14.0 QUALITY ASSURANCE & QUALITY CONTROL (QA & QC)

In order to ensure the representativeness of the samples recovered, the integrity and reliability of the chemical analyses carried out, industry standard decontamination procedures were implemented and Quality Assurance (QA) / Quality Control (QC) samples prepared. The following subsections provide additional information on all QA/QC matters applicable to the assessment.

14.1 Rinsate Sample

A number of rinsate water samples were recovered during the course of the assessment in order to detect any possible cross contamination between the sampling locations. A sample of the same water source used for cleaning the equipment (clean distilled water) was previously analysed by the laboratory, thus with known concentrations of analytes. The concentrations of the analytes of the rinsate samples could then be compared with the results of the original distilled water.

The rinsate water samples were not analysed as there were no soil or groundwater contaminants detected that could have been transferred through the rinsate water.

14.2 Trip Spike Samples

Trip spike samples are obtained from the laboratory on a regular basis, prior to conducting field sampling where volatile substances are suspected. The samples are retained in our Penrith office, at less than 4 degrees Celsius, for a period of not more than seven days. During the field work, a trip spike sample is kept in the chilled container with soil samples recovered from the site. The trip spike sample is then forwarded to the laboratory together with the soil samples recovered from the site.

The trip spike is prepared by adding a known amount of pure petrol standard to a clean sand sample. The sample is mixed thoroughly to ensure a relatively homogenous distribution of the spike throughout the sample. When the sample is submitted for analysis, the same procedure is adopted for testing as the soil samples being analysed from the site.

The purpose of the trip spike is to detect any loss, or potential loss, of volatiles from the soil samples, during field work, transportation, sample extraction or testing.

Four trip spike samples (TS1 to TS4), forwarded with the samples collected from the site, were tested for BTEX. The test results for the trip spike samples, reported as a percentage recovery of the applied and known spike concentrations, are shown in Table C1.

The results indicate a good recovery of the spike concentrations overall, ranging between 67% and 106%. Therefore, should volatiles have been present in the recovered soil samples, only minor losses may have been experienced.

Based on the above, it is considered that any loss of volatiles from the recovered samples that may have occurred would not affect the outcome / conclusions of this report.

14.3 Duplicate Samples

In order to ensure reliable analytical results from the laboratory, four duplicate soil samples (Duplicates DS1, DS2, DS4 and DS5) were prepared in the field from a selection of original samples, or in the laboratory from duplicates of sub-samples of composites. The duplicate samples and duplicate sub-samples were submitted blind to the laboratory for compositing and analysis. The test results for the duplicate samples were compared with the test results of the original samples.

The duplicate samples test results are presented in Appendix F and summarised in Tables C2 to C5. A comparison was made of the laboratory test results for the duplicate sample with the original sample and the Relative Percentage Differences (RPD) were computed, in order to assess the accuracy of the laboratory test procedures.

The comparisons between the duplicate and original samples indicated acceptable RPD, which is commonly set at less than 30% for inorganics and 50% for organics. Overall, the laboratory test results were of adequate accuracy and reliability for this assessment.

14.4 Split Sample (Inter-laboratory Duplicate)

The split sample provides a check on the analytical performance of the primary laboratory. Geotechnique Pty Ltd submitted three split samples (SS1 to SS3), prepared in the same way as a field duplicate sample, to a secondary laboratory, Amdel for analysis. The laboratory test results certificates are included in Appendix G.

Based on Schedule B (3) of the NEPM, the difference in the results between the split samples should, generally, be within 30% of the mean concentration determined by both laboratories, i.e., RPD should be within 30%. However, this variation can be higher for organic analysis than for inorganics and for low concentrations of analytes.

The test results are summarised in Tables C6 to C8.

As shown in the tables the comparisons between the split and corresponding original samples indicated acceptable RPD overall, with the exception occurring at relatively low concentrations of zinc (with respect to the threshold levels adopted) in Split Sample SS1. As such, the variations are not considered critical and the test results provided by the primary laboratory are deemed reliable for this assessment.

14.5 Laboratory QA/QC

Geotechnique uses only laboratories accredited by the National Association of Testing Authorities (NATA) for chemical analyses. The laboratory must also incorporate quality laboratory management systems, to ensure trained analysts, using validated methods and suitably calibrated equipment, produce reliable results.

In addition to the quality control samples, the laboratory must also ensure that all analysts receive certification as to their competence in carrying out the analysis and participate in national and international proficiency studies.

SGS and Amdel are both accredited by NATA. The laboratories also operate Quality Systems that are designed to comply with ISO 9002 and ISO Guide 25.

The test methods adopted by the laboratories are indicated with the certificates in Appendices F and G. As part of the analytical run for the project, both SGS and Amdel included laboratory blanks, duplicate samples, surrogate and matrix spikes.

Geotechnique Pty Ltd has checked the QA/QC procedures adopted by the laboratories against the appropriate guidelines. The quality control sample numbers are considered to be adequate for the analyses undertaken and generally conform to the recommendations provided in the National Environment Protection Measure (NEPM) 1999 "*Guideline on Laboratory Analysis of Potentially Contaminated Soils*" and Australian and New Zealand Environment and Conservation Council (ANZECC)-1996 "*Guidelines for the Laboratory Analysis of Contaminated Soils*".

Overall, the quality control elements adopted by the laboratories indicate the analytical data to fall within acceptable levels of accuracy and precision for the analysis of soils and water. The analytical data provided is therefore considered reliable and useable for this assessment.

15.0 CONCLUSION AND LIMITATIONS

A contamination assessment of the subject site was carried out by Geotechnique as part of an internal requirement of Matsushita Electric Company Pty Ltd. The assessment was carried out in accordance with then current NSW EPA guidelines and included a review of site history, a thorough site inspection, targeted and systematic soil and groundwater sampling and laboratory testing. The results of the assessment were reported in Geotechnique Report No 2883/1-AF dated 4 May 2005.

The subject site was purchased by Davids Group in 2006. The site is now proposed for redevelopment for residential (multi-storey), retail and open space uses. The results of the 2005 assessment have been re-assessed against current DECC guidelines and in particular, assessment criteria applicable to the proposed change in land use.

All laboratory data and/or data sets satisfied the criteria for stating that the analytes selected are either not present, or present in the soils at concentrations that do not pose a risk of hazard to human health or the environment under the proposed land use.

The laboratory data also revealed that there is no indication of contaminated groundwater beneath the site or contribution to groundwater contamination due to activities within the site prior to 2005. More recent site uses are also considered not to have contributed to groundwater contamination beneath the site.

As stated in the introduction to this report, soil sampling was limited to areas outside the main buildings due to ongoing operations in 2005. As such, the contamination status of soils beneath the buildings could not be ascertained. The likelihood of soil contamination beneath the buildings is considered to be low, however, soil sampling and testing must be carried out to justify this statement. Soil sampling can take place after building demolition.

The services performed by Geotechnique Pty Ltd in carrying out the contamination assessment were conducted in a manner consistent with the level of quality and skill generally exercised by members of the profession and consulting practice.

This report was prepared for Davids Group for the purposes stated within. The information in the report may also be relied upon by Penrith City Council, or any other relevant consenting authorities, in assessing any future rezoning, development, or building applications. Any reliance on this report by parties other than those mentioned shall be at such parties' sole risk, as the report might not contain sufficient information for other purposes.

This report shall only be presented in full and may not be used to support any other objective than those set out in the report, except where written approval is provided by Geotechnique.

Whilst the investigations were carried out in accordance with NSW EPA guidelines, the potential still exists for contaminated soils to be present between sampled locations. If 'suspect' materials are encountered during any future earthworks or construction works, this office, or another suitably qualified Environmental Consultant, should be contacted for assessment. "Suspect" materials would vary greatly from those encountered during sampling for this assessment.

Presented in Appendix H is a document entitled "Environmental Notes", which should be read in conjunction with this report.

GEOTECHNIQUE PTY LTD

P. Jorman

LIST OF REFERENCES

Clean Waters Regulations 1972

Contaminated Land Management Act 1997

Contaminated Land Management Regulation 1998

Contaminated Sites: Guidelines for Assessing Service Station Sites – NSW Environment Protection Authority 1994

Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites – NSW Environment Protection Authority 1997

Contaminated Sites: Guidelines for the NSW Site Auditor Scheme – NSW Environment Protection Authority 2006

Contaminated Sites: Guidelines on Significant Risk of Harm from Contaminated Land and the Duty to Report – NSW Environment Protection Authority 1999

Contaminated Sites: Sampling Design Guidelines - NSW Environment Protection Authority 1995

Geology of the Sydney 1:100,000 Sheet (9130) – Geological Survey of New South Wales, Department of Mineral Resources 1983

Environmental Quality Objectives in the Netherlands – Ministry of Housing, Spatial Planning and Environment 1994

Guidelines for the Laboratory Analysis of Contaminated Soils - Australian and New Zealand Environment and Conservation Council (ANZECC) 1996

