Appendix G36

Long-Term Environmental Management Plan

For Hunter Central Logistics Estate

DRAFT LONG-TERM ENVIRONMENTAL MANAGEMENT PLAN STAGES 1, 1A AND 1B DEVELOPMENT

1134 JOHN RENSHAW DRIVE, BLACK HILL

Prepared for PPIP PTY LTD C/- BROADEN MANAGEMENT

Prepared by RCA AUSTRALIA

RCA ref 17009-204/1

JULY 2024

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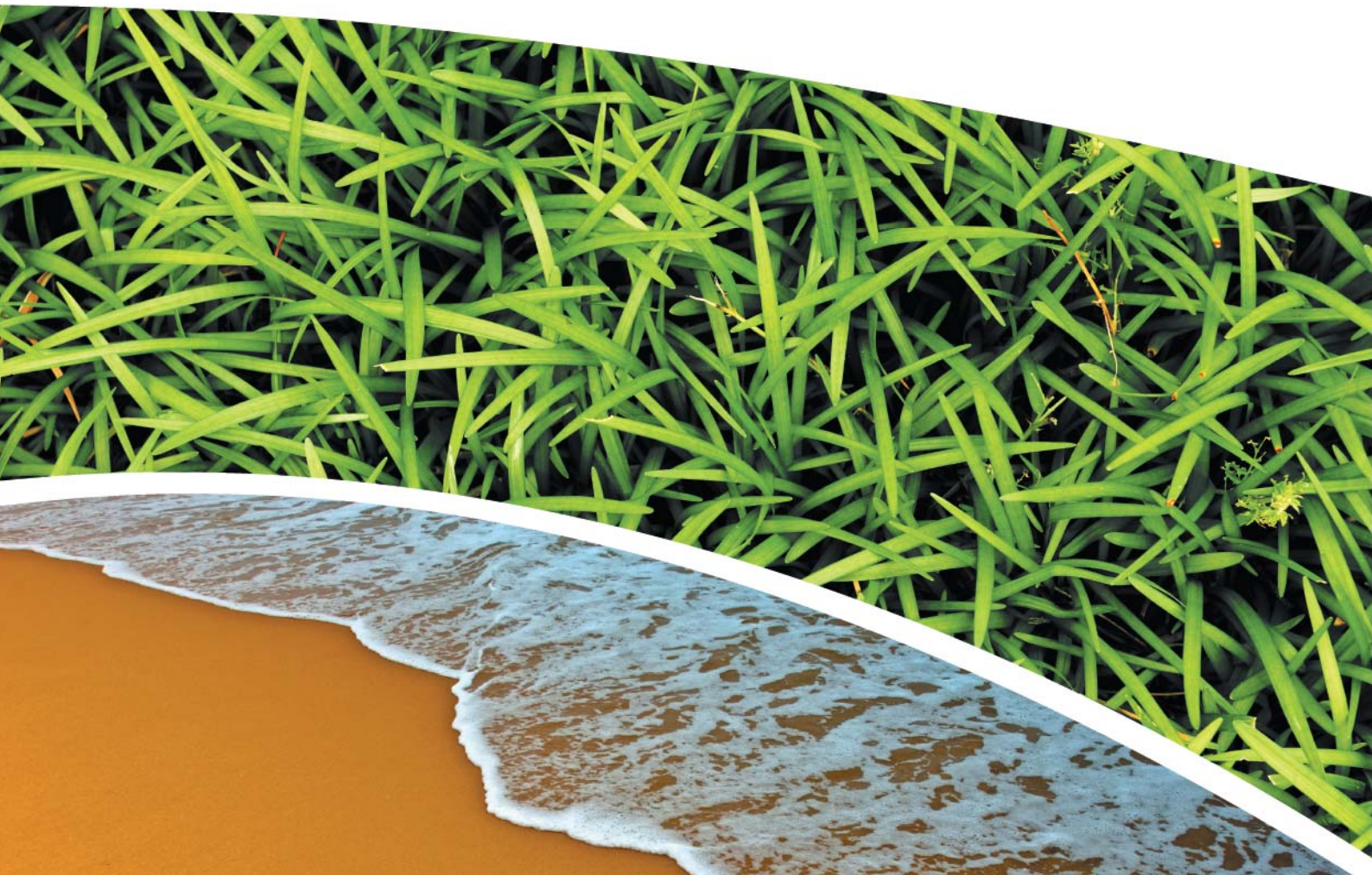

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/1	1	Electronic report	RCA – job archive	25.07.24

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RCA ref 17009-204/1

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Geotechnical Engineering
Engineering Geology
Environmental Engineering
Hydrogeology
Construction Materials Testing
Environmental Monitoring
Noise & Vibration
Occupational Hygiene

PPIP Pty Ltd C/-Broaden Management
Suite 1102
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25 July 2024

Attention: Steve McLeod (PPIP Pty Ltd & Broaden Management)
CC: Vanessa Morschel (Barr Planning)
CC: Fiona Robinson (Ramboll Australia Pty Ltd)
CC: Craig Goodbody (Ramboll Australia Pty Ltd)

DRAFT LONG-TERM ENVIRONMENTAL MANAGEMENT PLAN
STAGES 1, 1A AND 1B DEVELOPMENT
1134 JOHN RENSHAW DRIVE, BLACK HILL, NSW

1 INTRODUCTION

This draft long-term environmental management plan (LTEMP) details the requirements for management following the completion of remediation at part of 1134 John Renshaw Drive, Black Hill NSW, known at the time of writing as Stages 1, 1A and 1B of Lot 1, DP1260203.

The site was formerly part of a former poultry farm and comprises (at the time of writing, proposed) ten (10) Lots: seven (7) (Lots 101-107) for commercial / industrial purpose, two (2) (Lots 110-111) for operational infrastructure (stormwater pond and electrical substation), two (2) parts of one (1) (Lot 108) retained as environmental land.

The development was assessed as State Significant Development and, based on previous investigations (Ref [1] and [2]) which identified the presence of contamination at the site, the Secretary's Environmental Assessment Requirements SEARs (Ref [3]) required:

- An assessment of site suitability under the provisions of State Environmental Planning Policy (Resilience and Hazards) 2021 (Ref [4]).
- A site investigation report and remediation action plan (RAP).
- Provision of a Site Audit Statement for any completed remediation works and verification the site has been made suitable for its intended use.

The required site investigation report (Ref [5]) and RAP have been completed (Ref [6]). The remedial strategy comprises the sequestration of contaminated material within up to two (2) containment cells and as such will require the implementation of a management plan into the future. This draft LTEMP has therefore been prepared, prior to any remediation, to facilitate the Site Audit Statement as required by the SEARs (Ref [3]).

The site to which this draft LTEMP applies is presented in **Figure 1** below. There is a sewer alignment presented however as at the time of writing it will not include any contaminated soils it has not been included in the definition of the 'site' for the purpose of this draft LTEMP.

