Stage 1 and 2 - Desktop Environmental, Hydrogeological and Geotechnical Assessment

REPORT ON PSP AREA 40 – BALLAN ROAD

Final V2 | March 2013









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Document title: Stage 1 and 2 - Desktop Environmental, Hydrogeological

and Geotechnical Assessment

Report on PSP Area 40 - Ballan Road

Version: Final V2

Date: 8 March 2013

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File name: I:\VWES\Projects\VW05101\Deliverables\Stage 2 Report\Draft\VW05101.4 - PSP 40 -

Ballan Road, Wyndham Vale\March 2013 folder\F01_VW05101 4_S1PSP40_V2_8-01-

13_FINAL.docx

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Document History and Status

Revision	Date issued	Reviewed by	Approved by	Date approved	Revision type
Draft V1	09/06/10	J Blanchfield	J Blanchfield	09/06/10	Peer Rev.
Draft V1	09/06/10	R Graham	J Blanchfield	09/06/10	Tech. Rev. – Contaminated Land
Draft V1	09/06/10	L Mooney	J Blanchfield	09/06/10	Tech. Rev. – Geotechnical
Draft V1	10/06/10	M Robinson	J Blanchfield	10/06/10	Tech. Rev. – Hydrogeology
Draft V1	10/06/10	D Neumann	J Blanchfield	10/06/10	Tech. Rev. – Planning
Draft V2	05/07/10	J Blanchfield	J Blanchfield	05/07/10	Peer Rev.
Draft V2	22/07/10	R Graham	J Blanchfield	22/07/10	Tech Rev – Contaminated Land
Draft V2	5/3/2013	M.Rogers	Corey Bannister	5/3/2013	Comments provided via email

Distribution of Copies

Revision	Copy no	Quantity	Issued to
Draft V1	1	1 (.pdf)	Stephen Davis (GAA) via email 11/06/10
Draft V1	2	1 (.pdf)	SKM Electronic File
Final V1	1	3 (2 x hardcopies + 1 pdf)	Matthew Rogers (GAA)
	2	1 (.pdf)	SKM Library

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Printed:	8 March 2013
Last saved:	8 March 2013 04:41 PM
Project manager:	James Blanchfield / Corey Bannister
Name of organisation:	Growth Areas Authority (GAA)
Name of project:	Environmental Site Assessment of PSP 40 – Ballan Road
Name of document:	Report on Environmental Site Assessment of PSP 40 – Ballan Road
Document version:	Final V2
Project number:	VW05101.4



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List of Abbreviations

AHD Australian Height Datum AMG Australian Map Grid

ANZECC Australian New Zealand Environment and Conservation Council

ARMCANZ Agriculture and Resource Management Council of Australia and New Zealand

AS Australian Standard

ASRIS Australian Soil Resources Information System

ATES Aquifer Thermal Energy Storage

BTEX Benzene, Toluene, Ethylbenzene and Xylene

BH Borehole

CoC Chain of Custody
DS Stock and Domestic

DM Domestic

DO Dissolved Oxygen
DQO Data Quality Objective

DY Dairy

EAO Environmental Audit Overlay

EC Electrical Conductivity

EHS Environment, Health and Safety

EIL Ecological Investigation Levels

EMP Environmental Management Plan

EPA Environment Protection Authority

ESA Environmental Site Assessment

FZ1 Farming Zone Schedule 1
GAA Growth Areas Authority

GME Groundwater Monitoring Event
GMS Groundwater Management System
GQO Groundwater Quality Objective

GWZ1 Green Wedge Zone 1
HIL Health Investigation Levels

IR Irrigation
IV Investigation

LPP Local Planning Policies

LPPF Local Planning Policy Framework

mbgl Metres below ground level

MAH Monocyclic Aromatic Hydrocarbons

MAR Managed Aquifer Recharge

MI Miscellaneous

MSS Municipal Strategic Statement

MW Monitoring Well

NATA National Association of Testing Authorities, Australia

NEPC National Environment Protection Council
NEPM National Environment Protection Measure

NKN Not known



OCP Organochlorine Pesticides
OPP Organophosphate Pesticides
PAH Polycyclic Aromatic Hydrocarbons
PASS Potential Acid Sulphate Soils
PSP Precinct Structure Plan
RWL Reduced Water Level

SB Soil Bore

SAP

SEPP State Environment Protection Policy

Sampling & Analysis Plan

SKM Sinclair Knight Merz

SPPF State Planning Policy Framework

ST Stock

SWL Standing Water Level TDS Total Dissolved Solids

TPH Total Petroleum Hydrocarbons
UST Underground Storage Tank

UGZ Urban Growth Zone

WSPA Water Supply Protection Area



Executive summary

Background and Objectives

Sinclair Knight Merz Pty Ltd (SKM) was commissioned by the Growth Areas Authority (GAA) to undertake a Stage 1 and 2 Environmental, Hydrogeological and Geotechnical Site Assessment of the Precinct Structure Plan (PSP) Area referred to as the Ballan Road Area (PSP Area 40) located in Wyndham Vale, Victoria (hereafter referred to as "the site" or "PSP Area 40").

The site has been identified as future land supply for various commercial, residential and community land uses. The aim of this assessment is to identify opportunities and constraints to the proposed land development which may potentially be caused by existing or past land uses, and site and sub-surface conditions. Stage 1 of the project comprises the site history and preliminary desktop review of information. The proposed Stage 2 works involved inspections of the properties identified as high risk during the Stage 1 assessment with respect to contamination, hydrogeology and geotechnical considerations. This report includes the findings of both the Stage 1 and 2 assessments.

Scope of Works

The following scope of work was undertaken at the site:

- > The Stage 1 assessment comprised the gathering of relevant information (including the use of literature sources) for the purposes of identifying potential sources of contamination, hydrogeological and geotechnical issues;
- > The Stage 2 assessment included inspecting the site for potential sources of contamination, and areas of geotechnical and hydrogeological significance (i.e.: areas of water logging, existing groundwater bores, etc.) identified during the stage one assessment; and
- > The approach and findings of the assessment, together with supporting information, are documented within this report.

Conclusions

Site Contamination Assessment

Based on the information gathered during the Stage 1 & 2 assessments, the following conclusions can be made:

- > The site history assessment found that the site has had a long history of agricultural land uses dating back to at least the 1960s and is currently used for agricultural purposes;
- > Based on the available information and site history assessment the following potential sources of contamination have been identified on site:
 - Application of agricultural chemicals to crops across the site (including broad application);
 - Numerous stockyards where stock may have been treated with pesticides and insecticides (Visually observed on property 10);
 - Possible use of imported fill material to level or build up site (Visually observed on property 20);
 - Numerous farm properties with a residence and farmyard infrastructure including sheds and storage yards potentially used for chemical storage (fuels, oils, fertilisers, herbicides, insecticides and pesticides) and machinery maintenance (properties 1, 3, 4, 5, 6, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24 and 25);
 - Numerous piles of dumped materials;
 - Underground septic tanks (Visually observed on properties 4, 14 and 15); and
 - Stockpiled soils / imported fill material (observed on properties 15 and 20).



- A number of potential off-site sources of contamination have also been identified in the vicinity of the site, however are located significant distances (>1km) from the site and are therefore not considered to represent a significant risk of contamination to the subject site or are considered to represent a low risk of contamination to the site; and
- > Based on the information obtained from the sources described in this report, there do not appear to be any significant constraints from a site contamination perspective which would render the land unsuitable for a particular land use. Localised contamination is likely to be able to be effectively remediated or managed.

Geotechnical Assessment

Key geotechnical issues associated with development of the site include the depth and reactivity of the basaltic clay in terms of its influence on site classification, foundation selection, differential settlement, subgrade performance and excavations. Fill material, if present, is expected to be uncontrolled and may not be suitable for development in its present state. Areas subject to poor drainage may comprise soft material which provides low bearing capacity for foundations.

Hydrogeological Assessment

Based on the regional hydrogeological information and bore data in the vicinity of the site, two minor aquifers are present at the site and include the outcropping Newer Volcanics; and the underlying Brighton Group. The Werribee Formation is a more significant aquifer, but is likely to be around 200m deep at the site. The Newport Formation is an aquitard which separates the Brighton Group and the Werribee Formation. The chilled base of the Newer Volcanics acts as a barrier for groundwater flow. There is therefore limited vertical flow between the watertable aquifer and the underlying units.

There do not appear to be any significant hydrogeological constraints which would render the land unsuitable for development. The following issues would need to be considered however, in the planning and design of any development:

- > The shallow watertable in the Newer Volcanics may cause groundwater inflow to excavations;
- Increases to groundwater recharge rates (particularly over summer and autumn) has the potential to raise the water table to within a few metres of the ground surface, potentially causing corrosion to infrastructure and buildings; and
- > Decreased local groundwater recharge in winter and early spring has the potential to reduce discharge to nearby surface water features, which could potentially have a negative impact on the ecological health of local waterways.

Opportunities for groundwater use include extraction for garden watering and irrigation of parks and ovals (where the salinity is suitable), as well as high capacity MAR and ATES schemes. Further work would be required to assess the feasibility of these schemes.

Recommendations

Future assessment of the identified site contamination, hydrogeological and geotechnical issues are recommended to determine the suitability of the site for the proposed land uses and to confirm that future buildings and infrastructure (roads and underground service networks) are appropriately designed. Further assessment works may include, but are not limited to, the following activities:

- > Drilling and collection of soil samples from grid based and targeted locations (e.g. storage yards, sheds, dumped materials and areas of fill) to test the soil for potential contaminants of concern and also assess the geotechnical soil characteristics for input to design and planning;
- > Drilling and installation of groundwater monitoring wells, followed by sampling of the groundwater for potential contaminants of concern and aquifer hydraulics to determine aquifer properties;
- > Excavation and removal of underground storage tanks, soil remediation and tank pit validation if USTs are found on properties where access was not granted for site inspections; and

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> Removal of other potentially contaminating infrastructure (e.g. septic tanks and above ground storage tanks) followed by soil validation.

We understand that the proposed future use of the site is as future land supply for various land uses including sensitive uses such as residential and community facilities in addition to open space, retail and a range of business uses such as office, light industrial and manufacturing. As no specific land uses have been allocated to individual parcels of land, further assessment for site contamination, geotechnical or hydrogeological purposes is not considered appropriate at this point in time. An informed investigation strategy can be prepared once further information on the proposed land uses for specific areas of the site has been determined. Future intrusive assessment works should also be timed to coincide with the scaling down of current site operations and prior to the commencement of the proposed development works.

It is also recommended that the GAA approach the Wyndham City Council to determine the requirement for environmental audits of individual property parcels within the site. If environmental audits are required, a period of at least 6 months prior to development should be allowed to progress through the audit process. It is likely that a longer period of time will be required should significant contamination be identified at the site to allow for remediation works.



1. Introduction

1.1 Background and Objectives

Sinclair Knight Merz Pty Ltd (SKM) was commissioned by the Growth Areas Authority (GAA) to undertake a Stage 1 and 2 Environmental, Hydrogeological and Geotechnical Site Assessment of the Precinct Structure Plan (PSP) Area referred to as the Ballan Road Area (PSP Area 40) located in Wyndham Vale, Victoria (hereafter referred to as "the site" or "PSP Area 40").

The site has been identified as future land supply for various commercial, residential and community land uses. The aim of this assessment is to identify opportunities and constraints to the proposed land development which may potentially be caused by existing or past land uses, and site and sub-surface conditions. Stage 1 of the project comprised the site history and preliminary desktop review of information. The Stage 2 assessment involved inspections of the properties within the site identified as high risk during the Stage 1 assessment with respect to contamination, hydrogeology and/or geotechnical considerations. Site investigations were not conducted for all properties due to access limitations and property owner constraints during the investigation period. This report includes the findings of both the Stage1 and 2 assessment completed.

1.2 Scope of Work

The following scope of work was undertaken at the site:

- > The Stage 1 assessment comprised the gathering of relevant information (including the use of literature sources) for the purposes of identifying potential sources of contamination, hydrogeological and geotechnical issues;
- > The Stage 2 assessment included inspecting selected properties within the site for potential sources of contamination and areas of geotechnical and hydrogeological significance (e.g. areas of water logging, existing groundwater bores, etc.) identified during the Stage 1 assessment; and
- > The approach and findings of the assessment, together with supporting information, are documented within this report.