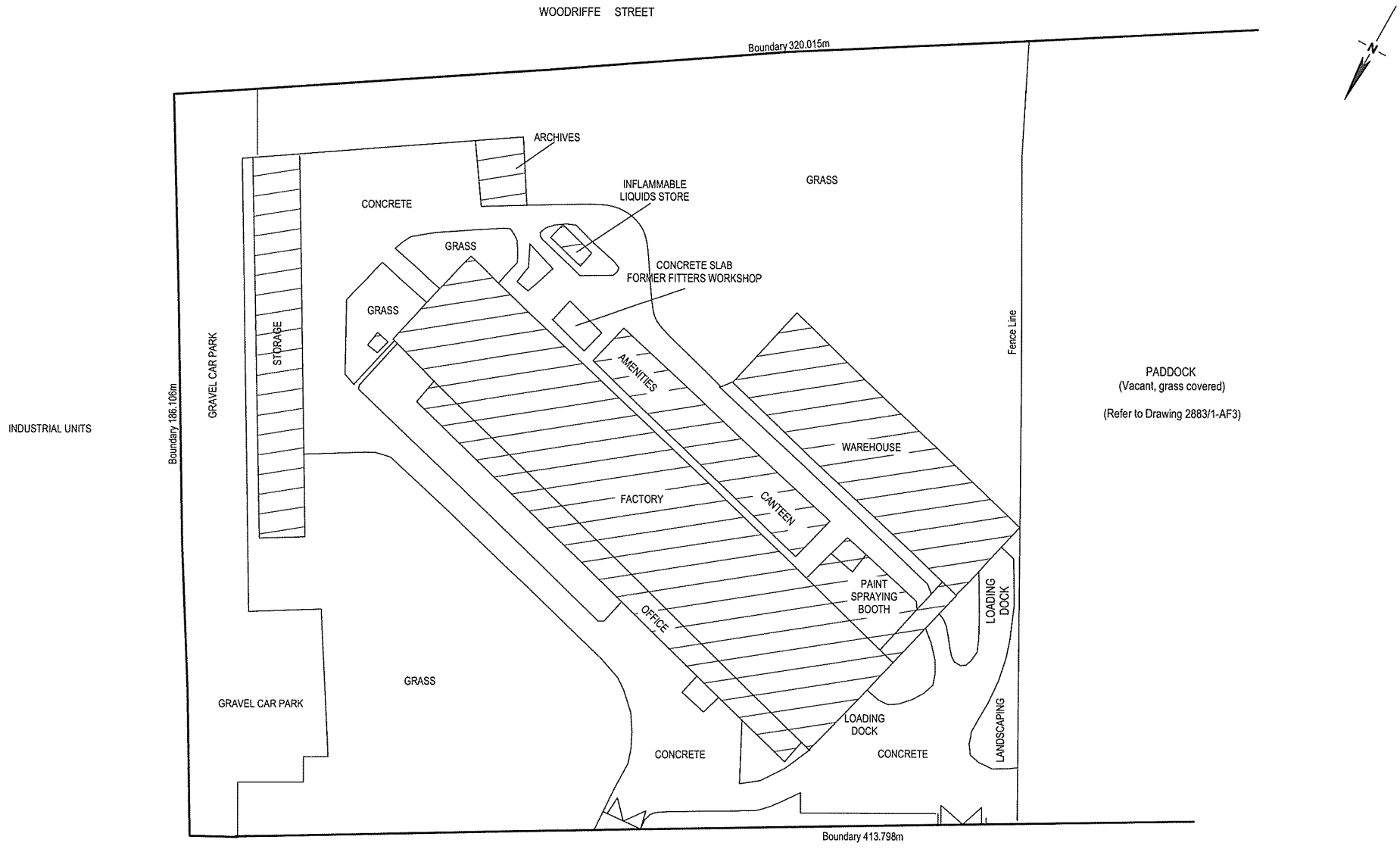
Managing Land Contamination: Planning Guidelines SEPP 55 – Remediation of Land – Department of Urban Affairs and Planning / NSW Environment Protection Authority 1998

National Environment Protection (Assessment of Site Contamination) Measures – National Environmental Protection Council 1999

Soil Landscape of the Sydney 1:100,000 Sheet (9130) – Soil Conservation Service Survey of NSW 1983

DRAWINGS

Drawing No 2883/1-AF1	*Site Features Plan*
Drawing No 2883/1-AF2	*Borehole Location Plan*
Drawing No 2883/1-AF3	*Borehole Location Plan*



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NOTES

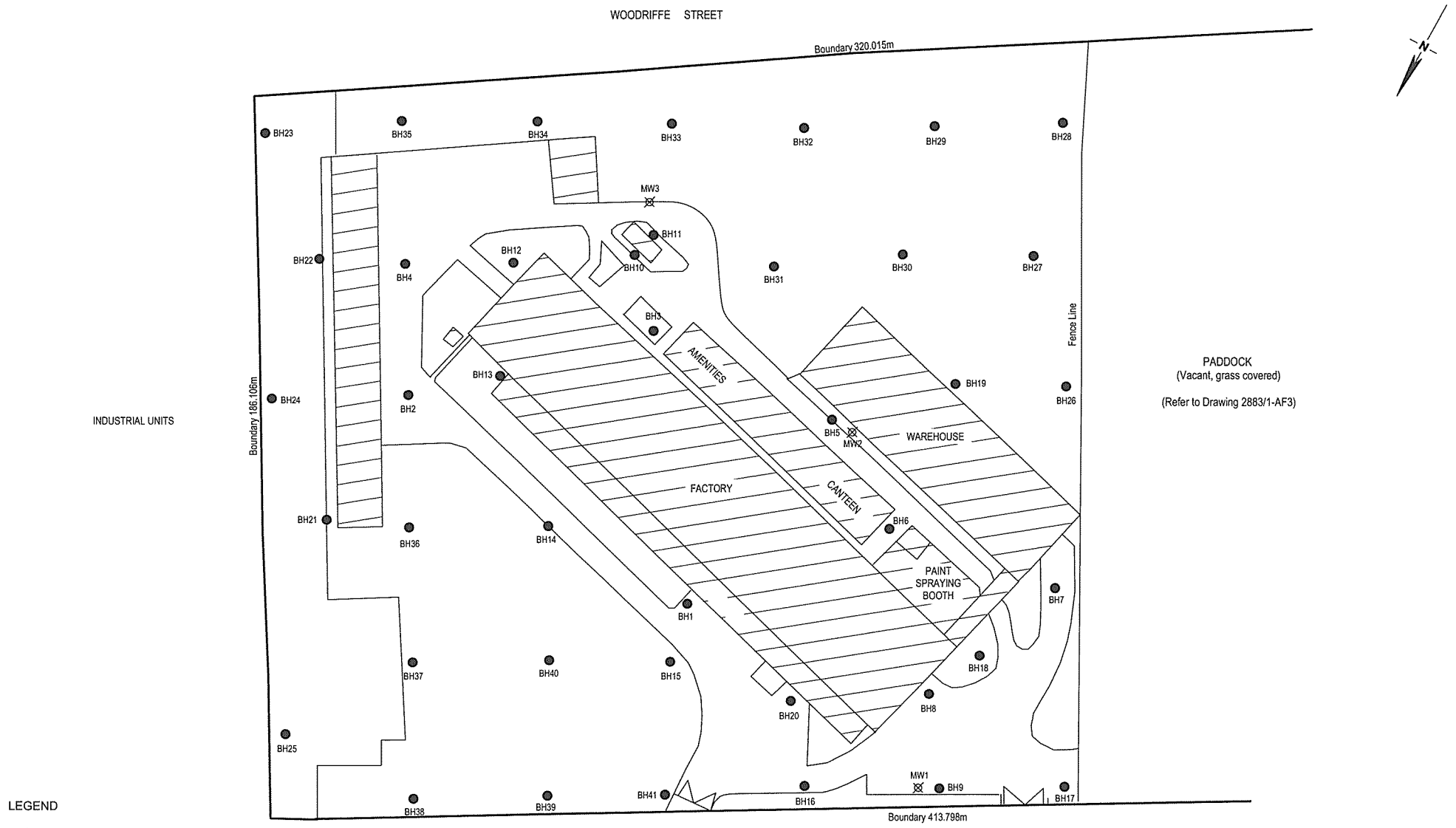
1. This drawing has been produced using a base plan provided by others, to which additional information e.g., test pits, borehole locations or notes have been added. Some or all of the information on this plan may not be relevant at the time of producing this drawing.
2. Site features are shown at approximate locations and are not to scale.

Panasonic AVC Networks Australia Pty Ltd
Lot 12 in DP234581
164 Station Street, Penrith

Site Features Plan

Drawing No: 2883/1-AF1
Job No: 2883/1
Drawn By: DP/AC
Date: 5 April 2005
Checked By: PG

File No: 2883-1 Drawings
Layers: 0, PLAN AF1/AF2, Hatch, AF1



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2. Site f[illegible]are shown at approximate locations and are not to scale.