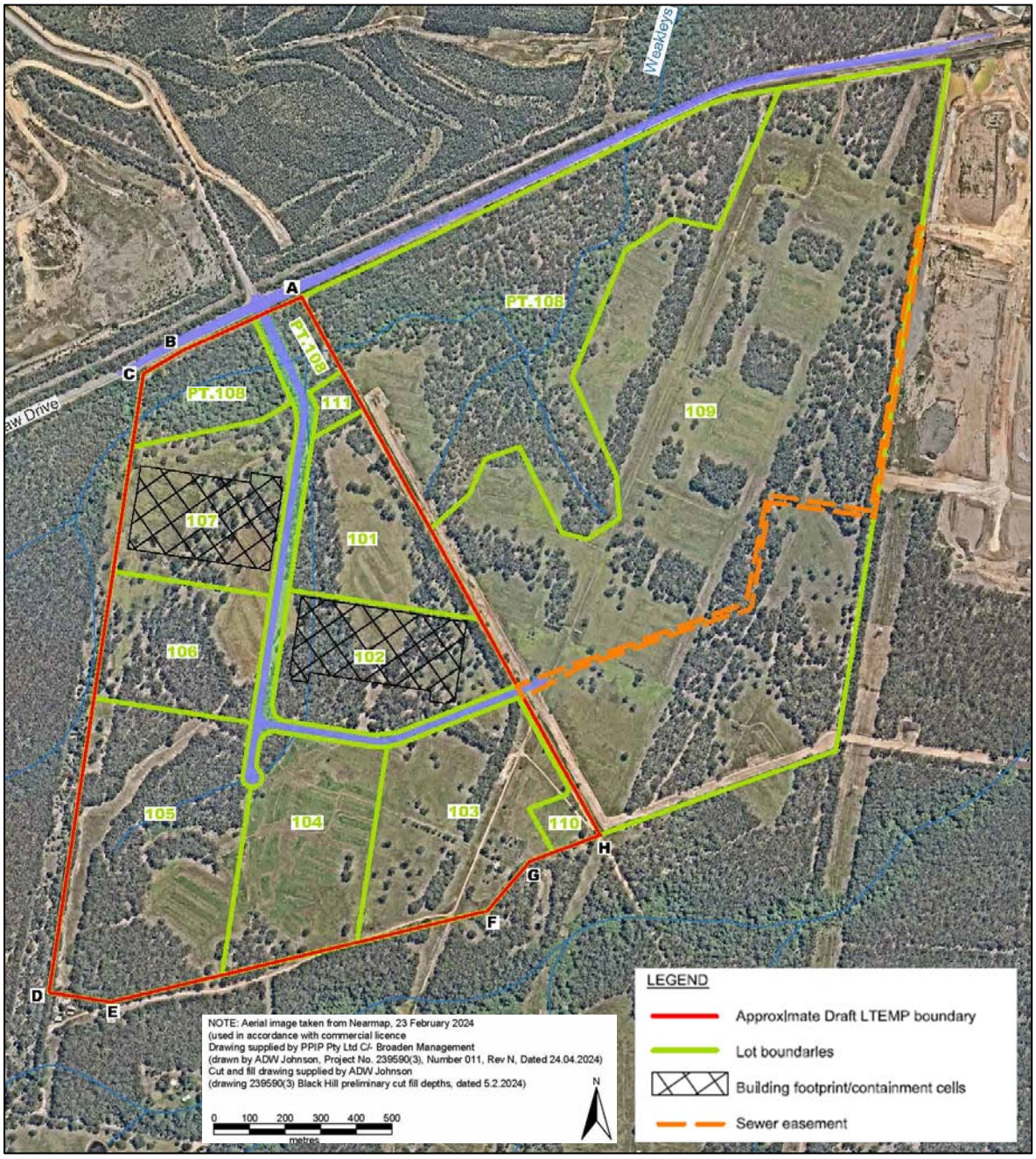

Figure 1 *Defined Area of the Site (in red) to which this draft LTEMP applies.*

This draft LTEMP is a stand-alone document which details management requirements to protect human health and the environment, and to ensure the remedial strategy is not compromised during the operations of the site in the future. Reference should be made to the validation report which will be completed after remediation for details of soil results from previous investigations, remediation and validation works. Providing that the controls within this draft LTEMP are employed and maintained, exposure to and/or contact with the contaminated soil will not occur during normal use of the site.

Management controls requirements are related to:

- Awareness that this draft LTEMP applies to the site. No further disclosure of the detail in this draft LTEMP is considered to be necessary except to personnel who will be undertaking excavation works within the containment cell(s).
    - Onsite workers and visitors entering the site are not considered to require information relating the draft LTEMP as long as operating procedures (refer to **Section 6.3**) are implemented.
- Maintenance of the extent of the capping layer within the containment cell(s) such that adequate cover (nominally 0.5m minimum) remains over the marker layer to prevent exposure and / or disturbance of underlying material. It is noted that at the time of writing the cell(s) is proposed to be situated under building(s) such that the concrete slab will be the surficial layer over the sequestered material.
- Restriction of excavations below the marker layer. No excavations are to be undertaken on site without the implementation of appropriate management measures as detailed in this draft LTEMP.
- Prohibition on the use of groundwater unless an assessment has been undertaken on its suitability for use.

This draft LTEMP has been prepared at the request of Steve McLeod from PPIP Pty Ltd, the proponents of the development.

As per the SEARs (Ref [3]) requirement, this draft LTEMP will be reviewed, and the final version will be endorsed by the appointed NSW EPA accredited contaminated lands site auditor, Fiona Robinson.

2 PURPOSE AND OBJECTIVES

The purpose of this draft LTEMP is to facilitate the provision of the Site Audit Statement in accordance with the requirement of the SEARs (Ref [3]) by outlining the expected environmental works, measures and controls, management, notification and enforceability requirements for the retained contamination at the site. Implementation as per this draft LTEMP, or as otherwise amended in the final, auditor endorsed LTEMP following remediation, will be required for the protection of human health and the environment with respect to the contaminated soil sequestered within the containment cell(s).

Specific objectives of this draft LTEMP are to:

- Ensure that the following are not exposed to unacceptable risks posed by sequestered soils:
    - Owners and/or tenants / employees of the commercial / industrial Lots.
    - Workers undertaking maintenance on utilities and others that may periodically require access.
- Ensure that there are no environmental risks posed by the sequestered soils.
- Provide standard operating procedures for undertaking works in compliance with external environmental policies.
- Provide prescriptions for mitigation measures to ensure that human and ecological impacts of the works are minimised and not significant.

- Identify personnel roles and responsibilities during any future proposed ground disturbance works.

The draft LTEMP is considered necessary and applies indefinitely until such time that the sequestered soil has been actively remediated. Should removal of management be sought, it will require the written approval of a suitably qualified professional, written concurrence from a NSW EPA accredited contaminated lands site auditor and Cessnock City Council.

Any proposed changes to the final auditor endorsed LTEMP which entails a reduction or lessening of any management or monitoring requirements will require concurrence from a NSW EPA accredited contaminated lands site auditor. However, any changes which act to increase the stringency of the final LTEMP may not need the involvement of an auditor.

3 SITE IDENTIFICATION AND DESCRIPTION

The site is at the time of writing is described as part 1134 John Renshaw Drive, Black Hill NSW and part Lot 1 DP1260203; these designators will be altered by the development. Additional site details are shown in **Table 1**, based on the expected status following completion of remediation.

Table 1 *Site Details*

<table>
<tr><td>Zoning</td><td colspan="3"> 
Current zoning (Ref [7]) comprises:
• E4 General Industrial (in purple).
• C2 Environmental Conservation (in orange).</td></tr>
<tr><td>Local government authority</td><td colspan="3">Cessnock City Council</td></tr>
<tr><td>Current use</td><td colspan="3">Commercial / industrial use.</td></tr>
<tr><td>Current site owner</td><td colspan="3">PPIP Pty Ltd.</td></tr>
<tr><td>Current site operator / lessee</td><td colspan="3">Pending.</td></tr>
<tr><td rowspan="10">Site coordinates</td><td colspan="3">Refer to Figure 1 above.</td></tr>
<tr><td>Point</td><td>Easting</td><td>Northing</td></tr>
<tr><td>A</td><td>369713.4520</td><td>6367745.5390</td></tr>
<tr><td>B</td><td>369474.9539</td><td>6367637.6192</td></tr>
<tr><td>C</td><td>369396.0387</td><td>6367589.7014</td></tr>
<tr><td>D</td><td>369204.4706</td><td>6366334.1876</td></tr>
<tr><td>E</td><td>369331.7282</td><td>6366314.8091</td></tr>
<tr><td>F</td><td>370093.6082</td><td>6366498.9752</td></tr>
<tr><td>G</td><td>376177.8968</td><td>6366598.8109</td></tr>
<tr><td>H</td><td>370318.1355</td><td>6366651.7028</td></tr>
<tr><td>Size of site</td><td colspan="3">97.57ha (89.524ha without Lot 108).</td></tr>
<tr><td>Land use to the:
North</td><td colspan="3">Mining (Donaldson Coal Ltd) to north (DP1126633) and northwest (Lot 81, DP627799), and adjoining industrial land to the northeast of the site (multiple Lot / DP).</td></tr>
<tr><td>South</td><td colspan="3">Remainder of former poultry farm (Lot 2 DP1260203) and residential land. Residential buildings immediately adjoin the southwestern corner.</td></tr>
<tr><td>East</td><td colspan="3">Residual land of Lot 1, DP1260203 and former commercial land / undeveloped bush land (Lot 30, DP870411) under construction for commercial development (no Lot / DP registered at time of writing).</td></tr>
<tr><td>West</td><td colspan="3">Vacant bush land, potentially mine buffer land (Lot 82 DP627799).</td></tr>
<tr><td>Nearest sensitive receptor (human health)</td><td colspan="3">Residents of the dwelling immediately adjacent the southwestern corner.
Black Hill Public School is across Black Hill Road approximately 800-1,000m to the southwest / south of the site.</td></tr>
<tr><td>Nearest sensitive receptor (environmental)</td><td colspan="3">Tributaries of Weakleys Flat Creek flows across the site; the Creek is situated in the northern portion of the site within the Environmental Conservation zoned land and flows to the north / northeast.
Viney Creek and associated tributaries are between 130-300m to the south / southeast of the site.</td></tr>
</table>

4 SITE BACKGROUND

4.1 SITE HISTORY

A historical review of previous investigations, the site and surrounding notifications, local council records, published local geology and hydrogeology, nearby registered groundwater bores and historical aerial photographs has been presented in the RAP (Ref [6]).