1.3 Statement of Limitations

This Report has been prepared by SKM for the sole use of the Growth Areas Authority ("the Client").

Undertaking an assessment or study of the on-site conditions may reduce the potential for exposure to the presence of contaminated or inadequate bearing ground and/or groundwater. All reports and conclusions that deal with sub-surface conditions are based on interpretation and judgement and as a result have uncertainty attached to them. It should be noted that this report contains interpretations and conclusions which are uncertain, due to the nature of the investigations. No study can completely eliminate risk, and even a rigorous assessment and/or sampling program may not detect all problem areas within a site. The following information sets out the limitations of the Report.

This Report should only be presented in full and should not be used to support any objective other than those detailed within the Agreement. In particular, the Report does not contain sufficient information to enable it to be used for any use other than the project specific requirements for which the Report was carried out, which are detailed in our Agreement. SKM accepts no liability to the Client for any loss and/or damage incurred as a result of changes to the usage, size, design, layout, location or any other material change to the intended purpose contemplated under this Agreement.

It is imperative to note that the Report only considers the site conditions current at the time of investigation, and to be aware that conditions may have changed due to natural forces and/or operations on or near the site. Any decisions based on the findings of the Report must take into account any subsequent changes in site conditions and/or developments in legislative and regulatory requirements. SKM accepts no liability to the Client for any



loss and/or damage incurred as a result of a change in the site conditions and/or regulatory/legislative framework since the date of the Report.

The Report is based on an interpretation of factual information available and the professional opinion and judgement of SKM. Unless stated to the contrary, SKM has not verified the accuracy or completeness of any information received from the Client or a third party during the performance of the services under the Agreement, and SKM accepts no liability to the Client for any loss and/or damage incurred as a result of any inaccurate or incomplete information.

The Report is based on assumptions that the site conditions as revealed through selective sampling are indicative of conditions throughout the site. The findings are the result of standard assessment techniques used in accordance with normal practices and standards, and (to the best of our knowledge) they represent a reasonable interpretation of the current conditions on the site. However, these interpretations and assumptions cannot be substantiated until specifically tested and the Report should be regarded as preliminary advice only.

Any reliance on this Report by a third party shall be entirely at such party's own risk. SKM provides no warranty or guarantee to any third party, express or implied, as to the information and/or professional advice indicated in the Report, and accepts no liability for or in respect of any use or reliance upon the Report by a third party.

This Report makes no comment on the presence of hazardous materials, unless specifically requested.



2. Investigation methodology

2.1 General Assessment Approach

2.1.1 Stage 1 Assessment

A Stage 1 assessment (also referred to as a Phase 1 Environmental Site Assessment (ESA)) is typically undertaken to establish site conditions, historical site uses and practices. As part of this Stage 1 assessment the following sources of information have been reviewed:

> Relevant Reports:

- Werribee District Hospital Estate Pty Ltd. Environmental Audit of Land Pursuant to Part (XD) of the Environment Protection Act 1970. 126 Synnot Street, Werribee, Victoria (Peter J. Ramsay & Associates, 2008);
- Melbourne Water Corporation. Area 2, Melbourne Water's Werribee Fields, Werribee. Environmental Audit Report (GHD, 2004); and
- Melbourne Water Corporation. Area 3, Werribee Fields, New Farm Road, Werribee, Victoria. Environmental Audit Report (GHD, 2008)
- > EPA Priority Sites Register;
- > EPA List of Certificates and Statements of Environmental Audit (current and completed audits);
- > Topographical Maps;
- > Groundwater Management System (GMS) bore searches;
- > Geological Maps;
- > Hydrogeological Maps; and
- > Potential Acid Sulfate Soils (PASS) Probability Maps.

Typically a site inspection and interviews with site personnel are also undertaken as part of a Stage 1 assessment, however for this particular assessment these works occurred at a later date (in Stage 2, as described in Section 2.1.2 below).

The Stage 1 assessment seeks to identify if possible:

- > The potential source(s) of on and off site contamination,
- > Pathways and receptors of contamination; and
- > Areas of environmental (contamination, hydrogeological and geotechnical) concern which will form the basis of subsequent assessments at the site.

2.1.2 Stage 2 Assessment

For this particular investigation, the site inspection works are referred to as a Stage 2 assessment. The site inspection undertaken included a close inspection of areas that were identified during the Stage 1 as high risk from a contamination, hydrogeological and geotechnical perspective. Based on the findings of these site inspections, the need for further soil and groundwater investigation (typically by sampling and analysis) has been identified. Site investigations were not conducted for all properties due to access limitations and property owner constraints during the investigation period.



2.1.3 Stage 3 Assessment

The Stage 3 intrusive site investigation may be undertaken to characterise the site with respect to contamination, hydrogeology and geotechnical conditions. Note that this stage of site investigation is usually referred to as a Stage 2 (or Phase 2) ESA. With respect to each of the abovementioned disciplines, the following works may be undertaken as part of a Stage 3 assessment:

- A contamination assessment will typically seek to determine the level (if any) of contamination present on site, establish the lateral and vertical distribution of contamination and identify the source(s) of on-site and off-site contamination. Prior to undertaking any intrusive soil and/or groundwater investigation, a Sampling and Analysis Plan (SAP) is generally prepared. The SAP defines the intended sampling locations and the contaminants which will be tested for, based on the site characteristics as determined in a Phase 1 ESA;
- A geotechnical assessment will typically seek to obtain information on the sub-surface conditions at the site through a geotechnical site investigation comprising a series of boreholes and/or test pits and laboratory testing. Field and laboratory test data is used to develop a site model describing the soil and/or rock profile and the variability across the site. A geotechnical assessment would generally include advice on site classification and allowable bearing capacity for shallow foundation design and comments regarding excavations, foundation systems, pavement design and other items relevant to the proposed development; and
- A hydrogeological assessment will typically include determination of the depth to the water table and the potentiometric surface of deeper confined aquifers through the installation of groundwater observation bores, assessment of groundwater and surface water interaction and assessment of aquifers suitability for managed aquifer recharge (MAR).

2.1.4 Remediation

If significant contamination is identified at a site, to a level where the beneficial uses of land, surface water or groundwater are at risk or precluded (described in further detail in Section 3), remediation of the identified contamination may be required in order to allow for a particular land use to continue or commence in future.

2.1.5 Environmental Auditing

The environmental audit system under the Environment Protection Act 1970 is administered by the Victorian Environment Protection Authority. A statutory Environmental Audit of a site involves the appointment of an EPA accredited environmental auditor to undertake an independent assessment of the environmental condition of a site and provide an opinion regarding the site's suitability for feasible or proposed end uses. A range of information including a site history assessment and results of relevant soil and groundwater testing undertaken are evaluated by the environmental auditor when forming such an opinion. At the conclusion of the audit a certificate or statement of environmental audit may be issued. A certificate indicates that the use of the land is unrestricted, whereas a statement indicates that particular beneficial uses of the land or groundwater are either precluded or suitable only under specified conditions.



3. Regulatory framework for assessment

3.1 Legislation and Policy

3.1.1 Planning and Environment Act 1987

The *Planning and Environment Act 1987* sets out the requirements of planning authorities when preparing planning schemes or amendments to planning schemes. The Act requires planning authorities to "take into account any significant effects which it considers the scheme or amendment might have on the environment or which it considers the environment might have on any use or development envisaged in the scheme or amendment".

Under Section 12 (2) (a) of the *Planning and Environment Act 1987*, the *Ministerial Direction No. 1 – Potentially Contaminated Land* requires planning authorities to satisfy themselves that the environmental conditions of land proposed to be used for a sensitive use, agriculture or public open space are, or will be, suitable for that use. This is generally done through the completion of an environmental site assessment and audit process.

3.1.2 Environment Protection Act 1970

The *Environment Protection Act 1970* established the Victorian Environment Protection Authority (EPA) and made provisions with respect to the powers, duties, and functions of the EPA and the protection of the environment. The Act provides for environmental audits, which are used to provide an authoritative opinion on the suitability of potentially contaminated land for future use, and form an integral part of the land use planning and approval process. The Act also provides the basis for the various State Environment Protection Policies (outlined below) which provide the framework for the assessment and management of the environmental quality of land, surface waters and groundwater in Victoria.

3.1.3 Land State Environment Protection Policy 2002

The State Environment Protection Policy (Prevention and Management of Contamination of Land) (Land SEPP) sets out the regulatory framework for the prevention and management of contaminated land within the State of Victoria. The intent of this framework is to maintain and maximise, to the extent practicable, the quality of the land environment in Victoria, in order to protect its existing and potential beneficial uses. The Land SEPP was declared in June 2002 in accordance with Section 16 of the *Environment Protection Act 1970*, and the Victorian EPA is responsible for its implementation.

The Land SEPP identifies a range of land use categories and a range of protected beneficial uses for each of these categories. The EPA considers that land (soil) is *polluted* where current and/or future protected beneficial uses for the relevant land use categories are precluded. Beneficial uses of land are considered to be precluded when relevant soil quality objectives set out in the Land SEPP for those beneficial uses have been exceeded. Further information on the beneficial uses of land with respect to specific land use categories can be found in **Appendix A**.

3.1.4 Groundwater State Environment Protection Policy 1997

The quality of groundwater in Victoria is protected under the 1997 State Environment Protection Policy (SEPP) 'Groundwaters of Victoria' (Groundwater SEPP), declared under the *Environment Protection Act 1970* and administered by the EPA. The groundwater SEPP defines a range of protected beneficial uses for defined segments of the groundwater environment, which are based on the total dissolved solids (TDS) content of the groundwater. The EPA considers that groundwater is *polluted* where protected beneficial uses for the relevant segment are precluded. Beneficial uses of groundwater are considered to be precluded when relevant groundwater quality objectives set out in the groundwater SEPP for those beneficial uses have been exceeded, or where non-aqueous phase liquid is present.



Where groundwater has been polluted, groundwater must be cleaned up such that the protection of beneficial uses is restored, or to be cleaned up the extent practicable. Further information on the beneficial uses of groundwater with respect to the various segments of groundwater can be found in **Appendix A**.

3.1.5 Surface Water State Environment Protection Policy 2003

The quality of Victoria's surface water environments are protected under the 2003 State Environment Protection Policy 'Waters of Victoria' (Surface Water SEPP) declared under the *Environment Protection Act 1970* and administered by the EPA. The Surface Water SEPP sets out the environmental values and beneficial uses of water which are to be protected for each segment of the surface water environment and includes schedules which cover some specific surface water catchments in Victoria. Beneficial uses of surface waters are considered to be precluded when relevant water quality objectives set out in the surface water SEPP for those beneficial uses have been exceeded.

In addition to assessment of surface water quality, the relevant water quality objectives stated in this SEPP are applied to groundwater at the point of groundwater discharge to a surface water system, to assess whether the maintenance of ecosystems beneficial use of groundwater is protected.

3.2 Guidelines and Standards

3.2.1 National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999

The NEPM is the national guideline for assessing contaminated sites and was prepared by the National Environment Protection Council (NEPC). The NEPM is implemented in each Australian jurisdiction under the National Environment Protection Measures (Implementation) Act 1998 (Commonwealth). The NEPM document ensures there is a nationally consistent approach to the assessment of contamination. The NEPM includes two main schedules which provide guidance on the methods of site contamination assessment, environmental and health based investigation levels for soil and groundwater contaminants, human and environmental health risk assessment and reporting requirements.

3.2.2 Various EPA Publications and Guidelines

The following publications and guidelines from the Victorian and New South Wales Environment Protection Authorities are commonly applied and referenced for intrusive soil and groundwater site assessments:

- > EPA Victoria, 2000. Groundwater Sampling Guidelines. Publication 669;
- > EPA Victoria, 2006. Hydrogeological assessment (groundwater quality) guidelines. Publication 668; and
- > NSW EPA, 1994. Guidelines for Assessing Service Station Sites.
- 3.2.3 Potentially Contaminated Land General Practice Note 2005

This general practice note was produced by the Department of Sustainability and Environment in conjunction with the Victorian EPA and provides guidance to the general public and planners on the identification of potentially contaminated land and the stages of assessment and audit required should a site be considered contaminated.

