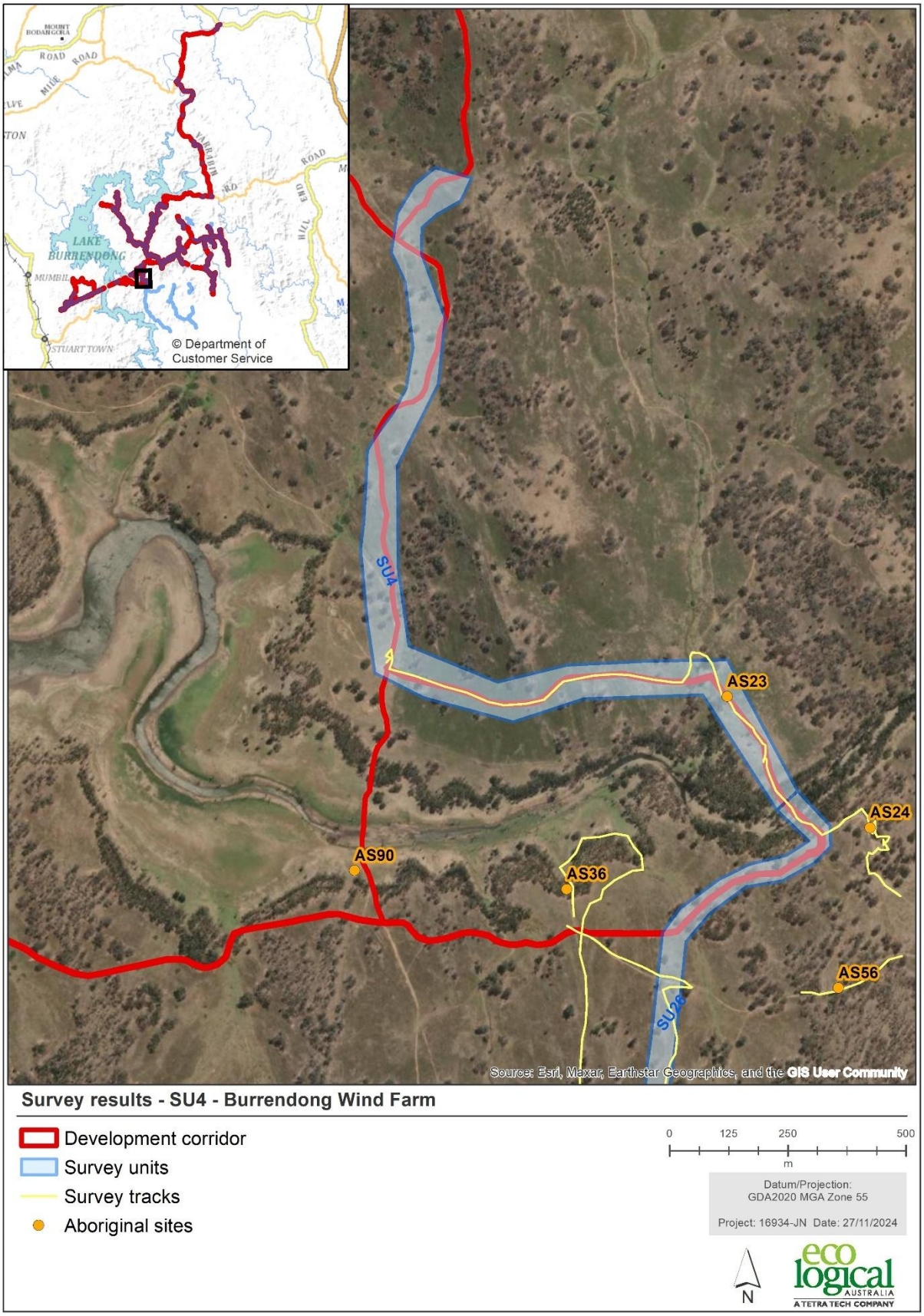


Figure 40: Survey unit 4, tracks and Aboriginal sites

Survey Unit 4	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the low lying hills. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates.
Characteristic Landforms	Undulating low hills with gentle slopes along large wide drainage line.
Typical Soils	Shallow stony soils on upper slopes with frequent rock outcropping and quartz seams, lower slopes were brown fine sandy loams with exposed yellowish orange clays. High quartz and ironstone gravels evident across exposures and vehicle tracks.
Vegetation	Remnant dry sclerophyll forest is a broad-leaved peppermint and scribbly gum community. On the upper slopes, associated species include tumbledown red gum, grey box and yellow box. The vegetation was mostly cleared with few stands of trees along the creek line and scattered across the slopes.
Archaeological potential	No archaeological potential along the upper slopes with exposed gravelly shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. Exposed bedrock along vehicle track. Across the lower slopes and along the drainage line, there were relatively deep soils however there was a shallow A horizon on hard setting sandy gravel loam above a reddish/ orange, brown medium to heavy clay. Aboriginal sites present were exposed as a surface expression.



View north across the mid slope landform above Oakey Creek, rocky outcropping, well grassed remnant tree stands.



View east across survey unit on lower slope, well grassed rocky outcrops, gravel bedrock and vehicle tracks.



View southeast across lower slope landform showing exposed clay loams with ironstone gravels and exposed Aboriginal site.



View west showing moderate slope, rocky vehicle track, brown loams on mid slope.

BWF AS23 (AHIMS ID 36-5-0336)

Site type: Campsite
Site features: Artefact Scatter
Coordinates: GDA 2020 Zone 55 709043 mE 6376229 mS
Site Extent: 10 m x 10 m

A low density surface artefact scatter located on an eroded exposure on a lower slope near drainage line (Lot 6 DP756903). The site was identified during the archaeological survey consisting of rounded river cobble, basalt flakes, and a chert flake. The location is on a raised position above an ephemeral drainage line.

The location is disturbed from past land clearance and vehicle movement. The erosion scar exposed shallow soils of brown loam over an ironstone rich reddish brown clay layer. There is no archaeological potential around the site due to the erosional nature of the landform.



Figure 41: View north across the erosion scar with the low density scatter across the surface.



Figure 42: Basalt flake on brown loam surface.



Figure 43: View southeast across the lower slope landform showing relatively flat exposure.



Figure 44: Chert flake with unique colouring and pattern.

BWF AS24 (AHIMS ID PENDING)

Site type: Campsite
Site features: Artefact Scatter
Coordinates: GDA 2020 Zone 55 709328 mE 6375981 mS
Site Extent: 50 m x 50 m

A high density surface artefact scatter located on an eroded exposure and vehicle access track adjacent to a cattle grid on a lower slope near Oakey Creek (Lot 4 DP756915). The site was identified during the archaeological survey consisting of well over 200 flakes and cores, rounded river cobbles with pitting, two unfinished stone axes. The site was not within the project footprint, so samples of the site were recorded, this site is a large campsite that has been used for long periods and contains several different lithic materials that are local and have been traded. The lithic material present were basalt, various colours of chert (grey, yellow, red, green and white), milky and crystal quartz, quartzite and FGS.

The location has been disturbed from past land clearance and continuing use by land owners vehicle movement and for cattle movement. The erosion scar exposed shallow soils of brown sandy loams over an ironstone rich reddish brown clay layer. There is no archaeological potential around the site due to the shallow erosional nature of the landform, but the site extent likely extends beyond the visible extent towards the creek lines to the east and south towards BWF 56-58.



Figure 45: View east across the artefact scatter showing shallow brown loams above a red clay loam.



Figure 46: Yellow chert flakes with red and grey veins .



Figure 47: FGS, basalt, chert and quartzite flakes.



Figure 48: Chert flakes and Bondi points, chalcedony flake.



Figure 49: Unfinished stone axe, flaked volcanic cobble.



Figure 50: Grey chalcedony flaked piece, FGS flake and basalt flakes.



Figure 51: Basalt flake cluster.



Figure 52: Crystal quartz flake.

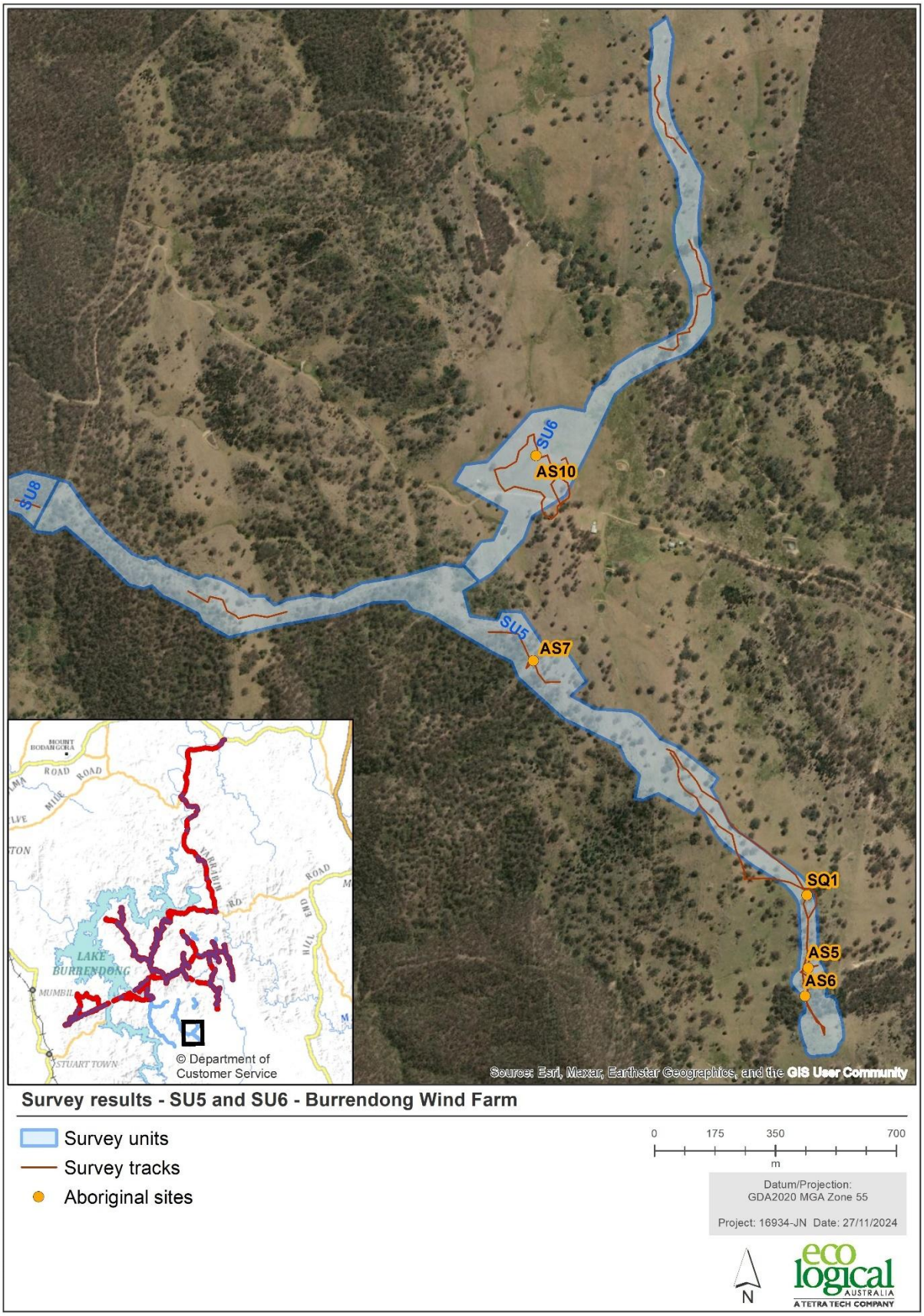


Figure 53: Survey unit 5 and 6, tracks and Aboriginal sites

Survey Unit 5	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the low lying hills. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams.
Characteristic Landforms	Rolling to steep hills on slate, greywacke and shale. Rocky outcrops are common across broad crests.
Typical Soils	Shallow stony soils on steep slopes, with shallow skeletal soils on ridgelines and crests. Soils were loamy sands; Reddish brown sandy clay loam was visible with > 50% subrounded gravels.
Vegetation	Dry sclerophyll forest is a broad-leaved peppermint and scribbly gum community. Associated species include red stringybark on ridges, with candle bark and scribbly gum on slopes. Tumbledown red gum, grey box and yellow box grow on upper slopes.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. Aboriginal sites present were exposed as a surface expression.



View southeast across crest landform showing relatively flat surface with abundant rocky outcropping.



Artefacts identified on uppers lope with shallow rocky brown loams.



Exposed soils along crest, reddish brown clay loams with rounded gravels.



Turbine location, steep slopes with rocky outcropping.

BWF AS5 (AHIMS ID 36-5-0265)

Site type: Transient campsite
Site features: Artefact Scatter
Coordinates: GDA 2020 Zone 55 710665 mE 6370387 mS
Site Extent: 5 m x 2 m

A low density surface artefact scatter located across a saddle between ridgetops along the ridgeline. (Lot 28 DP756915). The site was identified during the archaeological survey and was exposed across sheet erosion and animal tracks. The site consisting of a rounded river pebble manuport, basalt flakes, and quartz flakes on the ground surface amongst large bedrock floaters.

The location has been eroded from natural processes and animal tracks, exposing volcanic rock floaters and shallow sandy brown loas and bedrock. The vegetation is remnant old growth trees and new growth trees, well grassed. There is no archaeological potential around the site due to the erosional nature of the landform.



Figure 54: View west across the scatter location of the upper slope of the saddle, showing shallow soils and exposed bedrock.



Figure 55: Example of basalt flakes identified on the surfaces in the shallow erosion scar.

BWF AS6 (AHIMS ID 36-5-0266)

Site type: Transient campsite
Site features: Artefact Scatter
Coordinates: GDA 2020 Zone 55 710956 mE 6370010 mS
Site Extent: 10 m x 5 m

A very low density surface artefact scatter located on an eroded animal track along a narrow ridgeline (Lot 28 DP756915). The site was identified during the archaeological survey of turbine location and consisted of two basalt flakes on the ground surface with exposed bedrock surrounding. The site is likely part of BWF AS5 and could indicate a wider site extent.

The flakes were tertiary reduction and small in size and have low significance due to isolated position on the ridgetop. There is no archaeological potential associated with this site, the exposed bedrock indicates skeletal soils, and it is likely further Aboriginal objects would be present as a surface expression.

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Figure 56: View east, across proposed turbine pad, and location of BWF AS6.



Figure 57: Two flakes identified at location on eroded surface and exposed bedrock.

BWF SQ1 (AHIMS ID 36-5-0337)

Site type: Potential stone quarry (Basalt)
Site features: Stone resource
Coordinates: GDA 2020 Zone 55 711141mE 6369600 mS
Site Extent: 2 m x 2 m

An exposure of high quality basalt was identified along the survey unit on the ridgeline and was very similar material to the basalt flakes identified at BWF AS5 and BWF AS6 (Lot 92 DP724624). There was no evidence of utilisation or flaking in proximity to the basalt exposure. There is no evidence of Aboriginal utilisation of the site other than the material being similar to flakes at nearby sites. The loss of this exposure would not be significant to the cultural heritage of the area as basalt is a frequent occurring resource and other larger exposures have been observed throughout the project site.



Figure 58: View southeast, across exposure of basalt along the ridgeline.



Figure 59: Close up of quality basalt surface, the material is flaking material and was sharp along edges.

BWF AS7 (AHIMS ID 36-5-0267)

Site type: Transient campsite
Site features: Artefact Scatter
Coordinates: GDA 2020 Zone 55 711578 mE 6369600 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on an eroded location adjacent to a vehicle track along a narrow ridgeline (Lot 92 DP724624). The site was identified during the archaeological survey of the access track between turbine locations. The site consisting of milky quartz flakes on exposed brown sandy loams with high gravels content and exposed shales surrounding.

The sit is amongst remnant vegetation near minor fencing and a vehicle track that has been graded into shale bedrock, the very low density site is likely a knapping event from chance find of exposed quartz seam. There is no archaeological potential at or arround the site due to the location along the ridgeline with skeletal soils.



Figure 60: View east, towards vehicle track and fence line showing the exposing eroding shale bedrock.



Figure 61: Milky quartz flakes exposed on the ground surface; brown clay loams exposed with high angular gravel content.

Survey Unit 6	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the low lying hills. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams.
Characteristic Landforms	Undulating open depression dissected by ephemeral drainage lines – not permanent water.
Typical Soils	Shallow stony soils on steep slopes, with shallow skeletal soils on ridgelines and crests. Soils were loamy sands; Reddish brown sandy clay loam was visible with > 50% subrounded gravels.
Vegetation	Dry sclerophyll forest is a broad-leaved peppermint and scribbly gum community. Associated species include red stringybark on ridges, with candle bark and scribbly gum on slopes. Tumbledown red gum, grey box and yellow box grow on upper slopes.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. Aboriginal sites present were exposed as a surface expression. An Aboriginal site with potential was identified along valley floor between hills, outside the development corridor.



View southeast across crest landform showing relatively flat landform with rocky outcropping.



View north along survey unit, exposed shallow stony soils and rocky outcropping.

BWF AS10 (AHIMS ID 36-5-0269)

Site type: Campsite
Site features: Artefact Scatter
Coordinates: GDA 2020 Zone 55 710956 mE 6370010 mS
Site Extent: 50 m x 50 m

A low density surface artefact scatter spread across an eroded relatively flat landform above a drainage line (Lot 92 DP724624). The location is used for sheep holding, exposed bedrock was visible, few trees. The site consisted of rounded river cobble that has been flaked around the edge, basalt and quartz flakes. There is no potential for intact archaeological deposits or subsurface artefacts.

The Aboriginal site is likely a campsite in an elevated position adjacent to a drainage line sheltered from the ridgeline to the west. All Aboriginal objects were exposed spread across the ground surface of brown loams and ironstone gravels. Bedrock seams were visible along the highest point of the site. All trees have been cleared from past land use with a few stands of old growth.



Figure 62: View west, erosion from vehicle damage and sheep movement, and vegetation clearance. Shallow brown loams exposed with high ironstone gravel content and bedrock visible.



Figure 63: View north across Aboriginal site showing gentle slope, fencing and location of Aboriginal objects.



Figure 64: Example of Aboriginal objects, backed quartz point.



Figure 65: Basalt flaked pieces, milky quartz pieces amongst ironstone gravels.

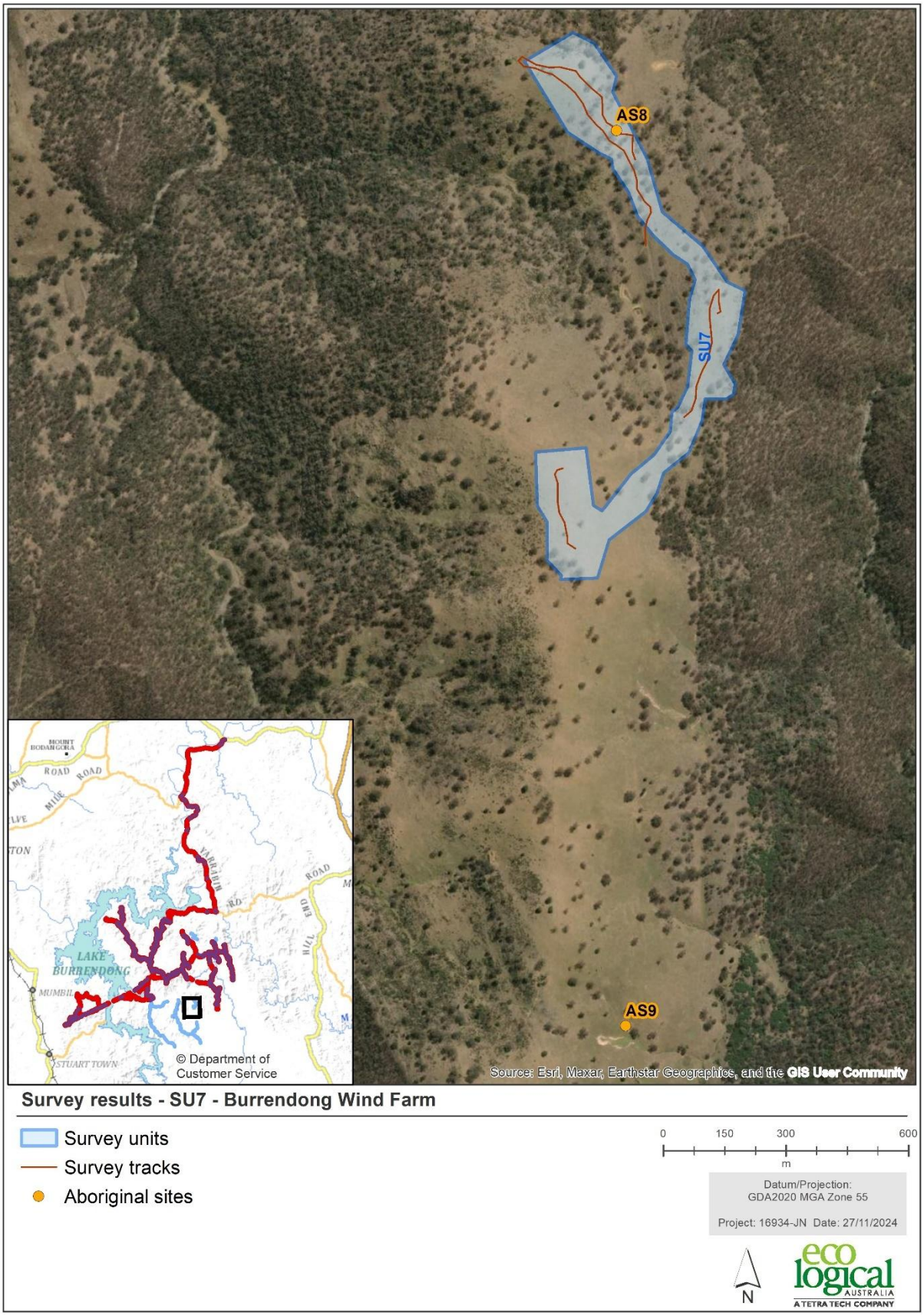


Figure 66: Survey unit 7, tracks and Aboriginal sites

Survey Unit 7	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams.
Characteristic Landforms	Rolling to steep hills on slate, greywacke and shale. Rocky outcrops are common across broad crests. Quartz seams outcropping.
Typical Soils	Shallow stony soils on steep slopes, with shallow skeletal soils on ridgelines and crests. Soils were loamy sands; Reddish brown sandy clay loam was visible with > 50% subrounded gravels.
Vegetation	Dry sclerophyll forest is a broad-leaved peppermint and scribbly gum community. Associated species include red stringybark on ridges, with candle bark and scribbly gum on slopes. Tumbledown red gum, grey box and yellow box grow on upper slopes.
Archaeological potential	No archaeological potential along the crest line, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. Aboriginal sites present were exposed as a surface expression in shallow erosion between rocky outcrops.



View southeast across crest landform showing relatively flat landform with rocky reefs amongst grass.



Rocky low lying ridgeline mostly cleared, well grassed rocky reefs.



View west at turbine location broad crest showing mostly cleared rocky surface.



Steep slopes along low lying ridgeline with quartz outcropping seams

BWF AS8 (AHIMS ID 36-5-0268)

Site type: Campsite
Site features: Artefact Scatter
Coordinates: GDA 2020 Zone 55 711141mE 6369600 mS
Site Extent: 1 m x 1 m

A very low density surface artefact scatter located on the edge of bioturbation along the ridgeline (Lot 92 DP724624). The Aboriginal site consisted of quartz flakes on the surface adjacent to exposed bedrock, the flakes were likely the result of a transitory campsite or utilisation of the quartz resource, Exposed seams of quartz were visible along the steep slopes.



Figure 67: View south across ridgeline and location of Aboriginal site adjacent to animal erosion.



Figure 68: Quartz flake located amongst exposed bedrock.

BWF AS9 (AHIMS ID 36-5-0338)

Site type: Campsite
Site features: Artefact Scatter
Coordinates: GDA 2020 Zone 55 711578 mE 6369600 mS
Site Extent: 20 m x 10 m

A moderate density surface artefact scatter exposed by gully erosion on the lower slopes of a narrow ridgeline (Lot 92 DP724624). The site was identified during the archaeological survey between survey units. There is potential for intact archaeological deposits and the presence of a larger campsite. The exposed deposits were brown loams over leached clay loams over yellow clays. The Aboriginal objects were basalt flakes, quartz flakes, a broken ground edge axe, basalt cores and crystal quartz.

The Aboriginal site has been disturbed from minimal land clearance stock movement and natural erosional process. The Aboriginal site is likely a seasonal campsite in a sheltered valley between ridgelines. There were no suitable rock exposures for grinding axes therefore the axe has been either traded or transported from its original place of manufacture and then discarded when broken.

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Figure 69: View north across gully erosion along the lower slope of ridgeline. Exposed Aboriginal site.



Figure 70: View east across artefact scatter, showing gully erosion.



Figure 71: Tip of ground edge axe, volcanic material, basalt or greywacke.



Figure 72: Basalt flakes and quartz flakes exposed in brown loams.



Figure 73: Basalt flakes, all tertiary reduction.



Figure 74: Basalt core and flake.

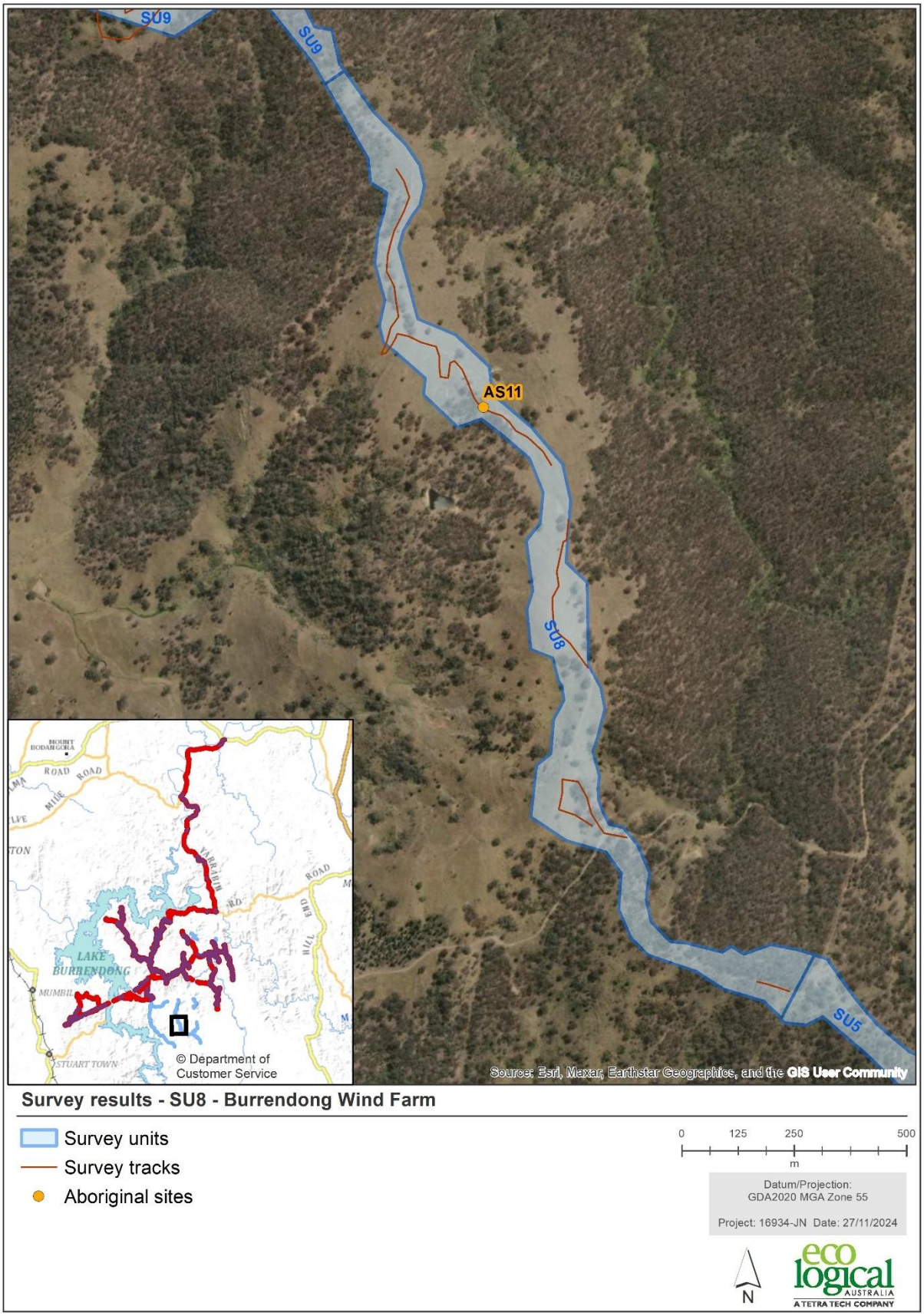


Figure 75: Survey unit 8, tracks and Aboriginal sites

Survey Unit 8	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams.
Characteristic Landforms	Ridgeline – narrow crest with steep side slopes, peaks, and saddles.
Typical Soils	Shallow stony soils on steep slopes. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along saddles. Hard setting sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey. Eucalypt species include white box, yellow box, Blakely's red gum, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared.
Archaeological potential	No archaeological potential along the crest line, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. Aboriginal sites present were exposed as a surface expression in shallow erosion between rocky outcrops. Aboriginal site across saddle was on exposed clays and bedrock.



View west across crest/ saddle landform showing relatively flat topography exposed hard setting clays and rocks.



Artefacts identified across vehicle track, exposed reddish clay loam adjacent to exposed bedrock.



View south east across moderate slope exposed bedrock sheets .



Stony reddish brown clay loam vehicle track, relatively cleared crest, turbine location.

BWF AS11 (AHIMS ID 36-5-0270)

Site type: Campsite
Site features: Artefact Scatter
Coordinates: GDA 2020 Zone 55 710956 mE 6370010 mS
Site Extent: 150 m x 50 m

A moderate density surface artefact scatter located on an eroded vehicle track along a narrow ridgeline Lot 34 DP756915). The site was identified during the archaeological survey consisting of basalt, quartz and chert flakes and cores. The exposed Aboriginal site has been caused by vehicle movement and natural erosional process.

The Aboriginal site is not likely a permanent campsite as its location has no permanent water source but is likely representative of a well-used transitory location between long-term campsites. The density of artefacts shows it was well used and there is likely a source material in the vicinity. There is no potential for archaeological deposits as the site is located in the vicinity of exposed bedrock and the soils are shallow to skeletal.



Figure 76: Crystal quartz flakes.



Figure 77: View south east across exposed Aboriginal sites, bedrock visible and orange clay loams along vehicle track.



Figure 78: Basalt flakes exposed on orange clay loams.



Figure 79: View north west across ridgeline showing spread of scatter, bedrock exposed.

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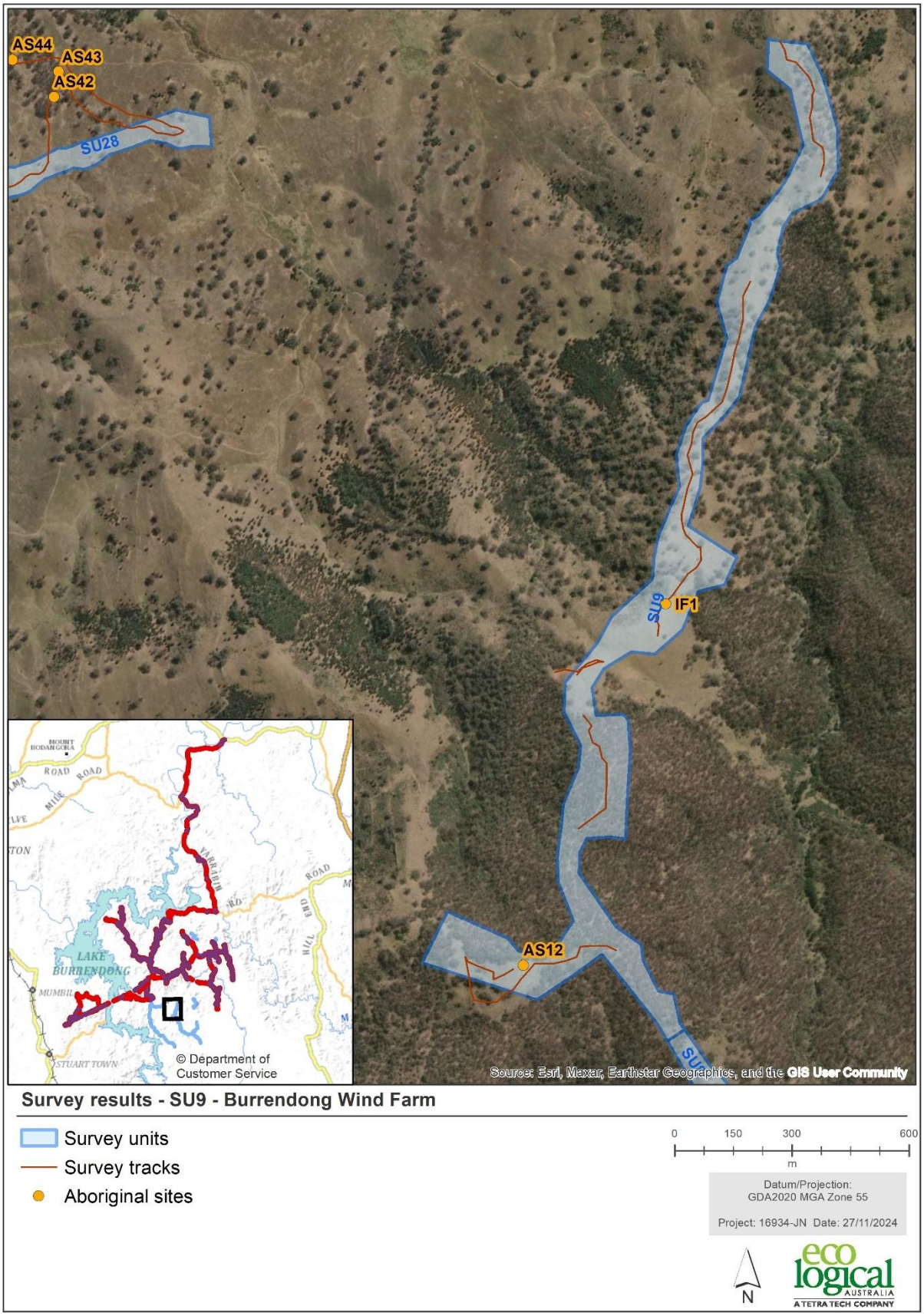


Figure 80: Survey unit 9, tracks and Aboriginal sites

Survey Unit 9	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the crest. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams.
Characteristic Landforms	Ridgeline – narrow crest with steep side slopes, peaks, and saddles.
Typical Soils	Shallow stony soils on steep slopes, with shallow skeletal soils on ridgelines and crests. Soils were loamy sands; Reddish brown sandy clay loam was visible with > 50% subrounded gravels.
Vegetation	Dry sclerophyll forest is a broad-leaved peppermint and scribbly gum community. Associated species include red stringybark on ridges, with candle bark and scribbly gum on slopes. Tumbledown red gum, grey box and yellow box grow on upper slopes.
Archaeological potential	No archaeological potential along the crest line, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. Aboriginal sites present were exposed as a surface expression in shallow erosion between rocky outcrops.



View north across ridge line showing narrow rocky vehicle track, remnant vegetations, location of IF1.



Exposed rocky ridgeline with graded vehicle track along edge, shallow reddish loams.

BWF AS12 (AHIMS ID 36-5-0271)

Site type: Transient campsite
Site features: Artefact Scatter
Coordinates: GDA 2020 Zone 55 711578 mE 6369600 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on an eroded vehicle track along a narrow ridgeline Lot 34 DP756915). The site was identified during the archaeological survey and was located on a ridgetop that was proposed for a turbine pad. The site consisted of three quartz flakes across exposed shale bedrock and skeletal brown loams.

The ridgeline has been cleared of native vegetation, with an eroded vehicle track and minor fencing, with a view across the Macquarie River valley. The Aboriginal site has low scientific significance with no potential for archaeological deposit.



Figure 81: View east, erosion from vehicle damage and bedrock exposure, shallow soils along cleared ridgeline.



Figure 82: Quartz flake located on exposed shale bedrock.

BWF IF1 (AHIMS ID 36-5-0272)

Site type: Isolated find
Site features: Artefact
Coordinates: GDA 2020 Zone 55 711141mE 6369600 mS
Site Extent: 1 m x 1 m

An isolated quartz flake identified along the narrow ridgeline, very little visibility across the site, likely further Aboriginal objects present (Lot 34 DP756915). Volcanic outcropping in seams along the edge of the vehicle track. Dense weed coverage across the ground surface, few stands of trees.



Figure 83: View south across the narrow ridgeline and location of quartz flake.

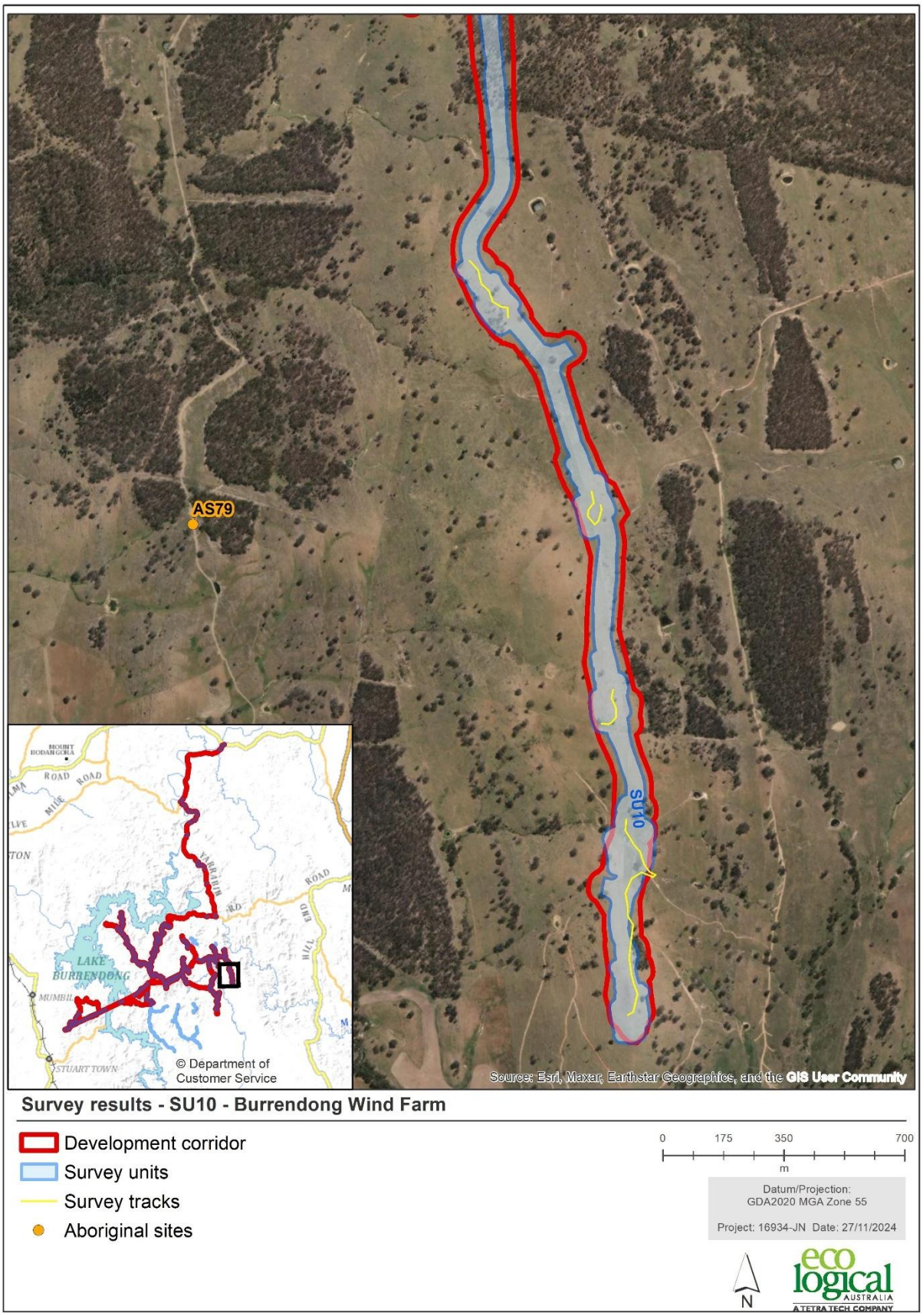


Figure 84: Survey unit 10, tracks and Aboriginal sites

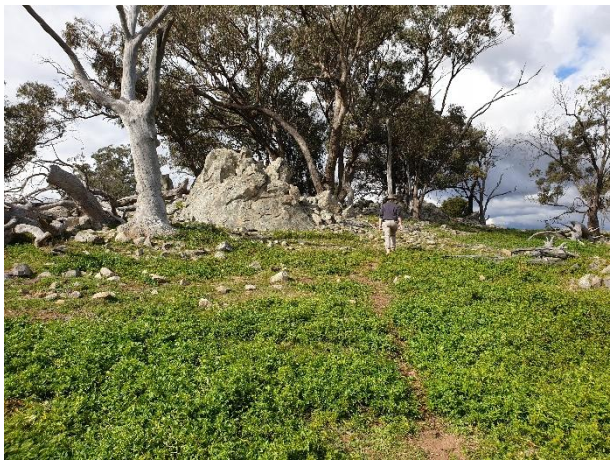
Survey Unit 10	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the crest. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams.
Characteristic Landforms	Undulating rolling low hills often strewn with quartz gravel. Broad to narrow crests with broad saddles. Steep drainage lines.
Typical Soils	Shallow stony soils on steep slopes. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along saddles. Hard setting sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey. Eucalypt species include white box, yellow box, Blakely's red gum, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared.
Archaeological potential	No archaeological potential along the crest line, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance.



View south across low lying landform showing broad crest with frequent rocky outcropping.



Exposed metamorphic bedrock with frequent floaters and reddish sandy loams.



View north across turbine location showing rocky outcropping frequent across survey unit.



Exposed metamorphic rocks on crests along broad low lying landform.

BWF AS79 (AHIMS ID 36-5-0339)

Site type: Campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 719192 mE 6379681 mS
Site Extent: 20 m x 20 m

A low density scatter spread across a large erosion scour and vehicle track on raised slope above drainage line (Lot 351 DP1180382). The site was identified along a vehicle track that was used to access different survey units within the project area. The site was exposed on the surface amongst eroded bedrock. The adjacent drainage line had exposed shale bedrock along the entire length. Quartz and basalt flakes were visible, no formal tools and no potential archaeological deposits. The ground surface was brown to orange clay loams with high ironstone gravel content and shales.