Panasonic AVC Networks Australia Pty Ltd
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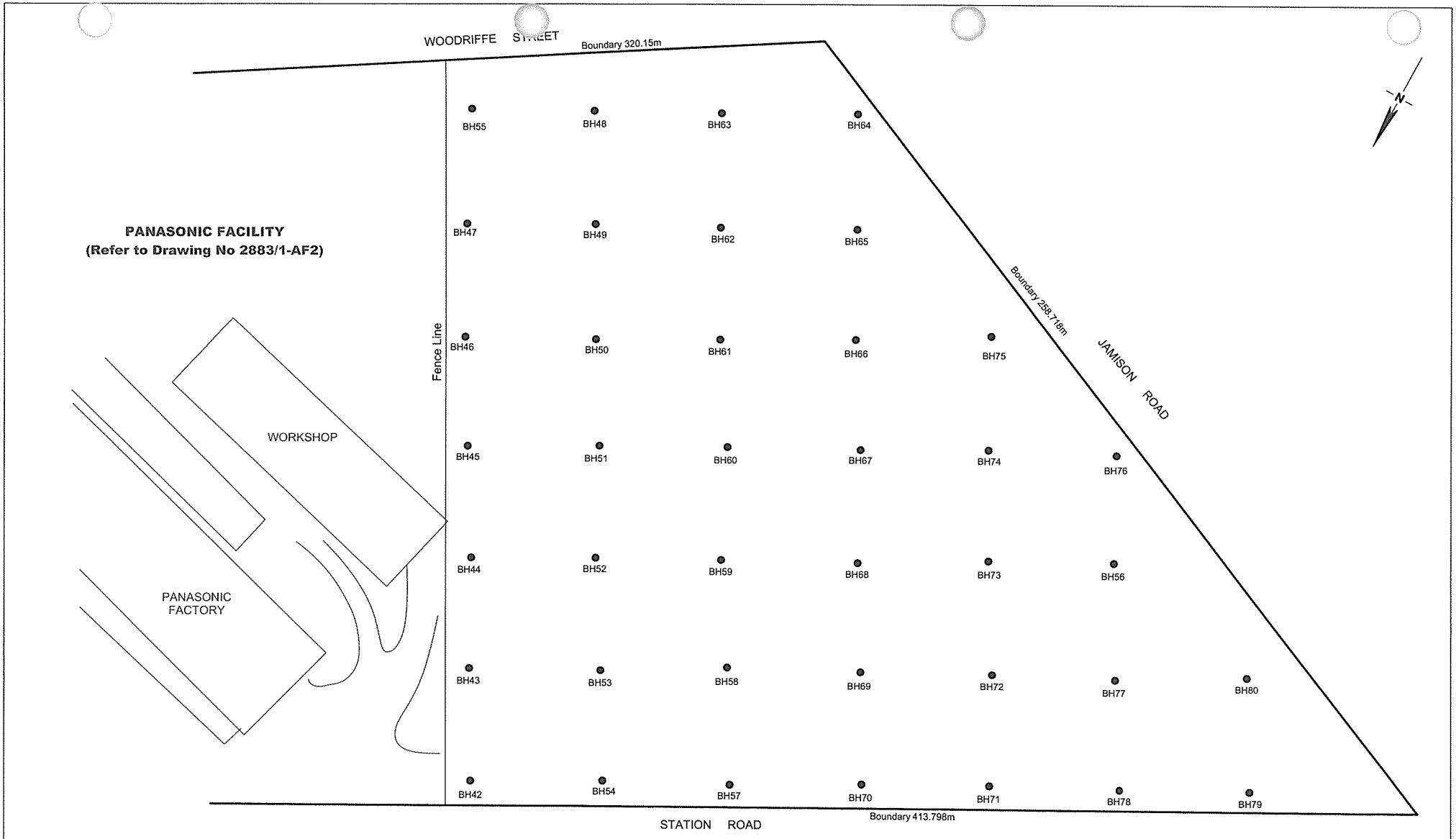
164 Station Street, Penrith

Borehole Location Plan

Drawing No: 2883/1-AF2
Job No: 2883/1
Drawn By: DP/AC
Date: 5 April 2005
Checked By: PG

File No: 2883-1 Drawings
Layers: 0, PLAN AF1/AF2, Hatc[illegible]



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2. Site features are shown at approximate locations and are not to scale.

Panasonic AVC Networks Australia Pty Ltd
Lot 12 in DP234581
164 Station Street, Penrith

Borehole Location Plan

Drawing No: 2883/1-AF3
Job No: 2883/1
Drawn By: DP/AC
Date: 5 April 2005
Checked By: PG

File No: 2883-1 Drawings
Layers: 0, PLAN AF3, AF3

LABORATORY SUMMARY TABLES

LABORATORY TESTING SCHEDULE

Sample	Depth (m)	HEAVY METALS (1)	HEAVY METALS (2)	TPH / BTEX	PAH	OCP	PCB	Cyanide	Hexavalent Chromium	Alkyl Mercury	VOC	Fluoride	asbestos
Surface (or near surface) soil samples from close to existing buildings													
BH1	0.7-0.85	✔		✔	✔	✔	✔	✔	✔	✔	✔		✔
BH2	0.13-0.28	✔		✔	✔	✔	✔						
BH3	0.15-0.3	✔		✔	✔	✔	✔	✔	✔	✔	✔		✔
BH4	0.25-0.4	✔		✔	✔	✔	✔						
BH5	0.25-0.4	✔		✔	✔	✔	✔	✔	✔	✔	✔		✔
BH6	0.12-0.27	✔		✔	✔	✔	✔	✔	✔	✔	✔		✔
BH7	0.23-0.38	✔		✔	✔	✔	✔	✔	✔	✔	✔		✔
BH8	0.22-0.37	✔		✔	✔	✔	✔	✔	✔	✔	✔		✔
BH9	0.15-0.3	✔		✔	✔	✔	✔						
BH10	0.2-0.35	✔		✔	✔	✔	✔	✔	✔	✔	✔		✔
BH11	0-0.15	✔		✔	✔	✔	✔	✔	✔	✔	✔		✔
BH12	0-0.15	✔		✔	✔	✔	✔	✔	✔	✔	✔		✔
BH13	0-0.15	✔		✔	✔	✔	✔	✔	✔	✔	✔		✔
BH16	0.17-0.32	✔		✔	✔	✔	✔	✔	✔	✔	✔		✔
BH18	0-0.15	✔		✔	✔	✔	✔						
BH19	0-0.15	✔		✔	✔	✔	✔	✔	✔	✔	✔		✔
BH20	0.5-0.65	✔		✔	✔	✔	✔	✔	✔	✔	✔		✔
BH21	0.1-0.25	✔		✔	✔	✔	✔	✔	✔	✔	✔		✔
BH22	0.1-0.25	✔		✔	✔	✔	✔	✔	✔	✔	✔		✔
BH23	0.1-0.25	✔		✔	✔	✔	✔						
BH24	0.1-0.25	✔		✔	✔	✔	✔						
Discrete surface (or near surface) soil samples away from existing buildings													
BH25	0.1-0.25		✔	✔	✔	✔	✔						
BH31	0-0.15		✔	✔	✔	✔	✔						
Composited surface (or near surface) soil samples away from existing buildings													
Composite A	NA		✔			✔							
Composite B	NA		✔			✔							
Composite C	NA		✔										
Composite D	NA		✔			✔							
Composite E	NA		✔										
Composite F	NA		✔			✔							
Composite G	NA		✔			✔							
Composite H	NA		✔										
Composite I	NA		✔			✔							
Composite J	NA		✔										
Composite K	NA		✔			✔							
Composite L	NA		✔										
Composite M	NA		✔			✔							
Composite N	NA		✔										
Composite O	NA		✔			✔							
Composite P	NA		✔			✔							
Composite Q	NA		✔										
Composite R	NA		✔			✔							
Discrete non-surface fill samples													
BH25	0.25-0.4		✔										
BH31	0.15-0.3		✔										
Groundwater samples													
GW1			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	
GW2			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	
GW3			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	

Notes

HEAVY METALS (1): arsenic, boron, cadmium, chromium, copper, lead, mercury, nickel, selenium, tin, zinc

HEAVY METALS (2): arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc

PAH : Polycyclic Aromatic Hydrocarbons

TPH : Total Petroleum Hydrcarbons

BTEX : Benzene, Toluene, Ethyl Benzene, Xylene

OCP : Organochlorine Pesticides

PCB : Polychlorinated Biphenyls

VOC: Volatile Organic Compounds

TABLE A1
HEAVY METALS TEST RESULTS
SURFACE (OR NEAR SURFACE) SOIL SAMPLES FROM AROUND BUILDINGS

Analyte / Sample Location	Depth (m)	ARSENIC	BORON	CADMIUM	CHROMIUM	HEXAVALENT CHROMIUM	COPPER	LEAD	MERCURY	ALKYL MERCURY	NICKEL	SELENIUM	TIN	ZINC
		HEAVY METALS (mg/kg)												
BH1	0.7-0.85	3	<5.0	<0.5	9	<1.0	9	12	<0.05	0.03	6	<2	15	17
BH2	0.13-0.28	4	<5.0	<0.5	14	NT	12	22	<0.05	NT	6	<2	30	19
BH3	0.15-0.3	<3	<5.0	<0.5	10	<1.0	6	7	<0.05	<0.02	5	<2	21	15
BH4	0.25-0.4	4	<5.0	<0.5	16	NT	19	7	<0.05	NT	5	<2	40	16
BH5	0.25-0.4	3	<5.0	<0.5	10	<1.0	6	8	<0.05	<0.03	5	<2	18	20
BH6	0.12-0.27	<3	<5.0	<0.5	9	<1.0	8	10	<0.05	0.03	5	<2	18	20
BH7	0.23-0.38	<3	<5.0	<0.5	7	<1.0	8	4	<0.05	<0.02	2	<2	16	7
BH8	0.22-0.37	<3	<5.0	<0.5	5	<1.0	5	4	<0.05	<0.02	3	<2	<10	6
BH9	0.15-0.3	<3	<5.0	<0.5	10	NT	6	7	<0.05	NT	5	<2	18	15
BH10	0.2-0.35	3	<5.0	<0.5	13	<1.0	7	8	<0.05	0.04	6	<2	21	15
BH11	0-0.15	13	<5.0	0.9	35	<1.0	78	230	<0.05	0.06	7	<2	290	350
BH12	0-0.15	4	<5.0	0.8	16	<1.0	63	82	<0.05	1.4	9	<2	74	190
BH13	0-0.15	8	<5.0	<0.5	9	<1.0	18	23	<0.05	0.28	5	<2	22	47
BH16	0.17-0.32	<3	<5.0	<0.5	7	<1.0	5	6	<0.05	0.04	3	<2	11	10
BH18	0-0.15	<3	<5.0	<0.5	13	NT	17	42	<0.05	NT	6	<2	23	70
BH19	0-0.15	5	<5.0	<0.5	12	<1.0	18	26	<0.05	<0.04	8	<2	29	33
BH20	0.5-0.65	3	<5.0	<0.5	11	<1.0	6	8	<0.05	0.03	5	<2	21	15
BH21	0.1-0.25	<3	<5.0	<0.5	17	<1.0	4	7	<0.05	0.04	8	<2	36	9
BH22	0.1-0.25	<3	<5.0	<0.5	57	<1.0	40	6	<0.05	<0.02	89	<2	68	58
BH23	0.1-0.25	<3	<5.0	<0.5	49	NT	34	11	<0.05	NT	81	<2	65	63
BH24	0.1-0.25	<3	<5.0	<0.5	67	NT	61	10	<0.05	NT	79	<2	69	57
Practical Quantitation Limits (PQL)		3	5	0.5	0.5	1.0	0.5	2.0	0.05	0.02	0.2	2.0	0.5	0.5
Procedure D [a] (Normal Distribution)														
Number of Samples		21	21	21	21	15	21	21	21	15	21	21	20	21
Mean [b]		4.0	5.0	0.5	19	1.0	20	26	0.05	0.1	17	2.0	45	50
Standard Deviation		2.4	0.0	0.1	18	0.0	22	50	0.0	0.4	28	0.0	61	80
Coefficient of Variance		0.6	0.0	0.2	0.9	0.0	1.1	1.9	0.0	2.5	1.7	0.0	1.3	1.6
95% Upper Confidence Limits (UCL)		*4.8*	*5.0*	*0.6*	*25*	*1.0*	*29*		*0.05*			*2.0*	*69*	
Procedure G [a] (Lognormal Distribution)														
Arithmetic Average								21		0.09	13			45
Variance								1.0		1.3	1.1			1.1
95% Upper Confidence Limit (UCL)								*37*		*0.22*	*25*			*83*
GUIDELINES FOR THE NSW SITE AUDITOR SCHEME (2006)														
Provisional Phyotoxicity Based Investigation Levels (PPBIL)		20		3	400	1	100	600	1		60			200
NATIONAL ENVIRONMENT PROTECTION MEASURE (1999)														
Health Investigation Levels (HIL) [c] (HIL 'D')		400	12000	80	48%[e]	400	4000	1200	60	40	2400			28000
Health Investigation Levels (HIL) [d] (HIL 'E')		200	6000	40	24%	200	2000	600	30	20	600			14000
THE ENVIRONMENTAL QUALITY OBJECTIVES IN THE NETHERLANDS (1994)														
Waste / Production Criteria [f]												50	5000	