3.2.4 Australian Standard AS4482.1-2005: Guide to the investigation and sampling of sites with potentially contaminated soil – Part 1: Non-volatile and semi-volatile compounds

The Australian Standard 4482.1 provides guidance on the collection of sufficient and reliable information when assessing potentially contaminated sites. In particular this standard focuses on the assessment of sites potentially contaminated with non volatile and semi volatile compounds. The standard covers key elements of preliminary site investigations (i.e. Stage 1 or Phase 1 ESAs), detailed site investigation methods (i.e. Phase 2 ESAs), data quality objectives (DQO), developing sampling strategies, the collection of samples and quality assurance procedures.



3.2.5 Australian Standard AS4482.2-1999: Guide to the sampling and investigation of potentially contaminated soil – Part 2: Volatile substances

This standard refers to AS448.1 regarding the establishment of preliminary site information, and provides more specific guidance on field screening and sample collection techniques when assessing sites that are potentially contaminated with volatile compounds.

3.2.6 Australian Standard AS1726-1993: Geotechnical Site Investigations

Australian Standard AS1726 sets out minimum requirements for a geotechnical site investigation, as a component in the engineering design, construction, commissioning and operation of civil engineering and building works.

The standard specifies considerations affecting the design and construction of works which must be made in a geotechnical site investigation. Assessment of these factors enables the identification of field and laboratory work to obtain the geotechnical data required to facilitate the engineering design and construction of the works. The standard provides guidance on suitable field and laboratory examination and testing of geotechnical materials and outlines a system of material classification.

The applications of this Standard include assessment of natural or filled ground, new construction, maintenance of existing facilities, the evaluation of post construction performance and the assessment of failure.

3.3 Regulatory Framework in the Context of this Assessment

The acts, policies, guidelines and standards relevant for each stage of assessment are set out in Table 3.1.

Table 3.1: Acts, Policies, Guidelines and Standards Relevant for Site Assessments

Stage of Assessment	Relevant Acts and Policies	Relevant Guidelines and Standards	How the Regulatory Framework Applies
Proposed Change to Land Use	Planning and Environment Act 1987	Ministerial Direction No. 1 – Potentially Contaminated Land DSE Potentially Contaminated Land Practice Note 2005	The Planning and Environment Act requires planning authorities to satisfy themselves that the environmental conditions of land proposed to be used for a sensitive use, agriculture or public open space are, or will be, suitable for that use. This is generally done through the completion of an environmental site assessment and audit process (see below).
Desktop Investigation (Phase 1 ESA)	Environment Protection Act 1970 Planning and Environment Act 1987 National Environment Protection Measures (Implementation) Act 1998 (Commonwealth)	NEPM 1999 AS4482.1-2005 AS4482.2-1999	The Environment Protection Act and SEPPs provide the legislative basis and policy framework for the assessment and management of contaminated land and groundwater in Victoria.
Intrusive Soil, Groundwater and Geotechnical Assessments (Phase 2 ESA)	Environment Protection Act 1970 Land SEPP 2002 Groundwater SEPP 1997 Waters of Victoria SEPP 2003	NEPM 1999 AS4482.1-2005 AS4482.2-1999 AS1726-1993	The guidelines and standards provide guidance on the collection of reliable information in order to assess the environmental condition of a site appropriately.
Statutory Environmental Auditing	Environment Protection Act 1970 Planning and Environment Act 1987 Land SEPP 2002 Groundwater SEPP 1997 Waters of Victoria SEPP 2003	NEPM 1999 Various Victorian EPA Guidelines and Publications	The environmental audit system is provided for in the Environment Protection Act 1970 and the audit process is administered by the Victorian EPA.



4. Site description

General information on PSP Area 40 site is presented in Table 4.1. Refer to Figure 1 for a site location map and Figure 2 for a site plan, attached at the end of this report.

Table 4.1: PSP Area 40 Site Details

Item	Description		
Location / Address	The site forms an irregular shaped parcel of land located on Ballan Road, in the suburb of Wyndham Vale located in the west of Melbourne, Victoria.		
Australian Map Grid	North western site extent on Ballan Road: 5807148 metres north 288638 metres east.		
Coordinates	South eastern site extent on Ballan Road: 5804670 metres north 290871 metres east.		
	North eastern site extent: 5806654 metres north 291651 metres east.		
Current Title Information	The site is divided into 25 individual parcels of land. The current title information for each parcel of land is summarised in Appendix B. Each parcel of land within the PSP area has been assigned a property number, which are referred to throughout this report. Figure 2 shows the location of each property and the assigned number.		
Site Area (ha)	451 ha		
Local Council	Wyndham City Council		
Current Land Zoning	Under the Wyndham Planning Scheme, the entire PSP 40 area is zoned as the Urban Growth Zone (UGZ).		
	The purpose of the Urban Growth Zone is to support the transition of non-urban land into urban land.		
Zoning of Surrounding Land	Under the Wyndham Planning Scheme, the land surrounding PSP Area 40 comprises the following zones:		
	Residential 1 (R1Z) and Business 1 (B1Z) to south of the site;		
	Public Park and Recreation Zone (PPRZ) east of the site; and		
	Green Wedge Zone (GWZ) to the north, east and west of the site.		
Environmental Audit Overlay	There are no sites with an environmental audit overlay within the site or within 200 m of the site boundary.		
Site Layout	The site forms an irregular shaped area bounded by Ballan Road to the south west of the site and the Werribee River in the north east of the site. The roads Wollahra Rise and Hobbs Road extend from Ballan Road into the PSP area. A number of private rural properties front onto these roads and also provide access via private driveways into the site. Refer to Figure 2 for a site layout plan.		
Current Land Uses	The site is currently used for agricultural and rural residential purposes.		
Proposed Land Uses	The proposed future use of the site is as future land supply for various land uses including sensitive uses such as residential and community facilities in addition to open space, retail and a range of business uses such as office, light industrial and manufacturing. At present, no specific land uses have been allocated to individual parcels of land.		
Surrounding Land Uses	The land surrounding the site to the north, east and west of the site is used for agricultural purposes. The Werribee River and some adjacent riparian vegetation are located to the north east of the site. The land to the south of the site is currently occupied by residential land uses. Some residential land development is currently underway to the south east of the site.		



Environmental setting

Information on the general environmental setting of PSP Area 40 is outlined in the following sections.

5.1 Topography

The topography of the site ranges in elevation from 30 to 60 m above sea level, or Australian Height Datum (mAHD) and slopes towards the east to south east of the site with local undulations in the topography. The surrounding land also falls gently to the south east of the site towards the Werribee River. The surface topography is presented on **Figure 3** provided at the end of this report.

5.2 Regional Geology

The Department of Primary Industries (DPI) Online Geological Map and the Geological Survey of Victoria's Melbourne Map Sheet (Scale 1:25,000) were reviewed to determine the geological conditions at the site. The expected geological stratigraphy at the site, from surface to depth, is outlined below:

- > Quaternary aged Newer Volcanics Formation (Qnv) which is characterised as olivine basalt, olivine labradorite basalt, dark to light grey, coarsely vesicular, minor interbedded silty sand and baked soils;
- > Tertiary aged Brighton group (Tpb) comprising undifferentiated Brighton Group sediments;
- > Newport Formation (Tmn) comprising silt, grey and green, glauconitic, calcareous silt, silty clay, minor limestone which grades into silty sands to the west;
- > Werribee Sands (Tew) comprising sands, sandy and silty clay, with pyritic and lignitic quartz; and
- > Devonian Granite bedrock (Dgr).

The Newer Volcanics Formation is likely to be the main geological unit encountered during future development activities at the site. Quaternary aged fluvial deposits may be encountered should the extent of the development reach the Werribee River floodplain in the north of the site. The surface geology for the site and immediately surrounding areas is presented on Figure 3 provided at the end of this report.

5.3 Soils and Acid Sulphate Soils Map Review

A review of the Australian Soil Resources Information System (ASRIS) online map describes the soil on site as loam, silty loam or sandy clay loam with clay content of between 20 to 30%, with the land in the far east of the site described as sand, loamy sand or clayey sand with clay content of less than 10%.

The ASRIS online map was accessed for information regarding acid sulphate soils. The map indicates that soils within the site boundary can be classed as having an extremely low probability of acid sulphate soil occurrence (ASRIS, 2010).

5.4 Regional Hydrology

The nearest surface water bodies to the site are shown on Figure 3 and include:

- > Werribee River which is located less than 20m, at its closest point, to the north east of the site. Three (3) minor tributaries of this river enter the site boundary in the north, east and south east of the site and all eventually drain into Werribee River;
- > Lollypop Creek which is located 1.3 km to the south west of the site. Minor tributaries of this creek are located between 500 and 700m to the south west of the site; and
- > Numerous farm dams are also evident within the study area.



5.5 Regional Hydrogeology

The hydrogeology of the area is characterised by aquifers comprising a thick, regionally extensive sequence of sedimentary and basalt layers overlying either a granite or siltstone basement. From the regional mapping (GSV, 1974), the main hydrogeological units at the site in order from youngest to oldest are:

- > Quaternary aged Newer Volcanics Aquifer, which consists of vesicular basalt with minor interbedded silty sand and baked soils;
- > Tertiary aged Brighton Group Aquifer, which generally consists of sand, silty sand and minor gravel;
- > Newport Formation Aquitard, which is a siliceous and calcareous silt, silty clay, with minor limestone;
- > Werribee Sands Aquifer, comprising sands, sandy and silty clay; and
- > Basement Aquifer comprising Devonian granite towards the southwest and Silurian siltstone towards the north.

The Victorian Groundwater Management System (GMS) database was accessed to identify the presence of any nearby registered groundwater bores. A number of groundwater bores were registered within a 4km radius of the site. The locations of the groundwater bores are shown on **Figure 3** and information on each of the registered groundwater bores is presented in **Appendix C**. All bore logs are for relatively shallow bores and do not indicate the depth of the basement in the vicinity of the site. Broad-scale geological cross-sections show that the basement could be up to 250m deep, indicating an equivalent thickness of overlying sediments and basalt.

The Newer Volcanics Aquifer is characterised by variable yields and salinity, but is considered a reasonable aquifer in areas where it is highly vesicular and strongly fractured. In general however, the Newer Volcanics are considered a minor aquifer.

The Brighton Group Aquifer to the west of Melbourne is also low-yielding with generally high salinity groundwater (Leonard, 1992), and is also considered to be a minor aquifer.

The Newport Formation is a fine-grained, low-yielding and low permeability unit which behaves as an aquitard between the overlying Brighton Group Aquifer and underlying Werribee Formation Aquifer.

The Werribee Formation Aquifer displays variable yields and quality; however the potential for high yields has caused this aquifer to be considered for large-scale groundwater extraction (SKM, 2007).

The Older Volcanics aquifers may also be present between the Werribee Formation Aquifer and the Newport Formation Aquitard; however these volcanics would be thin at the site and are not considered to form a significant aquifer.

In terms of groundwater management at the site, only the Newer Volcanics Aquifer needs further consideration as it is present at the surface and is likely to extend to a depth of between 50 and 150m (Leonard, 1992). For groundwater supply options, however, the deeper aquifers could present potential sources.

The Newer Volcanics Aquifer outcrops at the site and is unconfined. Due to the thickness and composition of the Newer Volcanics, the underlying aquifers in the area are expected to be confined (SKM, 2002). There is therefore limited hydraulic connection between the watertable aquifer and the deeper units.

A review of the Department of Natural Resources and Environment's *South Western Victoria Water Table Aquifers Map* indicates that the Newer Volcanics Formation forms the water table aquifer at the site (DCNR, 1995). Limited information on the depth to groundwater in the area was available and therefore a water table contour map could not be constructed for this area. Broad scale mapping of water table depth indicates depths of between 5m and 10m in the area (DSE, 2009).

Recharge to the Newer Volcanics aquifer would largely occur through direct infiltration from rainfall. The deeper aquifers are either recharged by rainfall infiltration in areas where they outcrop, or by vertical recharge from overlying units.



Given the proximity of the site to Werribee River and its local tributaries, located to the north east and east of the site, and the local topography which slopes in an east to south easterly direction, the local groundwater flow in the Newer Volcanics is inferred to be in an easterly direction towards the Werribee River. Discharge from the Newer Volcanics is expected to be to the Werribee River and to Lollipop Creek to the south. Regionally the groundwater is considered to be flowing towards Port Phillip Bay, located to the south of the site. The local water body, the Werribee River and its associated local tributaries such as Lollipop Creek are considered to be the potential receptors of any contaminated groundwater originating from the site.

There has been no hydrogeological testing at the site and therefore specific aquifer hydraulic parameters are unknown. Typical parameters are given in Table 5.1.

