Environmental Management Plan
For Former Mullumbimby Hospital
Lot 188 DP728535, Lot 138 DP755722 and
Lot 1 DP1159861,
1-3 Azalea St, Mullumbimby NSW 2482

Melaleuca Group Pty Ltd

Revision History

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A	6/01/2023	Preliminary Draft	Dr Melissa Van Zwieten	Mr Tim Fitzroy
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D	01/03/2023	Final V3	Dr Melissa Van Zwieten	Mr Tim Fitzroy, Byron Shire Council, Mr Ben Wackett (Auditor)

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Prepared for:
Byron Shire Council

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Melaleuca Group Pty Ltd

Executive Summary

Melaleuca Group Pty Ltd has been engaged by Byron Shire Council (BSC) to prepare an Environmental Management Plan (EMP) to manage risks associated with encapsulated friable asbestos (FA) and asbestos fibres (AF) containing material in soils located at the site. The encapsulation area relates to portions of Lot 188 DP728535, Lot 138 DP755722 and Lot 1 DP1159861, 1-3 Azalea St, Mullumbimby NSW 2482. The contamination is sourced from the former Mullumbimby Hospital (more formally known as Mullumbimby & District War Memorial Hospital) and Site Remediation works that ensued.

Previous investigations by ENV Solutions (2019) identified FA and AF within the footprint of A Block (2,400m^2) of the former Hospital to a depth of 1m (mainly in the upper 0.7m below ground level (bgl)). As a result of this discovery, a 0.5m thick cap was installed across the Block A area (only) in April 2020.

Subsequent investigations by Melaleuca Group in 2020 and 2021 resulted in additional FA and FA being detected at the site resulting in a larger area requiring remediation. Ultimately, a final remediation area based on the former hospital buildings of Blocks A, B and C was established. The final remediation area encapsulates residual FA and AF as detailed in the Remedial Action Plan (RAP) (Melaleuca Group 2021c).

The remedial works were completed and validated in 2022 (Melaleuca Group 2022d). The final Asbestos Encapsulated Area is shown on **Figure A3, Appendix A**.

Procedures to manage and mitigate risks associated with future use of the site are documented in this EMP.

While the final proposed landuse is unknown, the Validation Report (Melaleuca Group 2022d) concluded the capping is considered to have been designed and installed to allow for future landuses including:

- Residential with minimal opportunities for soil access;
- Commercial; and/or
- Public open spaces.

The encapsulation of Asbestos-impacted soils is considered a passive management system. With reference to *NSW EPA Practice note: Preparing environmental management plans for contaminated land* (2022), such systems are generally not considered appropriate for residential developments particularly if intrusive works at the site may create an unacceptable risk from the residual contamination. Given the residual COC (friable Asbestos) and the landform of the site whereby intrusive works are considered likely, development such as individual freehold residential lots for 'dwelling house' or 'dual occupancy' (as defined under the Byron Local Environmental Plan 2014) should not be permitted within this area of the site.

It is envisaged future proposals will be developed in close consultation with BSC to ensure they:

- are complementary to the passive management of the site;
- will not impact on the integrity of the capping (i.e. Asbestos Encapsulated Area); and
- will not conflict with the validation statement.

The purpose of this EMP is to manage the residual risks relating to the presence of fibrous asbestos in soil beneath capping material located on the site.

This EMP is considered a dynamic document that requires regular review so that it remains consistent with legislation, regulations, policies and best practice and with site changes over time.

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1. Introduction

1.1 Background

Melaleuca Group Pty Ltd has been engaged by Byron Shire Council (BSC) to prepare a Environmental Management Plan (EMP) to manage risks associated with encapsulated friable asbestos containing material in soils located at the site. The contamination is sourced from the former Mullumbimby Hospital (more formally known as Mullumbimby & District War Memorial Hospital) and Site Remediation works that ensued.

This EMP is to ensure that capping works at the site is maintained and the area is utilised in a manner that provides:

- Protection of future site users, following development, via ongoing monitoring of site conditions, particularly the integrity of the capping layer; and
- Protection of the health of construction and/or maintenance staff involved in future subsurface works during and following development in the designated Asbestos Encapsulation Area.

Details of the site:

Site Address: 1-3 Azalea St, Mullumbimby NSW 2482 (**Figure A1, Appendix A**)

Site Lot and DP: Lot 188 DP728535, Lot 138 DP755722 and Lot 1 DP1159861

Impacted Area (Asbestos Encapsulation Area): Parts of Lot 188 DP728535 and Lot 1 DP1159861 (refer **Figure A3, Appendix A**)

Landholder: Byron Shire Council

This EMP has been developed with reference to the requirements of: NSW EPA (2020) - *Consultants reporting on contaminated land, Contaminated land guidelines* and NSW EPA (2017) - *Contaminated Land Management Guidelines for the NSW Site Auditor Scheme (3rd edition)* and from previous studies completed:

- ENV Solutions (2017) HAZMAT REPORT Mullumbimby & District War Memorial Hospital 1 -3 Azalea Street Mullumbimby NSW 2482 (November 2016 – March 2017);
- ENV Solutions (2019a) Limited Underground Storage Tank (UST) Removal Validation Report. Tweed Coast Demolition and Excavation Former Mullumbimby Hospital. 1 -3 Azalea Street Mullumbimby NSW 2482 (September 2019);
- ENV Solutions (2019b) Detailed Site Investigation For: Tweed Coast Demolition and Excavation Mullumbimby & District and War Memorial Hospital A Block (December 2019);
- ENV Solutions (2020a) Final asbestos in soil validation – existing C Block footprint Mullumbimby Hospital. (18th February 2020).
- Melaleuca Group (2020) Preliminary Site Investigation for Former Mullumbimby Hospital Part of Lot 188 DP728535, Lot 138 DP755722 and Lot 1 DP1159861, 1-3 Azalea St, Mullumbimby NSW 2482 (dated 3rd September 2020);

- Melaleuca Group (2021a) Detailed Site Investigation for Former Mullumbimby Hospital Part of Lot 188 DP728535, Lot 138 DP755722 and Lot 1 DP1159861, 1-3 Azalea St, Mullumbimby NSW 2482 (dated 3rd September 2020);
- Melaleuca Group (2021b) Detailed Site Investigation for Asbestos at 2 Left Bank Rd (Lot 1 DP43806 and Lot 2 DP552246);
- Melaleuca Group (2021c) Remedial Action Plan for Former Mullumbimby Hospital Part of Lot 188 DP728535, Lot 138 DP755722 and Lot 1 DP1159861, 1-3 Azalea St, Mullumbimby NSW 2482;
- Melaleuca Group (2022a) Groundwater Investigations for Former Mullumbimby Hospital Part of Lot 188 DP728535, Lot 138 DP755722 and Lot 1 DP1159861, 1-3 Azalea St, Mullumbimby NSW 2482 (dated 1st February 2022);
- Melaleuca Group Pty Ltd (2022b) Groundwater Investigations, for Former Mullumbimby Hospital, Part of Lot 188 DP728535, Lot 138 DP755722 and Lot 1 DP1159861, 1-3 Azalea St, Mullumbimby NSW 2482 (dated 28th March 2022);
- Melaleuca Group Pty Ltd (2022c) Review of demolition documentation for former Mullumbimby Hospital (letter to Byron Shire Council dated 9th December 2022); and
- Melaleuca Group Pty Ltd (2022d) Validation Report for Former Mullumbimby Hospital, Part of Lot 188 DP728535, Lot 138 DP755722 and Lot 1 DP1159861, 1-3 Azalea St, Mullumbimby NSW 2482 (dated 19th December 2022).

1.2 Objectives and Scope of Works

This EMP provides a framework for ongoing environmental management of the site (within the designated Asbestos Encapsulated Area) with the following objectives:

- Summarise the presence of known contamination within the Asbestos Encapsulated Area (i.e. Asbestos in soils beneath capping);
- Document the site containment infrastructure;
- Outline a program for ongoing monitoring (and maintenance) of the capping layer;
- Roles and Responsibilities;
- Precautions and control measures required when completing works beneath the cap; and
- How long this plan is required for.

This EMP is considered passive. That is, unlike other common contaminants, the risks associated with asbestos-contaminated soil result from the potential to release airborne fibres. As the area is encapsulated, the risk from this exposure has been controlled. Asbestos in soil typically:

- is inert;
- does not degrade quickly, depending on how it is bonded and specific soil conditions;
- is not readily mobilised into the air;

- once buried, it is immobile (i.e. does not migrate other than through erosion, physical movement or airborne migration);
- is the result of human activity rather than naturally occurring and does not follow a pattern of occurrence (i.e. not evenly distributed when found);
- does not impact groundwater; and
- does not affect plant or animal life.

As such, besides regular inspections of the capping within the Asbestos Encapsulated Area there are no active management requirements.

Due to the nature of the contamination (i.e. Asbestos) encapsulated onsite, this EMP is to be implemented into perpetuity to ensure the site continues to be safe for future uses or has been replaced by an updated EMP.

If remediation of the site is undertaken in the future (i.e. validated removal of the encapsulated Asbestos), then this EMP would no longer be applicable.

1.3 Application and Enforcement of EMP and Responsibilities

1.3.1 Application

The requirements of this EMP are intended to apply to any activities within the Asbestos Encapsulated Area of the site which could involve disturbance or exposure of Asbestos-impacted soils beneath the cap. These include:

- Removal of any capping materials;
- Removal, installation or maintenance of any underground services;
- Excavations for any purpose.