Notes
a: Contaminated Sites: "Sampling Design Guidelines", 1995, EPA
b: For statistical purposes, concentrations less than PQL are assumed equal to PQL.
c: Residential with minimal opportunities for soil access including high-rise apartments and flats
d: Parks, recreational open space and playing fields
e: Chromium (+3)
f: Designated as a chemical waste under the Chemical Waste Act 1976 above this concentration

TABLE A2
HEAVY METALS TEST RESULTS
COMPOSITED AND DISCRETE SURFACE SOIL SAMPLES AWAY FROM BUILDINGS

Analyte / Sample Reference	Depth(m)	HEAVY METALS (mg/kg) ARSENIC	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	ZINC
Composite Samples									
Composite A	NA	5	<0.5	13	18	20	<0.05	11	31
Composite B	NA	5	<0.5	12	21	23	<0.05	9	33
Composite C	NA	3	<0.5	11	27	28	<0.05	7	30
Composite D	NA	<3	<0.5	8	10	18	<0.05	5	25
Composite E	NA	11	<0.5	10	11	21	<0.05	6	37
Composite F	NA	<3	<0.5	9	12	18	<0.05	7	26
Composite G	NA	5	<0.5	12	18	22	<0.05	10	29
Composite H	NA	5	<0.5	12	17	20	<0.05	9	26
Composite I	NA	5	<0.5	14	21	33	<0.05	11	42
Composite J	NA	<3	<0.5	6	7	9	<0.05	4	13
Composite K	NA	3	<0.5	9	10	14	<0.05	8	20
Composite L	NA	5	<0.5	15	20	22	<0.05	10	34
Composite M	NA	5	<0.5	12	16	21	<0.05	11	27
Composite N	NA	4	<0.5	11	14	19	<0.05	8	23
Composite O	NA	<3	<0.5	7	9	15	<0.05	5	16
Composite P	NA	4	<0.5	10	15	21	<0.05	9	27
Composite Q	NA	3	<0.5	10	13	15	<0.05	7	19
Composite R	NA	<3	<0.5	9	12	24	<0.05	6	21
Discrete samples									
BH25	0.1-0.25	<3	<0.5	41	49	13	<0.05	94	58
BH31	0-0.15	3	<0.5	10	12	15	<0.05	6	28
Practical Quantitation Limits (PQL)		3	0.5	0.5	0.5	2	0.05	0.2	0.5
Procedure D [a] (Normal Distribution)									
Number of Samples		20	20	20	20	20	20	20	20
Mean [b]		4.2	0.5	12	17	20	0.05	12	28
Standard Deviation		1.9	0.0	7.2	9.1	5.4	0.0	19	10
Coefficient of Variance		0.4	0.0	0.6	0.5	0.3	0.0	1.6	0.4
95% Upper Confidence Limits (UCL)		*5.2*	*0.5*	*16*	*21*	*22*	*0.05*	*22*	*33*
GUIDELINES FOR THE NSW SITE AUDITOR SCHEME (1998)									
Provisional Phytotoxicity Based Investigation Levels (PPBIL)		20	3	400	100	600	1	60	200
NATIONAL ENVIRONMENT PROTECTION MEASURE (1999)									
Health Investigation Levels (HIL) [c] (HIL 'D')		400	80	48%[e]	4000	1200	60	40	28000
Health Investigation Levels (HIL) [d] (HIL 'E')		200	40	24%	2000	600	30	20	14000

Notes
a: Contaminated Sites: "Sampling Design Guidelines", 1995, EPA
b: For statistical purposes, concentrations less than PQL are assumed equal to PQL.
c: Residential with minimal opportunities for soil access including high-rise apartments and flats
d: Parks, recreational open space and playing fields
e: Chromium (+3)

TABLE A3
TOTAL PETROLEUM HYDROCARBONS (TPH) AND BTEX TEST RESULTS

Analyte / Sample Reference	Depth (m)	TPH (mg/kg) C6-C9	C10-C14	C15-C28	C29-C40	C10-C40 [a]	BTEX (mg/kg) BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES
BH1	0.7-0.85	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH2	0.13-0.28	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH3	0.15-0.3	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH4	0.25-0.4	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH5	0.25-0.4	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH6	0.12-0.27	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH7	0.23-0.38	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH8	0.22-0.37	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH9	0.15-0.3	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH10	0.2-0.35	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH11	0-0.15	<20	<20	90	140	250	<0.50	<0.50	<0.50	<1.5
BH12	0-0.15	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH13	0-0.15	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH16	0.17-0.32	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH18	0-0.15	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH19	0-0.15	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH20	0.5-0.65	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH21	0.1-0.25	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH22	0.1-0.25	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH23	0.1-0.25	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH24	0.1-0.25	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
BH25	0.1-0.25	<20	<20	160	550	730	<0.50	<0.50	<0.50	<1.5
BH31	0-0.15	<20	<20	<50	<50	120	<0.50	<0.50	<0.50	<1.5
Practical Quantitation Limits (PQL)		20	20	50	50	NA	0.5	0.5	0.5	1.5
EPA Levels [b]		65	C10-C40 =1000				1	1.4	3.1	14

Notes a: C10-C40 = (C10-C14) + (C15-C28) + (C29-C40); concentrations less than PQL are assumed equal to PQL.

b: Contaminated Sites: "Guidelines for Assessing Service Station Sites", 1994, EPA

NA: Not Applicable

TABLE A4
BENZO(a)PYRENE & POLYCYCLIC AROMATIC HYDROCARBONS (PAH)

Sample Reference	Depth(m)	BENZO(a)PYRENE (mg/kg)	TOTAL PAH (mg/kg)
BH1	0.7-0.85	<0.05	1.6
BH2	0.13-0.28	<0.05	1.6
BH3	0.15-0.3	<0.05	1.6
BH4	0.25-0.4	<0.05	1.6
BH5	0.25-0.4	<0.05	1.6
BH6	0.12-0.27	<0.05	1.6
BH7	0.23-0.38	<0.05	1.6
BH8	0.22-0.37	<0.05	1.6
BH9	0.15-0.3	<0.05	1.6
BH10	0.2-0.35	<0.05	1.6
BH11	0-0.15	<0.05	1.6
BH12	0-0.15	<0.05	1.6
BH13	0-0.15	<0.05	1.6
BH16	0.17-0.32	<0.05	1.6
BH18	0-0.15	<0.05	1.6
BH19	0-0.15	<0.05	1.6
BH20	0.5-0.65	<0.05	1.6
BH21	0.1-0.25	<0.05	1.6
BH22	0.1-0.25	<0.05	1.6
BH23	0.1-0.25	<0.05	1.6
BH24	0.1-0.25	<0.05	1.6
BH25	0.1-0.25	<0.05	1.6
BH31	0-0.15	<0.05	1.6
Practical Quantitation Limit (PQL)		0.05	NA
NATIONAL ENVIRONMENT PROTECTION MEASURE (1999)			
Health Investigation Levels (HIL) [a] (HIL 'D')		4	80
Health Investigation Levels (HIL) [b] (HIL 'E')		2	40

Notes a: Residential with minimal opportunities for soil access including high-rise apartments and flats
b: Parks, recreational open space and playing fields

