Section 75W of the EP&A Act
Modification Application

Wet 'n' Wild
Remediation of Lot 1 in DP 1045771

Submitted to Department of Planning and Infrastructure
On Behalf of Prospect Aquatic Investments Pty Ltd

December 2012 ■ 09505

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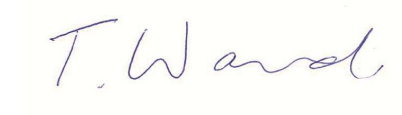
This report has been prepared by: Tim Ward



Date 17/12/2012

This report has been reviewed by: James Harrison

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It is considered appropriate to modify the Minister's approval to ensure that there is no doubt that the proposed works associated with the Remediation of the Site is covered by the Approval. The purpose of the proposed Modification Application is therefore to ensure that the scope of the Project Approval effectively covers the additional works required to remediate the Site.

Given the asbestos identified on Site, Remediation is required in order to render the Site suitable for the proposed land use. A detailed and comprehensive Remedial Action Plan has been prepared by SLR Consulting to address the contamination. The remediation strategy is to contain contaminated soil in specially designed and monitored capped containment cells generally located underneath the site car park.

The containment cells will result in at least 1m of physical separation between the contained contaminated soils and the end site users. SLR Consulting considers that the proposed design of the containment cell to retain contaminated soil is an appropriate solution given the end site use.

A detailed suite of site management measures will be implemented in order to prevent the off-site migration of potentially contaminated soils either as windblown dust or in surface water runoff. These measures include the carrying out of monitoring of the local air quality to ensure no significant amount of airborne asbestos occurs during the works.

Once Remediation of the Site has been completed SLR Consulting consider that the Site is unlikely to pose a risk to the environment or human health. To ensure the Site is properly managed in the long term the lateral and vertical extent of the containment cells will be surveyed and recorded on site plans, validation reports and site management plans, and a legally enforceable, long term site management plan (**SMP**) will be prepared and implemented to manage the contamination within the containment cells.

1.0 Introduction

This Modification Application is submitted to the Department of Planning and Infrastructure in support of a proposed modification of the Minister's approval for MP10_0190 (**Approval**), being the Wet 'n' Wild water theme park on the site at Reservoir Road, Prospect.

The Modification Application seeks approval for works associated with the Remediation of the Site due to asbestos being identified during the course of carrying out works associated with the Approval.

This report describes the reason for the proposed modification and provides an assessment of the proposal in terms of the matters for consideration under Section75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

This report has been prepared by JBA Planning on behalf of Prospect Aquatic Investments Pty Ltd and should be read in conjunction with the Remedial Action Plan prepared by SLR Consulting Australia at **Appendix A**.

1.1 Background

The Environmental Assessment Report (**EAR**) for MP10_0190 was submitted in February 2011 for the development of the Wet 'n' Wild Sydney project. MP10_0190 was for a Concept Plan and concurrent Project Application for the project under Part 3A of the EP&A Act. The Minister for Planning approved the Concept Plan and the Major Project on 8 December 2011.

1.1.1 The Site

As shown in **Figure 1** the site is bounded by the M4 Motorway to the north, Reservoir Road to the south, Watch House Road to the east, and a property being used for rural purposes to the west.

The site is described as Lot 1 in DP 1045771 (**Site**). It has an area of approximately 25.5 hectares and is an irregular shaped parcel of land. The Site's dimensions include a frontage of approximately 500m along the northern M4 motorway boundary, 600m along the curved southern boundary frontage of Reservoir Road, and 300m along the eastern Watch House Road boundary. The Site has a varying depth of between 300m and 500m between the M4 motorway and Reservoir Road.

To the north of the Site immediately on the opposite side of the M4 Motorway is further vacant land (owned by the NSW Government) which is zoned for general industrial use, then the Great Western Highway and the residential suburb of Prospect some 500 metres to the north.

To the south of the site is native bushland surrounding Prospect Reservoir.

To the east of the site are a small number of rural residential land uses and a telecommunications tower facility, and the Greystanes employment lands.

To the west of the site are other rural properties and the remainder of the Western Sydney Parklands used for various recreational purposes including Blacktown Drive-Inn, Eastern Creek Raceway, and Western Sydney Dragway.

Figure 1 – The Site

1.1.2 The Approved Concept Plan

The vision for Wet 'n' Wild Sydney provides for a world-class iconic water theme park, entertainment and recreational destination with a spectacular array of state of the art water theme park rides and attractions.