1.3.2 Enforcement of EMP

This EMP must be accepted by the ultimate custodian of the land that future controls will be implemented including a Section 10.7 Planning Certificate (*Environment Planning and Assessment Act* 1979). In addition, a covenant registered on the title to land under section 88B of the Conveyancing Act 1919 will occur.

Further, BSC will include a Consent Condition relating to this EMP for any future Development Application/s for the site. The Consent Condition will stipulate the requirement for the involvement of a Site Auditor accredited under the Contaminated Land Management Act.

1.3.3 Other relevant legislation

During any redevelopment of the Asbestos Encapsulated Area of the site, the site will be a considered a workplace and all relevant provisions of the NSW Work Health and Safety (WHS) Act 2011 and the NSW Work Health and Safety (WHS) Regulation 2017 will apply to the site.

Due to the presence of Asbestos on the site, the provision of Chapter 8 of the WHS Regulation 2017 are relevant. The WHS Regulation 2017 places duties upon a person with management or control of a workplace with regard to the management of risks due to Asbestos at the workplace.

This includes the development of an Asbestos Management Plan which must comply to the requirements of Clause 432 of the WHS Regulation 2017 and should be consistent with and cross-referenced with this EMP.

1.3.4 Site Owner

A copy of this EMP must be provided to all persons with ownership of all or part of the site (currently Byron Shire Council). A site owner must provide a copy of this EMP to any successor in Title.

The site owner must ensure that a copy of this EMP is provided to all persons with management or control of a workplace at the site.

Future land owner(s) need to be able to demonstrate they are able to implement and manage this EMP and thereby the residual contamination on-site.

1.3.5 Persons with management or control of a workplace at the site

Site personnel or contractors required to conduct intrusive works at the site must be inducted in this EMP and must be aware of their responsibilities with regard to health and safety and protection of the environment.

A copy of this EMP must be supplied to all persons conducting intrusive works on the site (within the bounds of the Asbestos Encapsulated Area).

The health and safety and environmental requirements specific to the Asbestos contamination issues on the site as outlined in this EMP must be complied with. This includes maintaining the integrity of the marker and barrier layers by the application of relevant procedures outlined in this EMP.

1.4 Limitations

The sole purpose of this report and the associated services performed by Melaleuca Group Pty Ltd is to provide an EMP in accordance with the scope of services set out in the contract / quotation between Melaleuca Group and Byron Shire Council (hereafter known as the Client).

The findings of this report are based on the objectives and scope of work outlined above. Melaleuca Group Pty Ltd performed the services in a manner consistent with the normal level of care and expertise exercised by members of the environmental assessment profession. No warranties or guarantees expressed or implied, are given. Subject to the scope of the work, Melaleuca Group Pty Ltd assessment is limited strictly to identifying typical environmental conditions associated with the subject site and does not include evaluation of any other issues. This report does not comment on any regulatory issues arising from the findings, for which a legal opinion should be sought. This report relates only to the objectives and scope of work stated and does not relate to any other works undertaken for the client.

The report and conclusions are based on the information obtained at the time of the assessment. Changes to the subsurface conditions may have occur subsequent to the investigation described herein, through natural processes or through the intentional or accidental addition of contaminants, and these conditions may change with space and time.

The site history and associated uses, areas of use, and potential contaminants were determined based on the activities described in the scope of work. Additional site information held by the client, regulatory authorities or in the public domain, which was not provided to Melaleuca Group Pty or was not sourced by Melaleuca Group Pty Ltd under the scope of work, may identify additional uses, areas of concern and/or potential contaminants. The information sources referenced have been used to determine the site history and desktop information regarding local subsurface conditions. Whilst Melaleuca Group Pty Ltd has used reasonable care to avoid reliance on data and information that is inaccurate and unsuitable, Melaleuca Group Pty Ltd is not able to verify the accuracy or completeness of all information and data made available.

This EMP is considered a dynamic document that requires regular review so that it remains consistent with legislation, regulations, policies and best practice and with site changes over time. Further, this EMP must be updated with consideration of contemporary Work Health and Safety legislation.

If at any time the advice in the codes of practice or legislation conflicts with advice in this EMP, then the advice/requirements of the code of practice or legislation prevails over this EMP and an update to this EMP is triggered.

2. The Site

2.1 Site Identification

The Subject Site is formally known as Lot 188 DP728535, Lot 138 DP755722 and Lot 1 DP1159861 and is located in Mullumbimby, approximately 1km south-west of the CBD. The Site is approximately 4.3 ha in size and is irregular (although almost triangular) in shape. The hospital was located in the eastern section of the site. That is, it covered the eastern section of Lot 188 along with Lot 1 and Lot 138 (Helipad only). St Vincent de Pauls Coolamon Villa, a Catholic Health Aged Care Nursing Home, is located in the northern section of the site. The remaining (western) section of the site is considered vacant.

The site is bound by Azalea Street (northern boundary), Left Bank Road (eastern boundary) and Reservoir Road (western boundary). Adjoining residential allotments form the remaining portion of the (southern) boundary.

This EMP is specific to only a portion of the site (not its entirety). The *Management Area* is the identified Asbestos Encapsulated Area which encompasses approximately 4,800m^2. This area relates to the footprints of the former Blocks A and C of the hospital along with part of Block B. The Asbestos Encapsulated Area is predominantly contained on Lot 188 with a small portion encroaching into Lot 1.

The reader is referred to **Appendix A** for **Figure A1** Locality Plan, **Figure A2** Hospital Site Layout Plan and **Figure A3** Asbestos Encapsulation Area.

2.2 Zoning

The Site is zoned SP2 Infrastructure under the Byron Local Environmental Plan (2014). Surrounding lands are either similarly zoned (north) or zoned R5 Large Lot Residential (north and south), RE1 Public Recreation (east and west), R2 Low Density Residential (west), RU2 Rural Landscape (north) and DM Deferred Matter (north-east).

Current zoning only allows Environmental protection works without consent. All other future proposals would need Development Consent from BSC and are limited to: Aquaculture; Environmental facilities; Roads or development that is ordinarily incidental or ancillary to development for these purposes.

Council's intention is to rezone the land to allow for a broader range of landuses for consideration. However, at this time, Council will also amend their Development Control Plan (DCP) to include site specific controls that will ensure all development proposals are submitted to Council for review whereby Council will verify that either:

- the proposal will result in remediation of the site (and thereby this EMP would no longer be required)

Or

- the future landuse will:
    - not impact on the integrity of the capping (i.e. Asbestos Encapsulated Area);
    - enforce the EMP; and
- not be in conflict with the validation statement.

2.3 Summary of Residual Contamination

As indicated above, a number of investigations have been completed at the site. The result of these investigations identified a single Chemical of Concern (COC) (Asbestos) was to be the subject of this EMP.

That is, investigations showed that while the excavation of a former UPSS has removed the primary source of the contamination, the results from the DSI investigation (Melaleuca Group 2021a) indicate that some Diesel had leaked from the UPSS and impacted soils at depth (4.5 m bgl). However, the levels of applicable COCs (i.e. hydrocarbons/BTEX) detected in the single soil sample (BH8I) did not warrant additional soil investigations.

Investigations into Groundwater (Melaleuca Group 2022b) similarly concluded that there are low human and ecological risks from the detected applicable COCs (hydrocarbons/BTEX), and that groundwater monitoring could cease.

These reports concluded that with the primary source of contamination removed (i.e. UPSS), impacted soils and groundwater are at depth and biodegradation of hydrocarbons likely, it is considered that the issue can be managed via an Environmental Management Plan focused on the residual Asbestos at the site.

It is also acknowledged that Aldrin and Dieldrin was also detected above adopted thresholds in a single sample within the footprint of Block A (PSI, Melaleuca Group 2020). This report details that with the cap in place, these pesticides have been contained. Further, leachate testing indicated these COCs have limited opportunities to be released from soils. Only if the cap is proposed to be removed and further remediation planned, should further investigations and/or remediation to address these COCs would need to occur.

Extensive Asbestos testing has been completed at the site (i.e. total of 220 samples: 178 by ENV Solutions, various studies, 23 by Melaleuca Group PSI 2020 and 19 by Melaleuca Group DSI 2021) (refer **Figure A4, Appendix A**).

This COC was detected across areas related to A, B and C Blocks of the former hospital and within the UPSS void (due to use of materials from the site used for backfilling). A Remedial option to encapsulate the area was considered the only viable solution for the site. Encapsulation works were completed for Block A in 2020 by Tweed Coast Demolition and Excavations (TCDE), overseen by ENV Solutions. Final encapsulation works were completed in 2022 by Synergy Resource Management overseen by GreenTec Consulting.

3. Capping Design and Construction

The design of an appropriate engineered cap was completed by GreenTec Consulting (2021a) (**Figure A5, Appendix A**). Full technical details of the design is provided in **Appendix C** of the RAP (Melaleuca Group 2021c).

GreenTec Consulting was subsequently engaged by BSC as the CQA Consultant and developed a Technical Specification (April 2022) and Construction Quality Assurance Plan (December 2021).

In addition, GreenTec Consulting was engaged to oversee the Remediation Works in regard to the installation of the capping and complete a Construction Quality Assurance (CQA) Report which is provided as **Attachment C** of the Validation Report (Melaleuca Group 2022d).