The site was occupied as part of a poultry farm from 1967 to 2003, with possible use for pig farming at some stage within the southwestern portion of the site, with a total of six (6) sheds within the boundary of the site and a further three (3) sheds within close proximity. Two (2) former areas of waste deposition (dead poultry carcasses, rotten eggs, building / demolition materials and laboratory wastes) are located within the site boundary with a third in close proximity, and other infrastructures within the site boundary included a Workshop, a Chemical Store, a Truck Wash and a Transpiration Area. Seven (7) ponds were situated within the site; six (6) of these have been fully filled and one has been filled partly. The majority of the structures associated with the farm were demolished from 2003 to 2009 (refer to **Figure 2** below). No documents were provided regarding the fate of wastes generated during the demolition, however indications of asbestos presented at multiple locations across the site.

Contamination within the soil comprised non-friable asbestos, microorganisms (total and thermotolerant coliforms, E. Coli and Enterococci) and metals (nickel and zinc). Lesser concentrations of hydrocarbons were also identified in areas of the site. The contamination appeared to be predominantly associated with the former poultry farm infrastructure however due to the variability in the distribution, along with the earthworks required to facilitate the development, the final remedial strategy (Ref [6]) as approved by the NSW EPA accredited contaminated sites auditor, comprised the:

- Removal of construction waste from the site to a licensed waste disposal facility.
- Sequestration of shallow soils within the area of bulk earthworks cut along with material from the two (2) waste dump areas and at other locations where contamination was identified into the containment cell(s).
- Placement of the marker layer across the surface of the contaminated soil / waste materials.
- Survey of the final placement of the marker layer.
- Placement of clean material excavated as part of the bulk earthworks cut, subject to verification of suitability in accordance with the RAP (Ref [6]), over the top of the marker layer to achieve design surface levels.
- Survey of the site to confirm capping depths above the marker layer had been achieved.
- Construction of building(s) over the top of the containment cell(s).

The pending validation report for the site will detail the verification that remedial works were undertaken in accordance with the remedial strategy.

No remedial works are anticipated to have been undertaken in relation to surface water or groundwater.

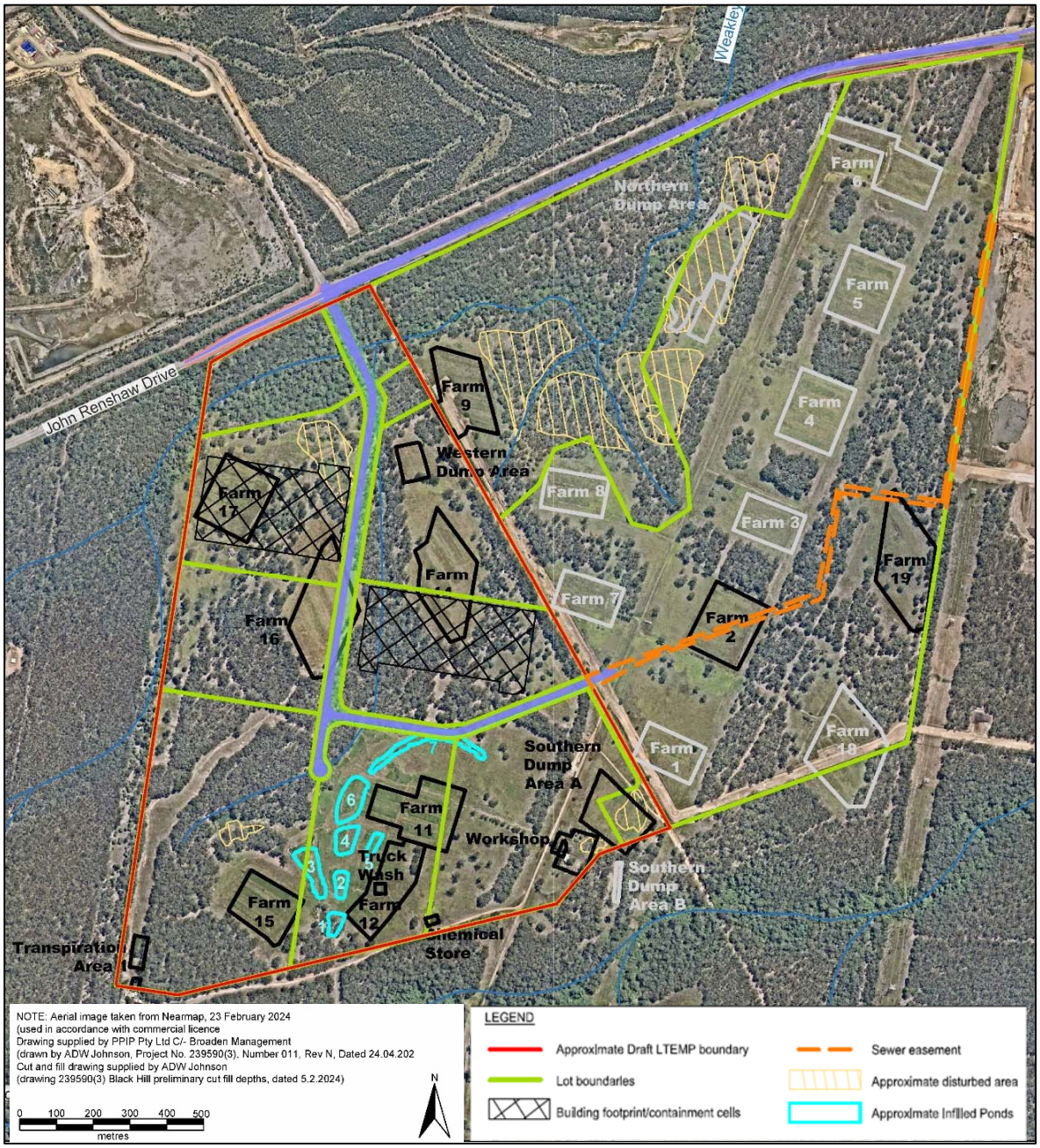

Figure 2 *Former infrastructure and contamination locations*

4.2 GEOLOGY AND HYDROGEOLOGY

The natural soils comprise silty clays, clays and clayey silts overlying the Tomago coal measures which include siltstone, sandstone, coal, tuff and claystone. There is no mapped risk of acid sulfate soils and samples collected as part of investigations adjacent and at the site (Ref [8] and [5]) did not identify any acid sulfate soil characteristics.

Groundwater has previously (Ref [2]) been reported as within two (2) aquifers: perched within six (6) metres below ground level (mbgl) and a regional aquifer situated at 30-40mbgl. The most recent investigation (Ref [5]) did not encounter groundwater within 10.15mbgl however it is considered that there may be isolated perched groundwater encountered during the remedial works such that this draft LTEMP includes a prohibition on the use of groundwater. There will be no groundwater monitoring wells remaining within the site following the completion of the development however two (2) wells may remain within the residual land of Lot 1, DP1260203 and a further installed to the south of the site in Lot 2, DP1260203. Five (5) registered groundwater wells are located in proximity to the site with a registered monitoring use.

5 STATUS OF REMAINING CONTAMINATION

Remediation as part of bulk earthworks at the site will comprise excavation and offsite disposal of construction and general waste, preparation of containment cell(s), excavation and sequestration of contaminated materials, placement of an orange geofabric material and capping the containment cell(s) using more than 0.5m clean materials and the concrete slab of the building.

The types of material which will be sequestered into the containment cell(s) comprises the following:

- Organic waste.
- Materials containing asbestos.
- Soil and material impacted by microorganisms (total and thermotolerant coliforms, E. Coli) and metals (zinc, nickel and copper) contamination.