Table 5.1: Typical hydrogeological parameters (after Leonard, 1992)

Hydrogeological Unit	Hydraulic Conductivity	Transmissivity	Storativity
Newer Volcanics	1 – 6 m/day	1 – 100 m2/day	~0.05 – 0.1
Brighton Group	0.1 – 2 m/day	1 – 100 m2/day	5x10-4 (confined aquifer)
Newport Formation	Unknown	Unknown	Unknown
Older Volcanics	N/A	N/A	N/A
Werribee Formation	3 – 15 m/day	150 – 2000 m2/day	5x10-4 (confined aquifer)

5.6 Regional Groundwater Quality

Hydrogeochemical data was obtained from available published mapping, specifically the Department of Sustainability and Environment's *South Western Victoria Water Table Aquifers Map* (DCNR, 1995) and the GMS and is summarised in Table 5.2.

Table 5.2: Summary of Regional Groundwater Chemistry

Parameter	Reported Concentration(s)	Information Source
TDS 1,001 – 13,000 mg/L		Department of Conservation and Natural Resources South Western Victoria Water Table Aquifers Map (DCNR, 1995)
EC / TDS	520 – 29,000 μS/cm 338 – 18,850 mg/L TDS*	GMS Search 18/05/10
pH	6.2 – 9.2	GMS Search 18/05/10
Chloride (CI)	242 – 10,490 mg/L	GMS Search 18/05/10
Carbonate (CO ₃)	20 – 24.39 mg/L	GMS Search 18/05/10
Bicarbonate (HCO ₃)	207 – 598 mg/L	GMS Search 18/05/10
Total Alkalinity	190 – 460 mg/L	GMS Search 18/05/10
Sulphate (SO ₄)	51 – 720 mg/L	GMS Search 18/05/10
Nitrogen (N)	1.13 – 17.83 mg/L	GMS Search 18/05/10
Calcium (Ca)	16 – 170 mg/L	GMS Search 18/05/10
Magnesium (Mg)	66 – 480 mg/L	GMS Search 18/05/10
Sodium (Na)	219 – 2484 mg/L	GMS Search 18/05/10
Potassium (K)	5.6 – 45 mg/L	GMS Search 18/05/10
Iron (Fe)	0.07 – 59 mg/L	GMS Search 18/05/10

 $\textbf{Notes: * Converted from EC to TDS using a conversion factor of 0.65.}$

TDS - Total Dissolved Solids

EC - Electrical Conductivity



Based on the information above, the groundwater TDS in the vicinity of the site is likely to be between 338 and 18,850 mg/L, conservatively classifying it as 'Segment A1' quality groundwater according to the Groundwaters of Victoria SEPP (Victorian Government, 1997). The following beneficial uses of groundwater are therefore protected at the site:

- > Maintenance of ecosystems;
- > Potable water supply (desirable);
- > Potable water supply (acceptable);
- > Potable mineral water supply;
- > Agriculture, parks and gardens;
- > Stock watering;
- > Industrial water use;
- > Primary contact recreation; and
- > Buildings and structures.

The site is not located within a known mineral springs area (Victorian Mineral Water Committee, 2010), therefore this beneficial use (potable mineral water supply) is not considered to be relevant for this site.

5.7 Groundwater Use

A minor part of the site in the east may fall within the Deutgam Water Supply Protection Area (WSPA), which has been declared in response to significant groundwater use and declining water levels in the area. The purpose of the WSPA is to protect groundwater supply and quality for future users, by maintaining groundwater levels. Applications for additional groundwater may not be approved by the relevant water management authority (Southern Rural Water). The remainder of the site does not fall within a declared water management area, and as such there are no legislated restrictions on the extraction and use of groundwater at the site.

A summary of the groundwater bore uses as registered in the GMS is provided in Table 5.3.

Table 5.3 : Summary of Registered Groundwater Bore Uses

Groundwater Bore Use(s)	No. of Registered Groundwater Bores
Domestic and Stock (DS / ST DM)	33
Irrigation (IR)	9
Not Known (NKN)	27
Domestic (DM)	25
Domestic and Irrigation (DM and IR)	1
Investigation (IV)	3
Miscellaneous (MI)	1
Stock, Domestic and Irrigation (ST DM IR)	1
Total	100



6. Information review

This section summarises the various sources of information, records and reports reviewed as part of the Stage 1 desktop assessment.

6.1 Current Certificate of Title Information

The current certificates of title were reviewed to possibly ascertain information on the current land uses. A summary of the current title information is provided in **Appendix B**. A review of the titles revealed the following information:

- > A number of the land owners appear to be private individuals; and
- A small proportion of the properties are owned by development companies (Transurban Developments (Aust) Pty Ltd, Fortune Developments Pty Ltd, Toorak Developments (Vic) Pty Ltd and Forrest Creek Developments Pty Ltd)

6.2 EPA Priority Sites Register

A search of the EPA's Priority Sites Register, which lists those sites for which EPA has requirements for active management of land and groundwater contamination, was conducted. The site was not listed on the Register and there are no registered priority sites within a 1km radius of the site.

6.3 EPA List of Sites Issued with Statements and Certificates of Environmental Audit

Under Victoria's *Environment Protection Act 1970*, statutory environmental audits of potentially contaminated land result in the issue of a Certificate of Environmental Audit if the site is considered suitable for any beneficial use (and land use). Sites are issued a Statement of Environmental Audit if they are not found to be suitable for all beneficial uses (or land uses), as defined under Section 4 of the Act. Issue of a Statement indicates that some contamination remains at the site. A statement precludes one or more beneficial uses and/or requires management for the site to be suitable for one or more land uses.

The Victorian EPA maintains a list of all sites for which a Certificate or Statement of Environmental Audit has been issued. At the time of reporting, the following three sites within a 5km radius of the site have been issued with a Statement or Certificate of Environmental Audit:

- > 126 Synnot Street, Werribee, Victoria (approximately 3.5 km to the south east of the site) issued with a Certificate of Environmental Audit;
- > Area 2, Melbourne Water's Werribee Fields, Werribee, Victoria (approximately 4.0 km to the south of the site) issued with a Certificate of Environmental Audit; and
- > Area 3, Werribee Fields, New Farm Road, Werribee, Victoria. (approximately 4.2 km to the south east of the site) issued with a Certificate of Environmental Audit.

Although is it very unlikely that a certificate of environmental audit would be issued if a site represented a significant risk of off-site contamination, a review of these environmental audit reports was undertaken to gain an appreciation of the site use history of surrounding properties and to determine if any residual soil and/or groundwater impact at the audit site has the potential to impact upon the subject site. In addition, information concerning the geology and hydrogeology of the area was also obtained.

6.3.1 Werribee District Hospital Estate Pty Ltd. Environmental Audit of Land Pursuant to Part (XD) of the Environment Protection Act 1970. 126 Synnot Street, Werribee, Victoria (Peter J. Ramsay & Associates, 2008)

This audit site is located approximately 3.5 km to the south east of the subject site. Peter J. Ramsay & Associates (PRJA) was engaged to complete an environmental audit of the property formerly occupied by the Werribee District Hospital. The site history reported indicated that the Werribee District Hospital occupied the site between 1963 and 1993, with the site lying vacant from 1993 until the commencement of the audit when the



buildings on site were demolished. The potential sources of contamination identified at the site included leaks from the gas boiler room, asbestos building materials, and imported fill material.

Contamination of the soil with heavy metals and asbestos was identified on site as part of the initial site investigation, triggering site soil remediation and validation. Following on site soil remediation activities, all soil concentrations were reported below the adopted assessment guidelines. The audit concluded that the soils were not considered to represent a risk of off-site contamination. PRJA noted that no groundwater contamination sources were noted on site at present or from the site history review, therefore a groundwater assessment was not conducted on site.

Based on the review of this audit report, and given the inferred direction of groundwater flow towards the east and distance from the site, it is highly unlikely that migration of contaminants from the audit site has potential to impact on the subject site, located to the north east of the audit site.

6.3.2 Melbourne Water Corporation. Area 2, Melbourne Water's Werribee Fields, Werribee. Environmental Audit Report (GHD, 2004)

This audit site is located approximately 4.0 km to the south of the subject site. GHD was commissioned in 2000 to undertake an audit of a parcel of land which formed part of the Melbourne Water Werribee Fields Complex. The site history documented in the audit report indicated that the site has been used for agricultural purposes including grazing and cropping since at least 1920. It was thought that the site may have been used by the Royal Australian Air Force (RAAF) as a runway with a possible underground fuel tank, however subsequent detailed geophysical surveys and investigative trenching works undertaken across the site refuted this anecdotal information.

Information on the sites environmental setting was also detailed in the audit report and indicated that the site was located on the Quaternary aged Duetgam Silt unit which overlies the Quaternary Aged Newer Volcanics Formation. GHD (2004) reported that the Newer Volcanics Formation is likely to be the main groundwater bearing formation with groundwater encountered in this unit at depths of between 8 and 9 mbgl during the field investigations. The stabilised depth to groundwater was reported as being 6.8 to 9.3 mbgl. The local groundwater flow was expected to be to the east of the site towards the Werribee River with regional flows expected to be towards Port Phillip Bay to the south east of the audit site.

The soil assessment undertaken at the site identified elevated concentrations of chromium and arsenic in the soils at the site. The beneficial uses of the site were not considered to be precluded as the metals were considered to be naturally occurring and to have low bioavailability and leachability.

The groundwater assessment conducted at the site revealed that concentration of boron, copper, chromium, selenium and zinc were reported in excess of the adopted maintenance of ecosystems guidelines, and in the case of selenium, in excess of the drinking water guidelines. The assessment concluded that the elevated metals detected in the groundwater at the site were naturally occurring.

The audit report concluded that there was no indication that soil or groundwater contamination has migrated off site. Based on the review of this audit report, and given the inferred direction of groundwater flow and distance from the site, it is highly unlikely that migration of contaminants from the audit site has potential to impact on the subject site.

6.3.3 Melbourne Water Corporation. Area 3, Werribee Fields, New Farm Road, Werribee, Victoria. Environmental Audit Report (GHD, 2008)

This audit site is located approximately 4.2 km to the south east of the subject site. GHD was commissioned in 2000 to undertake an audit of a parcel of land referred to as Area 3, located to the east of Area 2, and which also formed part of the Melbourne Water Werribee Fields Complex. The site history documented in the audit report indicated that the site has been used for agricultural purposes including dairy farming, stock grazing and vegetable growing. Historical land uses of the land to the north of the audit site, referred to as Area 4, included five RAAF hangars, underground fuel storage tanks (USTs) and a timber treatment area, with the land to the south west of the Area 2 audit site (discussed above) noted as being irrigated by waste water from the Western



Treatment Plant. Potential sources of contamination at or in the vicinity the audit site were noted as being the surrounding land uses, the former farm homestead on site and former irrigation of the site with water from Werribee River and irrigation of nearby sites with waste water from the Western Treatment Plant.

The geological and hydrogeological conditions noted in the audit report for this site were generally consistent with the information presented in the 2004 GHD audit report summarised above, with the exception of Quaternary aged terrace alluvium noted to the north east of Area 3.

A number of source removal activities were undertaken at the site, including the removal of the homestead and associated infrastructure and other various pipelines and drainage culverts. Following all source removal activities on site, only minor concentration of inorganic contaminants including metals were reported in excess of the adopted ecological investigation levels in the soils at the site. The report concluded that exceedances were localised and within the normal variation of soil concentrations. Furthermore, leachability testing undertaken for certain inorganics in question revealed insignificant results. None of the beneficial land uses were considered to be precluded.

The groundwater assessment revealed that the direction of groundwater flow was towards the east of the site towards the Werribee River. The groundwater assessment completed on site identified elevated concentrations of cadmium, copper, lead, manganese, nickel, selenium, zinc, iron and nitrate. However, for various reasons stated in the audit report, these contaminants were not considered to preclude any of the beneficial uses relevant for the groundwater at the site.

The audit report concluded there was no indication that soil or groundwater contamination has migrated off site. Based on the review of this audit report, and given the inferred direction of groundwater flow and distance from the site, it is highly unlikely that migration of contaminants from the audit site has potential to impact on the subject site.