The installation process for the encapsulation of asbestos fibres in completed in 2022 (June to October) can be summarised as follows:

- The decommissioning of services was undertaken prior to the construction works with the exception of the stormwater drainage pits which were decommissioned with a 20MPA 20mm 80 slump concrete. A total of 20m^3 of concrete was used to fill service pits, stormwater pits and manholes structures.
- The monitoring bores were extended in height to above the capping and topsoil height of some 0.6m. These bores were extended by a registered driller and gatic covers were installed to enable future access.
- All trees/shrubs within the capping extent were removed at ground level via Summerland tree services with all vegetation removed offsite. Tree root balls and topsoil was removed offsite to a licenced facility capable of handling asbestos related material.
- Installation of a geotextile barrier to provide a barrier between the contaminated subsoil and clean fill, while acting as a visual warning for potential future excavation.
- Installation of capping material (approximately 2,950m^3) over the design extent meeting or exceeding the minimum requirements of the Technical Specification of 0.5m in thickness (or 0.3m thickness in concrete area to the south) (Greentec 2022b);
- Verification by Greentec (2022c) of interim capping integrity (materials and thickness) installed over former Block A in 2020;
- Installation of 1,312 tonnes of topsoil and grassing;
- Validation of the capping installation is provided in the Validation Report (Melaleuca Group 2022d).

The final encapsulation area is approximately 6,300m^2 (including all batters). Within this, the capping encapsulating Block A (i.e. installed in 2020) covers approximately 2,400m^2. Hard stand surfaces (e.g. roads) covers an estimated 1,700m^2. Thereby leaving approximately 2,200m^2 encapsulating the footprints of former buildings (Block C and part of Block B) and surrounds (i.e. including UPSS) as per the design.

The final Asbestos Encapsulated Area is depicted on **Figures A3 and A6, Appendix A**. Site photographs taken at the completion of works are provided in **Appendix B**.

4. Environmental Management Plan Structure

4.1 Overview

At the time of writing, there is no proposed development works at the site. Any proposed development will require approval by the local authority (i.e., Byron Shire Council) or the Regional Planning Panel, (depending on the scale of the development) and will need to consider the requirements of this EMP.

The Validation Report (Melaleuca Group 2022d) advised:

> *The capping is considered to have been sufficiently designed and installed to allow for a range of future landuse scenarios with the implementation of a passive environmental management plan (EMP). However, an EMP on residential developments often result in complex management systems and/or onerous requirements for homeowners in relation to the remaining contamination, and therefore development such as individual freehold residential lots for 'dwelling house' or 'dual occupancy' (as defined under the Byron Local Environmental Plan 2014) should not be permitted.*

This EMP relates to the ongoing management of the property in relation to contaminants of concern located beneath the cap.

This EMP is required to be implemented to ensure the site remains safe by:

- maintaining the capping of the Asbestos Encapsulated Area of the Site in the condition described in this EMP; and
- ensuring any works that require the disturbance of the surface of the Asbestos Encapsulated Area of the Site, described below as 'minor works' and 'major works', are conducted in accordance with the requirements set out in this EMP.

4.2 Exposure Pathways

The known presence of Asbestos within the sub-surface soils beneath the Asbestos Encapsulated Area of the site does not affect the present safe use of the site under the current land use scenario (vacant) and whilst the existing capping surface is undisturbed.

However, if the capping surface is disturbed through Minor or Major works (as defined below), it is possible that a risk of exposure may result. In order to develop appropriate measures to control this exposure, it is necessary to understand the potential exposure pathways.

A summary of the potential health effects and the exposure pathway for asbestos fibres and or fibrous asbestos is summarised below:

Contaminant of Concern	Source	Physiological Effect	Exposure Pathway
Asbestos	Soils containing friable asbestos within the bounds of the former buildings of the Hospital (Blocks A, B and C).	Inhalation of asbestos fibres can cause asbestosis, lung cancer and mesothelioma. The risk of contracting these diseases increases with the number of fibres inhaled and the risk of lung cancer from inhaling asbestos fibres is also greater if you smoke. People who get health problems from inhaling asbestos have usually been exposed to high levels of asbestos for a long time. The symptoms of these diseases do not usually appear until about 20 to 30 years after the first exposure to asbestos	Inhalation of loose/friable asbestos from disturbed soils.

4.3 Roles and Responsibilities

This section summarises the various parties who have been allocated a responsibility under this EMP. The responsibilities have been allocated according to which party is best placed to manage the requirements. The responsibilities may be delegated where appropriate.

The owner (currently BSC) of the site will manage these responsibilities. The owner is required to ensure all maintenance employees and contractors have read and understood this EMP, and agree to undertake the relevant obligations within this EMP.

BSC also is the local regulatory authority and thereby currently has two (2) sets of roles and responsibilities to the site and this EMP.

The responsibilities of the local authority (i.e., BSC) are:

- To ensure appropriate planning controls are in place that guarantee any proposed development is brought to the attention of BSC to assess the proposal against the EMP;
- To confirm information received demonstrates compliance with appropriate regulations and guidelines, including a statement regarding the suitability of the *Management Area* for the proposed land use; and
- Only allow development that does not conflict with the validation statement for the site.

The responsibilities of the owner are:

- Maintain ultimate responsibility for implementation of this EMP including the implementation of a Routine Site Inspection programme;
- Ensure appropriate consents and licences (as required) are obtained for the works;
- Procure the training and induction of employees and contractors before and during the works, as appropriate and relevant;

- Provide a copy of this EMP to the occupiers, supervisor, tenant, employees or person-in-charge of employees and/or contractor/s who are undertaking the works;
- Ensure relevant and appropriate project manager/occupier/tenant staff and contractors comply with the requirements of the EMP;
- Ensure relevant and appropriate Project manager/occupier/tenant staff and contractors clearly understand the requirements of the EMP and ensure that compliance with the EMP is a condition of any agreement with these parties;
- Ensure the conditions of the EMP are implemented and supplemented, if necessary, by conditions of any relevant planning consent;
- Obtain advice if the condition of the Site are changed, and, if necessary, arrange for an appropriately qualified party to update the EMP;
- Ensure routine inspections of the site condition and capping integrity in accordance with Section 4.5 are carried out and record the results of the inspections;
- Ensure the Site is maintained in accordance with this EMP; and
- Review the effectiveness of this EMP on a five yearly basis or following any incident or other event that suggests the EMP is ineffective (whichever is sooner).

The responsibilities of the supervisor or person-in-charge of works (Contractor/Sub-contractor including future land or building managers) are:

- Implement this EMP to ensure compliance;
- Conduct works in an environmentally responsible manner;
- Ensure all works comply with relevant regulatory requirements;
- Implement the works in a safe and responsible manner (including relevant OH&S requirements);
- Notify the Owner if suspected contaminated fill materials is encountered during works on the Site;
- Ensure non-conformance and/or complaints are reported to the Owner;
- Undertake corrective actions in response to requests made by the Owner regarding specific environmental or safety issues;
- Inform the Owner if conditions change significantly from those documented in this EMP.
- Arrange for routine inspections of the site condition and capping integrity in accordance with Section 4.5 and ensure remedial measures are implemented, and notify the owner where problems are identified;
- Ensure that all maintenance staff conducting works are briefed on the presence of Asbestos beneath the cap within the encapsulation area;
- Maintain records of maintenance and/or reports related to the site;

- Review subcontractor work method statements for compliance with this EMP and any other aspects required for the safe completion of works on the site; and
- Monitor subcontractor compliance with their work method statements and inspect completed work to ensure the capping is restored appropriately upon completion and the integrity of the marker layers and capping layers are not compromised, and /or are restored if compromised.

The responsibilities of employees/workers are:

- Conduct works in an environmentally responsible manner;
- Ensure all works comply with relevant regulatory requirements;
- Implement the works in a safe and responsible manner (including relevant OH&S requirements);
- Notify Supervisor/Owner/Person-in-Charge of works, if suspected contaminated fill materials is encountered during works on the Site;
- Ensure non-conformance and/or complaints are reported to the Supervisor/Owner/Person-in-Charge of works;
- Undertake corrective actions in response to requests made by the Supervisor/Owner/Person-in-Charge of works regarding specific environmental or safety issues;
- Inform the Supervisor/Owner/Person-in-Charge of works if conditions change significantly from those documented in this EMP; and
- Complete records of maintenance and/or reports related to the site and return to Supervisor/Owner/Person-in-Charge of works.

4.4 Document Revision

This EMP is required to be reviewed and amended in the following circumstances:

1. Site changes ownership;
2. Change in Site use(s); or
3. Redevelopment of the Site is proposed; or
4. A major non-conforming event occurs.

The EMP is considered a dynamic document that requires regular review so that it remains consistent with legislation and best practice and with site changes over time. A review can be performed at any time, however, it is recommended that a review takes place at a minimum of every five years to ensure the references to legislation, codes of practice and environmental guidelines and standards remain up to date.

Changes as a result of items 2, 3 and 4 above, must be completed by a suitably qualified and experienced environmental consultant and requires reassessment to ensure consideration has been given to the encapsulated Asbestos and that any changes to the site will not increase the risk of

exposure to site users. In these circumstances it is also required a Site Auditor accredited under the CLM Act is to be involved.

It is the responsibility of the Owner of the Site to ensure that any EMP supplied to any person is the current updated or amended version.

It is the responsibility of the supervisor or person-in-charge of works proposed to be undertaken to ensure they have the current version of the EMP.

It is also noted, that if the site changes ownership from BSC, any future revisions must also be provided to BSC as the local authority.

Given the COC (Asbestos) this EMP is required to be implemented into perpetuity.