The design includes distinct precincts around key rides and attractions and support facilities including the surf wave pool centrepiece, lazy river, children's pool areas, extreme river and thrill rides, central support facilities and rest areas, park entry plaza, and natural wetland. The creation of these precincts presents a multitude of entertainment experiences through the water park.

The approved Concept Plan provides for:

- Design, Construction and Operation of Stage 1 of the theme park, including:
  - Site preparation and earthworks, demolition and tree removal;
  - Construction of 10 water theme park rides and attractions;
  - Construction of ancillary park support facilities;
  - 1810 at grade visitor car parks including 42 disabled bays, 12 coach parks, 6 minibus parks, 20 motorcycle parks, and 47 staff and service vehicle car parks;
  - Signage;
  - Landscaping;
  - Construction of associated stormwater and water cycle management facilities;
  - Infrastructure and utilities connections;

  - Intersection upgrades along Reservoir Road and Site Access; and
  - Upgrade to Reservoir Road.
- Stage 2, provides for an area for future expansion for theme park use.
- A Complying Development Code for the site regulates future expansion areas in Stage 2. The approved Complying Development Code essentially allows the following types of development to be carried out as Complying Development on the site subject to meeting prescribed standards and conditions:
  - Water ride tower structures up to a height of 35m above finished ground level; and
  - Buildings used for ancillary support facilities up to a height of 12 metres above finished ground level with a maximum footprint of 1,000m^2.

1.1.3 Project Approval

Concurrent with the Concept Plan approval, the Minister for Planning approved Stage 1 of the Project including all of the elements specified above. The Approval provides for the carrying out of works to deliver the Stage 1 development as specified above.

1.1.4 Current Status of the Project

The project is currently under construction. Specifically, site preparation, bulk earthworks, demolition and tree removal commenced in early September 2012 in accordance with that Approval.

During the bulk earthworks it has become apparent that the levels of asbestos contamination in the ground are higher than what was originally identified during the contaminated land investigation carried out for the project.

1.2 Purpose of the Modification

Measures need to be taken in order to ensure that contamination does not present a risk of harm to human health or the environment.

The purpose of the proposed Modification Application is therefore to ensure that the scope of the Approval effectively covers the works required to remediate the contamination.

The Remediation works include removal of soils which contain visible asbestos contamination, or which are identified as asbestos contaminated by chemical analysis, and placement of the excavated asbestos contaminated soils into specially designed and capped containment cells.

The containment cells will generally be located in the vicinity of the areas of the site that are proposed to be developed into car parks, and will include the following:

- Geo-fabric cover will be placed across the top of the emplaced contaminated material to act as a marker layer.
- Clean fill with a minimum thickness of 1 m will be placed on top of the geo-fabric to act as a capping layer. The top of this layer will be surveyed as the top of the containment cell.
- Additional clean fill material will be placed on top of the containment cell to achieve design elevations.

The lateral and vertical extent of the containment cells will be surveyed and recorded on site plans, validation reports and site management plans, and a legally

enforceable, long term site management plan (**SMP**) will be prepared and implemented to manage the asbestos contamination within the containment cells.

The permanent on-site containment of significant quantities of asbestos contaminated soils was not originally envisaged in the Concept Plan and Major Project Application, or as part of the Approval.

As such, it is considered appropriate to modify the Approval to ensure that there is no doubt that the proposed works associated with the remediation of the contaminated soils is covered by the Approval.

Accordingly, the proposed modification has been submitted for consideration by the Minister for Planning under Section 75W of the EP&A Act.

1.3 Consultation

No consultation has taken place with any infrastructure providers, Government agencies or neighbours as part of this application. Relevant stakeholders will be able to comment on the proposed remediation strategy as part of the S75W process.

2.0 Description of Proposed Modification

2.1 Identified Contamination

Upon commencement of bulk earthworks in early September, asbestos was identified at a number of locations on Site. Subsequent assessment and testing identified asbestos contamination present on Site in isolated patches (typically 2m to 3m diameter) across a portion of the 25 Ha site.

Identified asbestos contamination included fragments of asbestos containing cement sheets and plaster board as well as friable asbestos in the form of clumps of powdery, fibrous, crumbly asbestos containing materials. Based on the Site investigations carried out to date the outer extent of identified patchy contamination have been identified and are shown in **Figure 2**.