TABLE A5
ORGANOCHLORINE PESTICIDES (OCP) TEST RESULTS

Analyte / Sample Reference	Depth(m)	Organochlorine Pesticides (mg/kg)														
		HCB	BHC (Other than Lindane)	LINDANE	HEPTACHLOR EPOXIDE	HEPTACHLOR	METHOXYCHLOR	ALDRIN	DIELDRIN	ENDRIN	ENDOSULFAN	ENDOSULFAN SULFATE	DDD	DDE	DDT	CHLORDANE (trans & cis)
Composite Samples																
Composite A	NA	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
Composite B	NA	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
Composite D	NA	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
Composite F	NA	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
Composite G	NA	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
Composite I	NA	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
Composite K	NA	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
Composite M	NA	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
Composite O	NA	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
Composite P	NA	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
Composite R	NA	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
Discrete Samples																
BH1	0.7-0.85	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH2	0.13-0.28	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH3	0.15-0.3	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH4	0.25-0.4	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH5	0.25-0.4	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH6	0.12-0.27	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH7	0.23-0.38	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH8	0.22-0.37	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH9	0.15-0.3	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH10	0.2-0.35	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH11	0-0.15	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH12	0-0.15	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH13	0-0.15	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH16	0.17-0.32	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH18	0-0.15	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH19	0-0.15	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH20	0.5-0.65	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH21	0.1-0.25	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH22	0.1-0.25	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH23	0.1-0.25	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH24	0.1-0.25	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH25	0.1-0.25	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
BH31	0-0.15	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
Practical Quantitation Limits (PQL)		0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.2	0.1	0.2	0.2	0.2	0.2
NATIONAL ENVIRONMENT PROTECTION MEASURE (1999)																
Health Investigation Levels (HIL) [a] (HIL 'D')						40		40 [c]	40 [c]					800 [d]		200
Adjusted HIL D						13		13	13					267		67
Health Investigation Levels (HIL) [b] (HIL 'E')						20		20 [c]	20 [c]					400 [d]		100
Adjusted HIL E						7		7	7					133		33
THE ENVIRONMENTAL QUALITY OBJECTIVES IN THE NETHERLANDS (1994)																
Intervention Values					5		5			4 [f]	5	5 [g]				
Adjusted Intervention Values					1.7		1.7			1.3 [f]	1.7	1.7 [g]				

Notes :
- a: Residential with minimal opportunities for soil access including high-rise apartments and flats
- b: Parks, recreational open space and playing fields
- c: Aldrin + Dieldrin
- d: Total of DDD + DDE + DDT
- f: Total of Aldrin + Dieldrin + Endrin
- g: Endosulfan

TABLE A6
POLYCHLORINATED BIPHENYLS (PCB) TEST RESULTS

Sample Reference	Depth(m)	TOTAL PCB (mg/kg)
BH1	0.7-0.85	<0.9
BH2	0.13-0.28	<0.9
BH3	0.15-0.3	<0.9
BH4	0.25-0.4	<0.9
BH5	0.25-0.4	<0.9
BH6	0.12-0.27	<0.9
BH7	0.23-0.38	<0.9
BH8	0.22-0.37	<0.9
BH9	0.15-0.3	<0.9
BH10	0.2-0.35	<0.9
BH11	0-0.15	<0.9
BH12	0-0.15	<0.9
BH13	0-0.15	<0.9
BH16	0.17-0.32	<0.9
BH18	0-0.15	<0.9
BH19	0-0.15	<0.9
BH20	0.5-0.65	<0.9
BH21	0.1-0.25	<0.9
BH22	0.1-0.25	<0.9
BH23	0.1-0.25	<0.9
BH24	0.1-0.25	<0.9
BH25	0.1-0.25	<0.9
BH31	0-0.15	<0.9
Practical Quantitation Limit (PQL)		0.9
NATIONAL ENVIRONMENT PROTECTION MEASURE (1999)		
Health Investigation Levels (HIL) [a] (HIL 'D')		40
Health Investigation Levels (HIL) [b] (HIL 'E')		20

Notes
a: Residential with minimal opportunities for soil access including high-rise apartments and flats
b: Parks, recreational open space and playing fields

TABLE A7
CYANIDES TEST RESULTS

Analyte / Sample Location	Depth (m)	Total Cyanides (mg/kg)
BH1	0.7-0.85	<0.5
BH3	0.15-0.3	<0.5
BH5	0.25-0.4	<0.5
BH6	0.12-0.27	<0.5
BH7	0.23-0.38	<0.5
BH8	0.22-0.37	<0.5
BH10	0.2-0.35	<0.5
BH11	0-0.15	<0.5
BH12	0-0.15	<0.5
BH13	0-0.15	<0.5
BH16	0.17-0.32	<0.5
BH19	0-0.15	<0.5
BH20	0.5-0.65	<0.5
BH21	0.1-0.25	<0.5
BH22	0.1-0.25	<0.5
Practical Quantitation Limits (PQL)		0.5
NATIONAL ENVIRONMENT PROTECTION MEASURE (1999)		
Health Investigation Levels (HIL) [a] (HIL 'D')		1000[c] / 2000[d]
Health Investigation Levels (HIL) [b] (HIL 'E')		500[c] / 1000[d]

Notes
a: Residential with minimal opportunities for soil access including high-rise apartments and flats
b: Parks, recreational open space and playing fields
c: Cyanide (free)
d: Cyanide (complex)

TABLE A8
ASBESTOS TEST RESULTS

Sample Location	Depth (m)	Result
BH1	0.7-0.85	No Asbestos Detected
BH3	0.15-0.3	No Asbestos Detected
BH5	0.25-0.4	No Asbestos Detected
BH6	0.12-0.27	No Asbestos Detected
BH7	0.23-0.38	No Asbestos Detected
BH8	0.22-0.37	No Asbestos Detected
BH10	0.2-0.35	No Asbestos Detected
BH11	0-0.15	No Asbestos Detected
BH12	0-0.15	No Asbestos Detected
BH13	0-0.15	No Asbestos Detected
BH16	0.17-0.32	No Asbestos Detected
BH19	0-0.15	No Asbestos Detected
BH20	0.5-0.65	No Asbestos Detected
BH21	0.1-0.25	No Asbestos Detected
BH22	0.1-0.25	No Asbestos Detected

TABLE B1
HEAVY METALS TEST RESULTS
GROUNDWATER SAMPLES

Analyte / Sample Reference	HEAVY METALS (mg/L)										
	ARSENIC (As) - Total	BORON (B)	CADMIUM (Cd)	CHROMIUM (Cr) - Total	HEXAVALENT CHROMIUM	COPPER (Cu)	LEAD (Pb)	MERCURY (Hg) - Total	ALKYL MERCURY	NICKEL (Ni)	ZINC (Zn)
GW1a	0.006	0.022	<0.001	0.002	<0.05	<0.001	<0.001	<0.0001	<1.0	0.006	<0.001
GW2a	0.003	0.02	<0.001	0.001	<0.05	<0.001	<0.001	0.0002	<1.0	0.013	0.007
GW3a	0.001	0.017	<0.001	0.002	<0.05	0.002	0.002	<0.0001	<1.0	0.022	0.013
Practical Quantitation Limits	0.001	0.01	0.001	0.001	0.05	0.001	0.001	0.0001	1.0	0.001	0.001
ANZ [a] Guidelines for Fresh and Marine Water Quality (2000) Aquatic Ecosystems (Trigger Values) Fresh	0.024[c] 0.013[d]	0.37	0.0002	0.0033[e]	0.001[f]	0.0014	0.0034	0.00006[g]	ID[h]	0.057[i] 0.099[j] 0.099[k]	0.042[i] 0.072[j] 0.072[k]
CLEAN WATERS REGULATIONS 1972 [b] SCHEDULE 2	0.05	1	0.01	0.05	0.05	1	0.05	0.001	0.001		5

Notes

a: ANZ = Australia and New Zealand
b: Updated on 22 July 2003
c: as As (III)
d: as As (V)
e: as Cr (III)
f: as Cr (VI) - Hexavalent Chromium
g: as Hg (Inorganic)
h: as Hg (methyl)
ID: Insufficient Data to derive a reliable trigger value
i: Trigger value for GW1a, adjusted for hardness (hardness 390mg/L)
j: Trigger value for GW2a, adjusted for hardness (hardness 3,036mg/L)
k: Trigger value for GW3a, adjusted for hardness (hardness 3,888mg/L)

TABLE B2
BTEX TEST RESULTS
GROUNDWATER SAMPLES

Analyte / Sample Reference	BTEX (mg/L)			
	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES
GW1	<0.005	<0.005	<0.005	<0.015
GW2	<0.005	<0.005	<0.005	<0.015
GW3	<0.005	<0.005	<0.005	<0.015
Practical Quantitation Limits (PQL)	0.005	0.005	0.005	0.015
ANZ [a] Guidelines for Fresh and Marine Water Quality (2000) Aquatic Ecosystems (Trigger Values) Fresh	0.95	0.18 [e]	0.08 [e]	0.350[b] 0.075[c, e] 0.2[d]

Notes
a: ANZ = Australia and New Zealands
b: as o-Xylene
c: as m-Xylene
d: as p-Xylene
e: Indicative interim working level due to Insufficient Data (ID) to derive a reliable trigger value

TABLE B3
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)
GROUNDWATER SAMPLES

Analyte / Sample Reference	PAH (mg/L)				
	NAPHTHALENE	ANTHRANCENE	PHENANTHRENE	FLUORANTHENE	BENZO(a)PYRENE
GW1a	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
GW2a	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
GW3a	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Practical Quantitation Limits (PQL)	0.0005	0.0005	0.0005	0.0005	0.0005
ANZ [a] Guidelines for Fresh and Marine Water Quality (2000) Aquatic Ecosystems (Trigger Values) Fresh	0.016	0.00001[b]	0.0006[b]	0.001[b]	0.0001[b]

Notes
a: ANZ = Australia and New Zealands
b: Indicative interim working level due to Insufficient Data (ID) to derive a reliable trigger value