6.4 EPA List of Current Environmental Audit Sites

The Victorian EPA also maintains a list of all sites which are currently subject to the environmental audit process. At the time of reporting, the following sites within a 5km radius of the site, most of which form part of the Melbourne Water Werribee Fields site, were identified as current audit sites:

- > Farm Road (Werribee Fields)
- > Geelong Road (Werribee Fields)
- > New Farm Road (Werribee Fields)
- > Wests Road Refuse Disposal and Recycling Facility.

Given that the audits of the site listed above are currently in progress, no reports concerning the assessment works conducted at these properties were available for review.

6.5 Historical Aerial Photography Review

Aerial photographs from 1945 to 2009 were reviewed for land use changes. Observations are summarised in Table 6.1 below. Refer to **Appendix E** for aerial photographs.

Table 6.1: Aerial Photograph and Historical Plan Summary

Photo / Plan	Description	Source
Aerial Photo	The aerial photography reviewed from 1945 shows that the land was cleared open space which was possibly being used for agricultural purposes (grazing). Major road including Hobbs Road, which runs through the centre of the site in a north-south direction and Ballan Road have been established. A small farm property in the far east of the site, on McGrath Road has been established on	DSE - LIC
		Aerial Photo The aerial photography reviewed from 1945 shows that the land was cleared open space which was possibly being used for agricultural purposes (grazing). Major road including Hobbs Road, which runs through the centre of the site in a north-south direction and Ballan Road have been established.



Date	Photo / Plan	Description	Source
		The land surrounding the site was also occupied by rural/agricultural land uses and Werribee River to the north of the site.	
1963	Aerial Photo	There is no significant change to the site noted between 1945 and 1963. The land comprising the site and the surrounding areas was still cleared open space which was likely to be used for agricultural purposes.	DSE - LIC
1972	Aerial Photo	There is no significant change to the site noted between 1963 and 1972, however, there appear to be some scarring of the land due to flooding or the type of crop or pasture being farmed at the site. There are no significant changes to the surrounding land uses.	DSE – LIC
1979	Aerial Photo	There is no significant change to the site noted between 1972and 1979. The land to the west of the only farming property evident on site no longer appears to be vegetated and instead has a bare earth surface. Medium density residential development of the land to the south east of the site is evident.	DSE – LIC
1991	Aerial Photo	The site has been established with a number of rural properties along Woolahra Rise and Hobbs Road. An oval formation has been established to the east of Woolahra Rise, this is inferred to be a horse training track. A number of farm dams were also scattered throughout the study area. A small parcel of land located in the north of the site and to the west of Werribee River appears to be used for more intensive (crop) farming. The medium density residential development noted in the 1979 aerial photography has since expanded northward to the land directly adjacent to the site. The land to the west of Ballan Road appears to be occupied by intensive agricultural land uses.	DSE – LIC
2008	Мар	Nothing of significance was noted within the subject area, however McGrath Road to the east of the site was noted as being subject to flooding.	Melways 35 th Edition
2009	Aerial Photo	The landscape appears to be significantly drier than what was noted in previous years. There appears to have been greater development to the existing rural properties observed within the study area. A number of the farm dams observed appear to be dry. Residential development to the west of Ballan Road appears to be in progress.	Aus Image

6.6 Historical Zoning Records Review

The Department of Planning and Community Development (DPCD) website was accessed for historical zoning information in relation to the site. Historical planning scheme information was only available for 1985 and indicated that the northern half of the site was zoned as reserved living (R4) with the remaining southern half of the site zoned as general farming (F1).

6.7 Data Integrity Assessment

It is recognised that not all prior land use information has been identified, and given the resources provided for this investigation only a relatively general history of the site has been established. However, the completeness and quality of the historical data is considered to be sufficient for the purposes of the investigation.

The table below represents the years for which site use history data collected during this investigation was available.



Table 6.2 : Information Availability

	1	88	0		19	900)	1	92	0		19	94	0		19	960)		19	98)	20	000
Historical Plans																								
Aerial Photographs																								
Historical Photos																								

Note: Blank boxes indicate no information was available.

Shaded Boxes indicate information was viewed.



7. Site Characterisation

7.1 Site Contamination Assessment

Based on the information presented in the previous sections, a number of potential sources of contamination were identified during the Stage 1 assessment of PSP Area 40. The potential sources of on-site contamination were assigned a qualitative level of risk based on the likelihood of the contamination representing a potential constraint to future development at the site. Where potential on-site sources of contamination were identified as having a high risk of contamination during the Stage 1 assessment, a site inspection was recommended and then carried out during the Stage 2 assessment. No off-site potential sources of contamination were inspected during the Stage 2 Assessment.

Due to access constraints, properties 2, 3, 5, 6, 7, 8, 11, 12, 13, 16, 17, 18, 19, 21, 22, 23, 24 and 25 were not inspected as part of the Stage 2 assessment.

7.1.1 Potential Sources of Contamination On-Site and Findings of Site Inspection

The potential on-site sources of contamination were targeted during the site inspection of PSP Area 40 on 29 June 2010. Each of the potential sources of on-site contamination identified during the Stage 1 and 2 assessments are listed in Table 7.1 along with the findings of the Stage 2 site inspection. The original risk rankings have been re-evaluated following the site inspection with the revised risk rankings provided in Table 7.1. Appendix D provides photographs from the site inspection.

The property numbers referred to in Table 7.1 have been allocated to a particular property parcel by SKM for the purposes of this investigation. Figures 4a to 4d show the allocated property number and the location of each of these identified potential sources of contamination where possible.

The two general non-point sources of potential contamination listed in Table 7.1 were assessed as having a low to moderate risk of causing contamination. On the basis of this risk ranking and broad-scale and historical nature of these potential sources, a site inspection was not conducted specifically to identify these sources. Nevertheless, it is considered likely that further assessment of the land (through intrusive soil and groundwater assessments) may be required at a later date, once more certainty regarding the proposed land uses is available and an informed sampling strategy can be prepared. These general non-point sources of potential contamination sources, in addition to the other point sources identified as having a high potential for contamination, should be addressed at that time also.



Table 7.1 : Summary of Potential On-Site Sources of Contamination

Property No.	Site Use/Activity	Potentially Contaminated Medium	Potential Contaminants of Concern	Findings of Site Inspection	Revised Potential Contamination Risk	
All properties	General/Non Point Source or Point Source: Long history of agricultural land uses across the site dating back to at least 1960s. May include activities such as the application of agricultural chemicals to crops.	Soil, Groundwater and Surface Water	OCPs, OPPs, herbicides, fungicides, insecticides, nutrients, metals, TPH and MAHs	Spraying equipment (both large and small scale equipment) was observed on several properties. Likely to be used for the application of pesticides.	Moderate	
3, 6, 10, 23 and 24	Point Source: Numerous possible stockyards and cattle or sheep dips used to treat stock with pesticides and insecticides	Soil and Groundwater	OCPs, OPPs, herbicides, fungicides, insecticides, nutrients, metals and microbiological	No sheep dips were observed, however not all properties could be accessed.	High	
All properties	General/Non Point Source: Possible use of imported fill material to level site.	Soil	Various	See description on imported fill for properties 15 and 20.	Low to Moderate	
All Properties	Point Source: Numerous Farm properties with a residence and farmyard infrastructure including sheds and storage yards potentially used for chemical storage (fuels, oils, fertilisers, herbicides, insecticides) and machinery maintenance. (3, 4, 5, 6, 8, 11, 16, 17, 18, 19, 22, 23, 24 and 25). Note – these properties were not inspected (a higher risk rating has therefore been assigned)	Soil and Groundwater	OCPs, OPPs, herbicides, fungicides, insecticides, nutrients, and, TPH, MAHs, metals and asbestos	Sheds were observed on several properties for the following uses: • Farmyard machinery maintenance – Storage of tractors, excavators, hydraulic parts, used oil containers and tools. Minor staining on unconsolidated ground • Vehicle storage – Used for storing road vehicles, oils and lubricants. • General purpose – Storage of goods and wastes including empty paint tins, steel, empty oil drums **A moderate to High Risk has been assigned, as these properties were not inspected - a detailed storage / use history of these sheds is unknown	Moderate to High**	



Property No.	Site Use/Activity	Potentially Contaminated Medium	Potential Contaminants of Concern	Findings of Site Inspection	Revised Potential Contamination Risk
10 and 15	Point Source: Numerous piles of dumped materials.	Soil	TPH, MAHs, metals and asbestos	Waste material stored as stockpiles included car and tractor tyres, scrap metal (steel and aluminium, fridges, stoves), empty gas cylinders, empty 200L oil drums, and approximately 20L pesticide containers (including glyphosate).	High
15 and 20	Point Source: Stockpiled Soils	Soil	Various	Stockpiled soils were observed at Property 15; however their origin could not be ascertained. A large area of elevated land was found at property 20; anecdotal evidence from site owner suggests the large amount of imported fill was sourced from the adjacent Manor Lakes Residential Estate on the opposite side of Ballan Road.	Low to Moderate
10	Point Source: Quarry	Soil and Groundwater	Metals, herbicides, fungicides, insecticides, nutrients	A small abandoned quarry was found to have been used as a domestic waste disposal site, with waste including: scrap metals, empty gas cylinders, vehicles, tyres & empty 200L oil drums.	High
10	Point Source: Remnant Stockyard	Soil and Groundwater	Metals, herbicides, fungicides, insecticides	Possible contamination due to application of insecticides to stock. No sheep or cattle dips observed.	Moderate to Low
10	Point Source: Vehicle Shed	Soil	ТРН	Staining of unsealed ground with oils. Area used for the storage of oil, fuel, roundup (glyphosate) in small containers (capacity <20L).	Moderate to High
9	Point Source: Waste Stockpile (adjacent shed)	Soil and groundwater	TPH, metals	No access to shed. 200L oil drums and strong smell of hydrocarbons present in the immediate vicinity. The area was unsealed. Lead acid batteries were stored under cover on a concrete hard stand area, however still exposed to weather. Scrap metal (predominantly steel and aluminium) stock piled.	High
9	Point Source: Waste Stockpile (adjacent dam)	Soil and groundwater	TPH, metals	Aerial photograph shows the stockpile to likely consist predominantly of wood material and soils.	Moderate

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Property No.	Site Use/Activity	Potentially Contaminated Medium	Potential Contaminants of Concern	Findings of Site Inspection	Revised Potential Contamination Risk	
9	Point Source: Tractor Shed	Soil	ТРН	Heavy farmyard machinery plus oils are stored. Discarded oil drums and tractor tyres in the area outside tractor shed.	Moderate to High	
1	Point Source: Residence	Soil	Metals, TPH	Empty gas cylinders (inferred to be from domestic use) and abandoned farmyard machinery.	Low	
1	Point Source: Vehicle shed	Soil	Metals	Abandoned farmyard equipment and automobiles.	Low	
4	Point Source : Underground septic tank and storm water pits	Soil and Groundwater	Nutrients	An underground septic tank and storm water drains were found in yard near residence (Photo 1).	Moderate	
14	Non Point Source : General land use across the site formerly used for commercial horse agistment purposes during the 1980s.	Soil and Groundwater	Nutrients	The property is no longer used for commercial purposes.	Moderate	
14	Point Source: Vehicle shed	Soil	TPH, metals	Minor staining observed of bare ground within shed. Two empty oil drums (200 L) were found outside.	Moderate	
14	Point Source: Gas cylinder storage outside residence	Soil	TPH, Metals	Domestic use Gas cylinders, both in-use and discarded, were found within close proximity to residence.	Moderate	
14	Point Source: Stockpiles of soil material	Soil	Nutrients, TPH	Stockpiled soils were found in concrete lined bunker. One empty oil drum (200 L) was found nearby.	Moderate	
14	Point Source: Waste piles	Soil	Metals	Scrap steel and aluminium stockpiled.	Low to Moderate	
14	Point Source: Underground septic tank	Soil and Groundwater	Nutrients, metals	Septic tank location was advised by property owner and was used for household (toilet) waste disposal.	Moderate	
15	Point Source: Vehicle shed	Soil	TPH, metals	Oils, lubricants and fuels stored in various sized containers within concrete lined shed.	Low to Moderate	
15	Point Source: Waste pile area 1 (near shed)	Soil	Metals, nutrients, TPH,	Waste piles of scrap metal, empty paint tins, empty oil drums, and lead acid batteries are present. Imported fill material from an unknown source is also stockpiled.	Moderate to High	

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Property No.	Site Use/Activity	Potentially Contaminated Medium	Potential Contaminants of Concern	Findings of Site Inspection	Revised Potential Contamination Risk	
15	Point Source: Waste pile area 2 (in paddock)	Soil and Groundwater	Metals	Rusted scrap metal, discarded heavy machinery, domestic waste.	Moderate	
15	Point Source: Septic tank	Soil and Groundwater	Nutrients, metals	Septic tank location was advised by property owner and was used for household (toilet) waste disposal.	Moderate	
20	Point Source: Storage shed	Soil	TPH	Concrete lined shed is used for tractor storage.	Low	

Notes:

OCPs – Organochlorine Pesticides OPP s– Organophosphorus Pesticides

TPH - Total Petroleum Hydrocarbons

MAHs – Monocyclic Aromatic Hydrocarbons (including benzene, toluene, ethylbenzene and xylenes) PAHs – Polycyclic Aromatic Hydrocarbons

Nutrients – Ammonia, nitrate, nitrite, phosphate



7.1.2 Potential Sources of Contamination Off-Site

The areas surrounding the site were also considered during the Stage 1 assessment in order to identify the presence of off-site facilities or land uses that could potentially cause environmental impact to the site. The off-site sources identified in the vicinity of the site are summarised in Table 7.2 and illustrated on **Figure 5**. None of the off-site properties listed in Table 7.2 were inspected during the Stage 2 assessment.