The location has been mostly cleared of native vegetation with limited grass cover and has been graded for a vehicle access track.



Figure 85: View south across vehicle track and artefact scatter.



Figure 86: View east across scatter, exposed clay loams, ironstone gravel, and quartz flakes visible.



Figure 87: Sample of milky quartz flakes identified in a cluster on the edge of the vehicle track. Visible ironstone gravels and brown clay loams.



Figure 88: View south west across raised landform above the drainage line, exposed shale bedrock through drainage line.

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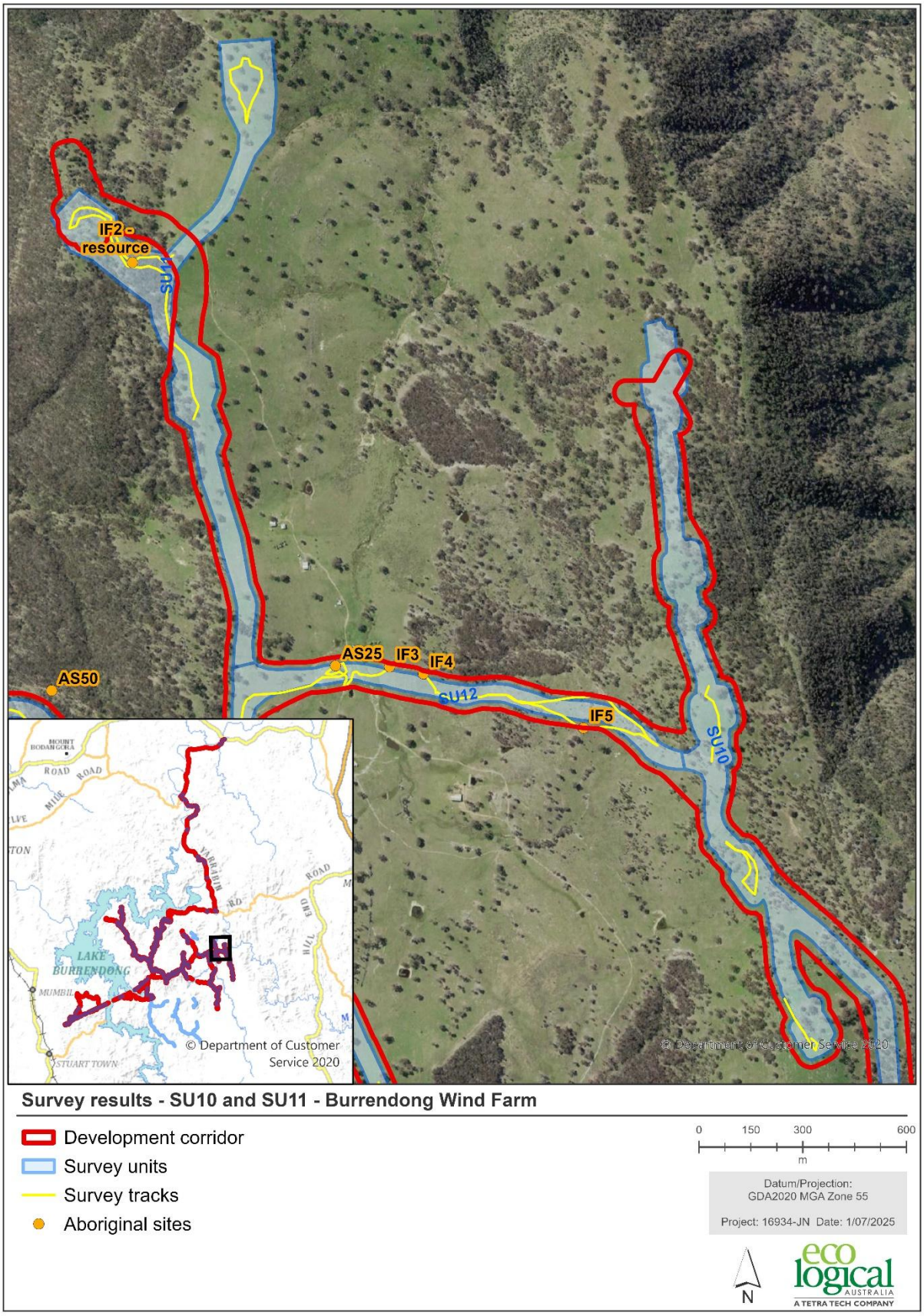


Figure 89: Survey unit 10 and 11, tracks and Aboriginal sites

Survey Unit 11	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the Crest. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams.
Characteristic Landforms	Undulating rolling low hill often strewn with quartz gravel. Broad to narrow crests with broad saddles.
Typical Soils	Shallow stony soils on steep slopes. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along saddles. Hard setting sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey. Eucalypt species include white box, yellow box, Blakely's red gum, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across broad landform with pockets of remnant native vegetation including grass trees.
Archaeological potential	No archaeological potential along the crest line, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance.



View south across crest landform showing rocky outcropping, broad moderately sloping sides.



Aboriginal resource, remnant vegetation, grass trees on crest landform amongst rocky outcropping.



View north across crest landform showing rocky outcropping, relatively cleared with remnant vegetation on steep slope.



Quartz outcropping frequent across reddish brown clay loams.

BWF IF2 - RG (AHIMS ID 36-5-0241)

Site type: Cultural resource
Site features: Artefact, Resource and Gathering
Coordinates: GDA 2020 Zone 55 717852mE 6383489 mS
Site Extent: 20 m x 20 m

A high significant cultural resource site with an isolated artefact located on a narrow crest landform that has residual vegetation and has had little disturbance from past land use (Lot 2 DP807931). The cultural resource are grass trees (Xanthorrhoea spp.) which have many cultural uses, including spears, weaving, fire starting and resin. The grass trees are of considerable age due to the size of the specimens present and the slow growth rate of the species, several were over 2m in height with branching arms. Amongst the grass trees were exposed quartz seams and one quartz flake was identified amongst the natural debris.

During the EIS, the site was identified along the proposed access track to a turbine pad. The Development Footprint has been amended to avoid site. There was little evidence of disturbance, vegetation may have been thinned by timber getting. The site has been identified as high cultural significance to the Aboriginal community.



Figure 90: View across the community of grass trees growing along the sheltered crest.



Figure 91: Isolated quartz flake identified amongst the quartz seam debris.

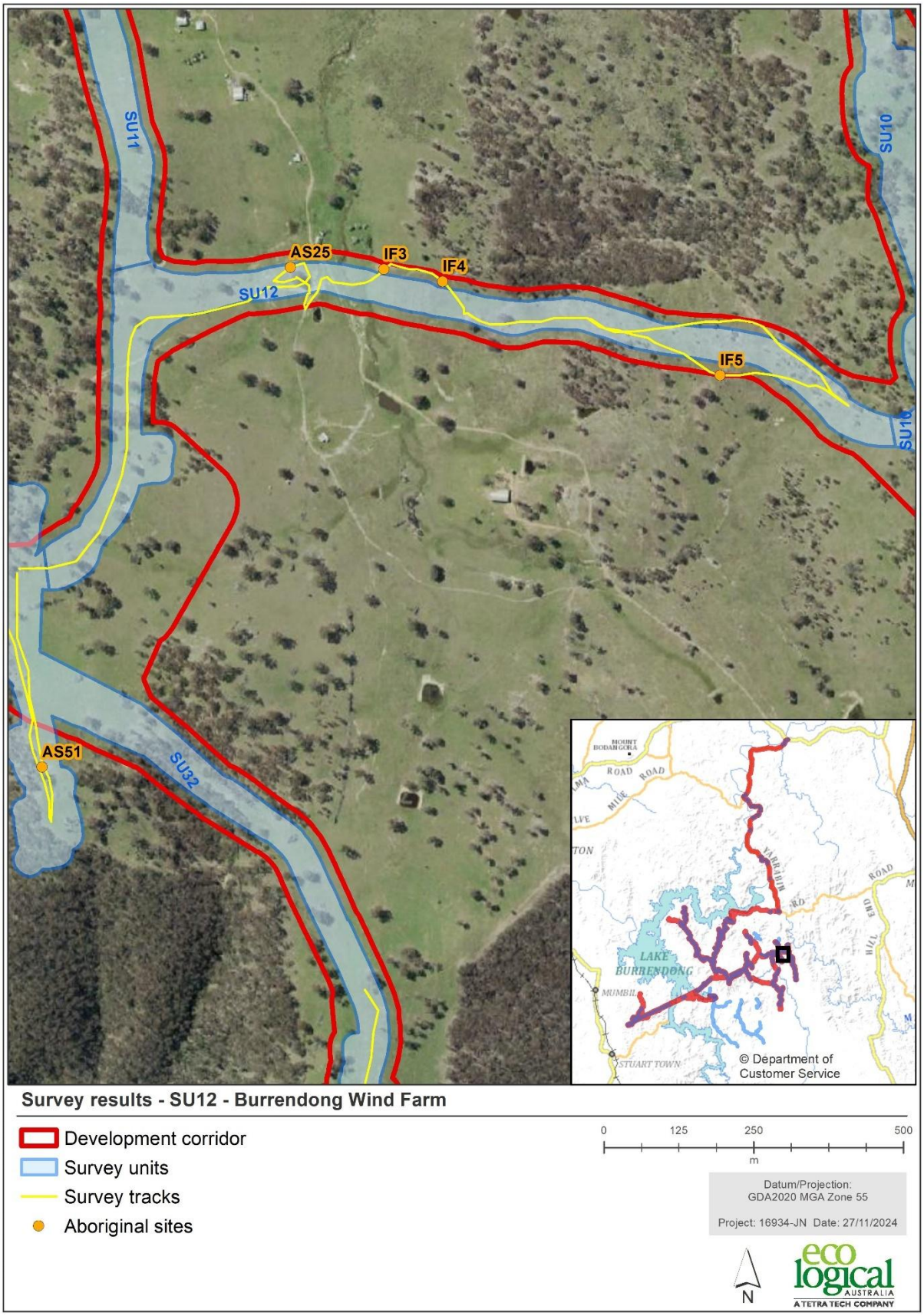


Figure 92: Survey unit 12, tracks and Aboriginal sites

Survey Unit 12 mook	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the broad low lying hills and drainage valley. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams. Exposed shales across the low lying hills and slopes.
Characteristic Landforms	Undulating rolling low hills often strewn with quartz gravel. Broad sloping drainage valley between narrow crests with broad saddles. One major drainage line runs through the centre of the survey unit. Raised terraces adjacent to drainage line with exposed shales.
Typical Soils	Skeletal stony soils on upper slopes and crests. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the mid and lower slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across broad landform with pockets of remnant native vegetation.
Archaeological potential	No archaeological potential along the low lying hill crests, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. The visible Aboriginal sites were exposed on the surface of orange clay loams.



View west across crest landform showing undulating ground surface and gully erosion exposing shallow soils and shallow bedrock.



View east across SU showing undulating landform dissected by ephemeral drainage lines and isolated stands of trees.



View north west across SU showing cleared vegetation and exposed bedrock across broad crest landform .



View north west showing existing graded vehicle track through bedrock, moderate slope from east to west.

BWF IF3 (AHIMS ID 36-5-0242)

Site type: Isolated find
Site features: Artefact
Coordinates: GDA 2020 Zone 55 718601mE 6382308 mS
Site Extent: 1 m x 1 m

An isolated quartz flake was identified on a low lying hill adjacent to a drainage line. Gully erosion near the site identified shallow clay loams above shale bedrock. Surrounding the surface find, shale bedrock was visible with skeletal brown loams (Lot 2 DP807931).

The location has been cleared of native vegetation, there was high visibility and exposure, with no potential archaeological deposits.



Figure 93: View east across low lying crest landform above drainage line. The isolated find was identified on the edge of the gully erosion mid image. BWF IF 4 flagged.



Figure 94: Isolated quartz flake identified on animal tracks in a highly visible location with exposed bedrock.

BWF IF4 (AHIMS ID 36-5-0243)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 718703mE 6382276 mS
Site Extent: 2 m x 2 m

This site is a very low density artefact scatter identified on a low lying hill adjacent to a drainage line. Gully erosion near the site identified shallow clay loams above shale bedrock with an isolated quartz flake. Surrounding the surface find, shale bedrock was visible with skeletal brown loams (Lot 2 DP807931). This low density site consisted of a basalt flake, a serrated chert flake, two FGS flaked pieces and three quartz flakes.

The site is located on the same landform as BWF IF3, cleared of native vegetation, high visibility and exposure with no potential archaeological deposits. The site consisted of a basalt flake, milky quartz flakes and a chert flake with a serrated margin.

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Figure 95: Large basalt flake and quartz flakes identified on an animal track.



Figure 96: Chert flake with serrated margins.

BWF IF5 (AHIMS ID 36-5-0244)

Site type: Isolated find
Site features: Artefact
Coordinates: GDA 2020 Zone 55 719179mE 6382162 mS
Site Extent: 1 m x 1 m

An isolated basalt flake identified on an eroded animal track on the upper to mid slope of the adjacent ridgeline. The exposed soils were orange, brown loams between exposed shale bedrock (Lot 2 DP807931).

The location has been cleared of native vegetation, there was high visibility and exposure, with no potential archaeological deposits. South of the isolated find location, in a minor drainage line, a water hole was identified with the potential for a campsite to be associated. This area of potential is not within the impact footprint.



Figure 97: View north west towards Isolated find near tree line. Water hole identified in an elevated depression between a ridgeline and a crest landform.



Figure 98: Basalt flake exposed on an animal track near the remnant tree line.

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BWF AS25 (AHIMS ID 36-5-0251)

Site type: Campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 718436mE 6382314 mS
Site Extent: 15 m x 20 m

A low density surface artefact scatter located on an eroded gently sloping landform within 100m of a minor drainage line (Lot 2 DP807931). The site was identified during the archaeological survey consisting of 27 lithic flakes on the ground surface in an erosion scar. The lithic material present were quartz flakes, basalt flakes, chert and silcrete flakes.

The Aboriginal site was exposed form sheet erosion and land clearance. The soil profile was visible in gullied vehicle tracks that exposed a thin A-horizon over orange clays. The Aboriginal objects were eroding out of the A-horizon. The Aboriginal site has no archaeological potential.



Figure 99: View east across the Aboriginal site, erosion scar adjacent to vehicle track.



Figure 100: Basalt and quartz flakes on the ground surface with ironstone gravels.



Figure 101: Basalt, quartz and chert flakes.



Figure 102: Green chert flake.

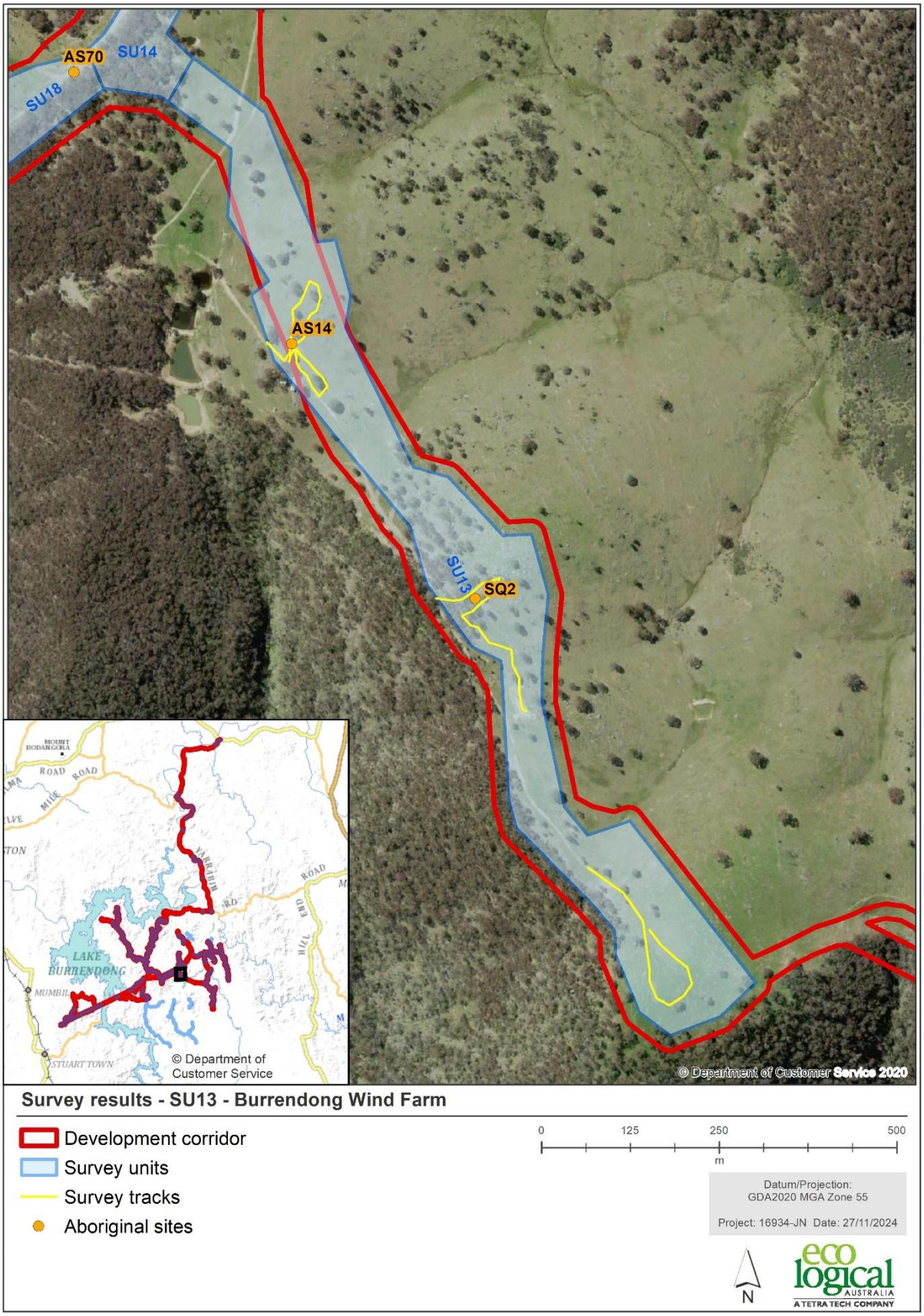


Figure 103: Survey unit 13, tracks and Aboriginal sites

Survey Unit 13	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams. The survey unit is located across a ridgeline with exposed volcanics (basalts and quartz outcropping seams along the ridge tops and the upper slopes and saddles.
Characteristic Landforms	Broad ridge line with alternating ridgetops and saddles formed by drainage lines. The south side was steep slopes and moderate slopes to the north.
Typical Soils	Skeletal stony soils on upper slopes and ridgetops. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the mid and lower slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey across the steep slopes to the south. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across broad landform with pockets of remnant native vegetation.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. The visible Aboriginal sites were exposed on the surface of orange clay loams.



View east across crest landform showing cleared vegetation, and rock outcropping.



Turbine location on hill crest, large, exposed bedrock boulders or granitic/ basalt.



View north across mid slope showing quartz seams exposed amongst basalt out cropping, skeletal soils.



Turbine location near AS14, exposed bedrock and reddish brown clay loams.

BWF SQ2 (AHIMS ID 36-5-0340)

Site type: Stone quarry (Basalt)
Site features: Stone Quarry
Coordinates: GDA 2020 Zone 55 713760 mE 6379128 mS
Site Extent: 20 m x 20 m

A high quality basalt outcropping located on a broad ridgeline (Lot 12 DP756903). No evidence of stone tool manufacture was identified but the characteristics of the basalt was found across many of the Aboriginal sites found in the project site. BWF AS14 is in close proximity to this outcrop and basalt flakes were found.



Figure 104: View south east, along the edge of the outcrop where the high quality basalt was exposed.



Figure 105: View of exposed basalt, fresh natural fracturing. Fine grained, natural breaks have sharp edges.

BWF AS14 (AHIMS ID 36-5-0252)

Site type: Campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 713499 mE 6379485 mS
Site Extent: 50 m x 50 m

A high density surface artefact scatter located on across an eroded vehicle track and a large eroded gentle slope along a broad ridgeline (Lot 12 DP756903). The site consisted of 126 Aboriginal lithic pieces, basalt flakes, quartz flakes, chert flakes, cores, blades and backed points. The site was adjacent to a large quartz outcrop and was exposed on the surface from natural erosion and vehicle damage.

The Aboriginal site was exposed on the surface and there is no likelihood for potential archaeological deposits. The soils visible were orange clay loams that were shallow with frequent exposed bedrock surrounding the site. There were few stands of old tree growth and large boulders to the east.



Figure 106: View south east, across shallow erosion caused by vehicle movement exposing thin soils and artefacts.



Figure 107: Sample of chert basalt and quartz flakes and backed points exposed on the orange clays with high gravel content.



Figure 108: View north west across the most densely exposed section of scatter.



Figure 109: Quartz flakes and backed points exposed across natural sheet erosion amongst bedrock.

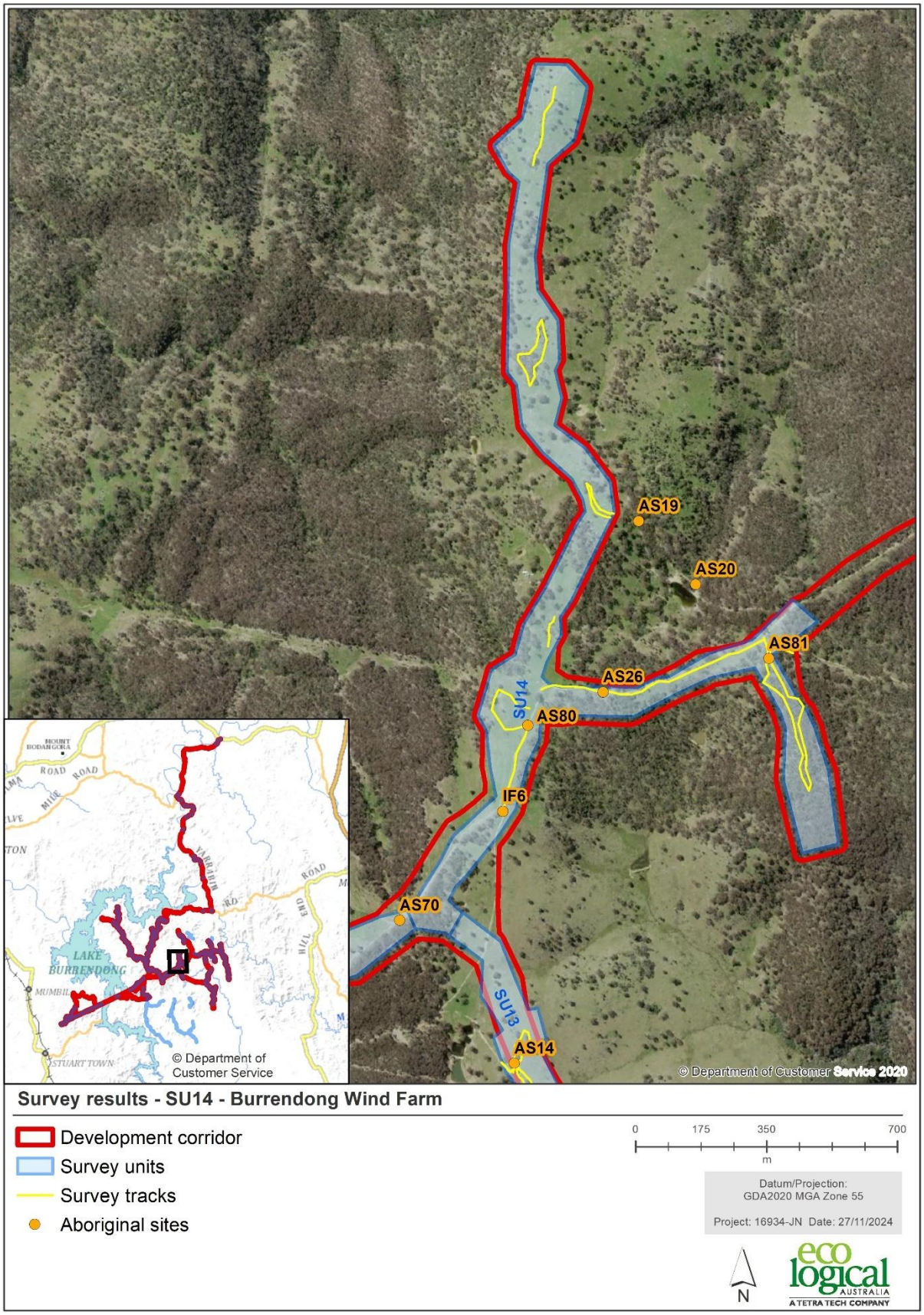


Figure 110: Survey unit 14, tracks and Aboriginal sites

Survey Unit 14	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams. The survey unit is located across a broad ridgeline with exposed volcanics (basalts and quartz outcropping seams along the ridge tops and the upper slopes and saddles.
Characteristic Landforms	Broad ridge line with alternating ridgetops and saddles formed by drainage lines. The side slopes have a moderate gradient.
Typical Soils	Skeletal stony soils on upper slopes and ridgetops. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the mid and lower slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey across the steep slopes to the south. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across broad landform with pockets of remnant native vegetation.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. The visible Aboriginal sites were exposed on the surface of orange clay loams. Archaeological potential was noted across the lower slopes and drainage lines where large sites were eroding out of the side slope.



View north across broad ridgeline, locations of the proposed turbines on ridgetops with exposed volcanic bedrock.



View south across minor ridgeline showing exposed bedrock amongst grass cover and remnant woodland, steep side slopes.

BWF AS19 (AHIMS ID 36-5-0341)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 713793 mE 6380992 mS
Site Extent: 5 m x 10m

A very low density surface artefact scatter located on an eroded vehicle track along a narrow ridgeline (Lot 66 DP42197). The site was identified during the archaeological survey travelling between survey units consisting of quartz flakes and a basalt flake.

The site was exposed in sheet wash erosion, pale brown loams with high ironstone gravel content, bedrock was visible on the vehicle track. The Aboriginal object is unlikely to in situ and has been

impacted by sheet erosion, track maintenance and vehicle movement, there is no potential archaeological deposits associated with the site.



Figure 111: View south across the location of artefacts. Sheet erosion from vehicle damage.



Figure 112: Milky quartz flakes, crystal quartz and a basalt flake.

BWF IF6 (AHIMS ID 36-5-0249)

Site type: Isolated find
Site features: Artefact
Coordinates: GDA 2020 Zone 55 713471 mE 6380160 mS
Site Extent: 1 m x 1 m

An isolated chert core on a saddle between two ridge lines (Lot 12 DP756903). The site was identified during the archaeological survey located on a graded eroded vehicle track with exposed bedrock.

The site was exposed in sheet wash erosion, pale brown loams with high ironstone gravel content, bedrock was visible on the vehicle track. The Aboriginal object has likely been impacted by sheet erosion, track grading and vehicle movement, there is no potential archaeological deposits associated with the site.



Figure 113: View south along graded vehicle track, high gravel content, exposed bedrock.



Figure 114: Weathered chert core exposed on the track surface.

BWF AS20 (AHIMS ID 36-5-0342)

Site type: Campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 713979 mE 6380758 mS
Site Extent: 20 m x 20 m

A moderate density surface artefact scatter located on the lower slope of drainage line along a narrow ridgeline (Lot 66 DP42197). The site was identified during the archaeological survey travelling between survey units consisting of more than 50 lithic pieces consisting of quartz, chert and basalt flakes. Backed basalt points, likely grinding stones and knapping stones.

The site has been partially destroyed by a dam construction and ongoing erosion from vehicle movement as it is an access point. The Aboriginal objects were identified eroding out of the drainage line bank and exposed on the steep slope on the north side of dam. There is potential archaeological deposits that would need investigation to understand the nature and extent of the site if it were to be impacted by the project.



Figure 115: View north, across slope with high sheet erosion from vehicle damage and dam construction.



Figure 116: Backed basalt point with broken tip.



Figure 117: Basalt flakes and blade cores exposed on surface, north of dam.



Figure 118: South side of the dam construction, exposed deposits with artefacts eroding out of A horizon.

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BWF AS26 (AHIMS ID 36-5-0245)

Site type: Campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 713737mE 6380478 mS
Site Extent: 50 m x 7 m

A low density surface artefact scatter located along a narrow ridgeline (Lot 66 DP42197). The site was identified during the archaeological survey consisting of approximately 20 lithic pieces, mainly basalt, and a few quartz and chert pieces.

The site has been partially destroyed by track grading and vehicle movement as it is an access point between several lots. The Aboriginal objects were exposed on the vehicle track and the surrounding high visibility points. There is a high content of background basalt pieces that have been mechanically broken by a grader across a basalt seam 50m along the track. There are no potential archaeological deposits that would need investigated to understand the nature and extent of the site, the soils were skeletal, and bedrock was visible.



Figure 119: View west across ridgeline and exposed artefact scatter, soils were skeletal and exposed bedrock along vehicle track.



Figure 120: Basalt flakes exposed on the ground surface adjacent to vehicle track.



Figure 121: View west from eastern end of site, graded vehicle track and exposed basalt bedrock, moderate slope.



Figure 122: Chert core and basalt flake exposed on vehicle track.

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BWF AS80 (AHIMS ID 36-5-0343)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 713545 mE 6380401 mS
Site Extent: 2 m x 5 m

A very low density surface artefact scatter located along a graded vehicle track on a narrow ridgeline (Lot 66 DP42197). The site was identified during the archaeological survey consisting of 6 basalt flakes.

The site is likely the result of track grading and vehicle movement as the lithic material is consistent with BWF AS26. The Aboriginal objects were exposed on the vehicle track and there are no potential archaeological deposits that would need investigated to understand the nature and extent of the site, the soils were skeletal, and bedrock was visible.



Figure 123: View south across graded vehicle track, lithic pieces were scattered across surface and bedrock is visible.



Figure 124: Weathered basalt flakes similar to BWF AS26.

BWF AS81 (AHIMS ID 36-5-0344)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 714185 mE 6380545 mS
Site Extent: 20 m x 15 m

A very low density surface artefact scatter located along a graded vehicle track on a narrow ridgeline (Lot 66 DP42197). The site was identified during the archaeological survey consisting of 8 lithic pieces consisting of weathered basalt flakes and quartz flakes exposed on eroded surfaces and vehicle track.

The Aboriginal objects were exposed on the vehicle track and sheet eroded surfaces, there is no potential archaeological deposits that would need investigated to understand the nature and extent of the site, the soils were skeletal, and bedrock was visible. The Aboriginal objects are highly weathered and are likely a similar site to BWF AS26.

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Figure 125: View south across an exposure with skeletal brown loams over orange clays with high gravel content.



Figure 126: Weathered basalt flakes exposed on the ground surface.

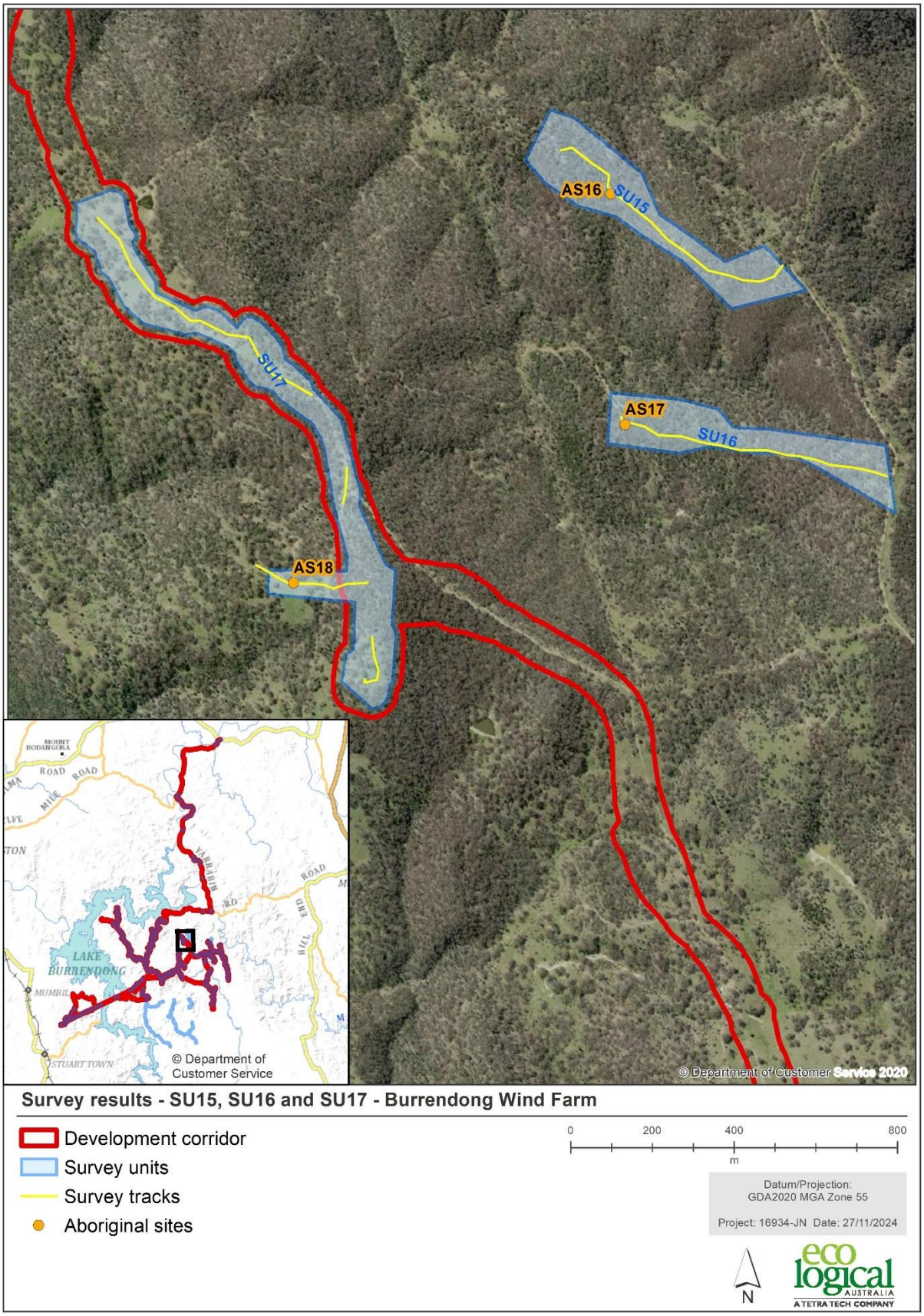


Figure 127: Survey unit 15, 16 and 17, tracks and Aboriginal sites

Survey Unit 15	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams. The survey unit is located across a ridgeline with exposed volcanics (basalts and quartz outcropping seams.
Characteristic Landforms	Broad ridge line with steep side slopes.
Typical Soils	Skeletal stony soils on upper slopes and ridgetops. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the saddles and mid slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey across the steep slopes to the south. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. The visible Aboriginal sites were exposed on the surface of thins brown loams amongst rocky bedrock outcrops.



View north west across crest landform showing vegetation coverage, exposed rocks and gravelly surface.



Vehicle track adjacent survey unit showing exposed bedrock, shallow rocky reddish sandy loams present across landform.

BWF AS16 (AHIMS ID 36-5-0246)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 714886 mE 6384770 mS
Site Extent: 20 m x 20 m

A low density surface artefact scatter located along a saddle between ridgetops on a narrow ridgeline (Lot 351 DP776208). The site was identified during the archaeological survey consisting of 17 lithic pieces, five weathered basalt flakes, two rhyolite flakes and ten quartz flakes exposed on sheet eroded surfaces.

The Aboriginal objects were exposed on the ground surface, a large sheet erosion scour on a gentle sloping saddle. The soils visible were brown sandy loams with ironstone gravels and exposed red brown clay loams. There are no potential archaeological deposits due to the highly eroded surface and exposed bedrock and quartz seams.



Figure 128: View east, across exposed scatter.



Figure 129: Two basalt flakes and milky quartz flakes on the exposed clay sandy loams with ironstone gravels.

Survey Unit 16	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams. The survey unit is located across a ridgeline with exposed volcanics (basalts and quartz outcropping seams.
Characteristic Landforms	Broad ridge line with steep side slopes .
Typical Soils	Skeletal stony soils on upper slopes and ridgetops. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the saddles and mid slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey across the steep slopes to the south. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. The visible Aboriginal sites were exposed on the surface of thins brown loams amongst rocky bedrock outcrops.



View west across crest landform showing exposed rocks amongst the grass cover, open woodland.



Exposed quartz outcropping and point of the crest landform.

BWF AS17 (AHIMS ID 36-5-0247)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 714926 mE 6384198 mS
Site Extent: 2 m x 2 m

A low density surface artefact scatter located along a saddle between ridgetops on a narrow ridgeline (Lot 351 DP776208). The site was identified during the archaeological survey consisting of 13 lithic pieces, nine weathered basalt flakes, two basalt cores, red chert flake and three quartz flakes exposed on sheet eroded surfaces.

The Aboriginal objects were exposed on the ground surface, a large sheet erosion scour and ant nest on a gentle sloping ridge top. The soils visible were red brown sandy loams with ironstone gravels and exposed red brown clay loams. There are no potential archaeological deposits due to the highly eroded surface and exposed bedrock.



Figure 130: View east across the sheet erosion and bioturbation.



Figure 131: Basalt flakes on the red clay loams with angular ironstone gravels.

Survey Unit 17	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams. The survey unit is located across a ridgeline with exposed volcanics (basalts and quartz outcropping seams.
Characteristic Landforms	Broad ridge line with steep side slopes .
Typical Soils	Skeletal stony soils on upper slopes and ridgetops. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the saddles and mid slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey across the steep slopes to the south. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. The visible Aboriginal sites were exposed on the surface of thins brown loams amongst rocky bedrock outcrops.



View north across turbine location showing moderate slope, rocky shallow soils, remnant vegetation.



Rocky outcropping across ridgeline, gravelly soils, gentle slope south to north.



View southeast across turbine location showing rock outcropping, cleared vegetation along ridgeline.



Moderate slope long saddle between ridge points, gravelly rocky surface, skeletal reddish sandy loams.

BWF AS18 (AHIMS ID 36-5-0248)

Site type: Isolated find
Site features: Artefact
Coordinates: GDA 2020 Zone 55 714105 mE 6383817 mS
Site Extent: 5 m x 5 m

A very low density surface artefact scatter located along a crest that slopes off the narrow ridgeline (Lot 352 DP776208). The site was identified during the archaeological survey consisting of 4 lithic pieces, three quartz flakes and a chert flake exposed on sheet eroded surfaces with exposed bedrock.

The Aboriginal objects were exposed on the ground surface, a large sheet erosion scour across a gentle sloping crest line. The soils visible were red brown clay loams with ironstone gravels. There are no potential archaeological deposits due to the highly eroded surface and exposed bedrock.



Figure 132: View west across the crest line with exposed bedrock.



Figure 133: Crystal quartz flake on the ground surface.

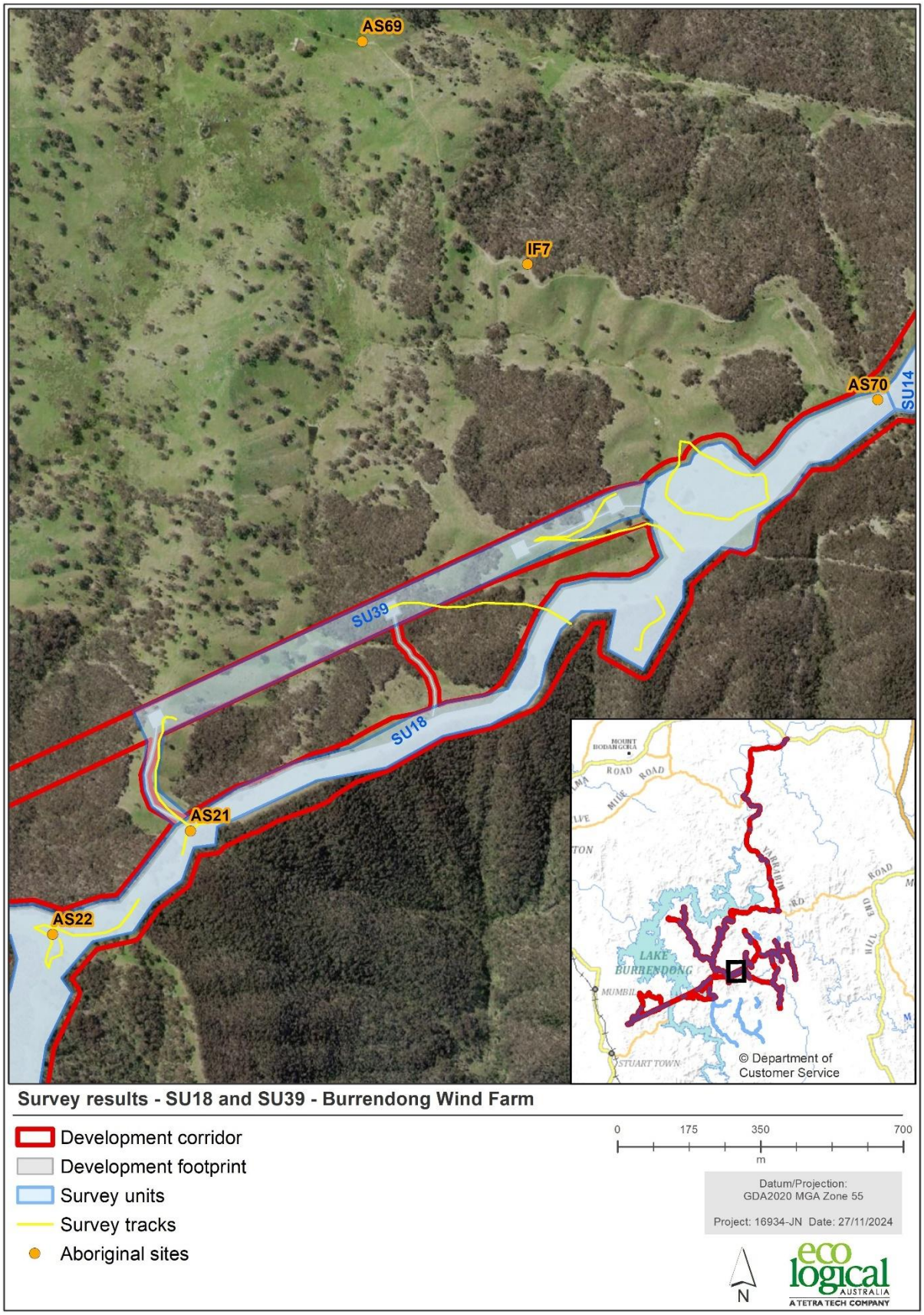


Figure 134: Survey unit 18 and 39, tracks and Aboriginal sites

Survey Unit 39	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the crest. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams. The survey unit is located across a broad crest line that joins to a narrow rocky ridgeline, with exposed volcanics (basalts and quartz outcropping seams along the upper slopes and saddles.
Characteristic Landforms	Broad crest line with saddles formed by drainage lines. The side slopes have a moderate to steep gradient.
Typical Soils	Skeletal stony soils on upper slopes and ridgetops. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the mid and lower slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey across the steep slopes to the south. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across broad landform with pockets of remnant native vegetation.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance.