5. Environmental Management Plan Activities and Controls

5.1 Routine Site Inspections

Routine site inspections should be conducted or arranged to be conducted by maintenance employees/contractors every year or immediately after penetration of the capping (i.e. Asbestos Encapsulated Area), if this occurs. This is to ensure that the integrity of the capping layer has not been compromised. The inspections should document the following:

- Condition of the capping layer in the Asbestos Encapsulation Area;
- Any exposure of the marker layer, indicating that the integrity of the capping layer has been compromised;
- Condition of grass vegetation on the capping layer for sediment and erosion prevention;
- An ongoing inspection schedule documenting the observations of the inspections noted above.

If, at any time, the capping layer is compromised and there is risk of exposure of asbestos, the owner must be made aware as soon as practicable to implement repairs.

Routine inspections are to include assessment of vegetation within or adjacent to the Asbestos Encapsulated Area. Advice from an aborist is to be sought where adjacent trees may impact on the capping integrity.

Routine inspections are also considered those that may occur irregularly due to unforeseen events such as:

- after major inclement weather event such as 100mm rainfall in 24 hrs;
- local flood event;
- traffic accident (with encroachment into site);
- change of site conditions; and/or
- pollution incidents.

Irregular inspections should be completed within 24 hrs of the incident (or as soon as practicable after receiving notification).

Rectifications works need to be implemented as soon as practicable depending on the required works. It is envisaged that the following would occur:

- within 48hrs rectification works have been implemented to stabilise the surface of the capping to minimise any further damage and control the immediate risk; and
- within three (3) weeks, repairs are completed which are consistent to the capping specification.

5.2 Disturbance of Capping Layer

5.2.1 Minor Works

Minor works are considered works that require minimal disturbance of the capping layer and comprise of activities such as:

- Maintenance works at surface level only such as filling in of cracks, patching of holes or small-scale replacement of sections of materials where erosion has occurred; and
- Landscaping works such as mowing, shallow planting, mulching, raking leaves, removal of weeds (no tree species will be allowed to become established). Includes works where direct contact with the capping materials is possible, but no contact with the underlying retained soils or contact with the geotextile marker layer is possible (i.e., generally covers works within upper 0.2m of cap).

It is considered that any works that would be carried out in the near future would only constitute *Minor Works*. That is, at the time of writing, the current land zoning and lack of proposed development, would limit any works to general maintenance of the site such as mowing, landscaping, weed control and similar activities.

5.2.2 Major Works

Major works comprise larger scale disturbance to the capping and the underlying materials and comprise activities such as:

- Any works across the Asbestos Encapsulated Area during which direct contact with the subsurface soils or contact with the geotextile marker layer, is possible (i.e., generally covers works required >0.2m of the cap surface); and
- Installation and/or maintenance of sub-surface services, such as water, electricity, stormwater, surface drainage and telephone.

It is considered any development of the site will be considered *Major Works*. As indicated previously, at the time of writing, no development or landuse is proposed at the site. Once landuse(s) and/or development is proposed, Major Works are considered likely to occur.

As such, it is envisaged future proposals will be developed in close consultation with BSC to ensure they:

- are complementary to the passive management of the site;
- will not impact on the integrity of the capping (i.e. Asbestos Encapsulated Area); and
- will not conflict with the validation statement.

5.2.3 Vegetation

Vegetation such as grasses, groundcovers or small shrubs can be utilised to help stabilise the capping. Such vegetation should be completed by either seeding (includes importation of suitable topsoils) or instant turf so to avoid disturbance to the cap. Small shrubs, if utilised, should be planted as tube stock into suitable imported topsoil/growing media.

The planting of vegetation likely to cause root penetration of the geotextile fabric within the capping (i.e. Asbestos Encapsulated Area) is to be avoided.

5.3 Control Measures for Future Activities

As detailed above, *Minor Works* involve activities such as mowing or landscaping whereby the works are unlikely to disturb capping materials greater than 0.2m in depth and thereby do not require specific controls. It is considered in the immediate future (up to 2-3 years) only site maintenance works would occur and during this time, the site will remain in the ownership of BSC.

Where *Major Works* are required, additional control measures may be required depending on the scope of the works. *Major Works* are considered likely for a range of future proposals but also unforeseen events such as a major rainfall event causing significant erosion.

Whilst it is not possible to assess the impacts from all future activities as possible development are yet to be proposed, it is possible to consider exposure scenarios likely to be associated with a range of general maintenance and intrusive works (refer **Table 5-1**).

5.4 Specific requirements for those working with Asbestos Impacted Materials

Asbestos containing materials are known to be present on the site as friable asbestos in soils underlying the marker layer across the Asbestos Encapsulated Area of the former buildings of the hospital. Work involving any breaches of the barrier (>0.2m) and marker layer (i.e. major works) will require supervision by a Class A licensed asbestos contractor. The works will be undertake using procedures available in up-to-date guidelines [e.g. Code of Practice – Excavation Work (SafeWork Australia 2014); Managing Asbestos in or on Soil (WorkCover NSW (2014)] and the following site-specific procedures:

- All site workers shall be inducted to the site and made aware of the procedures outlined in this EMP;
- The Asbestos work area shall be defined and clearly marked. A 10m exclusion zone shall be established around the work area;
- Asbestos Warning signs are to be erected;
- Workers and visitors to the site will be made aware of the friable asbestos contamination during the site induction and tool box meetings. Only authorised individuals shall enter the work area which must contain a perimeter barrier to restrict entry;
- All personnel working within the Asbestos work area shall wear a P2 class half face respirator, disposable gloves and coveralls which provide adequate protection against fibre penetration whilst completing works;
- A decontamination area shall be established within the Asbestos work area for the removal and disposal of PPE before workers leave the work area. Personal decontamination must be undertaken each time a worker leaves the works area and at the completion of the works. All disposable PPE shall be disposed of as asbestos waste;

- Static air monitoring at a minimum of three (3) locations surrounding each asbestos work area and with consideration to neighbouring receptors shall be undertaken in accordance to guidelines current at the time of works (e.g. Guidance Note on the membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition) for the duration of the works.

At the completion of the works, the capping material is to be reinstated.

Table 5-1. Control Measures

Activity	Possible Risk to the Site Users	Possible Risk to the Environment	Control Measures
Minor Works (including current site maintenance)	Inhalation and skin contact with soils potentially containing contaminants (though considered unlikely)	Low risk of runoff. However, may impact stormwater system if not appropriately contained.	• No eating, drinking, smoking; avoid contact with soil (wear gloves); wash hands and clothes after work and before eating or smoking. • A P2 face mask should be used if dusty conditions develop. Dust generation should be controlled by dampening the materials. • Where the integrity of the capping has been compromised such that the required repairs are considered to be Minor Works, an exclusion zone must be established around the impacted area to preclude exposure to the subsurface by users of the Site until such time that repairs can be completed. The exclusion zone is to established by using physical barriers such as bollards, cones, tape or mesh. • If any materials require removal from the site, ensure all excavated materials are disposed off-site in accordance with NSW EPA Waste, Classification Guidelines or equivalent and disposal to a facility licensed by NSW EPA to receive the class of waste material. Records of disposal to be maintained and recorded in a materials tracking register.
Major Works (including any proposed development of the site)	Ingestion, inhalation and skin contact with fill materials containing contaminants. Unexpected finds	Potential for runoff / leaching from contaminated soil to impact surrounding land and/or waterways, if not appropriately contained.	• No eating, drinking, smoking; • Wear appropriate PPE including latex gloves, hard-hat, steel-toed boots, high-visibility vest and safety glasses during manual handling of soil/groundwater in an excavation and in stockpiles. • Where the integrity of the capping has been compromised such that the required repairs are considered to be Major Works, an exclusion zone must be established around the impacted area to preclude exposure to the subsurface by users of the Site until such time that repairs can be completed. The exclusion zone is to established by using physical barriers such as bollards, cones, tape or mesh. • Wash hands and clothes after work. • Prevent dust by dampening materials prior to and during excavation. • Develop safety documentation for works.

Activity	Possible Risk to the Site Users	Possible Risk to the Environment	Control Measures
			• If materials require removal off-site, ensure all excavated materials are disposed off-site in accordance with NSW EPA Waste, Classification Guidelines or equivalent and disposal to a facility licensed by NSW EPA to receive the class of waste material. Records of disposal to be maintained and recorded in a materials tracking register. • In the event of unexpected finds that cannot be managed/controlled in the manner set out above, works must cease immediately. If deemed necessary by the Owner a suitably qualified environmental consultant will need to conduct an inspection and provide a recommendation of what works are required to control/manage the unexpected find in accordance with the relevant NSW EPA endorsed guidelines, NSW regulations and legislation.

5.5 Dust Suppression

The objective of dust management is to minimise the potential for asbestos fibres to be released to the atmosphere by excavation works within Asbestos Encapsulated Area. Works must be conducted in a manner that mitigates dust generation. Potential sources of dust generation include:

- Minor and Major excavations;
- Loading of soil on or off trucks; and
- Wind movement across stockpiled material and exposed soil areas.

To mitigate risk from dust generation, the following is recommended:

- Undertake regular dust inspections when excavations in the Asbestos Encapsulated Area is occurring;
- Ensure all exposed soil and any vehicle routes are regularly dampened to minimise dust generation;
- Monitor dust conditions during maintenance works where stockpiles are made, or where bare earth is exposed;
- Plan activities in light of forecast weather conditions and cease working in high wind conditions;
- A water supply should be available and used to dampen all bare earth;
- Any stockpiles should be covered; and
- Personnel working in areas during potential dust generating works are to wear the appropriate personal protection equipment (PPE).