Full details of the sequestered material and the capping composition will be included in the final LTEMP.

Figure 3 below presents the conceptual site model following remediation.

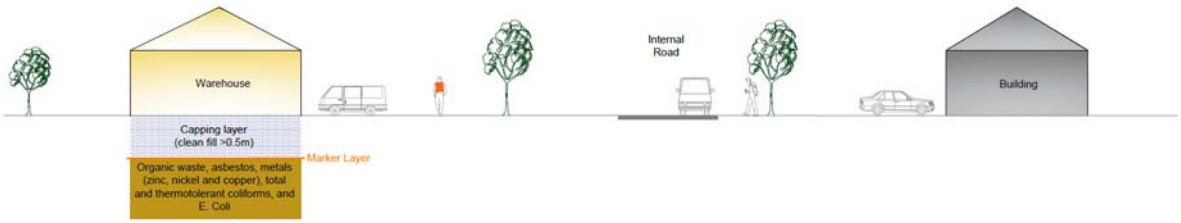

Figure 3 *Post remediation conceptual site model.*

The surveyed position of the marker layer and depth of soil overlying the marker layer will be provided in the final LTEMP; for the purpose of this draft LTEMP the containment cell(s) are presumed to be under the building as presented in **Figure 1**.

Installation of the capping material will be conducted under appropriate (unknown at this time) level of geotechnical supervision to ensure that adequate compaction is achieved for the purpose of building construction.

5.1 EXPOSURE PATHWAYS

Prior to remediation the potential exposure pathways for soil contamination at the site comprised:

- Inhalation of dust and / or asbestos fibres.
- Dermal contact with / ingestion of organic waste and contaminated soil.

There was furthermore potential for detrimental aesthetic impact due to sighting of anthropogenic waste material.

No more than negligible risk of exposure in groundwater was considered to be present with the exception of perched water which may be encountered during the earthworks and risks handled during the construction process. The final LTEMP will provide comment regarding its quality if encountered.

Post remediation, due to the presence of generally at least 0.5m of compacted capping material and large warehouse(s) over sequestered material, there will be no active exposure pathways for inhalation, dermal contact or ingestion related to soil contamination. The potential for aesthetic impacts from anthropogenic waste material will also being removed as waste will have either been removed from the site or sequestered in the containment cell(s).

Pathways may be created if the capping material is penetrated or removed by ground disturbance works. Failure of the capping is considered to be limited to some natural disasters (such as earthquakes) which are not common in the location of the site.

5.2 REMAINING RISK

Based on the contamination status as discussed in the earlier subsections above, the aspects, remedial measures and potential exposure pathways are summarised in **Table 2** below.

Table 2 *Aspects and Contaminants of Concern Following Remediation*

Aspect	Remediation Measure	Potential Exposure Routes
Contaminated (Soil) Material	Contaminated and potentially contaminated material will be at beneath the high visibility marker layer in designated containment cell(s). The depth of fill above the marker layer will be surveyed and presented in the final LTEMP. The containment cell(s) will be further capped by the placement of building slabs for warehouse(s).	Negligible for workers, subcontractors and visitors providing management controls are adhered to and the capping layer is maintained. In the event that maintenance works require excavation beneath marker layer exposure routes are considered to be inhalation of fibres / dust, ingestion of and dermal contact with dust / soil. Risks likely only related to persons engaged in excavation unless dust is significant and migrates away from area of works. Such works would be considered non-standard operations for the purpose of management as detailed in **Section 6.3**.
Capping Material	Material will be verified as suitable for use prior to using as capping material.	None with regards to contamination.
Groundwater	Nil.	Perched groundwater may be encountered during non-standard operations beneath the cap of the containment cell(s).
Surface Water and ponding of surface water at site	Nil active. The sequestration of contaminated materials will limit potential interaction with surface water runoff and mobilisation of contaminants/ transportation of contaminated material. Site grading will improve the potential for surface water runoff across and offsite for the remainder of the development process. Following development completion, the site will be predominantly hardstand material with a stormwater network.	Unlikely unless the capping layer is compromised.
Imported Soil (if required)	Construction materials will be verified as suitable for use prior to importation. Imported soil will require certification prior to arrival at site.	None with regards to contamination.

A risk matrix and assessment relating to foreseeable potential site activities and contamination aspects are presented in **Table 3** and **Table 4** respectively.

Table 3 *Risk Matrix*

Consequence **Likelihood**	**Minor** **(limited and/or localised impact to human health and / or the environment)**	**Major** **(reversible impacts to human health, wider implications to the environment)**	**Critical** **(serious long-term impacts to human health and / or the environment)**	**Catastrophic** **(serious permanent damage to human health and /or to the environment)**
Almost Certain **(common occurrence)**	10	**18**	**20**	**25**
Likely **(known to occur)**	*9*	14	**19**	**24**
Potentially **(occasionally occur)**	*8*	13	17	**23**
Not likely **(unlikely to occur)**	*7*	12	16	**22**
Rare **(almost impossible)**	*6*	11	15	**21**

Risk levels: *Low*, Medium, **High**

Table 4 *Risk Assessment of Site Activities Following Remediation*

Activity	Risk (Likelihood and Consequence) to Activity from Contamination Aspect and Rating			
	Contaminated (Soil) Material		Surface Water	
Using communal hardstand areas (roads, footpaths, parking)	Rare Minor	*6*	Rare Minor	*6*
Using communal softstand areas (grassed or landscaped areas) if present	Rare Minor	*6*	Rare Minor	*6*
Excavation (above marker layer)	Rare Minor	*6*	Rare Minor	*6*
Excavation (below marker layer – in accordance with the draft LTEMP controls)	Rare Minor	*6*	Rare Minor	*6*
Excavation (below marker layer – not in accordance with the draft LTEMP controls)	General / Organic Waste, microorganisms, contaminated soil			
	Potential Major	13	Potential Minor	*8*
	Asbestos Materials / Impacted Soil			
	Potential Critical	17		

Risk levels: *Low*, Medium

Therefore, following the remediation there will be no risk to human health or the environment during the standard use of the site providing the marker layer and overlying capping coverage remain at the place. Risk is considered most significant to human health in the event that asbestos materials and / or asbestos impacted soils are excavated.

6 MANAGEMENT ACTIVITIES

6.1 MANAGEMENT STRUCTURE

The controls listed in this draft LTEMP must be followed to ensure the protection of human health and the environment from potential risks associated with the sequestered soils. Non-compliance with this draft LTEMP may result in increased exposure to contamination and an unacceptable risk to human health and/or the environment. Prosecution for illegal / inappropriate handling of contaminated material may also result.

This draft LTEMP is specific to contamination and as such may fall within a wider environmental management system, the extent of which is unknown at the time of writing.

It is the responsibility of the site owner (PPIP Pty Ltd at the time of writing however likely to change in future) to ensure that workers and visitors affected by this draft LTEMP are notified of the contamination status at the site and are provided with a current copy of this draft LTEMP prior to commencing any ground disturbance works.

It is the responsibility of site owner (PPIP Pty Ltd at the time of writing however likely to change in future) to ensure that any personnel undertaking any works have risk assessments undertaken and controls implemented whilst the works are being performed.

The responsibilities and relevant stakeholders with regards to the management, including those of regulators, are detailed in **Table 5** below.

Table 5 *Stakeholder Responsibilities for this LTEMP*

Organisation	Relevant Contact Details	Responsibility
The consent authority for State Significant development (SSD)	NSW Government, Minister for Planning and Public Spaces.	Inclusion of the final LTEMP as a condition of consent.
Cessnock City Council	02 4993 4100	Inclusion of the final LTEMP, as well as Site Audit Statement, onto the Section 10.7 Certificate for the site such that future owners are aware of the document's existence.
Site Owner (PPIP Pty Ltd at time of writing however subject to change in future)	Steve McLeod (at the time of writing) steve@broaden.com.au	Co-ordination with Council such that the Section 10.7 Certificate is amended to include the final LTEMP. Overall responsibility for the implementation of the final LTEMP. Ensuring that appropriate site personnel, subcontractors and visitors have been informed of the requirements of the final LTEMP relevant to their site attendance. Ensuring that the final LTEMP is reviewed and updated as appropriate (refer to **Section 7**). Undertaking any rectification. Undertaking such management requirements that fall within the capacity and capability of their personnel. Ensuring that appropriate contractors are engaged to undertake management requirements outside the capacity and capability of site personnel. Providing details of the final LTEMP to personnel and contractors whose activities may require actions in accordance with the final LTEMP. Ensuring that all workers associated with areas managed by the final LTEMP have prepared appropriate WHS and environmental documentation as required by the final LTEMP.
Personnel and contractors of the site owner whose duties relate to areas managed by this draft LTEMP	Dependent on works being undertaken: to be provided prior to commencement of any works. Contacts to be provided for within standard operational hour and outside of standard operational hours.	Implementation of the relevant management measures and reporting as appropriate from the final LTEMP during the undertaking of their duties. Taking into consideration the potential environmental and human health effects from the contamination identified in the final LTEMP when undertaking works. Identifying any issues with the final LTEMP based on encountered issues or perceived deficiencies.