View west across the southern end of SU where the crest meets the ridgeline, skeletal soils and exposed bedrock.



Upper slope of the crest riling and exposed bedrock, short grass and skeletal soils.



View southeast across crest landform with remnant vegetation, exposed bedrock and moderate visibility.



View south showing low lying crest with moderate slopes and extensive vegetation clearance.

Survey Unit 18	
Geology	Steep hills and narrow ridgeline with exposed slate, greywacke, and shale. Parent rocks are sediments and metasediments uplifted through volcanic processes.
Characteristic Landforms	Steep, hilly, and rocky slopes, mainly shallow loams and sands. Occasional basalt caps, confined river valleys with terrace remnants. High erosion hazard.
Typical Soils	Shallow stony soils on steep slopes, texture contrast soils grading from red subsoils on upper slopes to yellow subsoils on lower slopes. Skeletal sands and loams on along the ridgeline and upper slopes with frequent bedrock outcropping.
Vegetation	Dry sclerophyll forest remaining on the upper slopes and steep sides of the ridgeline. There has been extensive clearance along the ridgetop and the moderate slopes to the north.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance.



View southwest across ridge line showing rocky gravelly landform. Cleared vegetation on moderate slopes and remnant vegetation on steep slopes.



View north west along the ridgeline showed cleared vegetation and remnant vegetation on steep side slopes.



View southeast across ridge line showing rocky gravelly landform. Undulating ground between ridgetops and shallow saddles, frequent exposed shales.



View south east across rocky ridgeline, skeletal soils, exposed shales and quartz seams.

BWF AS21 (AHIMS ID 36-5-0253)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 711510 mE 6378810 mS
Site Extent: 20 m x 10 m

A very low density surface artefact scatter located on an eroded vehicle track along a narrow ridgeline (Lot 38 DP756872). The site was identified during the archaeological survey consisting of two basalt flakes, flaked river cobble, and a greywacke flake.

The Aboriginal objects were exposed on the ground surface, a large sheet erosion scour across a saddle that has also been impacted by vehicle movement. The soils visible were skeletal red sandy loams with ironstone gravels and large floating bedrock pieces amongst exposed shales on the upper slope. There areno potential archaeological deposits due to the highly eroded surface and exposed bedrock.



Figure 135: View north across the erosion from vehicle movement and natural processes, scatter exposed on surface.



Figure 136: Greywacke flake on red brown sandy loams.

BWF AS22 (AHIMS ID 36-5-0254)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 711169 mE 6378556 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on the eroded upper slope along a narrow ridgeline (Lot 38 DP756872). The site was identified during the archaeological survey consisting of four chert flakes.

The Aboriginal objects were exposed on the ground surface, a large sheet erosion scour across a ridgetop that has also been impacted by vehicle movement and vegetation clearance. The soils visible were skeletal red sandy loams with ironstone gravels and large areas of exposed shales. There are no potential archaeological deposits due to the highly eroded surface and exposed bedrock.

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Figure 137: View east across the ridgeline and location of artefacts.



Figure 138: Four chert flakes located on eroding bedrock.

BWF AS70 (AHIMS ID 36-5-0345)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 712333 mE 6380206 mS
Site Extent: 5 m x 10 m

A very low density surface artefact scatter located on an eroded residual shale surface and vehicle track along a narrow ridgeline (Lot 12 DP756903). The site was identified during the archaeological survey consisting of basalt flakes and quartz flakes on the ground.

The Aboriginal objects were exposed on the eroding residual shale surface along the ridgeline, sheet erosion and vehicle damage is evident, there is no potential archaeological deposits that would need to be investigated to understand the nature and extent of the site, the soils were skeletal, and bedrock was visible.



Figure 139: View south west along the eroded ground surface with exposed eroding shales and basalt bedrock.



Figure 140: Basalt flake exposed on the ground surface on brown loams and fractured shales.

BWF IF7 (AHIMS ID 36-5-0250)

Site type: Isolated find
Site features: Artefact
Coordinates: GDA 2020 Zone 55 712348 mE 6380176 mS
Site Extent: 2 m x 2 m

An isolated artefact located on an eroded and graded vehicle track along a broad crest line (Lot 5 DP756872). The site was identified during the archaeological survey consisting of a weathered silcrete flake identified in a disturbed context.

Exposed on the eroding residual shale surface along the upper slope of the crest line, sheet erosion and vehicle damage is evident, there is no potential archaeological deposits that would need to be investigated to understand the nature and extent of the site, the soils were skeletal, and bedrock was visible.



Figure 141: View south east across the graded vehicle track showing exposed and eroding bedrock.



Figure 142: Weathered silcrete flake on the vehicle access track, angular shale fragments abundant.

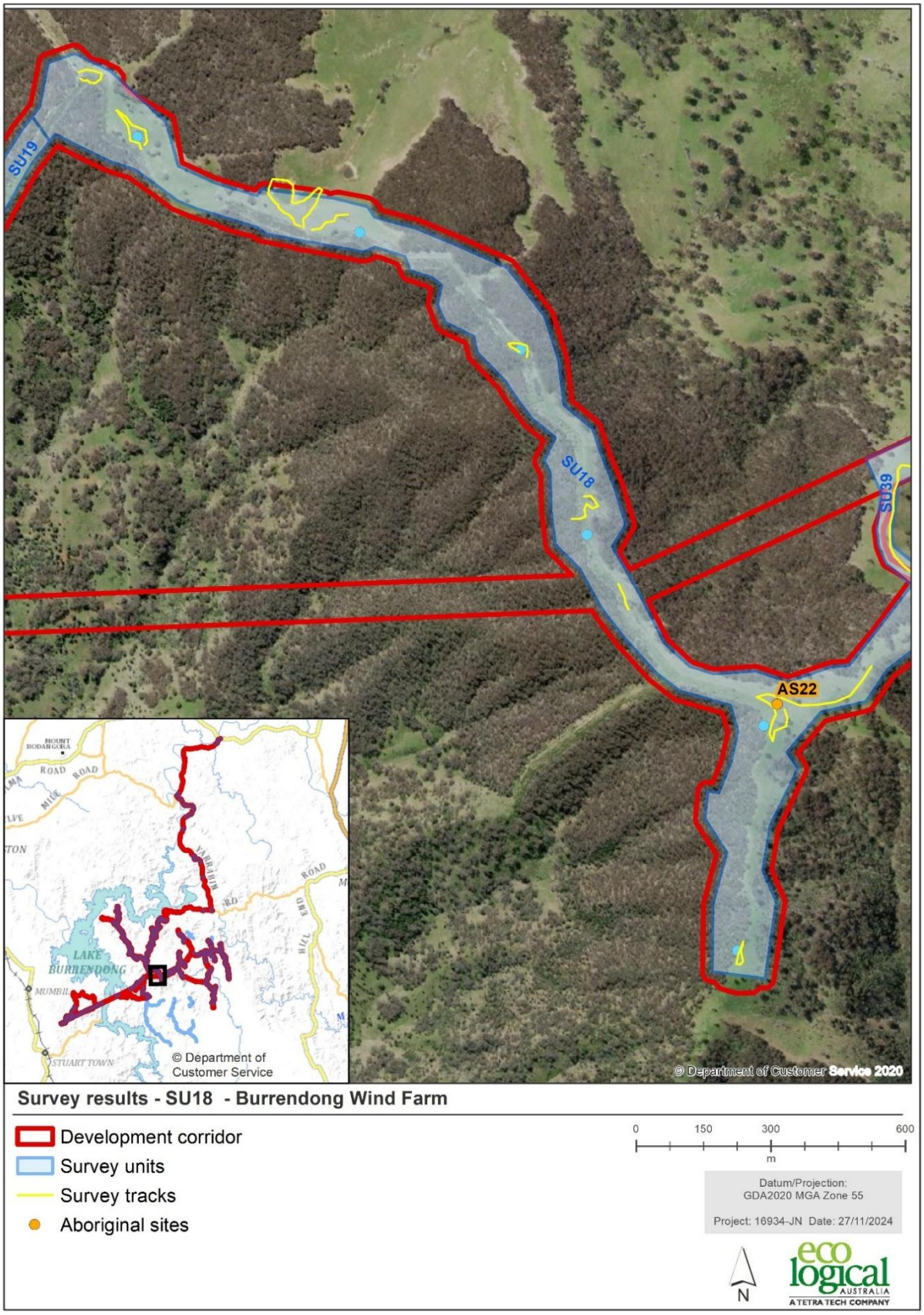


Figure 143: Survey unit 18, tracks and Aboriginal sites

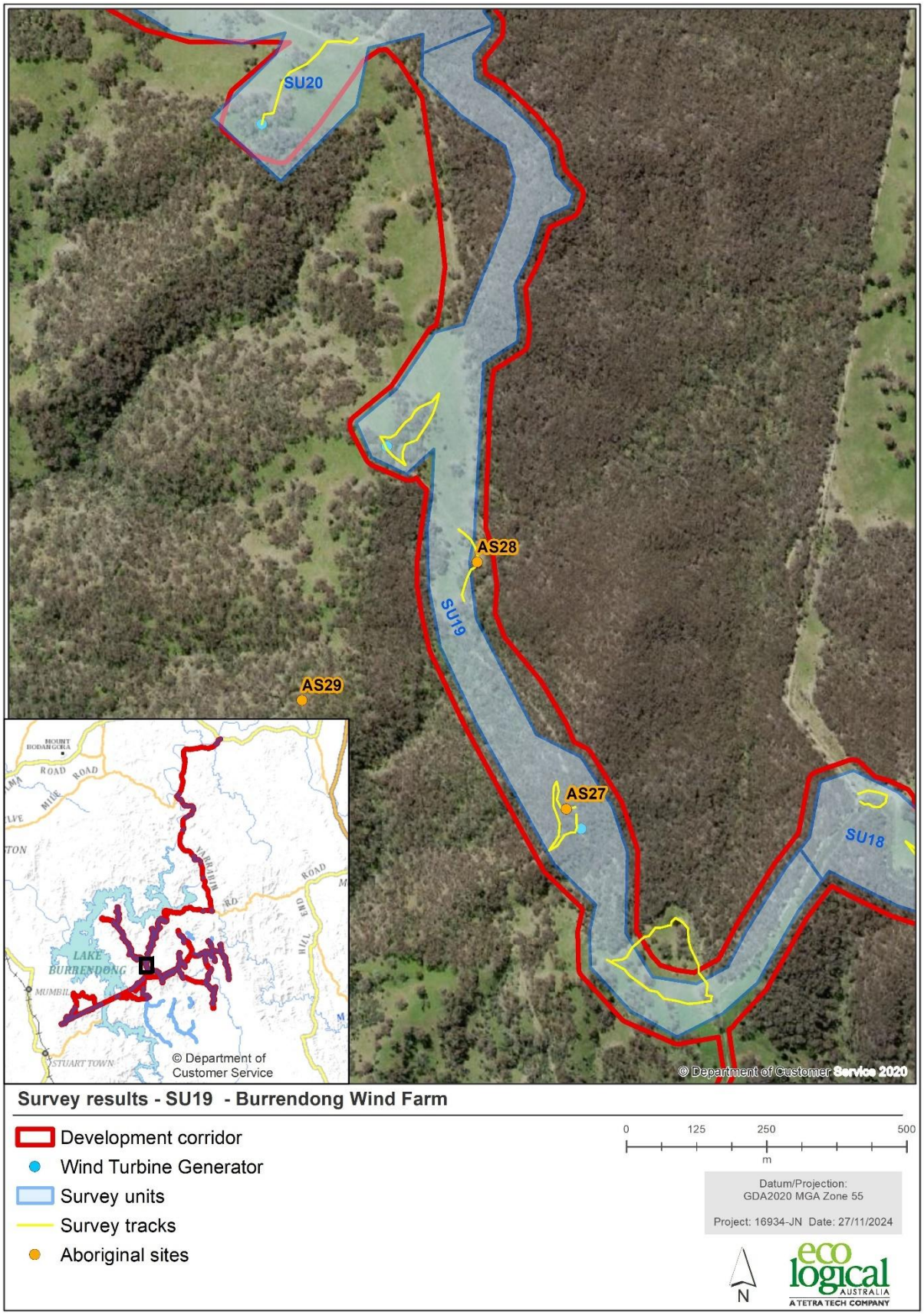


Figure 144: Survey unit 19, tracks and Aboriginal sites

Survey Unit 19	
Geology	Steep hills and narrow ridgeline with exposed slate, greywacke, and shale. Parent rocks are sediments and metasediments uplifted through volcanic processes. Frequent quartz seams exposed.
Characteristic Landforms	Steep, hilly, and rocky slopes with shallow valleys between crests, mainly shallow loams and sands. High erosion hazard.
Typical Soils	Shallow stony soils on steep slopes, texture contrast soils grading from red subsoils on upper slopes to yellow subsoils on lower slopes and saddles. Skeletal sands and loams along the crests and upper slopes with frequent bedrock outcropping.
Vegetation	Dry sclerophyll forest remaining on the upper slopes and steep sides of the ridgeline. There has been minimal clearance along the survey unit.
Archaeological potential	No archaeological potential along the survey unit, shallow skeletal soils with high erosion hazard.



View northeast across ridgeline showing skeletal soils, volcanic outcropping with frequent quartz seams, open woodland.



Turbine location, view west across to the Macquarie River, volcanic rock outcrops, open woodland, steep side slopes.

BWF AS27 (AHIMS ID 36-5-0255)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 709099 mE 6379941 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on an eroded crest line (Lot 16 DP756903). The site was identified during the archaeological survey consisting of two milky quartz flakes on the ground surface in an erosion scar adjacent to a graded vehicle track and exposed quartz seam. There is a large amount of background quartz material.

There was high visibility and exposure across the site, exposed bedrock and copious amounts of quartz eroding from a large seam. The soils were skeletal brown loams with high ironstone gravel content. there is no potential archaeological deposits that would need to be investigated to understand the nature and extent of the site, the soils were skeletal, and bedrock was visible.

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Figure 145: View west across the site on a moderate slope with high erosion and exposed bedrock.



Figure 146: Two quartz flakes distinguished amongst a high background scatter of eroding quartz material.

BWF AS28 (AHIMS ID 36-5-0346)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 708927 mE 6380421 mS
Site Extent: 5 m x 10 m

A very low density surface artefact scatter located on an eroded vehicle track through a gentle sloping saddle between two narrow ridgelines (Lot 16 DP756903). The site was identified during the archaeological survey consisting of quartz and basalt flakes on the ground surface in an erosion scar.

The Aboriginal objects were exposed by sheet erosion and vehicle damage, there is no potential archaeological deposits that would need investigated to understand the nature and extent of the site, the soils were skeletal, and the sheet erosion exposed a thin brown loam A horizon over red brown clay loams with high angular gravel content.



Figure 147: View south east across sheet erosion.



Figure 148: Aboriginal objects identified spread across the sheet erosion, basalt and quartz.

BWF AS29 (AHIMS ID 36-5-0347)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 708671 mE 6380119 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on an eroded surface adjacent to a fence line along the narrow ridgeline (Lot 16 DP756903). The site was identified during the archaeological survey consisting red stained basalt, chert and quartz flakes including one basalt core on the ground surface in an erosion scar.

The Aboriginal objects were exposed by natural erosion process, on the ground surface around fence posts. The site is located at the end of a vehicle access track. There is potential archaeological deposits associated with the scatter, the soils were red earths to red clay loams with little gravel content, and no visible bedrock. The soils were very different to exposed leached loams and exposed basalt bedrock 100m down the access track.



Figure 149: View east along the ridge line showing erosion scour adjacent to the fence line.



Figure 150: Red stained quartz, basalt and chert flakes on red earths.

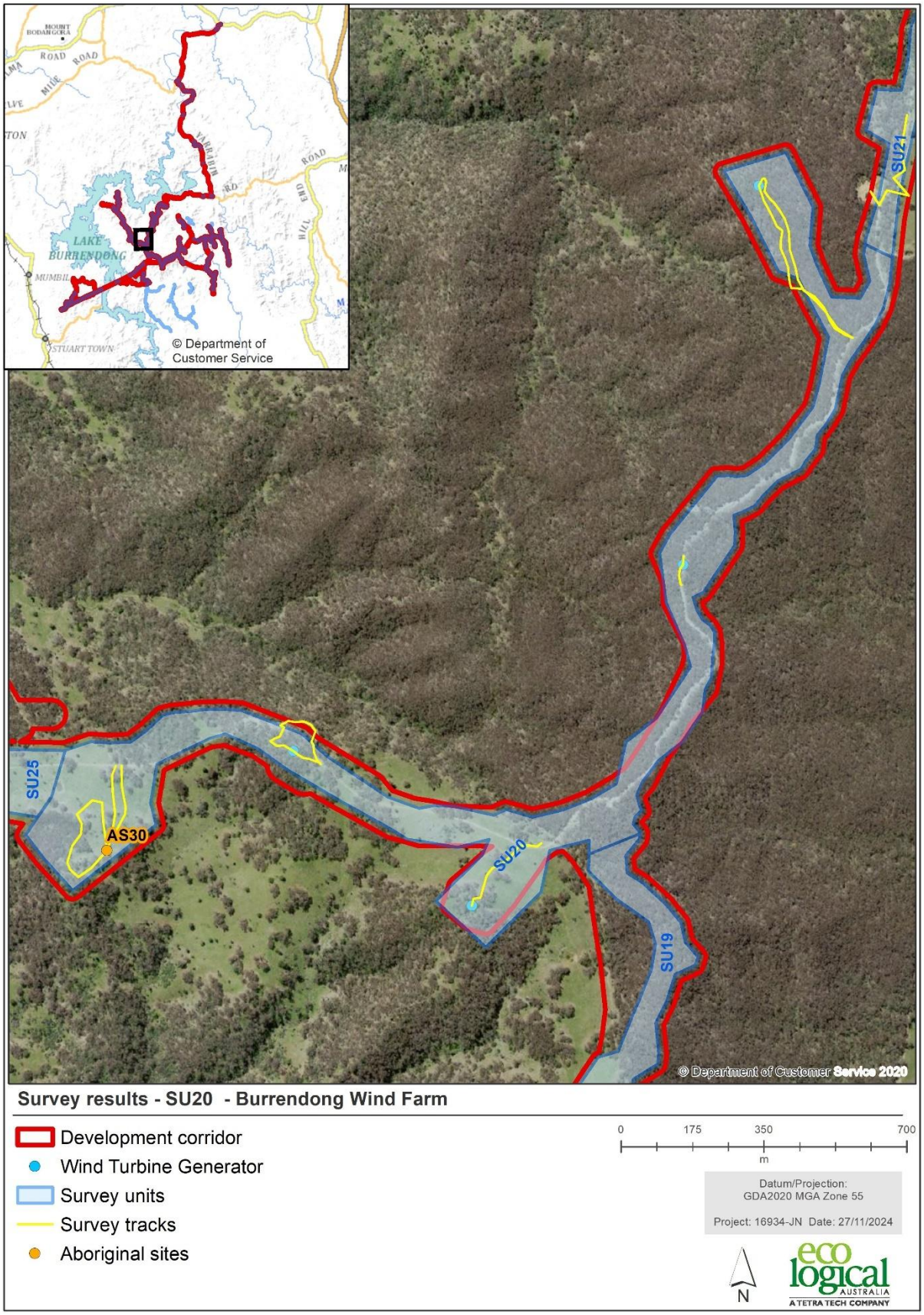


Figure 151: Survey unit 13, tracks and Aboriginal sites

Survey Unit 20	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams. The survey unit is located across a ridgeline with exposed volcanics (Greywackes, basalts and quartz outcropping seams along the ridge tops and the upper slopes and saddles.
Characteristic Landforms	Broad ridge line with alternating ridgetops and saddles formed by drainage lines. The with steep slopes and deep drainage lines.
Typical Soils	Skeletal stony soils on upper slopes and ridgetops. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the mid and lower slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey across the steep slopes to the south. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across the vehicle access track with the remaining survey unit covered in native vegetation/ open woodland.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. The visible Aboriginal sites were exposed on the surface of orange clay loams.



View north west across crest landform exposed bedrock, tree cover at the location of a stockpile.



Large exposures of bedrock across a crest line at the location of a turbine, skeletal soils.



View west across crest landform showing vegetation clearance and grading for vehicle track, exposed shales along graded surface.



Vegetation clearance across turbine location exposed bedrock and brown loams.

BWF AS30 (AHIMS ID 36-5-0256)

Site type: Campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 707657 mE 6381301 mS
Site Extent: 10 m x 10 m

A very low density surface artefact scatter located on an eroded broad moderate sloping landform above a large drainage valley (Lot 48 DP756919). The site was identified during the archaeological survey of the proposed substation for the northern option of the transmission line. The site consisted of four quartz flakes and a quartz geometric microlith on the upper slope overlooking a broad drainage valley.

The Aboriginal objects were exposed by natural erosion process, on the ground surface. The soils were red earths to red clay loams with little gravel content. There was bedrock exposed as reefs across the drainage valley and surrounding the erosion scour. There is no potential archaeological deposit as the site was highly eroded and exposed bedrock suggests shallow soils.



Figure 152: View east across the sheet eroded moderate slope above the drainage line.



Figure 153: Quartz flakes and a geometric microlith.

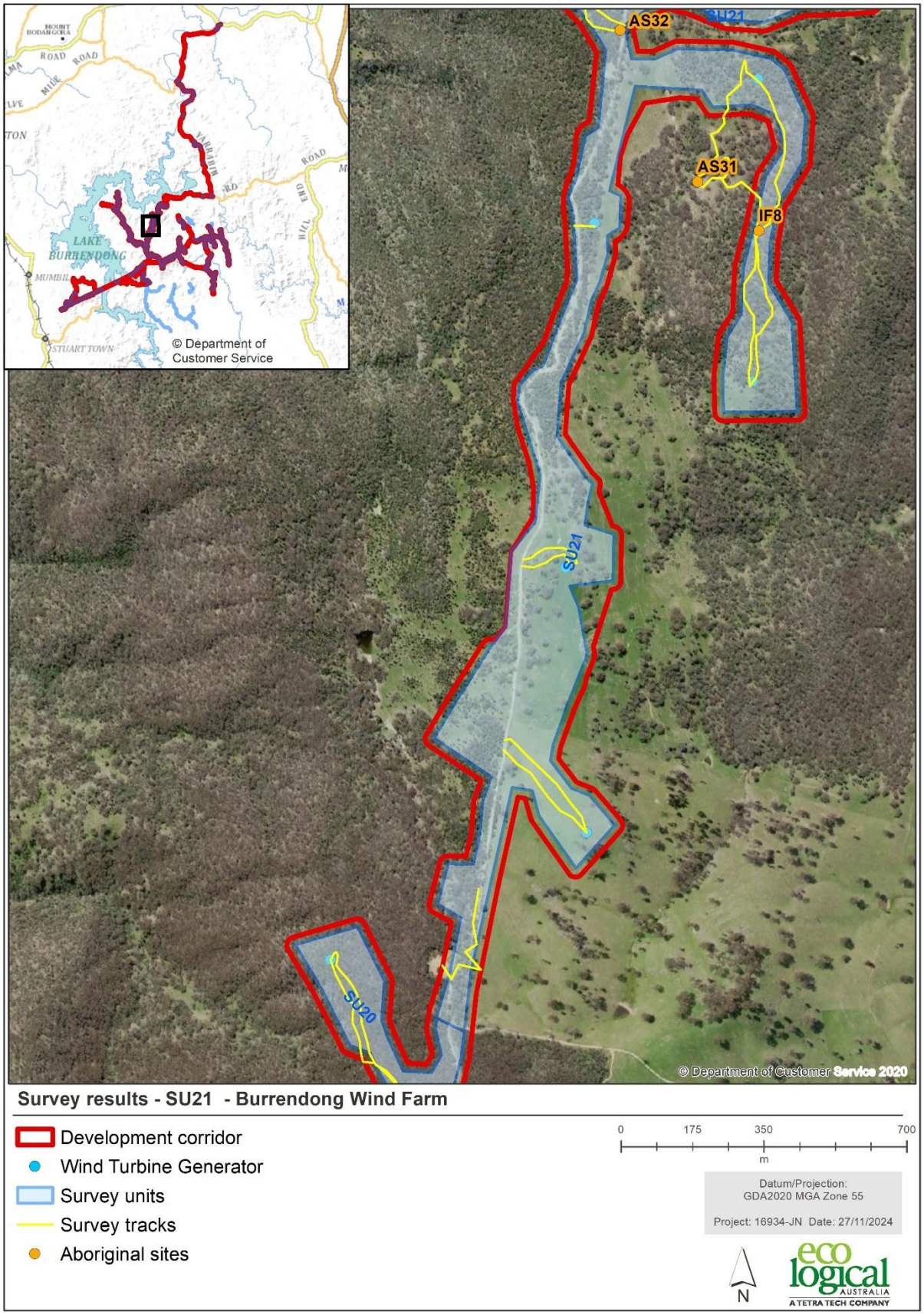


Figure 154: Survey unit 21, tracks and Aboriginal sites

Survey Unit 21	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams. The survey unit is located across a broad ridgeline with exposed volcanics outcropping seams along the ridge tops and the upper slopes and saddles.
Characteristic Landforms	Broad ridge line with alternating ridgetops and saddles formed by drainage lines. The side slopes have a moderate gradient.
Typical Soils	Skeletal stony soils on upper slopes and ridgetops. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the mid and lower slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey across the steep slopes to the south. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across broad landform with pockets of remnant native vegetation.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. The visible Aboriginal sites were exposed on the surface of orange clay loams. Archaeological potential was noted across the lower slopes and drainage lines where large sites were eroding out of the side slope.



View north across the vehicle access corridor, disturbance from continuous grading and track movement between the fence lines.



Bedrock outcropping across the broad spurs off the ridgeline, mostly cleared vegetation.



View west across the broad crest, mostly cleared, large bedrock reefs across the landform.



Red -orange clay loams exposed in the drainage valleys, high visibility and exposed soil profiles.

BWF IF8 (AHIMS ID 36-5-0257)

Site type: Isolated find
Site features: Artefact
Coordinates: GDA 2020 Zone 55 710309 mE 6384714 mS
Site Extent: 2 m x 2 m

An isolated artefact located on an eroded vehicle track along a narrow ridgeline (Lot 42 DP756872). The site was identified during the archaeological survey along the access track for a turbine, consisting of a basalt flake.

The soil exposed were skeletal to non-existent and there were large expanses of exposed bedrock. The vegetation cover is open woodland and high visibility and exposure. There is no potential for an archaeological deposit associated the Aboriginal site.



Figure 155: View south across the rocky crest, an informal rocky vehicle track with exposed sandstone boulders and decomposing bedrock.



Figure 156: Basalt flake identified on the vehicle track.

BWF AS31 (AHIMS ID 36-5-0348)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 710179 mE 6384836 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on an eroded gentle slope (Lot 42 DP756872). The site was identified during the archaeological survey consisting of two river cobbles that have evidence of knapping, grinding and or hammering. One river cobble has pitting at the narrow end with flake scars along the long edge. The second river cobble has pitting on the short edge and a smooth surface likely from grinding.

The soils visible were pale brown loams with ironstone gravels and exposed red orange clay loams. There are no potential archaeological deposits due to the highly eroded ground surface and exposed shallow soil profile.

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Figure 157: Knapping or hammer stone with pitting and flake scars. Located on the brow loams.



Figure 158: Location of the hammer stone on a large sheet erosion scour, no other Aboriginal objects were visible.

BWF AS32 (AHIMS ID 36-5-0258)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 709965 mE 6385200 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on a graded vehicle track in close proximity to a quartz seam across the road (Lot 42 DP756872). The site was identified during the archaeological survey for the project access corridor and access to the turbine adjacent. The lithic material consisted of two quartz flakes and a basalt flaked piece.

There is no archaeological potential, and the site is no longer valid. The latest surveys had observed that the vehicle access track had been recently graded and was wider since the site was recorded. The quartz seam was no longer visible. This site has been destroyed by property maintenance. There are no potential archaeological deposits.



Figure 159: View south across vehicle track, location of artefacts across road.



Figure 160: Two quartz flakes identified.

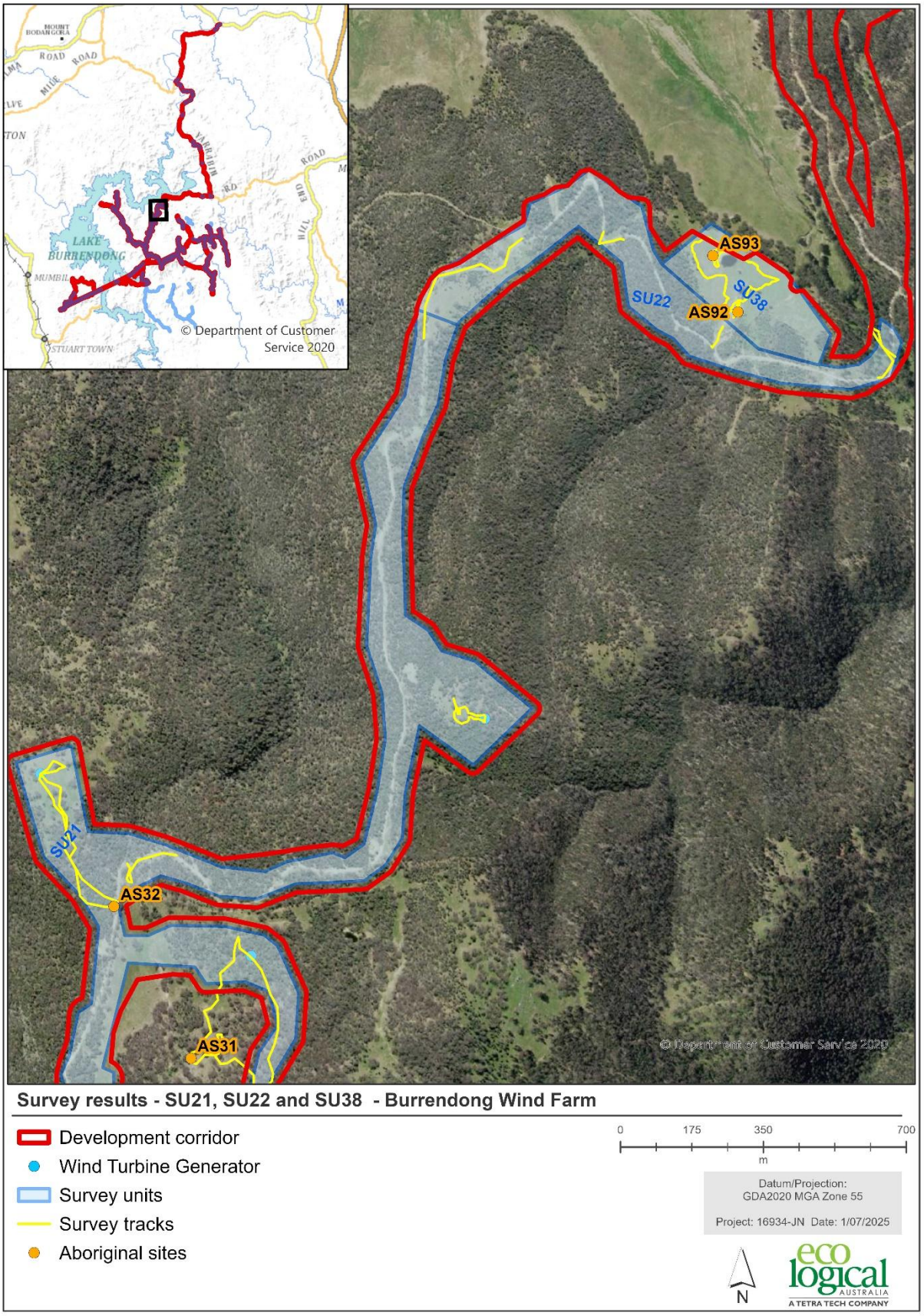


Figure 161: Survey unit 21, 22 and 38 tracks and Aboriginal sites

Survey Unit 38	
Geology	The survey unit is located across a broad drainage valley with exposed volcanics (basalts and quartz outcropping seams along the and the mid slopes. Exposed shales across the low lying hills and slopes.
Characteristic Landforms	Undulating rolling low hills often strewn with quartz gravel. Broad sloping drainage valley between narrow crests with broad saddles. One major drainage line runs through the centre of the survey unit. Raised terraces adjacent to drainage line with exposed shales. The gentle sloping landform had poor drainage and standing water was present.
Typical Soils	Reddish brown fine sandy clay loams along the survey unit. Exposed gravelly sand s along the access track and around the dam. Copious quartz floats. There is a high clay content throughout the visible soil profile, and they were shallow.
Vegetation	Extensively cleared across broad landform with pockets of remnant native vegetation along the boundary and isolated stands of trees.
Archaeological potential	No archaeological potential within the survey unit, the shallow soils have been impacted by land clearance and stock movement. The visible Aboriginal sites were exposed on the surface of orange clay loams. There is potential for this site to have in situ deposits beyond the fence line/ footprint where there is no visible disturbance from stock movement. If in situ deposit present, they would be shallow.



View north west across gentle sloping landform showing relatively flat extensively cleared stock enclosure.



View north across the dam construction, exposed clays and bedrock, ground saturation poor drainage.



View southeast showing remnant vegetation and shallow soil profile with high clay content.



View west across survey unit, minor fencing and stock damage causing erosion scours and mixed soil profile.

BWF AS92 (AHIMS ID 36-5-0350)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 711494 mE 6386663 mS
Site Extent: 20 m x 50 m

A moderate density surface artefact scatter located across an eroded vehicle track on the lower gentle slope of a ridgeline (Lot 6 DP240821). The site was identified during the archaeological survey of the potential location for workers accommodation, consisting of sixteen basalt flakes, three greywacke flakes, a rhyolite grinding stone (red), a flaked river cobble, quartz core and four quartz flakes, three FGS flakes, Chert flake, and three quartzite flakes.

The artefacts were visible on the ground surface, a large sheet erosion scour and vehicle track. There was copious amounts of background quartz fragments, and the distribution of the artefacts has been influenced by disturbance. The soils visible were red brown sandy loams and exposed red orange clay loams. There are no potential archaeological deposits due to the highly eroded surface and exposed shallow soil profile.



Figure 162: View southeast across the highly eroded ground surface from vehicle damage and Stock movement.



Figure 163: Two Basalt flakes and a white chert flake.



Figure 164: Quartz core and FGS flake.



Figure 165: Four Basalt flakes, tertiary and secondary reduction.

BWF AS93 (AHIMS ID 36-5-0351)

Site type: Campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 711434 mE 6386801 mS
Site Extent: 50 m x 50 m

A low density surface artefact scatter located across a large area of stock damage and erosion from ground water (Lot 6 DP240821). The site was identified during the archaeological survey of the potential location for workers accommodation, consisting of weathered ground edge stone axe, six quartz flakes, a basalt flakes piece, thirteen basalt flakes, a broken basalt Bondi point, four FGS cores and four FGS flakes.

The artefacts were visible on the ground surface, and the distribution of the artefacts has been influenced by disturbance. The soils visible were red brown clay loams and large bedrock fragments. There are no potential archaeological deposits within the boundary of the project area, but there is potential archaeological deposits beyond the fence line where there has been no visible impact from stock damage or dam construction.



Figure 166: View north west across the artefact scatter in stock erosion. Shallow soils over clays. Large floating bedrock fragments.



Figure 167: Highly weathered ground edge stone axe, located on the surface north of the dam.



Figure 168: Basalt and FGS flakes located on the surface below the constructed dam



Figure 169: Basalt and quartz flakes spread across the surface of the eastern edge of the dam.

Survey Unit 22	
Geology	Exposed slate, greywacke, and shale. Quartz seams. Parent rocks are sediments and metasediments uplifted through volcanic processes.
Characteristic Landforms	Steep undulating hills and narrow ridgeline mainly shallow loams and sands. High erosion hazard. The majority of the survey unit is a road corridor graded for property access.
Typical Soils	Shallow stony soils on steep slopes, texture contrast soils grading from red subsoils on upper slopes to yellow subsoils on lower slopes. Skeletal sands and loams on along the ridgeline and upper slopes with frequent bedrock outcropping.
Vegetation	Dry sclerophyll forest remaining on the upper slopes and steep sides of the ridgeline. There has been extensive clearance along the transport corridor.
Archaeological potential	No archaeological potential along the survey unit, shallow soils with high erosion hazard due to weak soil structure and vegetation clearance along the lower to mid slopes and then skeletal rocky soils on the upper slopes and ridgeline.



View southeast across the moderate upper slope of the landform, red earths with large bedrock outcropping. Vehicle access track has been graded to bedrock.



View north across the narrow ridgeline section graded through bedrock, skeletal / absent soils.



Turbine location, rocky outcropping and narrow spur line off the ridgeline.



Location for transport corridor widening skeletal soils and rocky outcropping.

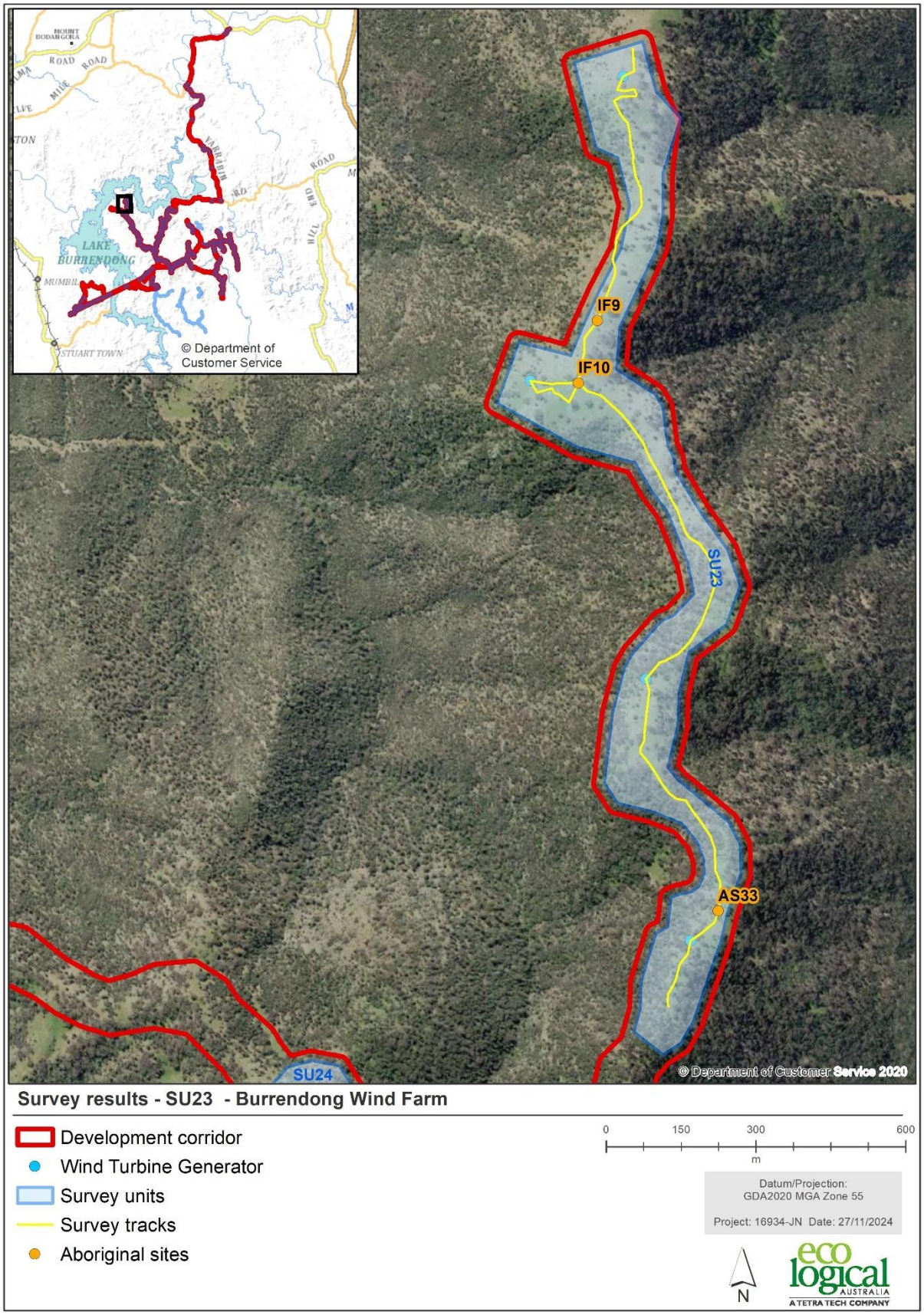


Figure 170: Survey unit 23 tracks and Aboriginal sites

Survey Unit 23	
Geology	Steep hills and narrow ridgeline with exposed slate, greywacke, and shale. Parent rocks are sediments and metasediments uplifted through volcanic processes. Copious quartz seams and floats.
Characteristic Landforms	Steep, hilly, and rocky slopes, mainly shallow loams and sands. Occasional basalt caps, confined river valleys with terrace remnants. High erosion hazard.
Typical Soils	Shallow stony soils on steep slopes, texture contrast soils grading from red subsoils on upper slopes to yellow subsoils on lower slopes. Skeletal sands and loams along the ridgeline and upper slopes with frequent bedrock outcropping.
Vegetation	Dry sclerophyll forest remaining on the upper slopes and steep sides of the ridgeline. There has been extensive clearance along the ridgetop and the moderate slopes to the north.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance.



View north across crest landform off the narrow ridgeline, location of turbine. Steep side slopes and ridge points.



Cleared narrow ridgeline, exposed bedrock and quartz seams.



View south along the narrow ridgeline, steep side slopes, cleared vegetation with isolated clumps, quartz outcropping.



Turbine location view west, ridgeline has broadened, rocky outcropping visible.

BWF IF9 (AHIMS ID 36-5-0260)

Site type: Isolated find
Site features: Artefact
Coordinates: GDA 2020 Zone 55 704973 mE 6388196 mS
Site Extent: 2 m x 2 m

An isolated artefact located along a narrow ridgeline (Lot 34 DP756919). The site was identified during the archaeological survey of the north west turbine branches consisting of a quartz Bondi point in close proximity to a quartz seam outcrop. No archaeological potential.