In addition, there are a number of stockpiles, including a large stockpile (approximately 6,000 m^3) of topsoil mixed with grass/vegetation that has been stripped from areas that may have been potentially contaminated.

Ultimately it is expected that the total amount of contaminated soil requiring Remediation will be slightly more than 30,000 m^3.

The vertical extent of the contamination identified to date is considered to be as follows:

- Bonded asbestos was predominantly observed:
  - On the grass surface;
  - On the soil surface directly beneath the grass; or
  - Within the fill material containing building rubble. Asbestos is assumed to be present across the depth of the fill material, unless shown otherwise by detailed testing; and
- Clumps and 'slabs' of friable asbestos buried beneath a thin layer of topsoil to an approximate depth of up to 300mm.

The areas where asbestos was identified were progressively mapped.

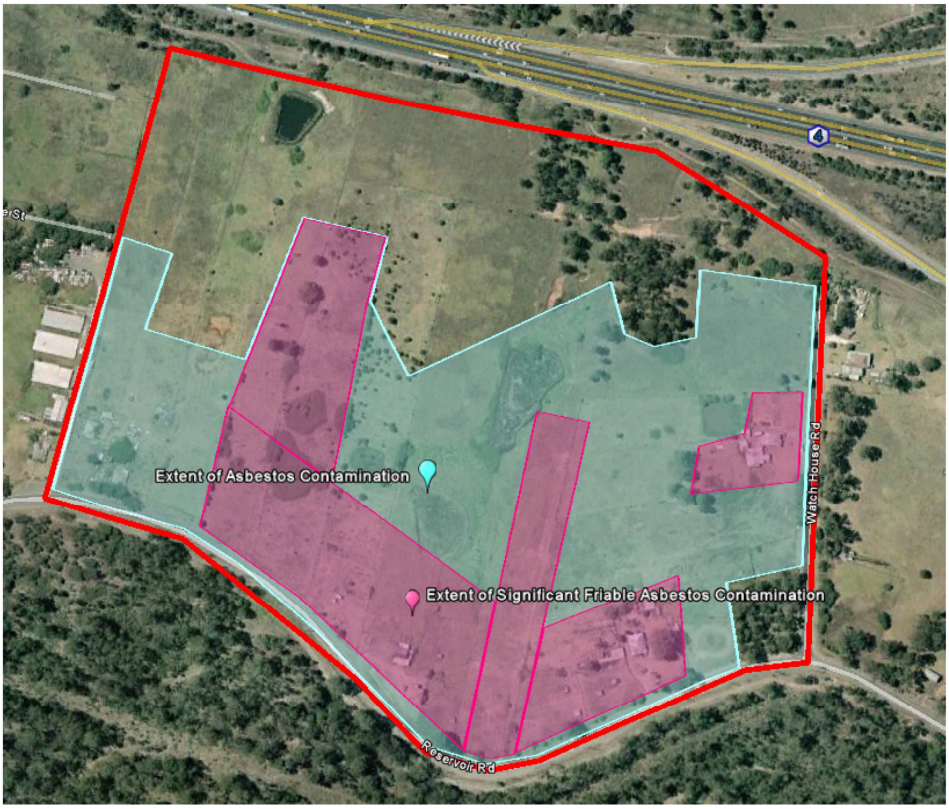

Figure 2 – Identified Outer Extent of Patchy Asbestos Contamination

2.2 Proposed Remediation Strategy

The proposed remediation strategy is detailed in the RAP attached at **Appendix A** and is summarised as follows: ·

- Patches of asbestos contamination within the identified extent of contamination will be excavated to remove all visible asbestos.
- The excavated soils containing visible asbestos contamination will be placed into appropriately designed containment cells. The cells are proposed to be generally located beneath areas of the Site that will be developed into car parks to provide a suitable physical barrier between the contamination and end Site users.
- Areas where visible asbestos has been excavated will then be subjected to a detailed visual inspection and sampling for asbestos.
- If asbestos is not detected through the detailed inspection and sampling program, an Asbestos Clearance Certificate for the remediated area will be issued, allowing the earth works contractor to commence stripping of topsoil/fill material in the cleared areas.
- All stripping of topsoil/fill material will be conducted under full time supervision of a suitably qualified contaminated land specialist to assess if any additional asbestos is identified in those areas. If additional asbestos is identified, the above Remediation and validation process (excavation, placement into containment cell, visual inspection and sampling, and clearance certification) will be repeated in those areas.
- The topsoil that is assumed to be or demonstrated to be contaminated with asbestos will also be placed in the proposed containment cells.

