



ENVIRONMENTAL INVESTIGATION SERVICES

# **REPORT**

TO

**SYDNEY FISH MARKET PTY LTD AND LAND AND  
PROPERTY MANAGEMENT AUTHORITY**

ON

**ACID SULFATE SOIL MANAGEMENT PLAN**

FOR

**PROPOSED REDEVELOPMENT**

AT

**SYDNEY FISH MARKETS, 56-60 PYRMONT BRIDGE  
ROAD, PYRMONT, NSW**

**AUGUST 2010**

**REF: E23982KrptASSMP**



AS/NZS ISO 9001  
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## 1 INTRODUCTION

Conybeare Morrison International Pty Ltd and Reilly Design Group (CM+ & R), acting on behalf of Sydney Fish Market Pty Ltd, and Land and Property Management Authority, commissioned Environmental Investigation Services (EIS), a division of Jeffery & Katauskas Pty Ltd (J&K), to prepare an acid sulfate soil management plan (ASSMP) for the proposed redevelopment at Sydney Fish Markets, 56-60 Pyrmont Bridge Road, Pyrmont, NSW.

The site location is shown on Figure 1 and for the purpose of this ASSMP the site has been subdivided into the following three main areas as shown on Figures 2, 3a and 3b:

- The SFM part 3A and 4 area;
- The waterfront works part 3A area; and
- Sediments.

The ASSMP was prepared generally in accordance with an EIS proposal (Ref: EP5080K) of 18 August 2010 and written acceptance from CM+ & R.

This report documents the procedures to be implemented to manage acid sulfate soils (ASS) identified during the previous investigations undertaken at the site.

### 1.1 Investigation Reports Prepared by EIS and J&K

EIS have prepared the following reports for the site:

- *Report to Sydney Fish Markets Pty Ltd on Environmental Site Assessment and Acid Sulfate Soil Assessment for Proposed Redevelopment at Sydney Fish Markets, 56-60 Pyrmont Bridge Road, Pyrmont, NSW, Ref: E23982Krpt, dated June 2010<sup>1</sup>;*
- *Report to Land and Property Management Authority C/- Government Architects Office on Preliminary Environmental Site Assessment for Proposed Redevelopment – Waterfront at Sydney Fish Markets, 56-60 Pyrmont Bridge Road, Pyrmont, NSW, Ref: E24125Krpt, dated August 2010<sup>2</sup>; and*
- *Report to Sydney Fish Market Pty Ltd and Land and Property Management Authority on Additional Environmental Site Assessment and Remediation Action Plan for Proposed Redevelopment at Sydney Fish Markets, 56-60 Pyrmont Bridge Road, Pyrmont, NSW, Ref: E23982Krpt2, dated August 2010<sup>3</sup>.*

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<sup>1</sup> Referred to as EIS 2010a report

<sup>2</sup> Referred to as EIS 2010b report

<sup>3</sup> Referred to as EIS 2010c report



The ASS assessment results presented in the above reports have been summarised in this report. The ASSMP should be read in conjunction with the EIS 2010c report. J&K have prepared a number of geotechnical investigation reports for the proposed development at the site. Reference should be made to the EIS 2010a and 2010b reports for further details.

## **1.2 Proposed Development Details**

### **1.2.1 SFM Part 3A and 4 Area (EIS 2010a Report)**

The proposed development in this area consists of four stages (Stages 1 to 4 inclusive as shown on Figure 2). Each stage will be undertaken in sequence to reduce the potential for disruption to the existing fish market operations.

Stage 1 of the development will comprise a single-storey extension to the west end of Building 34. The extension will have the same finished floor level (FFL) as the ground floor of Building 34, which is slightly above current ground levels within the proposed extension footprint. We understand that the ground floor slab is to be built as a suspended slab. Excavation will only be required if necessary for new services trenches and footing construction.

Stages 2 and 3 will include demolition of the existing buildings in the east of the site and construction of a four-storey building. The ground floor of this building will be at RL 3.6m and will have a delivery/pick up area over part of the ground floor. The first floor will be made up of both retail and parking areas, with the second and third floors also for parking. We have been advised that there is the possibility that a further two floors may be added to this building.

Stage 4 will include further works to building 34 as well as building 35 in the north-east section of the site. These buildings will be two-storeys, with the ground floor level for the building being at RL 3.6m. There will also be a new arrival forecourt which will be at approximately RL 6m.

Excavation for the proposed new works will be to a maximum depth of about 1.5m to achieve the required ground floor level of RL 3.6m for the stages 2 to 4 buildings. Locally deeper excavation may be required if necessary for new services trenches, lift pits and footing construction.



### **1.2.2 Waterfront Works Part 3A Area (EIS 2010b Report)**

Based on the details provided by Government Architects Office we understand the works in this area may include construction of a promenade, boardwalk, waterfront park and seawall. We have been advised that the works associated with the seawall construction are unlikely to include dredging of the sediments.

The proposed waterfront redevelopment is unlikely to include significant excavation works. Some filling may be required in the vicinity of the proposed park in order to achieve the desired site levels.



## **2 BACKGROUND TO ACID SULFATE SOILS (ASS)**

Acid sulfate soils (ASS) is the common term for naturally occurring soil and sediment that contains iron sulfides which, when exposed to oxygen generate sulfuric acid. These soils are formed from iron rich alluvial sediments and sulfate (found in seawater) in the presence of sulfate reducing bacteria and plentiful organic matter. These conditions are generally found in mangroves, salt marsh vegetation or tidal areas and at the bottom of coastal rivers and lakes.

The NSW government in 1994 formed the Acid Sulfate Soils Management Advisory Committee (ASSMAC) to coordinate a response to ASS issues. In 1998 this group released the Acid Sulfate Soil Manual<sup>4</sup> providing best practice advice for planning, assessment, management, laboratory methods, drainage, groundwater and the preparation of ASS management plans (ASSMP).