Figure 171: View south along the narrow ridgeline quartz outcropping.



Figure 172: Quartz Bondi point.

BWF IF10 (AHIMS ID 36-5-0259)

Site type: Isolated find
Site features: Artefact
Coordinates: GDA 2020 Zone 55 704925 mE 6388071 mS
Site Extent: 2 m x 2 m

An isolated artefact located along a narrow ridgeline (Lot 34 DP756919). The site was identified during the archaeological survey of the north west turbine branches consisting of a quartz Bondi point in close proximity to a quartz seam outcrop.



Figure 173: View east, across site location, broad crest.



Figure 174: Quartz flake.

BWF AS33 (AHIMS ID 36-5-0224)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 709965 mE 6385200 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located along a narrow ridgeline (Lot 34 DP756919). The site was identified during the archaeological survey of the north west turbine branches consisting of a three quartz flakes in close proximity to a quartz seam outcrop.

The visible soils were skeletal brown sandy loams with high content of angular gravels. There is no potential for archaeological deposits due to the skeletal soils and the outcropping bedrock.



Figure 175: View south across the narrow ridgeline, showing extensive clearance, rocky outcropping and sparse tree cover.



Figure 176: Three quartz flakes located on the ground surface.

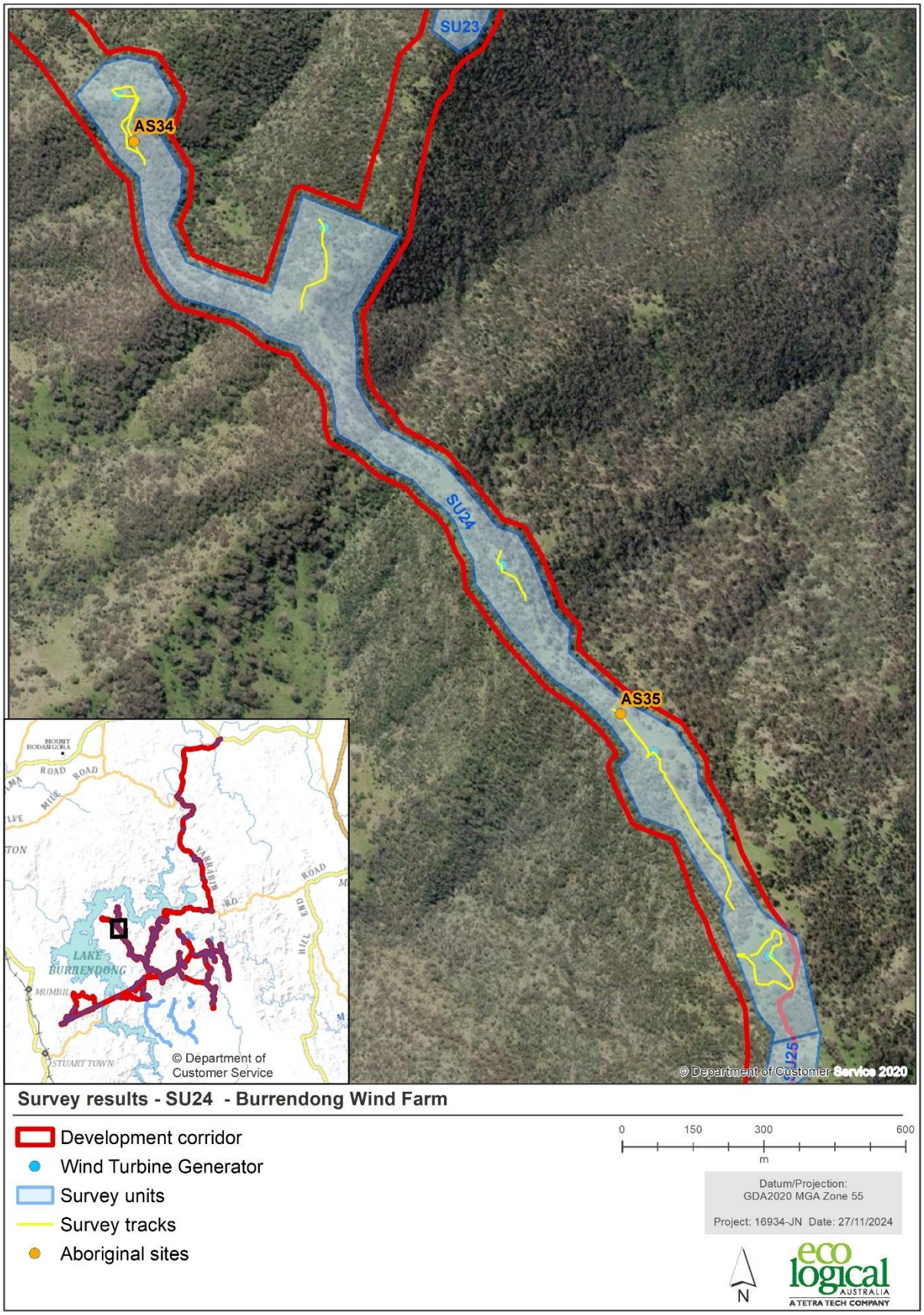


Figure 177: Survey unit 24 tracks and Aboriginal sites

Survey Unit 24	
Geology	Steep hills and narrow ridgeline with exposed slate, greywacke, and shale. Parent rocks are sediments and metasediments uplifted through volcanic processes. Copious quartz seams and floats.
Characteristic Landforms	Steep, hilly, and rocky slopes, mainly shallow loams and sands. Occasional basalt caps, high erosion hazard.
Typical Soils	Shallow stony soils on steep slopes, texture contrast soils grading red subsoils on upper slopes and saddles. Skeletal sands and loams along the ridgeline and upper slopes with frequent bedrock outcropping.
Vegetation	Dry sclerophyll forest remaining on the upper slopes and steep sides of the ridgeline. There has been extensive clearance along the ridgetop and the moderate slopes to the north.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure, rocky outcropping and vegetation clearance.



View north west across narrow ridgeline, with rocky outcropping along the edges of vehicle track.



View west across the broad saddle between ridge tops, rocky outcropping skeletal soils.



View north west across narrow ridgeline, with quartz seam outcropping.



View north, steep side slopes on saddles between ridgetops, large rocky outcropping.

BWF AS34 (AHIMS ID 36-5-0225)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 704412 mE 6386529 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on an eroded vehicle track along a narrow ridgeline (Lot 39 DP756919). The site was identified during the archaeological survey consisting of two chert flakes at a high elevation on the ground surface.

The chert flakes were identified along a vehicle track cutting into the bedrock, the soils were skeletal brown loams amongst the volcanic rock bedrock. There is no potential for archaeological deposits.



Figure 178: View north west across the graded vehicle track. Exposed volcanic bedrock.

BWF AS35 (AHIMS ID 36-5-0226)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 705444 mE 6385316 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on an eroded vehicle track along a narrow ridgeline (Lot 19 DP756919). The site was identified during the archaeological survey consisting of rounded river cobble manuport and three quartz flakes at a high elevation on the ground surface in an erosion scar adjacent to a quartz seam outcropping

The river cobble is a manuport along the narrow edge likely sourced from the river gravels of the Macquarie River. The material is durable volcanic rock and is suggested by the Wiradjuri representatives that it was brought up to the ridgeline as a punishment or am endurance practice. The soils are skeletal and there is no potential for archaeological deposits.



Figure 179: View west across the ridgeline, large exposed milky quartz outcropping.



Figure 180: Large river cobble manuport located on the narrow ridge line.

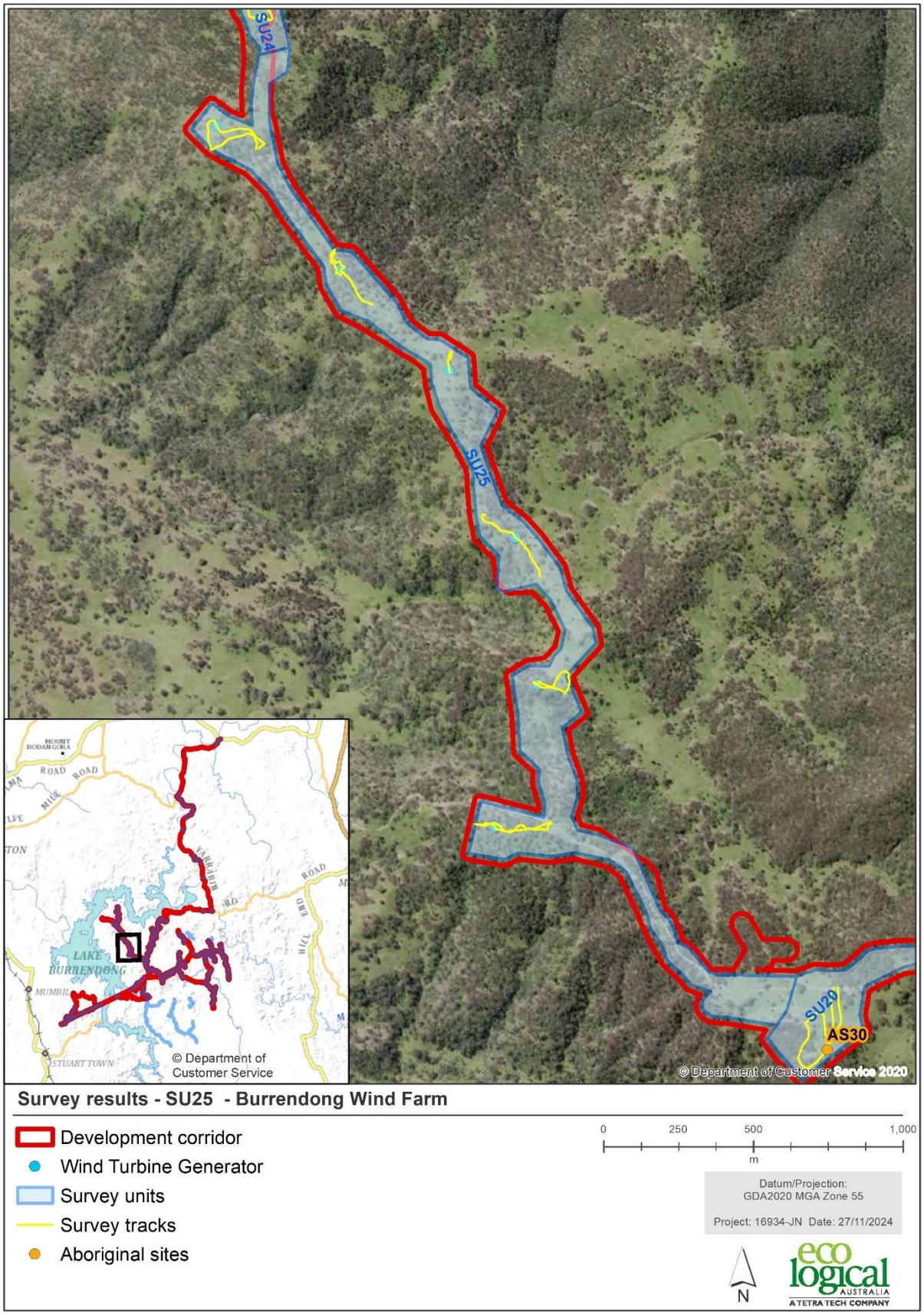


Figure 181: Survey unit 25 tracks.

Survey Unit 25	
Geology	Steep hills and narrow ridgeline with exposed slate, greywacke, and shale. Parent rocks are sediments and metasediments uplifted through volcanic processes. Copious quartz seams and floats.
Characteristic Landforms	Steep, hilly, and rocky slopes, mainly shallow loams and sands. Occasional basalt caps, high erosion hazard.
Typical Soils	Skeletal stony soils on upper slopes and ridgetops. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the mid and lower slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey across the steep slopes to the south. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across broad landform with pockets of remnant native vegetation.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. The visible Aboriginal sites were exposed on the surface of orange clay loams.



View southeast the steep slope with the vehicle track cut into side slope, rocky outcropping.



View north west across the ridgeline, rocky outcropping, saddles between ridgetops.



Turbine location, rocky outcropping.



View north, steep slope to ridgetop, brown lomas, large rock outcropping on ridgetops.

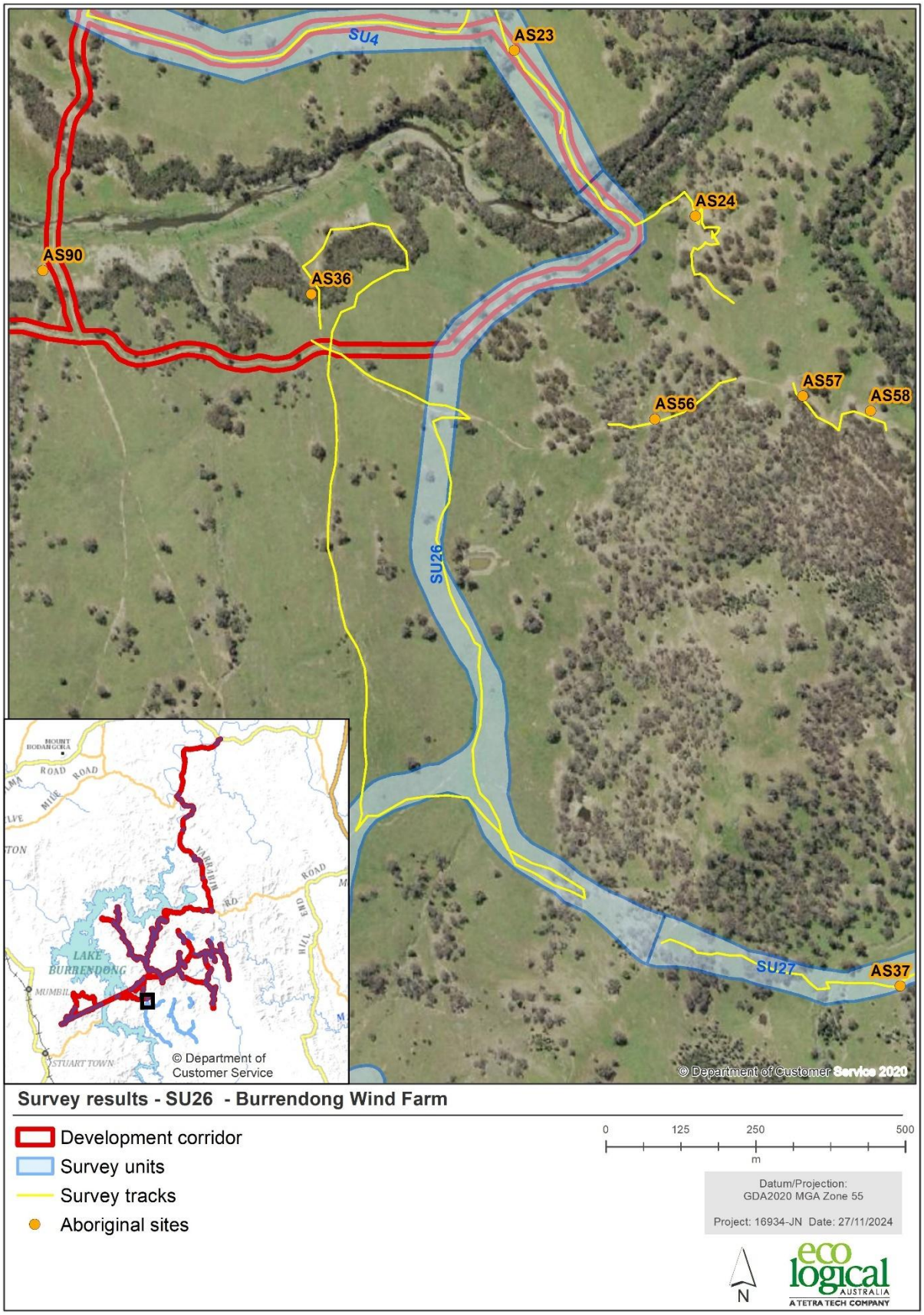


Figure 182: Survey unit 26 tracks

Survey Unit 26	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams. The survey unit is located across a broad open depression with exposed volcanics outcropping seams along the low lying hills and moderate side slopes.
Characteristic Landforms	Open depression – flat to gentle undulating, low lying hills dissecting the largely flat landscape.
Typical Soils	Skeletal stony soils on upper slopes and crests. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the mid and lower slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across broad landform with pockets of remnant native vegetation.
Archaeological potential	No archaeological potential along the low lying hill crests, shallow soils with high erosion hazard due to weak soil structure and vegetation clearance along the mid to lower slopes. The visible Aboriginal sites in the vicinity of the survey unit were exposed on the surface of orange clay loams.



View east across relatively flat, gravelly/ shale vehicle track. Vegetation clearance and minor fencing.



View north across the eroded vehicle track, the soils were orange clay loams with high gravel content.



View north towards the ridgeline, low lying hills with rocky outcropping.



Mid slope of low lying hill, isolated clumps of trees, gravelly graded shales.

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BWF AS36 (AHIMS ID 36-5-0392)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 708698 mE 6375808 mS
Site Extent: 10 m x 2 m

A very low density surface artefact scatter located on an eroded vehicle track along a raised slope adjacent to Oakey Creek (Lot 9 DP756915). The site was identified during the archaeological survey consisting of nine weathered basalt flakes, a basalt Bondi point and a basalt core.

There is remnant stands of native vegetation along the creek line with sparse grass cover, visibility was high and exposed shale bedrock. The landform is a gentle slope, and the soils were brown silty loams above a red brown clay loam with high density of ironstone gravels. There is no potential for intact archaeological deposits as the site was exposed on the ground surface from shallow animal erosion.



Figure 183: View south across the animal track through remnant stand of native vegetation.



Figure 184: Basalt flakes and Bondi point.

BWF AS90 (AHIMS ID 36-5-0391)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 708242 mE 6375895 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on the flooded banks of Oakey Creek (Lot 9 DP756915). The site was identified during the archaeological survey consisting of two basalt flakes, a basalt core or unfinished stone axe and four quartz flakes.

There is remnant stands of native vegetation along the creek line with sparse grass cover, visibility was high and exposed shale bedrock. The landform is a gentle slope, and the soils were brown silty loams above a red brown clay loam with high density of ironstone gravels. There is no potential for intact archaeological deposits as the site was exposed on the ground surface from shallow animal erosion.

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Figure 185: View along the usually flooded banks of Oakey Creek and the location of the exposed scatter.



Figure 186: Flaked basalt river cobble, basalt flake and quartz flakes.

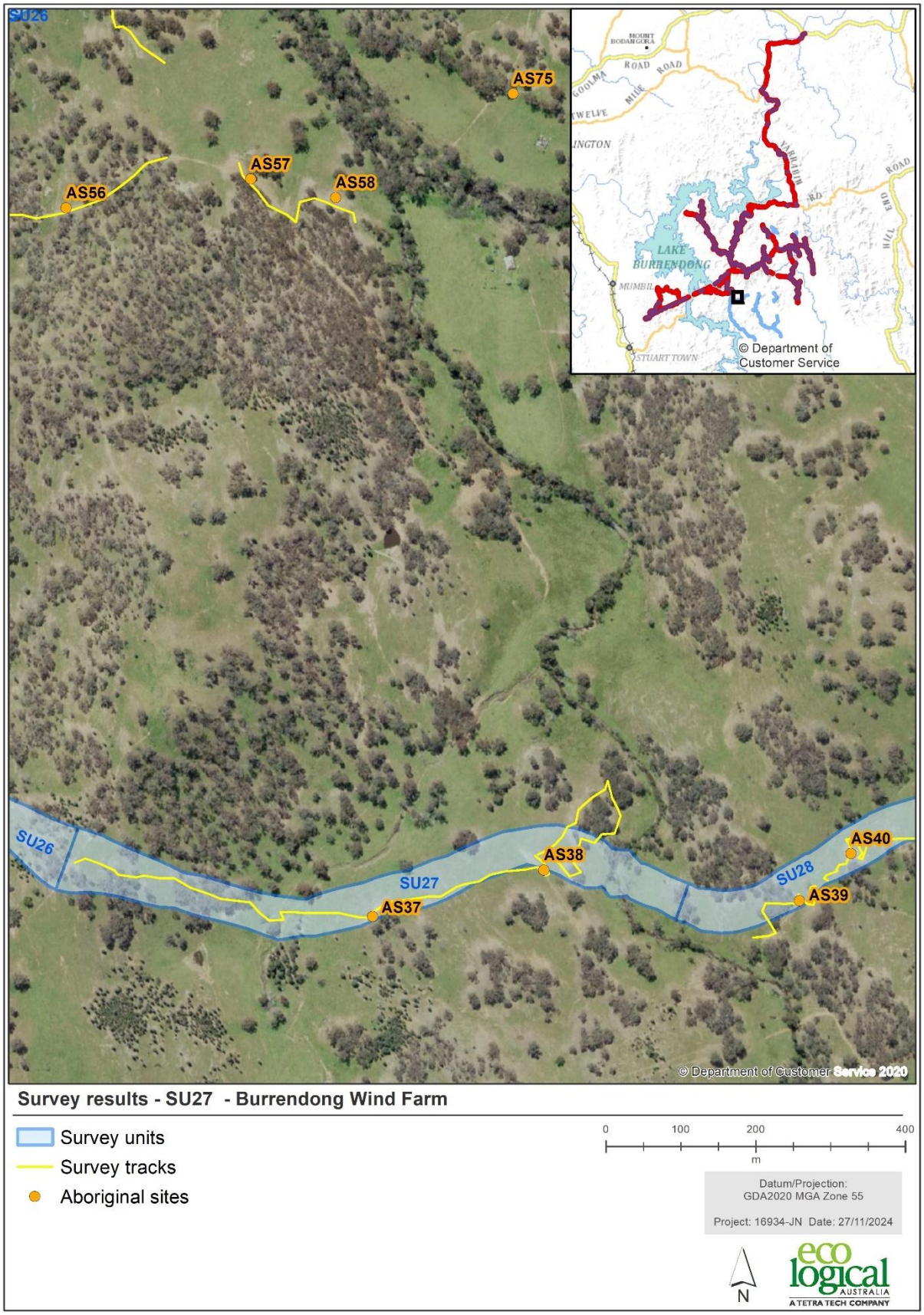


Figure 187: Survey unit 27 tracks and Aboriginal sites

Survey Unit 27	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the open depression. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams. The survey unit is located across a ridgeline with exposed volcanics (Greywackes, basalts and quartz outcropping seams along the ridge tops and the upper slopes and saddles.
Characteristic Landforms	Open depression with gentle sloping to steep sloping sides of low lying hills, the west end of survey unit is steep with deep gully erosion exposing bedrock. The creek line has large river cobbles. Resource zone for lithics.
Typical Soils	Skeletal stony soils on upper slopes and ridgetops. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the mid and lower slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey across the steep slopes to the south. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across broad landform.
Archaeological potential	There is archaeological potential across the terrace of the tributary that flows into Oakey Creek. The visible Aboriginal sites were exposed on the surface of orange clay loams, however further up the slope from the creek line there is deeper soil profiles. The upper slopes are skeletal soils with exposed bedrock.



View north west across moderate slopes of the open depression, mostly cleared with remnant trees.



View north across the flat area adjacent to Redbank Creek, elevated terrace.



View north across the deep gully erosion on moderate slopes, exposed shales and clay loams.



View east across the low lying hills sparsely located across the open depression.

BWF AS37 (AHIMS ID 36-5-0227)

Site type: Campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 709664 mE 6374683 mS
Site Extent: 10 m x 7 m

A very low density surface artefact scatter located on an eroded low lying hill crest (Lot 12 DP756915). The site was identified during the archaeological survey of the former southern turbine access tracks. The site consisted of two quartz flakes and a broken ground edge stone axe that has been flaked post break.

There open depression is relatively cleared, the site was located on a sheet eroded slope adjacent to remnant vegetation above an ephemeral drainage line of Oakey Creek. Visibility was high and exposed brown loams over exposed clay loams with fragmented shales. There is potential for intact archaeological deposits on the lower slopes north and west of the site.



Figure 188: View north across the sheet erosion on the crest of a low lying hill, location of AHIMS site.



Figure 189: Broken ground edge stone axe identified on the ground surface of the sheet erosion, adjacent to stone flakes.

BWF AS38 (AHIMS ID 36-5-0228)

Site type: Campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 709899 mE 6374749 mS
Site Extent: 20 m x 40 m

A moderate density surface artefact scatter located across the lower slopes and flat area of an open depression adjacent to Redbank Creek a permanent water source (Lot 2 DP603060). The site was identified during the archaeological survey of the former southern turbine access tracks. The site consisted of seventeen basalt flakes, a backed basalt blade, ten crystal quartz flakes, six milky quartz flakes, two quartzite core, four FGS flakes, two chert flakes and a round river cobble with pitting.

The erosion scar exposed shallow soils of brown sandy loams over an ironstone rich reddish brown clay layer. Visibility was high and exposed soil profiles along Redbank Creek and the vehicle track shows there is potential for intact archaeological deposits across the flat terrace and lower slope.



Figure 190: View north across the sheet erosion on the terrace of Redbank Creek.



Figure 191: View north across vehicle track with exposed artefacts, western most edge of site extent.



Figure 192: Quartzite core and crystal quartz flake.



Figure 193: Crystal quartz flakes and chert flakes.

BWF AS56 (AHIMS ID 36-5-0375)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 709257 mE 6375638 mS
Site Extent: 20 m x 3 m

A low density surface artefact scatter located on an eroded vehicle access track on a lower slope of a crest near Oakey Creek (Lot 4 DP756915). The site was identified during the archaeological survey consisting of three basalt flakes, a basalt core, two quartz flakes, a crystal quartz piece and FGS flake.

The location has been disturbed from past land clearance and continuing use by land owners vehicle movement and for cattle movement. The erosion scar exposed shallow soils of brown sandy loams over an ironstone rich reddish brown clay layer. There is no archaeological potential around the site due to the shallow erosional nature of the landform.

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Figure 194: View east across the artefact scatter and the vehicle access track.



Figure 195: Basalt flake on sandy loams with high gravel content.

BWF AS57 (AHIMS ID 36-5-0376)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 709504 mE 6375679 mS
Site Extent: 20 m x 5 m

A low density surface artefact scatter located on an eroded exposure at the junction of two vehicle access tracks (Lot 4 DP756915). The site was identified during the archaeological survey consisting of a highly significant artefact identified by the Wiradjuri representatives as a war hammer, a river cobble with evidence of impact on two ends and the grinding through the centre for a handle grip, a basalt flaked piece, five basalt flakes, an FGS flake with crushing along both edges and a grinding stone.

The location has been disturbed from past land clearance and continuing use by land owners vehicle movement and for cattle movement. The erosion scar exposed shallow soils of brown sandy loams over an ironstone rich reddish brown clay layer. There is no archaeological potential around the site due to the shallow erosional nature of the landform.



Figure 196: View north across the artefact scatter showing shallow brown loams above a red clay loam.



Figure 197: Highly significant war hammer river cobble.

BWF AS58 (AHIMS ID 36-5-0377)

Site type: Campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 709617 mE 6375654 mS
Site Extent: 20 m x 10 m

A high density surface artefact scatter located on an eroded exposure on a raised terrace adjacent to Oakey Creek (Lot 4 DP756915). The site was identified during the archaeological survey consisting of a quartzite Bondi point, three river cobbles with pitting around narrow edge, 16basalt flakes, two basalt cores, and 23 milky quartz flakes.

The location has been disturbed from natural sheet erosion and animal erosion. The erosion scar exposed shallow soils of brown sandy clay loams over exposed bedrock. There is no archaeological potential around the site due to the shallow erosional nature of the landform.



Figure 198: View north across the artefact scatter showing shallow brown sandy clay loams and exposed bedrock.



Figure 199: Basalt flakes and a basalt core.



Figure 200: Quartzite Bondi point.



Figure 201: River cobble with pitting around narrow edge.

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BWF AS75 (AHIMS ID 36-5-0378)

Site type: Campsite
Site features: Artefact Scatter
Coordinates: GDA 2020 Zone 55 710092 mE 6375731 mS
Site Extent: 20 m x 20 m

A low density surface artefact scatter on an eroded gentle slope near an old homestead above Oakey Creek (Lot 2 DP222707). The site was identified during the historical survey of the potential historical homestead consisting of river cobble with pitting at one narrow end and across one broad surface, three quartz flakes, a basalt back blade, two basalt flakes, three basalt cores and a milky quartz core, a chert flake, weathered FGS flake.

The location has been disturbed from past land clearance and use by land owners vehicle movement. The erosion scar exposed shallow soils of brown sandy loams over an ironstone rich reddish brown clay layer. There is no archaeological potential around the site due to the shallow erosional nature of the landform.



Figure 202: View south towards on a potential old homestead, sheet erosion across the vehicle track.



Figure 203: Sheet erosion across vehicle track, scatter across the entrance to property.



Figure 204: River cobble with pitting along narrow point and across broad surface.



Figure 205: Basalt backed blade.

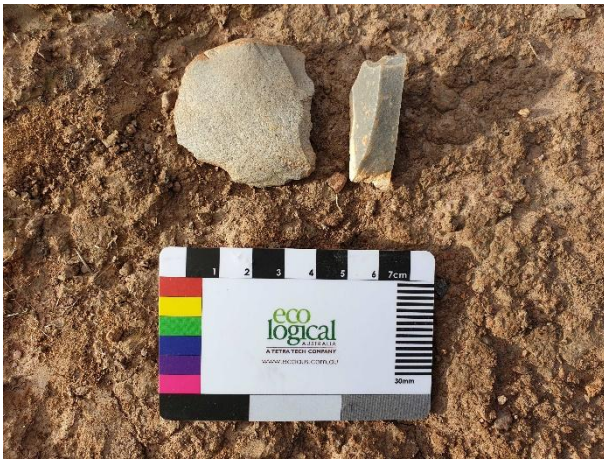


Figure 206: FGS and chert flake.



Figure 207: Basalt rotated core.

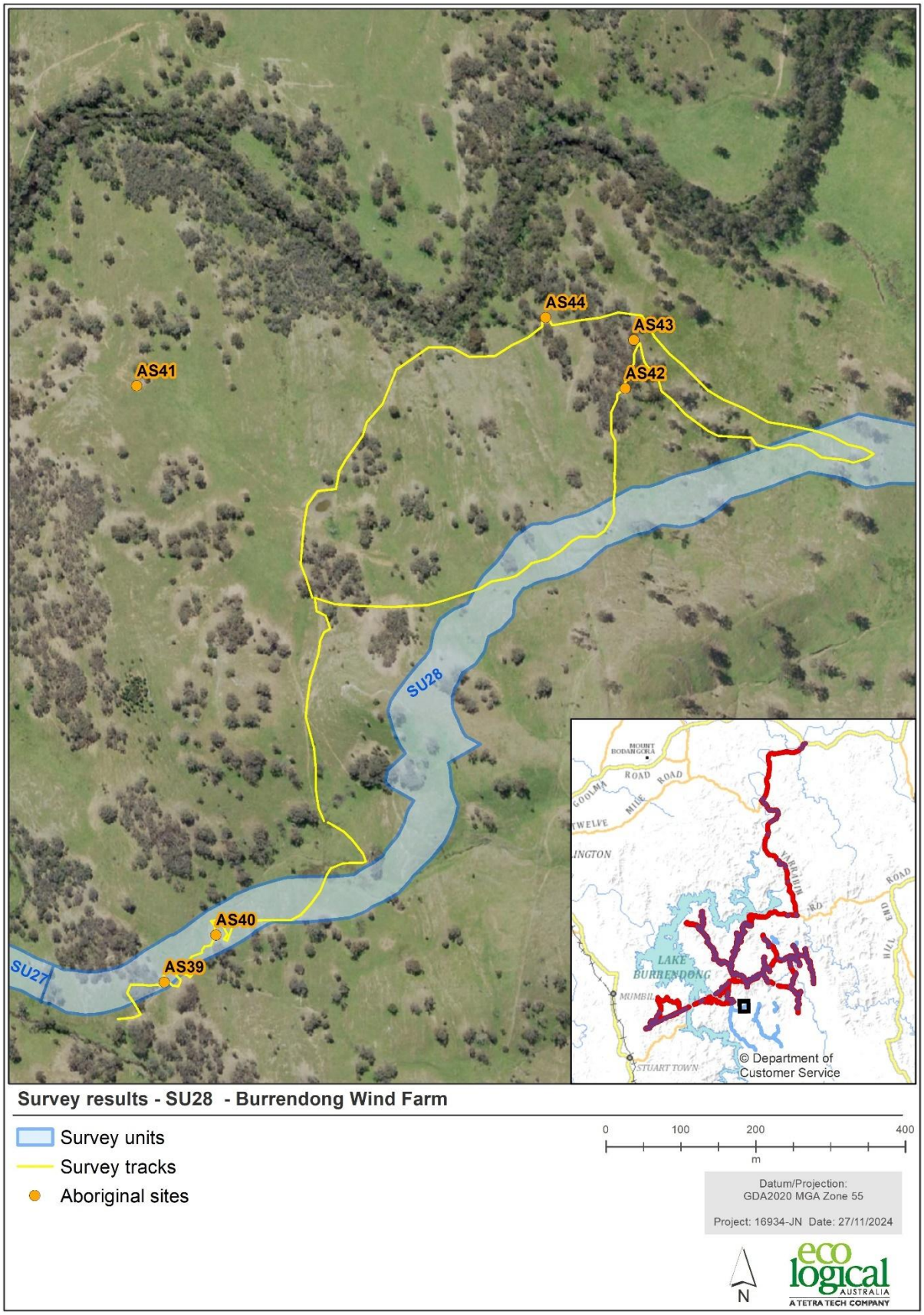


Figure 208: Survey unit 28 tracks and Aboriginal sites

Survey Unit 28	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the low lying hills. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. The survey unit is located across the low lying hills below a narrow ridgeline with exposed shales and quartz outcropping seams along the crests and the upper slopes.
Characteristic Landforms	Series of spurs formed by drainage lines with highly eroded crest and slopes. Moderate slopes with sever sheet erosion. Large open depression adjacent to Oakey Creek.
Typical Soils	Skeletal stony soils on upper slopes and crests. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the mid and lower slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey across the steep slopes to the south. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across broad landform with pockets of remnant native vegetation on crest and along drainage lines.
Archaeological potential	No archaeological potential along the survey unit, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. The visible Aboriginal sites were exposed on the surface of the crest and upper slopes.



View west across crest landform showing rocky outcropping, broad moderately sloping sides.



View west from the crest landform showing the broad open depression of Oakey Creek.



View east across the open depression showing the low lying hills, isolated clumps of native vegetation and scattered exposures.



Open depression, isolated clumps of trees and exposed soils and gravels in sheet erosion.

BWF AS39 (AHIMS ID 36-5-0230)

Site type: Campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 710236 mE 6374703 mS
Site Extent: 20 m x 20 m

A low density surface artefact scatter located on a sheet eroded ground surface on a lower slope above a drainage line (Lot 1 DP603060). The site was identified during the archaeological survey consisting of sandstone cobble used for knapping, a grinding stone, twelve weathered basalt flakes, five quartz flakes, and a backed quartz point.

There was a few stands of native vegetation with sparse grass cover, visibility was high and exposed bedrock. The landform is a gentle slope, and the soils were pale brown sandy loams above a red brown clay loam with high density of ironstone gravels. There is no potential for intact archaeological deposits as the site was exposed on the ground surface from natural erosional processes.



Figure 209: View north across sheet erosion, artefact scatter across ground surface.



Figure 210: Two basalt flakes and four quartz flakes.

BWF AS40 (AHIMS ID 36-5-0229)

Site type: Campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 710306 mE 6374774 mS
Site Extent: 20 m x 20 m

A low density surface artefact scatter located on a sheet eroded ground surface on a lower slope above a drainage line (Lot 1 DP603060). The site was identified during the archaeological survey consisting of three weathered basalt flakes, four quartz flakes, and two quartz cores.

There was a few stands of native vegetation with sparse grass cover, visibility was high and exposed fractured bedrock across the ground surface. The landform is a gentle slope, and the soils were pale brown sandy loams above a red brown clay loam with high density of ironstone gravels. There is no potential for intact archaeological deposits as the site was exposed on the ground surface from natural erosional processes.

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Figure 211: View west across the scatter, sheet erosion has exposed the site, fractured shale bedrock scattered, across clay loams.



Figure 212: Large basalt flakes, weathered from exposure.

BWF AS41 (AHIMS ID 36-5-0373)

Site type: Campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 710199 mE 6375511 mS
Site Extent: 10 m x 5 m

A low density surface artefact scatter located on a sheet eroded ground surface on a lower slope above a drainage line (Lot 2 DP603060). The site was identified during the archaeological survey consisting of a large river cobble with pitting around narrow edge, thirteen weathered basalt flakes, a basalt core, three grey chert flakes, red chert flake, four FGS flakes, and one quartz flake.

There was a few stands of native vegetation with sparse grass cover, visibility was high, and the soils were red brown clay loam with high density of ironstone gravels. There is no potential for intact archaeological deposits as the site was exposed on the ground surface from natural erosional processes.



Figure 213: View north across sheet erosion across low lying crest adjacent to Oakey Creek.



Figure 214: Basalt and grey chert flakes on clay loams amongst ironstone gravels.

BWF AS42 (AHIMS ID 36-5-0372)

Site type: Campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 710853 mE 6375508 mS
Site Extent: 20 m x 4 m

A low density surface artefact scatter located on a sheet eroded ground surface on a lower slope above a drainage line (Lot 2 DP603060). The site was identified during the archaeological survey exposed along a fence line consisting of a quartzite flake, two chert flakes, thirty-three basalt flakes, a backed basalt blade and six quartz flakes. Site is part of larger site extent of BWF AS43.

There was a remnant stand of native vegetation with sparse grass cover, visibility was high, and the soils were red brown clay loam with high density of ironstone gravels. There is no potential for intact archaeological deposits as the site was exposed on the ground surface from natural erosional processes.



Figure 215: Basalt backed blade; site exposed along the fence line.



Figure 216: Basalt flakes.

BWF AS43 (AHIMS ID 36-5-0371)

Site type: Campsite

Site features: Artefact
Coordinates: GDA 2020 Zone 55 710863 mE 6375572 mS
Site Extent: 10m x 10 m

A moderate density surface artefact scatter located on a sheet eroded ground surface on a lower slope above a drainage line (Lot 2 DP603060). The site was identified during the archaeological survey exposed along a fence line consisting of a crystal quartz and milky quartz geometric microlith, two quartz flakes, 44basalt flakes, and four backed basalt points. Site is part of BWF AS42.

There was a remnant stand of native vegetation with sparse grass cover, visibility was high, and the soils were red brown clay loam with high density of ironstone gravels. There is no potential for intact archaeological deposits as the site was exposed on the ground surface from natural erosional processes.

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Figure 217: View north across the sheet erosion along the fence line, Oakey Creek in the distance.



Figure 218: Basalt flakes and the crystal quartz geometric microlith.

BWF AS44 (AHIMS ID 36-5-0370)

Site type: Campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 710744 mE 6375605 mS
Site Extent: 10 m x 10 m

A low density surface artefact scatter located on a sheet eroded ground surface on a lower slope above a drainage line (Lot 2 DP603060). The site was identified during the archaeological survey consisting of a broken river cobble with pitting, twenty-one weathered basalt flakes, red quartzite flake, two FGS flakes and FGS core, and two basalt broken Bondi points.

There was a few stands of native vegetation with sparse grass cover, visibility was high, and the soils were red brown clay loam with high density of ironstone gravels. There is no potential for intact archaeological deposits as the site was exposed on the ground surface from natural erosional processes.



Figure 219: View north across the sheet erosion, Oakey Creek in the distance.



Figure 220: Basalt flakes and red quartzite flakes.

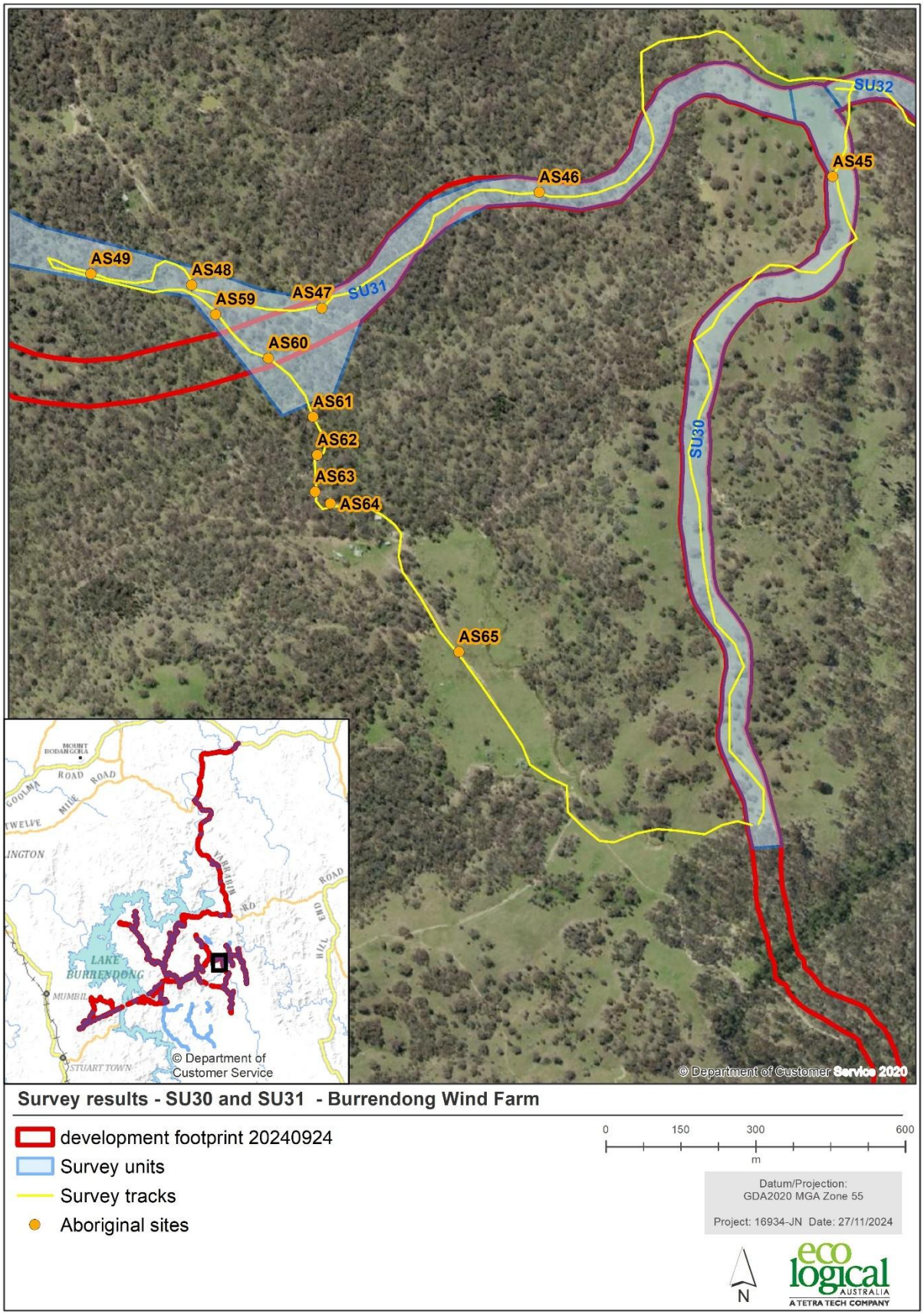


Figure 221: Survey unit 30 and 31 tracks and Aboriginal sites

Survey Unit 30	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the low lying hills. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates.
Characteristic Landforms	Undulating rolling low hills often strewn with quartz gravel. Broad to narrow crests with broad saddles.
Typical Soils	Shallow stony soils on steep slopes. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along saddles. Hard setting sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey. Eucalypt species include white box, yellow box, Blakely's red gum, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across broad landform with pockets of remnant native vegetation including grass trees.
Archaeological potential	No archaeological potential along the crest line, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance.