Organisation	Relevant Contact Details	Responsibility
Contaminated Land Consultant	RCA Australia 02 49029 200	Update of this draft LTEMP following the completion of remediation and validation to accurately reflect the conditions of the site including the lateral and vertical extent of the sequestered contamination and depth of overlying materials. Providing assistance with the assessment and management measures as may be requested by the site owner, delegate(s) and/ or contractors as part of the implementation of the final LTEMP. Identifying any need to revise the final LTEMP in accordance with the aspects identified in **Section 7**. Consulting with the NSW EPA accredited contaminated lands site auditor or Cessnock City Council as considered warranted or as otherwise required by the final LTEMP. Revising the final LTEMP as necessary and co-ordinating with the NSW EPA accredited contaminated lands site auditor where necessary for a formal update.
NSW EPA accredited contaminated sites auditor	Fiona Robinson, Ramboll Australia Pty Ltd 02 4962 5444	Review of this draft LTEMP as part of the site audit required by SEARs (Ref [3]). Review of the final LTEMP as part of the validation of the completion and adequacy of the remediation. In the event that revisions of the LTEMP require site auditor review: co-ordinating with the contaminated land consultant and reviewing the LTEMP where necessary for a formal update.

6.2 TRAINING AND AWARENESS

An overview induction will be given to all site workers and contractors which specifies the presence of the containment cell(s), its location, the notification procedure should any defects or issues arise and that there are special provisions for undertaking excavation works within or in close proximity to the containment cell(s).

6.3 OPERATING PROCEDURES

Remediation works at the site will improve the site's condition with the installation of a marker layer and adequate capping layer. It is considered that these works will negate the potential exposure risk during standard operations for commercial land use (HIL 'D' as specified within the ASC NEPM, Ref [9]).

The following sections detail what this draft LTEMP considers to be standard operations; non-standard operations, exposure risk and considerations which should be taken into account prior to subsurface disturbance within or in close proximity to the containment cell(s).

6.3.1 STANDARD OPERATIONS

Standard operations include industry use and maintenance activities which occur outside the extent of the containment cell(s) and do not compromise or penetrate the marker layer. It is envisaged that standard operations will include:

- Operations of the various commercial / industrial businesses at the site.

- Light vehicular, heavy vehicular, pedestrian and cyclist traffic.
- Vehicle parking.
- Shallow planting for landscaping and associated maintenance works – this activity may also fall under non-standard operations depending on the specific type of flora and associated root structure.
- Shallow excavations associated with maintenance of all services.

During standard operations and whilst the cap and marker layer remain well maintained, the risk of human contact with contaminated media are minimal and the risk of ingestion, inhalation and/or dermal absorption are considered negligible.

Standard operation activities do not require the implementation of additional management controls.

Works which penetrate the capping layer and may interact with the marker layer or underlying impacted material are considered to be defined as “non-standard operations” and will require thorough consideration of the potential impact to receptors at the site and schedule work hours and/or establish exclusion zones as part of exposure risk mitigation: refer to **Section 6.3.2** for further details.

Records of the works, including the extent of replacement of the cap, are to be provided to the site owner(s) or delegate(s), with the final LTEMP revised and reissued as necessary following the works. The document status table at the front of this document should be updated with a summary of the changes made following each revision. The site owner(s) or delegate(s) should inspect the area following the completion of works to ensure that all required information for the purposes of the final LTEMP are documented.

6.3.2 NON-STANDARD OPERATIONS

The frequency of these activities occurring is lower however the inherent consequence without effective management control is high. Excavations that occur under the marker layer for any purpose present the risk of human contact with contaminated soil, surface water, dust and asbestos fibres. The human exposure pathways of ingestion, inhalation of fibres and/or dermal contact are considered significant.

There is potential for contaminated material to generate an environmental exposure pathway to surface water, erosion and sediment transport, air by way of dust. The risk increases if the water table is encountered and / or the works introduce significant volumes of water. Exposure pathways to surface soil, sediment transport and surface water can be generated from stockpiled contaminated material, machinery and equipment and in the event of works involving dewatering.

In addition to the standard activities described above, non-standard operational use of the area(s) of the containment cell(s) may occur and are defined by this draft LTEMP as ‘infrequent’ activities that occur at or below the marker layer. This may comprise:

- Maintenance and/or repairs to existing underground services below the marker layer. At the time of writing, no services are expected to be placed under the marker layer.
- Installation of new underground services below the marker layer. At the time of writing, the installation of new services under the warehouse(s) which will overlie the containment cell(s) is not expected.

Non-standard operations must be conducted in adherence to the controls outlined in the relevant operating procedures provided in **Attachment A**. Any changes that occur to the marker layer, capping layer, installation of sub-surface infrastructure or similar during non-standard operations need to be documented, with the final LTEMP revised and reissued as necessary following the works. The document status table at the front of this document should be updated with a summary of the changes made following each revision. The site owner(s) or appointed delegate(s) should inspect the area following the completion of works to ensure that the marker layer and cap have been adequately reinstated and to ensure that all required information for the purposes of the final LTEMP are documented.

6.3.3 WORK HEALTH AND SAFETY (WHS)

Contamination within the site presents a risk to the environment and human health if exposed. A detailed WHS Plan must be prepared prior to the commencement of any works which will potentially disturb the soil beneath the cap. Specifically, the WHS controls related to minimising the risk are:

- Ensuring all personnel are informed of the contamination present at the site and have received appropriate training as per **Section 6.2**.
- Restriction of exposure to contamination:
  - Minimising fibre generation from asbestos fragments through use of appropriate equipment, machinery and methodology.
  - Minimising dust generation and associated exposure through implementation of the best practice controls.
  - Personal protective equipment (PPE) requirements should be determined on the basis of risks associated with the activities to be carried out and in accordance with relevant WHS regulations and codes of practice. Personnel associated with any works which cause dust generation during disturbance or handling material within the site may require masks to minimise inhalation of asbestos fibres and dust. Personnel operating machinery with closed door/ windows and utilising recycled air-conditioning are not required to wear masks however should have these available for contingency purpose.
  - No smoking on site prior to the completion of capping replacement.
  - Hygienic principles of washing hands and face prior to consuming food and drink.
- Ensuring that plant and equipment is operated only by those with appropriate licences / permits.
- Co-ordinating activities at the site to avoid conflict between plant / equipment and personnel / visitors in light vehicles or on foot.
- Implementing best practice controls for control of noise and erosion control.
- Contingency planning.

6.4 MONITORING OF SITE CONDITIONS

No further monitoring of the site is required specific for remediation / contamination with the exception of conducting inspections as per below.

Inspection should be conducted on accessible soil areas prior to and during the construction process on Lots outside of the area(s) of the containment cell(s) by the site owner(s), the principal contractor or nominated entity on a routine basis and following any significant rainfall event (>25mm in a twenty-four (24) hour period) and completion of non-standard activities which have disturbed the area. Any incidence of suspected asbestos materials or waste should trigger the implementation of an unexpected finds protocol (refer to **Attachment B**).

As the containment cell(s) will be situated under warehouse(s) it is considered that deficiencies in the warehouse slab(s) will be promptly identified as part of day to day operations and rectification will be undertaken if required. Formal inspections are to be undertaken by a site manager or delegate on an annual basis and after a significant event (seismic earthquake or natural disaster such as a bush fire) in a long term with any identified defects to be assessed by a suitably qualified person. Depending on the extent of rectification, the works may comprise non-standard operations.