In 1997 the Department of Land and Soil Conservation (now part of DECCW) developed two series of maps with respect to ASS for use by council and technical staff implementing the ASS Manual 1998:

- Acid Sulfate Soils Planning Maps – issued to councils and government units; and
- Acid Sulfate Soils Risk Maps – issued to interested parties.

The ASS planning maps provide an indication of the relative potential for disturbance of ASS to occur at locations within the council area. These maps do not provide an indication of the actual occurrence of ASS at a site or the likely severity of the conditions. The maps are divided into five classes dependent upon the type of activities/works that if undertaken, may represent an environmental risk through the development of acidic conditions associated with acid sulfate soils:

- Class 1: All works;
- Class 2: All works below existing ground level and works by which the watertable is likely to be lowered;
- Class 3: Works at depths beyond 1m below existing ground level or works by which the water table is likely to be lowered beyond 1m below existing ground level;
- Class 4: Works at depths beyond 2m below existing ground level or works by which the water table is likely to be lowered beyond 2m below existing ground level; and

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<sup>4</sup> *Acid Sulfate Soils Manual*, Acid Sulfate Soils Management Advisory Committee (ASSMAC), 1998 (ASS Manual 1998)



- Class 5: Works within 500m of adjacent Class 1,2,3,4 land which are likely to lower the water table below 1m AHD on the adjacent land.

The ASS maps, based on interpretation from geological and soil landscape maps provide an indication of the probability of occurrence of acid sulfate soils at a particular location. The maps provide classes based on high probability, low probability, no known occurrence and areas of disturbed terrain (site specific assessment necessary) and the likely depth at which ASS are likely to be encountered.



### **3      SITE INFORMATION**

#### **3.1      Regional Geology**

The geological map of Sydney (1983<sup>5</sup>) indicates the site to be located in the vicinity of two geological formations. Generally the areas towards Blackwattle Bay and the west portion of the site are mapped as being underlain by manmade fill which typically consists of dredged estuarine sand and mud, demolition rubble, industrial and household waste over Quaternary aged deposits of silty to peaty quartz sand, silt and clay with ferruginous and humic cementation and common shell layers.

The areas towards the north and east sections of the site are mapped as being underlain by Hawkesbury Sandstone, which typically consists of medium to coarse grained quartz sandstone with minor shale and laminite lenses.

#### **3.2      Acid Sulfate Soil Risk Map**

The acid sulfate soil risk maps indicate areas of high risk, low risk and no known occurrence of acid sulfate soils. The acid sulfate soil risk map for the Prospect/Parramatta area prepared by Department of Land and Soil Conservation (1997<sup>6</sup>) indicates that the site is located within an area of 'disturbed terrain' to depths of approximately 2m - 4m.

The 'disturbed terrain' classification is adopted in large scale filled areas which often occur during reclamation of low lying swamps for urban development, in areas which may have been mined or dredged or have undergone heavy ground disturbance through general urban development or the construction of dams and levees.

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<sup>5</sup> 1:100,000 Geological Map of Sydney (Series 9130), Department of Mineral Resources (1983) [now Department of Primary Industries]

<sup>6</sup> 1:25,000 Acid Sulfate Soil Risk Map (Series 9130N3, Ed 2), Department of Land and Soil Conservation (1997) [now NSW Land and Property Management Authority]



## **4 SUMMARY OF ASS CONDITIONS AT THE SITE**

### **4.1 EIS 2010a Investigation**

Soil samples for the ASS assessment were obtained from six boreholes (BH501, BH502, BH506, BH508, BH510 and BH518) drilled at the site (as shown in Figure 3a). Nine fill and ten natural soil samples obtained from the boreholes were analysed for ASS using the sPOCAS laboratory test outlined in the EIS 2010a report.

The laboratory results were compared to the site assessment criteria (SAC) adopted for the investigation which varied based on the soil type. The laboratory results and the SAC are presented in Table A. The laboratory analysis reports are presented in Appendix B of the EIS 2010a report.

The results of the analyses are summarised below:

#### ***pH***

- Soil pH (1:5 soil:water) results generally ranged from 7.1 to 11.4 and were indicative of neutral to very alkaline soils;
- The pH<sub>KCl</sub> results for the soil ranged from 4.5 to 11. These results indicated that the soil suspended in potassium chloride solution was slightly acidic to very alkaline; and
- Following oxidation the pH<sub>ox</sub> results for the soil samples ranged from 2.4 to 8.3. The majority of the results were below pH 5. The largest differences in pH were generally recorded in the natural soil samples which generally dropped by 2 or more pH units.

#### ***Acid Trail***

- Titratable actual acidity (TAA) results indicated that the soils were generally non-acidic prior to oxidation;
- Total potential acidity (TPA) results for four natural soil samples were above the SAC. The remaining TPA results were less than the SAC; and
- Titratable sulfidic acidity (TSA) results for four natural soil samples were above the SAC. The remaining TSA results were less than the SAC.

#### ***Sulfur Trail***

- The S<sub>pos</sub>% results for the majority of the fill and natural soil samples were above the SAC. The most significant S<sub>pos</sub>% were recorded for the natural alluvial soil samples. EIS consider that the elevated S<sub>pos</sub>% in the majority of the fill soil samples could be attributed to sulfur compounds contained within slag material



rather than potential acid sulfate soils (PASS). This is supported by the general lack of significant TPA concentrations within the fill material samples.

Based on the results of the assessment, the risk of the generation of acid sulfate conditions following disturbance of the natural alluvial soils at the site was considered to be high. The report recommended the preparation of an ASSMP for the proposed works at the site.

