Don Fox Planning
Incorporating Hirst Consulting Services

planning consultants

town planning
economic & retail assessment

26 March 2010
Our Ref: 5565H.44DK

The Director-General
Department of Planning
GPO Box 39
SYDNEY 2001

By email: Anthony.Witherdin@planning.nsw.gov.au

Dear Anthony,

Section 75W Modifications
Project Application No 07_0032
Sandon Point Residential Subdivision

1.0 INTRODUCTION

Stockland has been examining the conditions of the Project Approval (MP 07_0032) in relation to obtaining a construction certificate for the reconstruction of the Wrexham Road railway bridge and there are five conditions that warrant review in order to prevent the delay of the issue of the construction certificate and construction of the replacement bridge.

Stockland proposes to construct the Wrexham Road railway bridge ahead of the residential subdivision. This will enable reinstatement of the pedestrian access over the railway line to Thomas Gibson Park from the residential areas to the west of the railway line. From a timing point of view, the reconstruction of replacement bridge must take place within track shut downs planned by RailCorp. An opportunity exists to utilise the next track shut down in May 2010 and subsequent shut downs in July and September 2010. If the issue of construction certificate is delayed by being linked to conditions that are intended to relate to the residential component of the project, then the replacement bridge will be further delayed.

The five conditions are:

- Condition B11 – Remediation
- Condition B12 – Acid Sulfate Soil Management Plan
- Condition B42 – Landscaping
- Condition B43 – Maintenance Program and Streetscape Landscape Works
- Condition B50 – Conservation Agreement

Stockland is therefore submitting an application under Section 75W of the Environmental Planning and Assessment Act, 1979 (EP&A Act) to modify the Project Approval in relation to these conditions. Associated with the proposed amended conditions are amendments to the Statements of Commitments for the Project Application. The reason for the modifications and the proposed amendments is discussed in turn in the balance of this letter.

An application form and political disclosure statement are included with this application. A cheque for the $750 application fee will be forwarded separately.

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2.0 SUBJECT SITE

The Project application and this s75W application relate to the following parcels of land:

- Lot 2 DP 595478
- Lot 235 DP 1048602
- Lot 1 DP 1024490
- Part Lot 1 DP 204631
- Lot 22 DP 835200 (part Hewitts Creek Reserve)
- Lot 101 DP 268549
- Lot 1 and Lot 2 DP 224431
- Land in the adjoining South Coast Railway Corridor

3.0 PROPOSED MODIFICATION

The reasons for the proposed modification are explained and justified in turn below. Proposed amendments to the conditions of the Project Application and Statements of Commitment are shown with underlining.

3.1 Condition B11 – Remediation

Condition B11 currently reads as follows:

> *(1) Prior to the issue of a Construction Certificate, the Proponent shall submit to the CA a Remedial Action Plan and a Hazardous Material Survey. The Remedial Action Plan must be accompanied by a statement from a site auditor accredited by the DECC to issue site audit statements.*
>
> *(2) Upon completion of the remediation works on the site, the Proponent shall submit a detailed Site Audit Summary Report and Site Audit Statement and Validation Report to the PAC. The site audit must be prepared in accordance with the Contaminated Land Management Act, 1997 and completed by a site auditor accredited by the DECC to issue site audit statements. The site audit must verify that the land is suitable for the proposed uses.*

In our opinion this condition was intended to apply to the residential subdivision not the reconstruction of the railway bridge.

A Hazardous Material Identification Survey was carried out prior to the demolition of the former Wrexham Road railway bridge, including a soil sample taken on the bridge top. The sample tested showed no detection of asbestos, Polynuclear Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls (PCBs), Organochlorine Pesticides (OC/OP) and only low levels of lead significantly below the DECC/EPA NSW Auditors Guideline Criteria. A copy of this report is attached at **Appendix A**. On the basis of this report and the proposed use as a bridge with soils being inaccessible, the condition is not considered warranted for this component of the Project.

We therefore propose that Condition B11 be amended to exclude its application to the construction of the replacement Wrexham Road railway bridge. We also propose that the Statement of Commitment in relation to Contamination and Acid Sulfate Soils be amended for consistency and clarity.

Proposed Modification

A. Modifying Condition B11 as follows:

B11 – Remediation

(1) Prior to the issue of a Construction Certificate, the Proponent shall submit to the CA a Remedial Action Plan and a Hazardous Material Survey. The Remedial Action Plan must be accompanied by a statement from a site auditor accredited by the DECC to issue site audit statements.

(2) Upon completion of the remediation works on the site, the Proponent shall submit a detailed Site Audit Summary Report and Site Audit Statement and Validation Report to the PAC. The site audit must be prepared in accordance with the Contaminated Land Management Act, 1997 and completed by a site auditor accredited by the DECC to issue site audit statements. The site audit must verify that the land is suitable for the proposed uses.

(3) <u>This condition does not apply to that component of the Project relating to the replacement Wrexham Road railway bridge.</u>

B. Modifying the Statement of Commitment relating to Contamination and Acid Sulfate Soils in the following manner:

Stockland undertaking further precautionary testing for land contaminants and potential acid sulfate soils.

Stockland also commits to undertaking any recommendations from its geotechnical consultants arising from those investigations.

<u>This Commitment does not apply to that component of the Project relating to the reconstruction of the replacement Wrexham Road Railway Bridge.</u>

3.2 Condition B12 - Acid Sulfate Soil Management Plan

Condition B12 currently reads as follows:

> *The Proponent commits to further soil testing and a Potential Acid Sulphate Soils assessment, which may find there is a need for an Acid Sulphate Soil Management Plan to be prepared. If Acid Sulphate soils are present, a detailed Acid Sulphate Soil Management plan for the entire site shall be prepared by a suitably qualified person in accordance with the Acid Sulphate Soil Assessment Guidelines (Acid Sulphate Soil Management Advisory Committee, 1998). The Management Plan shall cover the entire site and be submitted to the satisfaction of the CA prior to the issue of a Construction Certificate for below ground works for the first stage of the project.*

As for Condition B11, we are of the opinion that this condition is intended to relate to the residential subdivision and not the reconstruction of the replacement Wrexham Road railway bridge.

Network Geotechnics prepared a Preliminary Acid Sulphate Soil assessment that was submitted with the Project application (Environmental Assessment, Appendix G). Network Geotechnics formed the opinion that an Acid Sulfate Management Plan would be unlikely to be required for the site, but recommended that Stockland undertake further testing during construction.