TABLE B4
ORGANOCHLORINE PESTICIDES TEST RESULTS
GROUNDWATER SAMPLES

Analyte / Sampling Location	Organochlorine Pesticides (OCP) ug/L												
	HCB	LINDANE	HEPTACHLOR	METHOXYCHLOR	ALDRIN	DIELDRIN	ENDRIN	ENDOSULFAN	ENDOSULFAN SULFATE	DDD	DDE	DDT	CHLORDANE (trans & cis)
GW1a	<0.01	<0.2	<0.09	<0.04	<0.02	<0.02	<0.02	<0.05	<0.05	<0.01	<0.01	<0.01	<0.04
GW2a	<0.01	<0.2	<0.09	<0.04	<0.02	<0.02	<0.02	<0.05	<0.05	<0.01	<0.01	<0.01	<0.04
GW3a	<0.01	<0.2	<0.09	<0.04	<0.02	<0.02	<0.02	<0.05	<0.05	<0.01	<0.01	<0.01	<0.04
Practical Quantitation Limits	0.01	0.20	0.09	0.04	0.02	0.02	0.02	0.05	0.05	0.01	0.01	0.01	0.04
ANZ [a] Guidelines for Fresh and Marine Water Quality (2000) Aquatic Ecosystems (Trigger Values) Fresh	0.05[c]	0.2	0.01	0.005[c]	0.001[c]	0.01[c]	0.01	0.03	0.03 [d]		0.03 [c]	0.006	0.03
CLEAN WATERS REGULATIONS 1972 [b] SCHEDULE 2	10	10	10	10	10	10	1	10	10	10	10	10	1

Notes:
a : ANZ = Australia and New Zealands
b : Updated on 22 July 2003
c : Indicative interim working level due to Insufficient Data (ID) to derive a reliable trigger value
d : Endosulfan

TABLE B5
POLYCHLORINATED BIPHENYLS (PCB) TEST RESULTS
GROUNDWATER SAMPLES

Analyte / Sample Location	POLYCHLORINATED BIPHENYLS (PCB) ug/L								
	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Arochlor 1262	Arochlor 1268
GW1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
GW2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
GW3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Practical Quantitation Limit (PQL)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
ANZ [a] Guidelines for Fresh and Marine Water Quality (2000) Aquatic Ecosystems (Trigger Values) Fresh	0.001[b]	1.0[b]	0.3[b]	0.3	0.03[b]	0.01	25[c]	50[c]	50[c]

Notes
a : ANZ = Australia and New Zealands.
b : Insufficient Data (ID) to derive a reliable trigger value. The Trigger value is based on acute toxicity only and is low reliability (AF (Assessment Factor method) of 1000)
c : Insufficient Data (ID) to derive a reliable trigger value. The Trigger value is derived from single acute freshwater fish figure by applying an AF of 1000.

TABLE B6
PHENOLS, FLUORIDE AND CYANIDES TEST RESULTS
GROUNDWATER SAMPLES

ANALYTE / Sample Location		TOTAL PHENOLS (mg/L)	FLUORIDE	TOTAL CYANIDES (mg/L)
GW1a		<0.05	0.14	<0.005
GW2a		<0.05	0.14	0.008
GW3a		<0.05	0.12	<0.005
Practical Quantitation Limits (PQL)		0.05	0.08	0.005
ANZ [a] Guidelines for Fresh and Marine Water Quality (2000) Aquatic Ecosystems (Trigger Values)	Fresh	0.32		0.007
CLEAN WATERS REGULATIONS 1972 [b] SCHEDULE 2			1.5	0.05

Notes : a : ANZ = Australia and New Zealands
b : Updated on 22 July 2003

TABLE C1
TRIP SPIKE SAMPLES

ANALYTE	TRIP SPIKE TS1	TRIP SPIKE TS2	TRIP SPIKE TS3	TRIP SPIKE TS4
BTEX				
Benzene	70%	67%	89%	84%
Toluene	96%	94%	68%	95%
Ethyl Benzene	87%	82%	83%	106%
Total Xylene	89%	86%	91%	101%

Note : results are reported as percentage recovery of known spike concentration

TABLE C2
DUPLICATE SAMPLE DS1

ANALYTE	BH9 0.15-0.3m mg/kg	DUPLICATE DS1 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	<3	<3.0	-
Boron	<5.0	<5.0	-
Cadmium	<0.5	<0.5	-
Chromium	10	9.0	11
Copper	6.0	5.0	18
Lead	7.0	8.0	13
Mercury	<0.05	<0.05	-
Nickel	5.0	5.0	0
Selenium	<2	<2.0	-
Tin	18	23	24
Zinc	15	16	6
TOTAL PETROLEUM HYDROCARBONS (TPH)			
C6 - C9	<20	<20	-
C10 - C14	<20	<20	-
C15 - C28	<50	<50	-
C29 - C40	<50	<50	-
BTEX			
Benzene	<0.5	<0.5	-
Toluene	<0.5	<0.5	-
Ethyl Benzene	<0.5	<0.5	-
Total Xylenes	<1.5	<1.5	-
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)			
Benzo(a)pyrene	<0.05	<0.05	-
Total PAH	<1.6	<1.6	-
ORGANOCHLORINE PESTICIDES (OCP)			
HCB	<0.1	<0.1	-
BHC (other than lindane)	<0.3	<0.3	-
Lindane (g-BHC)	<0.1	<0.1	-
Heptachlor Epoxide	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Methoxychlor	<0.1	<0.1	-
Aldrin	<0.1	<0.1	-
Dieldrin	<0.05	<0.05	-
Endrin	<0.1	<0.1	-
Endosulfan	<0.2	<0.2	-
Endosulfan Sulfate	<0.1	<0.1	-
DDD	<0.2	<0.2	-
DDE	<0.2	<0.2	-
DDT	<0.2	<0.2	-
Chlordane (trans & cis)	<0.2	<0.2	-
POLYCHLORINATED BIPHENYLS (PCB)			
Total PCB	<0.9	<0.9	-

TABLE C3
DUPLICATE SAMPLE DS2

ANALYTE	BH13 0-0.15m mg/kg	DUPLICATE DS2 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	8.0	9.0	12
Boron	<5.0	<5.0	-
Cadmium	<0.5	<0.5	-
Chromium	9.0	10	11
Hexavalent Chromium	<1.0	<1.0	-
Copper	18	19	5
Lead	23	25	8
Mercury	<0.05	<0.05	-
Alkyl Mercury	0.28	0.26	7
Nickel	5.0	5.0	0
Selenium	<2	<2.0	-
Tin	22	24	9
Zinc	47	49	4
TOTAL PETROLEUM HYDROCARBONS (TPH)			
C6 - C9	<20	<20	-
C10 - C14	<20	<20	-
C15 - C28	<50	<50	-
C29 - C40	<50	<50	-
BTEX			
Benzene	<0.5	<0.5	-
Toluene	<0.5	<0.5	-
Ethyl Benzene	<0.5	<0.5	-
Total Xylenes	<1.5	<1.5	-
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)			
Benzo(a)pyrene	<0.05	<0.05	-
Total PAH	<1.6	<1.6	-
ORGANOCHLORINE PESTICIDES (OCP)			
HCB	<0.1	<0.1	-
BHC (other than lindane)	<0.3	<0.3	-
Lindane (g-BHC)	<0.1	<0.1	-
Heptachlor Epoxide	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Methoxychlor	<0.1	<0.1	-
Aldrin	<0.1	<0.1	-
Dieldrin	<0.05	<0.05	-
Endrin	<0.1	<0.1	-
Endosulfan	<0.2	<0.2	-
Endosulfan Sulfate	<0.1	<0.1	-
DDD	<0.2	<0.2	-
DDE	<0.2	<0.2	-
DDT	<0.2	<0.2	-
Chlordane (trans & cis)	<0.2	<0.2	-
POLYCHLORINATED BIPHENYLS (PCB)			
Total PCB	<0.9	<0.9	-
CYANIDES AND ASBESTOS			
Asbestos	Not detected	Not detected	-
Total Cyanides	<0.5	<0.5	-

TABLE C4
DUPLICATE SAMPLE DS4

ANALYTE	Composite F mg/kg	DUPLICATE DS4 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	<3	<3.0	-
Cadmium	<0.5	<0.5	-
Chromium	9	9	0
Copper	12	12	0
Lead	18	17	6
Mercury	<0.05	<0.05	-
Nickel	7	7	0
Zinc	26	27	4
ORGANOCHLORINE PESTICIDES (OCP)			
HCB	<0.1	<0.1	-
BHC (other than lindane)	<0.3	<0.3	-
Lindane (g-BHC)	<0.1	<0.1	-
Heptachlor Epoxide	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Methoxychlor	<0.1	<0.1	-
Aldrin	<0.1	<0.1	-
Dieldrin	<0.05	<0.05	-
Endrin	<0.1	<0.1	-
Endosulfan	<0.2	<0.2	-
Endosulfan Sulfate	<0.1	<0.1	-
DDD	<0.2	<0.2	-
DDE	<0.2	<0.2	-
DDT	<0.2	<0.2	-
Chlordane (trans & cis)	<0.2	<0.2	-

TABLE C5
DUPLICATE SAMPLE DS5

ANALYTE	Composite P mg/kg	DUPLICATE DS5 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	4	4	-
Cadmium	<0.5	<0.5	-
Chromium	10	12	18
Copper	15	16	6
Lead	21	23	9
Mercury	<0.05	<0.05	-
Nickel	9	10	11
Zinc	27	32	17
ORGANOCHLORINE PESTICIDES (OCP)			
HCB	<0.1	<0.1	-
BHC (other than lindane)	<0.3	<0.3	-
Lindane (g-BHC)	<0.1	<0.1	-
Heptachlor Epoxide	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Methoxychlor	<0.1	<0.1	-
Aldrin	<0.1	<0.1	-
Dieldrin	<0.05	<0.05	-
Endrin	<0.1	<0.1	-
Endosulfan	<0.2	<0.2	-
Endosulfan Sulfate	<0.1	<0.1	-
DDD	<0.2	<0.2	-
DDE	<0.2	<0.2	-
DDT	<0.2	<0.2	-
Chlordane (trans & cis)	<0.2	<0.2	-