#### **4.2 EIS 2010b Investigation**

Soil samples for the ASS assessment were obtained from four boreholes (BH601, BH605, BH606 and BH608) and three sediment sample locations (SSA, SSB and SSC) as shown on Figure 3b. Eight fill, two natural soil samples and three sediment samples were analysed for ASS using the sPOCAS laboratory test outlined in the EIS 2010b report.

The laboratory results were compared to the SAC adopted for the investigation which varied based on the soil type. The laboratory results and the SAC are presented in Table A. The laboratory analysis reports are presented in Appendix B of the EIS 2010b report.

The results of the analyses are summarised below:

##### ***pH***

###### **Soil Samples**

- Soil pH<sub>KCl</sub> results ranged from 5.6 to 9.6. These results indicated that the soil suspended in potassium chloride solution was generally slightly acidic to alkaline prior to oxidation;
- Following oxidation the pH<sub>ox</sub> results for the soil samples ranged from 2.5 to 7.8. Half of the results were below pH 5. The largest differences in pH were generally recorded in the natural soil samples which generally dropped by 4 or more pH units.

###### **Sediment Samples**

- The pH<sub>KCl</sub> results for the soil ranged from 8.7 to 8.9. These results indicated that the soil suspended in potassium chloride solution was alkaline prior to oxidation; and
- Following oxidation the pH<sub>ox</sub> results for the soil samples ranged from 2.9 to 7.2. The SSB and SSC samples recorded the most significant drop in pH, with both samples dropping by at least 4 pH units.



### ***Acid Trail***

#### Soil Samples

- TAA results indicated that the soils were generally non-acidic prior to oxidation;
- TPA results for two fill and two natural soil samples were above the SAC. The remaining TPA results were less than the SAC; and
- TSA results for one fill and two natural soil samples were above the SAC. The remaining TSA results were less than the SAC.

#### Sediment Samples

- TAA results indicated that the soils were non-acidic prior to oxidation;
- TPA results for two samples (SSB and SSC) were above the SAC. The remaining TPA results were less than the SAC; and
- TSA results for two samples (SSB and SSC) were above the SAC. The remaining TPA results were less than the SAC.

### ***Sulfur Trail***

#### Soil Samples

- The  $S_{pos}\%$  results for the two natural soil samples and one of the fill samples were above the SAC. The most significant  $S_{pos}\%$  was recorded for the natural soil sample obtained from BH601 (5.8m-6.0m).

#### Sediment Samples

- The  $S_{pos}\%$  results for all three sediment samples were above the SAC.

Based on the results of the assessment, the risk of the generation of acid sulfate conditions following disturbance of the natural soils and sediments at the site was considered to be high. The report recommended the preparation of an ASSMP for the proposed works at the site.



## **5 ACID SULFATE SOIL MANAGEMENT PLAN (ASSMP)**

### **5.1 Objective**

The objective of the ASSMP is to reduce the potential on-site and off-site environmental impacts associated with disturbance of ASS identified at the site. The ASSMP has been prepared generally in accordance with the ASS Manual 1998.

The following issues are addressed in the ASSMP:

- Strategies for the management of PASS during development;
- Implementation of a soil and groundwater monitoring program; and
- Contingency procedures to be implemented in the event of the failure of management strategies.

This ASSMP should be subject to review in the event that the proposed development details differ significantly from those described in Section 1.2 of this report.

### **5.2 Soil Exclusion Zone**

Based on the results of the ASS assessment, EIS are of the opinion that the fill soil to a depth of approximately 1.5m at the site is not considered to be PASS due to the following reasons:

- The  $S_{pos}\%$  results for the majority of the fill samples above a depth of approximately 1.5m were generally below the SAC;
- The groundwater table at the site is located at a depth of approximately 2m below the existing surface. Groundwater levels can fluctuate based on tidal movements. If present, the PASS in the fill above the groundwater table is likely to have oxidised due to exposure with the atmosphere; and
- The elevated  $S_{pos}\%$  in the fill samples could be attributed to sulfur compounds contained within slag material.

An ASSMP is not considered necessary for development works to a depth of approximately 1.5m. Any works below this depth should be undertaken in accordance with this ASSMP.

The sediment soil samples are considered to be PASS and will require treatment and management as outlined in this ASSMP.



### 5.3 Management of Excavated Material

Any fill soils excavated from below a depth of approximately 1.5m at the site must be treated, assigned a waste classification and disposed of to an appropriate landfill. Reference should be made to the EIS 2010c report for waste classification and disposal details. However, it should be noted that if PASS and non-PASS become mixed during excavation, the resulting material should be considered to be PASS.

The following options are available for the disposal of ASS soils excavated during the development works:

- Option A – Fill and Natural ASS: Treatment, waste classification and disposal to Landfill; and
- Option B – Natural ASS Only: Immediate transport of natural ASS to Landfill for disposal beneath the water table. A number of conditions have to be satisfied for burial beneath the water table to be viable. This option is not suitable for fill material.

#### 5.3.1 **Option A: Treatment and Disposal of Fill and Natural ASS to Landfill**

Potential acid generation is typically managed by the addition of lime to neutralise acid that may be generated during and after the excavation works.

A slightly alkaline, low solubility product such as agricultural lime should be used. This form of lime is chemically stable and any excess lime takes a significant period of time (years) to influence soil pH beyond the depth of mixing. The lime particles eventually become coated with an insoluble layer of ferrihydrite ( $\text{Fe}(\text{OH})_3$ ) that inhibits further reaction. Long term alteration of groundwater conditions is not expected to occur as a result of the use of lime during the proposed development works.