This finding accords with the Acid Sulphate Soil Map forming part of the Wollongong Local Environmental Plan 2009. The Acid Sulphate Soil Map indicates the location of the Wrexham Road railway bridge as being class 5 land. Clause 7.5 of WLEP 2009 requires that a Acid Sulfate Management Plan be prepared (in this instance) for "*works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum and by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.*"

The land is not within 500m of adjacent clause 1, 2, 3 or 4 land and the construction of the bridge would not lower the watertable.

We therefore propose that Condition B12 not apply to the construction of the Wrexham Road railway bridge which is consistent with the previous findings of the Environmental Assessment and the planning controls in the recently gazetted WLEP 2009.

We note that the modification to the Statement of Commitment relating to Contamination and Acid Sulfate Soils discussed in relation to Condition B11 is also justified on the above grounds.

Proposed Modification
Stockland therefore proposes to modify Condition B12 follows:

B12 - Acid Sulfate Soil Management Plan
The Proponent commits to further soil testing and a Potential Acid Sulphate Soils assessment, which may find there is a need for an Acid Sulphate Soil Management Plan to be prepared. If Acid Sulphate soils are present, a detailed Acid Sulphate Soil Management plan for the entire site shall be prepared by a suitably qualified person in accordance with the Acid Sulphate Soil Assessment Guidelines (Acid Sulphate Soil Management Advisory Committee, 1998). The Management Plan shall cover the entire site and be submitted to the satisfaction of the CA prior to the issue of a Construction Certificate for below ground works for the first stage of the project. <u>This condition does not apply to that component of the Project relating to the reconstruction of the replacement Wrexham Road Railway Bridge.</u>

3.3 Condition B42 – Final Landscape Plans

Condition B42 currently reads as follows:

1. *The Landscape Plans submitted are to be amended and a set of final Landscape Plans submitted to Wollongong City Council for approval, prior to the issue of the Construction Certificate. A separate set of final landscape plans can be submitted for Stage 5 of the subdivision. Both sets of final Landscape Plans shall address the following requirements:*
   a) ...
   b) ...
   c) ...

2. *Detailed landscape plans must be submitted to Council or the PCA for all areas to be dedicated as open space, entry statements area and streetscapes. Landscape plans must show:*
   (a) ...
   (b) ...
   (c) ...
   (d) ...
   (e) ...
   (f) ...

The plans of the replacement bridge submitted with the Project Application (Appendix C of the Environmental Assessment) illustrate that there is no landscaping proposed as part of the bridge reconstruction. There is landscaping associated with the construction of Wrexham Road leading into the subdivision which is best undertaken with the road and subdivision works.

In our opinion Condition B42 is intended to relate to the residential subdivision, not the reconstruction of the Wrexham Road railway bridge. We therefore propose that Condition B42 is modified to reflect this intent.

Proposed Modification
Stockland therefore proposes to modify Condition B42 as follows:

B42 – Final Landscape Plans

1. The Landscape Plans submitted are to be amended and a set of final Landscape Plans submitted to Wollongong City Council for approval, prior to the issue of the Construction Certificate, excluding a Construction Certificate for that component of the Project relating to the replacement Wrexham Road railway bridge. A separate set of final landscape plans can be submitted for Stage 5 of the subdivision. Both sets of final Landscape Plans shall address the following requirements:
   a) ...
   b) ...
   c) ...

2. Detailed landscape plans must be submitted to Council or the PCA for all areas to be dedicated as open space, entry statements area and streetscapes. Landscape plans must show:
   a) ...
   b) ...
   c) ...
   d) ...
   e) ...
   f) ...

3.4 Condition B43 – Maintenance Program Streetscape Landscape Works

Condition B43 currently reads as follows:

> *The implementation of a landscape maintenance program in accordance with the approved Landscape Plan is required. This is to be for a minimum period of 12 months to ensure that all streetscape landscape work becomes well established by regular maintenance. Details of the program must be submitted with the Landscape Plan to the CA for approval prior to issue of the Construction Certificate.*

As discussed above, there is no landscaping associated with the construction of the replacement Wrexham Road railway bridge. It therefore follows that Condition B43 has no relevance to the construction of the replacement Wrexham Road railway bridge.

Condition B43 is therefore proposed to be amended as follows.

Proposed Modification

Condition B43 - Maintenance Program Streetscape Landscape Works
The implementation of a landscape maintenance program in accordance with the approved Landscape Plan is required. This is to be for a minimum period of 12 months to ensure that all streetscape landscape work becomes well established by regular maintenance. Details of the

program must be submitted with the Landscape Plan to the CA for approval prior to issue of the Construction Certificate, excluding a Construction Certificate for that component of the Project relating to the replacement Wrexham Road railway bridge.

3.5 Condition B50 – Conservation Agreement

Condition B50 currently reads as follows:

> *In accordance with the Statement of Commitments, a draft Voluntary Conservation Agreement under the National Parks and Wildlife Act, 1974 should be prepared regarding the cultural heritage of the site and shall be prepared in consultation with the National Parks and Wildlife Service (NPWS-DECC) and submitted to the CA prior to the issue of a Construction Certificate.*
>
> *Should the National Parks and Wildlife Service (NPWS-DECC) not wish to enter into a conservation agreement for the site, then any relics found on the site are to be collected and dealt with as per the conditions relating to heritage in other parts of this determination.*

As you are aware Stockland has submitted a separate application under s75W of the EPA&A Act on 12 March 2010 to modify five conditions in relation to Aboriginal heritage, including condition B50 which is proposed to be deleted under that application. In the event that this subject s75W application is modified before the 12 March 2010 application, then Condition B50 is proposed to be modified in the manner set out below in order to prevent the delay of the construction certificate for the replacement bridge.

The proposed Wrexham Road bridge is a replacement bridge. The ground levels in the vicinity of the bridge have been highly disturbed with the construction of the railway cutting and former bridge greatly reducing the likelihood of any Aboriginal archaeology in this location.

A Voluntary Conservation Agreement (VCA) under the National Parks and Wildlife Act, 1974 is an agreement that is attached to land and should identify that part of the land to which the agreement relates. In the case of the replacement bridge RailCorp and Wollongong City Council are the landowners, not Stockland. Therefore Stockland cannot make a third party enter into a VCA.

We propose that the condition be modified by excluding the application of the condition from the process of obtaining a construction certificate for the replacement Wrexham Road railway bridge.

The proposed modification below is an interim measure to facilitate the issue of a construction certificate for the replacement Wrexham Road railway bridge. The proposed modification does not change or replace the modifications proposed in the s75W application dated 12 March 2010.