5.6 Sediment and Erosion Control

It is important that sediment and erosion is controlled during any excavation works within the Asbestos Encapsulated Area (or nearby that might result in surface waters flows onto the area).

The following provides some guidance for management of sediment and erosion controls at the site:

- Runoff water, which has not been in contact with any contaminated material, is not of concern.
- Any surface water that comes into contact with contaminated soil must be collected and tested prior to disposal or discharge.
- Temporary silt fencing, sandbags and/or hay bales must be installed to prevent offsite sediment to ensure compliance with the Protection of the Environment Operations Act 1997 (POEO Act), which would come into effect if pollution migrates offsite.
- During the transportation of any soil to or from site, care must be taken so that soil is not deposited on nearby roads.
- Trucks should be loaded on sealed or clean surfaces where possible and covered before leaving site.

- Contractors shall monitor the exit points from site and any evidence of soil being transported offsite on truck tyres must be investigated immediately and corrective actions implemented.
- Stockpiled soil which is awaiting offsite disposal or reinstatement into the excavation should be covered.

5.7 Soil Disposal

Any soil generated at site which requires disposal should be stockpiled and subsequently classified by an appropriately qualified environmental consultant for disposal.

A qualified consultant shall prepare a waste classification letter for the receiving waste facility as per the NSW EPA, 2014 Waste Classification Guidelines Part 1: Classifying Waste. Once classified, the material can be disposed of only by appropriately licensed transportation contractors to an appropriately licensed facility.

At all stages appropriate documentation should be maintained including but not limited to:

- Waste classification report;
- Waste consignment documentation; and
- Landfill disposal dockets.

5.8 Imported Fill

Only certified landscaping products or virgin excavated natural material (VENM) or Resource Recovery Exemption Order (NSW EPA 2014), such as excavated natural material (ENM) are to be used on site.

Certification of material should be provided to an appropriately qualified environmental consultant to ensure compliance with the requirements have been met.

5.9 Unexpected Finds Protocol

For works both within or outside the extent of the Asbestos Encapsulated Area, an Unexpected finds protocol is to be developed. Unexpected finds include Buried Structures and Waste (including Asbestos).

In the unlikely event that buried structures or materials are encountered during site works, the structure(s)/buried waste also is to be managed/removed as described below. Additional management is required in the event of Asbestos being discovered and works should cease until further appropriate methodologies are developed.

a. Upon discovery of structure and/or buried waste, works are to cease immediately and the site foreman is to be notified and the area barricaded;

b. An Environmental Consultant is to be notified to inspect the area and confirm the presence and type of structure and/or waste and to determine the extent of remediation works to be undertaken. A report detailing this information would be compiled and provided to the Client/site owner and the site manager;

c. Excavate and stockpile impacted materials (based on field observations) for classification;

d. Validation of the remedial pit by a qualified environmental consultant for the contaminants of concern at appropriate sampling densities (including QA/QC sampling and analysis);

e. If required, ”chase out’ all of materials in the remediation pit identified to be impacted by contaminant of concern, and further validation sampling and analysis as required to assess appropriate removal of impacted materials;

f. Waste classification and off-site disposal of impacted materials in accordance with guidelines

g. Inclusion of validation, waste classification and disposal documents (including landfill dockets) in the validation report.

5.10 Reinstatement of Capping Layer

Following any excavations that have disturbed the capping layer, reinstatement is required to include the following:

- Capping materials used are to meet original technical specifications (GreenTec Consulting 2022a);
- Capping materials must be reinstated to their original survey levels;
- Document works and provide updated reference levels to ensure that capping thickness requirements have been met;
- Any damage to the geotextile marker barrier is to be repaired prior to reinstatement of the capping materials;
- If future works do not result in the installation of pavement (i.e. remain unpaved), any vegetative material removed during works is to be reinstated in order to stabilise the capping materials;
- Provide photographic evidence as a record of works;
- Where material has been removed from the capping layer the reinstated capping is to be resurveyed to ensure compliance with the minimum capping thickness.

5.11 Reporting of Complaints and Incidents

Complaints and environmental incidents are required to be notified to the Owner of the site as soon as practicable after a complaint has been made or an environmental incident has occurred. If appropriate, and following the Site Owner’s instructions, notification may need to be made to the applicable regulatory authority.

If a complaint is made by a member of the public or by any other person with respect to any environmental management or control issue either during “Minor Works” or during “Major Works” or at any other time, the site is to be inspected by the owners representative. If deemed necessary corrective action is to be undertaken as soon as practicable. The Owner of the site is responsible for ensuring corrective action(s) are undertaken.

Similarly, if an environmental incident occurs that has given or may give rise to pollution of soil, air or waters, appropriate corrective action(s) is required to be undertaken as soon as practicable.

Records of complaints and incidents are required to be entered into a register to be developed for the Site, but only after corrective action has been taken and the Site Owner has been notified.

While BSC remains the owner the following contact details are provided:

Corporate and Community Services

Manager Corporate Services - Governance Services

02 6626 0000 (Business Hours)

02 6622 7022 (After hours)

Or 'Report It' online form: https://www.byron.nsw.gov.au/System-pages/Report-it-to-Council

5.12 Records

Records are to be collated and kept by the owner and any facilities/maintenance staff and should include the following:

- EMP variations and distribution list;
- Training and induction records;
- Complaint records;
- Incident records;
- Routine inspection reports;
- Penetration inspection reports;
- Non-conformances and corrective and preventative action reports;
- Any accredited asbestos assessor report including but not limited to, clearance certificates, asbestos air monitoring results and the like; and
- Any other report completed (e.g. qualified contamination contractor report such as waste classification result).

6. Summary

The EMP relies on regular monitoring of the Asbestos Encapsulated Area to ensure the ongoing protection of current and future site users and the environment.

As such, it is envisaged future proposals will be developed in close consultation with BSC to ensure they:

- are complementary to the passive management of the site;
- will not impact on the integrity of the capping (i.e. Asbestos Encapsulated Area); and
- will not conflict with the validation statement.

Given the COC (Asbestos) it is considered this EMP is required to be implemented into perpetuity. That is, while site remediation is a possible scenario at the time of writing this is considered unlikely due to the financial viability of this option. If remediation was to occur, this EMP would become invalid.

Changes in site uses is considered likely and any proposed development needs to consider the residual contamination at the site and be designed in accordance with the Remedial Action Plan (RAP) (Melaleuca Group 2021c). Future development needs to consider, and where necessary, revise and modify this EMP as required.

Changes as a result of:

- Change in Site use(s); or
- Redevelopment of the Site is proposed; or
- A major non-conforming event occurs,

must be completed by a suitably qualified and experienced environmental consultant and requires reassessment to ensure consideration has been given to the encapsulated Asbestos and that any changes to the site will not increase the risk of exposure to site users. In these circumstances it is also required a Site Auditor accredited under the CLM Act is to be involved.

A summary of monitoring required for the implementation of this EMP is provided in **Table 6-1**.

Table 6-1. Summary of Monitoring Requirements for Asbestos Encapsulation Area

Activity	Location	Monitoring Frequency	Monitoring Parameter	Performance Criteria	Documentation
Integrity of capping layer	Refer **Figures A3** and **A6, Appendix A**	Annual Routine inspections[1] During and following any scheduled works (minor or major works) Irregular inspections (e.g. after major inclement weather event such as 100mm rainfall in 24 hrs)	Visual inspection of capping layer Visual inspection of geotextile barrier (if applicable) Obtain survey data to establish and adapt as necessary to maintain capping thickness during works.	• No significant damage or erosion to capping. • No significant damage to geotextile barrier (if applicable). • Survey reference levels indicate sufficient capping remains insitu to provide effective barrier. Note: Rectifications works need to be implemented as soon as practicable depending on the required works. It is envisaged that the following would occur: • within 48hrs, rectification works have been implemented to stabilise the surface of the capping to minimise any further damage and control the immediate risk; and • within three (3) weeks, repairs are completed which are consistent to the capping specification.	Performance checklist Photographs Survey data

Activity	Location	Monitoring Frequency	Monitoring Parameter	Performance Criteria	Documentation
Works beneath geotextile barrier (Asbestos)	Refer **Figures A3** and **A6, Appendix A** Excavation and stockpiling of materials	Daily during works program	Works lead by friable licenced asbestos removalist Works area clearly identified and fenced off Dust controls implemented for excavation and stockpiles Sediment and erosion controls implemented Air monitoring Waste disposal – appropriate assessment, classification and waste disposal location. Obtain survey data to establish and adapt as necessary to maintain capping thickness during works.	• Works completed in accordance with agreed SWMS (developed with regard to appropriate guidelines and legislation) • WorkCover Notification (if licenced work) • Waste Classification report (if waste generated)	Contractor and consultant reports Waste tracking documentation
Imported materials	Site	As required during works program	For materials used for replacing/repairing capping: Certified as meeting Specifications (GreenTec Consulting 2022a) For all other materials: Certified landscape products Certified ENM or VENM	• NSW EPA waste guidelines/ NSW EPA Resource Recovery Orders	Certificates or Verification Report (e.g. ENM/VENM)

[1] Owner to ensure an appropriate checklist is developed for inspections to ensure for practical recording of monitoring inspections

7. References

ENV Solutions (2017). HAZMAT REPORT Mullumbimby & District War Memorial Hospital 1 -3 Azalea Street Mullumbimby NSW 2482 (November 2016 – March 2017).

ENV Solutions (2019a). Limited Underground Storage Tank (UST) Removal Validation Report. Tweed Coast Demolition and Excavation Former Mullumbimby Hospital. 1 -3 Azalea Street Mullumbimby NSW 2482 (September 2019).