6.5 APPROVAL AND LICENSING CONDITIONS

At the time of writing there is no specific requirement for the implementation as per this draft LTEMP; the final LTEMP will reference any requirements in the Project Approval.

At the time of writing, it is not anticipated that there will be a licence required for the operations at the site however the final LTEMP will reference any that apply.

6.6 REPORTING REQUIREMENTS

No reporting is required as part of this draft LTEMP except in the instance that

- If material is exported from the site for offsite disposal as part of site works, waste classification would be required in accordance with the NSW EPA waste guidelines (Ref [10]).
- The unexpected finds protocol is triggered following inspections undertaken during construction (refer to **Section 6.4**) or non-standard operations are undertaken (refer to **Attachment A**).

Reports will be written by personnel undertaking the works / inspections and will be provided to the relevant site owner(s) personnel (refer to **Table 5**) as soon as practicable from completion of works. The timing will vary depending on the scale of the works however it is considered that one week will be sufficient.

An example of an inspection template relevant to the site is provided in **Attachment C**. Reports may be variable based on the specific works (operating procedures in **Attachment A** provide more specific requirements dependent on the type of work), however will need to include at least, but may not be limited to, the following information:

- Date and specific location and extent of the works undertaken.
- Reason for works being undertaken.
- Specifying whether the marker layer was sighted, if works were conducted above or below the marker layer. Photographs are to be included.
- Assessment of material from below the marker layer prior to any use above the marker layer or disposal offsite.

  - In the event that material is removed from site, material tracking records such as a loading sheet, truck dockets and a receival record (may also be dockets) must be retained to facilitate review by regulatory authority if undertaken.
- Any unexpected finds (refer to **Attachment B**).
- Certification that any material imported for the purpose of fill has been done so in accordance with NSW legislative requirements. Documentation to include source, volume and any chemical testing undertaken.
- Details of any changes/ reinstatement of the marker layer and capping layer. Any changes to be included with 'As Constructed' plans for future use.
- Surface condition at completion of works (include photographs).

Compilation of the report is the responsibility of the person(s) or contractor undertaking the works.

Reports are to be provided to relevant site owner(s) personnel, with the final LTEMP revised and reissued as necessary following the works. The document status table at the front of this document should be updated with a summary of the changes made following each revision.

6.7 COMMUNICATIONS PROTOCOL

As this draft LTEMP is passive and will be managed solely by the site owner(s) it is not considered that a formal Communications Protocol for 3rd parties is required. Notifications on publicly available documentation (such as Section 10.7 planning certificate) will be undertaken and the existence and requirements of the final LTEMP will be communicated to relevant personnel as detailed in **Section 7**.

The final LTEMP will be provided to each of the development Lot owners upon purchase with a contractual requirement that it be made available to any tenants and future contractors conducting any work on the site.

6.8 CONTINGENCY

Where standard activities, non-standard activities, or inspections identify indications that there are deficiencies in the sequestration, mitigation / rectification works will need to be conducted promptly to rectify.

Cracking, subsidence or uneven settlement of the warehouse(s) situated above the containment cell(s) site may trigger the requirement for rectification: geotechnical investigation into the defects may also be required if the reason for the issue is not known.

This draft LTEMP has sought to address all management measures that could foreseeably arise as part of the operations of the site. If at any stage, the final LTEMP does not adequately cover a situation encountered at site, then:

- Any operational work is to cease.
- Relevant nominated site owner(s) personnel is to be advised of the issue(s).
- A suitably qualified environmental consultant is to be contacted for advice. A geotechnical consultant may also be required depending on the issue.
- A NSW EPA accredited contaminated sites auditor is to be advised, or contacted for advice if recommended by the consultant, of the issue and how the issue was addressed along the principles of the final LTEMP.

An unexpected finds protocol detailing the process is provided in **Attachment B**: this is to be available for personnel and subcontractors as appropriate for the extent of works.

In the event that site management protocols fail, the following is to be undertaken:

- Investigate the cause.
- Record the results.
- Assessment of whether human health or the environment were harmed, and further steps as considered necessary.
- Corrective action raised by relevant nominated site owner(s) personnel or delegate (such as consultant appropriate for the issue(s)).
- Notification to affected persons and/or relevant authorities if exposure to contamination has occurred.
- Incorporate procedures for corrective or preventive action.
- Revision of final LTEMP by an appropriately qualified environmental consultant to address the non-compliance or major changes to the final LTEMP. Control document update and distributed to registered holders of final LTEMP.

Any changes to the area under management of the final LTEMP will need to be documented, with the final LTEMP revised and reissued as necessary following the works. Changes to the final LTEMP are to be reviewed by a NSW EPA accredited contaminated lands site auditor.

7 MAINTENANCE, REVIEW & COMMUNICATION OF LTEMP

7.1 MONITORING AND REPORTING

No active monitoring which may trigger reporting is required for the site except for:

- Inspection records during construction at the site after the completion of the remediation.
- Contingency items.

Where the final LTEMP needs adjustment, a contaminated land management consultant is to be consulted. Pending the advice of the contaminated land consultant, site owner(s) or delegate(s) may have to contact the NSW EPA accredited contaminated lands site auditor, NSW EPA or Cessnock City Council to provide information or seek consent / approval.

The site owner(s) or delegate(s) shall be responsible for the maintenance of the final LTEMP and shall be responsible for the inspection requirements as detailed in **Section 6.4**, and as required under operating procedures as included in **Attachment A**.

A record of non-standard operations conducted within the vicinity of the containment cell(s) must be maintained with details of the works conducted. Complaints, incidents, notifications, resident inductions and non-compliances must also be maintained and periodically reviewed to evaluate the effectiveness and currency of the final LTEMP implementation.

7.2 CORRECTIVE ACTION

Failure to implement the Environmental Control Procedures detailed in the Operating Procedures (**Attachment A**) are all deemed ‘environmental non-conformances’.

The nature and extent of the nonconformity is to be advised to relevant site owner(s) personnel or delegate(s) for evaluation of the significance of the nonconformity. The contaminated land consultant is also to be consulted regarding potential impact to the final LTEMP and suitability of the site: the contaminated land consultant will advise the NSW EPA accredited contaminated lands site auditor if the incident is considered relevant.

If necessary, subsequent and / or associated work is to be suspended pending review of the nonconformity.

Records of all incidents and / or corrective actions are to be maintained with the relevant version of the final LTEMP at the time of the incident / corrective action and relevant site owner(s) personnel or delegate(s) are to update any relevant stakeholders affected by the stipulations of the final LTEMP (i.e., letter or similar).

If corrective action is not considered adequate to prevent further occurrence, consideration is to be given to the need for remedial action: note all relevant parties will need to be informed during discussion.

7.3 DOCUMENT CONTROL AND REVIEW

The version of this draft LTEMP as referenced by the Site Audit Statement is the approved version. Amendments to this document can only be made as per the following:

- Logistical – allocated personnel for instance – can be made by site owner(s) or delegate(s).
- Technical – change in management requirements – can only be made by a suitably qualified contaminated land consultant with the approval of a NSW EPA accredited contaminated lands site auditor where any reduction in management requirements is proposed, or where otherwise considered necessary by the consultant.

The approved LTEMP shall remain in place indefinitely until such time as the relevant regulatory authority determines it is no longer required. It is noted that due to the contaminants sequestered, it is considered unlikely that the LTEMP will be able to be removed unless the material is wholly removed from the site: which is considered impractical.

Review of the final LTEMP should be undertaken annually prior to the completion of development and obtaining the occupational certificate. Following the completion of final surfacing at the site, review can be reduced to at least every five (5) years, unless any of the following occur:

- Material changes to legislative and regulatory requirements affecting the final LTEMP.
- Changes to the ownership and/or responsibility of the site.
- Any major non-conformance is detected in regards to the environmental controls and measures outlined in the final LTEMP.
- The final LTEMP measures are found (e.g., by means of inspection, incident or near miss) to be inadequate to address the health and environmental management requirements for the site.

Documentation of the reason(s) for amending the final LTEMP should include, but are not necessarily limited, to:

- The date of the change, whether amendment or addition.
- The extent of the change.

- The reason for the change.
- The person approving the change.
- If revision relates to ground disturbance and excavation of material; details regarding quantity, fate (i.e., returned to excavation, appropriate offsite disposal), and verification of works and marker/capping layer reinstatement (i.e. photographic log or disposal dockets).