Proposed Modification
Stockland therefore proposes that the Project application be modified as follows:

A. Modifying Condition B50 as follows:

B50 - Conservation Agreement
In accordance with the Statement of Commitments, a draft Voluntary Conservation Agreement under the National Parks and Wildlife Act, 1974 should be prepared regarding the cultural heritage of the site and shall be prepared in consultation with the National Parks and Wildlife Service (NPWS-DECC) and submitted to the CA prior to the issue of a Construction Certificate, excluding a Construction Certificate for that component of the Project relating to the replacement Wrexham Road railway bridge.

Should the National Parks and Wildlife Service (NPWS-DECC) not wish to enter into a conservation agreement for the site, then any relics found on the site are to be collected and dealt with as per the conditions relating to heritage in other parts of this determination.
B. Amending the following Commitment A voluntary conservation agreement would be provided with the implementation of the Project Plan approval (excluding that component of the Project relating to the replacement Wrexham Road railway bridge), if required.

4.0 Environmental and Site Management

The conditions regarding environmental management such as Condition B13 – Construction Management Plan and Condition B14 – Traffic Management Plan and construction related conditions contained in Part E of the Approval (e.g. site notices, dust control, sediment and erosion control measures, hours of work etc) will continue to apply to the issue of a construction certificate for the replacement bridge.

In addition, Stockland will need to obtain a licence from Wollongong City Council under the Local Government Act 1993 to occupy part of Thomas Gibson Park for the standing of a plant and equipment and site fencing to enable the work to take place. Based on the licence obtained by Stockland's contractors for the demolition of the bridge, Wollongong City Council is likely to require management plans before issuing such a licence address such matters as pedestrian and traffic management, work safety methods, occupational health and safety matters, public safety and site security documentation. The preparation of such plans and information will be provided to accredited certificate and Council separate from the s.75W application process.

The combination of the environmental management conditions in the Project approval and site management and safety matters addressed through the property licence process with Wollongong City Council will provide a comprehensive set of management measures for the proposed works.

5.0 Consistency with Project Approval

In our opinion the proposed modification does not alter the nature of the Project and merely seeks to amend the timing for the issue of a construction certificate for one component of the Approved Project. In our opinion the proposed modification is consistent with the Approved Project.

6.0 Conclusion

In our opinion the modifications to the Project Approval and approved Statement of Commitments is minor. The conditions proposed to be modified do not have relevance to the construction of the replacement bridge.

As presently worded the above conditions do not make any distinction between the construction certificate(s) for the residential subdivision and the construction of the replacement Wrexham Road railway bridge. This requires a construction certificate for the bridge to satisfy conditions relating to the residential subdivision and therefore delays the commencement of works for the replacement bridge.

Without the proposed modifications the bridge reconstruction will be delayed and the opportunity to carry out the works during the track shut downs scheduled during this year will be lost. The delays will, in turn, delay the reinstatement of pedestrian access over the railway line

to Thomas Gibson Park from the residential areas to the west of the railway line. The community will therefore benefit from this proposed modification.

Stockland is happy to discuss the proposed modifications to the conditions and is keen to work with the Department of Planning in order to achieve a set of conditions that achieve an appropriate outcome and are readily capable of being implemented. Should you have any further questions, please do not hesitate to contact David Kettle.

Yours faithfully
DON FOX PLANNING PTY LIMITED

DAVID KETTLE
SENIOR TOWN PLANNER

Reviewed: _____

cc: Michael Braithwaite, Stockland
Michael Woodland, Department of Planning.

Encl: Appendix A Hazardous Material Identification Survey prepared by Network Geotechnics dated, September 2007.

dfp

planning consultants

APPENDIX A

EARTH AIR WATER CONSULTING AND MONITORING PTY LIMITED

ENVIRONMENTAL ENGINEERS HYDROGEOLOGISTS AND GEOTECHNICAL ENGINEERS

Stockland Development Pty Ltd
c/- Don Fox Planning Pty Ltd

Hazardous Materials Identification Survey

-:-

Wrexham Road Railway Bridge
Thirroul, NSW 2515.

September 2007

Hazardous Materials Identification Survey: Wrexham Road Railway Bridge, Thirroul NSW

Issue No: 1
Issue Date: 29/09/2007
Earth Air Water Consulting and Monitoring Pty Limited Ref: J/No 981

Client: Stockland Development Pty Ltd
c/-Don Fox Planning Pty Ltd
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Report Prepared By: Alex Clifton BSc (Geoecol)(PhysGeog) CertIV Land. Man.
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Hanady Hourani BEnvSc (Restoration)(Conservation)

Approved By: .....
Warren Newell
MAppSc FIEAust CPEng
Managing Director

CONTENTS

1.0 EXECUTIVE SUMMARY

1.1 Background

The conclusions and recommendations, which are presented in this report, are based only on information, which has been obtained as part of this survey, and the specified background information. Some of the conclusions and recommendations may change if the information upon which they are based is later found to be incorrect or incomplete, or if additional information is subsequently found to exist.

This "Hazardous Materials Identification Survey" (HMIS) has been requested by David Kettle on behalf of Don Fox Planning Pty Ltd to ascertain the extent of hazardous materials within the bridge and immediate area of Wrexham Road Railway Bridge, Thirroul, NSW. A visual search, hazardous materials historical search, and analytical testing were undertaken for asbestos containing material (ACM), asbestos dust, synthetic mineral fibre (SMF), Polychlorinated Biphenyls (PCB), Polynuclear Aromatic Hydrocarbons (PAH), Organochlorine Pesticides (OC/OP) and Lead (Pb) were also undertaken.

1.2 Objectives of the Investigation

The objective of this investigation was to identify environmental and/or health risks that known, and in some cases unknown, potential contaminants and/or hazardous materials may pose. The information contained in this report may therefore not be suitable for engineering design or construction purposes. To avoid misinterpretation or misrepresentation of results obtained during this investigation, laboratory results, maps and photographs should not be separated from this report and should be utilised by the client to facilitate in the understanding of this report.

The specific objective of this assessment was to survey nominated areas within the site for hazardous materials.

1.3 Summary of Conclusions and Recommendations

All the field work conducted by EAW personnel on the 19th September 2007, A systematic visual search was undertaken on the site as well as analytical determination of several paint, soil, and material samples. It is possible that areas unaccessible to EAW during the survey may contain undetected hazardous materials:

- Locked electrical fuse boxes, potentially containing asbestos containing boards and asbestos insulation. The size of this ACM, if present, would be less than 10 kg over the site.