ENV Solutions (2019b). Detailed Site Investigation For: Tweed Coast Demolition and Excavation Mullumbimby & District and War Memorial Hospital A Block (December 2019).

ENV Solutions (2020a). Final asbestos in soil validation – existing C Block footprint Mullumbimby Hospital (18th February 2020).

ENV Solutions (2020b). Mullumbimby Hospital - Capping of footprint. Letter to Tweed Coast Demolition and Excavation (TCDE) dated 27th April 2020.

GreenTec Consulting (2021a). Basis of Design Review – Capping Design Letter to Melaleuca Group dated 29th September 2021.

GreenTec Consulting (2021b) Byron Shire Council Former Mullumbimby Hospital Site Capping Construction – Construction Quality Assurance Plan (20th December 2021).

GreenTec Consulting (2022a). Byron Shire Council Former Mullumbimby Hospital Site Capping Construction Technical specification (12th April 2022)

GreenTec Consulting (2022b). Byron Shire Council Former Mullumbimby Hospital Site Capping Construction – Construction Quality Assurance Report (18th October 2022).

GreenTec Consulting (2022c). Review of Block A Capping Works for the Former Mullumbimby Hospital Site. Letter to Byron Shire Council dated 7th December 2022.

Melaleuca Group (2020). Preliminary Site Investigation for Former Mullumbimby Hospital Part of Lot 188 DP728535, Lot 138 DP755722 and Lot 1 DP1159861, 1-3 Azalea St, Mullumbimby NSW 2482 (dated 3rd September 2020).

Melaleuca Group (2021a). Detailed Site Investigation for Former Mullumbimby Hospital Part of Lot 188 DP728535, Lot 138 DP755722 and Lot 1 DP1159861, 1-3 Azalea St, Mullumbimby NSW 2482 (dated 9th February 2021).

Melaleuca Group (2021b). Detailed Site Investigation for Asbestos at 2 Left Bank Rd Mullumbimby NSW 2482 (Lot 1 DP43806 and Lot 2 DP552246).

Melaleuca Group (2021c). Remedial Action Plan for Former Mullumbimby Hospital Part of Lot 188 DP728535, Lot 138 DP755722 and Lot 1 DP1159861, 1-3 Azalea St, Mullumbimby NSW 2482.

Melaleuca Group (2022a). Groundwater Investigations for Former Mullumbimby Hospital Part of Lot 188 DP728535, Lot 138 DP755722 and Lot 1 DP1159861, 1-3 Azalea St, Mullumbimby NSW 2482 (dated 1st February 2022).

Melaleuca Group Pty Ltd (2022b) Groundwater Investigations, For Former Mullumbimby Hospital, Part of Lot 188 DP728535, Lot 138 DP755722 and Lot 1 DP1159861, 1-3 Azalea St, Mullumbimby NSW 2482 (dated 28th March 2022).

Melaleuca Group Pty Ltd (2022c) Review of demolition documentation for former Mullumbimby Hospital (letter to Byron Shire Council dated 9th December 2022).

Melaleuca Group Pty Ltd (2022d) Validation Report for Former Mullumbimby Hospital. Part of Lot 188 DP728535, Lot 138 DP755722 and Lot 1 DP1159861, 1-3 Azalea St, Mullumbimby NSW 2482.

National Environment Protection Council (NEPC) (1999) National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended in 2013. Available at https://www.legislation.gov.au/Details/F2013C00288. Referred to as NEPM.

National Environment Protection Council (NEPC) (1999), 'Schedule B(1) Guideline on Investigation Levels for Soil and Groundwater, National Environment Protection (Assessment of Site Contamination) Measure (NEPM) as amended in May 2013'. (NEPM 2013a).

Northern Rivers Regional Council (NRRC) (2007). Regional Policy for the Management of Contaminated Land.

NSW Environment Protection Authority (EPA) (2014). Waste Classification Guidelines. Part 1 Classifying Waste.

NSW Environment Protection Authority (EPA) (1995). Contaminated Sites – Sampling Design Guidelines. NSW EPA, Chatswood.

NSW Environment Protection Authority (EPA) (2015). Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997.

NSW Environment Protection Authority (EPA) (2017). Contaminated Land Management Guidelines for the NSW Site Auditor Scheme (3rd edition).

NSW Environment Protection Authority (EPA) (2020). Consultants reporting on contaminated land, Contaminated land guidelines.

NSW Environment Protection Authority (EPA) (2022). Practice note: Preparing environmental management plans for contaminated land.

SafeWork Australia (2016). Code of Practice - How to Manage and Control Asbestos in the Workplace. SafeWork Australia (2016) Code of Practice - How to Safely Remove Asbestos.

SafeWork Australia (2014). Code of Practice - Construction Work. SafeWork Australia (2015) Code of Practice - Excavation Work.

Western Australian Department of Health (2009). Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia.

WorkCover NSW (2011). How to Manage Work Health and Safety Risks.

WorkCover NSW (2014). Managing Asbestos in or on Soil.

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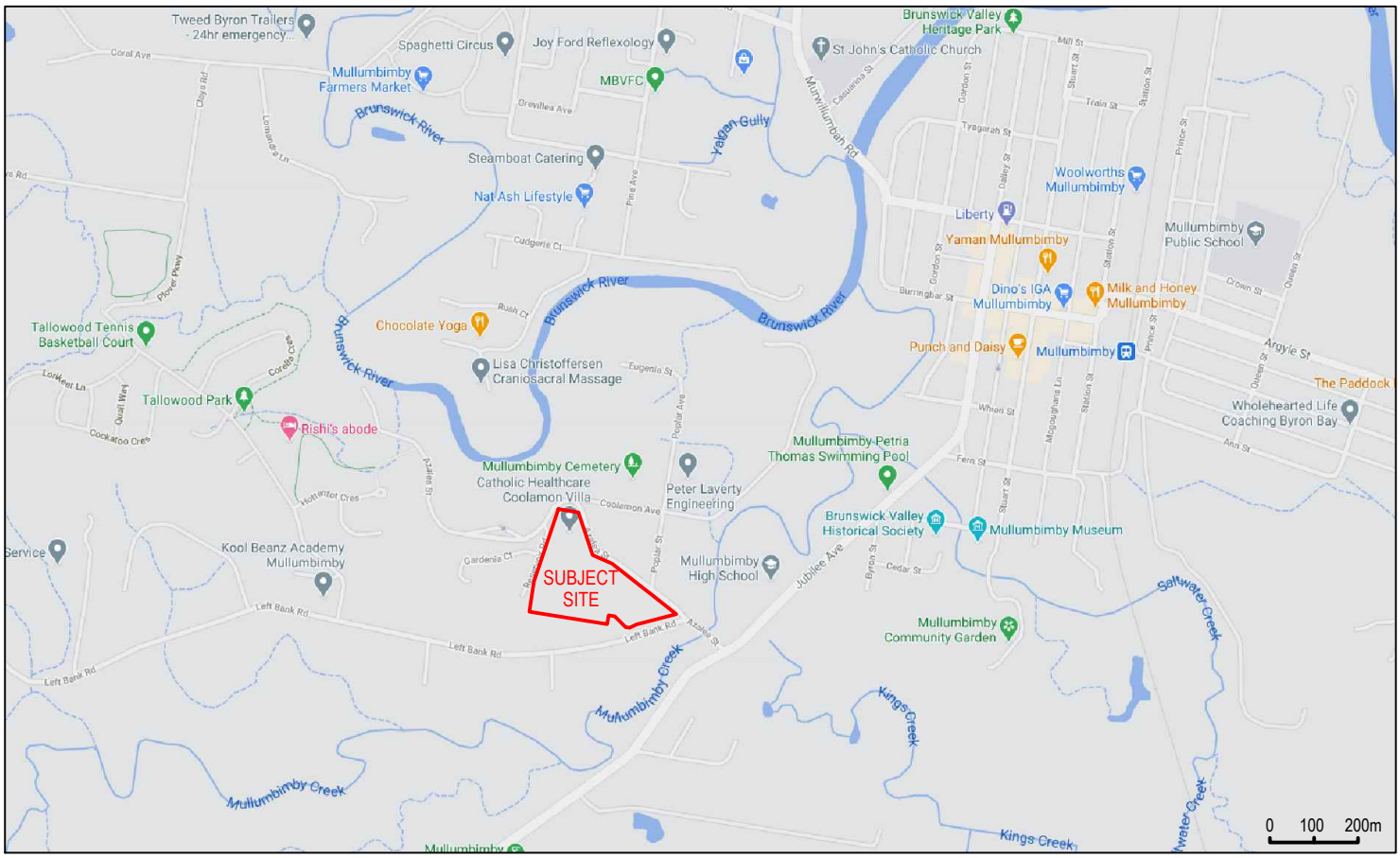
Appendices

Appendix A: Figures



NOTE: The Position of the Image is in an approximate location only. For an accurate location of existing features a detailed survey by a Registered Surveyor should be carried out.
SOURCE:
Image: *Google Maps*

Scale at A4	1:2000	Melaleuca Group Pty Ltd	Project: MULLUMBIMBY HOSPITAL SITE AZALEA ST & LEFT BANK RD MULLUMBIMBY NSW	Title: LOCALITY PLAN
Drawn	GC	Dr Melissa Van Zwieten		
Date	12.01.2021	Senior Environmental Scientist		Figure A1
Checked	MV	Mobile: 0427 628 847		
Dwg. No.	MG20002-Locality	melissa.vanzwieten@exemail.com.au		

St Vincent De Pauls
"Coolamon Villa"

Proposed Subdivision

Resource Centre

188
DP 728535

C Block

B Block

A Block

Underground Tank

AZALEA STREET

1
DP 1159861

Helipad
138
DP 755722

LEFT BANK ROAD

N

40 20 0 50 100

SCALE 1:2000 AT A4

SUBJECT SITE

NOTE: The Position of Aerial Image is in an approximate location only. For an accurate location of existing features a detailed survey by a Registered Surveyor should be carried out.