View south across crest landform showing rocky outcropping along vehicle track, broad moderately sloping sides, pale loams on lower slope.



Rocky outcropping, granitic exposures along the crest landform.



View south west on upper slope of crest landform, Vehicle track grading exposing the reddish brown clay loams with large angular bedrock floaters.



View east at the ridgeline, basalt, granite outcropping frequent across the elevated areas.

BWF AS45 (AHIMS ID 36-5-0231)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 717434 mE 6382018 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on an eroded vehicle track along a narrow ridgeline (Lot 3 DP807931). The site was identified during the archaeological survey consisting of rounded river cobble at a high elevation on the ground surface and a crystal quartz.

The river cobble had evidence of pecking along the narrow edge and indentation in the centre of one broad face. The cobble was likely sourced from the river gravels down on Gundowda Creek. The visible soils were red clay loams with angular gravels. There is no potential for intact archaeological deposits as the site was exposed on the ground surface from natural erosional processes.



Figure 222: View south east, erosion from vehicle damage, shallow soils and exposed bedrock.



Figure 223: Grinding stone, broken.

Survey Unit 31	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. The survey unit is located across a ridgeline with exposed volcanics (Greywackes, basalts and quartz outcropping seams along the ridge tops and the upper slopes and saddles.
Characteristic Landforms	Broad ridgeline with steep slopes, deep gullies and broad saddles.
Typical Soils	Skeletal stony soils on upper slopes and yellowish brown to reddish brown fine sandy loams and sandy clay loams along the mid and lower slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey across the steep slopes to the south. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across broad landform with pockets of remnant native vegetation.
Archaeological potential	No archaeological potential along the upper slopes, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. There is potential archaeological deposits along the drainage lines where Aboriginal objects were visible across sheet erosion and vehicle damage.



View east at the ridgeline, basalt, granite outcropping frequent across the elevated areas.



Graded vehicle tracks with drainage, orange clay loams exposed, with bedrock and high gravel content.



View west across saddle showing rocky outcropping, amongst the grass, remnant vegetation with new growth.



View east across ridgeline, skeletal soils, quartz and bed rock gravels, ironstone rick clay loam exposures.

BWF AS46 (AHIMS ID 36-5-0232)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 716847 mE 6381918 mS
Site Extent: 20 m x 20 m

A very low density surface artefact scatter located on an eroded animal track along a narrow ridgeline (Lot 10 DP756903). The site was identified during the archaeological survey consisting of four basalt flakes and a quartz flake along a steep slope above an eroded drainage gully.

The artefacts were spread across a steep slope with exposed bedrock and large fragments of floating bedrock. The visible soils were a brown organics layer over a pale brown leached sandy loam between the bedrock sheets. The steep sloping nature of the site means the likelihood for in situ archaeological deposits is low and it is likely the site is present due to widespread sheet erosion.



Figure 224: View north west across the location of the small scatter exposed on ground surface.



Figure 225: Two basalt flakes on the ground surface and brown sandy loams.

BWF AS47 (AHIMS ID 36-5-0233)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 716407 mE 6381744 mS
Site Extent: 20 m x 10 m

A low density surface artefact scatter located on an eroded animal track along a narrow ridgeline (Lot 10 DP756903). The site was identified during the archaeological survey consisting of seven basalt flakes, FGS core, quartzite flake and two quartz flakes along a crest above an eroded drainage gully.

The artefacts were exposed on a sheet eroded surface with exposed bedrock, visible soils were brown sandy loam with subangular gravels and shale fragments. The steep sloping nature of the site means the likelihood for in situ archaeological deposits is low, the location of the site is on a highly eroded crest exposed due to natural erosional processes.

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Figure 226: View west across crest landform with sheet erosion exposing the artefact scatter.



Figure 227: Basalt flake/ blade, broken tip exposed on sandy loams.

BWF AS48 (AHIMS ID 36-5-0234)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 716146mE 6381791mS
Site Extent: 20 m x 5 m

A very low density surface artefact scatter located on an eroded vehicle track along a narrow ridgeline (Lot 10 DP756903). The site was identified during the archaeological survey across the proposed access tracks between turbines. The site consisted of three basalt flakes, quartzite flake and seven quartz flakes along a saddle.

The location has been disturbed from past land clearance and use by land owners for vehicle access. The exposed shallow soils of brown sandy loams over an ironstone rich brown clay layer. There is no archaeological potential around the site due to the shallow erosional nature of the landform.



Figure 228: View across graded vehicle track bedrock exposed, large bedrock fragments and sandy soils.



Figure 229: Two quartz flakes and a quartzite flake.

BWF AS49 (AHIMS ID 36-5-0237)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 715944 mE 6381812 mS
Site Extent: 1 m x 1 m

A very low density surface artefact scatter located on an eroded animal track along a narrow ridgeline (Lot 10 DP756903). The site was identified during the archaeological survey consisting of a chert core and a quartz flake.

Surrounded by native vegetation, the location is on the edge of and eroded drainage line, with a gentle slope. The gentle slope was heavily saturated, and the site has likely been formed by natural erosional processes. The soils were pale brown sandy loams above an orange, brown clay loam with small subangular gravels. There is the potential for further artefacts, but it is unlikely they will be in situ.



Figure 230: View east, across broad drainage valley on saddle landform, saturated from ground water.



Figure 231: Chert core on sandy soils with angular gravels.

BWF AS59 (AHIMS ID 36-5-0363)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 716194 mE 6381735 mS
Site Extent: 5 m x 2 m

A very low density surface artefact scatter located across an eroded vehicle track near the boundary of two properties (Lot 14 DP756903). The site was identified during the archaeological survey and consisted of a basalt flake and three quartz flakes located in a disturbed context.

The location is surrounded by native vegetation, has been used for vehicle access. The landform is a gentle slope, and the soils were pale brown silty loams above an orange, brown clay loam with small subangular gravels. The site is likely part of BWF AS60, there is no potential for intact archaeological deposits.

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Figure 232: View south east across eroded vehicle track with site location.



Figure 233: Large basalt flake and quartz flake.

BWF AS60 (AHIMS ID 36-5-0364)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 716301 mE 6381647 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located across an eroded vehicle track near the boundary of two properties (Lot 14 DP756903). The site was identified during the archaeological survey and consisted of a basalt flake and a quartz flake located in a disturbed context.

The location is surrounded by native vegetation, has been used for vehicle access. The landform is a gentle slope, and the soils were pale brown silty loams above an orange, brown clay loam with small subangular gravels. The site is likely part of BWF AS62, there is no potential for intact archaeological deposits.



Figure 234: View south east across eroded vehicle track with site location.



Figure 235: Large basalt flake and quartz flake.

BWF AS61 (AHIMS ID 36-5-0365)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 716391 mE 6381532 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on an eroded vehicle track (Lot 14 DP756903). The site was identified during the archaeological survey travelling between survey units and consisted of a basalt flaked piece and a quartz flake located in a disturbed context.

The location is surrounded by open native vegetation and has been used for vehicle access. The landform is a gentle slope, the soils were orange, brown clays with small subangular gravels. The site is likely part of BWF AS62, there is no potential for intact archaeological deposits.



Figure 236: Large basalt flaked piece.

BWF AS62 (AHIMS ID36-5-0368)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 716397 mE 6381452 mS
Site Extent: 20 m x 20 m

A moderate density surface artefact scatter located across an eroded vehicle track and a large area of sheet erosion between several converging ephemeral drainage lines (Lot 14 DP756903). The site was identified during the archaeological survey travelling between survey units. The site consisted of chert flake, four quartz flakes and nineteen basalt flakes.

The location is between several ephemeral drainage lines on a gentle sloping landform. The soils were pale brown silty loams above an orange, brown clay loam with small subangular gravels. There is the potential for a larger site extent with potential archaeological deposits.



Figure 237: View south east across eroded vehicle track through a raised slope above a drainage line. Sheet erosion to the west.



Figure 238: Basalt flakes.



Figure 239: Basalt flakes, grey chert flake and milky quartz.



Figure 240: Crystal quartz flake.

BWF AS63 (AHIMS ID 36-5-0367)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 716394 mE 6381379 mS
Site Extent: 5 m x 2 m

A very low density surface artefact scatter located on an eroded vehicle track along a broad drainage valley with low rises (Lot 14 DP756903). The site was identified during the archaeological survey travelling between survey units. The site consisted of seven basalt flakes that were well weathered located in a disturbed context.

Surrounded by native vegetation, the location has been used for vehicle access. The landform is a gentle slope above a broad drainage line, an ephemeral tributary is adjacent to the site with severe gully erosion. The soils were pale brown silty loams above an orange, brown clay loam with small subangular gravels. There is the potential for a larger site extent with potential archaeological deposits.



Figure 241: View south east across eroded vehicle track through a raised slope above a drainage line. Gully erosion to the west.



Figure 242: Basalt flakes identified across the eroded vehicle track.

BWF AS64 (AHIMS ID 36-5-0366)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 716423 mE 6381357 mS
Site Extent: 20 m x 2 m

A low density surface artefact scatter located across a vehicle track that has been cut to divert an existing property access track (Lot 14 DP756903). The site was identified during the archaeological survey travelling between survey units. The site consisted of sixteen broken basalt flakes located in a disturbed context.

The location is surrounded by native vegetation, clearance has been carried out for vehicle access and the adjacent property with outbuildings and minor fencing. The landform is a gentle slope above a broad drainage line. The soils were pale brown silty loams above an orange, brown clay loam with small subangular gravels. There is the potential for a larger site extent and there is potential archaeological deposits.



Figure 243: Basalt flakes identified across the diverted vehicle track.

BWF AS65 (AHIMS ID 36-5-0369)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 716681 mE 6381058 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on an eroded and graded vehicle track along a raised gentle slope above a wide drainage line (Lot 29 DP701072). The site was identified during the archaeological survey travelling between survey units. The site consisted of two basalt flakes located in a disturbed context.

The location has been cleared of native vegetation for pastoral and grazing practices and the raised slope has been graded for vehicle access to the property. The soils were pale brown silty loams above an orange, brown clay loam with small subangular gravels. There is the potential for a larger site extent and there are potential archaeological deposits.



Figure 244: View south east across graded vehicle track through a raised slope above a drainage line.



Figure 245: Two Basalt flakes identified on the verge of the vehicle access track.

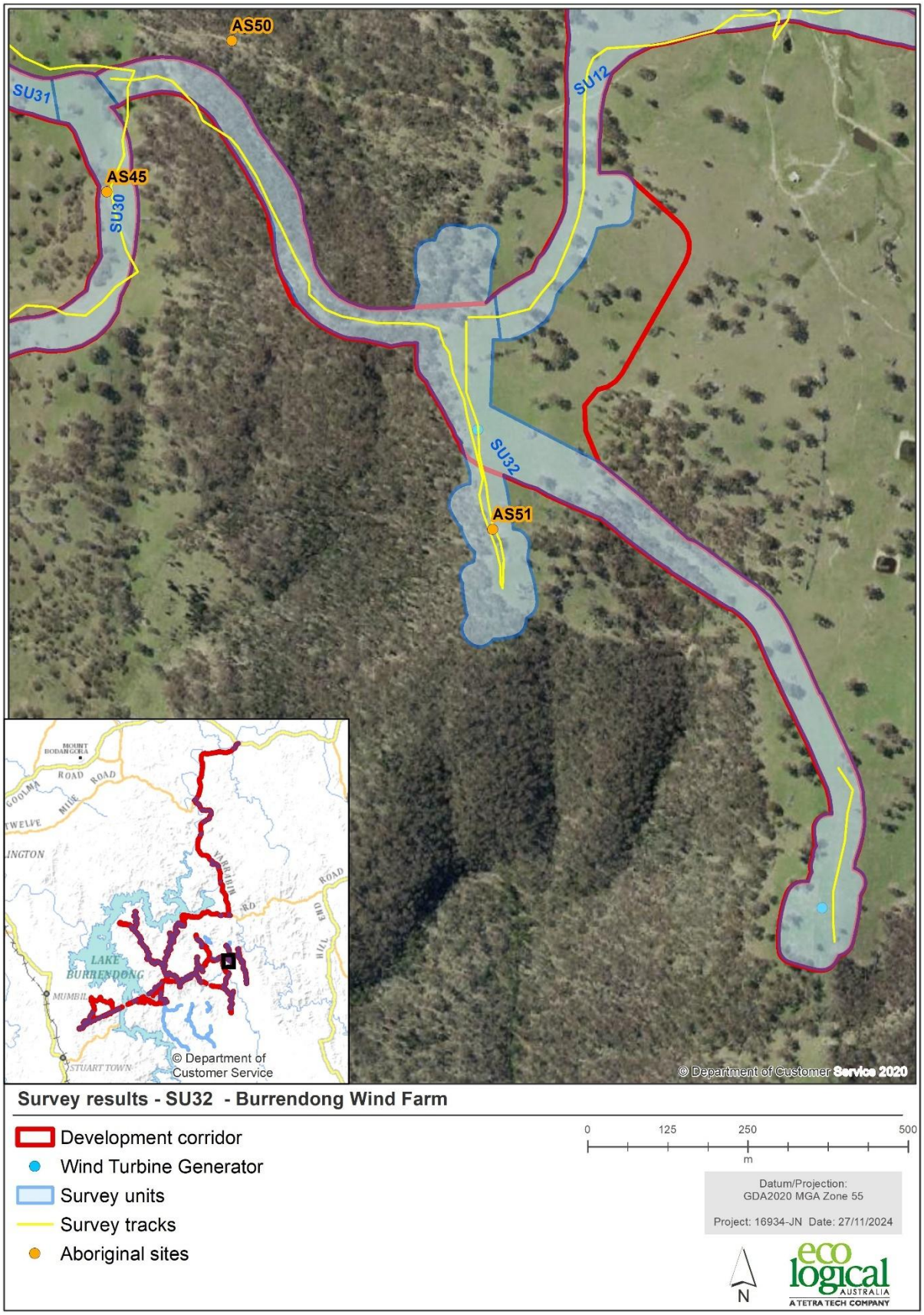


Figure 246: Survey unit 32 tracks and Aboriginal sites

Survey Unit 32	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the broad ridgeline. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. The survey unit is located across a ridgeline with exposed volcanics (Greywackes, basalts and quartz outcropping seams along the ridge tops and the upper slopes and saddles.
Characteristic Landforms	Broad ridge line with alternating ridgetops and saddles formed by drainage lines. The south and west side was steep slopes and moderate slopes to the north.
Typical Soils	Skeletal stony soils on upper slopes and ridgetops. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the mid and lower slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats
Vegetation	Dry sclerophyll woodland with grass/shrub understorey across the steep slopes to the south. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across broad landform with pockets of remnant native vegetation. Intact native vegetation along the steep side slopes.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. The visible Aboriginal sites were exposed on the surface between large expanses of exposed bedrock sheets.



View west across broad saddle showing rocky outcropping.



View south east across the proposed access track between turbines. Extensively cleared with isolated trees.



View north west across ridgeline showing cleared boundary fencing and rocky outcropping, with remnant vegetation on steep slope.



View south from the ridgetop, location of turbine, rocky outcropping and skeletal soils, mostly cleared.

BWF AS51 (AHIMS ID 36-5-0235)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 718032 mE 6381482 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on an eroded vehicle track along a broad crest (Lot 2 DP807931). The site was identified during the archaeological survey and consisted of three quartz flakes located across an exposed area of bedrock.

The location has a few stands of trees, the landform is a broad crestline, and the soils were skeletal pale brown silty loams. There is no potential for intact archaeological deposits due to the skeletal soils and exposed bedrock.



Figure 247: Three milky quartz flakes.



Figure 248: View east across the exposed bedrock and sheet erosion.

BWF AS50 (AHIMS ID 36-5-0380)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 717563 mE 6382256 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on an eroded vehicle track along the slope of a narrow ridgeline (Lot 2 DP807931). The site was identified during the archaeological survey and consisted of a basalt flake and a crystal quartz geometric microlith located in a disturbed context.

The location is surrounded by native vegetation, on a graded vehicle access track. The landform is a moderate slope, and the soils were pale brown silty loams above an orange, brown clay loam with small subangular gravels. There is no potential for intact archaeological deposits.

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Figure 249: View west across the graded vehicle track with exposed clay loams and gravels.



Figure 250: Crystal quartz geometric microlith.

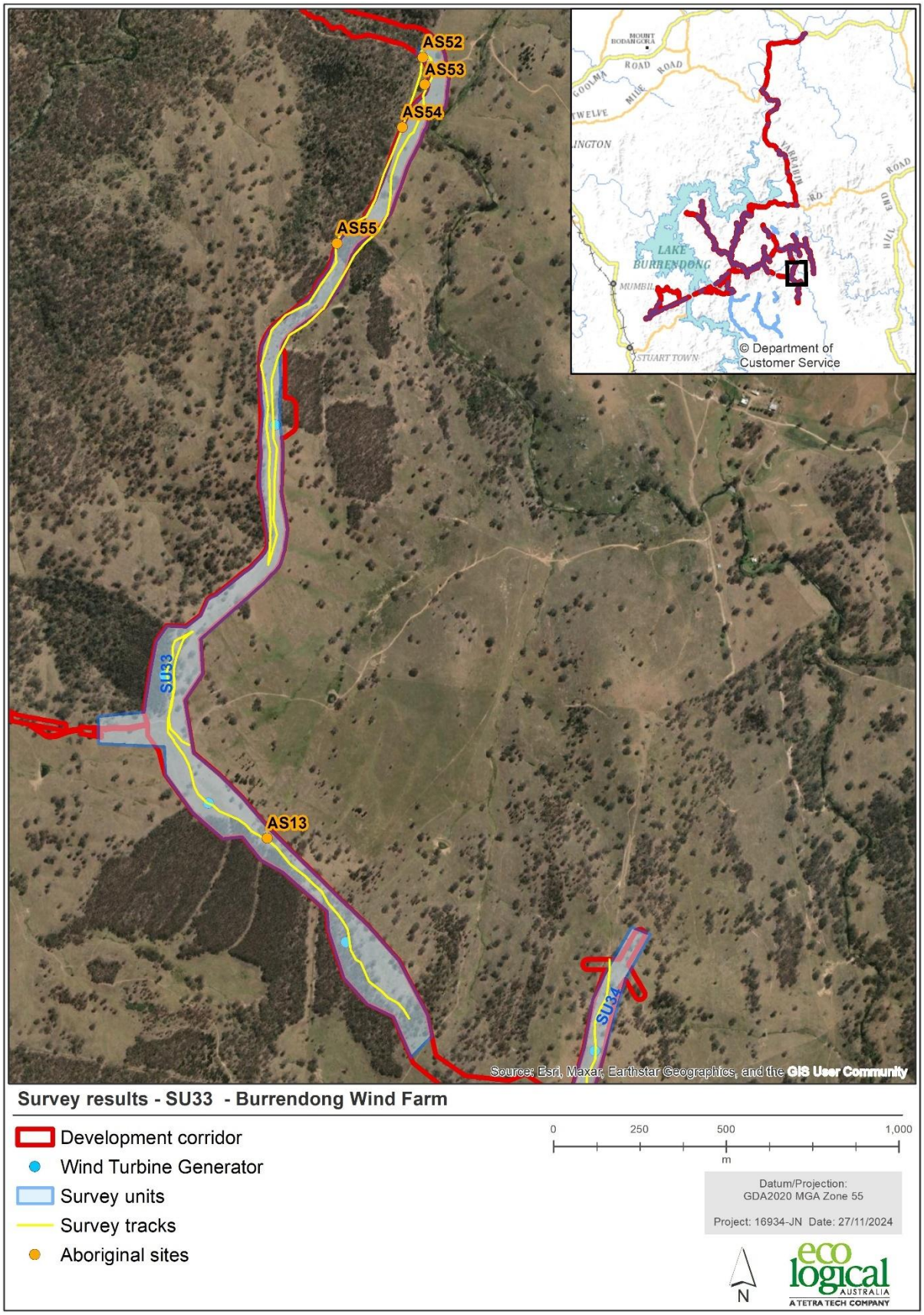


Figure 251: Survey unit 33 tracks and Aboriginal sites

Survey Unit 33	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. The survey unit is located across a ridgeline with exposed volcanics (Greywackes, basalts and quartz outcropping seams along the ridge tops and the upper slopes and saddles.
Characteristic Landforms	Broad and narrow ridgeline with steep slopes, deep gullies and broad saddles between ridge tops.
Typical Soils	Skeletal stony soils on upper slopes and yellowish brown to reddish brown fine sandy loams and sandy clay loams along the mid and lower slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey across the steep slopes to the south. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across broad landform with pockets of remnant native vegetation.
Archaeological potential	No archaeological potential along the upper slopes, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. There is potential archaeological deposits along the drainage lines where Aboriginal objects were visible across sheet erosion and vehicle damage.



View south across crest landform showing rocky outcropping, broad moderately sloping sides and shallow drainage line on lower slope.



View north showing exposed gravels, bedrock and skeletal clay loams along vehicle track.



View south west across crest landform showing rocky outcropping, with remnant vegetation along gravely vehicle track.



Exposed shale bedrock at turbine location along high points of the crest landform.

BWF AS13 (AHIMS ID 36-5-0374)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 717487 mE 6377496 mS
Site Extent: 10 m x 2 m

A very low density surface artefact scatter located on an eroded vehicle track along a narrow ridgeline (Lot 42 DP756887). The site was identified during the archaeological survey consisting of four basalt flakes and one quartz flake.

The location is surrounded by native vegetation, on a graded vehicle access track. The landform is the upper slope of a ridgeline with steep side slopes, and the soils were brown silty loams above exposed shale bedrock. There is no potential for intact archaeological deposits.



Figure 252: view north set across the ridgeline showing the eroded vehicle track along the fence line, exposed bedrock and skeletal soils.



Figure 253: Split basalt flake, weathered located on the surface amongst ironstone gravels.

BWF AS52 (AHIMS ID 36-5-0236)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 717973 mE 6379748 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on an eroded vehicle track along a narrow ridgeline (Lot 352 DP1180382). The site was identified during the archaeological survey consisting of two basalt flakes, a basalt core and two quartz flakes.

The location is along a property easement and is surrounded by native vegetation, on a graded vehicle access track. The landform is a broad ridgeline with steep side slopes, and the soils were skeletal brown silty loams on exposed uplifted shale bedrock. There is no potential for intact archaeological deposits.

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Figure 254: Milky quartz flakes exposed on the ground surface amongst ironstone gravels.

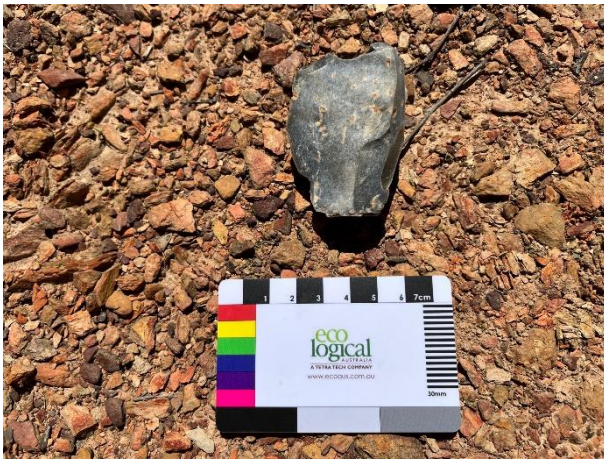


Figure 255: Basalt core.

BWF AS53 (AHIMS ID 36-5-0238)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 717981 mE 6379670 mS
Site Extent: 5 m x 2 m

A low density surface artefact scatter located on an eroded animal track along a broad ridge line (Lot 352 DP1180382). The site was identified during the archaeological survey consisting of six basalt flakes, a basalt core, a chert core and one quartz flake.

The location is along a property easement and is surrounded by native vegetation, on a broad ridgeline with steep side slopes, and the soils were skeletal brown silty loams on exposed uplifted shale bedrock. There is no potential for intact archaeological deposits.



Figure 256: Chert core, quartz flake and a basalt flake.



Figure 257: Basalt core with four basalt flakes.

BWF AS54 (AHIMS ID 36-5-0240)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 717911 mE 6379543 mS
Site Extent: 2 m x 2 m

A low density surface artefact scatter located on an eroded animal track along a broad ridgeline (Lot 352 DP1180382). The site was identified during the archaeological survey consisting of a basalt flake and one quartz flake.

The location is along a property easement above a drainage line with a formed dam, surrounded by native vegetation, on a graded vehicle access track. The landform is a broad ridgeline with moderate side slopes, and the soils were skeletal brown silty loams on exposed uplifted shale bedrock. There is no potential for intact archaeological deposits.



Figure 258: View east, across new growth trees with limited exposures.



Figure 259: Quartz flake.

BWF AS55 (AHIMS ID 36-5-0239)

Site type: Transient campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 717725 mE 6379209 mS
Site Extent: 5m x 2 m

A very low density surface artefact scatter located on a highly eroded vehicle track along a broad ridgeline (Lot 352 DP1180382). The site was identified during the archaeological survey consisting of a basalt flake and one quartz flake.

The location is along a property easement and is surrounded by native vegetation, on a graded vehicle access track that has been highly eroded by natural processes. The landform is a broad ridgeline with steep side slopes, and the soils were skeletal brown silty loams with large gravels and decomposed bedrock. There is no potential for intact archaeological deposits.

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Figure 260: Basalt flake located on the eroded ground surface amongst decomposed bedrock and skeletal soils.



Figure 261: View north east across the site showing erosion and, vegetation clearance and the fence line.

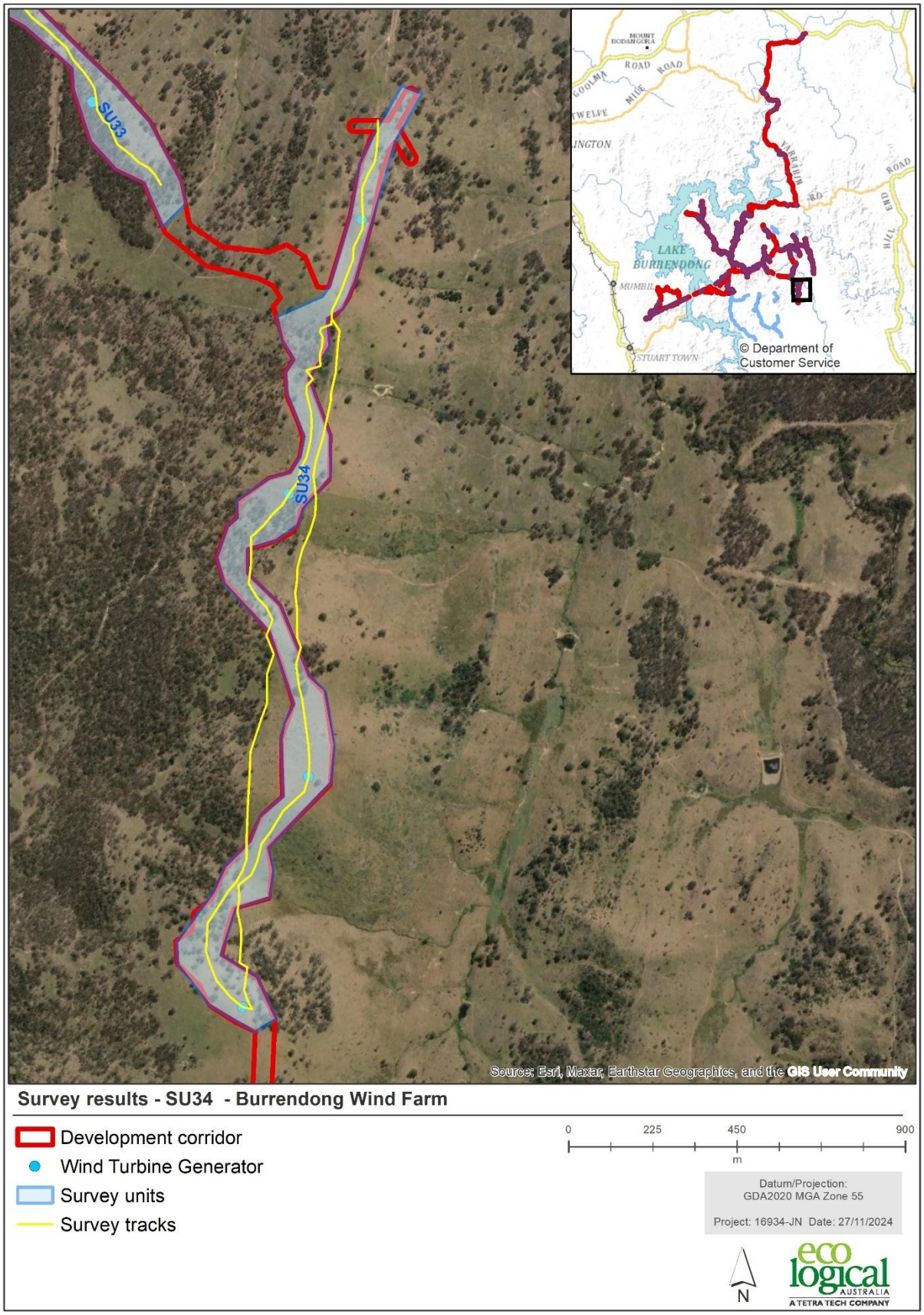


Figure 262: Survey unit 34 tracks

Survey Unit 34	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams. The survey unit is located across a broad ridgeline with exposed volcanics (basalts and quartz outcropping seams along the ridge tops and the upper slopes and saddles.
Characteristic Landforms	Broad ridge line with alternating ridgetops and saddles formed by drainage lines. The side slopes have a moderate gradient.
Typical Soils	Skeletal stony soils on upper slopes and ridgetops. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the mid and lower slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey across the steep slopes to the south. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across broad landform with pockets of remnant native vegetation.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. No Aboriginal sites were exposed on the surface of brown sandy loams and bedrock sheets.



View south across crest landform showing rocky outcropping, broad moderately sloping sides.



View south across ridgetop location of turbine showing rocky outcropping, broad moderately sloping sides.



View south across broad ridgeline showing saddles between ridgetops, broad drainage lines, extensively cleared.



Quartz outcropping frequent across broad ridgeline, reddish brown clay loams.

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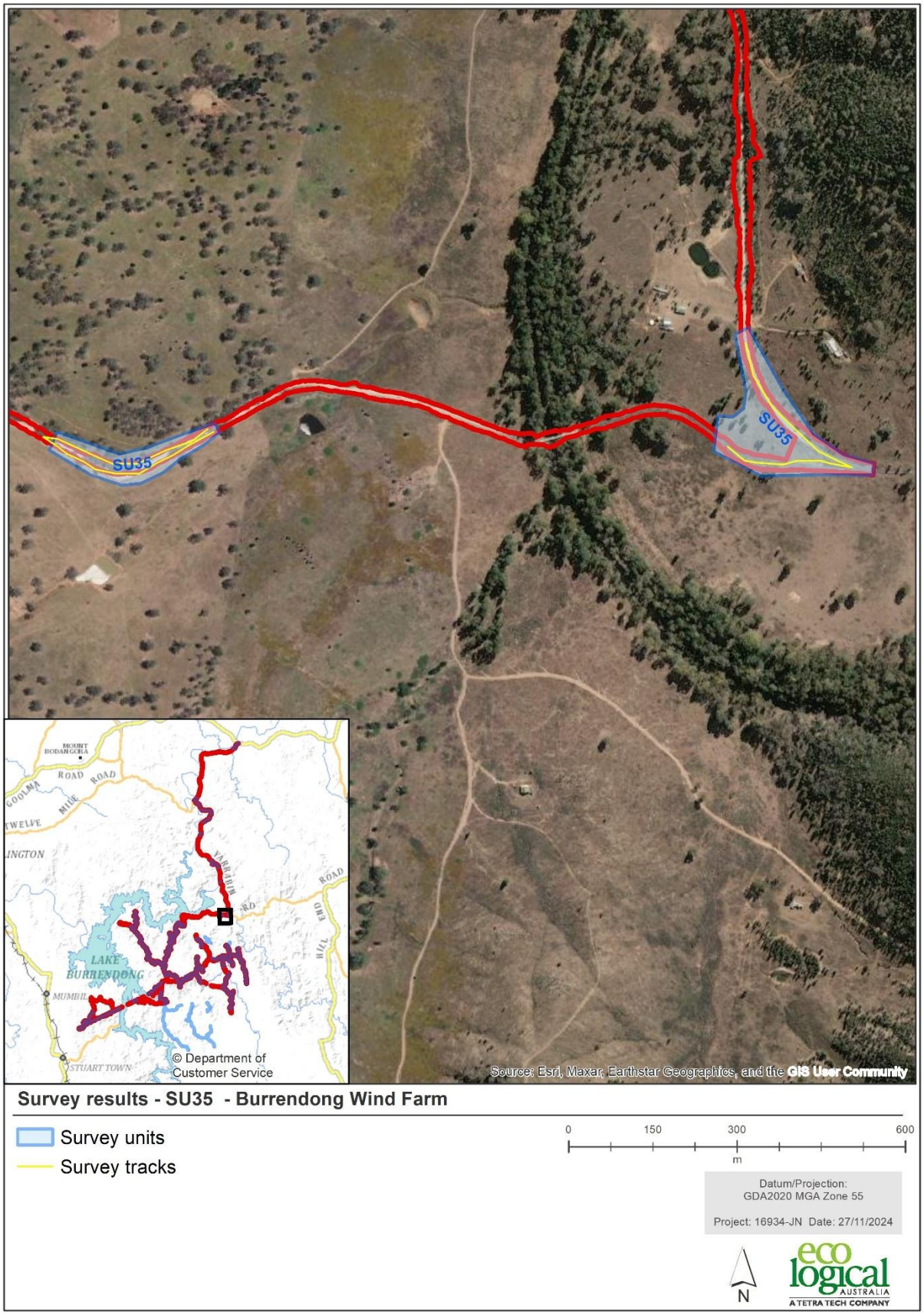


Figure 263: Survey unit 35 tracks

Survey Unit 35	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates. Exposed basalt in seams. The survey unit is located across a broad ridgeline with exposed volcanics (basalts and quartz outcropping seams along the ridge tops and the upper slopes and saddles.
Characteristic Landforms	The southern portion of survey unit is broad ridge line with alternating ridgetops and saddles formed by drainage lines. The northern portion of the survey unit was low lying hills with broad areas of slat adjacent to Cudgegong River.
Typical Soils	Skeletal stony soils on upper slopes and drainage lines of the broad ridgeline. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the mid and lower slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats. Shallow and stony soils along the low lying hills and crests, moderate slopes. Yellowish brown to reddish brown fine sandy loams and sandy clay loams along the mid and lower slopes. Hard setting thin sandy loams, gravelly sands, loams, and clays with weak structure. Copious quartz floats and gravelly subsoils of broken shales and ironstone. Deep Quaternary alluvial along Cudgegong River in narrow banks adjacent to shallow skeletal soils of the spur lines.
Vegetation	Dry sclerophyll woodland with grass/shrub understorey across the steep slopes to the south. Eucalypt species include white box, red stringybark, broad-leaved peppermint, red box and black cypress pine. Extensively cleared across the broad landform in the northern portions with pockets of remnant native vegetation. The southern portion has extensive woodland especially across the steep side slopes.
Archaeological potential	No archaeological potential along the portions of Yarrabin Road that require widening to accommodate the transport corridor.



View south across the lower slope showing road grading through bedrock with red clay loams.



View north through a road cutting into drainage valley, exposed shales and quartz seams, low lying hills.



View north through a deep drainage lines through the bedrock with exposed volcanics and quartz.



Quartz outcropping frequent across reddish brown clay loams of the low lying hills. Gravelly brown sandy loams exposed by road.



View south across crest landform showing road grading though shallow and gravelly soils, bedrock exposed on the verges.



View north across the side slopes of the ridgeline, road grading through mid-slope, exposed bedrock and gravelly soils on verge.



View south across the broad drainage line adjacent to Cudgegong River. Exposed sandy soils with high gravel content, No Aboriginal objects identified.



View east across existing creek crossing, deep modern alluvial. Mixed loams showing episodes of flooding.

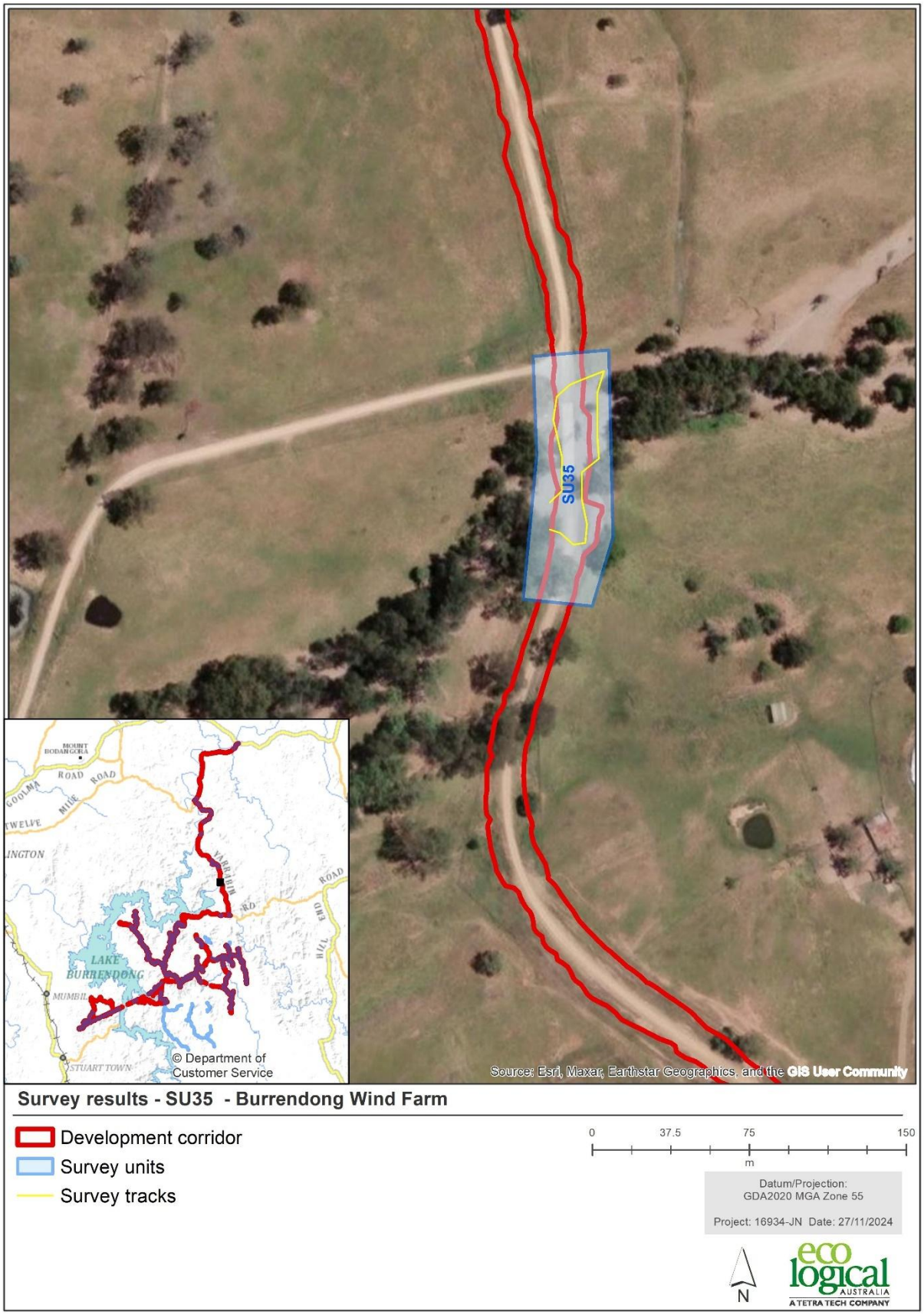


Figure 264: Survey unit 35 tracks

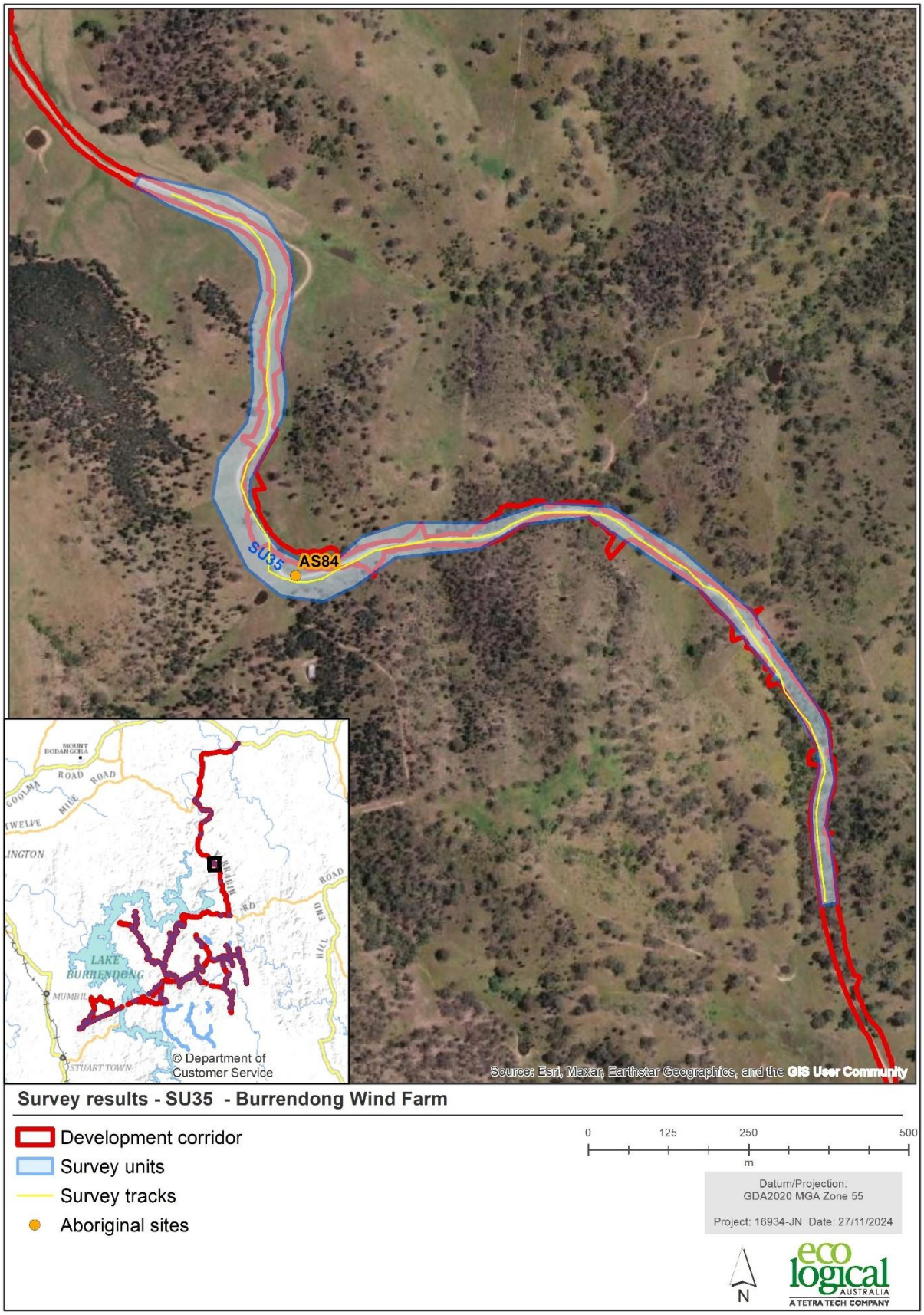


Figure 265: Survey unit 35 tracks

BWF AS84 (AHIMS ID 36-5-0352)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 716040 mE 6395039 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on the edge of the graded Yarrabin Road through a narrow drainage line between ridgelines (Lot 2 DP1146129). The site was identified during the archaeological survey consisting of two quartz flakes located on the mounded edge of the graded road. Yarrabin road has been graded through a narrow valley with large outcroppings of quartz visible through the drainage line and as seams exposed on the road cuttings

The soils are shallow and rocky between large outcropping of volcanics bedrock and quartz seams. The soils were brown loams over an orange clay loam that has a high gravel content.