All other areas were accessible for the survey. The search identified two separate lead based paints used on brickwork on the bridge. The purple paint used on the upper surface and the black "resin" underneath the arch both contained lead as determined by analytical analysis. The search did not identify any other hazardous materials.

Analytical results from NATA accredited laboratories have concluded that there is no detection of asbestos minerals/fibres on Wrexham Road Bridge, located in Thirroul, NSW from the samples taken. A soil sample from the bridge was also analysed for PAH's PCBs, OC/OP's and lead. The sample tested showed no detection PAH's, PCB's and OC/OP's, and only low levels of lead attributable to background concentrations.

The risk of human health from lead based paints is considered minimal if there is no significant liberation of particles from paint deterioration, and hence no significant risk of inhalation of those particles. The condition of paint on the bridge is considered good. Demolition of all painted surfaces should be done so without sanding. However, if removal of paint before demolition is required, procedures such as wet blasting or use of power tools fitted with HEPA-filtered local exhaust ventilators should be implemented. All personnel involved in the task will be required to wear appropriate P2 rated dust masks as per the *Occupational Health and Safety Regulation 2001*.

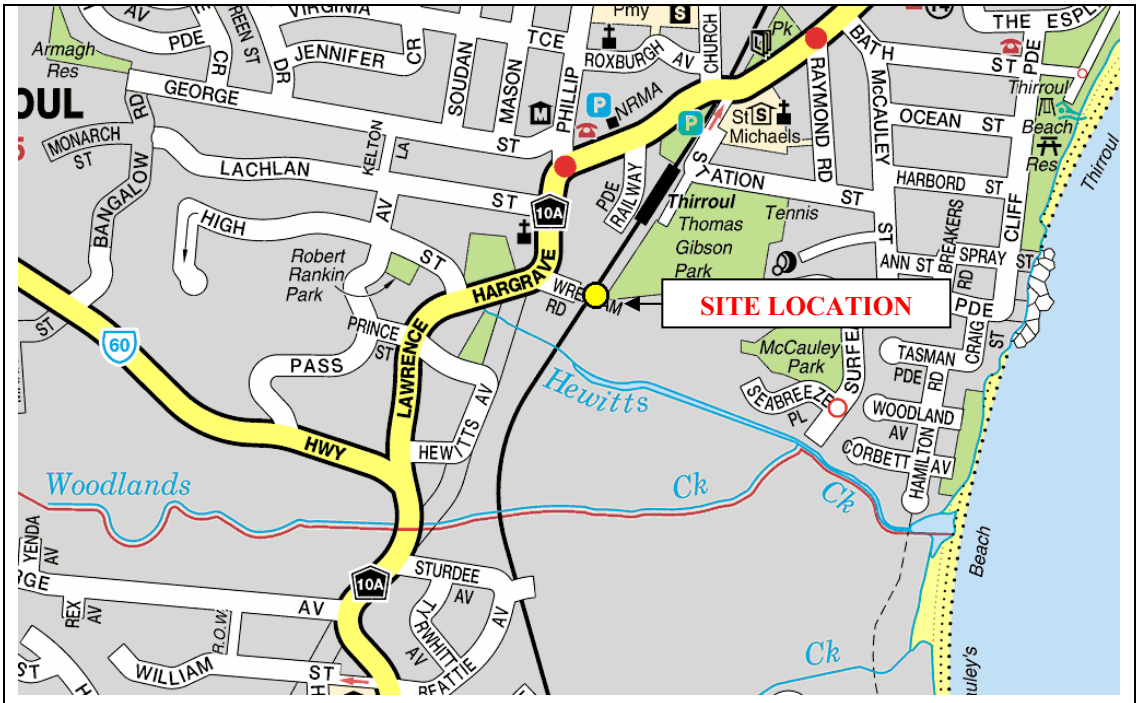
2.0 SCOPE OF WORK

- The scope of work was to carry out a "Hazardous Materials Identification Survey" with specific reference to all hazardous materials, on the bridge to be demolished. The location was at Wrexham Road, railway bridge, THIRROUL. The site assessment was undertaken on 19th September 2007. The samples were taken to NATA accredited laboratories for analysis, and a Hazardous Materials Identification Assessment Report compiled using the results of the site assessment and analytical data.

3.0 SITE IDENTIFICATION

The site is identified as the bridge on Wrexham Road, THIRROUL, in the State of New South Wales.

3.1 Site Map



Wrexham Road Bridge, **THIRROUL NSW, 2515.**	**Scale Approximate**

3.2 Aerial Photograph of Site

Aerial photographs were not required as part of this investigation.

3.3 Site Description

The site area is located on Wrexham Road, THIRROUL. The road is a no through road, with the closest cross-street being Lawrence Hargrave Drive. The site consisting of a narrow, two lane bridge with loose gravel surface that spans the main Illawarra railway lines. The closest station is Thirroul, which is located 200m North East of the bridge. The surrounding area to the west is predominantly medium density residential in an established neighbourhood.

The site is relatively flat, with a slight slope into the neighbouring park located 50m north east. The bridge is a mosaic of old and new brickwork and paint, evidence of multiple periods of renovation. There are cracks in the basic foundation of the bridge; the most prominent one is located on the south wall, roughly in the middle.

On both sides of the bridge are metal platform foundations that are $1m^2$ x $6m^2$. Underneath these platforms are located the ceramic insulators and associated electrical hardware for the electrical power. Double tracks on blue metal ballast and concrete sleepers are located below the bridge. A points box, and associated electrical and hydraulic lines run parallel to these tracks.

4.0 SITE HISTORY

4.1 Summary of Site History

A detailed site history was not required as part of this investigation.

4.2 Land Use

A detailed land use study was not required as part of this investigation.

4.3 Inventory of Chemicals and Wastes Associated with the Site

A WorkCover NSW Dangerous Goods Search was undertaken on the site, appended to this report. No bulk "Scheduled" chemicals are stored on the site and there is no evidence to suggest bulk storage has occurred on the site in the past.

4.4 Possible Sources of Hazardous Materials

Historically no specific information exists in relation to the use of hazardous materials within the construction of the site bridge. This fact is not surprising given that the hazard of primary concern, asbestos, was not known to pose a significant health risk at the time and therefore would not have warranted and special record. Asbestos could have been a possible source of material found on site within the building foundation, underneath the bridge from the railway sections or the textured external paint of the bridge, however samples taken of accessible areas of these materials indicate no presence of asbestos.

Asbestos dust as a result of deterioration of train brake pads was considered a possible source. Samples from surfaces on the bridge, and surfaces below the bridge were analysed for asbestos, with all results showing non-detection for asbestos.