TABLE C6
INTER-LABORATORY DUPLICATE (SPLIT SAMPLE) SS1

ANALYTE	BH10 0.2-0.35m mg/kg	SPLIT SS1 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	3.0	<5.0	-
Boron	<5.0	<10	-
Cadmium	<0.5	<0.5	-
Chromium	13	12	8
Copper	7.0	6.0	15
Lead	8.0	8.0	0
Mercury	<0.05	<0.05	-
Nickel	6.0	7.0	15
Selenium	<2	<5.0	-
Tin	21	<5.0	-
Zinc	15	40	91
TOTAL PETROLEUM HYDROCARBONS (TPH)			
C6 - C9	<20	<5	-
C10 - C14	<20	<10	-
C15 - C28	<50	<50	-
C29 - C40	<50	<50	-
BTEX			
Benzene	<0.5	<0.2	-
Toluene	<0.5	<1.0	-
Ethyl Benzene	<0.5	<1.0	-
Total Xylenes	<1.5	<3.0	-
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)			
Benzo(a)pyrene	<0.05	<0.5	-
Total PAH	<1.6	<8.5	-
ORGANOCHLORINE PESTICIDES (OCP)			
HCB	<0.1	<0.1	-
BHC (other than lindane)	<0.3	<0.3	-
Lindane (g-BHC)	<0.1	<0.1	-
Heptachlor Epoxide	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Methoxychlor	<0.1	<0.1	-
Aldrin	<0.1	<0.1	-
Dieldrin	<0.05	<0.1	-
Endrin	<0.1	<0.1	-
Endosulfan	<0.2	<0.1	-
Endosulfan Sulfate	<0.1	<0.1	-
DDD	<0.2	<0.1	-
DDE	<0.2	<0.1	-
DDT	<0.2	<0.1	-
Chlordane (trans & cis)	<0.2	<0.1	-
POLYCHLORINATED BIPHENYLS (PCB)			
Total PCB	<0.9	<1.0	-
CYANIDES			
Total Cyanides	<0.5	2.0	-

TABLE C7
INTER-LABORATORY DUPLICATE (SPLIT SAMPLE) SS2

ANALYTE	BH22 0.1-0.25m mg/kg	SPLIT SS2 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	<3	<5.0	-
Boron	<5.0	<10	-
Cadmium	<0.5	<0.5	-
Chromium	57	67	16
Copper	40	49	20
Lead	6.0	9.0	40
Mercury	<0.05	<0.05	-
Nickel	89	92	3
Selenium	<2	8.0	-
Tin	68	<5.0	-
Zinc	58	75	26
TOTAL PETROLEUM HYDROCARBONS (TPH)			
C6 - C9	<20	<5	-
C10 - C14	<20	<10	-
C15 - C28	<50	<50	-
C29 - C40	<50	<50	-
BTEX			
Benzene	<0.5	<0.2	-
Toluene	<0.5	<1.0	-
Ethyl Benzene	<0.5	<1.0	-
Total Xylenes	<1.5	<3.0	-
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)			
Benzo(a)pyrene	<0.05	<0.5	-
Total PAH	<1.6	<8.5	-
ORGANOCHLORINE PESTICIDES (OCP)			
HCB	<0.1	<0.1	-
BHC (other than lindane)	<0.3	<0.3	-
Lindane (g-BHC)	<0.1	<0.1	-
Heptachlor Epoxide	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Methoxychlor	<0.1	<0.1	-
Aldrin	<0.1	<0.1	-
Dieldrin	<0.05	<0.1	-
Endrin	<0.1	<0.1	-
Endosulfan	<0.2	<0.1	-
Endosulfan Sulfate	<0.1	<0.1	-
DDD	<0.2	<0.1	-
DDE	<0.2	<0.1	-
DDT	<0.2	<0.1	-
Chlordane (trans & cis)	<0.2	<0.1	-
POLYCHLORINATED BIPHENYLS (PCB)			
Total PCB	<0.9	<1.0	-
CYANIDES			
Total Cyanides	<0.5	0.6	-

TABLE C8
INTER-LABORATORY DUPLICATE (SPLIT SAMPLE) SS3

ANALYTE	Composite G mg/kg	SPLIT SS3 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	5.0	5.0	-
Cadmium	<0.5	<0.5	-
Chromium	12	13	8
Copper	18	17	6
Lead	22	26	17
Mercury	<0.05	<0.05	-
Nickel	10	11	10
Zinc	29	33	13
ORGANOCHLORINE PESTICIDES (OCP)			
HCB	<0.1	<0.1	-
BHC (other than lindane)	<0.3	<0.3	-
Lindane (g-BHC)	<0.1	<0.1	-
Heptachlor Epoxide	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Methoxychlor	<0.1	<0.1	-
Aldrin	<0.1	<0.1	-
Dieldrin	<0.05	<0.1	-
Endrin	<0.1	<0.1	-
Endosulfan	<0.2	<0.1	-
Endosulfan Sulfate	<0.1	<0.1	-
DDD	<0.2	<0.1	-
DDE	<0.2	<0.1	-
DDT	<0.2	<0.1	-
Chlordane (trans & cis)	<0.2	<0.1	-

APPENDIX A

RECORDS OF LAND & PROPERTY INFORMATION

ADVANCE LEGAL SEARCH PTY LIMITED

(ACN 077 067 068)
ABN 49 077 067 068

PO Box 149
Yagoona NSW 2199

Telephone: (02) 9754 1590
Mobile: 0412 169 809
Facsimile: (02) 9754 1364
Email: alsearch@veritel.com.au

10 October 2004

GEOTECHNIQUE PTY LTD
DX 8032 PENRITH

Attention: Frances Kuiper

RE: **164 Station Street, Penrith**
Lot 12 DP 234581
Ref: 2883/1

Current Search

Folio Identifier 12/234581 (attached)
DP 234581 (plan attached)
Dated 06 October 2004
Registered Proprietor:
MATSUSHITA ELECTRIC CO (AUSTRALIA) PTY LIMITED

Seen 13/10/04

Title Tree
Lot 12 DP 234581

Folio Identifier 12/234581

Certificate of Title Volume 10665 Folio 128

Certificate of Title Volume 9489 Folio 128

P A 40143

Conveyance BK 2401 – 339

Conveyance BK 2396 – 469

Conveyance BK 1965 – 947

Conveyance BK 1338 – 261

Conveyance BK 222 - 132

******

Summary of Proprietor(s)
Lot 12 DP 234581

Year	Proprietor
	(Lot 12 DP 234581)
1988 – todate	Matsushita Electric Co (Australia) Pty Limited
	(Lot 12 DP 234581- CT Vol 10665 Fol 128)
1968 – 1988	Matsushita Electric Co (Australia) Pty Limited
1967 – 1968	Singer Industries Pty Limited
	(Lot 1 DP 218751- CT Vol 9489 Fol 237)
1962 – 1967	Singer Industries Pty Limited
	(Parish Mulgoa 8 Acres 1 Rood 35 ½ Perches, 6 Acres 0 Rood 32 ¼ Perches, 5 Acres 1 Rood 13 ¾ Perches, 1 Acre 0 Rood 3 ¾ Perches & 2 Acres 3 Rood 20 ¾ Perches)
1957 – 1962	Penrith Manufacturing Company Pty Limited
1956 – 1957	Albert Edward Flint, dairyman
1945 – 1956	Albert Royal Charles Flint, dairyman
1924 – 1945	Harley Reuben Croome Eaton, carrier
1923 – 1924	Frederick Daniel Woodriff, gentleman Mary Ann Catherine Woodriff, widow Albert Edward Baker, solicitor
1881 – 1923	Frederick Daniel Woodriff, gentleman

******

Information Provided Through
Advance Legal Search Pty Ltd
Ph. 0297541590 *Fax.* 0297541364
DX.

Title Search

EziSearch
An Approved LPI *NSW*
Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 12/234581

SEARCH DATE	TIME	EDITION NO	DATE
6/10/2004	8:50 PM	1	6/4/1995

LAND

LOT 12 IN DEPOSITED PLAN 234581
AT PENRITH
LOCAL GOVERNMENT AREA: PENRITH
PARISH OF MULGOA COUNTY OF CUMBERLAND
TITLE DIAGRAM: DP234581

FIRST SCHEDULE

MATSUSHITA ELECTRIC CO (AUSTRALIA) PTY LIMITED (T L32471)

SECOND SCHEDULE (2 NOTIFICATIONS)