Figure 266: View north along Yarrabin Road, graded road through moderate sloping hills and a narrow drainage line.



Figure 267: Quartz flake identified on mounded edge of graded road.

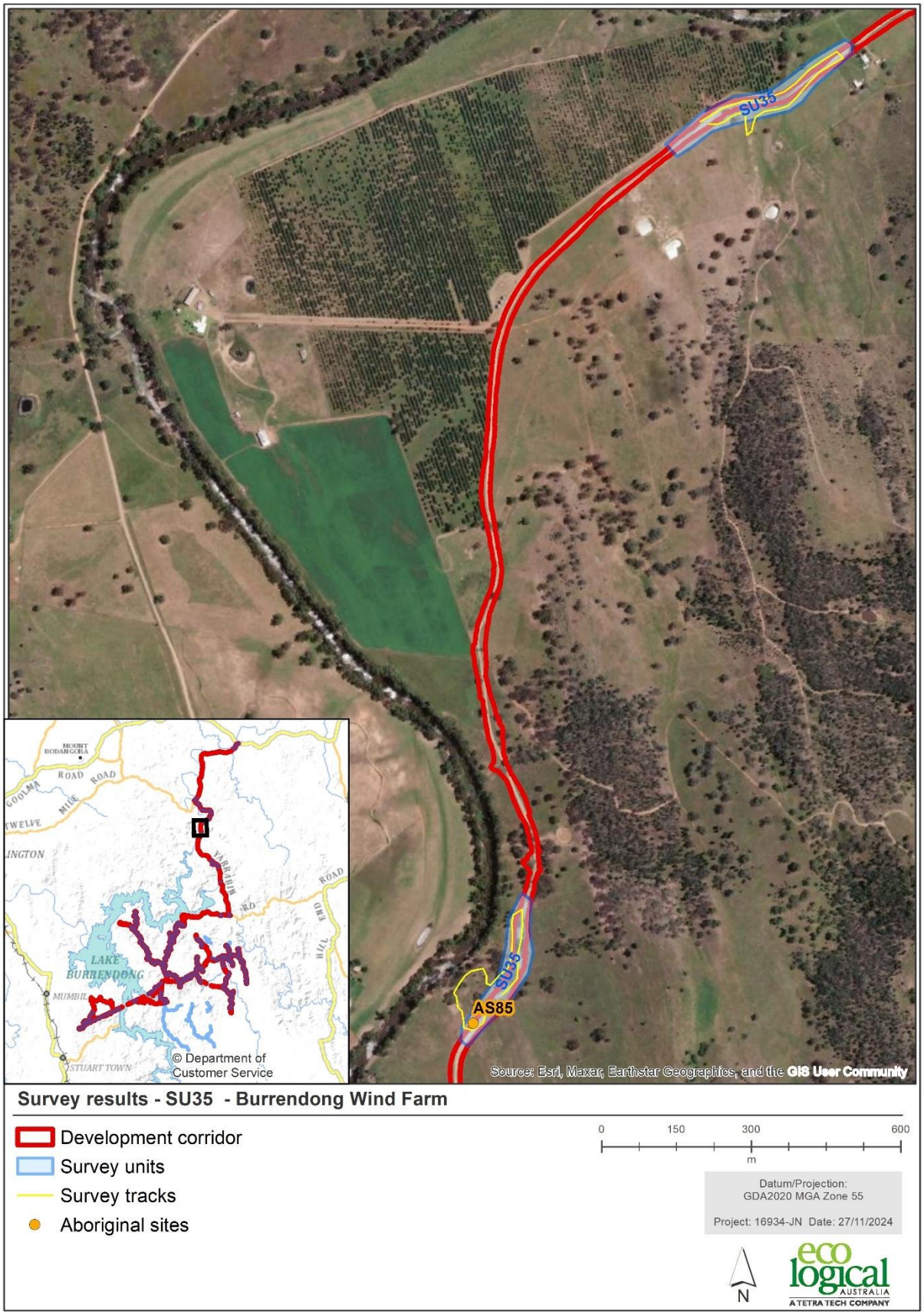


Figure 268: Survey unit 35 tracks and Aboriginal site

BWF AS85 (AHIMS ID 36-5-0353)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 714434 mE 6399272 mS
Site Extent: 10 m x 10 m

A very low density surface artefact scatter located on the edge of the graded Yarrabin Road in close proximity to Cudgegong River (Lot 1 DP221173). The site was identified during the archaeological survey consisting of two basalt flakes, two FGS flakes and a backed basalt point located on disturbed edge of the graded road. Yarrabin Road has been graded through a low lying hill with a moderate slope. The site is on the river side of the transport corridor and there is likely a larger site extent between the road and the Cudgegong River.

The soils are potentially deep on the Cudgegong banks however this soil profile is modern and has been laid down by flooding events and can be deep fluvial sandy loams. The soils visible on the road and in the cuttings were brown loams over an orange clay loam that has a high gravel content. There are no potential archaeological deposits east of the road.



Figure 269: View north across the erosion scour on the edge of Yarrabin Road.



Figure 270: Backed basalt point.

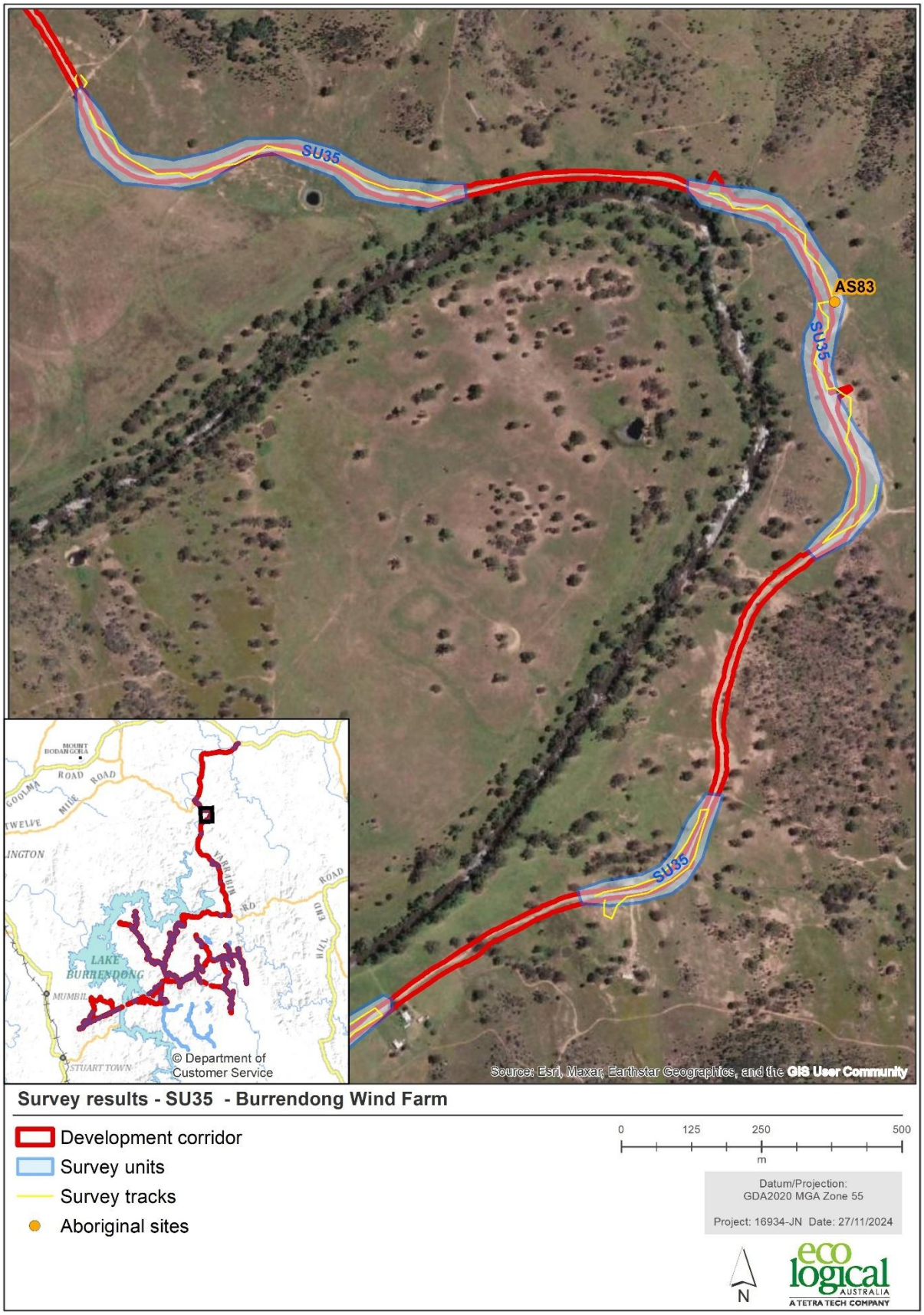


Figure 271: Survey unit 35 tracks and Aboriginal site

BWF AS83 (AHIMS ID 36-2-0811)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 715982 mE 6402478 mS
Site Extent: 20 m x 20 m

A low density surface artefact scatter located on the edge of the graded Yarrabin Road (Lot 35 DP756902). The site was identified during the archaeological survey basalt flakes, FGS, silcrete flakes, quartz flakes and a scraper on the raised road cutting. The sites were eroding out of a shallow high gravel brown loam with shale bedrock exposed. The site is on the lower slope of a rolling hill with a moderate graded slope. An ephemeral drainage line runs adjacent to the road and is causing gully erosion.

The shallow soils consist of brown loams over a gravel rich orange clay loam and eroding and exposed bedrock.. The bedrock is shale and sandstone derived and is decomposing. There is likely a larger site extent further up the spur line beyond the transport corridor.



Figure 272: View south across the site and Yarrabin Road, moderate sloping hills.



Figure 273: Basalt flakes located on the edge of the road on the north side of the bend.



Figure 274: Gully erosion on the south side of Yarrabin Road, thin A horizon of brown loams over an orange clay loam with large bedrock floaters.



Figure 275: Silcrete and quartz flake located on the eroding gully south of the road.

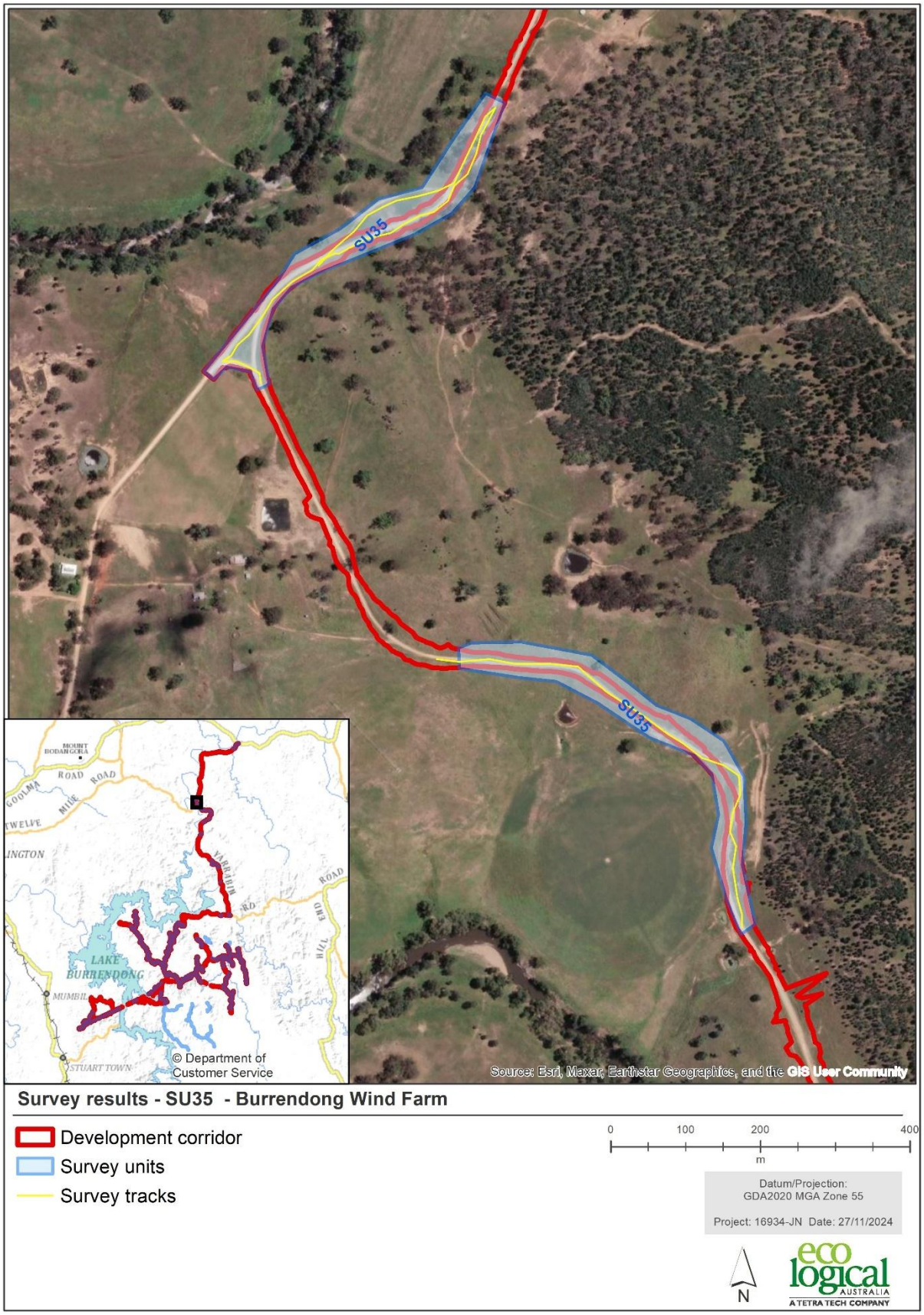


Figure 276: Survey unit 35 tracks

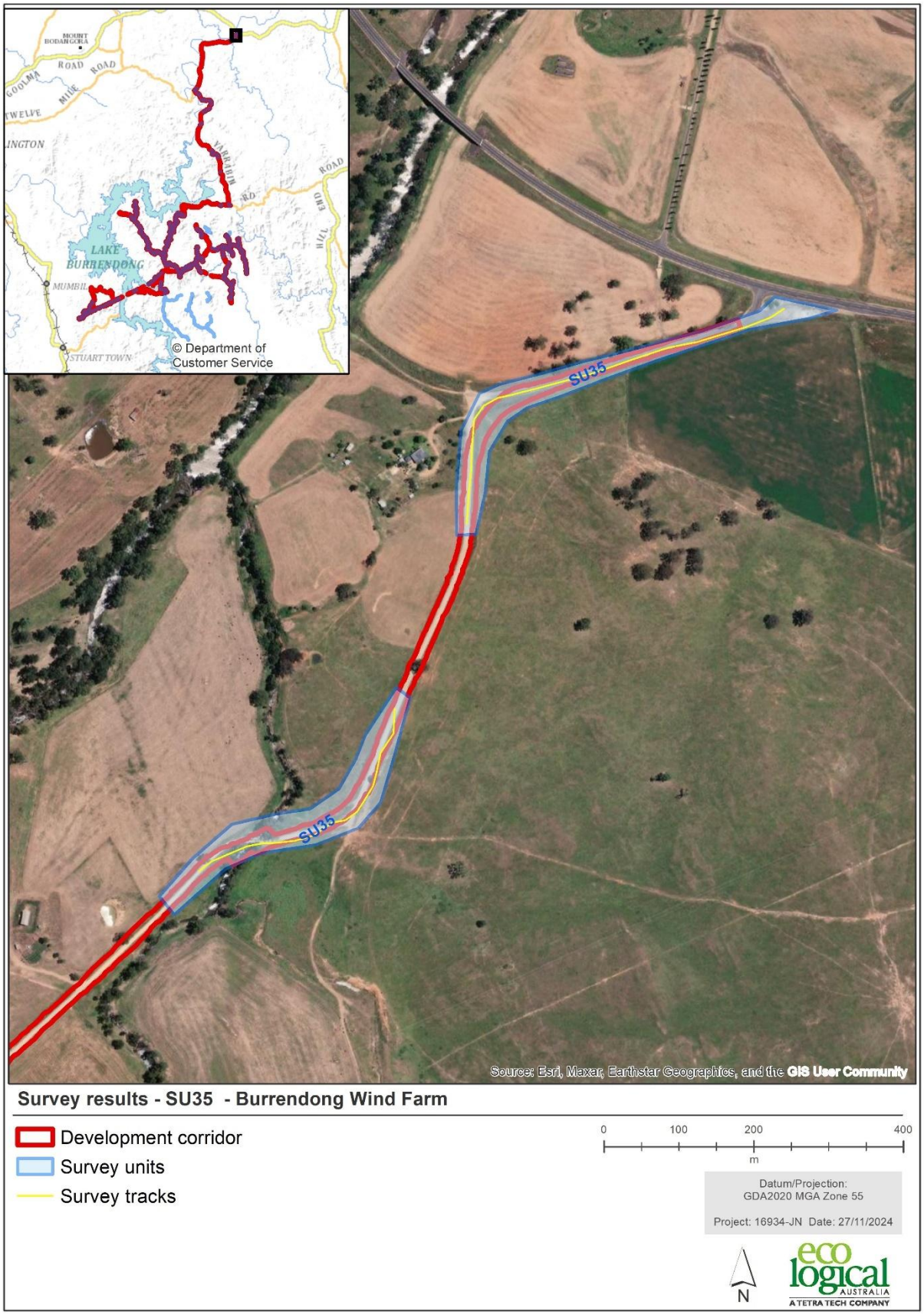


Figure 277: Survey unit 35 tracks

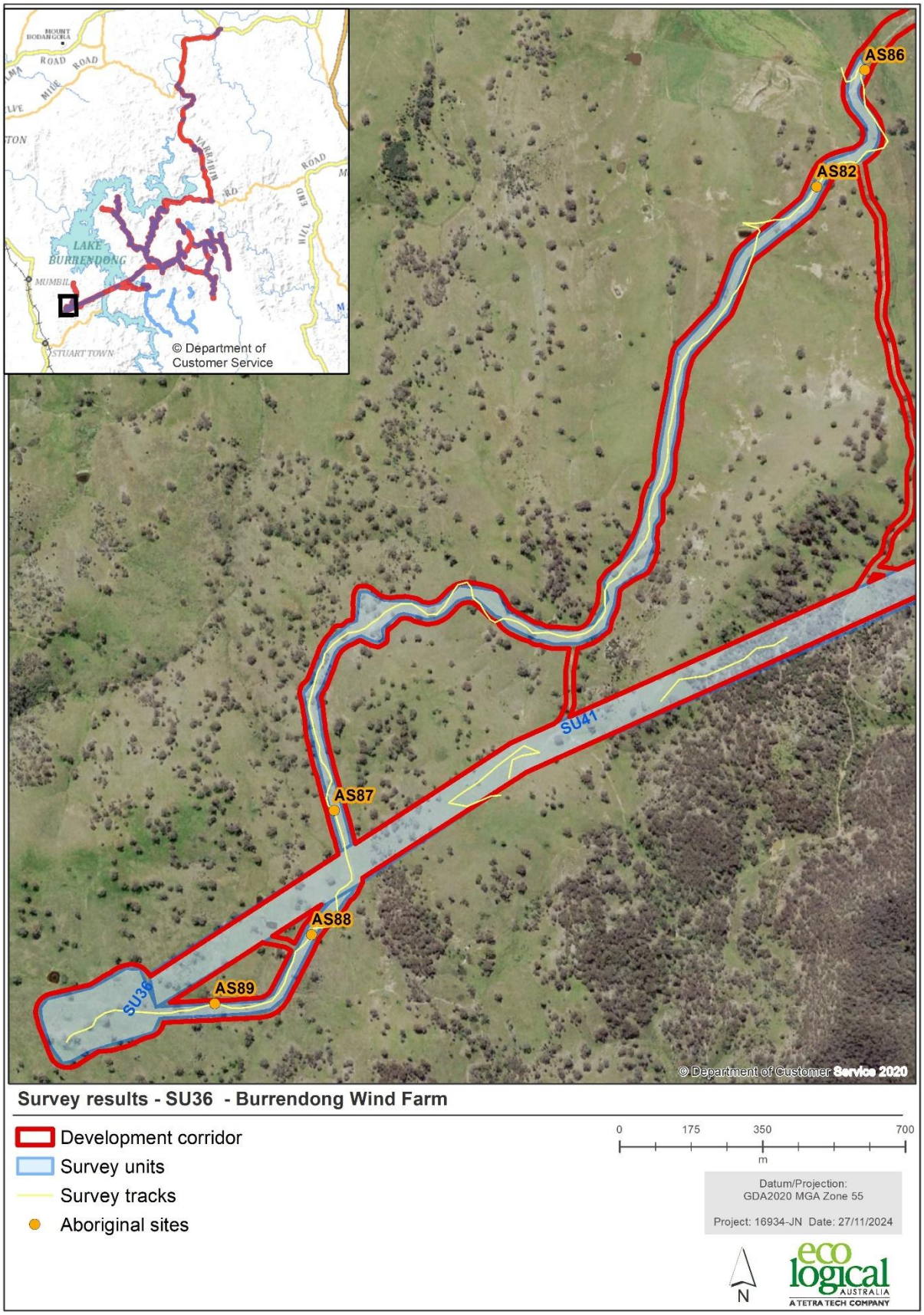


Figure 278: Survey unit 36 tracks and Aboriginal sites

Survey Unit 36	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline. The survey unit traversed low lying hills with exposed shales and through deep drainage gullies and across the ridgeline with exposed volcanics and shales.
Characteristic Landforms	Ridgeline – broad crest with steep side slopes, peaks, and saddles through open depression with low lying hills.
Typical Soils	Shallow, skeletal stony soils on steep slopes, and on ridgelines and crests. Soils were loamy sands; Yellowish brown sandy clay loam was visible with > 50% subrounded gravels. Narrow gullies had shallow soils with exposed bedrock, broad drainage lines had shallow top soils with clay rich subsoils and exposed shales in gully erosion.
Vegetation	Dry sclerophyll forest is a broad-leaved peppermint and scribbly gum community. Associated species include red stringybark on ridges, with candle bark and scribbly gum on slopes. Tumbledown red gum, grey box and yellow box grow on upper slopes. Extensively cleared across the open depression and broad crest and ridgelines. Remnant open woodland along the steep to moderate slopes.
Archaeological potential	No archaeological potential along the ridgeline, steep slopes and narrow drainage gullies, shallow skeletal soils with high erosion hazard. Skeletal soils on crest and mixed soils in drainage gullies from erosional process due to weak soil structure and vegetation clearance.



View north across crest of a low lying hill that dissects broad landform.



View south across the broad ridgeline showing isolated clumps of trees, stony skeletal soils.



View north the broad drainage valley, clay loams, gravel rick subsoils.



Steep side slops of broad ridgeline, drainage gullies and high erosion.

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BWF AS86 (AHIMS ID 36-2-0813)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 715982 mE 6402478 mS
Site Extent: 20 m x 20 m

A low density surface artefact scatter located across the crest and slope of a low lying spur (Lot 195 DP756871). The site was identified during the archaeological survey of the proposed vehicle access track for the substation. The site consisted of 9 lithic pieces of quartzite, quartz, basalt, chert and silcrete flakes, including the broken tip of a ground edge axe made of basalt. Several of the artefacts had cortex which showed they were from terrestrial and riverine lithic sources.

The location of the site was exposed from sheet erosion and vehicle movement. The soils were skeletal brown loams with a high ironstone gravel content and decomposing shale. There is likely a much larger site extent beyond the sheet erosion, there is no potential for archaeological deposit.



Figure 279: View south towards the ridgeline, artefacts were exposed across the vehicle track and the large expanse of sheet erosion.



Figure 280: Basalt, ground edge axe, broken or shattered from use. Rough surface indicates a terrestrial source.



Figure 281: Quartzite and two grey silcrete flakes.



Figure 282: Grey silcrete flake.

BWF AS87 (AHIMS ID 36-5-0362)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 697480 mE 6372796 mS
Site Extent: 10 m x 2m

A low density surface artefact scatter located across the crest and slope of a low lying spur (Lot 272 DP756871). The site was identified during the archaeological survey of the proposed vehicle access track for the substation. The site consisted of five FGS flakes, one basalt flake, and three multi coloured chert/ silcrete flakes and one scraper.

The location of the site was exposed from vehicle movement over the crest landform. The soils were skeletal brown loams with a high ironstone gravel content and exposed shale/ basalt bedrock along the vehicle track. There is likely a larger site extent beyond the vehicle track, however due to the skeletal soils and exposed bedrock there is no potential for archaeological deposit.



Figure 283: View south across the vehicle track with skeletal soils and exposed bedrock.



Figure 284: Four grey FGS flakes.



Figure 285: Weathered FGS flake and a medial basalt flake.



Figure 286: Multicoloured chert or silcrete flakes and one scraper(left).

BWF AS88 (AHIMS ID 36-5-0361)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 697406 mE 6372650 mS
Site Extent: 20 m x 2 m

A low density artefact scatter located on a highly eroded vehicle track on a broad gently sloping low lying rise (Lot 272 DP756871). The site was identified during the archaeological survey of the proposed vehicle access track for the substation. The artefacts were spread across the vehicle track either side of the property fence line. The site consisted of five FGS flakes, six basalt flakes, a basalt core, one white chert flake, a grey chert flake, one grey silcrete flake and five unique flakes (beige/ brown with black veins). The unique flakes could be chert or petrified wood.

The location of the site was exposed from sheet erosion and vehicle movement. The soils were these pale brown sandy loams over a red clay loam. The artefacts were eroding out of the thin A horizon therefore there is likely a much larger site extent beyond the exposed site but there is no potential for archaeological deposit.



Figure 287: View south across the site through the gate access for vehicles. Exposed sandy loam and clays.



Figure 288: Basalt core and flake, grey silcrete flake on sandy loams.



Figure 289: Basalt flake, grey silcrete flake and medial FGS flake.



Figure 290: Unique lithic material beige brown with black veins, either chert or petrified wood.

BWF AS89 (AHIMS ID 36-5-0360)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 697156 mE 6372473 mS
Site Extent: 10 m x 20 m

A low density artefact scatter located on an eroded vehicle track across a gentle lower slope of a spur (Lot 273 DP721743). The site was identified during the archaeological survey of the proposed vehicle access track for the substation. The site consisted of nine FGS flakes, one basalt flake basalt, and two unique flakes (beige/ brown with black veins). The unique flakes could be chert or petrified wood, one has terrestrial cortex.

The site was exposed from sheet erosion and vehicle movement, the soils were skeletal brown loams over a red brown clay loam with a high ironstone gravel content. The site is spread along the vehicle track and its likely a much larger site extent that is not visible due to the dense grass cover. The soils are shallow and there is no potential for archaeological deposit.



Figure 291: View west across the sheet erosion and vehicle damage across the gate entrance. Brown loams and high gravel content.



Figure 292: Unique lithic material beige brown with black veins, either chert or petrified wood.



Figure 293: FGS flakes on sandy brown loams.



Figure 294: FGS flakes.

BWF AS82 (AHIMS ID 36-5-0359)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 698630 mE 6374494 mS
Site Extent: 10 m x 2 m

A low density surface artefact scatter located on an eroded vehicle track on broad gently sloping landform (Lot 177 DP756871). The site was identified during the archaeological survey along the proposed vehicle access track to the substation. The site consisted of four basalt flakes and three chert flakes eroding out of the A horizon.

The soils consisted of shallow brown loams over a reddish brown sandy clay loam with rounded ironstones gravels. This clay loam covered an orange medium to heavy clay. There is likely a much larger site extent beyond the transport corridor.



Figure 295: View north east across the highly eroded vehicle track artefacts washed into gully erosion.



Figure 296: Chert flakes identified in the sheet erosion washed into vehicle track, unique chert pattern identified on Mudgee side of dam.

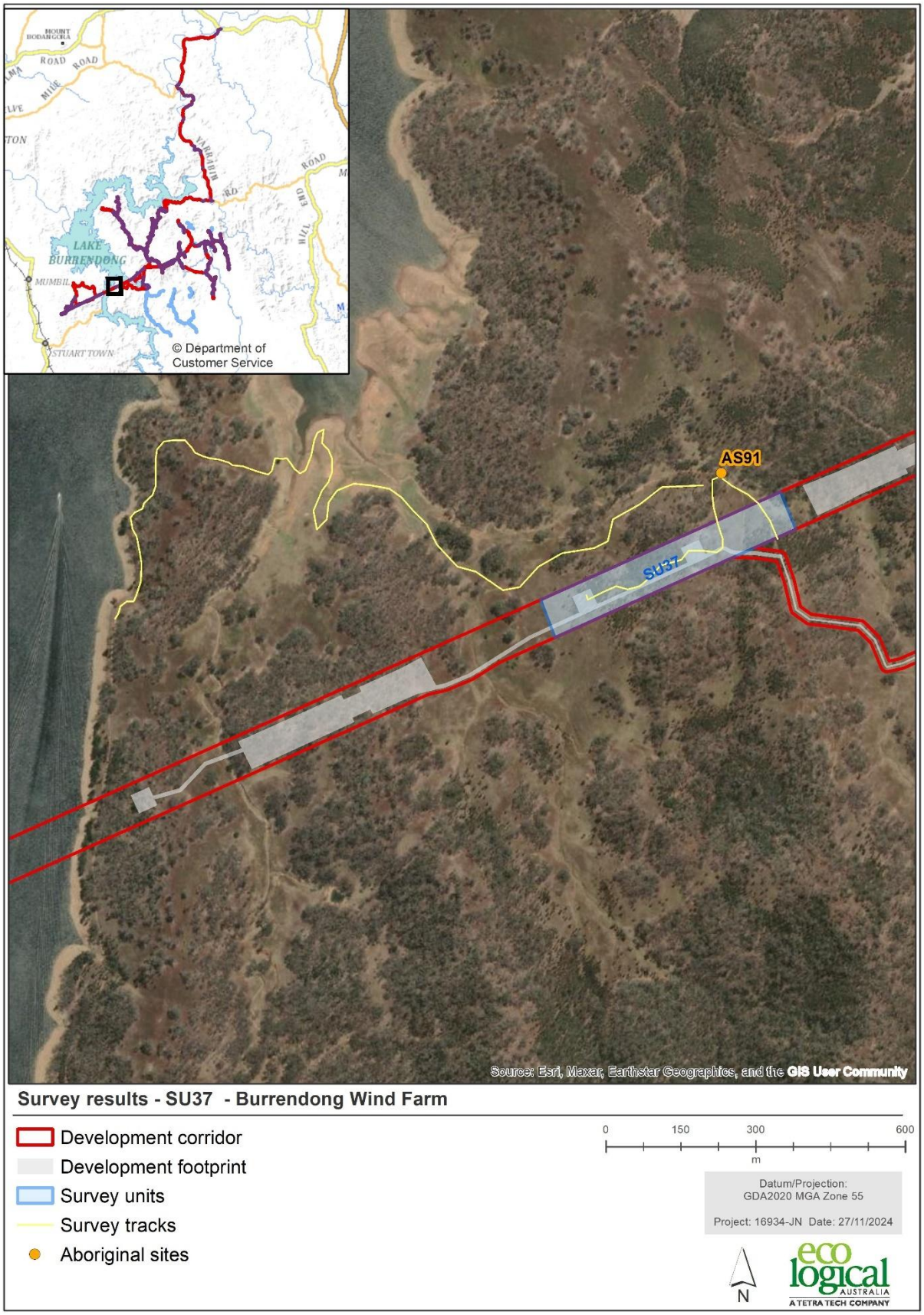


Figure 297: Survey unit 37 tracks and Aboriginal site

Survey Unit 37	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the ridgeline. The survey unit traversed tracks with exposed crumbling shales and the ridgetops exposed volcanics.
Characteristic Landforms	Ridgeline – narrow crest with steep side slopes, peaks, and saddles Deep drainage lines, narrow with exposed bedrock.
Typical Soils	Shallow stony soils on steep slopes, with shallow skeletal soils on ridgelines and crests. Soils were loamy sands; Yellowish brown sandy clay loam was visible with > 50% subrounded gravels.
Vegetation	Dry sclerophyll forest is a broad-leaved peppermint and scribbly gum community. Associated species include red stringybark on ridges, with candle bark and scribbly gum on slopes. Tumbledown red gum, grey box and yellow box grow on upper slopes.
Archaeological potential	No archaeological potential along the ridgeline, shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. Aboriginal sites present will be exposed as a surface expression.



View south across steep slope of ridgetop showing rocky outcropping.



Broad moderately sloping sides of the saddles between ridgetops.



Ground surface and visibility, shallow brown loams across side slopes frequent rock out cropping.



View north showing narrow drainage lines between ridgetops.

BWF AS91 (AHIMS ID 36-5-0349)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 704830 mE 6376350 mS
Site Extent: 2 m x 2 m

A very low density surface artefact scatter located on a graded vehicle track at the base of a steep slope of a narrow ridge line (Lot 26 DP756915). The site was identified during the archaeological survey consisting of four quartz flakes on the ground surface adjacent to an ephemeral drainage line.

The soils visible were red brown clay rich loams with ironstone gravels and exposed bed rock along the edge of the track. There are no potential archaeological deposits due to the highly eroded surface and exposed shallow soil profile.



Figure 298: View north across the access vehicle track on the lower slope of a steep ridge line, red brown clay loams with gravel.



Figure 299: Four quartz flakes located on the graded vehicle access track.

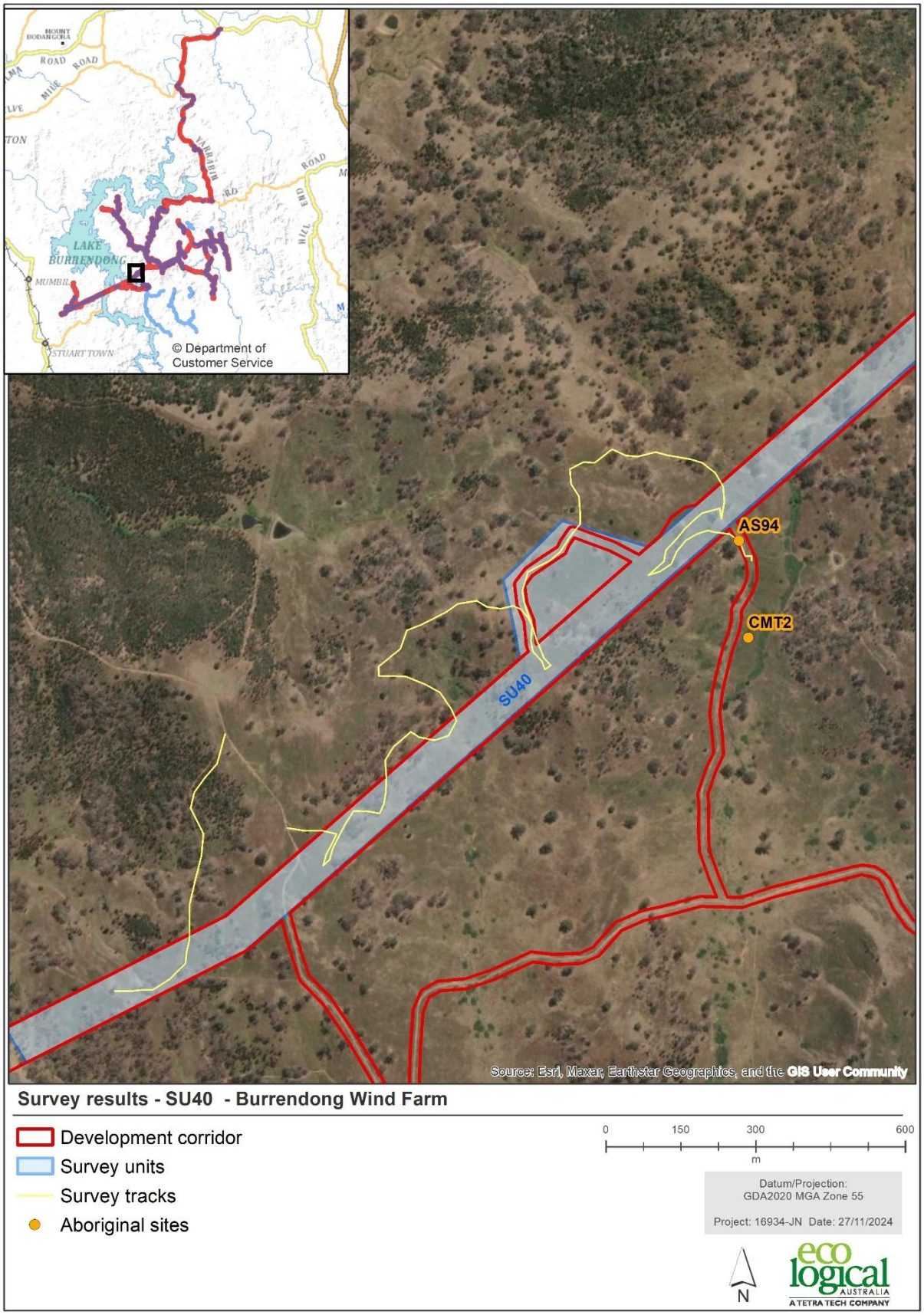


Figure 300: Survey unit 40 tracks and Aboriginal sites

Survey Unit 40	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the low lying hills. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates.
Characteristic Landforms	Undulating low hills with gentle slopes along large wide drainage line.
Typical Soils	Shallow stony soils on upper slopes with frequent rock outcropping and quartz seams, lower slopes were brown fine sandy loams with exposed yellowish orange clays. High quartz and ironstone gravels evident across exposures and vehicle tracks.
Vegetation	Remnant dry sclerophyll forest is a broad-leaved peppermint and scribbly gum community. On the upper slopes, associated species include tumbledown red gum, grey box and yellow box. The vegetation was mostly cleared with few stands of trees along the creek line and scattered across the slopes.
Archaeological potential	No archaeological potential along the upper slopes with exposed gravelly shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. Exposed bedrock along vehicle track. Across the lower slopes and along the drainage line, there were relatively deep soils however there was a shallow A horizon on hard setting sandy gravel loam above a reddish/ orange, brown medium to heavy clay. Aboriginal sites present were exposed as a surface expression.



View south across crest landform showing rocky outcropping, broad moderately sloping sides. Location of power pole.



View south across crest landform Skeletal red sandy loams with shales bedrock exposed. Location of power pole.



View south west showing moderate to steep side slopes of low lying hills and quartz seams



Drainage valley with low crests, red sandy loams, high gravel content, and quartz seams

BWF AS94 (AHIMS ID 36-5-0357)

Site type: Campsite
Site features: Artefact
Coordinates: GDA 2020 Zone 55 707942 mE 6378021 mS
Site Extent: 20 m x 20 m

A low density surface artefact scatter located on a low lying hill between two drainage lines (Lot 18 DP756903). The site was identified during the archaeological survey consisting of basalt and quartz flakes at a high elevation on the ground surface in an erosion scar adjacent to an ephemeral drainage line.

The scatter was exposed on the low lying crest above two drainage lines and is likely representative of a campsite in the sheltered valley below the ridgeline. The majority of the site was exposed on the surface by sheet erosion but is indicative of a larger site extent.



Figure 301: View south east, showing a graded vehicle track through the site. Artefacts located to the right under the trees.



Figure 302: Example of basalt flakes uncovered by the track grading.

BWF CMT2 (AHIMS ID 36-5-0358)

Site type: Culturally modified tree
Site features: Modified tree (scarred)
Coordinates: GDA 2020 Zone 55 707961 mE 6377829 mS
Site Extent: 1 m x 1 m

A culturally modified tree located on a hill crest above the confluence of two drainage lines. The Aboriginal site is associated with BWF AS94 (Lot 18 DP756903). The scarred surface of the tree is facing north towards the ridgeline, the scar is not visible from the Macquarie River or Oakey Creek therefore it is not likely a camp marker. The Aboriginal representatives have identified the scar may be for a canoe or for a serving platter for a large gathering.