SOURCE:
Image: *-2015, https://maps.six.nsw.gov.au*

Scale at A4	1:2000
Drawn	GC
Date	03.01.2023
Checked	MV
Dwg. No.	MG20002-2015 HOS_b

Melaleuca Group Pty Ltd
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Senior Environmental Scientist
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Project:
MULLUMBIMBY HOSPITAL SITE
AZALEA ST & LEFT BANK RD
MULLUMBIMBY NSW

Title:
SITE PLAN WITH HOSPITAL LAYOUT
Figure A2

MGA

DISCLAIMER:
This plan was prepared to accompany a application to council and should not be used for any other purpose. The lots shown hereon are approximate only and may be subject to final survey and also to the requirements of council and any other authority which may have requirements under any relevant legislation. In particular, no reliance should be placed on the information on this plan for any financial dealings involving the land. This note is an integral part of this plan.

Asbestos Encapsulation Area

ENV Solutions Tank Pit Excavation Area (approximate location)

Note: The aerial image shown is overlaid in an approximate position only.

40 20 0 50 100 150 200

SCALE 1:2000 AT A4

Scale at A4	1:2000
Drawn	GC
Date	03.01.2023
Checked	MV
Dwg. No.	MG20002-AsbEnc

Melaleuca Group Pty Ltd
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Senior Environmental Scientist
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Project: **Mullubimby Hospital Site Azalea St & Left Bank Rd Mullumbimby NSW**

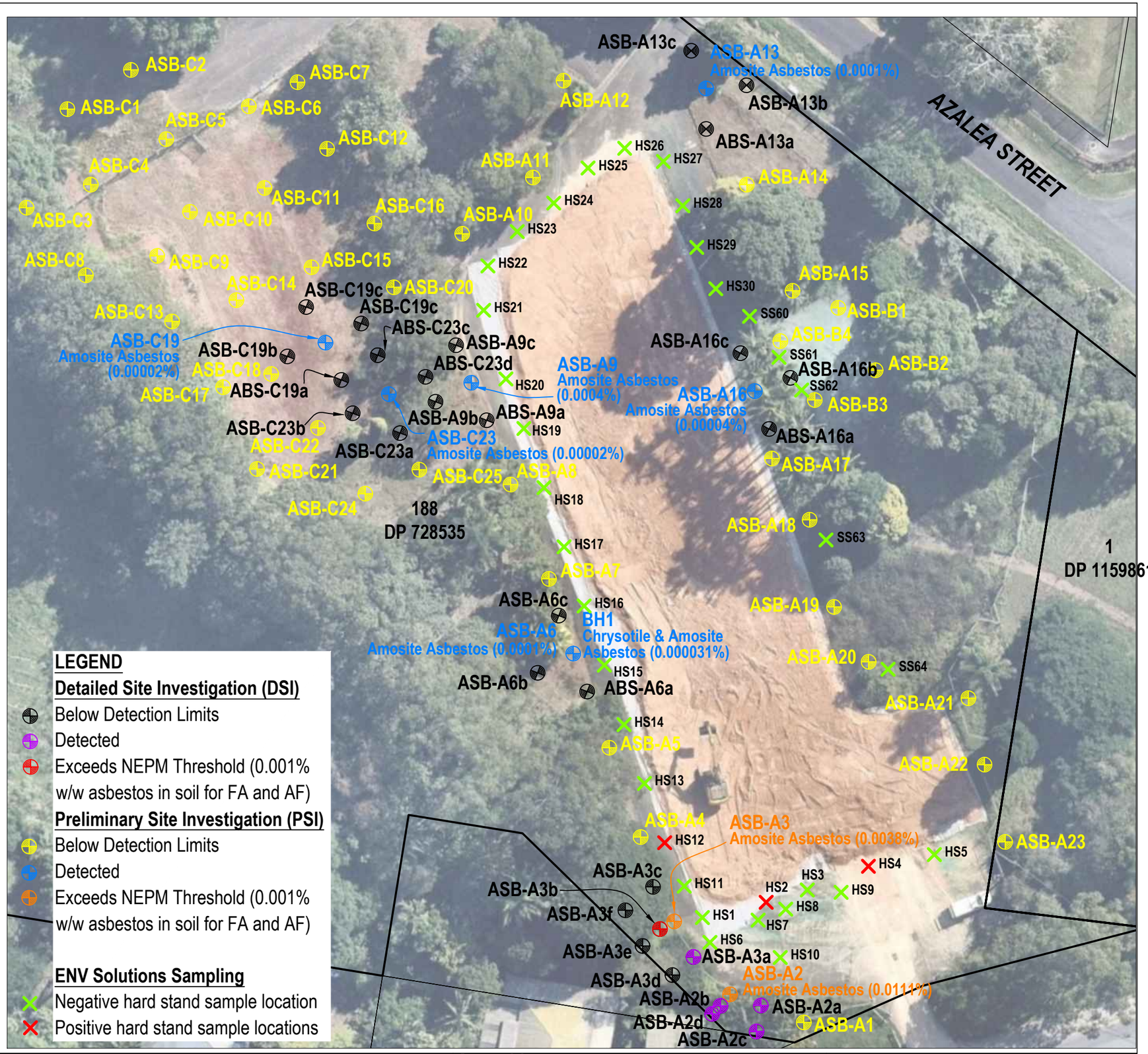
Title: **SITE PLAN - Asbestos Encapsulation Area** **Figure A3**

MGA

Sample Identification	Asbestos Identification	Estimated Approx weight of Asbestos in soil (% w/w)
DSI-ASB A2a 0-300mm	Chrysotile Asbestos Detected	0.0002
DSI-ASB A2b 0-300mm	Chrysotile Asbestos Detected	0.00004
DSI-ASB A2c 0-300mm	Chrysotile & Amosite Asbestos Detected	0.0001
DSI-ASB A2d 0-300mm	Amosite Asbestos Detected	0.00045
DSI-ASB A3a 0-300mm	Chrysotile Asbestos Detected	0.0001
DSI-ASB A3b 0-300mm	Chrysotile Asbestos Detected	0.01
DSI-ASB A3c 0-300mm	No Asbestos Detected	<0.001
DSI-ASB A3d 0-300mm	No Asbestos Detected	<0.001
DSI-ASB A3e 0-300mm	No Asbestos Detected	<0.001
DSI-ASB A3f 0-300mm	No Asbestos Detected	<0.001
DSI-ASB A6a 0-300mm	No Asbestos Detected	<0.001
DSI-ASB A6b 0-300mm	No Asbestos Detected	<0.001
DSI-ASB A6c 0-300mm	No Asbestos Detected	<0.001
DSI-ASB A9a 0-300mm	No Asbestos Detected	<0.001
DSI-ASB A9b 0-300mm	No Asbestos Detected	<0.001
DSI-ASB A9c 0-300mm	No Asbestos Detected	<0.001
DSI-ASB A13a 0-300mm	No Asbestos Detected	<0.001
DSI-ASB A13b 0-300mm	No Asbestos Detected	<0.001
DSI-ASB A13c 0-300mm	No Asbestos Detected	<0.001
DSI-ASB A16a-2 800-900mm	No Asbestos Detected	<0.001
DSI-ASB A16b-2 650-750mm	No Asbestos Detected	<0.001
DSI-ASB A16c-2 850-950mm	No Asbestos Detected	<0.001
DSI-ASB C19a 0-300mm	No Asbestos Detected	<0.001
DSI-ASB C19b 0-300mm	No Asbestos Detected	<0.001
DSI-ASB C19c 0-300mm	No Asbestos Detected	<0.001
DSI-ASB C19d 0-300mm	No Asbestos Detected	<0.001
DSI-ASB C23a 0-300mm	No Asbestos Detected	<0.001
DSI-ASB C23b 0-300mm	No Asbestos Detected	<0.001
DSI-ASB C23c 0-300mm	No Asbestos Detected	<0.001
DSI-ASB C23d 0-300mm	No Asbestos Detected	<0.001

RESULTS

Detailed Site Investigation (DSI)



SOURCE:
Aerial Map: NearMaps.
Cadastre: https://maps.six.nsw.gov.au

Design	MV	Scale at A3	1:500
Drawn	GC	Datum	NA
Date	05.02.2021	Filename	MG20002-Feb2021.dwg
Checked	MV	Approved	
Dwg. No.	MG20002-ASB_feb	Sheet No.	.
		Issue	B

DISCLAIMER:
This plan was prepared to accompany a application to council and should not be used for any other purpose. The lots shown hereon are approximate only and may be subject to final survey and also to the requirements of council and any other authority which may have requirements under any relevant legislation. In particular, no reliance should be placed on the information on this plan for any financial dealings involving the land. This note is an integral part of this plan.

Note: The aerial image shown is overlaid in an approximate position only.