The following procedures should be implemented for this option:

- ASS soils disturbed during development works should be immediately transferred to a designated 'treatment area' and spread to a height of approximately 1m;
- The 'treatment area' must include a relatively impermeable surface for treatment or alternatively be covered with a pad of lime. The pad of lime should be at least 100mm thick and this thickness should be maintained for the duration of treatment works;
- The treatment area should be designed to retain any water run-off from the stockpiled materials using a compacted clay bund or similar retention system (eg skip bins if only relatively small quantities of soil require treatment). All water will be diverted to a detention tank or constructed pond for assessment and treatment prior to disposal;



- The laboratory analysis results indicate that approximately 35kg lime per tonne of soil is required to adequately stabilise the ASS soil. Additional field testing should be undertaken to confirm that this quantity of lime addition is appropriate for neutralisation of the soils;
- Lime should be applied to the excavated material within the treatment area immediately (at the rate confirmed after field testing) using a backhoe or suitable equipment to thoroughly mix the lime through the soil. Alternatively use of a pug mill may be considered dependent upon the volume of soil to be treated in a timely fashion;
- Monitoring will be undertaken by qualified personnel to ensure the mixing is undertaken to a suitable extent as the success of the neutralisation method relies on the effectiveness of the mixing process;
- ASS must be kept wet at all times during excavation and subsequent handling, transport and storage until they can be disposed of safely;
- Field pH measurements should be undertaken to confirm that ASS have been neutralised by lime addition. If required, additional lime should be added to the soil and additional mixing undertaken;
- If circumstances prevent the spreading and treatment of the material. The surface area will be minimised by avoiding 'spreading-out' of the stockpile and forming a relatively high coned shape. This will limit the surface area exposed to oxidation. Water infiltration will be minimised by covering the stockpile during wet weather. This will limit the formation and transport of acid leachate due to rainfall. The stockpile will be bunded to prevent erosion of the ASS and any movement of potentially acid leachate. Upstream surface runoff water will also be diverted around the stockpile;
- All neutralised material will be disposed of off-site to a NSW DECCW (EPA) landfill licensed to accept treated acid sulfate soils; and
- Reference should be made to the EIS 2010c report for the waste classification details.

### 5.3.2 Option B: Disposal of Natural ASS beneath the Water Table

Natural ASS may be disposed of below the water table without lime treatment provided that the following conditions are met:

- The material is disposed below the water table within 24 hours of excavation;
- The material meets the definition of 'virgin excavated natural material' (VENM) under the *Protection of the Environment Operations Act* (1997<sup>7</sup>), even though the soils are considered to be ASS; and

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<sup>7</sup> *Protection of Environment Operations Act*, NSW Government, 1997 (POEO Act 1997)



- The receiving landfill is licensed to dispose of ASS below the water table.

The following procedures should be implemented for this option:

- ASS soils should be excavated/disturbed in stages;
- The pH of the soil should be checked using the test method(s) outlined in the ASS Manual 1998 (Methods 21A and or 21Af). The pH of each load and the time of extraction should be recorded and forwarded to the landfill;
- Provided that the pH of the excavated ASS is not less than 5.5 the material can be loaded onto trucks and transported immediately to the landfill; and
- ASS must be kept wet at all times during excavation and subsequent handling, transport and storage until they can be disposed of safely.

#### **5.4 Groundwater Seepage and Dewatering**

In the event that de-watering of excavations is required during construction, management of the pumped out water and conditions within the surrounding ASS will be required.

Water pumped from the excavation should be placed in a portable tank, or open 'skip bin', where samples can be obtained for field testing. The water should be in the pH range of 6.5 to 8.5 (Schedule 5 Protection of the Operations [General] Regulation 2009). If the pH is outside of this range, treatment will be necessary prior to disposal of the water, either as stormwater, irrigation or to the sewer. Reference should be made to EIS 2010c for further details regarding disposal of groundwater at the site.

In the event that extended pumping of water is necessary during the construction period, the quality of the groundwater should be monitored on a regular basis over the entire construction period. The pH will be measured and recorded. Immediate advice is to be sought from an experienced consultant if the pH at any location is not within 10% of the initial pH at the commencement of pumping. If required corrective action should be taken as soon as possible. Laboratory analysis will be required on water samples as part of the corrective action to assess the quantity of neutralising agents required if treatment is necessary.

#### **5.5 Contingency Plan**

In the event the results of soil neutralisation or groundwater monitoring tests indicate a significant change in acidic conditions, the contingency plan should be implemented.

If soil monitoring indicates the presence of significantly more acidic material than expected or water monitoring indicates that the pH of the pumped water has become



significantly more acidic, all excavation works should be placed on hold until further action is taken to limit the oxidation of ASS soils in the area of the current earthworks. Contingency works will be undertaken as follows:

- The depth to groundwater (ie the extent of de-watering) in the area of current excavation will be measured;
- The pH of soils exposed to oxygen within the excavation will be measured to establish the source of the acidic conditions;
- Material found to be acidic will be excavated and neutralised in accordance with the methods presented in Section 5.3;
- Where suitable, in-place treatment involving lime addition and mixing may be adopted; and
- In the case that unacceptable acidic levels are recorded by the groundwater monitoring, installation of a neutralisation trench (or similar) may be required to intercept and treat acidic groundwater prior to discharge. This could consist of an excavation filled with a sand/lime mixture designed to filter, intercept and treat groundwater flowing across the trench.



## **6 LIMITATIONS**

The conclusions presented in this report are based on site conditions which existed at the time of the site assessment and the scope of work outlined previously in this report. They are based on the interpretation of available information and documents reviewed as described in this report.

The preparation of this report has been undertaken in accordance with accepted practice for environmental consultants, with reference to applicable environmental regulatory authority and industry standards, guidelines and the assessment criteria outlined previously in this report.

Where information has been provided by third parties, EIS has not undertaken any verification process, except where specifically stated.

Subsurface soil and rock conditions encountered between investigation locations may be found to be different from those expected. Groundwater conditions may also vary, especially after climatic changes.