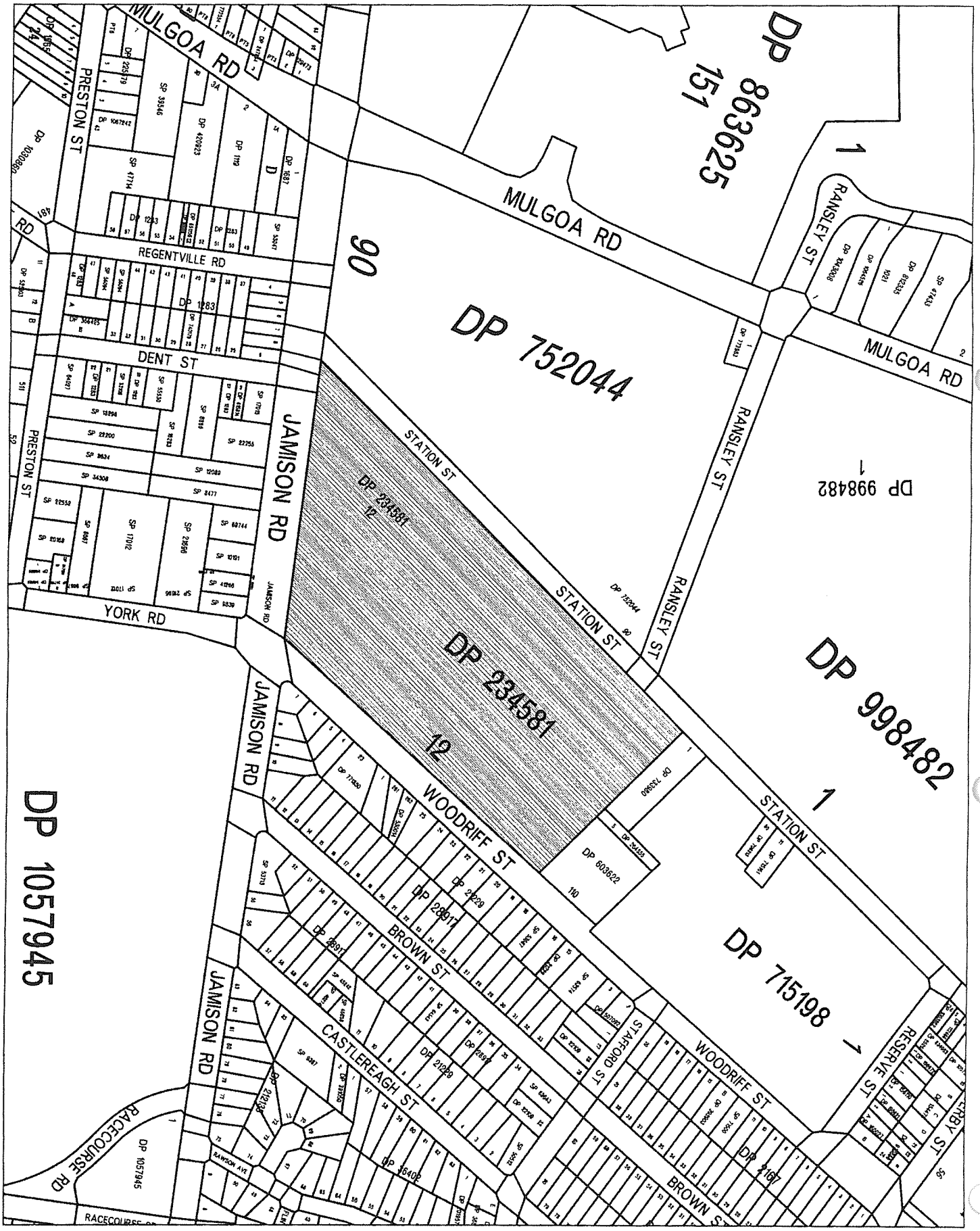
1. RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2. O131362 EASEMENT FOR WATERMAIN 3.5 WIDE AFFECTING THE PART OF THE LAND ABOVE DESCRIBED AS SHOWN DESIGNATED (A) IN DP649514

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

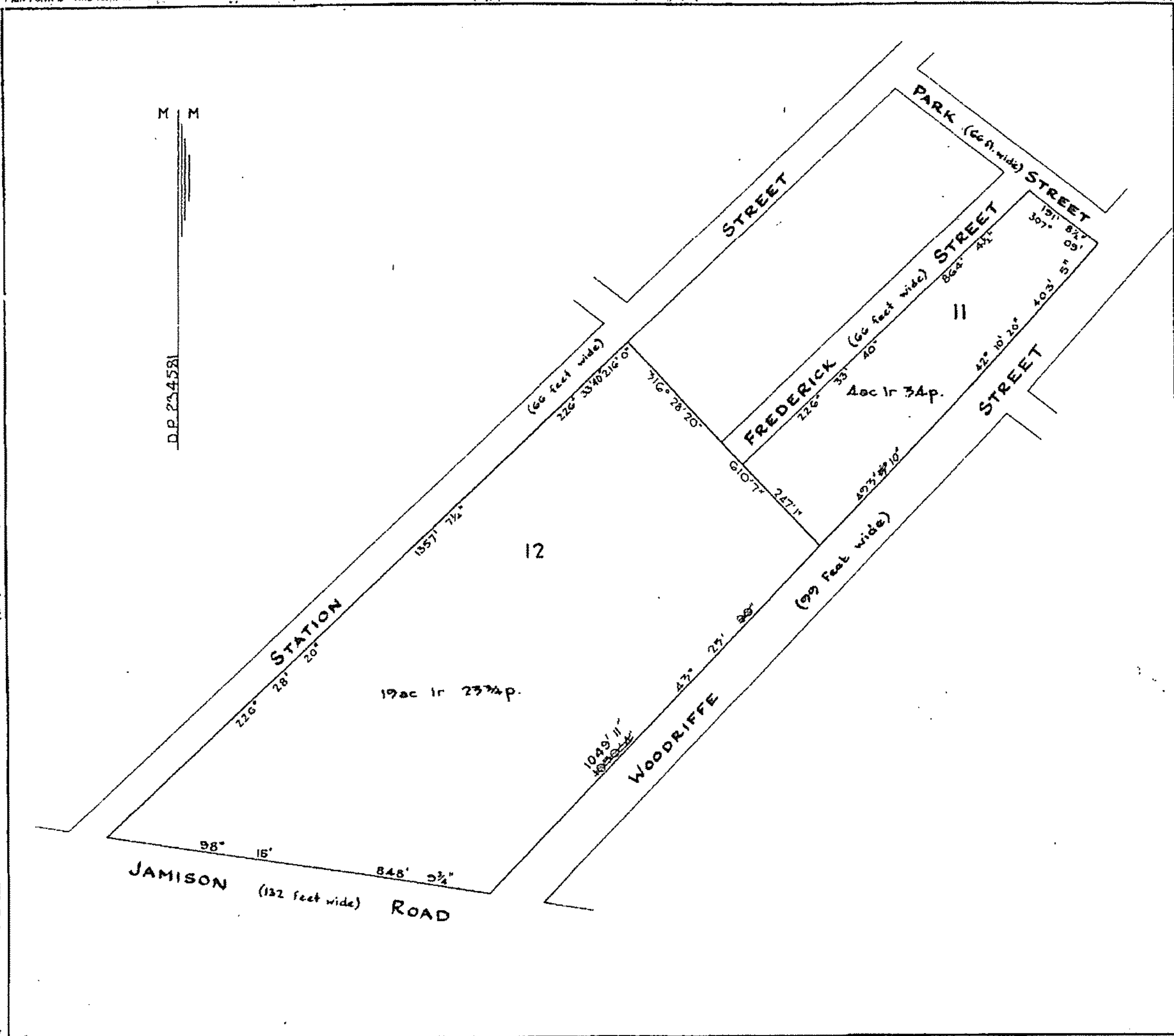
DEPARTMENT OF LANDS ..... Client: planroom2
Enquiry Parcel: Lot 12 in DP234581
Locality: PENRITH Co: CUMBERLAND Ph: MULGOA
Local Government Area: PENRITH - Date: 07-OCT-04 - Time: 10:30am



Seen 13/10/04

Plan Form 2—This form must NOT be used where it is intended to dedicate public roads or public reserves or create drainage reserves, easements, or restrictions as to user.—See Form 3.

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION.



D.P. 234581	
Registered:	11-10-1967
C.A.	2267 of 12.9.67
Title System:	Torrens
Purpose:	Subdivision
Ref. Map:	Penrith Sh. 3
Last Plan	D.P. 218751

PLAN OF Lot 1 D.P. 218751

Scale: 160 feet to an inch

~~Mun./Shire~~ City: PENRITH

Locality: PENRITH

Parish: MULGOA

County: CUMBERLAND

I, FRANCIS PHILIP WALLIS F. P. WALLIS & MOORE of 147 MACQUARIE ST. SYDNEY a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan is accurate and has been made by me in accordance with the Survey Practice Regulations, 1933, and was completed on

Signature: F.P. Wallis

Surveyor registered under Surveyors Act, 1929, as amended. Datum Line of Azimuth.

OFFICE USE ONLY.

Amendments 1049' 11", 493' 10", 42° 25', 226° 33' 40" Made in Reg. Gen. Dept. at Surveyor's request.

Council Clerk's Certificate. 72/67

I hereby certify that—
(a) the requirements of the Local Government Act, 1919 (other than the requirements for the registration of plans), and
*(b) the requirements of section 342 of the Metropolitan Water, Sewerage, and Drainage Act, 1924, as amended, (Hunter District Water, Sewerage, and Drainage Act, 1938, as amended,

have been complied with by the applicant in relation to the proposed subdivision (Insert "new road" or "subdivision") set out herein.

Subdivision No. 2267

Date: 12th September 1967

(Signature) [signature] Council Clerk.

*This part of certificate to be deleted where the application is only for the opening of a new road or where the land to be subdivided is wholly outside the areas of operations of the Metropolitan Water Sewerage and Drainage Board and the Hunter District Water Board. (Delete if inapplicable.)

SURVEYOR'S REFERENCE. 8857

WARNING. Plan Drawing only to appear in this space.

M.P.D.

D.P. 234581

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 234581

FEET	INCHES	METRES
66	-	20.117
99	-	30.175
132	-	40.234
191	8 1/2	58.433
216	-	65.837
247	1	75.311
403	5	122.961
493	10	150.520
610	7	186.106
848	9 3/4	258.718
864	4 1/2	263.462
1049	11	320.015
1357	7 1/4	413.798
1357	10 3/4	413.807

AC RD P	HA
4 1 34	1.8
19 1 23 3/4	7.85

I, Bruce Richard Davies, Registrar General for New South Wales, certify that this negative is a photograph made as a permanent record of a document in my custody this 5th day of July, 1977

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Seen 13/10/04

Req:RP239779 /Doc:DP 0234581 P /Rev:10-Jun-1992 /Sts:OK.OK /Prt:06-Oct-2004 20:55 /Pgs:1
Ref:Geotechnique ALSP /Src:M