Table 7.2: Summary of Potential Off-Site Sources of Contamination

Type of Land Use / Facility	Potential Contaminants of Concern	Distance and Direction from Site (km)
General: Surrounding agricultural land uses	OCPs, OPPs, herbicides, fungicides, insecticides, nutrients, and, TPH, MAHs, metals.	All directions.
Audit Site: 126 Synnot Street, Werribee, Victoria	Metals and asbestos	3.5 km to the south east of the site
Industrial: Mountain View Quarries	TPH, MAHs, PAHs and CHCs	2.4 km to the north west of the site
Audit Site: Melbourne Water's Werribee Fields, Area 2, Werribee, Victoria	OCPs, OPPs, herbicides, fungicides, insecticides, nutrients, and, TPH, MAHs, metals.	4.0 km to the south of the site
Audit Site: Melbourne Water's Werribee Fields, Area 3, Werribee, Victoria	OCPs, OPPs, herbicides, fungicides, insecticides, nutrients, and, TPH, MAHs, metals and asbestos	4.2 km to the south east of the site
Industrial Facility: Powercor Depot and Store	Metals, TPH and PCBs	4.0 km to the south east of the site
Industrial Facility: Western Treatment Plant	Metals, VOCs, phenols, surfactants, nutrients and microbiological	3.3 km to the south east of the site
Commercial Facility: Service Station	TPH, MAHs, Phenols and Lead	5.0 km to the south of the site
Commercial Facility: Burmah Fuels Australia (Service Station)	TPH, MAHs, Phenols and Lead	1.3 km to the south of the site
Commercial Facility: Ampol Service Station	TPH, MAHs, Phenols and Lead	2.9 km to the south east of the site
Commercial Facility: Better Choice Fuels (Service Station)	TPH, MAHs, Phenols and Lead	1.1 km to the south east of the site
Industrial Facility: Wests Road Refuse Disposal and Recycling Facility	Metals, Nutrients, TPH, MAHs, PAHs, miscellaneous	5.2 km to the south west of the site
Extractive Land Use / Industrial Facility: Readymix Quarry	TPH, MAHs, PAHs	5.2 km to the south west of the site

Notes:

VOCs - Volatile Organic Compounds

A number of off-site sources of contamination have been identified in the vicinity of the site. The majority of the identified sources are located significant distances (>1km) from the site and are therefore not considered to represent a significant risk of contamination to the subject site. The potential sources of contamination in close proximity to the site which is the surrounding agricultural land uses are considered to represent a low risk of causing contamination at the site.

7.1.3 Potential Receptors of Contamination

Potential receptors of contamination (should any exist) at or near the site include:

- > Site workers at the site:
- > Residents at the site;



- > Future construction workers at the site;
- > Visitors to the site;
- > Underground utilities located on and around the site (including easements);
- > Surrounding residents and occupants and visitors (via windblown contamination during excavation works);
- > Sensitive land based ecosystems on and near the site; and
- > The nearest surface water bodies (including aquatic ecosystems), namely Werribee River and its tributaries and Lollypop Creek.

7.1.4 Exposure Pathways & Routes

These potential receptors may be impacted through ingestion, inhalation or dermal contact with potentially contaminated soil (on site) and groundwater (on and off site). Off site receptors (including humans and aquatic and land based ecosystems) may be impacted through the transport of contamination via a number of pathways such as trenches containing underground services (from the site to off site locations), storm water drainage networks, surface drainage via overland flow (runoff), groundwater flow and surface water transport (e.g. to and in the nearest surface water bodies to the site including the Werribee River and its tributaries and Lollypop Creek).

7.2 Geotechnical Assessment

7.2.1 General

Based on the available geological information, it is anticipated that the site is underlain by the quaternary aged Newer Volcanics Formation. The upper portion of the basalt profile in this formation (usually up to several metres) is typically weathered to highly reactive residual clay. However, shallow rock can be encountered, and large near surface basalt boulders (known as "floaters" or "corestones") are often encountered in a clay matrix.

An indicative site classification of Class "H to E" is applicable to these conditions in accordance with AS2870-1996 (Residential Slabs and Footings). Characteristic surface movements in the range from 40mm to greater than 70mm may be anticipated. This classification would depend on the depth, thickness and reactivity of the clay material in this area. The thickness of the residual soil profile in the Newer Volcanics is variable, and it is our experience in this area and with this geological unit that the depth to basalt can vary significantly over relatively short horizontal distances.

Given the previous use of the site, it is considered that areas of fill material may be present. A site classification of Class "P" would apply for such areas where the history of the filling is unknown. A site classification of Class "P" requires that footings be designed on the basis of engineering principles as opposed to the adoption of the standard footing designs presented in AS2870.

The above site classifications are based on regional geological information and are intended for preliminary consideration only. Geotechnical site investigations including soil sampling and laboratory testing should be undertaken prior to the design and construction of any footing systems, pavements and associated civil infrastructure.

7.2.2 Site Inspection

No areas were specifically targeted for the geotechnical assessment, however at the time of the site inspection, surface water ponding was observed in the central area of the site. The owner of Property 15 indicated that the adjacent property (14) is prone to flooding after periods of rain. Based on our experience with similar ground conditions in the area, the soil profile is very moisture sensitive and prone to water logging in wetter months and after periods of rain, which may present trafficability problems for construction equipment.

Basalt boulders were observed on the surface in the area of property 20. It is likely that a shallow rock profile will be encountered in this area, which may present slower rates of site preparation and excavation at the time construction



7.3 Hydrogeological General

Based on the regional hydrogeological information and bore data in the vicinity of the site, the conceptual hydrogeological model for the site is:

- > The presence of two minor aquifers at the site: the outcropping Newer Volcanics; and the underlying Brighton Group. The Werribee Formation is a more significant aquifer, but is likely to be around 200m deep at the site.
- > The Newport Formation is an aguitard which separates the Brighton Group and the Werribee Formation;
- > These units have a thickness of up to 250m. The hydraulic basement is Devonian Granite to the southwest, and Silurian siltstone further north;
- > The chilled base of the Newer Volcanics acts as a barrier for groundwater flow. There is therefore limited vertical flow between the watertable aquifer and the underlying units.
- > The Newer Volcanics are unconfined. All underlying units are confined;
- > Recharge to the New Volcanics is from direct infiltration of rainfall. Underlying aquifer are recharge by direct infiltration where they outcrop, and vertical recharge from surrounding units;
- > Groundwater discharges locally to Lollipop Creek and the Werribee River. Regional groundwater discharge is towards the southeast to Port Phillip Bay;
- > The watertable occurs within the Newer Volcanics. Groundwater levels are likely to be between 5m and 10m deep;
- > Groundwater salinity in the Newer Volcanics is commonly brackish (up to 13,000 mg/L); and
- > Hydraulic conductivity in the Newer Volcanics aquifer is in the order of 1-6 m/day, and transmissivity is less than 100 m²/day. Higher aquifer parameters (and therefore likely higher yields) are found in the Werribee Formation, with a hydraulic conductivity of 3 15 m/day and a transmissivity of up to 2,000 m²/day.

7.3.1 Site Inspection

No areas were specifically targeted for the hydrogeological assessment, however at the time of the site inspection an uncapped and disused bore was identified along the north western boundary of property 20. The depth to groundwater was measured and found to be 16.8 m below ground level.

As noted in the section above, at the time of the site inspection some water logged areas were also observed on. Before commencing development activities on site, it is important to confirm that the watertable is well below the surface, to ensure that groundwater is not the cause of water logging observed on site. Shallow water tables have the potential to cause implications for future development by causing groundwater inflows to drains, basements and any excavations. If shallow water tables are evident on site, this would require below ground structures to be either completely sealed, or have groundwater pumped out constantly and disposed of.



8. Development opportunities and constraints

8.1 Site Contamination

Based on the information described in this report, there do not appear to be any significant constraints from a site contamination perspective which would render the land unsuitable for any feasible land use. However, there are particular areas which have been identified as having a potentially high risk of contamination (see Table 7.1). It is likely that the identified areas of concern will comprise discrete or localised areas of contamination that can be cost-effectively remediated or managed. These areas will need to be assessed in greater detail through intrusive soil and groundwater sampling before a more robust conclusion regarding the site's suitability for a particular land use can be made.

A long history of agricultural land uses has been identified within the PSP Area 40. The DSE (2005) *Potentially Contaminated Land General Practice Note* recommends that such land undergo detailed Phase (Stage) 1 and 2 environmental site assessments prior to change of land use to a more sensitive receptor, given the potential contamination which may result from this land use. Therefore further, more detailed site specific investigations would be required prior to change of land use to a more sensitive receptor.

Stage 1 and 2 assessments may be completed as part of a statutory Environmental Audit prior to the re-zoning of land to a more sensitive use in accordance with Environment Protection Act 1970. This may be considered a potential constraint due to the time and costs required to complete an Environmental Audit. If an audit results in a Statement of Audit is achieved (not a Certificate of Audit), the Statement may also specify site management measures that may constrain future development.

8.2 Geotechnical

Based on the available information, there does not appear to be any key geotechnical or geological constraints that indicate the area is unsuitable for development. However, the following issues requiring consideration in the planning and design of any development and should be assessed through a geotechnical site investigation.

- > The depth and reactivity of the Newer Volcanics residual clay which forms the surface geology across the site would determine the site classification for foundation design. It is expected that the site would be considered highly reactive (Class "H to E"). Foundations may need to be designed for characteristic surface movements in excess of 70mm;
- > The variable thickness of the clay horizon over relatively short horizontal distances can lead to differential settlement of structures. As such, a geotechnical investigation is required to assess the depth to rock across the site:
- Excavations in the Newer Volcanics formation can transition abruptly from readily easily excavatable clays into high strength basalt, which may require rock breaking techniques or blasting. In the case of developments requiring excavations, delineation of the soil/rock interface should be assessed;
- > Design of roads, drainage works and underground assets would require consideration of the highly reactive nature of the clays to ensure serviceable performance and minimise ongoing maintenance requirements;
- > Fill material, which may be present, is expected to be uncontrolled and may not be suitable as a founding material in its current state;
- > Potential soft or loose deposits in the vicinity of the Werribee River floodplain, and in other areas where poor drainage conditions prevail, may provide low bearing capacities for potential developments; and

Potential near-surface groundwater in the vicinity of the Werribee River, which could rise in the event of flooding. In this case, consideration of developing part of this area (which slopes down towards the river) on an engineered fill platform may be required.