EIS accept no responsibility for potentially asbestos containing materials that may exist at the site. These materials may be associated with demolition of pre-1970 constructed buildings or fill material at the site.

EIS have not and will not make any determination regarding finances associated with the site.

During construction at the site, soil, fill and any unsuspected materials that are encountered should be monitored by qualified environmental and geotechnical engineers to confirm assumptions made on the basis of the limited investigation data, and possible changes in site level and other conditions since the investigation.

This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose. Copyright in this report is the property of EIS. EIS has used a degree of care, skill and diligence normally exercised by consulting engineers in similar circumstances and locality. No other warranty expressed or implied is made or intended. Subject to payment of all fees due for the investigation, the client alone shall have a licence to use this report.



Should you require any further information regarding the above, please do not hesitate to contact us.

Yours faithfully  
ENVIRONMENTAL INVESTIGATION SERVICES

A handwritten signature in black ink, appearing to read 'V. Boggaram', is positioned above the name.

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A J Kingswell  
Senior Associate



### **ABBREVIATIONS**

|         |                                                                      |
|---------|----------------------------------------------------------------------|
| ANZECC  | Australian and New Zealand Environment Conservation Council          |
| ASS     | Acid Sulfate Soil                                                    |
| BH      | Borehole                                                             |
| DECC    | Department of Environment and Climate Change (formerly DEC and EPA)  |
| DNR     | NSW Department of Natural Resources (now split between DWE and DECC) |
| EPA NSW | Environment Protection Authority, New South Wales (now part of DECC) |
| NATA    | National Association of Testing Authorities, Australia               |
| NEPC.   | National Environmental Protection Council                            |
| PQL     | Practical Quantitation Limit                                         |
| sPOCAS  | Suspension Peroxide Oxidation Combined Acidity and Sulfate           |
| SPT     | Standard Penetration Test                                            |
| SWL     | Standing Water Level                                                 |



### **IMPORTANT INFORMATION ABOUT THE SITE ASSESSMENT REPORT**

These notes have been prepared by EIS to assist with the assessment and interpretation of this report.

#### ***An Environmental Assessment Report is Based on a Unique Set of Project Specific Factors:***

This report has been prepared in response to specific project requirements as stated in the EIS proposal document which may have been limited by instructions from the client. This report should be reviewed, and if necessary, revised if any of the following occur:

- the proposed land use is altered;
- the defined subject site is increased or sub-divided;
- the proposed development details including size, configuration, location, orientation of the structures are modified;
- the proposed development levels are altered, eg addition of basement levels;  
or
- ownership of the site changes.

EIS/J&K will not accept any responsibility whatsoever for situations where one or more of the above factors have changed since completion of the assessment. If the subject site is sold, ownership of the assessment report should be transferred by EIS to the new site owners who will be informed of the conditions and limitations under which the assessment was undertaken. No person should apply an assessment for any purpose other than that originally intended without first conferring with the consultant.

#### ***Changes in Subsurface Conditions***

Subsurface conditions are influenced by natural geological and hydrogeological process and human activities. Groundwater conditions are likely to vary over time with changes in climatic conditions and human activities within the catchment (eg. water extraction for irrigation or industrial uses, subsurface waste water disposal, construction related dewatering). Soil and groundwater contaminant concentrations may also vary over time through contaminant migration, natural attenuation of organic contaminants, ongoing contaminating activities and placement or removal of fill material. The conclusions of an assessment report may have been affected by the above factors if a significant period of time has elapsed prior to commencement of the proposed development.



***This Assessment is Based on Professional Interpretations of Factual Data***

Site assessments identify actual subsurface conditions at the actual sampling locations at the time of the investigation. Data obtained from the sampling and subsequent laboratory analyses, available site history information and published regional information is interpreted by geologists, engineers or environmental scientists and opinions are drawn about the overall subsurface conditions, the nature and extent of contamination, the likely impact on the proposed development and appropriate remediation measures.

Actual conditions may differ from those inferred, because no professional, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than an assessment indicates. Actual conditions in areas not sampled may differ from predictions. Nothing can be done to prevent the unanticipated, but steps can be taken to help minimise the impact. For this reason, site owners should retain the services of their consultants throughout the development stage of the project, to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

***Environmental Site Assessment Limitations***

Although information provided by an environmental site assessment can reduce exposure to the risk of the presence of contamination, no environmental site assessment can eliminate the risk. Even a rigorous professional assessment may not detect all contamination on a site. Contaminants may be present in areas that were not surveyed or sampled, or may migrate to areas which showed no signs of contamination when sampled. Contaminant analysis cannot possibly cover every type of contaminant which may occur; only the most likely contaminants are screened.

***Misinterpretation of Environmental Site Assessments by Design Professionals***

Costly problems can occur when other design professionals develop plans based on misinterpretation of an environmental assessment report. To minimise problems associated with misinterpretations, the environmental consultant should be retained to work with appropriate professionals to explain relevant findings and to review the adequacy of plans and specifications relevant to contamination issues.

***Logs Should not be Separated from the Environmental Assessment Report***

Borehole and test pit logs are prepared by environmental scientists, engineers or geologists based upon interpretation of field conditions and laboratory evaluation of field samples. Logs are normally provided in our reports and these should not be re-drawn for inclusion in site remediation or other design drawings, as subtle but



significant drafting errors or omissions may occur in the transfer process. Photographic reproduction can eliminate this problems, however contractors can still misinterpret the logs during bid preparation if separated from the text of the assessment. If this occurs, delays, disputes and unanticipated costs may result. In all cases it is necessary to refer to the test of the report to obtain a proper understanding of the assessment. Please note that logs with the 'Environmental Log' header are not suitable for geotechnical purposes as they have not been peer reviewed by a Senior Geotechnical Engineer.