- The footprints of, and the areas in the immediate vicinity of, the potentially contaminated stockpiles of topsoil will also be remediated and validated as described above (i.e. through detailed visual inspections, testing and asbestos clearance certificates).
- The contaminated material in the containment cells will be physically separated from the end users by the following, in the order shown from bottom to top of the cells:
  - Geo-fabric cover will be placed across the top of the emplaced contaminated material to act as a marker layer;
  - Clean fill with a minimum thickness of 1 m will be placed on top of the geo-fabric to act as a capping layer. The top of this layer will be surveyed as the top of the containment cell; and
  - Additional clean fill material will be placed on top of the containment cell to achieve design elevations.

The lateral and vertical extent of the containment cells will be surveyed and recorded on site plans, validation reports and site management plans, and a legally enforceable, long term site management plan (**SMP**) will be prepared and implemented to manage the contamination within the containment cells.

At this stage, two containment cells are proposed to be located in the vicinity of the north western corner of the site, in the area proposed to be occupied by the overflow car park, and one containment cell is proposed to be located in the south western portion of the site beneath the proposed asphalt car park. The location of the two containment cells located in the northwest of the Site is shown in **Appendix B**.

Approximately 90% of the area of these two containment cells is located under the proposed car park, adding a further 0.5m of physical separation (sub-grade and asphalt) between the contaminated soil and site users. The approximately 10% of the area of the containment cell that is located outside of the car park will be isolated from public access due to the proposed planting of dense shrub.

A survey of the third cell in the south western portion of the Site will be provided when available.

All remediation works will be conducted by an AS2 licensed contractor under the supervision of an AS1 licensed contractor with the asbestos management measures deemed to be necessary by the AS1 contractor being implemented.

The Remediation works will be validated in accordance with the provisions of this RAP and the NSW EPA accredited site auditor's requirements. A validation report will be prepared in accordance with the NSW EPA (1997) *Guidelines for Consultant's Reporting on Contaminated Sites*. The validation report will be reviewed and approved by the site auditor.

3.0 Statutory Requirements

3.1 Legislation

3.1.1 Environmental Planning and Assessment Act 1979

The works required for the development of the Wet 'n' Wild Sydney water theme park have been approved by the Minister for Planning under Part 3A of the EP&A Act. Part 3A of the EP&A Act was repealed in October 2011, however Schedule 6A of the EP&A Act was inserted in order to provide transitional arrangements for approved Part 3A projects.

The Wet 'n' Wild project is an approved project under Part 3A and as such is considered a 'transitional Part 3A project'. In accordance with clauses 3 and 3C of Schedule 6A, Part 3A continues to apply to transitional Part 3A projects, and Section 75W continues to apply for the purpose of the modification of an approved concept plan.

3.1.2 Environmental Planning and Assessment Regulation 2000

The treatment of contaminated soil by on-site storage is a type of development listed in clause 15 of Schedule 3 of the *Environmental Planning and Assessment Regulation 2000* (**EP&A Regulation**) because it will exceed the specified thresholds. Notwithstanding this, clause 37A of the Schedule specifies that clause 15 does not apply if a development is ancillary to other development and is not carried out independently of that other development. In this case the contaminated soil treatment works are ancillary to the development of the Wet 'n' Wild water theme park, and will be carried out as part of the development for Wet 'n' Wild.

Notwithstanding the above, the project is subject of Part 3A of the EP&A Act (now repealed) and the provisions that are relevant to the carrying out of development listed in Schedule 3 of the EP& Regulations do not apply to projects subject of Part 3A.

3.1.3 Protection of the Environment Operations Act 1997

The treatment of contaminated soil by on-site storage is a type of development listed in clause 15 of Schedule 1 of the *Protection of the Environment Operations Act 1997* (POEO Act), if it:

- Disturbs more than an aggregate area of 3 hectares of contaminated soil.

The proposed remediation works will exceed this threshold and so an Environment Protection Licence from the Environment Protection Authority will be required for the works.

3.2 Environmental Planning Instruments

The proposed modification does not affect any aspect of the final form or use of the Wet 'n' Wild water theme park. As such, the assessment of the approved project against most environmental planning instruments remains unchanged from what was presented in the EAR. This is the case for:

- *State Environmental Planning Policy (Western Sydney Parklands) 2009.*
- *State Environmental Planning Policy (Infrastructure) 2007*

- *State Environmental Planning Policy (Major Development) 2005*
- *State Environmental Planning Policy No. 33 – Hazardous and Offensive Development*

The remaining environmental planning instruments against which the assessment of the project has been undertaken are addressed below.