7.4 COMMUNICATION

The existence of the final LTEMP will be noted on the Site Audit Statement as it will have formed a primary basis for the determination that the site is suitable for use following the completion of remediation.

The existence of the final LTEMP should also be included on the Section 10.7 certificate for the site (for which the Lot and DP reference is not known at the time of writing this draft LTEMP): if this notification is not undertaken by Cessnock City Council it is the responsibility of PPIP Pty Ltd to notify Council such that the Section 10.7 certificate can be amended.

Revised versions of the final LTEMP, as concurred by the NSW EPA accredited contaminated lands site auditor, must be supplied by the entity organising the revision (site owner(s) or delegate(s)) to the other responsible entity. A copy of the most up to date version must be provided to Council and kept on the site for implementation as required and personnel inducted in the implementation of the final LTEMP provided information regarding the revision of the final LTEMP and aspects of management which have been altered. The area(s) covered by the final LTEMP will be registered with Before You Dig Australia (BYDA) such that any persons undertaking excavations within the area(s) for which there are management requirements can undertake appropriate considerations of risks and implement mitigation measures.

Yours faithfully

RCA AUSTRALIA

Dr. Kenny Yan
Environmental Scientist
BSc(Hons)(Env), PhD(Env Remediation)

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LIMITATIONS

This report has been prepared for PPIP Pty Ltd in accordance with an agreement with RCA Australia (RCA) dated 17 January 2024. The services performed by RCA have been conducted in a manner consistent with that generally exercised by members of its profession and consulting practice.

This report has been prepared for the sole use of PPIP Pty Ltd. The report may not contain sufficient information for purposes of other uses or for parties other than PPIP Pty Ltd. This report shall only be presented in full and may not be used to support objectives other than those stated in the report without written permission from RCA Australia.

The information in this report is considered accurate at the date of issue with regard to the current conditions of the site. Conditions can vary across any site that cannot be explicitly defined by investigation.

Environmental conditions including contaminant concentrations can change in a limited period of time. This should be considered if the report is used following a significant period of time after the date of issue.

REFERENCES

[1] JBS&G Australia Pty Ltd, *Environmental Site Assessment, John Renshaw Drive, Black Hill NSW*, Ref: 54892-115852 / Rev 0, 14th August 2018.

[2] JBS&G Australia Pty Ltd, *Former Black Hill Steggles Poultry Farm, Remedial Action Plan – Stage 2 Civil Works, John Renshaw Drive, Black Hill NSW*, Ref: 54892-116888 / Rev 0, 14th August 2018.

[3] Department of Planning and Environment, *Planning Secretary's Environmental Assessment Requirements, Hunter Central Logistics Estate (HCLE)*, Ref: SSD-64738258, December 2023.

[4] State Environmental Planning Policy (Resilience and Hazards) 2021, current version 4th August 2023.

[5] RCA Australia, *Detailed Site (Contamination) Assessment, Stages 1, 1a and 1b Development and Sewer Alignment, 1134 John Renshaw Drive, Black Hill.* Ref: 17009-202/1, 11th June 2024.

[6] RCA Australia, *RAP, Stages 1, 1a and 1b Development and Sewer Alignment, 1134 John Renshaw Drive, Black Hill.* Ref: 17009-203/1, July 2024.

[7] Cessnock Local Environmental Plan 2011, 15 December 2023.

[8] RCA Australia, *Acid Sulfate Soil Assessment, Proposed Watermain Pipeline, Black Hill, NSW*, RCA ref: 16871-201/1, November 2023.

[9] NEPC, *National Environment Protection (Assessment of Site Contamination) Measure*, 1999 as amended 2013.

[10] NSW EPA, *Waste Classification Guidelines*, *Part 1; Classifying Waste*, November 2014.

GLOSSARY

LTEMP	Long-term environmental management plan.
kg	kilogram, 1000 gram.
NEPC	National Environment Protection Council.
NSW EPA	NSW Environment Protection Authority – made a separate entity in 2011 to regulates the contaminated land industry.
PPE	Personal Protective Equipment.

Attachment A

Operating Procedures

OP Title	**General Excavations**		
OP Number		**Date Issued**	

Purpose and Scope

This procedure details the requirements for personnel undertaking excavation outside of the containment cell(s) or within the containment cell(s) above the position of the marker layer at 1134 John Renshaw Drive, Black Hill.

Note that any works specifically being undertaken below the marker layer are to be undertaken in accordance with the relevant OP.

There are no known potential risks from the contamination during excavations outside / above the marker layer however depending on the area of the site there may be unexpected finds encountered during excavations. There are risks if excavations are undertaken within the containment cell(s) beneath the marker layer.

Excavation works have the potential to affect surface water.

Procedure

1	Personnel to confirm that proposed depth of excavation is outside the footprint of the containment cell(s) or otherwise is <0.5m below the surface or is within the extent of an established services trench.
2	This OP is not appropriate for situations where intended excavation depth will be within the containment cell(s) and below the depth of the marker layer. Refer to OP for '*Excavations Below Marker Layer*'.
3	An Unexpected Finds Protocol (UFP) is to be derived.
4	Principal site owner(s) personnel to be advised of excavation intentions and the applicability of this OP discussed. Any deficiencies to be addressed by a specific procedure.
5	The location of the excavation is to be identified and marked out on site.
6	Erosion control measures to be put in place to ensure no contamination of surface water.
7	Excavation is to be undertaken with a spotter observing for signs of the marker layer. If sighted, works are to stop and not continue past the marker layer unless under the OP for '*Excavations Below the Marker Layer*'.
8	Soil is to be stockpiled for re-use at the completion of works.
9	Works are to be completed. If suspect material is sighted unexpectedly, works are to cease and the UFP enacted.
10	It is considered unlikely for groundwater to be encountered, however, no dewatering of the excavation, or other form of groundwater discharge to the environment, is to be undertaken without an analytical assessment of the water quality and suitability. Groundwater is to be considered contaminated and contact with skin and eyes avoided.
11	Soil is to be replaced in the reverse order of extraction (such that deep materials are returned to the deepest part of the excavation). The thickness of the capping material above the marker layer in the area of the containment cell(s) is to be measured by survey if different from initial conditions.
12	Erosion control measures to be placed as appropriate after completion of works and / or vegetation to be replaced.

13	Report to be compiled including: • Whether marker layer or unexpected materials were sighted; include photographs and actions under UFP. • Extent (lateral and vertical) of works undertaken. • Certification that any material imported for the purpose of fill placement over the marker layer has been done so in accordance with NSW legislative requirements. Documentation to include source, volume and any chemical testing undertaken. • Certification that material exported from the site has been done so in accordance with NSW legislative requirements. Documentation to include source, volume and any chemical testing undertaken. • Confirmation that the thickness of capping above the marker layer within the containment cell(s) has been maintained or otherwise changes to be included with 'As Constructed' plans for future use. • Surface condition at completion of works (include photographs)
14	Area to be inspected the following day and weekly until such time that area has rehabilitated or is covered with bitumen / concrete.

OP Title	Excavations below Marker Layer		
OP Number		Date Issued	

Purpose and Scope
This procedure details the requirements for personnel undertaking excavation below the marker layer within the containment cell(s) at 1134 John Renshaw Drive, Black Hill. Excavations below the marker layer within the containment cell(s) have the potential to encounter bonded (non-friable) asbestos containing materials, organic waste, metal and microorganism impacted soil material. Excavation works have the potential to affect surface water.

Procedure	
1	Determine whether an alternative to the intended works can be undertaken to avoid excavation below the marker layer in the area of the containment cell(s). Where no alternative is possible, the applicability of this OP is to be discussed between principal site owner(s) personnel and personnel proposing to undertake the works. Any deficiencies to be addressed by a specific procedure. The scope and risk of works are considered prior to commencement such that exclusion zones or scheduling outside of active hours are undertaken as necessary.
2	The following PPE is required to be work by all personnel: • Long sleeve and long pants. • Safety boots in accordance with Standard AS/NZS 2210. • Gloves if manual handling of material will be required and impacted material disturbed. Other task specific PPE may be required. Masks specific for protection against inhalation of asbestos should be available for use if fragments identified. An area for disposal of masks and washing of hands and face is to be set up and signage placed to advise of the importance of implanting hygienic controls for the protection of health. The work area, including where stockpiles of excavated material may be placed, is to be barricaded off from access by anyone other than relevant personnel.
3	The location of the excavation is to be identified. If works are in relation to water supply / sewer / stormwater: flow to the pipe to be turned off/ redirected (if not already done so). A water diversion is to be installed to direct surface water away from the excavation prior to breaking ground. Monitoring stations, if deemed appropriate for measuring asbestos or microorganisms in air are to be established. The locations may need to move depending on the extent and progress of the excavation, predominant winds and proximity of potential receptors other than involved workers.
4	To the extent possible, excavation is to be limited to the required area and undertaken to avoid disturbing the marker layer to the extent possible.
5	Soil above the marker layer is to be stockpiled for re-use at the completion of works.
6	Where possible, the marker layer is to be left in-situ. If the marker layer is removed, deliberately or by accident, the layer is to be stored for re-use if in good enough condition. Due to the requirement for overlap during placement, additional marker layer material may be required regardless of the intention to re-use and this should be considered prior to commencing the works.