The tree is dead, species is unknown, the scar is elongated (220cm length, 25cm wide), scar regrowth measured approx. 55cm on either side, scar depth about 15cm.

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Figure 303: View south across the lower slopes of the ridgeline looking towards Oakey Creek.



Figure 304: Base of the scar, clean cut mark into the heartwood during scar creation.

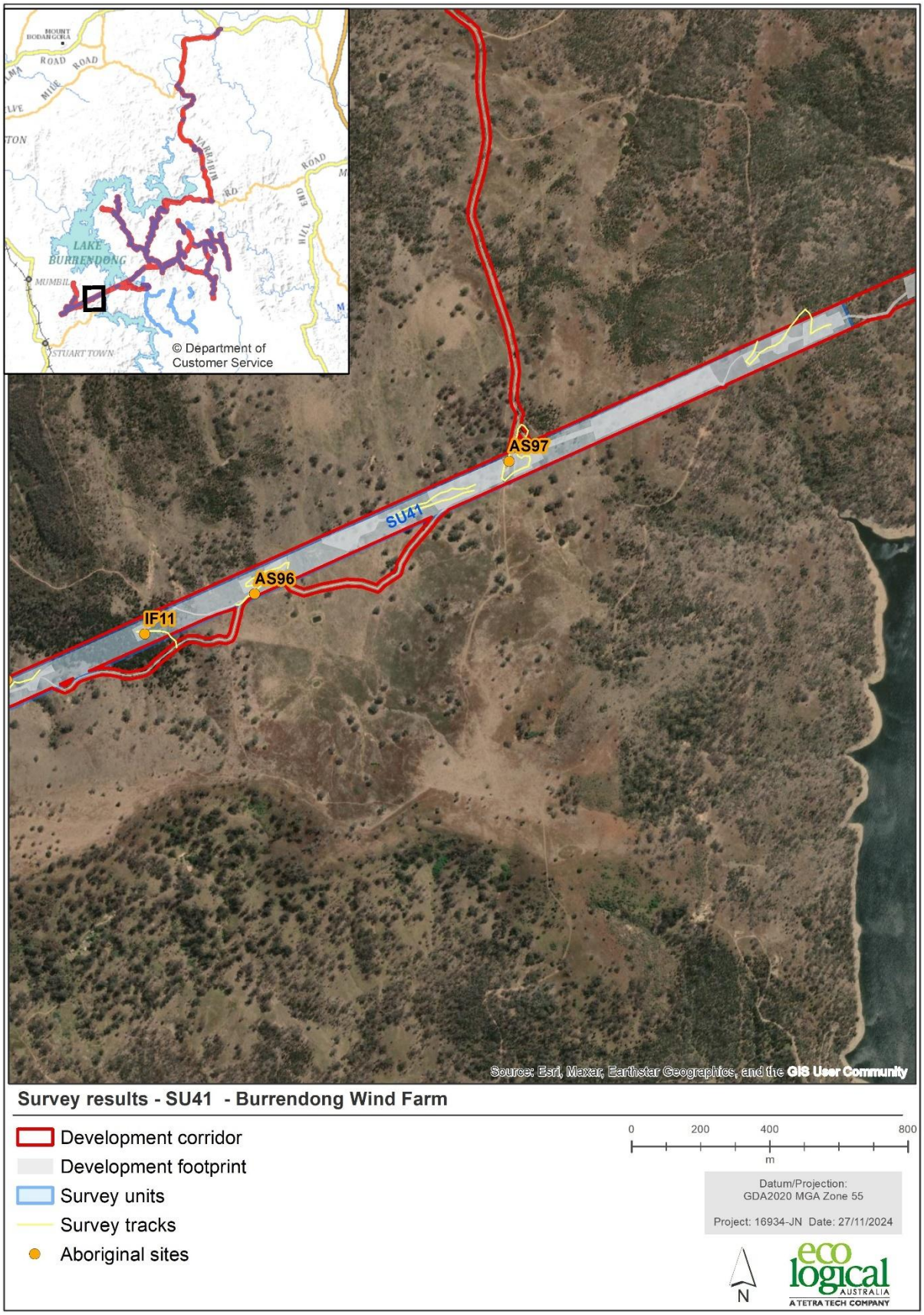


Figure 305: Survey unit 41 tracks and Aboriginal sites

Survey Unit 41	
Geology	Uplifted Sedimentary – shales with volcanic outcropping, large exposures of bedrock across the low lying hills. Quartz rich greywackes and slates, quartzite, siltstones and conglomerates.
Characteristic Landforms	Undulating hills with gentle lower slopes and steep upper slopes along large wide drainage line
Typical Soils	Shallow stony soils on upper slopes with frequent rock outcropping and quartz seams, lower slopes were brown fine sandy loams with exposed yellowish orange clays. High quartz and ironstone gravels evident across exposures and vehicle tracks.
Vegetation	Remnant dry sclerophyll forest is a broad-leaved peppermint and scribbly gum community. On the upper slopes, associated species include tumbledown red gum, grey box and yellow box. The vegetation was mostly cleared with few stands of trees along the creek line and scattered across the slopes.
Archaeological potential	No archaeological potential along the upper slopes with exposed gravelly shallow skeletal soils with high erosion hazard due to weak soil structure and vegetation clearance. Exposed bedrock along vehicle track. Shallow A horizon on hard setting sandy gravel loam above a reddish/ orange, brown medium to heavy clay. Aboriginal sites present were exposed as a surface expression.



View south across the steep slope, deep gully erosion exposing skeletal soils and high gravel content.



View north across the location of power pole, exposed bedrock and shallow red sandy loams.



Location of power pole on a low lying hill with exposed shales, extensively cleared.



Exposed reddish brown clay loams along lower slopes and valleys, high gravel content.

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BWF AS96 (AHIMS ID 36-5-0356)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 700839 mE 6374379 mS
Site Extent: 15 m x 6 m

A moderate density surface artefact scatter located on an eroded vehicle track along a low lying hill crest above a drainage valley (Lot 59 DP756871). The site was identified during the archaeological survey consisting of 34 flakes and a core, the material visible was cherts of several colours, basalt, and quartz

The artefact scatter was identified across an area of sheet erosion of the top of a low lying crest. The vehicle tracks have eroded the surface, there is low likelihood of archaeological deposits due to the shallow nature of the soil profile and the presence of the scatter in the shallow A horizon. The soils were brown loam A horizon over a red brown clay loam with a high ironstone and shale gravel content.

There is likely a larger site extent surrounding just below the grass cover.



Figure 306: View north across the artefact scatter across the vehicle track and sheet erosion.



Figure 307: Chert core and flake, including basalt flakes.



Figure 308: Milky quartz and chert flake.



Figure 309: Milky quartz and chert flake.

BWF AS97 (AHIMS ID 36-5-0355)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 701577 mE 6374764 mS
Site Extent: 20 m x 20 m

A stone axe, and grinding stone located on the edge of a graded vehicle track on a lower slope above a drainage line (Lot 281 DP44173). The site was identified during the archaeological survey in a heavily disturbed context. The vehicle track was graded to decomposing shale bedrock, the track edge exposed a thin red brown clay loam with high gravel content.

There was no potential archaeological deposit associated with this site. The soil profile was shallow, and the artefacts were identified on the surface.



Figure 310: View south west across the location of the small scatter. Sheet erosion from vehicle damage, graving and vegetation clearance.



Figure 311: FGS flake located in a large sheet erosion adjacent to the vehicle track.



Figure 312: Ground edge stone axe, rounded river cobble with smooth sharped end, pitting from use.



Figure 313: Hammer stone, rounded river cobble with pitting at the short end.

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BWF IF11 (AHIMS ID 36-2-0812)

Site type: Isolated find
Site features: Artefact
Coordinates: GDA 2020 Zone 55 715982 mE 6402478 mS
Site Extent: 2 m x 2 m

A basalt flake located amongst new growth pine trees on a gentle sloping crest landform (Lot 177 DP756871). The location is heavily disturbed from plantation practices, with the likelihood of further Aboriginal objects. If there was an Aboriginal campsite, the nature and extent has no significance due to the disturbance. There is no potential archaeological deposit.



Figure 314: View north west across the location of the isolated find. The isolated basalt flake was in a location of high disturbance with mixed loams and clays.



Figure 315: Basalt flake located at the base of a tree.

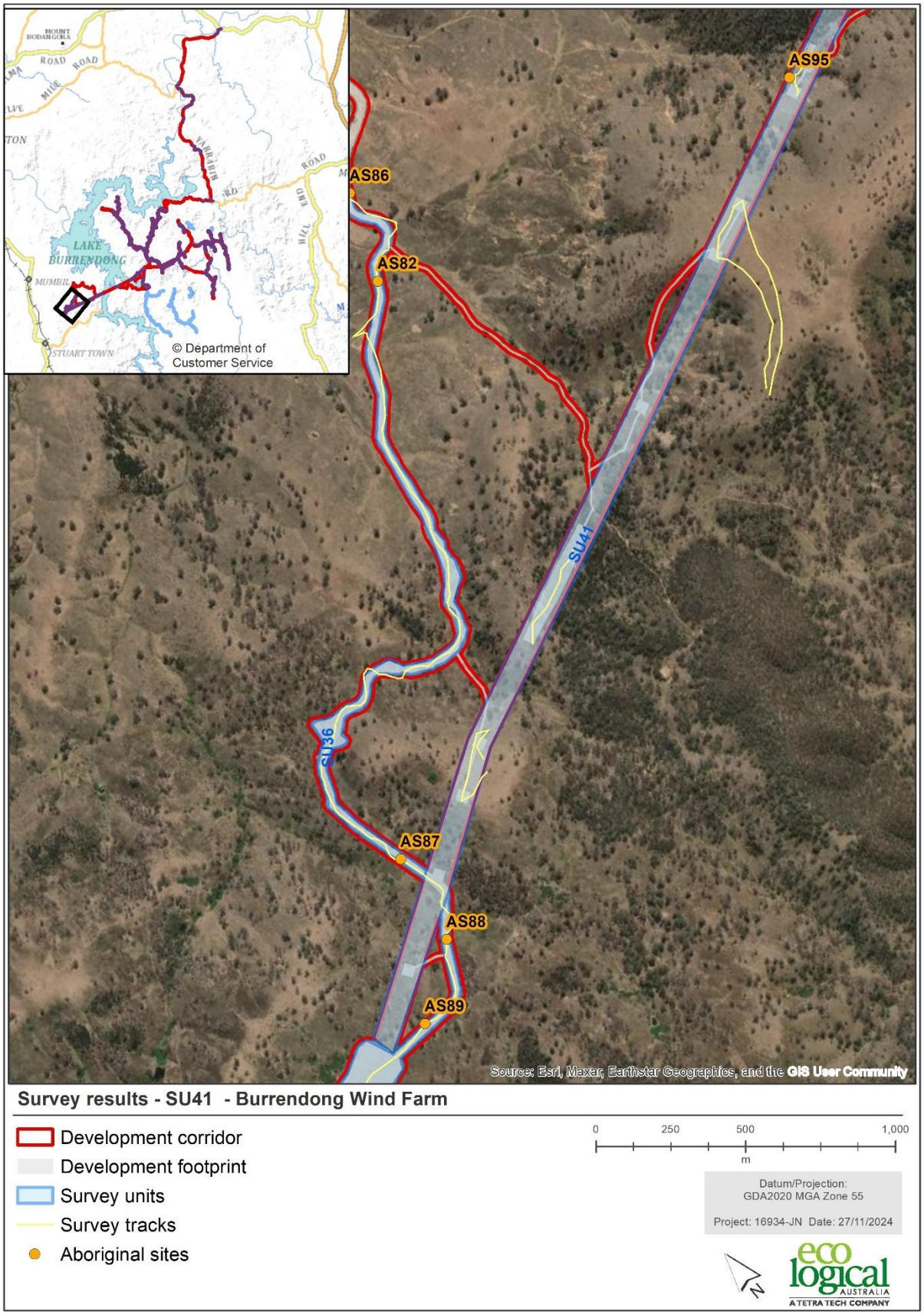


Figure 316: Survey unit 41 tracks and Aboriginal sites

BWF AS95 (AHIMS ID 36-5-0354)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 700123 mE 6374131 mS
Site Extent: 1 m x 1 m

A very low density surface artefact scatter located in gully erosion on a moderate sloping landform (Lot 255 DP41327). The site was identified during the archaeological survey consisting of a single knapping event which is likely the result of a resource chance find. The lithic material was rhyolite and could potentially be refitted.

The site is in a highly disturbed context from natural erosional processes likely compounded by land clearance for grazing. There was exposed bedrock and brown clay rich soils with dense ironstone gravel content. There are no potential archaeological deposits.



Figure 317: View south across the gully erosion from land clearance an unstable soil structure.



Figure 318: Basalt flakes and core, evidence of a chance find knapping event.

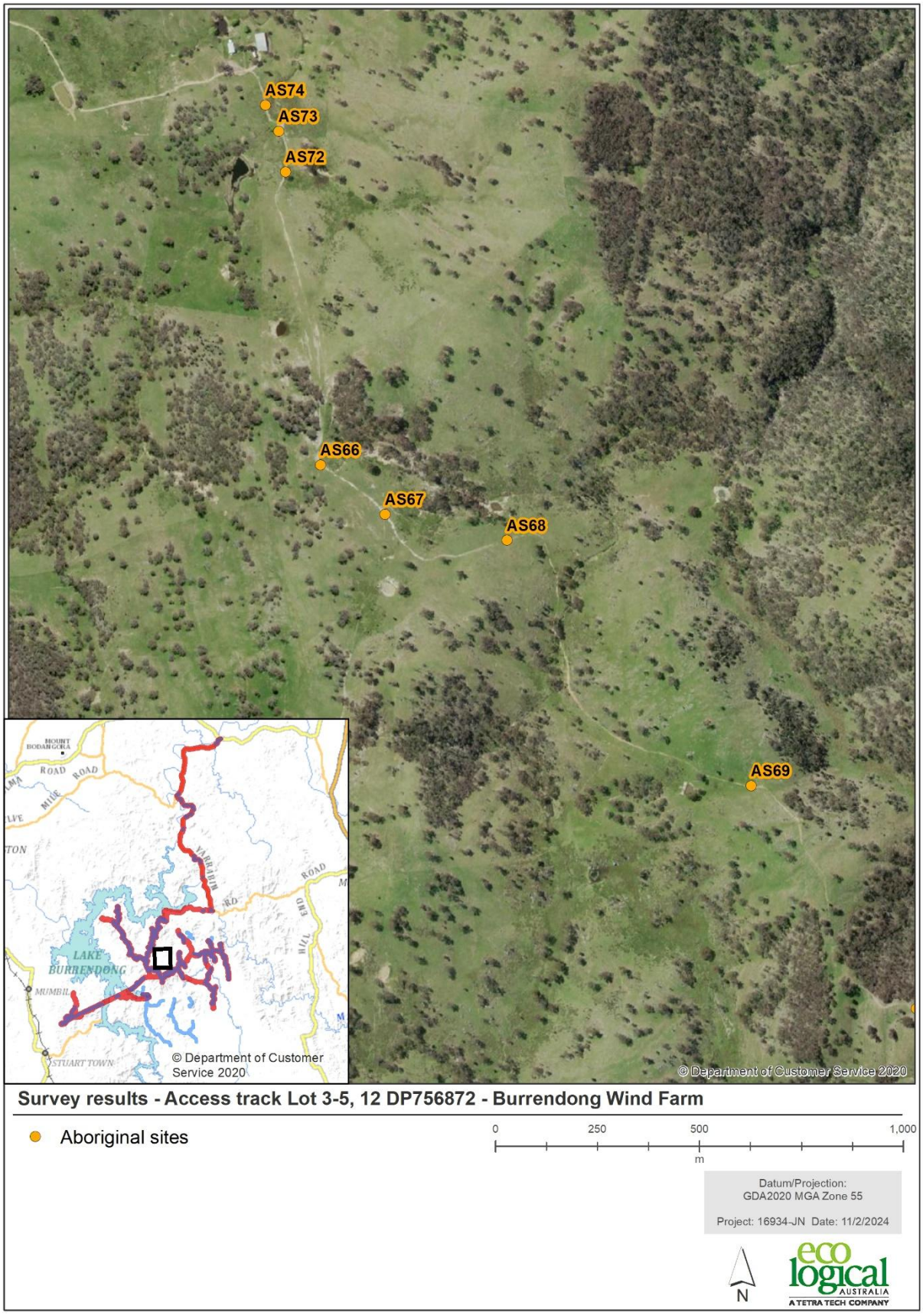


Figure 319: Aboriginal sites along access track through Lot 3-5, 12 DP 756872

BWF AS66 (AHIMS ID 36-5-0382)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 710875 mE 6381535 mS
Site Extent: 5 m x 5 m

A low density surface artefact scatter located along an eroded vehicle track cut through a moderate sloping landform (Lot 3 DP756872). The site was identified during the archaeological survey consisting of three basalt flakes and six quartz flakes.

The site is in a highly disturbed context from natural erosional processes and track grading that is cut into the landform. There was exposed shallow pale sandy loams above orange clay rich soils with dense ironstone gravel content. There are potential archaeological deposits beyond the road corridor, though they may be shallow and disturbed from past land clearance.



Figure 320: View south east across the moderate slope showing the graded vehicle track cut into the slope.



Figure 321: Quartz flakes.

BWF AS67 (AHIMS ID 36-5-0381)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 711033 mE 6381416 mS
Site Extent: 10 m x 4 m

A low density surface artefact scatter located along an eroded vehicle track cut through a moderate sloping landform (Lot 3 DP756872). The site was identified during the archaeological survey consisting of a flaked river cobble, and several quartz flakes.

The site is in a highly disturbed context from natural erosional processes and track grading that is cut into the landform. There was exposed shallow pale sandy loams above orange clay rich soils with dense ironstone gravel content. There is potential archaeological deposits beyond the road corridor, though they may be shallow and disturbed from past land clearance.

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Figure 322: View south across the gully erosion from land clearance an unstable soil structure.



Figure 323: Basalt flakes and core, evidence of a chance find knapping event.

BWF AS68 (AHIMS ID 36-5-0389)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 711330 mE 6381354 mS
Site Extent: 10 m x 5 m

A low density surface artefact scatter located along an eroded vehicle track cut through a moderate sloping landform (Lot 3 DP756872). The site was identified during the archaeological survey consisting of a flake basalt river cobble, a rhyolite flake, an FGS flake, a chalcedony flake, six basalt flakes and two quartz flakes, a quartz core and a crystal quartz flake.

The site is in a highly disturbed context from natural erosional processes and track grading that is cut into the landform. There was exposed shallow pale sandy loams above orange clay rich soils with dense ironstone gravel content. There is potential archaeological deposits beyond the road corridor, though they may be shallow and disturbed from past land clearance.



Figure 324: Basalt core, flaking along one margin.



Figure 325: Basalt flakes and a small chalcedony flake.

BWF AS69 (AHIMS ID 36-5-0388)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 711928 mE 6380751 mS
Site Extent: 10 m x 5 m

A low density surface artefact scatter located along an eroded vehicle track cut through a moderate sloping landform (Lot 5 DP756872). The site was identified during the archaeological survey consisting of two basalt cores, ten basalt flakes and eight crystal quartz flakes.

The site is in a highly disturbed context from natural erosional processes and track grading that is cut into the landform. There was exposed red clay rich sandy loams with dense ironstone gravel content and exposed bedrock. There are no potential archaeological deposits beyond the road corridor, due to the level of disturbance from past land clearance.



Figure 326: View south east across the moderate slope showing the grade vehicle track cut into the slope.



Figure 327: Basalt flakes and a basalt core.

BWF AS72 (AHIMS ID 36-5-0387)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 710787 mE 6382256 mS
Site Extent: 20 m x 10 m

A low density surface artefact scatter located along an eroded vehicle track cut through the lower slope of a drainage valley (Lot 4 DP756872). The site was identified during the archaeological survey consisting of ten basalt flakes, three crystal quartz flakes and eight quartz flakes.

The site is in a highly disturbed context from natural erosional processes and track grading that is cut into the landform. There was exposed shallow pale sandy loams above orange clay rich soils with dense ironstone gravel content. There is potential archaeological deposits beyond the road corridor, though they may be shallow and disturbed from past land clearance.

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Figure 328: View south across the gully erosion from land clearance an unstable soil structure.



Figure 329: Basalt flakes and a quartz flake

BWF AS73 (AHIMS ID 36-5-0386)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 710772 mE 6382356 mS
Site Extent: 10 m x 10 m

A moderate density surface artefact scatter located along an eroded vehicle track cut through a moderate sloping landform (Lot 4 DP756872). The site was identified during the archaeological survey consisting of two basalt Bondi points, twenty three basalt flakes and three chert flakes, a chert core, four quartz flakes. The site is likely part of the wider site extent of BWF AS74.

The site is in a highly disturbed context from natural erosional processes, the exposed soil profile was shallow pale sandy loams above orange clay rich soils with dense ironstone gravel content. There is potential archaeological deposits along the drainage line, though they may be shallow and disturbed from past land clearance.



Figure 330: View north across the gully erosion along the drainage line and the remnant archaeological deposit.



Figure 331: Basalt flakes and chert flakes.

BWF AS74 (AHIMS ID 36-5-0383)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 710739 mE 6382421 mS
Site Extent: 10 m x 10 m

A moderate density surface artefact scatter located across an eroded lower slope adjacent to a drainage line (Lot 4 DP756872). The site was identified during the archaeological survey consisting of nineteen basalt flakes, a basalt core and two quartz flakes. The site is likely part of the wider site extent of BWF AS73.

The site is in a highly disturbed context from natural erosional processes, the exposed soil profile was shallow pale sandy loams above orange clay rich soils with dense ironstone gravel content. There is potential archaeological deposits along the drainage line, though they may be shallow and disturbed from past land clearance.



Figure 332: Basalt flakes and a basalt core



Figure 333: Basalt flakes on brown silty loam ground surface

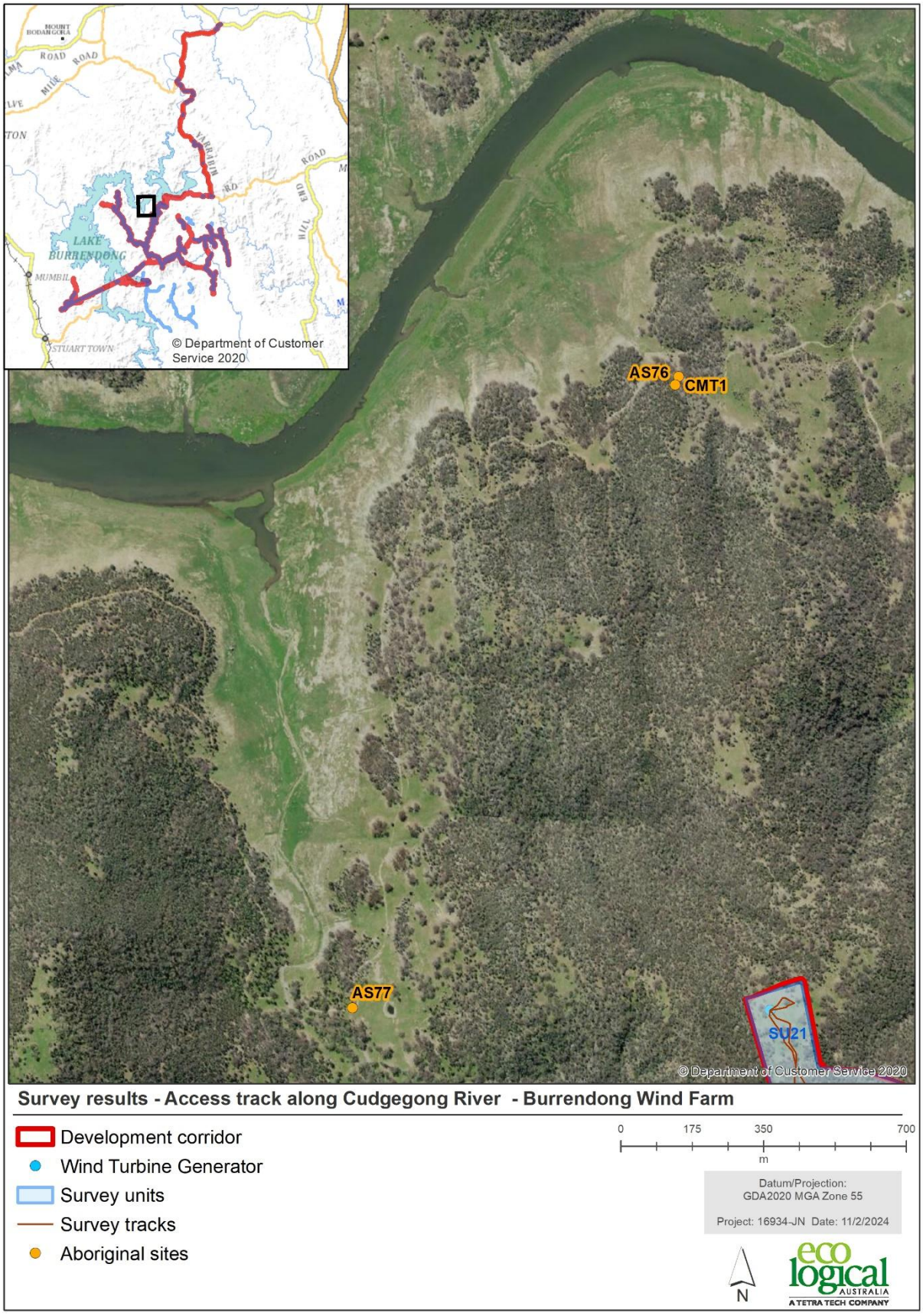


Figure 334: Aboriginal sites along the Cudgegong River access track

BWF AS76 (AHIMS ID 36-5-0384)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 709570 mE 6387088 mS
Site Extent: 5 m x 5 m

A very low density surface artefact scatter located along an eroded vehicle track cut through a moderate sloping landform (Lot 54 DP756872). The site was identified during the archaeological survey consisting of two basalt flakes and one quartz flake on the road verge.

The site is in a highly disturbed context from natural erosional processes and track grading that is cut into the landform. There was exposed red clay rich earths with dense ironstone gravel content. There are potential archaeological deposits between the road corridor and the scarred tree BWF CMT1.



Figure 335: View south east across the gully eroded road with red clay loams and ironstone gravels.



Figure 336: Basalt flake and quartz flake on the road surface.

BWF AS77 (AHIMS ID 36-5-0385)

Site type: Artefact scatter
Site features: Artefact
Coordinates: GDA 2020 Zone 55 708761 mE 6385539 mS
Site Extent: 10 m x 10 m

A low density surface artefact scatter located along an eroded vehicle track cut through a moderate sloping landform (Lot 55 DP756872). The site was identified during the archaeological survey consisting of five basalt flakes, and a basalt core

The site is in a highly disturbed context from natural erosional processes and track grading that scaped the ground surface of the landform. There was exposed shallow sandy loams above orange clay rich soils with dense ironstone gravel content. There are potential archaeological deposits beyond the road corridor, though they may be shallow and disturbed from past land clearance.

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Figure 337: View south across the site towards the ridgeline in the distance.



Figure 338: Basalt core, evidence of a knapping event.

BWF CMT1 (AHIMS ID 36-5-0390)

Site type: Culturally modified tree
Site features: Modified tree (scarred)
Coordinates: GDA 2020 Zone 55 709553 mE 6387064 mS
Site Extent: 1 m x 1 m

A culturally modified tree located on a hill crest above a drainage line that flows to the Cudgegong River. The Aboriginal site is associated with BWF AS76 (Lot 54 DP756872). The scarred surface of the tree is facing north towards the Cudgegong River and BWF AS76. the scar is likely a camp marker.

The tree is semi-dead, species is white box, the scar is oval shaped (50cm length, 20cm wide), scar regrowth measured approx. 30cm on either side, scar depth about 15cm.



Figure 339: View south across the lower slopes of the looking the scarred face of the tree.



Figure 340: View north from the scarred tree towards BWF 76 and the Cudgegong River.

Appendix C Artefact catalogue

Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS1	Quartz	Milky	Distal Fragment			Feather	19	11	6	
BWF AS1	Quartz	Milky	Proximal Fragment	Focal			12	9	2	
BWF AS1	Quartz	Milky	Angular Fragment				15	9	5	No distinguishing features, likely bipolar flaking or fragmented from natural fault
BWF AS2	FGS	Black	Medial Fragment				32	25	10	Grey from weathering
BWF AS2	FGS	Black	Distal Fragment			Feather	32	17	7	
BWF AS2	FGS	Black	Flake	Broad	Flake scar	Feather	40	27	11	Grey from weathering
BWF AS2	Chert	Grey	Flake	Broad	Flake scar	Feather	33	33	5	White weathered cortex (1-30%)
BWF AS2	Chert	Grey	Flake	Broad	Flake scar	Feather	18	12	3	
BWF AS2	Quartz	Crystal	Flake	Focal		Feather	19	10	3	
BWF AS2	Quartz	Milky	Flake	Focal		Feather	30	12	7	
BWF AS2	Quartz	Crystal	Angular Fragment				18	17	9	
BWF AS2	Quartz	Milky	Angular Fragment				17	21	11	
BWF AS2	FGS	Black	Flake	Broad	Flake scar	Step	38	14	11	4 dorsal scars
BWF AS3	Quartz	Crystal	Geometric Microlith				17	10	4	Ceremonial? Potentially used for scarification
BWF AS3	Quartz	Milky	Distal Fragment			Feather	17	10	3	
BWF AS3	Quartz	Milky	Distal Fragment			Feather	21	10	7	
BWF AS3	Quartz	Milky	Flake	Focal		Feather	16	11	3	
BWF AS4	Chert	Grey	Distal Fragment			Feather	25	31	5	
BWF AS4	Chert	Grey	Flake	Faceted	2 flake scars	Feather	31	18	8	White weathered cortex (1-30%)
BWF AS4	FGS	Black	Medial Fragment				39	38	10	Dorsal scars no platform or termination

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS5	Quartz	Milky	Angular Fragment				22	32	15	
BWF AS5	Quartz	Milky	Angular Fragment				11	5	10	
BWF AS5	FGS	Grey	Manuport				135	90	40	Rhyolite pebble rounded
BWF AS5	Quartz	Milky	Flake	Focal		Feather	33	10	7	
BWF AS5	FGS	Grey	Angular Fragment				32	22	5	Dorsal scars
BWF AS5	Quartz	Milky	Flake	Focal		Feather	31	19	9	
BWF AS5	Quartz	Milky	Flake	Broad	Flake scar	Feather	21	9	22	
BWF AS5	FGS	Black	Angular Fragment				95	81	13	
BWF AS6	FGS	Grey	Angular Fragment				26	14	5	Dorsal scars
BWF AS6	Quartz	Milky	Angular Fragment				20	16	9	Has been flaked (bipolar)
BWF AS7	Quartz	Milky	Flake	Focal		Feather	15	11	4	
BWF AS7	Quartz	Milky	Flake	Focal		Feather	16	5	5	
BWF AS7	Quartz	Milky	Flake	Focal		Feather	17	9	5	
BWF AS7	Quartz	Milky	Angular Fragment				6	6	3	
BWF AS7	Quartz	Milky	Angular Fragment				7	5	3	
BWF AS7	Quartz	Milky	Angular Fragment				5	4	4	
BWF AS8	Quartz	Milky	10+ Angular Fragments							Background scatter
BWF AS9	Volcanic	Grey	Axe Broken				36	27	19	Broken tip of a stone axe, ground edge
BWF AS9	Quartz	Milky	Angular fragments 40+							Background scatter
BWF AS9	Quartz	Crystal	Angular fragments 40+							Background scatter
BWF AS9	Basalt	Black	Medial Fragment				42	25	7	3 dorsal scars
BWF AS9	Basalt	Black	Core				108	34	32	Unifacial 4 Blade scars, 1-30% cortex
BWF AS9	FGS	Grey	Proximal fragment	Broad	Crushed		39	42	11	

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS9	Basalt	Black	Flake	Broad	Flake scar	Feather	52	24	8	
BWF AS9	Basalt	Black	Flake	Broad	Flake scar	Feather	31	25	6	
BWF AS9	Basalt	Black	Flake	Broad	Flake scar	Feather	36	17	5	
BWF AS9	Basalt	Black	Flake	Broad	Flake scar	Feather	42	15	10	
BWF AS9	Basalt	Black	Flake	Broad	Flake scar	Hinge	36	36	8	
BWF AS9	Basalt	Black	Proximal fragment	Focal			18	11	7	
BWF AS9	FGS	Grey	Distal fragment			Feather	29	37	21	
BWF AS9	Basalt	Black	Blade	Broad	Flake scar	Feather	57	12	11	
BWF AS9	Basalt	Black	Flake	Broad	Flake scar	Feather	80	33	17	
BWF AS9	Basalt	Black	Flake	Broad	Flake scar	Feather	45	27	14	
BWF AS9	Volcanic	Grey	Hammerstone							Pitting at both ends,
BWF AS10	Volcanic	Grey	Hammerstone				130	124	42	Pitting around entire rim, damage flaking from use
BWF AS10	Quartzite	Grey	Flake	Broad	Flake Scar	Feather	24	16	9	
BWF AS10	Basalt	Black	Flake	Faceted	2 Flake scars	Feather	50	38	15	8 dorsal scars
BWF AS10	Quartz	Milky	Distal fragment			Feather	36	28	12	
BWF AS10	Quartz	Milky	Backed point				29	10	8	Not broken, proximal and distal reduced
BWF AS10	Basalt	Black	Flake	Faceted	2 flake scars	Feather	55	32	14	5 dorsal scars
BWF AS10	Chert	Grey	Flake	Faceted	2 flake scars	Feather	23	22	7	
BWF AS10	Chert	Grey	Distal fragment			Feather	11	11	3	
BWF AS10	Quartz	Milky	Angular fragment				42	28	10	
BWF AS10	Quartz	Milky	Angular fragment				27	19	6	
BWF AS10	Basalt	Grey	Proximal fragment	Focal			48	15	12	3 dorsal scars
BWF AS11	Quartz	Milky	50+ Angular Fragments							Background scatter mixed with flakes and broken flakes

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS11	Quartz	Crystal	20+ Angular Fragments							Background scatter mixed with flakes and broken flakes
BWF AS11	Quartz	Crystal	Flake	Focal		Feather	24	10	5	
BWF AS11	Quartz	Crystal	Flake	Broad	Flake scar	Feather	19	14	7	
BWF AS11	Quartz	Crystal	Flake	Focal		Feather	37	18	8	
BWF AS11	Quartz	Crystal	Flake	Focal		Feather	26	12	7	
BWF AS11	Quartz	Crystal	Flake	Focal		Feather	22	15	7	
BWF AS11	Quartz	Crystal	Flake	Focal		Feather	18	12	5	
BWF AS11	Basalt	Black	Flake	Broad	Flake scar	Plunge	35	27	12	
BWF AS11	Basalt	Black	Flake	Focal		Feather	29	19	7	
BWF AS11	Basalt	Black	Flake	Broad	Flake scar	Feather	20	38	19	
BWF AS11	Basalt	Black	Flake	Broad	Flake scar	Feather	22	24	9	
BWF AS11	Basalt	Black	Angular Fragment				19	14	6	
BWF AS11	Basalt	Black	Angular Fragment				42	19	8	
BWF AS11	Basalt	Black	Flake	Broad	Flake scar	Feather	20	39	6	
BWF AS11	FGS	Grey	Flake	Broad	Flake scar	Feather	68	58	19	Banded Rhyolite, 1-30% cortex
BWF AS11	FGS	Grey	Flake	Broad	Flake scar	Feather	42	38	15	Banded Rhyolite, grey weathering
BWF AS11	Basalt	Black	Flake	Broad	Flake scar	Feather	42	33	8	
BWF AS11	FGS	Grey	Flake	Broad	Flake scar	Feather	52	58	16	
BWF AS11	FGS	Grey	Flake	Broad	Flake scar	Feather	42	33	10	Orange staining
BWF AS11	Volcanic	Beige	Hammerstone				60	65	25	Pitting on 1 broad face, 2 broad surface is smooth
BWF AS11	Quartz	Crystal	Flake	Focal		Feather	31	27	6	
BWF AS11	Quartz	Crystal	Flake	Focal		Step	22	19	6	
BWF AS11	Quartz	Crystal	Flake	Focal		Feather	20	16	6	

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS11	Quartz	Milky	Proximal Fragment	Broad	Flake scar		26	17	4	
BWF AS11	Basalt	Black	Flake	Broad	Flake scar	Feather	40	30	11	
BWF AS11	Basalt	Black	Flake	Broad	Flake scar	Feather	35	20	12	
BWF AS11	Basalt	Black	Flake	Broad	Flake scar	Feather	35	25	11	
BWF AS11	Basalt	Black	Flake	Broad	Flake scar	Feather	15	15	10	
BWF AS11	Basalt	Black	Proximal fragment	Broad	Flake scar		17	15	7	
BWF AS11	Rhyolite	Grey	Flake	Broad	Flake scar	Feather	38	40	11	
BWF AS11	Quartz	Milky	Flake	Focal		Feather	20	16	6	
BWF AS11	Quartz	Milky	Flake	Focal		Feather	22	19	6	
BWF AS11	Quartz	Milky	Flake	Focal		Feather	18	17	4	
BWF AS11	Quartz	Milky	Flake	Focal		Feather	10	12	5	
BWF AS11	Quartz	Milky	Flake	Focal		Feather	12	9	4	
BWF AS11	Quartz	Milky	Flake	Focal		Feather	15	15	4	
BWF AS11	Basalt	Black	Core Unifacial				80	61	18	One flaking platform, large flake scars.
BWF AS12	Quartz	Milky	Flake	Focal		Feather	24	19	7	
BWF AS12	Quartz	Milky	Flake	Broad	Flake scar	Feather	28	32	7	
BWF AS12	Quartz	Milky	Flake	Focal		Step	24	13	8	
BWF AS12	Quartz	Milky	Angular fragment				18	17	4	
BWF AS12	Quartz	Milky	Angular fragment				22	19	6	
BWF IF1	Quartz	Crystal	Flake	Focal		Feather	20	11	7	
BWF IF2	Quartz	Milky	Flake	Broad	Flake scar	Feather	38	30	9	Quartz outcropping, large background scatter nearby, also large copse of Grass trees
BWF AS13	Basalt	Black	Flake	Focal		Feather	50	24	6	Weathered grey
BWF AS13	Quartz	Milky	Flake	Broad	Flake scar	Feather	15	12	7	

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS13	Basalt	Black	Flake	Broad	Flake scar	Feather	31	30	8	
BWF AS13	FGS	Brown	Flake	Broad	Flake scar	Feather	26	21	5	Rough texture
BWF AS14	Quartz	Milky	Flake	Broad	Flake scar	Feather	24	20	6	
BWF AS14	Quartz	Crystal	Flake	Focal		Feather	12	25	4	
BWF AS14	Quartz	Milky	Flake	Broad	Flake scar	Feather	30	18	6	
BWF AS14	Quartz	Milky	Flake	Broad	Flake scar	Feather	33	13	6	Cortex 1-30%
BWF AS14	Quartz	Crystal	Flake	Focal		Feather	19	17	4	
BWF AS14	FGS	Grey	Flake	Broad	Flake scar	Father	36	27	8	
BWF AS14	Quartz	Crystal	Flake	Focal		Feather	24	20	6	
BWF AS14	Basalt	Black	Flake	Focal		Feather	40	32	14	Grey weathered, 1-30%cortex
BWF AS14	Chert	Grey	Proximal Fragment	Broad	Flake scar		19	24	4	
BWF AS14	Quartz	Milky	Proximal Fragment	Focal			22	12	3	
BWF AS14	Basalt	Black	Core				62	35	24	Unidirectional, blade core
BWF AS14	Basalt	Black	Core				46	21	32	Unidirectional, blade core
BWF AS14	Basalt	Black	Flake	Broad	Flake scar	Feather	34	52	17	
BWF AS14	FGS	Grey	Core				54	66	41	Single platform, 2 flake scars
BWF AS14	FGS	Grey	Flake	Broad	Flake scar	Feather	43	32	29	Large platform
BWF AS14	Basalt	Black	Flake	Broad	Flake scar	Hinge	32	16	7	Cortex platform 1-30%
BWF AS14	Basalt	Black	Proximal Fragment	Broad	Flake scar		15	16	4	
BWF AS14	Quartz	Crystal	Proximal Fragment	Focal			12	16	4	
BWF AS14	Quartzite	Green	Distal Fragment			Feather	27	15	5	
BWF AS14	Basalt	Black	Flake	Broad	Flake scar	Hinge	28	40	11	
BWF AS14	FGS	Grey	Proximal Fragment	Broad	Flake scar		28	22	8	
BWF AS14	Chert	Grey	Flake	Faceted	2 Flake scars	Feather	22	13	5	

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS14	Basalt	Black	Proximal Fragment	Broad	Flake scar		29	11	5	Cortex 30-70%
BWF AS14	Chert	Grey	Flake	Focal		Feather	22	10	4	
BWF AS14	Chert	Grey	Flake	Broad	Flake scar	Step	31	35	14	Cortex 1-30%
BWF AS14	Quartz	Crystal	Proximal Fragment	Focal			15	12	4	
BWF AS14	Quartzite	Green	Distal Fragment			Feather	21	13	7	
BWF AS14	FGS	Grey	Flake	Broad	Flake scar	Feather	24	45	16	Cortex 1-30%
BWF AS14	FGS	Grey	Flake	Broad	Flake scar	Feather	60	60	27	
BWF AS14	Quartz	Crystal	Proximal Fragment	Focal			12	10	3	
BWF AS14	FGS	Grey	Flake	Broad	Flake scar	Feather	30	20	8	Cortex 1-30%
BWF AS14	Basalt	Black	Flake	Broad	Flake scar	Feather	34	46	19	Grey weathering
BWF AS14	Basalt	Black	Flake	Broad	Flake scar	Feather	31	15	8	Grey weathering
BWF AS14	FGS	Grey	Flake	Broad	Flake scar	Feather	37	45	6	
BWF AS14	Basalt	Black	Flake	Broad	Flake scar	Step	59	37	7	Grey weathering, Large eraillure scar
BWF AS14	Basalt	Black	Flake	Broad	Flake scar	Feather	62	42	22	
BWF AS14	FGS	Grey	Flake	Focal		Feather	30	21	6	
BWF AS14	Basalt	Black	Distal Fragment			Feather	74	52	23	
BWF AS14	Quartz	Crystal	Distal Fragment			Feather	27	16	5	
BWF AS14	Quartz	Milky	Distal Fragment			Feather	27	27	7	
BWF AS14	Basalt	Black	Flake	Broad	Flake scar	Feather	33	49	11	Grey weathering
BWF AS14	Basalt	Black	Flake	Broad	Flake scar	Feather	51	25	19	Grey weathering
BWF AS14	Basalt	Black	Split Flake			Feather	40	27	4	Grey weathering, Left margin
BWF AS14	Basalt	Black	Distal Fragment			Feather	21	21	3	
BWF AS14	Basalt	Black	Split Flake			Feather	55	42	9	Grey weathering, Left margin
BWF AS14	Basalt	Black	Distal Fragment			Feather	29	28	3	Grey weathering