3.2.1 SEPP 55 – Remediation of Land

State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55) and its associated contaminated land planning guidelines establish the requirements for the investigation and remediation of contaminated land as part of the development of land in NSW.

Clause 7 of SEPP 55 effectively states that a consent authority must not consent to the carrying out of any development on land unless it has considered whether the land is contaminated, and it is satisfied that the land is suitable in its present state, or will be made suitable after remediation, for the proposed land use.

The assessment carried out for the EAR did not find widespread significant contamination and it was considered that the site was suitable for the proposed use without any specific soil or groundwater remediation being carried out. Given the asbestos that has subsequently been unearthed during the earthworks, the site is now considered unsuitable without Remediation for the proposed land use.

A Remedial Action Plan has been prepared to make the site suitable for the proposed use. As described above, the remediation strategy is based on on-site containment and capping of asbestos contaminated soils.

The remediation works will be validated in accordance with the provisions of this RAP the NSW EPA accredited site auditor's requirements. A validation report will be prepared in accordance with the NSW EPA (1997) *Guidelines for Consultant's Reporting on Contaminated Site*s. The validation report will be reviewed and approved by the site auditor. A NSW EPA accredited Site Auditor has been engaged to provide an independent audit of the investigation, remediation strategy and validation of the remediation works.

SLR Consulting considers that if the contamination identified at the site is remediated in accordance with the remediation strategy outlined in the proposed RAP, and no other contamination issues are identified, the site will be made suitable for the proposed land use.

The Remediation is not of a type listed in clause 9 of SEPP 55 and so the Remediation is not a Category 1 Remediation Work. Notwithstanding this, the approval of this Modification Application would ensure that the Part 3A Approval for the project includes all components of the development.

3.3 Strategic Plans

The proposed modification does not affect any aspect of the final form or use of the Wet 'n' Wild water theme park. As such, the assessment of the approved project against the relevant aspects of the following strategic plans remains unchanged from what was presented in the EAR:

- *NSW State Plan*
- *Metropolitan Plan for Sydney 2036 and North-West Draft Subregional Strategy*

3.4 Other Requirements

The works will be carried out in accordance with all relevant standards, codes and legislation, including:

- Work Health and Safety Act (2011).
- Work Health and Safety Regulations (2011).
- Code of Practice for How to Safely Remove Asbestos [Safe Work Australia (2011)].
- Code of Practice for How to Manage and Control Asbestos in the Workplace [Safe Work Australia (2011)].
- Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC: 3003(2005)].
- Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia [Department of Health (May 2009)].
- AS1270E2002 Acoustics E Hearing Protectors.
- AS1319E1994 Safety Signs for the Occupational Environment.
- AS1576.1E1995 Scaffolding General Requirements.
- AS/NZS 1715E1994 Selection, Use and Maintenance of Respiratory Protective Devices.
- AS/NZS 1716E2003 Respiratory Protective Devices
- AS1800E1998 Occupational Protective Helmets
- AS2210.1E1994 Occupational Protective Footwear E Guide to Selection, Care and Use.
- AS 2601E2001 The Demolition of Structures.
- Protection of the Environment Operations Act (1997).
- Protection of the Environment Operations (Waste) Regulation (1996).
- Waste Avoidance and Resource Recovery Act (2001).
- The special conditions applicable to the Transport of Asbestos Waste (Categories 1 and 2) as laid-down by the Waste Recycling and Processing Service.
- Current Asbestos Removal Contractor's Licence and current regulations
- Any other relevant Standards or Codes published by the responsible Authorities or the Standards Association of Australia.

4.0 Assessment of Planning Issues

It is important to note that the implementation of the proposed remediation strategy will require bulk earthworks and the handling and movement of asbestos contaminated soils. Bulk earthworks have been approved as part of the Minister's Project Approval. The nature and extent of the earthworks required to implement the remediation strategy will be consistent with the bulk earthworks that are already approved as part of the Approval.