Synthetic Mineral Fibres (SMF), usually made up of glass, rock and alumina and silica materials is a common substitute of asbestos. Samples taken of accessible areas of potential SMF containing materials indicate no presence of SMF.

Other possible hazardous materials that were testing for include Lead (Pb) in paint products or any solder, and Polychlorinated Biphenyls (PCB), Polynuclear Aromatic Hydrocarbons (PAH), and Organochlorine Pesticides (OC/OP) in the soil material located on top of the bridge.

Locked points hydraulic fluid boxes and hydraulic lines, potentially containing PCB's within the oil. It is unlikely that the oil contains PCB's unless previously recycled from electrical transformers.

Locked electrical fuse boxes, potentially containing asbestos sheeting and insulation were also present on site. EAW was unable to gain access to these boxes, the possibility remains that these contain small amounts of bonded asbestos sheeting.

4.5 Details and Locations of Current and Former Storage Tanks

UST's or AST's do not exist on the site. The surrounding area given the established residential nature of the site and neighbourhood this is very unlikely; however these have not been subject to assessment as part of this HMIS survey.

4.6 Local Site Knowledge of Residents and Staff

No significant knowledge relating to this investigation has been obtained from the site.

4.7 Summary of Local Literature About the Site

Local literature specific to the site was limited and in most cases provided little information of relevance to this survey.

4.8 Historical Use of Adjacent Land

A detailed history of adjacent land was not required as part of this investigation.

4.9 Integrity Assessment

The information contained within this report is based on the limited records available in relation to the area by on-site investigations and the Work Cover Dangerous Goods Search.

5.0 HAZARDOUS MATERIALS IDENTIFICATION SURVEY

5.1 Extruding platform ledge.

The bridge had two extruding platform ledges on either side. These metal constructions held a thin layer of unidentified dust particles surrounding the cable covers. Samples of dust were taken from these platforms for presence of asbestos (originating from train brake pads). Dust sampled from the south side of the bridge showed no detection of asbestos material/fibres or any traces of Synthetic Material Fibres (SMF). Results concluded there was a consisted mixture of dust particles, sand, organic fibres, corroded metal, plant matter and fragments of bitumen.

No ACM's were identified in these areas during the survey.

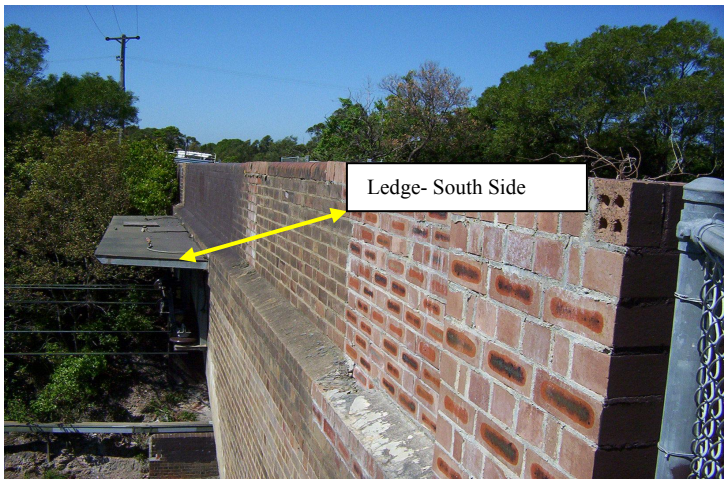


Figure 5.1a) Extruding platform ledge on the South Side. Patchwork nature of brickwork is evident on bridge structure

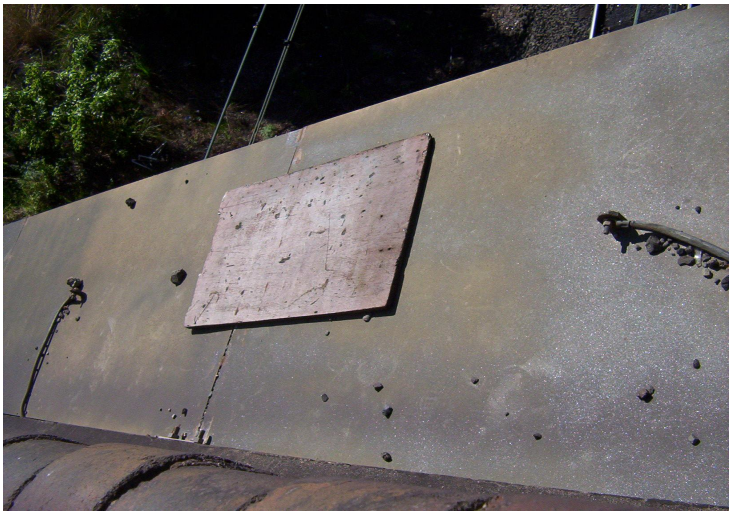


Figure 5.1b) Close up of the ledge showing evidence of dust.

5.2 Concrete Foundation

The concrete from which sample was taken is located in the original part of the brick building foundation, on the outside south wall where no paint was evident.

This foundation was also thought to have evidence of Asbestos material/fibres and SMF within the concrete, although samples returned non-detection for such materials. The concrete foundation contained fragments of plaster cement like material.

Figure 5.2- Close up of brick works where concrete sample was taken.

5.3 Original Brick

As previously mentioned in Section 3.3, the bridge is made of a combination of old and newer bricks, where previous renovations have occurred. The one sample was taken from the original brick area with no paint application, due to the old bricks having more of a chance of containing hazardous material then the new products. The sample returned with no detection of either Asbestos material/fibres or any SMF material.

The sample contained fragments of refractory brick like material, glass and debris.

Figure 5.3- Brick works where sample was taken.

5.4 Soil on the bridge top.

The bridge top consisted of a narrow two lane road of loose gravel, with ½ strips of grass on either side. The sample was taken underneath the gravel, where imported fill material may contain Polychlorinated Biphenyls (PCB), Polynuclear Aromatic Hydrocarbons (PAH), and Organochlorine Pesticides (OC/OP PCB'S). The analytical results returned low levels of lead attributable to background concentrations and non-detection limits for all other parameters

Testing was also carried out for accumulation of free friable asbestos material/fibres and SMF, but no detection was evident.

Figure 5.4- Top of the bridge looking out to Wrexham road.

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5.5 Paint fragments on the bridge wall/arch.