7	Works to be undertaken on the understanding that asbestos is present and presumption that fibres may be present such that dust is minimised and exposure to dust is minimised. Works are to be undertaken on the understanding that elevated microorganism are present such that dust is minimised and exposure to dust and the soil is minimised. Works are to cease if more than minor (occasional piece) asbestos containing materials are encountered and the process for excavation considered in relation to: • Whether excavation works are crucial such that they have to continue. If not, excavations should be backfilled as per Items 10 onwards below. • Whether the asbestos is bonded, non-friable. • Whether a licensed asbestos assessor and / or contractor is required to undertake the works: required for friable asbestos and for >10m^2 non-friable asbestos or >100kg soil with non-friable asbestos. • Whether dust and soil movement controls are appropriate. • Whether all personnel undertaking the activity are required. • Whether the PPE being utilised is appropriate or whether additional is required. The WHS documentation for the excavation should also reviewed and revised if required prior to recommencement of excavations.
8	Any material below the marker layer that is encountered is to be stockpiled separately to other material and placed such that it doesn't contaminant underlying material (e.g., on plastic, concrete / bitumen, in skip bin). Material should be placed in an area which is not accessible to personnel not associated with the works or visitors to the site. Erosion and sediment controls are to be employed around the stockpile, and water diversion controls should be considered if inclement weather is possible. The stockpile should be covered to prevent dust generation, migration of any asbestos fibres, minimisation of odours and other potential exposure.
9	No dewatering of the excavation, or other form of groundwater discharge to the environment, is to be undertaken without an analytical assessment of the water quality and suitability.
10	Material excavated from below the marker layer is to be returned to below the marker layer, or otherwise removed from site by licensed waste contractor following assessment by a suitably qualified environmental consultant for off-site disposal. The presence of asbestos within the material to be disposed of is to be specifically assessed. The area on which excavated material was stockpiled is to be inspected by a Class B asbestos assessor to confirm no asbestos is present at the surface of the site.
11	Marker layer to be placed above impacted material and up the sides of excavation as appropriate to intersect / overlap with marker layer of surrounding area. Refer to OP for replacement protocol.
12	Position of marker layer to be surveyed.
13	Excavation to be backfilled with appropriate material and the thickness measured by survey if different from initial conditions.
14	Erosion control measures to be placed as appropriate after completion of works.

15	Report to be compiled including: • Extent of works undertaken. • If any impacted material was encountered and what was its fate. Retain dockets if material removed to licensed waste facility. • Marker layer replacement (include photographs). If position different from initial, information to be included with 'As Constructed' plans for future use. • Certification that any material imported for the purpose of fill placement over the marker layer has been done so in accordance with NSW legislative requirements. Documentation to include source, volume and any chemical testing undertaken. • Type and thickness of capping layer above the marker layer. Any changes to be included with 'As Constructed' plans for future use. • Results of air monitoring (if undertaken). • Surface condition at completion of works (include photographs),
16	Area to be inspected the following day.

OP Title	Replacement of Marker Layer		
OP Number		Date Issued	

Purpose and Scope
This procedure details the requirements for personnel replacing the marker layer on the containment cell(s) after the completion of works which disturbed its placement. Refer to 'As Constructed' plans in the LTEMP showing the extent of the marker layer. Replacement marker layer is to comprise Hi Vis 801 from Geofabrics Australia or equivalent product. The presence of the marker layer is an integral part of the remediation and subsequent management of the site which is under long term management. While the layer may have to be removed upon occasion for specific works, the layer has to be replaced for the protection of human health and the environment in accordance with the remedial strategy.

	Procedure
1	Material which is to remain below the level of the marker layer is to be compacted to the extent possible noting that appropriate controls with regards to limiting dust must be implemented.
2	The area requiring coverage by marker layer is to be measured. An allowance for a minimum of thirty (30) cm overlap of marker layer should be allowed for at each edge.
3	The marker layer is to be placed over the ground surface and pinned into place over the top of the existing marker layer around the extent of the excavation. Pins, comprising two (2) prongs and approximately ten (10) cm in length, should be placed approximately every metre to their full extent through both layers such that there is full coverage of the area of excavation.
4	Reinstatement of the capping layer dependent on the area and particular use of the area: this will likely comprise a mix of soil, concrete, bitumen and / or pavers. The depth of the capping material should be at least 0.5m unless the capping comprises concrete or equivalent permanent paving in which case the thickness of the material is considered sufficient.

Attachment B

Unexpected Finds

Examples of unexpected finds at the site include, but are not necessarily limited to:

- Asbestos above the marker layer / outside of the containment cell(s).
- Putrescible waste above the marker layer / outside of the containment cell(s).
- Buried drums or other containers.
- Bulky items such vehicle parts, mattresses.
- Discoloured or odorous material.
- Slag.

In the event of unexpected finds being encountered on the site, the following procedure, is to be adopted:

- Stop all current works in the area.
- Site worker or resident to inform relevant site owner(s) personnel of find.
- Site owner(s) to consider need for external assistance (licensed asbestos assessor / contractor, geotechnical consultant, contaminated land consultant or other) and make appropriate contact.
- If issue cannot be resolved within framework provided with the LTEMP, the area of find is to be made into an excluded area until issue is resolved.
    - All personnel are to be made aware of the reason for the exclusion.
- Following resolution of the issue, the incident notification process is to be undertaken as per **Sections 6.8** and **7.2** of the LTEMP and the review process as detailed in **Section 7.3** undertaken.

Attachment C

Form Templates

INDUCTION REGISTER

1134 JOHN RENSHAW DRIVE, BLACK HILL

Location:	
Date of Induction:	
Time:	
Convener/presenter:	

The following acknowledge that they have completed the site induction and have received the Long Term Environmental Management Plan prior to undertaking any works within the containment cell(s) at 1134 John Renshaw Drive, Black Hill.

By signing the following, personnel acknowledge induction for the site works and training in the requirements of the LTEMP at the site has been provided and that they have understood the requirement, will adhere to the requirements in the induction, and have included specific inclusion of the constraints in planning and WHS controls.

Name	License Number (list all licenses relevant to project such as vehicle and plant)	License Class	Expiry Date	Signature

INSPECTION REPORT
1134 JOHN RENSHAW DRIVE, BLACK HILL

Date & time of inspection: …….

Person conducting the inspection (name and role): ……..……...

……...

Area of inspection: ……..……...

Reason for inspection:

☐ Routine ☐ Rainfall event: (..……mm)

☐ Completion of non-standard activity (please specify):

…….....……

Any signs of plant stress or loss?	Yes	No	N/A	
Any signs of erosion?	Yes	No	N/A	
Any sign of vandalism?	Yes	No	N/A	
Has the capping material been compromised?	Yes	No	N/A	
Has the marker layer been breached?	Yes	No	N/A	
Is the marker layer (orange) visible?	Yes	No	N/A	
Any sign of uneven settlement or slumping?	Yes	No	N/A	
Any sign of impacted material at the surface?	Yes	No	N/A	
Is the area adequately inaccessible to unauthorised personnel?	Yes	No	N/A	
Could works impact on the structural integrity of the batter slope adjacent to southwest conner?	Yes	No	N/A	If yes, additional controls need to be employed: please specify:
Have relevant personnel/ residents who may require access to the area been notified of any non-conformance/ temporary limitations?	Yes	No	N/A	

Any corrective actions required? If so, please specify details and locations:

……

Who has been notified and when: ……

Corrective actions completed (description, date and outcomes)?

……

……