As such, the assessment of the environmental and planning issues has been limited to those matters where the Remediation works might be reasonably expected to result in changes to the environmental impacts of the project. It is highlighted that the proposed Remediation works will have no effect on the built form, urban design, ecologically sustainable development, safety and security, flooding, and bushfire management of the project and so they have not been considered further as they relate only to the operation and final built form of the development. **Table 1** summarises the issues that are expected to remain the same as and those issues that are considered further.

Table 1 – Summary of Relevant Environmental Planning Issues

Issues	Comment/response	Further Assessment
Planning Instruments	No change to assessment of the project against most EPIs, except for SEPP 55.	See **Section 3.2.1**
Transport and Accessibility	No change to operational traffic. There will be no substantive change to off-site construction traffic.	Not assessed further
Environmental and Residential Amenity	Handling of asbestos contaminated materials during the earthworks increases the potential risk of airborne asbestos dust.	See **Section 4.1.1**
Heritage	No change in the extent of earthworks to be carried out, so no change in the extent of potential impacts or mitigation measures to be applied.	Not assessed further
Contamination	Further contamination has been identified.	See **Section 2, 3.2.1 and 4.2.**
Flooding	No change to final land form or impacts on hydrology during construction.	Not assessed further
Flora and Fauna	No effect on the extent of clearing.	Not assessed further
Noise and Vibration	The nature and extent of works is consistent with Approved Project. Works will take place within the approved work hours.	Not assessed further
Waste Management	No change in the construction waste principles. No asbestos contaminated soils to be disposed off-site.	Not assessed further
Hazardous Materials	No change in the hazardous materials removed from structures at the site.	Not assessed further
Construction Management	The presence of more widespread contamination increases the risks associated with erosion and sedimentation.	See **Section 4.1**

4.1 Construction Management

4.1.1 Air Quality

Dust may be generated during excavation of the contaminated soils. In order to prevent the emission of airborne dust from asbestos contaminated areas all temporary stockpiles of contaminated or potentially contaminated materials will be covered with plastic sheeting. Further, to prevent dust from the trafficked areas, exposed surfaces will be damped down and the speed of vehicles over exposed contaminated surfaces will be limited. Water sprays will provide minimal amounts of water applied to the work areas in a fine mist form to minimise water run-off and shall not generate free water/water runoff.

Air monitoring at the site perimeter and the remediation areas will be conducted each day. All asbestos clearance air monitoring results must be <0.01 fibres/mL. If the results of the asbestos air monitoring indicate that airborne asbestos levels exceed 0.01 fibres/mL, work practices and control measures will be reviewed by a competent person and appropriate measures taken to rectify the problems.

If the results of the asbestos air monitoring indicate that airborne asbestos levels exceed 0.02 fibres/mL, the works will cease, the cause of the high readings will be identified, the work practice and control measures shall be reviewed and appropriate measures taken to rectify the problems. Further air monitoring will be undertaken and no work will resume until airborne asbestos monitoring results are <0.01 fibres/mL. If necessary dust barriers (including shade cloth) will be erected along the site boundaries to further reduce the potential for offsite migration of dust.

Dust could also be emitted from the on-site handling and on-site transportation of the contaminated soils. In order to prevent the emission of dust from haulage, the loads on all trucks will be sealed appropriately prior to transportation of the materials to the containment cells along designated routes.

4.1.2 Surface Water and Erosion Protection

The topsoil observed at the site may be prone, when exposed, to the effects of erosion during extended or severe periods of rain. The asbestos contamination, particularly friable asbestos, presents an additional risk to the surrounding environment if it is allowed to run-off from the site during rain.

Given that the site slopes generally towards the centre of the site, offsite contamination due to surface water flow is deemed unlikely. However, surface run-off control measures will be implemented at the site including silt fencing material and/or straw bales prior to the commencement of Remediation activities and all temporary stockpiles of contaminated or potentially contaminated materials will be covered with plastic sheeting.

Further, the works will be planned, where possible, to avoid extended periods of wet weather and so will be conducted in a single continuous operation to ensure there are no extended periods of soil exposure.

Such measures may also be required in remediated and validated areas, or potentially clean areas, to prevent recontamination through surface water flow over friable asbestos contaminated areas.

In order for the above controls to be effective, it will also be important to prevent the cross contamination of contaminated soils into the non-contaminated parts of the site. To prevent cross-contamination of contaminated soils the following measures will be implemented:

- Loading of contaminated soils to trucks will be carried out in the designated remediation areas.
- Excavators and associated attachments will be decontaminated in the wash down area prior to moving into potentially clean or remediated areas. The wash down area will be lined with geo-fabric or a similar material, such that the accumulated sediment can be removed and disposed of to the containment cell as contaminated sediment after the final decontamination.