8.3 Hydrogeological

Based on the hydrogeological conceptual model described in this report, there does not appear to be any significant hydrogeological constraints which would render the land unsuitable for development. The following issues would need to be considered however, in the planning and design of any development:

- > The shallow depth of the water table at the site means that excavations may intersect the water table and cause groundwater to flow into underground structures. This water would subsequently need to be collected and disposed of, or alternatively underground structures (e.g. basements) would need to be fully lined to prevent inflows. The depth of the watertable at the site would need to be confirmed through further investigations to determine whether a shallow watertable is an actual constraint to development.
- Increases to groundwater recharge rates can occur due to the cumulative impacts of excessive urban irrigation of lawns and gardens over summer and autumn, recharge from artificially constructed lakes and wetlands, and leaky water supply and drainage infrastructure. If groundwater levels rise to within a couple of metres of the ground surface, high salinity levels and soil moisture have the potential to cause corrosion to infrastructure and buildings, unless appropriate engineering solutions are implemented. In addition, the increased recharge to groundwater is likely to increase the discharge to nearby surface water features, which could potentially have a negative impact on the ecological health of local waterways as a result of increased salinity (SKM, 2009). The depth and salinity of the water table aquifer at the site would need to be confirmed through further investigations to determine whether this is an actual constraint to development.
- > The increased proportion of hard impermeable surfaces associated with the development of the site is likely to decrease local recharge to the underlying aquifers in winter and early spring, which could in turn reduce discharge to nearby surface water features. This could potentially have a negative impact on the ecological health of local waterways (SKM, 2009).

Several opportunities exist in relation to the use of groundwater at the site, reducing reliance on mains water. These include:

- > Installation of bores for stock and domestic uses, such as watering gardens
- > Installation of bores for irrigation of public reserves or ovals
- Managed Aquifer Recharge (MAR) this technique uses the aquifer as a storage facility. Excess water (for example rainfall runoff during winter) can be captured, injected into the aquifer, and stored until the water is required for use in a drier period. Generally, MAR schemes capture and store water during winter, and extract water for use in summer. Broad scale mapping indicates that there is potential for a high capacity MAR project (more than 200 ML/year) at this site (DSE, 2009). For general information on MAR, refer to the Waterlines report, produced by Dillon *et al* (2009) for the National Water Commission. This report explains MAR, describes the various drivers for MAR and presents information on the economics of MAR in relation to alternative sources of supply. The authors also discuss how to establish a MAR project, and look at MAR opportunities in an integrated urban water management context.
- Aquifer Thermal Energy Storage (ATES) this technology uses groundwater to efficiently heat and cool buildings. Groundwater maintains a relatively stable temperature throughout the year, which can be augmented so that one area contains warm groundwater, while another contains cool groundwater. Groundwater is then pumped between the warm and cool areas on an annual basis, and passed through a heat exchanger which uses the thermal energy stored in the groundwater to heat or cool a building. For example in winter, groundwater would be extracted from the warm area, and passed through the heat exchanger, before being injected into the cold groundwater area. The direction of flow is reversed in summer, to cool the building. The flow of water between areas of warm and cool groundwater maintains the temperature gradient required to heat or cool the building. Sites with deeper watertables and confined aquifers are more conducive to such systems.

Establishment of an MAR &/or ATES scheme is more likely to be feasible if the water table is deep, aquifer transmissivity is high, and confined or semi-confined aquifer are present. The existing hydrogeological conceptual model suggests these requirements could be fulfilled by the deeper aquifers at the site, although bores for the schemes would have to be deep. This would increase the cost of such a scheme.



The development of an MAR &/or ATES scheme typically comprises a series of stages as follows:

- > Stage 1: Desktop feasibility
- > Stage 2: Preliminary Field Investigations
- > Stage 3: Detailed Field Investigations
- > Stage 4: Detailed Design and Approvals
- > Stage 5: Construction and Commissioning
- > Stage 6: Operation

The initial desktop feasibility for a site typically costs between \$10K - \$15K. The duration and complexity of each subsequent stage depends on the outcomes of the preceding stage and the establishment of a scheme from desktop feasibility to operation can typically take 1 to 3 years.

8.4 Land Use

Melbourne's Urban Growth Boundary has been reviewed to ensure that enough land is available to meet the needs of Melbourne's growing population. Delivering Melbourne's newest sustainable communities is the culmination of work focussed on land use, transport and environmental initiatives. It takes an integrated approach to land use and transport planning so that infrastructure and essential services will be delivered as new communities in the growth areas develop. These initiatives will deliver the most significant land use and transport changes that Melbourne has experienced in a generation. Importantly, these initiatives, built on sound policy platforms, will maintain Melbourne's liveability as the city's population approaches five million.

Delivering Melbourne's newest sustainable communities was informed by a number of separate but interlinked documents, including independent advice and specialist reports for the Urban Growth Boundary and transport projects, and a Strategic Impact Assessment Report to meet the requirements of the *Environment Protection and Biodiversity Conservation Act 1999*.

The planning elements required for these projects are contained in Amendment VC67.

The Government's plan for managing the growth areas on Melbourne's fringe together with related transport (including the Regional Rail Link and the Outer Metropolitan Ring / E6 Transport Corridor) and biodiversity initiatives was recently put before Parliament in Amendment VC67.

PSP 40 (Ballan Road) is affected by the proposed Regional Rail Link. The new Manor Lakes Station is located to the south of PSP 40 (Ballan Road). The land allocated for the rail corridor and the stations has been identified by the Victorian Government and is proposed to be compulsorily acquired accordingly. Within the Wyndham Planning Scheme, the land is to be identified by the Public Acquisition Overlay and forms part of Amendment VC67. The Minister for Planning has approved and is now seeking parliamentary ratification of Amendment VC67. Due to changes requested by the State opposition, the Amendment is currently on hold awaiting legal advice to the President of the house. We understand that the only way changes can be made is if VC67 is withdrawn and a new amendment drafted which is a time consuming exercise, not impossible but will take time.

The land associated with Regional Rail Link will ultimately be zoned as Public Use Zone (Schedule 4 - Transport). A plan showing the location of PSP 40 in relation to Regional Rail Link and the Outer Metropolitan Ring / E6 Transport Corridor is attached.

The Outer Metropolitan Ring / E6 Transport Corridor will create a major arterial transport corridor providing links between Melbourne's west and north. The proposed route for the Transport Corridor includes road and rail links between the Werribee, Melton, Tullamarine and Craigieburn / Mickleham areas, a road link from the Metropolitan Ring Road in Thomastown to the Outer Metropolitan Ring Transport Corridor at the Hume Freeway, and a road link between the Deer Park Bypass and the Outer Metropolitan Ring is located to the west of PSP 40.



9. Planning considerations

A desktop planning assessment was conducted to identify potential land use and approvals risks and opportunities associated with the development of the PSP Area 40. The findings of the desktop assessments are presented in the following sections.

9.1 Planning Context

The *Planning and Environment Act* 1987 allows certain documents to be incorporated in a planning schemed by reference within the Table to Clause 81.01 or the Schedule to Clause 81.01 of the relevant planning scheme. PSPs are incorporated documents and as such should be incorporated and read as part of the planning scheme.

The Urban Growth Zone (UGZ) applies to land that has been identified for future urban development within the Urban Growth Boundary. In the UGZ, the PSP is the long term strategic plan that allows the conversion of non-urban land to urban land. One of the main purposes of the PSPs is to identify and address any opportunities and constraints that will affect future urban development.

The planning system is the primary means for regulating land use and approving development and is an important mechanism for triggering the consideration of potentially contaminated land. As part of this assessment, a review of the Wyndham Planning Scheme has been undertaken. This included state and local policy, zones, overlays and relevant particular provisions which currently apply to the land occupied by existing potentially contaminating uses, and provides the relevant consideration of this issue if these land uses change in the future.

9.2 State, Municipal and Local Planning Policy Framework

The State Planning Policy Framework (SPPF) contains general principles for land use and development in Victoria and specific policies relating to strategic issues of State significance which must be considered by responsible authorities when planning decisions are made. It applies on a State-wide basis.

The Local Planning Policy Framework (LPPF) is a statement of the key strategic planning, land use and development objectives for each municipality and the strategies and actions for achieving these objectives. The Municipal Strategic Statement (MSS) establishes the strategic planning framework while the Local Planning Policies (LPP) provides the policy statements to achieve the vision for a municipality.

The following tables provide an outline of the state, municipal and local planning policy objectives relevant to the assessment of buffers within the PSP area.

Table 9.1: State Planning Policy

Planning Policy	Policy Objective					
State Planning Policy Framework						
Clause 12 – Metropolitan Development	The purpose of this Clause 12.01 (A more compact city) is to facilitate sustainable development that takes full advantage of existing settlement patterns, and investment in transport and communication, water and sewerage and social facilities.					
	One of the strategies contained in this policy for the better management of metropolitan growth through the development of PSP consistent with the applicable Precinct Structure Plan Guidelines approved by the Minister for Planning to:					
	Ensure greater housing choice, diversity and affordability.					
	Develop vibrant, well serviced activity centres.					
	Provide sustainable transport networks.					
	Deliver accessible community facilities and infrastructure.					
	Create multi-use, linked open space networks.					
	Boost employment and commercial activity.					
	Increase environmental sustainability.					



Planning Policy	Policy Objective
Clause 15 – Environment	Clause 15.04 refers to air quality and seeks to prevent the reduction in community amenity by air emissions by ensuring, wherever possible, that there is suitable separation between potentially amenity reducing and sensitive land uses and developments. Consideration should be given to <i>Recommended Buffer Distances for Industrial Residual Air Emissions</i> (EPA 1990) to determine the extent of separation.
	Clause 15.06 refers to soil contamination and seeks to ensure that potentially contaminated land is suitable for its intended future use and development, and that contaminated land is used safely. Clause 15.06-2 refers to <i>Ministerial Direction No.1</i> and outlines requirements for applications for use of land or known to have been used for industry, mining or the storage of chemicals, gas, wastes or liquid fuel.
	Clause 15.05 seeks to assist the control of noise effects on sensitive land uses by ensuring that development is not prejudiced and community amenity is not reduced by noise emissions, by planning tools such as land use separation.

Table 9.2 : Local Planning Policy

Wyndham Planning Sch	neme				
Municipal Strategic Statement					
Clause 21.03-2 – Key Issues	Clause 21.03 (Wyndham's Urban Growth Framework) identifies that the Werribee corridor was earmarked in the 1980s as one of Melbourne's growth areas and identifies the need to planning for future growth.				
Clause 21.04 – Wyndham's Vision	This Clause outlines Wyndham's Strategic Framework Plan and identifies the PSP areas as future residential land and open space.				
Clause 21.05 – Objectives and Strategies	 This Clause aims to achieve the following relevant objectives: The cost-effective and orderly management of urban growth, balancing the city and country aspects of the municipality. Access to a range and quality of housing opportunities which meet the needs of the population. Accessible, safe and efficient options for the movement of people and goods within, into, and out of, the municipality. Establishment of a network of current and future activity centres which satisfy a range of retail, commercial and community needs and which create a sense of place within the community. Productive use of rural land, ensuring compatibility with land care values and effective separation from 				
Local Planning Policy F	urban purposes. ramework				
Clause 22.01 – Werribee West, Wyndham North and Point Cook Area Planning Policy	Growth is identified in three major fronts: Wyndham North, Werribee West and Point Cook. PSP areas 40 (Ballan Road) and 42 (Black Forest Road) are located within the Werribee West growth area (as shown on Map 1 of Clause 22.01).				
Clause 22.13 – Non- Residential Uses in Residential Zones Policy	 The objectives of this policy are to ensure non residential uses are appropriately located having regard to: Location in areas that are appropriate to the intensity and scale of the proposed use where the use will have a minimal impact on the amenity of the local area and nearby residential facilities. Major facilities serving catchments beyond the local level should be located in commercial areas or sited on roads, which avoid extra generation of traffic on residential streets. The siting and design of proposed buildings and works, including car parking areas and advertising signs, fencing, landscaping, lighting, open space, storage amenities and loading facilities. To ensure appropriate location of access points. To ensure the scale and character of development is consistent with nearby housing. To reduce adverse impacts on the amenity of the area in regard to the intensity of use and hours of development, any overshadowing, overlooking, noise, traffic, light spill, waste management and the provision of facilities. 				



9.3 Zones and Overlays

Although there were a number of potentially contaminating land uses identified in the vicinity of the PSP Area 40 (see Table 7.1 and Table 7.2), this PSP area is located well outside the threshold distances/buffer zones for the identified potentially contaminating land uses, therefore no zones and overlay information with respect to the buffer distances have been provided.

Potentially contaminating activities in the area that do not require buffers include farming, market gardens and occasional light commercial use.

9.4 Future Land Use

If a 'sensitive use' (e.g. a proposal to rezone land to a residential use) is proposed on potentially contaminated land, consideration needs to be given to *Ministerial Direction No. 1- Potentially Contaminated Land (Direction No. 1).* The purpose of this direction is:

"to ensure that potentially contaminated land us suitable for a use which is proposed to be allowed under an amendment to a planning scheme and which could be significantly adversely affected by any contamination."