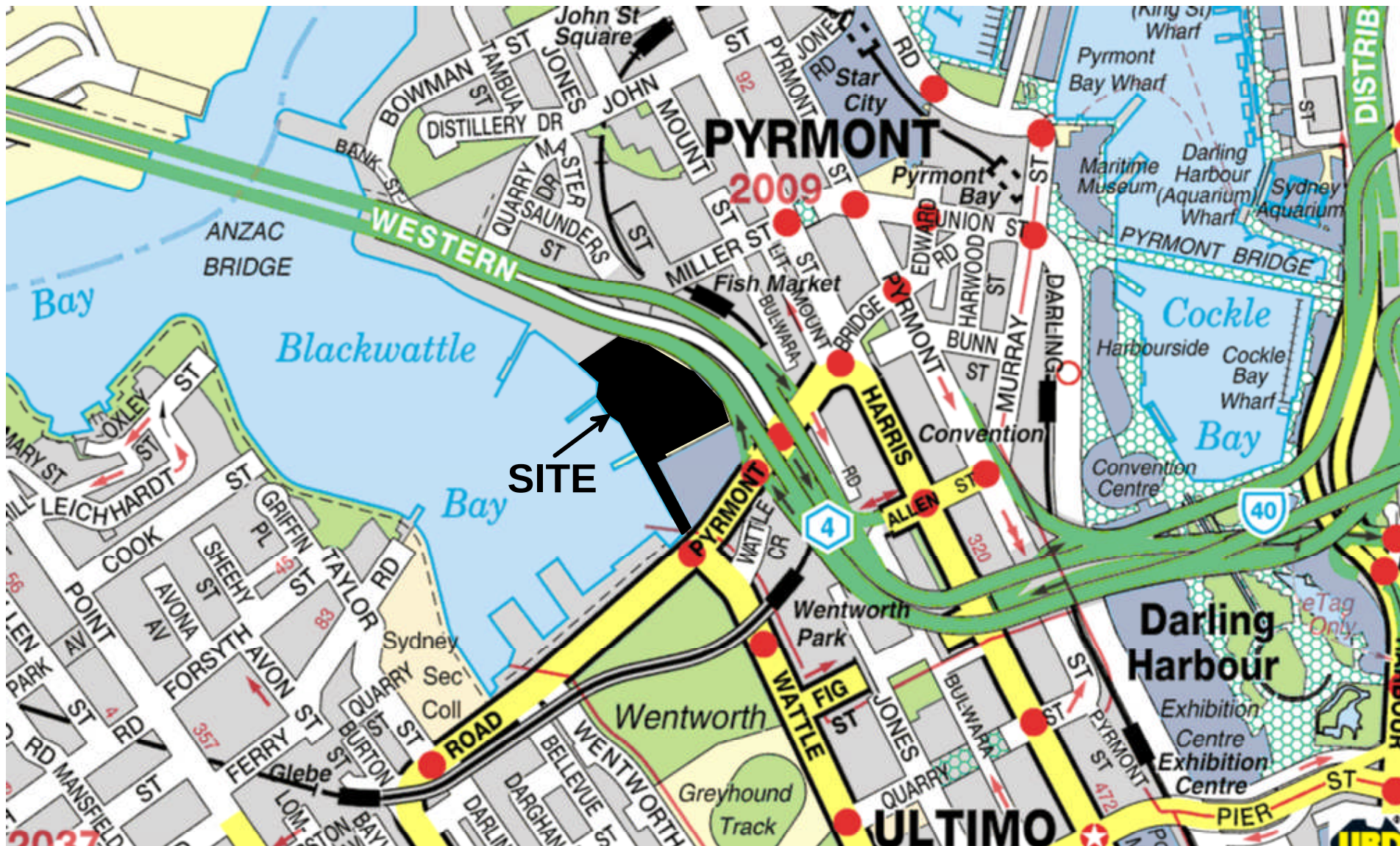
To reduce the likelihood of borehole and test pit log misinterpretation, the complete assessment should be available to persons or organisations involved in the project, such as contractors, for their use. Denial of such access and disclaiming responsibility for the accuracy of subsurface information does not insulate an owner from the attendant liability. It is critical that the site owner provides all available site information to persons and organisations such as contractors.

***Read Responsibility Clauses Closely***

Because an environmental site assessment is based extensively on judgement and opinion, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, model clauses have been developed for use in written transmittals. These are definitive clauses designed to indicate consultant responsibility. Their use helps all parties involved recognise individual responsibilities and formulate appropriate action. Some of these definitive clauses are likely to appear in the environmental site assessment, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to any questions.