The bridge has a thick cover of purple paint to approximately ¾ of the brickworks. One sample was taken on the external south side of the bridge to test for Lead (Pb). The search identified two separate lead based paints used on brickwork on the bridge. The purple paint used on the upper surface and the black "resin" underneath the arch both contained lead as determined by analytical analysis

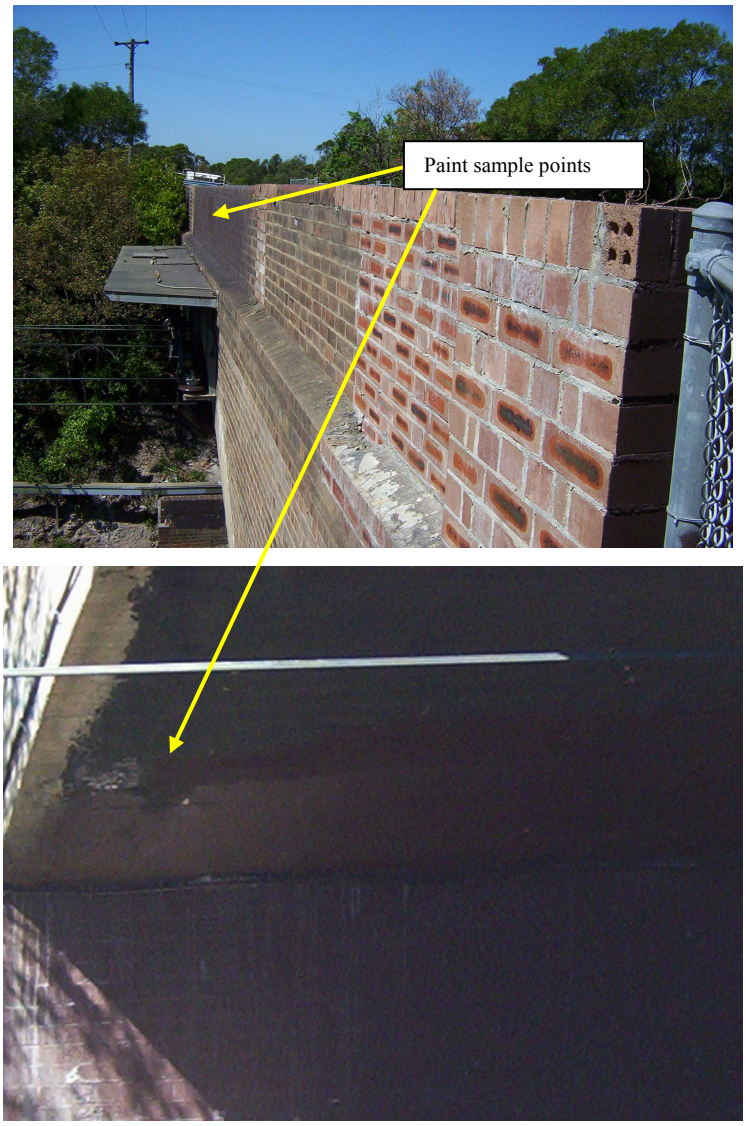

Figure 5.5- Sample points where paint fragments taken.

5.6 Rendering underneath the arch. North side.

Although limited access was available underneath the bridge, a sample was taken for any hazourdous material that might be contained underneath the bridge. The rendering was seen as a possible subject as it might contain asbestos material/fibres, or SMF. The results concluded that there was no asbestos detected and the sample only contained fragments of hard plastic cement like material.

5.7 Track and associated infrastructure.

Dust on surfaces below the bridge were tested for asbestos dust, a possible product of asbestos brake degradation over time. No detection of asbestos or SMF resulted from analytical testing.

Locked electrical fuse boxes, potentially containing asbestos sheeting and insulation were also present on site. EAW was unable to gain access to these boxes, the possibility remains that these contain small amounts of bonded asbestos sheeting. The boxes appeared to be in good condition.

There was no access afforded to the points boxes and associated hydraulic lines. It is unlikely that the oil or points boxes contains any hazardous material.

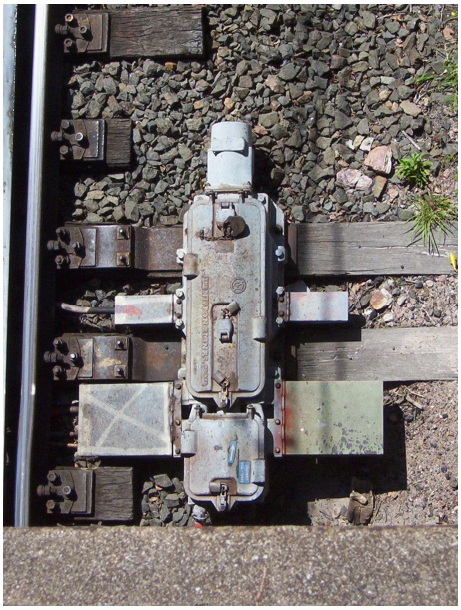

Figure 5.7 Points Box

6.0 SAMPLING AND ANALYSIS PLAN AND SAMPLING METHODOLOGY

The investigation requirement for this site was to perform a Hazardous Materials Identification Survey to evaluate for potential presence of hazardous materials. Each bridge area was surveyed on an individual basis with all safely accessibly locations inspected visually for common hazardous materials including:

- ACM such as asbestos sheeting, asbestos lagging or insulation material.
- Synthetic mineral fibres within building materials
- Lead containing materials such as lead paint
- PCB's such as transformer oil
- PAH's and Organo chlorine pesticides in any soil material or timber/building products.

Analytical testing was undertaken on selected materials, considered representative where accessible to confirm presence/absence of selected parameters. Five samples were taken to determine potential asbestos content. SMF was also considered a hazardous material that could be associated from this site; further tests were undertaken to investigate. Lead (Pb) was tested for in various paint fragments, and PCB, PAH, OC/OP in one soil sample.

6.1 Sampling, Analysis and Data Quality Objectives

The sampling objective was to obtain for analysis and or assessment samples representative of the bridge buildings material within each structure surveyed, as well as analysis of locations with a high likelihood of yielding contamination.

The analysis and data quality objectives were determined to be the requirement that a NATA accredited laboratory provide confirmative analysis

in certified form using approved methods that would adequately confirm or discount the presence of target contaminants.

6.2 Selection Rationale for the selection of:

- **Sampling Pattern**

Sampling pattern was judgemental as opposed to systematic, given the structure of the built environment being assessed. Sample locations varied greatly on site, just as materials varied greatly on the bridge. The soil sample taken on the bridge was composited from 6 locations chosen systematically, as within the DECC/EPA *"Sample Design Guidelines"*.

- **Sampling Density**

Sampling density was determined by the number of safely accessible locations on and around the bridge, which provided material of a type consistent with target materials.