0 10 20 30 40 50
SCALE 1:500 AT A3

Project: Mullumbimby Hospital Site
Azalea St & Left Bank Rd
Mullumbimby NSW

Title: **RESULTS - ASBESTOS**

Figure A4

MGA

LEGEND:

- BOUNDARY LINE
- BOUNDARY EASEMENT
- EXTENT OF PROPOSED CAPPING & MIN. EXTENT OF GEOTEXTILE MARKER LAYER
- EXTENT OF EXISTING CAPPING
- EXTENT OF CAPPING TOE
- DETECTED ASBESTOS (PSI)
- EXCEEDS NEPM ASBESTOS THRESHOLD (PSI)
- DETECTED ASBESTOS (DSI)
- EXCEEDS NEPM ASBESTOS THRESHOLD (DSI)
- POSITIVE HARD STAND ASBESTOS (ENVSolutions)

Design	CL	Scale at A3	1:500
Drawn	TS	Datum	mAHD MGA2020
Date	06/10/2021	Filename	MG20002-Aug22
Checked	MV	Approved	
Dwg. No.	.	Sheet No.	.
		Issue	D

DISCLAIMER:
This plan was prepared to accompany a application to council and should not be used for any other purpose. The lots shown hereon are approximate only and may be subject to final survey and also to the requirements of council and any other authority which may have requirements under any relevant legislation. In particular, no reliance should be placed on the information on this plan for any financial dealings involving the land. This note is an integral part of this plan.

SURVEY REFERENCE:
Wade Engineering Surveying (2021)
Lot 188 DP728535
Plan Number 21/1685 Dated 08/04/21 and 12/04/21

NOTES:
Asbestos Detection Locations are Indicative Only

0 5 10 15 20m

SCALE 1:500 @ A3

Project:
Mullubimby Hospital Site
Azalea St & Left Bank Rd
Mullumbimby NSW

Title:
CAPPING DESIGN AND CONTAMINATION EXTENTS
Figure A5

Underground Services

1. Underground Service Mains **have not** been located by Survey. Where service mains are shown with a corresponding depth then the mains have been located by a Qualified Service Locator and surveyed as directed.
2. The location of underground mains are shown diagrammatically only and has been plotted from records supplied by the relevant authority.
3. Where visible, Surface inspection pits and the like have been located by survey. Proponents, designers, builders, civil contractors and the like should make their own enquiries regarding underground services and not rely solely upon the survey information shown here-in.
4. Route location of underground services has been joined from surveyed surface points indicative of the appropriate service diagrams obtained from relevant service authorities where available, and accordingly, the location of the underground routes may not necessarily be accurate.
5. Depths of services are approximate only and subject to final location by a suitably qualified Underground Service Locator.
6. It is recommended that a suitably qualified Underground Service Locator be commissioned to locate all underground service mains prior to finalisation of construction drawings and prior to commencement of any works.
7. Where provided, Service diagrams must be checked for validity prior to commencement of any sub-surface work. Service diagrams and corresponding survey information shown here-in is current only at the time of survey. Proponents/Contractors must ensure they have current information.
8. Proponents/Contractors are required to undertake suitable service location techniques when operating within or around service locations shown here-in.
9. Proponents/Contractors have a Duty of Care in relation to underground services and RCS Group Australia accepts no responsibility for the damage or destruction to underground service mains or any resultant disruption to services caused by a lack of care exercised by a third party.

Survey Point Symbols

Height Above Subgrade

Line Styles

- Boundary
- Major contour
- Minor contour
- Top of Bank
- Bottom of Bank
- BSC Central Capped Area
- Design Limit

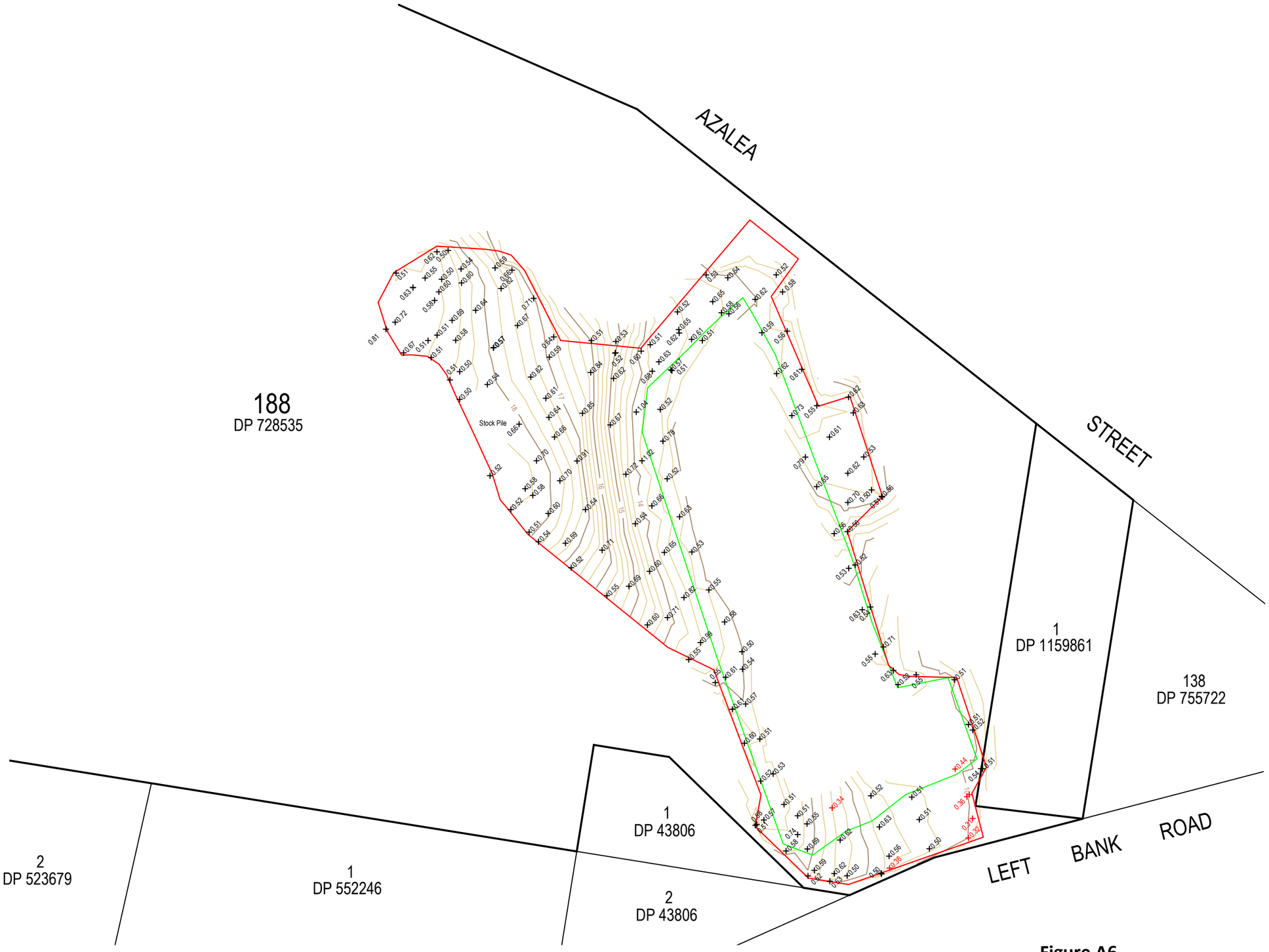


Figure A6

ISSUE	AMENDMENT DESCRIPTION	SURV	DATE	DRWN	DATE	CHK	DATE
01	ORIGINAL ISSUE	AR	16/08/22	IC	18/08/22	MJ	18/08/22

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IMPORTANT NOTES

- All areas and dimensions are subject to final Survey.
- Boundary corners have not been marked by survey. Prior to undertaking any construction works in proximity to the boundaries of the land/s shown within this plan it is recommended that the boundaries be fully surveyed and marked accordingly.
- The shape and size of survey point symbols shown on this plan are diagrammatic only.
- Further disclaimers are noted on the plan.
- Information contained within this plan has been prepared for a specific purpose only and may not be reproduced in whole or part without the express written authority of the author..

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CONSULTING SURVEYORS NATIONAL
PROFESSIONAL STANDARDS SCHEME
Liability limited by a scheme approved under Prosessional Standards legislation

0 10 20 30

GRID NORTH
MGA 2020
Zone 56

Reduction Ratio (A3) 1:750
Horizontal Datum Ground
Vertical Datum AHD
Vertical Origin PM 39224
RL 8.151

Capping Layer Conformance

Project: Mullumbimby Hospital Remediation			
Client: Synergy Resource Management Pty Ltd			Drawing No: 22020SP1
Contour Interval: Major: 1, Minor: 0.25	Locality: Mullumbimby	Parish: Mullumbimby	Issue No: 1 Sheet No: 1
	County: Rous	Local Government Area: Byron	Original Sheet Size: A3

Appendix B: Photographs of Site

Plate B1. Drone photography of Site (4th August 2022)

Plate B2. Drone photography of Site (4th August 2022)

Plate B3. Southerly view of encapsulation area (16th August 2022) (grass area is with Block A)

Plate B4. Westerly view of northern section of encapsulation area at end of Block A with Block C in background (16th August 2022)

Plate B5. Southerly view of eastern section of encapsulation area with part of Block B visible (to left) (16th August 2022)

Plate B6. Northerly view of western section of encapsulation area (overlooking Block A) (16th August 2022)

Plate B7. Easterly view of southern section of encapsulation area (overlooking Block A) (16th August 2022)

Plate B8. Northerly view of encapsulation area - overlooking Block A (grassy area) with Block C in top left and Block B in right (near tree) (16th August 2022)