4.1.3 Construction Waste Management

All contaminated materials removed (including materials suspected of being contaminated with asbestos) will be disposed of as follows:

- All such material must be placed immediately into new approved polyethylene bags in an appropriate manner to render it safe for handling and disposal;
- Bags must be filled to no more than 20 kg and should be no more than half full;
- Bags must twisted tightly and have the neck folded over and secured with tape. When tying the bag, surplus air should be gently excluded from the bag without discharging contaminated dust;
- The surface of each bag should be cleaned to remove any adhering dust before being removed from the removal area and then double bagged outside the removal area immediately following the decontamination process;
- Loaded bags must be carried carefully and not thrown, dropped, or roughly handled;
- The bagged waste shall not be allowed to accumulate. It shall be removed from the site at regular intervals at the completion of decontamination in each removal area;
- The bags are to be placed into approved storage containers/bins. The containers are to be lined with plastic. When the bins/containers are full they are to be sealed and removed from site;
- Any contamination of the work area must be cleaned up immediately; and
- All waste must be disposed of in the correct manner and all disposal documentation must be available for inspection, if required, on site.

4.1.4 Onsite Environmental Scientist

At least one properly qualified occupational hygienist or environmental scientist will be present on site full time to observe the remediation works. The duties of the on-site environmental scientist/hygienist include:

- ensure adherence to the Remediation Action Plan;
- monitor the excavation of contaminated material undertaken at the site;
- ensure environmental compliance of contractors;
- inspection of the integrity of the operational phase site management controls placed around the site;
- immediately report actual or potential non-compliances to the client who will report those to appropriate regulatory bodies if required;
- note weather conditions, approximate temperature, direction and velocity of the wind, and rainfall at the commencement of work, at about midday and at the end of the day;
- conduct visual inspections for asbestos clearance;

- collect samples for validation or other purposes;
- maintain a site diary which will record the following information:
  - date
  - weather conditions
  - details of materials excavated during the remediation works
  - details of areas remediated
  - details of actions taken if unexpected materials are encountered
  - details of accidents, near misses or incidents, which may have resulted in injury, and the actions taken to prevent their recurrence
  - details of environmental issues, which may result in environmental incidents and measures taken to correct them
  - details of visitors to the site or other matters relating to environmental or health issues.

4.2 Contamination

The identified contamination is detailed in **Section 2.1** and the proposed Remediation strategy is detailed in **Section 2.2**.

4.2.1 Suitability of the Site

Remediation of the identified contamination is now considered to be required in order to render the site suitable for the proposed land use.

Contaminated materials will be contained in a specially designed capped cells to be generally located underneath the car park. The containment cells will result in at least 1m of physical separation between the contained contamination and the end Site users. This separation thickness is also understood to be sufficient to install all underground services at the proposed car park, without having to disturb contained asbestos.

SLR Consulting considers that the proposed design of the containment cell to retain contamination is appropriate in consideration of the end site use and thus is unlikely to pose a risk to the environment or human health if properly managed in the long term.

The lateral and vertical extent of the containment cells will be surveyed and recorded on site plans, validation reports and site management plans, and a legally enforceable, long term site management plan (**SMP**) will be prepared and implemented to manage the asbestos contamination within the containment cells.

SLR Consulting considers that if the asbestos contamination identified at the site is remediated in accordance with the remediation strategy outlined in the proposed RAP, and no other contamination issues are identified, the site will be suitable for the proposed land use.

4.2.2 Validation of Remediated Areas

Validation will be necessary for Remediation works. Once the asbestos materials have been removed, the areas of removal are to be validated as per the method below. A clearance certificate will be issued subject to satisfactory validation results.

Validation inspection and sampling process will initially be a visual inspection of the surface. If no asbestos contaminated materials can be seen, samples are to be collected from the surface as follows:

- In areas where the topsoil and fill material has been excavated to expose a surface of natural clay, with no evidence of fill or topsoil present, samples will be collected from the surface at the rate of 1 sample per 400m^2 (on a 20m by 20m grid); and
- In areas where there is evidence of topsoil or any fill material, samples will be collected at the rate of 1 sample per 100m^2 (on a 10m by 10m grid).