| TABLE A<br>SUMMARY OF LABORATORY RESULTS<br>ACID SULFATE SOILS ANALYSIS (POCAS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |                          |                        |       |            |      |            |            |           |           |           |                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------|------------------------|-------|------------|------|------------|------------|-----------|-----------|-----------|-----------------------------------------|
| Location                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Depth (metres) | Sample Description       | Soil pH 1:5 soil:water | pHKCL | TAA pH 6.5 | pHox | TPA pH 6.5 | TSA pH 6.5 | Ca A %w/w | Mg A %w/w | SPOS %w/w | Liming Rate kg CaCO <sub>3</sub> /tonne |
| EIS 2010a Investigation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |                          |                        |       |            |      |            |            |           |           |           |                                         |
| BH501                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.5-0.95       | Fill: sand               | 7.3                    | 9.3   | LPQL       | 7.8  | LPQL       | LPQL       | 0.094     | 0.023     | 0.011     | <0.75                                   |
| BH501                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1.5-1.95       | Fill: sand               | 7.5                    | 7.6   | LPQL       | 4.1  | LPQL       | LPQL       | 0.013     | LPQL      | 0.060     | 2.8                                     |
| BH502                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.3-0.8        | Fill: sandy gravel       | 7.4                    | 9.5   | LPQL       | 7.4  | LPQL       | LPQL       | 0.31      | 0.015     | 0.032     | <0.75                                   |
| BH506                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.5-1.0        | Fill: gravelly sand      | 11.4                   | 11.0  | LPQL       | 8.3  | LPQL       | LPQL       | 1.5       | 0.039     | 0.022     | <0.75                                   |
| BH506                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1.85-2.05      | Fill: gravelly sand      | 9.3                    | 10.2  | LPQL       | 7.6  | LPQL       | LPQL       | 0.35      | 0.019     | 0.150     | <0.75                                   |
| BH506                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3.0-3.45       | Silty sand               | 10                     | 7.3   | LPQL       | 2.4  | 383        | 383        | 0.078     | 0.013     | 0.890     | 33                                      |
| BH506                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 4.3-4.5        | Silty sand               | 9.3                    | 7.1   | LPQL       | 3.1  | 17         | 17         | LPQL      | LPQL      | 0.100     | 2.5                                     |
| BH508                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.3-0.5        | Fill: gravelly sand      | 9.6                    | 9.3   | LPQL       | 6.2  | LPQL       | LPQL       | 0.098     | 0.011     | 0.083     | 3.9                                     |
| BH508                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1.5-1.95       | Fill: silty sand         | 7.7                    | 7.9   | LPQL       | 5.6  | LPQL       | LPQL       | 0.011     | LPQL      | 0.048     | 2.2                                     |
| BH508                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3.0-3.45       | Silty sand               | 8.7                    | 7.1   | LPQL       | 3    | 72         | 72         | 0.007     | LPQL      | 0.230     | 7.2                                     |
| BH508                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 4.5-4.95       | Silty sand               | 7.1                    | 4.5   | 12         | 3.5  | 17         | 5          | LPQL      | LPQL      | 0.076     | 4.5                                     |
| BH508 <sup>M</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 6.1-6.45       | Silty clayey sand        | 8.7                    | 5.1   | 5          | 4.5  | LPQL       | LPQL       | 0.006     | 0.011     | 0.006     | <0.75                                   |
| BH508                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 7.0-7.2        | Silty sand               | 8.1                    | 5.3   | 5          | 4.3  | LPQL       | LPQL       | LPQL      | LPQL      | LPQL      | <0.75                                   |
| BH508                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 7.7-7.8        | Sandstone                | 8.4                    | 5.1   | 7.5        | 3.9  | LPQL       | LPQL       | LPQL      | LPQL      | LPQL      | <0.75                                   |
| BH510                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3.0-3.45       | Fill: gravelly sand      | 9.4                    | 9.1   | LPQL       | 7.4  | LPQL       | LPQL       | 0.14      | 0.016     | 0.009     | <0.75                                   |
| BH510                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 4.5-4.95       | Silty sand               | 7.9                    | 6.7   | LPQL       | 2.4  | 190        | 190        | 0.010     | LPQL      | 0.330     | 15                                      |
| BH510 <sup>M</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 6.0-6.5        | Silty clayey sand        | 7.8                    | 6.1   | LPQL       | 3.1  | 40         | 37         | 0.005     | LPQL      | 0.140     | 6.7                                     |
| BH510 <sup>M</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 7.5-7.95       | Silty clayey sand        | 7.3                    | 4.5   | 12         | 4.2  | 5          | LPQL       | LPQL      | LPQL      | 0.014     | 1.6                                     |
| BH518                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.5-0.8        | Fill: sandy gravel       | 9.3                    | 9     | LPQL       | 7.8  | LPQL       | LPQL       | 1.7       | 0.057     | 0.050     | <0.75                                   |
| EIS 2010b Investigation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |                          |                        |       |            |      |            |            |           |           |           |                                         |
| BH601 <sup>M</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.3-0.5        | Fill: Silty sandy clay   | na                     | 9.1   | LPQL       | 7.6  | LPQL       | LPQL       | 0.25      | 0.013     | 0.047     | LPQL                                    |
| BH601                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1.3-1.5        | Fill: Silty clayey sand  | na                     | 9.1   | LPQL       | 7.8  | LPQL       | LPQL       | 0.18      | 0.016     | 0.016     | LPQL                                    |
| BH601                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2.8-3.0        | Fill: Silty sand         | na                     | 7.7   | LPQL       | 4.9  | LPQL       | LPQL       | LPQL      | LPQL      | LPQL      | LPQL                                    |
| BH601                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 4.2-4.5        | Fill: Silty sand         | na                     | 8.5   | LPQL       | 2.6  | 238        | 238        | 0.032     | 0.028     | 0.610     | 21                                      |
| BH601 <sup>F</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 5.8-6.0        | Silty clay / Clayey silt | na                     | 8.8   | LPQL       | 3    | 283        | 283        | 0.44      | 0.15      | 1.400     | 35                                      |
| BH605                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.3-0.5        | Fill: Silty sand         | na                     | 9.3   | LPQL       | 7.3  | LPQL       | LPQL       | 0.12      | 0.008     | 0.008     | LPQL                                    |
| BH605                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2.8-3.0        | Silty sand               | na                     | 7.0   | LPQL       | 2.5  | 288        | 288        | 0.017     | 0.005     | 0.590     | 24                                      |
| BH606 <sup>M</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.3-0.5        | Fill: Silty clayey sand  | na                     | 9.6   | LPQL       | 7.6  | LPQL       | LPQL       | 0.38      | 0.006     | LPQL      | LPQL                                    |
| BH606 <sup>M</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.8-1.0        | Fill: Silty clayey sand  | na                     | 9.1   | LPQL       | 7.4  | LPQL       | LPQL       | 0.076     | 0.006     | 0.014     | LPQL                                    |
| BH608                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.3-0.5        | Fill: Silty sand         | na                     | 5.6   | LPQL       | 4    | 20         | 17         | LPQL      | LPQL      | 0.013     | 0.82                                    |
| SSA <sup>M</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -              | Sediment                 | na                     | 8.9   | LPQL       | 7.2  | LPQL       | LPQL       | 0.81      | 0.12      | 0.93      | 4.5                                     |
| SSB <sup>M</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -              | Sediment                 | na                     | 8.8   | LPQL       | 4.2  | 92         | 92         | 0.66      | 0.15      | 1.20      | 24                                      |
| SSC <sup>M</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -              | Sediment                 | na                     | 8.7   | LPQL       | 2.9  | 185        | 185        | 0.14      | 0.082     | 0.72      | 21                                      |
| <b>EXPLANATION:</b><br>Action criteria are defined as follows:<br>- coarse textured soils (sands to loamy sands):<br>pH < 5<br>TAA/TSA/TPA (pH 5.5) > 18mol H <sup>+</sup> /tonne<br>S <sub>pos</sub> > 0.03% sulfure oxidisable<br><br>Action criteria for samples marked as 'M' (medium textured soils - sandy loams to light clays):<br>pH < 5<br>TAA/TSA/TPA (pH 5.5) > 36mol H <sup>+</sup> /tonne<br>S <sub>pos</sub> > 0.06% sulfure oxidisable<br><br>Action Criteria for samples marked as 'F' (fine textured soils - medium to heavy clays and silty clays):<br>pH < 5<br>TAA/TSA/TPA (pH 5.5) > 62mol H <sup>+</sup> /tonne<br>S <sub>pos</sub> > 0.1% sulfure oxidisable<br><br>TAA or S <sub>pos</sub> % Values Exceeding Action Criteria<br><div>VALUE</div><br>pH <sub>KCL</sub> : pH of filtered 1:20, 1M KCL extract, shaken overnight<br>TAA pH 6.5 : Total Actual Acidity in 1M KCL extract titrated to pH6.5<br>pH <sub>ox</sub> : pH filtered 1:20 1M KCl after peroxide digestion<br>TPA : Total Potential Acidity, 1M KCL peroxide digest titrated to pH6.5<br>TSA: Total Sulfide Acidity<br>S <sub>POS</sub> : Peroxide oxidisable Sulfur (SP - SKCL)<br>Ca <sub>A</sub> /Mg <sub>A</sub> : Calcium/Magnesium reacted with acid generated by peroxide digest<br>Calcium and Magnesium values used to estimate additional Ca/Mg from acid-shell/carbonate/dolomite reaction<br><br>Reference: ASSMAC (Acid Sulfate Soils management Advisory Committee - <b>Acid Sulfate Soil Manual</b> , August 1998). |                |                          |                        |       |            |      |            |            |           |           |           |                                         |