- **Analytical Methods**

The analytical methods used by the contracted laboratory are stated on the test certificates appended to this report.

- **Analytes for Samples**

Samples collected were submitted for the analysis of asbestos (presence/absence and species), SMF(presence/absence), Lead (Pb) and PCB, PAH, OC/OP.

6.3 Detailed Description of the Sampling Methods Including:

- **Sample Containers and Type of Seal Used**

Samples designated for asbestos analysis were placed into zip sealed plastic bags, individually labelled and stored in large heavy seal asbestos waste bags. Soil sample containers consist of solvent rinsed jars with Teflon lined lids. These are then placed in (eskies) hard cased coolers and cooled to <4 degrees.

- **Sampling Devices and Equipment**

Sampling equipment included large blade stainless steel scrapers and flat mouthed stainless steel sample scoops as well as glass fibre brushes and stainless steel funnels. The soil sample was collected using a rinsed stainless steel spatula and placed into a rinsed stainless steel sample tray from where the soil was deposited into the prescribed sample jar.

- **Equipment Decontamination Procedures**

All materials and equipment used to collect the samples were washed and cleaned with a glass fibre brush after each sample had been collected and then rinsed with demineralised and filtered water. Trays were wiped clean with paper towels after washing and rinsing.

- **Sample Handling Procedures**

Samples were stored in a foam cooler at a temperature of approximately 4^{o} C and transported to the laboratory. Sample custody and the company transport procedure maintain sample integrity.

- **Sample Preservation Methods**

References to recognised protocols

All samples were placed in the appropriate containers and transported according to the standard AS/NZ 1726 – 1993 and the EPA Guidelines for Contaminated Sites – Sampling Design Guidelines.

7.0 FIELD QUALITY ASSURANCE AND QUALITY CONTROL

7.1 Details of Sampling Team

Sampling and assessment was performed by:

- EAW Environmental Scientist Mr. Alex Clifton BSc (Geoecol)(PhysGeog) CertIV Land Man
- EAW Environmental Scientist Ms. Hanady Hourani BESc (Restoration) (Conservation).
- OH&S Scientist Mr. Ghazanfer Ahmedi BAppSc OH&E BAppSc OH&E.

7.2 Decontamination Procedures Carried Out Between Sampling Events

All sampling equipment was brushed down between test locations to limit cross contamination. Stainless steel sampling trays were washed out and all spatulas cleaned.

7.3 Chain of Custody

All samples are uniquely identified on site and labelled. The chain of custody forms are prepared and submitted to the laboratory where they are signed on receipt of the samples. Chain of custody forms are appended to this report.

8.0 LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL

The laboratory results from soil, lead and asbestos samples are compared to and interpreted against accepted criteria compiled in guideline documents, which stipulate the maximum permissible concentrations of contaminants in soil, and air. It should be noted that guideline values are commonly derived for a representative general population with representative exposure conditions and should be adapted, as appropriate, at national and local levels. The approach to deriving guidance values is based on the concept of a tolerable daily intake (TDI) and (TWA) exposure limits which are doses that humans may be exposed to every day throughout their life without appreciable risk. Guidance values are defined as:

"Values, such as concentrations in air or water, which are derived after appropriate allocation of the Tolerable intake (TI) among the possible different media of exposure. Combined exposure from all media at the guidance values over a lifetime would be expected to be without appreciable health risk. The aim of a guidance value is to provide quantitative information from risk assessment for risk managers to enable them to make decisions concerning the protection of human health." (WHO, 1994)

EAW uses, wherever possible, guidelines which have been developed for Australian environmental conditions (soil type, climate etc) which determines the presence, phase, mobility, and degradation etc of contaminants. The Australian guidelines, which are followed, can be found in the *National Environmental Health Forum, Health-based soil investigation levels*. Where acceptance criteria for contaminants are not as yet specified in the Australian guidelines, alternative guidelines are utilised these are generally based upon the Dutch guidelines which are globally recognised as pioneers in this field.

8.1 Signed Chain of Custody Form

Chain of Custody Form (COC) is appended to this report.

8.2 Analytical Methods Used

Analytical methods include polarised light microscopy and as well as gram staining for species differentiation.

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8.3 Laboratory Accreditation

The laboratory selected by Earth Air Water Consulting and Monitoring Pty Limited to perform the analysis on the asbestos and SMF samples was Australian Safer Environment & Technology Pty Ltd (NATA accreditation No. 14484). The laboratory selected for Lead (Pb), and PCB, PAH, OC/OP sample analysis was Australian Laboratory Services – Environmental at Smithfield- ALSE Sydney (NATA registration number 825). Both laboratory's NATA approval is current.

9.0 QUALITY ASSURANCE AND QUALITY CONTROL DATA EVALUATION

The laboratory QA/QC information has been included in the test certificates. The recoveries are all within acceptable limits. Recovery tables are given in conjunction with Laboratory Certificates.

The chain of custody form has been checked and is appended to the laboratory reports. All requested tests have been completed.

9.1 Evaluation of all Quality Assurance and Quality Control Information

Documentation from field to laboratory and included with the test results is complete and satisfactory.

Data from site and the laboratory is complete and satisfactory

Data from the requested test samples is within sampling and location limitations. This is considered representative of the site.

Precision and accuracy for both sampling and analysis for each analyte in each environment matrix is satisfactory and complete

9.2 Data Comparability Checks

Data comparability is within an acceptable range as shown by the RPD calculation.

10.0 RESULTS

10.1 Summary of Hazardous Materials for Buildings Surveyed

The following table summarises observations and analytical testing evidence obtained as part of this Hazardous Materials Identification Survey.

Location	Sample No	Material	Extent/Area	Comments
Platform ledge- South Side dust.	07981001	Dust	1x6m^2	No detection of Asb or SMF
Concrete foundation	07981003	Concrete	Bridge Length	No detection of Asb or SMF
Soil- Bridge Top	07981005	Soil	Bridge Length	No detection of Asb or SMF PCB's, PAH, OC/OP. Background levels of Pb.
Paint- south side wall	07981002	Paint	½ Bridge Length	**Contains Pb**
Paint- under bridge	07981006	Paint	Bridge Length	**Contains Pb**
Rendering under bridge	07981007	Rendering	Bridge Length	No detection of Asb or SMF
Original brick- South side	07981004	Brick	Bridge Length	No detection of Asb or SMF

10.2 Discussion of Results

A total of seven (7) samples were collected for analysis for asbestos. All original materials we classified and no detections were evident for any Asbestos, Lead (Pb), SMF, PCB, PAH and OC/OP.

