

## Glossary of Terms

|                                  |   |
|----------------------------------|---|
| AASS                             | Actual Acid Sulphate Soil   |
| AC                               | asbestos cement   |
| AGST                             | above ground storage tank   |
| AHD                              | Australian Height Datum   |
| ANZECC                           | Australian and New Zealand Environmental & Conservation Council   |
| As                               | arsenic   |
| ASS                              | Acid Sulphate Soil  |
| ASSMAC                           | Acid Sulphate Soil Management Advisory Committee  |
| ASSMP                            | Acid Sulphate Soil Management Plan  |
| B(a)P                            | benzo(a)pyrene (a polycyclic aromatic hydrocarbon compound)   |
| bgl                              | below ground level  |
| BTEX                             | benzene, toluene, ethyl benzene, total xylenes (monocyclic aromatic hydrocarbons)   |
| Cd                               | cadmium   |
| CN                               | cyanide   |
| Cr                               | chromium (total)  |
| Cr(III)                          | chromium with oxidation state III (stable in normal environments)   |
| Cr(VI)                           | chromium with oxidation state VI (typically not stable in normal environments)  |
| CT                               | contaminant threshold (screening criteria for waste classification assessment)  |
| Cu                               | copper  |
| C <sub>6</sub> –C <sub>9</sub>   | light hydrocarbon chain groups  |
| C <sub>10</sub> –C <sub>14</sub> | medium hydrocarbon chain groups   |
| C <sub>15</sub> –C <sub>28</sub> | heavy hydrocarbon chain groups  |
| C <sub>29</sub> –C <sub>36</sub> | heavy hydrocarbon chain groups  |
| DEC                              | Department of Environment and Conservation  |
| DIPNR                            | Department of Infrastructure, Planning and Natural Resources  |
| DP                               | Douglas Partners Pty Ltd  |
| ec                               | electric conductivity   |
| EPA                              | Environmental Protection Authority  |
| GW                               | groundwater   |
| ha                               | hectares  |
| HIL                              | NSW EPA Contaminated Sites: <i>Guidelines for the NSW Site Auditors Scheme, 1998.</i><br>Health-based investigation levels (Columns 1 to 4) |
| Hg                               | mercury   |
| m                                | metres  |
| mg/kg                            | milligrams per kilogram (or parts per million)  |

|                  |  |
|------------------|--|
| mg/L             | milligrams per litre (or parts per million)  |
| NATA             | National Association of Testing Authorities  |
| Ni               | nickel   |
| NSW              | New South Wales  |
| ND(nd)           | Not detected above the PQL   |
| OCP              | organochlorine pesticides  |
| OPP              | organophosphate pesticides   |
| PAH              | polycyclic aromatic hydrocarbon  |
| PASS             | Potential Acid Sulphate Soil   |
| Pb               | lead   |
| PCB              | polychlorinated biphenyls  |
| pH               | unit measure of acidity/ alkalinity  |
| PID              | photoionisation detector   |
| POCAS            | peroxide oxidation combined acidity and sulphate   |
| ppb              | parts per billion  |
| PPIL             | NSW EPA Contaminated Sites: <i>Guidelines for the NSW Site Auditors Scheme, 1998.</i><br>Provisional phytotoxicity-based investigation levels for sandy loams (Column 5) |
| ppm              | parts per million  |
| PQL              | practical quantitation limit   |
| RAP              | Remediation Action Plan  |
| RL               | reduced level  |
| %RPD             | relative percentage difference   |
| S <sub>KCl</sub> | KCl extractable sulphur  |
| S <sub>P</sub>   | peroxide oxidation sulphur   |
| S <sub>POS</sub> | Peroxide Oxidisable Sulphur  |
| SEPP 55          | State Environmental Planning Policy No. 55 – Remediation of Land   |
| SCC              | specific contaminant concentration (total concentration for waste classification assessment)   |
| SPOCAS           | suspension peroxide oxidation combined acidity and sulphate  |
| SWL              | standing water level   |
| TAA              | Total Actual Acidity   |
| TCLP             | Toxicity Characteristic Leaching Procedure   |
| TDS              | total dissolved solids   |
| TRH              | total recoverable hydrocarbons   |
| TPA              | Total Potential Acidity  |

## TABLE OF CONTENTS

---

|  | Page |
|--|------|
| 1 INTRODUCTION   | 1    |
| 2 SITE DESCRIPTION   | 2    |
| 3 BACKGROUND   | 3    |
| 4 GEOLOGY AND HYDROGEOLOGY                                     | 5    |
| 5 POTENTIAL FOR CONTAMINATION                                  | 6    |
| 6 FIELD WORK   | 7    |
| 6.1 Data Quality Objectives                                    | 7    |
| 6.2 Quality Assurance/ Quality Control Objectives              | 8    |
| 6.3 Sampling procedures  | 9    |
| 6.3.1 Soil Sampling Procedures and Rationale                   | 9    |
| 6.3.2 Acid Sulphate Soil Sampling                              | 10   |
| 6.3.3 Piezometer Installation and Groundwater Sampling Methods | 10   |
| 6.4 Sampling and Analytical Rationale                          | 12   |
| 7 SITE ASSESSMENT CRITERIA                                     | 15   |
| 7.1 Soil   | 15   |
| 7.2 Groundwater  | 15   |
| 8 RESULTS  | 16   |
| 8.1 Field Observations   | 16   |
| 8.2 Field Testing Results                                      | 18   |
| 8.2.1 Groundwater Development Field Parameters                 | 18   |
| 8.3 Laboratory Results   | 19   |
| 9 DISCUSSION   | 24   |
| 9.1 Measured Contaminant Levels in Soils                       | 24   |
| 9.1.1 Heavy Metals   | 24   |
| 9.1.2 TRH and BTEX   | 24   |
| 9.1.3 PAH, Phenols   | 26   |
| 9.1.4 OCP  | 26   |
| 9.1.5 VOC's and Cyanide  | 27   |
| 9.16 Asbestos  | 27   |
| 9.2 Measured Contaminant levels in Groundwater                 | 27   |
| 9.3 Acid Sulphate Soils  | 28   |
| 9.4 General Issues   | 29   |
| 10 CONCLUSIONS AND RECOMMENDATIONS                             | 30   |
| 11 LIMITATIONS OF THIS REPORT                                  | 31   |



## TABLE OF CONTENTS

---

### APPENDICES

- Appendix A - Site Drawing
- Appendix B - Aerial Photographs
- Appendix C - Laboratory Results and Chain of Custody Documentation
- Appendix D – Test Bore Logs and Notes Relating to This Report
- Appendix E - Quality Assurance/Quality Control Analysis