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS14	Basalt	Black	Flake	Broad	Flake scar	Feather	51	52	19	Grey weathering
BWF AS14	Basalt	Black	Flake	Broad	Flake scar	Feather	48	47	9	Grey weathering
BWF AS14	Quartz	Milky	Core				58	68	49	Multidirectional
BWF AS14	Quartz	Milky	Angular Fragments	100+						Background scatter near source
BWF AS15	Quartz	Milky	Proximal Fragment	Focal			43	45	10	
BWF AS15	Quartz	Milky	Distal Fragment			Feather	24	14	3	
BWF AS16	Quartz	Milky	Distal Fragment			Step	32	18	5	
BWF AS16	Quartz	Milky	Flake	Broad	Flake scar	Feather	40	29	7	
BWF AS16	Quartz	Milky	Flake	Broad	Flake scar	Feather	37	15	5	
BWF AS16	Quartz	Milky	Distal Fragment			Feather	18	13	4	
BWF AS16	Basalt	Black	Flake	Broad	Flake scar	Feather	22	31	6	
BWF AS16	Basalt	Black	Flake	Broad	Flake scar	Feather	17	30	4	
BWF AS16	Quartz	Milky	Flake	Broad	Flake scar	Feather	35	18	4	
BWF AS16	Quartz	Crystal	Flake	Broad	Flake scar	Feather	15	12	4	
BWF AS16	Quartz	Crystal	Flake	Broad	Flake scar	Feather	22	22	6	
BWF AS16	Quartz	Milky	Flake	Broad	Flake scar	Feather	32	30	7	
BWF AS16	Quartz	Milky	Flake	Broad	Flake scar	Feather	41	37	9	
BWF AS16	Quartz	Milky	Flake	Broad	Flake scar	Feather	17	10	3	
BWF AS16	Basalt	Black	Flake	Broad	Flake scar	Feather	40	29	12	Cortex 1-30%
BWF AS16	Basalt	Black	Flake	Faceted	2 Flake scar	Hinge	39	33	14	
BWF AS16	Basalt	Black	Medial Fragment				23	23	11	
BWF AS16	Rhyolite	Grey	Flake	Faceted	3 Flake scars	Feather	28	43	13	
BWF AS16	Basalt	Black	Proximal Fragment	Broad	Flake scar		52	50	14	
BWF AS17	Basalt	Black	Split Flake			Feather	45	18	15	Cortex 1-30%

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS17	Basalt	Black	Flake	Focal		Feather	22	13	4	
BWF AS17	Basalt	Black	Distal Fragment			Feather	10	12	3	
BWF AS17	Basalt	Black	Proximal Fragment	Broad	Flake scar	Feather	23	20	11	
BWF AS17	Chert	Red	Distal Fragment			Feather	12	14	3	
BWF AS17	Basalt	Black	Proximal Fragment	Broad	Flake scar	Feather	22	20	4	
BWF AS17	Basalt	Black	Angular Fragment				62	52	50	
BWF AS17	Basalt	Black	Flake	Broad	Flake scar	Feather	63	28	12	Banded
BWF AS17	Basalt	Black	Flake	Broad	Flake scar	Feather	52	29	12	
BWF AS17	Basalt	Black	Proximal Fragment	Broad	Flake scar	Feather	21	28	10	Grey weathering, banded
BWF AS17	Basalt	Black	Proximal Fragment	Broad	Flake scar	Feather	58	48	17	Banded
BWF AS17	Basalt	Black	Distal Fragment			Feather	25	47	7	Banded
BWF AS17	Quartz	Milky	Angular Fragments	30+						Background scatter, no discernible flakes
BWF AS18	Quartz	Milky	Angular Fragments	5+						Background scatter, no discernible flakes
BWF AS18	FGS	Grey	Flake	Broad	Flake scar	Feather	27	16	12	
BWF AS19	Basalt	Black	Flake	Broad	Flake scar	Feather	31	30	8	
BWF AS19	Basalt	Black	Flake	Broad	Flake scar	Feather	22	24	9	
BWF AS19	Basalt	Black	Medial Fragment				10	23	11	
BWF AS19	Quartz	Crystal	Flake	Focal			26	20	2	
BWF AS19	FGS	Grey	Flake	Broad	Flake scar	Feather	21	18	5	
BWF AS19	Quartz	Milky	Angular Fragment				26	28	8	
BWF AS19	Quartz	Milky	Angular Fragment				26	18	3	
BWF AS20	Large complex site 150+ Aboriginal objects (formal tools and debitage), with intact deposit, see site card for detailed sample of artefacts.									
BWF AS21	Basalt	Black	Flake	Faceted	4 flake scars	Hinge	40	21	10	

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS21	Basalt	Black	Core				55	41	12	Uni directional, large broad flake scars
BWF AS21	Basalt	Black	Core				60	43	30	Multidirectional, large broad flake scars, river pebble cortex
BWF AS21	Basalt	Black	Distal fragment			Feather	28	18	3	
BWF AS22	Chert	Grey	Flake	Broad	Flake scar	Feather	21	20	4	
BWF AS22	Chert	Grey	Flake	Broad	Flake scar	Feather	43	30	7	
BWF AS22	Chert	Grey	Flake	Broad	Flake scar	Feather	30	21	12	
BWF AS22	Chert	Grey	Distal Fragment			Feather	18	15	4	
BWF IF3	Quartz	Milky	Flake	Focal		Feather	31	23	4	
BWF IF4	Quartz	Milky	Angular Fragment				29	24	3	
BWF IF4	Quartz	Milky	Angular Fragment				23	19	4	
BWF IF4	Quartz	Milky	Angular Fragment				21	12	3	
BWF IF4	Basalt	Black	Flake	Broad	Flake scar	Feather	57	61	12	
BWF IF4	Chert	Grey	Flake	Broad	Flake scar	Feather	19	30	3	Crushing along distal end
BWF IF4	Chert	Grey	Flake	Broad	Flake scar	Feather	42	26	8	Crushing along distal end, minor flake scars
BWF IF4	Chert	Grey	Flake	Broad	Flake scar	Feather	22	15	4	
BWF IF5	Basalt	Black	Distal Fragment			Feather	13	8	4	Rough flake on eroded track next to spring
BWF IF6	Chert	Grey	Core							3 flake scars, on eroded track
BWF IF7	Chert	Grey	Angular fragment				22	15	4	Rough matte yellow cortex
BWF IF8	Volcanic	Grey	Hammerstone				134	46	25	Pecking on both sides
BWF IF 9	Quartz	Milky	Flake	Focal		Feather	27	8	6	
BWF IF10	Quartz	Milky	Flake	Broad	Flake scar	Feather	29	35	7	
BWF AS25	Basalt	Black	Flake	Broad	Flake scar	Feather	24	28	6	Grey weathering, banding
BWF AS25	Basalt	Black	Proximal fragment	Broad	Flake scar		25	18	6	

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS25	Basalt	Black	Proximal fragment	Focal			20	15	5	Grey weathering
BWF AS25	Basalt	Black	Medial fragment				16	37	5	
BWF AS25	Basalt	Black	Proximal fragment	Focal			39	52	14	
BWF AS25	Basalt	Black	Core				36	15	16	Exhausted, multidirectional
BWF AS25	Basalt	Black	Proximal fragment				16	13	3	
BWF AS25	Basalt	Grey	Distal fragment			Feather	36	25	8	Highly weathered
BWF AS25	Quartzite	Grey	Proximal fragment	Broad	Flake scar		53	43	12	
BWF AS25	Basalt	Black	Angular fragment				52	27	11	1-30% grey cortex
BWF AS25	Basalt	Black	Flake	Broad	Flake scar	Feather	44	35	9	1-30% grey cortex
BWF AS25	Basalt	Black	Flake	Broad	Flake scar	Feather	24	14	4	
BWF AS25	Quartz	Milky	Flake	Focal		Feather	23	14	3	
BWF AS25	Quartz	Milky	Flake	Focal		Feather	20	14	3	
BWF AS25	Quartz	Milky	Flake	Focal		Feather	18	13	3	
BWF AS25	Quartz	Milky	Flake	Focal		Feather	26	16	4	
BWF AS25	Quartz	Milky	C			Feather	20	15	3	
BWF AS25	Quartz	Milky	Proximal fragment	Broad	Flake scar		48	21	7	
BWF AS25	Quartz	Milky	Flake	Focal		Feather	28	14	5	
BWF AS25	Chert	Beige	Flake	Broad	Flake scar	Step	43	25	7	Broken in two pieces
BWF AS25	Chert	Grey	Flake	Broad	Flake scar	Feather	39	40	5	
BWF AS25	Quartz	Crystal	Flake	Focal		Feather	21	11	3	
BWF AS25	Basalt	Black	Flake	Broad	Flake scar	Feather	54	74	9	Grey weathering, banded
BWF AS25	Basalt	Black	Flake	Focal		Feather	31	20	2	Grey weathering, banded
BWF AS25	Basalt	Black	Flake	Broad	Flake scar	Feather	36	17	5	
BWF AS25	Basalt	Black	Flake	Focal		Feather	41	24	5	

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS25	Basalt	Black	Flake	Broad	Flake scar	Hinge	40	43	6	
BWF AS26	Basalt	Grey	Proximal fragment	Focal			22	26	4	Grey weathering
BWF AS26	Basalt	Grey	Proximal fragment	Focal			61	38	11	Grey weathering
BWF AS26	Basalt	Grey	Distal fragment			Feather	34	42	5	
BWF AS26	Basalt	Black	Flake	Broad	Flake scar	Feather	67	84	17	Grey weathering, banded
BWF AS26	Basalt	Black	Flake	Broad	Flake scar	Feather	43	91	17	1-30% cortex
BWF AS26	Basalt	Black	Flake	Broad	Flake scar	Feather	37	46	12	
BWF AS26	Quartz	Milky	Angular fragment				44	31	10	
BWF AS26	Basalt	Black	Flake	Broad	Flake scar	Feather	50	59	16	
BWF AS26	Basalt	Black	Proximal fragment	Broad	Flake scar		27	25	5	
BWF AS26	Basalt	Black	Flake	Broad	Flake scar	Feather	51	33	12	Grey weathering, 30-70% cortex
BWF AS26	Basalt	Black	Flake	Broad	Flake scar	Feather	71	60	9	Grey weathering, banded 1-30% cortex
BWF AS26	Chert	Yellow	Core	Uni			130	83	54	Single platform, unidirectional flaking
BWF AS26	Basalt	Black	Core	Uni			67	65	22	Grey weathering, unidirectional
BWF AS26	Basalt	Black	Flake	Broad	Flake scar	Feather	35	45	12	
BWF AS26	Basalt	Black	Flake	Focal		Feather	37	19	6	
BWF AS26	Basalt	Black	Flake	Focal		Feather	47	21	8	
BWF AS26	Chert	Grey	Distal fragment			Feather	20	13	4	
BWF AS26	Chert	Grey	Flake	Focal		Feather	22	14	3	
BWF AS26	Quartz	Milky	Angular fragment				23	8	3	
BWF AS26	Quartz	Crystal	Flake	Focal		Feather	19	13	3	
BWF AS26	Volcanic	Grey	Core				73	56	39	Single platform, unidirectional
BWF AS26	Basalt	Grey	Flake	Broad	Flake scar	Feather	33	41	7	1-30% cortex
BWF AS26	Basalt	Grey	Flake	Broad	Flake scar	Feather	67	31	17	

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS26	Basalt	Grey	Distal fragment			Feather	44	22	10	
BWF AS26	Basalt	Grey	Flake	Focal		Feather	30	49	9	30-70% cortex,
BWF AS27	Quartz	Milky	Flake	Focal		Feather	29	23	4	
BWF AS27	Quartz	Milky	Flake	Broad	Flake scar	Feather	31	27	5	
BWF AS30	Quartz	Milky	Angular fragment				27	25	6	
BWF AS30	Quartz	Milky	Angular fragment				15	11	3	
BWF AS30	Quartz	Milky	Angular fragment				16	9	3	
BWF AS30	Quartz	Milky	Distal fragment			Feather	20	20	4	
BWF AS30	Quartz	Crystal	Distal fragment			Feather	15	8	2	
BWF AS32	Quartz	Milky	Angular fragment				53	22	5	
BWF AS32	Quartz	Milky	Angular fragment				37	41	6	
BWF AS32	Basalt	Black	Flake	Focal		Hinge	41	27	5	
BWF AS33	Quartz	Crystal	Proximal fragment	Broad	Flake scar		17	23	4	
BWF AS33	Quartz	Crystal	Distal fragment			Feather	24	11	3	
BWF AS33	Basalt	Grey	Distal fragment			Hinge	25	30	5	
BWF AS33	FGS	Beige	Flake	Broad	Flake scar	Feather	37	33	6	Highly weathered, likely basalt
BWF AS33	Basalt	Grey	Split flake				42	27	5	
BWF AS33	Basalt	Grey	Flake	Broad	Flake scar	Feather	41	21	5	
BWF AS33	Basalt	Grey	Distal fragment			Feather	38	45	6	
BWF AS33	Basalt	Black	Flake	Broad	Flake scar	Feather	24	18	4	
BWF AS33	Basalt	Grey	Flake	Broad	Flake scar	Feather	29	41	5	
BWF AS33	Basalt	Grey	Flake	Broad	Flake scar	Feather	30	23	4	
BWF AS33	Basalt	Grey	Distal fragment			Feather	17	19	3	

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS33	Basalt	Grey	Flake	Broad	Flake scar	Feather	55	25	14	Highly weathered, stained orange
BWF AS33	Basalt	Black	Flake	Broad	Flake scar	Feather	25	32	4	
BWF AS33	Basalt	Black	Flake	Broad	Flake scar	Feather	39	80	13	
BWF AS33	Basalt	Black	Flake	Broad	Flake scar	Feather	30	42	8	
BWF AS33	Basalt	Black	Flake	Broad	Flake scar	Feather	38	65	12	Grey weathering, banded
BWF AS33	Quartz	Milky	Flake	Broad	Flake scar	Feather	31	3	6	
BWF AS34	Chert	Grey	Proximal fragment	Broad	Flake scar		30	12	3	
BWF AS34	Chert	Grey	Flake	Focal		Feather	39	29	8	
BWF AS35	Volcanic	Grey	Manuport				170	120	40	River pebble top of ridgeline
BWF AS35	Quartz	Crystal	Flake	Focal		Feather	16	13	3	
BWF AS35	Quartz	Milky	Flake	Focal		Feather	12	13	2	
BWF AS37	Quartz	Milky	Angular fragments							x5 quartz pieces
BWF AS37	Volcanic	Grey	Axe							Broken ground edge axe, 5 negative scars
BWF AS38	Basalt	Black	Distal fragment			Feather	32	34	9	
BWF AS38	Quartz	Crystal	Flake	Focal		Feather	13	7	3	
BWF AS38	Quartz	Crystal	Flake	Focal		Feather	18	10	3	Broken in two pieces
BWF AS38	Quartz	Crystal	Flake	Focal		Feather	12	4	3	
BWF AS38	Quartz	Crystal	Distal fragment			Feather	15	12	3	
BWF AS38	Quartz	Crystal	Distal fragment			Feather	29	21	4	
BWF AS38	Quartz	Crystal								Terminated crystal
BWF AS38	Quartz	Milky	Proximal fragment	Focal			12	12	4	
BWF AS38	Quartz	Milky	Proximal fragment	Focal			21	13	4	
BWF AS38	Basalt	Black	Flake	Focal		Feather	35	42	15	Crushing and old ventral surface on dorsal

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS38	Basalt	Black	Flake	Focal		Feather	33	43	5	
BWF AS38	Basalt	Black	Medial fragment				16	7	4	
BWF AS38	Basalt	Black	Proximal fragment	Focal			27	12	5	
BWF AS38	Basalt	Black	Proximal fragment	Broad	Flake scar		20	27	8	
BWF AS38	Basalt	Black	Flake	Broad	Flake scar	Feather	35	47	9	
BWF AS38	Basalt	Black	Distal fragment			Feather	35	47	6	
BWF AS38	Basalt	Black	Split flake	Broad	Flake scar	Feather	35	28	7	
BWF AS38	Basalt	Black	Flake	Broad	Flake scar	Hinge	52	23	15	
BWF AS38	Quartz	Milky	Angular fragment				20	10	3	
BWF AS38	Above is sample of site approximately 7 per sqm potential for larger site subsurface – 20-40m and 10x2m									
BWF AS39	Basalt	Black	Flake	Focal		Feather	65	62	9	Highly weathered
BWF AS39	Sandstone	Grey	Hammerstone				112	76	32	Pitting on margins
BWF AS39	Basalt	Black	Flake	Broad	Flake scar	Feather	33	53	11	Banded
BWF AS39	Quartz	Milky	Angular fragment				20	10	3	
BWF AS39	Basalt	Black	Flake	Focal		Hinge	25	13	4	
BWF AS39	Basalt	Black	Flake	Focal		Feather	27	20	5	
BWF AS39	Quartz	Crystal	Angular fragment				18	12	3	
BWF AS39	Quartz	Crystal	Angular fragment				20	10	4	
BWF AS39	Quartz	Crystal	Angular fragment				12	9	3	
BWF AS39	FGS	Grey	Proximal fragment	Broad	Flake scar		33	42	10	
BWF AS39	Basalt	Black	Distal fragment			Feather	36	41	5	Weathered and banded
BWF AS39	Basalt	Black	Flake	Focal		Hinge	32	41	5	
BWF AS39	Quartz	Milky	Medial fragment				36	16	3	
BWF AS39	Volcanic	Grey	Manuport				203	97	83	River pebble far from creek

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS39	Basalt	Black	Flake	Focal		Hinge	22	33	4	
BWF AS39	Basalt	Black	Distal fragment			Feather	38	10	5	
BWF AS39	Quartz	Milky	Proximal fragment	Focal			36	10	5	
BWF AS39	Basalt	Black	Flake	Broad	Flake scar	Feather	26	24	4	Weathered
BWF AS40	Basalt	Black	Flake	Broad	Flake scar	Feather	93	25	13	
BWF AS40	Basalt	Black	Flake	Broad	Flake scar	Feather	63	19	9	
BWF AS40	Quartz	Milky	Angular fragments							X 4 pieces evidence of flaking
BWF AS40	Basalt	Grey	Core				82	35	47	Multidirectional platform
BWF AS40	Quartz	Milky					65	75	25	Bidirectional platform
BWF AS40	Basalt	Black	Distal fragment			Feather	85	62	13	
BWF AS40	Quartz	Crystal	Core				40	39	37	Multidirectional platform
BWF AS45	Quartz	Crystal	Flake	Broad	Flake scar	Feather	29	16	9	
BWF AS45	Volcanic	Pink	Anvil				137	126	61	Broken anvil, pitting in centre of broad face – River pebble on crest of spur
BWF AS46	Basalt	Black	Medial fragment				13	23	3	
BWF AS46	Basalt	Black	Distal fragment			Feather	28	19	3	Weathered and banded
BWF AS46	Basalt	Black	Proximal fragment	Focal			27	14	4	Weathered and banded
BWF AS 46	Quartz	Milky	Flake	Focal		Feather	25	12	3	
BWF AS46	Basalt	Black	Proximal fragment	Broad	Flake scar		53	50	8	1-30% cortex
BWF AS47	Basalt	Black	Flake	Broad	Flake scar	Feather	30	47	5	
BWF AS47	Basalt	Black	Core				73	41	37	Bidirectional platform
BWF AS47	Basalt	Black	Flake	Broad	Flake scar	Feather	23	28	3	
BWF AS47	Basalt	Black	Core				80	57	39	Bidirectional platform, highly weathered
BWF AS47	Basalt	Black	Proximal fragment	Focal			29	33	3	

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS47	Basalt	Grey	Core				56	35	37	Blade core, unidirectional
BWF AS47	Quartz	Milky	Flake	Focal		Feather	29	17	3	
BWF AS47	Quartz	Milky	Flake	Focal		Feather	27	33	4	
BWF AS47	Basalt	Grey	Proximal fragment	Focal			43	14	4	
BWF AS47	Basalt	Black	Distal fragment			Feather	42	31	4	
BWF AS48	Quartz	Crystal	Angular fragment				31	19	5	
BWF AS48	Quartz	Milky	Flake	Focal		Feather	59	31	11	
BWF AS48	Basalt	Black	Distal fragment			Feather	55	31	9	
BWF AS48	Quartz	Milky	Distal fragment			Feather	22	20	3	
BWF AS48	Quartz	Milky	Distal fragment			Feather	16	14	3	
BWF AS48	Quartz	Milky	Distal fragment			Feather	35	17	5	
BWF AS48	Quartz	Milky	Flake	Focal		Feather	37	23	5	
BWF AS48	Quartz	Milky	Distal fragment			Feather	33	13	4	
BWF AS48	Basalt	Grey	Flake	Focal		Feather	34	33	5	
BWF AS48	Basalt	Black	Medial fragment				21	17	4	
BWF AS49	Chert	Yellow	Core				35	30	28	Unidirectional platform long flake scars
BWF AS49	Quartz	Milky	Angular fragments							X3 pieces
BWF AS51	Quartz	Milky	Proximal fragment	Focal			25	14	4	
BWF AS51	Quartz	Milky	Proximal fragment	Focal			23	13	3	
BWF AS51	Quartz	Milky	Distal fragment			Feather	23	15	4	
BWF AS52	Quartz	Milky	Flake	Focal		Feather	44	28	7	
BWF AS52	Quartz	Milky	Distal fragment			Feather	24	14	4	
BWF AS52	Basalt	Black	Proximal fragment	Broad	Flake scar		62	43	16	

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS52	Basalt	Black	Proximal fragment	Broad	Flake scar		23	32	6	
BWF AS53	Basalt	Black	Proximal fragment	Focal			32	12	4	
BWF AS53	Basalt	Black	Flake	Focal		Feather	47	15	5	Broken in two, 1-30% cortex left margin
BWF AS53	Quartz	Milky	Flake	Focal		Feather	33	23	8	
BWF AS53	Chert	Pink	Core				39	43	38	Unidirectional, single platform
BWF AS54	Basalt	Black	Proximal fragment	Broad	Flake scar		53	32	5	
BWF AS54	Basalt	Black	Proximal fragment	Broad	Flake scar		46	57	6	
BWF AS54	Basalt	Black	Distal fragment			Feather	14	8	3	
BWF AS54	Basalt	Black	Core fragment				98	55	31	
BWF AS55	Quartz	Crystal	Proximal fragment	Focal			28	19	3	
BWF AS55	Basalt	Black	Flake	Focal		Hinge	37	31	5	
BWF AS80	Basalt	Black	Medial Fragment	Broad	Flake scar	Feather	17	21	5	Weathered
BWF AS80	Basalt	Black	Distal fragment			Hinge	12	9	3	
BWF AS80	Basalt	Black	Distal fragment			Hinge	10	7	5	
BWF AS80	Basalt	Black	Flake	Broad	Flake scar	Hinge	50	46	9	Weathered
BWF AS80	Basalt	Black	Flake	Broad	Flake scar	Feather	75	58	20	
BWF AS80	Silcrete	Green	Medial Fragment				40	25	7	
BWF AS80	Quartz	Milky	Medial Fragment				5	4	2	
BWF AS81	Basalt	Black	Flake	Focal		Feather	20	13	5	
BWF AS81	Basalt	Black	Distal fragment			Feather	10	7	3	
BWF AS81	Basalt	Black	Flaked piece				25	8	5	
BWF AS81	Basalt	Black	Distal fragment			Feather	22	9	4	
BWF AS81	Basalt	Black	Flake	Broad	Flake scar	Feather	50	23	5	Weathered

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Locale	Material	Colour	Type	Platform	Platform surface	Termination	L	W	Th	Comments
BWF AS81	Basalt	Black	Split Flake			Feather	38	18	4	Split right margin
BWF AS81	Quartz	Milky	Flake	Focal		Feather	24	10	3	
BWF AS81	Quartz	Milky	Flake	Focal		Feather	10	5	2	
BWF AS81	Basalt	Black	Flake	Broad	Flake scar	Feather	32	15	6	
BWF AS82	Basalt	Black	Flake	Broad	Faceted	Hinge	33	25	5	
BWF AS82	Basalt	Grey	Proximal fragment	Broad	Flake scar		42	20	4	
BWF AS82	Chert	Grey	Proximal fragment	Focal			20	14	3	
BWF AS82	Basalt	Black	Backed blade				29	11	4	Bondi point, tip broken, backing on right margin
BWF AS83	Chert	Beige	Flake	Broad	Cortex	Feather	45	40	15	1-30% cortex on dorsal and platform
BWF AS83	Chert	Grey	Flake	Focal		Feather	23	28	4	
BWF AS83	Chert	Grey	Distal fragment			Feather	22	11	4	
BWF AS83	Quartz	Milky	Flake	Focal		Feather	18	16	3	
BWF AS83	FGS	Beige	Flake	Broad	Flake scar	Feather	40	38	12	Weathered
BWF AS83	Basalt	Grey	Medial Fragment				32	12	4	
BWF AS82	Basalt	Black	Distal fragment			Feather	56	25	11	Right margin missing
BWF AS82	Basalt	Black	Proximal fragment				39	23	5	
BWF AS82	Basalt	Grey	Proximal fragment	Focal			49	26	6	
BWF AS82	Basalt	Grey	Proximal fragment	Focal			34	27	5	
BWF AS82	Basalt	Grey	Distal fragment			Feather	52	16	8	
BWF AS82	Basalt	Black	Angular Fragment				57	13	12	
BWF AS82	Basalt	Grey	Proximal fragment	Focal			32	19	6	
BWF AS82	Basalt	Black	Core				87	52	63	Bidirectional
BWF AS82	Basalt	Black	Flake	Focal		Step	23	55	11	

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Appendix D Record of Consultation Undertaken

Contact	Organisation	Contacted by	Organisation	Method	Date	Comment/ response
AGENCY LETTERS 4.1.2 NOTIFICATION						
	National Native Title Tribunal	C Bradshaw	ELA	Email	02/12/2020	Section 4.1.2 Letter requesting list of potentially interested stakeholders, information, response by 16 December 2020
	NTS Corp	C Bradshaw	ELA	Email	02/12/2020	Section 4.1.2 Letter requesting list of potentially interested stakeholders, information, response by 16 December 2020
	Heritage NSW	C Bradshaw	ELA	Email	02/12/2020	Section 4.1.2 Letter requesting list of potentially interested stakeholders, information, response by 16 December 2020
	Office of the Registrar	C Bradshaw	ELA	Email	02/12/2020	Section 4.1.2 Letter requesting list of potentially interested stakeholders, information, response by 16 December 2020
	Central West Local Land Services	C Bradshaw	ELA	Email	02/12/2020	Section 4.1.2 Letter requesting list of potentially interested stakeholders, information, response by 16 December 2020
	Mudgee Local Aboriginal Land Council	C Bradshaw	ELA	Email	02/12/2020	Section 4.1.2 Letter requesting list of potentially interested stakeholders, information, response by 16 December 2020
	Dubbo Regional Council	C Bradshaw	ELA	Email	02/12/2020	Section 4.1.2 Letter requesting list of potentially interested stakeholders, information, response by 16 December 2020
	Mid-Western Regional Council	C Bradshaw	ELA	Email	02/12/2020	Section 4.1.2 Letter requesting list of potentially interested stakeholders, information, response by 16 December 2020
4.1.3 AD						
Dubbo Liberal Daily		C Bradshaw	ELA	Newspaper	18/12/2020	Published Ad 21 December 2020 with a response date of 11 January 2021 (accounting for Christmas period)
Agency Responses						
C Bradshaw	ELA	Geospatial Searches	National Native Title Tribunal	Email	03/12/2020	Multiple Native Title claims identified Wi
C Bradshaw	ELA	Barry Gunther	Heritage NSW	Email	17/12/2020	RAP List for Dubbo LGA Sent
C Bradshaw	ELA	Paul Houston	Heritage NSW	Email	21/12/2020	RAP List for Mid-Western LGA Sent
Invitation to Register 4.1.3						
Jamie Grey	Binjang Wellington Wiradjuri heritage Survey	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Brian Draper	Brian Draper	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
	Central West Catchment Management Authority	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Grace Toomey	Dubbo Aboriginal Community Working Party	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Paul Carr	Dubbo Aboriginal Community Working Party	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
	DUBBO LALC	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Katrina Mckinnon	Katrina Mckinnon	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Neville Williams	Mooka	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Natasha Rodgers	Natasha Rodgers	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Paul Brydon	Paul Brydon	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Peter Peckham	Peter Peckham	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.

Trevor Robinson	Trevor Robinson	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Craig Riley	Wamarr Cultural Consultants	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
	Wellington LALC	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
	Wellington Valley Wiradjuri Aboriginal Corporation	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Robert Clegg	Wiradjuri Council of Elders	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
	Wiradjuri Interim Working Party	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Coral Peckham	Wirrimbah Direct Descendants	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Bill Allen	Bill Allen	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
David Maynard	David Maynard	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Darlina Verrills	Darlina Verrills	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Deborah Foley	Deborah Foley	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
	Dhuuluu-Yala Aboriginal Corporation	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Jean Thornton	Jean Thornton	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Jodie McKinnon	Jodie McKinnon	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Larry Foley	Larry Foley	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Lyn Syme	North-Eastern Wiradjuri	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Helen Riley	Mingaan Aboriginal Corporation	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
	Mudgee LALC	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
	Warrabinga Native Tittle Claimants Aboriginal Corporation	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
	Wellington Valley Wiradjuri Aboriginal Corporation	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
	Wiradjuri Interim Working Party	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
	Wiradjuri traditional Owners Central West Aboriginal Corporation	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Kerrie Slater	Wurrumay Consultants	C Bradshaw	ELA	Email	22/12/2020	Section 4.1.3 Letter regarding invitation to register for project, response requested by 15/01/2021.
Registration of Interest						
C Bradshaw	ELA	Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	Email	22/12/2020	Registered interest. Do no pass details, correspondence onto LALC
C Bradshaw	ELA	Cherie (Carroll) Johnson	Gunjeewong	Email	22/12/20	Registered interest. Do no pass details, correspondence onto LALC. Not on RAP list, not sent invitation
C Bradshaw	ELA	Debbie Foley	Murong Gialinga Aboriginal & Torres Strait Islander Corporation	Email Phone	05/01/2021 18/03/2021	Registered interest. ELA (C Bradshaw) contacted Debbie in regard to availability/capacity in early May.
C Bradshaw	ELA	Bradley Bliss	Wellington Valley Wiradjuri Aboriginal Corporation	Email Phone	05/01/2021	Registered interest. Bradley called ELA (C Bradshaw) for an update to the field survey. Informed that the field survey has been pushed back until early May and to ensure a heritage officer is available at that time.

					17/03/2021	
C Bradshaw	ELA	Jamie Grey	BINJANG WELLINGTON WIRADJURI ABORIGINAL HERITAGE SURVEYS	Email Email Phone	14/01/2021 19/03/2021 19/03/2021	Registered interest. Forwarded invite to Wiradjuri Central West Governing Council. $600/day. Requests email and mail for methodology and all documents. Sent through insurances and daily rate ($650/day) Jamie Grey called to discuss insurance and the Wiradjuri traditional Owners Central West Aboriginal Corporation (WTOCWAC). Jamie explained the WTOCWAC are affiliated with Binjang Wellington Wiradjuri Aboriginal Heritage Surveys and are covered by their insurance. I explained that we would only require one heritage officer between the two groups, if anything changed, he would be informed.
ACHAR Methodology 1						
Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	Jennifer Norfolk	ELA	Email	03/05/2021	Sent ACHAR methodology for RAP review with a response date of 03 June 2021
Cherie (Carroll) Johnson	Gunjeewong	Jennifer Norfolk	ELA	Email	03/05/2021	Sent ACHAR methodology for RAP review with a response date of 03 June 2021
Debbie Foley	Murong Gialinga Aboriginal & Torres Strait Islander Corporation	Jennifer Norfolk	ELA	Email	03/05/2021	Sent ACHAR methodology for RAP review with a response date of 03 June 2021
Bradley Bliss	Wellington Valley Wiradjuri Aboriginal Corporation	Jennifer Norfolk	ELA	Email	03/05/2021	Sent ACHAR methodology for RAP review with a response date of 03 June 2021
Jamie Grey	BINJANG WELLINGTON WIRADJURI ABORIGINAL HERITAGE SURVEYS	Jennifer Norfolk	ELA	Email	03/05/2021	Sent ACHAR methodology for RAP review with a response date of 03 June 2021
	Mudgee LALC	Jennifer Norfolk	ELA	Email	03/05/2021	Sent ACHAR methodology for RAP review with a response date of 03 June 2021
Draft 1 ACHAR RAP review						
Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	Jennifer Norfolk	ELA	Email	22/12/2021	Sent ACHAR for RAP review with a response date of 11 February 2022
Cherie (Carroll) Johnson	Gunjeewong	Jennifer Norfolk	ELA	Email	22/12/2021	Sent ACHAR for RAP review with a response date of 11 February 2022
Debbie Foley	Murong Gialinga Aboriginal & Torres Strait Islander Corporation	Jennifer Norfolk	ELA	Email	22/12/2021	Sent ACHAR for RAP review with a response date of 11 February 2022
Bradley Bliss	Wellington Valley Wiradjuri Aboriginal Corporation	Jennifer Norfolk	ELA	Email	22/12/2021	Sent ACHAR for RAP review with a response date of 11 February 2022
Jamie Grey	BINJANG WELLINGTON WIRADJURI ABORIGINAL HERITAGE SURVEYS	Jennifer Norfolk	ELA	Email	22/12/2021	Sent ACHAR for RAP review with a response date of 11 February 2022
	Mudgee LALC	Jennifer Norfolk	ELA	Email	22/12/2021	Sent ACHAR for RAP review with a response date of 11 February 2022
Draft 1 ACHAR RAP response and comments						
Jennifer Norfolk	ELA	Bradley Bliss	Wellington Valley Wiradjuri Aboriginal Corporation	Email	02/02/2022	Provided comments and cultural knowledge as well as recommendations
Jennifer Norfolk	ELA	Debbie Foley	Murong Gialinga Aboriginal & Torres Strait Islander Corporation	Text	12/02/2022	Sent image of the response to ACHA and recommendations, same conclusion as WVWAC
Project update – sent to all RAPS – 28/07/2022 and 06/10/2022 – Confirming the EIS is still ongoing; the SEARs had lapsed, and new ones received. No responses received						
ACHAR Methodology 2						
Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	Jennifer Norfolk	ELA	Email	10/01/2023	Sent ACHAR methodology for RAP review with a response date of 10 February 2023
Cherie (Carroll) Johnson	Gunjeewong	Jennifer Norfolk	ELA	Email	10/01/2023	Sent ACHAR methodology for RAP review with a response date of 10 February 2023
Debbie Foley	Murong Gialinga Aboriginal & Torres Strait Islander Corporation	Jennifer Norfolk	ELA	Email	10/01/2023	Sent ACHAR methodology for RAP review with a response date of 10 February 2023

Bradley Bliss	Wellington Valley Wiradjuri Aboriginal Corporation	Jennifer Norfolk	ELA	Email	10/01/2023	Sent ACHAR methodology for RAP review with a response date of 10 February 2023
Jamie Grey	BINJANG WELLINGTON WIRADJURI ABORIGINAL HERITAGE SURVEYS	Jennifer Norfolk	ELA	Email	10/01/2023	Sent ACHAR methodology for RAP review with a response date of 10 February 2023
	Mudgee LALC	Jennifer Norfolk	ELA	Email	10/01/2023	Sent ACHAR methodology for RAP review with a response date of 10 February 2023
Draft 2 ACHAR RAP review						
Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	Jennifer Norfolk	ELA	Email	14/04/2023	Sent ACHAR for RAP review with a response date of 19 May 2023
Cherie (Carroll) Johnson	Gunjeewong	Jennifer Norfolk	ELA	Email	14/04/2023	Sent ACHAR for RAP review with a response date of 19 May 2023
Debbie Foley	Murong Gialinga Aboriginal & Torres Strait Islander Corporation	Jennifer Norfolk	ELA	Email	14/04/2023	Sent ACHAR for RAP review with a response date of 19 May 2023
Bradley Bliss	Wellington Valley Wiradjuri Aboriginal Corporation	Jennifer Norfolk	ELA	Email	14/04/2023	Sent ACHAR for RAP review with a response date of 19 May 2023
Jamie Grey	BINJANG WELLINGTON WIRADJURI ABORIGINAL HERITAGE SURVEYS	Jennifer Norfolk	ELA	Email	14/04/2023	Sent ACHAR for RAP review with a response date of 19 May 2023
	Mudgee LALC	Jennifer Norfolk	ELA	Email	14/04/2023	Sent ACHAR for RAP review with a response date of 19 May 2023
Draft 2 ACHAR RAP response and comments						
Jennifer Norfolk	ELA	Bradley Bliss	Wellington Valley Wiradjuri Aboriginal Corporation	Email	18/05/2023	Provided comments and recommendations for updated ACHA
Project update – sent to all RAPS – 1/09/2023 and 22/12/2023 – Confirming the EIS is still ongoing; the SEARs had lapsed, and new ones received. No responses received						
Confidential Cultural information						
Bradley Bliss	Wellington Valley Wiradjuri Aboriginal Corporation	Jennifer Norfolk	ELA	Email	20/05/2024	Sent a request for further cultural knowledge and information on sensitive sites, areas and potential song lines/ travelling routes.
Jennifer Norfolk	ELA	Bradley Bliss	Wellington Valley Wiradjuri Aboriginal Corporation	Email	24/05/2024	Provided sensitive cultural knowledge to inform the ACHA – not for public knowledge
Project update – sent to all RAPS – 19/06/2024 – Informing them of the Request by Heritage NSW for further field investigations including Transmission line and extra sampling						
Draft 3 ACHAR RAP review						
Marilyn Carroll-Johnson	Corroboree Aboriginal Corporation	Jennifer Norfolk	ELA	Email	03/09/2024	Sent ACHAR for RAP review with a response date of 04 October 2024
Cherie (Carroll) Johnson	Gunjeewong	Jennifer Norfolk	ELA	Email	03/09/2024	Sent ACHAR for RAP review with a response date of 04 October 2024
Debbie Foley	Murong Gialinga Aboriginal & Torres Strait Islander Corporation	Jennifer Norfolk	ELA	Email	03/09/2024	Sent ACHAR for RAP review with a response date of 04 October 2024
Bradley Bliss	Wellington Valley Wiradjuri Aboriginal Corporation	Jennifer Norfolk	ELA	Email	03/09/2024	Sent ACHAR for RAP review with a response date of 04 October 2024
Jamie Grey	BINJANG WELLINGTON WIRADJURI ABORIGINAL HERITAGE SURVEYS	Jennifer Norfolk	ELA	Email	03/09/2024	Sent ACHAR for RAP review with a response date of 04 October 2024
	Mudgee LALC	Jennifer Norfolk	ELA	Email	03/09/2024	Sent ACHAR for RAP review with a response date of 04 October 2024
Draft 3 ACHAR RAP response and comments						
Jennifer Norfolk	ELA	Bradley Bliss	Wellington Valley Wiradjuri Aboriginal Corporation	Email	03/10/2024	Provided comments and recommendations for updated ACHA

Appendix E Movement of Aboriginal objects

Wherever artefacts have been identified within the Development corridor, the Aboriginal community should be provided the opportunity to collect and relocate the artefacts prior to any works occurring. The movement of artefacts should be undertaken in line with the following methodology:

- Representatives of the Aboriginal community would be invited to participate in the movement of Aboriginal objects.
- The following process will be carried out –
    - Walk across area within the footprint of proposed works and mark any artefacts with a visible flag/peg.
    - Photograph area for site card context and reporting.
    - Plot the location of artefacts using a GPS.
    - Artefacts must be recorded on site by a qualified archaeologist or experienced heritage officer in line with the *Code of Practice*. Lithic artefacts must be photographed, and characteristics recorded in writing, including raw material, dimensions, tool/reduction type and any other characteristics (heat treatment, use wear, or marginal backing).
    - The site data must be recorded/updated on the Aboriginal Heritage Information Management System (AHIMS).
    - Recorded artefacts may be moved a minimum of 2 metres off the trail and out of harm's way.
- If the Aboriginal representative/s identify an artefact to be highly significant (e.g. ground-edge axe, adze, grinding stone) and not appropriate for movement and prefer community collection, the following steps must be followed:
    - Record object/s in accordance with the *Code of Practice* as specified above. Do not move object/s until a temporary storage place is designated (e.g. National Parks office or the office of the Project Archaeologist). Once a location is decided for safekeeping, the object/s must be zip seal bagged and labelled with the date, location (Eastings/Northings or Latitude/Longitude), depth of find (if applicable), name of person who collected object/s and site name (including AHIMS ID if associated with existing site).
    - A Care Agreement must be obtained through Heritage NSW. If an Aboriginal person/organisation wish to apply to be custodian of an Aboriginal object/s that are subject to AHIP or an application for an AHIP, it is important to discuss the management of the objects with the Aboriginal parties registered for that application.
    - Once a Care Agreement is established between Heritage NSW and the Aboriginal person/organisation, the object/s may be transferred for long-term keeping.

Appendix F Chance find procedure

Aboriginal objects have been identified within the Development corridor and across the wider Project site, the Aboriginal community should be provided the opportunity to survey or inspect location within the project site that will be impacted by the proposed development but were inaccessible during the archaeological investigations. The density of Aboriginal sites identified during the sampled survey indicates the Project site is rich in cultural values and there is a chance further Aboriginal sites will be likely be impacted by the proposed works.

The chance find procedure will involve a similar process to the 'Movement of Aboriginal objects' where the Aboriginal site is recorded, Aboriginal objects are collected then relocated.

If the Aboriginal site as a whole is assessed as being highly significant and/ or movement or surface collection is not a possible mitigation measure then consultation with the RAPs, Heritage NSW and the proponent will be required to identify an appropriate outcome.

Possible Aboriginal sites that cannot be moved or collected may be:

- Modified trees
- Burials
- Ceremonial grounds or other culturally sensitive areas
- Grinding grooves.

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