The search identified two separate lead based paints used on brickwork on the bridge. The purple paint used on the upper surface and the black "resin" underneath the arch both contained lead as determined by analytical analysis. The results did not identify any other hazardous materials.

However, it must be stated that although no detections were evident from the samples taken on the 19th September 2007, it does not indicate that the area is completely free from all hazardous material, such as areas inaccessible during the survey (points boxes and hydraulic lines, and fuse boxes). The possibility exists for hazardous materials to be placed onsite in the future; an identified potential hazard is the settling of brake dust containing asbestos. This scenario was taken into consideration when sampling number 07981001, due to the evident dust. All samples returned with no detection of asbestos.

11.0 SITE CHARECTERISATION

11.1 Assessment of Type of Hazardous Materials Identified

There was no detection of any type of hazardous material identified. The analyts that were tested include asbestos, lead (Pb), SMF, PCB, PAH or OC/OP.

11.2 Assessment of Extent of Hazardous Materials

There was no measureable extent of hazardous material due to no detection of asbestos, lead (Pb), SMF, PCB, PAH or OC/OP in the seven samples taken.

11.3 Assessment of Possible Exposure Routes and Exposed Populations

The possibility of exposure routes and populations seem unlikely, due to the results from the samples. No detection was evident of asbestos, lead (Pb), SMF, PCB, PAH or OC/OP in the seven samples taken

12.0 CONCLUSIONS AND RECOMMENDATIONS

12.1 Brief Summary of all Findings

All the field work conducted by EAW staff members on the 19th September 2007, and the analytical results from NATA accredited laboratories have concluded that there is no detection of hazardous materials on Wrexham Road Bridge, located in Thirroul NSW from the samples that were taken and visual inspection of the site.

However, it must be stated that although no detections were evident from the samples taken on the 19th September 2007, it does not indicate that the area is completely free from all hazardous material; it is possible that areas inaccessible to EAW during the survey may contain undetected hazardous materials:

- Locked electrical fuse boxes, potentially containing asbestos containing boards and asbestos insulation.

The possibility exists for hazardous materials to be placed onsite in the future; an identified potential hazard is the settling of brake dust containing asbestos. This scenario was taken into consideration when sampling number 07981001, due to the evident dust. All samples returned with no detection of asbestos.

Another hazardous material that was tested for includes Lead (Pb), in 2 separate types of paints. The first was on the bridge foundation walls, the later underneath the bridge. The search identified two separate lead based paints used on brickwork on the bridge. The purple paint used on the upper surface and the black “resin” underneath the arch both contained lead as determined by analytical analysis

One soil sample was taken on the bridge top, and tested for possible Polychlorinated Biphenyls (PCB), Polynuclear Aromatic Hydrocarbons (PAH), Organochlorine Pesticides (OC/OP) and Lead (Pb). A separate test

for Asbestos fibres/minerals and Synthetic Material Fibres (SMF) was also taken from the same sample. The sample tested showed no detection of Asbestos, PAH's, PCB's and OC/OP's, and only low levels of lead contributable to background levels and significantly below the DEC/EPA NSW Auditors Guideline Criteria, Column 1 / NEHF "F" Threshold.

The concrete and old brick material from the foundation of the bridge also submitted to no asbestos or SMF found.

All samples chosen were considered representative of those materials evident from visual inspection that area used throughout the bridge structure. There may be materials that were not able to been seen/sampled during the fieldwork that contain hazardous materials.

12.2 Assumptions used in Reaching the Conclusions

EAW has endeavoured to ensure that this investigation was conducted using, in its opinion, the most appropriate methods and techniques in order to satisfy the specific requirements of the survey. The assumption is made that all information provided by the client and their representatives is complete and factual.

12.3 Extent of Uncertainties

This survey is specific only to the areas of the buildings that were safely accessible on the day of survey and excludes areas with unsafe or no access such as the locked points hydraulic fluid boxes located adjacent to the tracks. While every professional effort is made to ensure that all hazardous materials are identified and their extents defined, the possibility exists that a small deposit of such material may remain undiscovered until a later date.

Although all due care is taken to preserve and store the samples immediately following collection and during transport to the laboratory, some chemicals may decompose or degrade whilst samples are being transported to or awaiting processing at the laboratory.

12.4 Recommendations for Further Work

EAW recommends that future plans for the demolition of Wrexham Road Bridge can be continued, with the provision for lead management.

Lead Management

The risk of human health from lead based paints is considered minimal if there is no significant liberation of particles from paint deterioration, and hence no significant risk of inhalation of those particles. The condition of paint on the bridge is considered good. Demolition of all painted surfaces should be done so without sanding. However, if removal of paint before demolition is required, procedures such as wet blasting or use of power tools fitted with HEPA-filtered local exhaust ventilators should be implemented. As espoused in the NSW EPA *Managing Lead Contamination in Home Maintenance and Demolition (2003),* techniques are detailed below.

Wet blasting methods reduce dustiness associated with the removal of lead based paint. Both high pressure water alone and water mixed with abrasive produce substantially lower dust emissions. Retrofit devices to fit over the end of conventional abrasive blast nozzles are available, and improve the rate of surface cleaning in wet blasting. All runoff water from wet blasting must be properly contained, collected and disposed of in slush boxes. Contaminated runoff containing lead would be classified as Group A waste as outlined in the EPA's environmental guidelines, *Assessment, Classification and Management of Liquid and Non-Liquid Wastes*. Group A waste requires treatment at a licensed liquid waste treatment facility. A trade waste agreement must be obtained from the appropriate water authority before any liquid waste is disposed of to the sewer.

Power tools can be used to sand, scrape or chip coatings from steel structures, allowing the removal of deteriorated paint while leaving paint in nearby areas intact. Power tools equipped with HEPA-filtered local exhaust ventilators, also known as vacuum tools, are used to reduce workers' exposure during lead paint removal. Vacuum tools can also reduce airborne lead emissions and can control and collect the waste better. Power tools are effective in controlling

lead exposure when they are used properly. All personnel will be required to wear appropriate P2 rated dust masks.

No other specific requirements in relation to Hazardous Material's other than those implemented for lead management above. In mentioning this however, care should be taken if new materials are found onsite once demolition has started. A suitably qualified OH&S Scientist should be consulted in this instance.

13.0 APPENDICES

Appendix A: Laboratory Certificates

Appendix B: Chain of Custody

Appendix C: Dangerous Goods Search

Appendix A: Laboratory Certificates

Appendix B: Chain of Custody

Appendix C: Dangerous Goods Search