Recreated from UBD on disc (version 5.0)  
Map Ref: 235 N11 (not to scale)

## SITE LOCATION PLAN

Sydney Fish Markets  
56-60 Pyrmont Bridge Road, Pyrmont, NSW



ENVIRONMENTAL  
INVESTIGATION  
SERVICES

Job No: E23982KrptASSMP  
Figure: 1

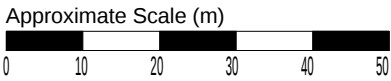
*Note: Reference should be made to the text for a full understanding of this plan*



Image sourced from  
Google Earth Pro

**LEGEND:**

- APPROXIMATE SITE BOUNDARY
- APPROXIMATE BOUNDARY OF SFM  
PART 3A AND 4 AREA
- APPROXIMATE BOUNDARY OF  
WATERFRONT WORKS PART 3A AREA
- - - APPROXIMATE OUTLINE OF PROPOSED  
REDEVELOPMENT STAGES



Note: Reference should be made to the  
text for a full understanding of this plan.

**SITE LAYOUT PLAN**

Sydney Fish Markets  
56-60 Pyrmont Bridge Road, Pyrmont, NSW



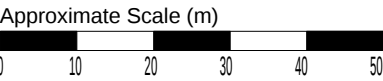
ENVIRONMENTAL  
INVESTIGATION  
SERVICES

Job No: E23982KrptASSMP  
Figure: 2



**LEGEND:**

- BH501 (1.0) BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m) - June 2010
- APPROXIMATE SITE BOUNDARY
- APPROXIMATE BOUNDARY OF SFM PART 3A AND 4 AREA



*Note: Reference should be made to the text for a full understanding of this plan.*

### BOREHOLE LOCATION PLAN SFM PART 3A AND 4 AREA

Sydney Fish Markets  
56-60 Pyrmont Bridge Road, Pyrmont, NSW



**ENVIRONMENTAL  
INVESTIGATION  
SERVICES**

Job No: E23982KrptASSMP  
Figure: 3a

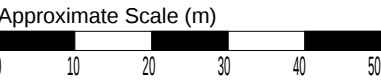


Site boundary extends further north and east. Please refer to Figure 2.



**LEGEND:**

- BH601 (1.0) BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m) - August 2010
- SWA/SSA SEDIMENT AND HARBOUR WATER SAMPLING LOCATION AND SAMPLE REFERENCE - August 2010
- APPROXIMATE SITE BOUNDARY
- APPROXIMATE BOUNDARY OF WATERFRONT WORKS PART 3A AREA



Note: Reference should be made to the text for a full understanding of this plan.

**BOREHOLE AND SAMPLING LOCATION PLAN  
WATERFRONT WORKS PART 3A AREA**

Sydney Fish Markets  
56-60 Pyrmont Bridge Road, Pyrmont, NSW



Job No: E23982KrptASSMP  
Figure: 3b