If a significant amount of asbestos containing material is detected, either visually or by sampling and analysis, the area is to be considered as contaminated and area of 5m diameter around the failed sample location will be excavated to a minimum depth of 100mm and placed into the containment cell. Following the completion of the excavation, further validation samples will be collected as follows:

- One samples will be collected if the 5m diameter excavation has exposed the natural clay surface across; and
- Three samples will be collected if the 5m diameter excavation contains topsoil or fill material.

This process will be repeated until no asbestos is reported.

4.2.3 Validation of Stockpiles

The validation of the "suspected clean" stockpiles created by the grass stripping exploratory works will also initially involve visual inspection.

If the visual inspection identifies asbestos, the stockpile will be deemed contaminated and be placed into the containment cell.

If the visual inspection does not identify asbestos, soil samples will be collected from the near surface soils of the stockpile, to be tested for asbestos, as follows:

- No less than 3 samples per stockpile that has a volume of no more than 10m^3;
- Where the volume of the stockpile is greater than 10m^3, the sampling density will be at least 1 sample per 10m^3, with no less than 3 samples from each stockpile;

If the laboratory analysis indicates that asbestos is present in any of the samples collected from a stockpile, that entire stockpile will be deemed to be contaminated and placed into the containment cell.

Following the above multi staged validation process, any stockpiles that do not report asbestos in the analytical results will be deemed suitable for unrestricted use within the site.

The fate of all "suspected clean" stockpiles will be tracked until they are deemed suitable for unrestricted use or they are placed into the containment cell. The material tracking information will be provided as part of the final validation report.

4.2.4 Validation of Containment Cells

The construction and completion of the containment cell will be validated as follows:

- The full lateral extent of the placed asbestos contamination will be covered by the geo-fabric marker layer and the 1m clean fill capping layer;
- The extent of the contained asbestos contamination and the capping layer will be surveyed and recorded;

The validation of the containment cell will be limited to the 1m of clean fill (capping layer) placed above the geo-fabric. Excavations into the 1m thick capping layer will be avoided where possible. Any excavations to install underground services that may potentially extend in to the capping layer will be managed by an AS1 licensed contractor, and be reinstated to such an extent that the marker layer is replaced and the minimum amount of clean cover is retained. Details of any installed underground services above or in the vicinity of the containment cell will be recorded on the SMP.

4.2.5 Validation Report

The Remediation works will be validated in accordance with the provisions of this RAP and the NSW EPA accredited site auditor's requirements. A validation report will be prepared in accordance with the NSW EPA (1997) *Guidelines for Consultant's Reporting on Contaminated Sites*. The validation report will be reviewed and approved by the site auditor.

5.0 Conclusion

Given the asbestos contamination identified on Site Remediation is required in order to render the Site suitable for the proposed land use.

A detailed and comprehensive Remedial Action Plan has been prepared in order to address this issue. The Remediation strategy is to contain all soils contaminated with asbestos in specially designed capped containment cells generally located underneath the site car park.

The containment cells will result in at least 1m of physical separation between the contained contaminated soils and the end site users. SLR Consulting considers that the proposed design of the containment cell is appropriate and that it is unlikely to pose a risk to the environment or human health if properly managed in the long term.

A detailed suite of site management measures will be implemented in order to prevent the off-site migration of potentially contaminated soils either as windblown dust or in surface water runoff. These measures include the carrying out of monitoring of the local air quality to ensure no significant amount of airborne asbestos occurs during the works.

Remedial Action Plan

SLR Consulting

Appendix A

Containment Cell Location Plan

Malone Buchan Laird & Bawden Pty Ltd

Appendix B

PRELIMINARY

Malone Buchan Laird & Bawden Pty Ltd
ACN 066 985 046 ABN 56 069 344 614
Nominated Architect: Nathan Hones NSW ARN 6957
Architecture + Master Planning + Interiors + Graphics
A member of **The Buchan Group**

KEY PLAN

issue	date	revision	ints	auth
A	12/11/12	PRELIMINARY ISSUE		AP

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WET'N'WILD SYDNEY
RESERVOIR ROAD
PROSPECT

CONTAINMENT CELL LOCATIONS

purpose	PRELIMINARY 12/11/12
proj no	212038
scale	1:1250 @ A1/1:2500 @ A3
created	NOV 2012
plotted	12.11.2012 at 16:10
file	Y:\712\212038 Wet 'N Wild Sydney\PLO A-DD-0103.dwg

dwn	dwg no	issue
CAD	A-DD-0103	A