The Direction requires a planning authority to satisfy itself that the environmental conditions of potentially contaminated land or area will be suitable for a use proposed, through an environmental audit.

The Direction defines uses including residential use, a child care centre, pre-school or primary school as 'sensitive uses'.

An environmental audit is provided for under the *Environment Protection Act* 1970 and involves an independent assessment of the condition of a site and requires an environmental auditor to form an opinion about its suitability for the proposed use.

The Environmental Audit Overlay (EAO) is a mechanism provided in the *Victorian Planning Provisions* and planning schemes to ensure the requirement for an environmental audit under *Direction No. 1* is met before the commencement of the sensitive use or any buildings and works associated with that use. The application of the overlay ensures the requirement will be met in the future but does not prevent the assessment and approval of a planning scheme amendment (e.g. rezoning).

By applying the overlay, the planning authority has made an assessment that the land is potentially contaminated, and is unlikely to be suitable for a sensitive use without more detailed assessment and remediation works or management. By applying the EAO the planning authority is also determining that the requirements of *Direction No. 1* may be deferred.

The EAO should not be used simply as a means of identifying land that is or might be contaminated, and previous zoning is not a sufficient reason to justify the application of an EAO. As stated in the Explanatory Statement to *Direction No. 1* it may only be appropriated to defer audit requirements (through the application of an EAO) if testing of the land before a notice of amendment is given is difficult or inappropriate.

Additionally, before deciding on a planning permit application, Section 60 of the *Planning and Environment Act* 1987 requires a responsibility to consider:

"any significant effects which the responsible authority considers the use or development may have on the environment or which the responsible authority considers the environment many have on the use or development."

9.5 Key Contacts

<u>City of Wyndham:</u> 03 9742 0777 Peter Vantil (Planning Manager) <u>EPA Head Office:</u> 03 9695 2722



9.6 Conclusion

Although there were a number of potentially contaminating land uses identified in the vicinity of the PSP Area 40, this PSP area is located well outside the threshold distances/buffer zones for the identified potentially contaminating land uses and is therefore those land uses are not expected to impede future development of the area.

Potentially contaminating activities in the area that do not require buffers include farming, and occasional commercial or light industrial use.



10. Conclusion and recommendations

10.1 Conclusions

Site Contamination Assessment

Based on the information gathered during this assessment, the following conclusions can be made:

- > The site history assessment found that the site has had a long history of agricultural land uses dating back to at least the 1960s;
- > A review of current aerial photography indicates that the site is currently used for agricultural purposes;
- > Based on the available information and site history assessment the following potential sources of contamination have been identified on site:
 - Application of agricultural chemicals to crops across the site (including broad application);
 - Numerous stockyards where stock may have been treated with pesticides and insecticides (Visually observed on property 10);
 - Possible use of imported fill material to level or build up site (Visually observed on property 20);
 - Numerous farm properties with a residence and farmyard infrastructure including sheds and storage yards potentially used for chemical storage (fuels, oils, fertilisers, herbicides, insecticides and pesticides) and machinery maintenance (properties 1, 3, 4, 5, 6, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24 and 25);
 - Numerous piles of dumped materials;
 - Underground septic tanks (Visually observed on properties 4, 14 and 15); and
 - Stockpiled soils / imported fill material (observed on properties 15 and 20).
- > A number of potential off-site sources of contamination have also been identified in the vicinity of the site (see **Section 7.1.2**). The identified sources are located significant distances (>1km) from the site and are therefore not considered to represent a significant risk of contamination to the subject site or are considered to represent a low risk of contamination to the site; and
- > Based on the information obtained from the sources described in this report, there do not appear to be any significant constraints from a site contamination perspective which would render the land unsuitable for a particular land use. Localised contamination is likely to be able to be effectively remediated or managed.

Geotechnical Assessment

Based on the available geological information, it is anticipated that the site is underlain by highly reactive residual clay overlying basalt rock. An indicative site classification of Class "H to E" has been assessed in accordance with AS2870-1996.

Key geotechnical issues associated with development of the site include the depth and reactivity of the basaltic clay in terms of its influence on site classification, foundation selection, differential settlement, subgrade performance and excavations. Fill material, if present, is expected to be uncontrolled and may not be suitable for development in its present state. Areas subject to poor drainage may comprise soft material which provides low bearing capacity for foundations.

Hydrogeological Assessment

Based on the regional hydrogeological information and bore data in the vicinity of the site, two minor aquifers are present at the site and include the outcropping Newer Volcanics; and the underlying Brighton Group. The Werribee Formation is a more significant aquifer, but is likely to be around 200m deep at the site. The Newport Formation is an aquitard which separates the Brighton Group and the Werribee Formation. The chilled base of



the Newer Volcanics acts as a barrier for groundwater flow. There is therefore limited vertical flow between the watertable aquifer and the underlying units.

There do not appear to be any significant hydrogeological constraints which would render the land unsuitable for development. The following issues would need to be considered however, in the planning and design of any development:

- > The shallow watertable in the Newer Volcanics may cause groundwater inflow to excavations;
- Increases to groundwater recharge rates (particularly over summer and autumn) has the potential to raise the water table to within a few metres of the ground surface, potentially causing corrosion to infrastructure and buildings; and
- Decreased local groundwater recharge in winter and early spring has the potential to reduce discharge to nearby surface water features, which could potentially have a negative impact on the ecological health of local waterways.

Opportunities for groundwater use include extraction for garden watering and irrigation of parks and ovals (where the salinity is suitable), as well as high capacity MAR and ATES schemes. Further work would be required to assess the feasibility of these schemes.

10.2 Recommendations

Further assessment of the identified site contamination, hydrogeological and geotechnical issues are recommended to determine the suitability of the site for the proposed land uses and to confirm that future buildings and infrastructure (roads and underground service networks) are appropriately designed. Further assessment works may include, but are not limited to, the following activities:

- > Drilling and collection of soil samples from grid based and targeted locations (e.g. former in filled farm dams, storage yards and shed) to test the soil for potential contaminants of concern and also assess the geotechnical soil properties for building foundation and road design;
- > Drilling and installation of groundwater monitoring wells to determine the depth to groundwater, sampling of the groundwater to assess for potential contaminants of concern and aquifer hydraulics testing to determine aquifer properties;
- > Excavation and removal of underground storage tanks, soil remediation and tank pit validation if USTs are found on properties where access was not granted for site inspections; and
- > Removal of other potentially contaminating infrastructure (e.g. septic tanks and above ground storage tanks) followed by soil validation.

We understand that the proposed future use of the site is as future land supply for various land uses including sensitive uses such as residential and community facilities in addition to open space, retail and a range of business uses such as office, light industrial and manufacturing. As no specific land uses have been allocated to individual parcels of land, further assessment for site contamination, geotechnical or hydrogeological purposes is not considered appropriate at this point in time. Further assessment will instead be required at a later stage and an informed investigation strategy can be prepared once further information on the proposed land uses for specific areas of the site is available. Future intrusive assessment works should be timed to coincide with the cessation or scaling down of current site operations and prior to the commencement of the proposed development and construction works.

It is also recommended that the GAA approach the City of Wyndham Council to determine the requirement for a statutory environmental audit at the site. If an environmental audit of the site is required, a period of at least 6 months prior to development should be allowed to progress through the audit process. It is likely that a longer period of time will be required should significant contamination be identified at the site to allow for remediation works.



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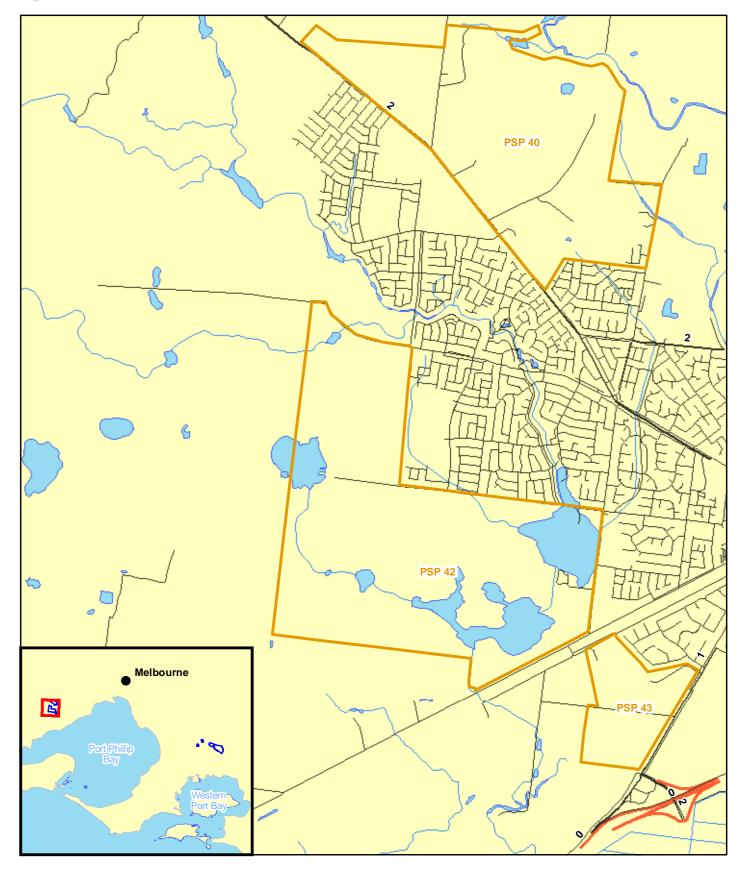
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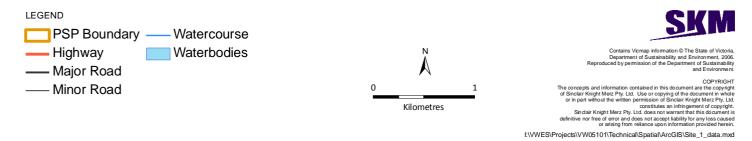


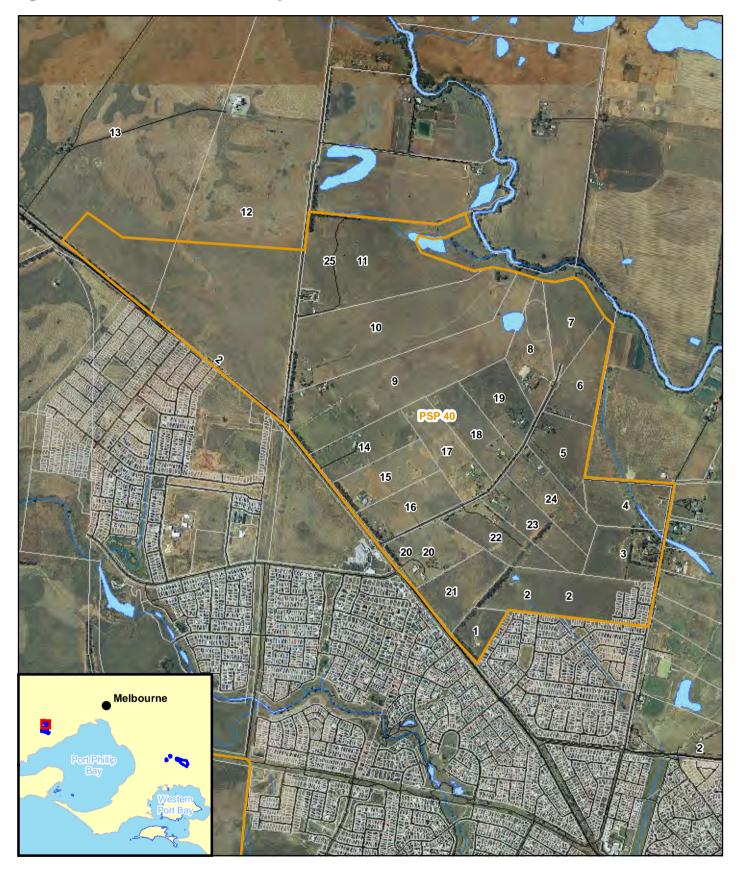
Figures

Figure 1 - Site Location Plan

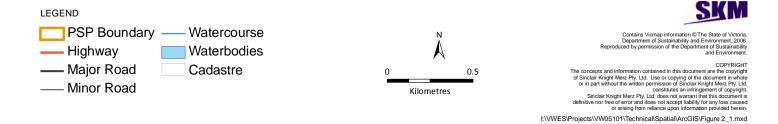


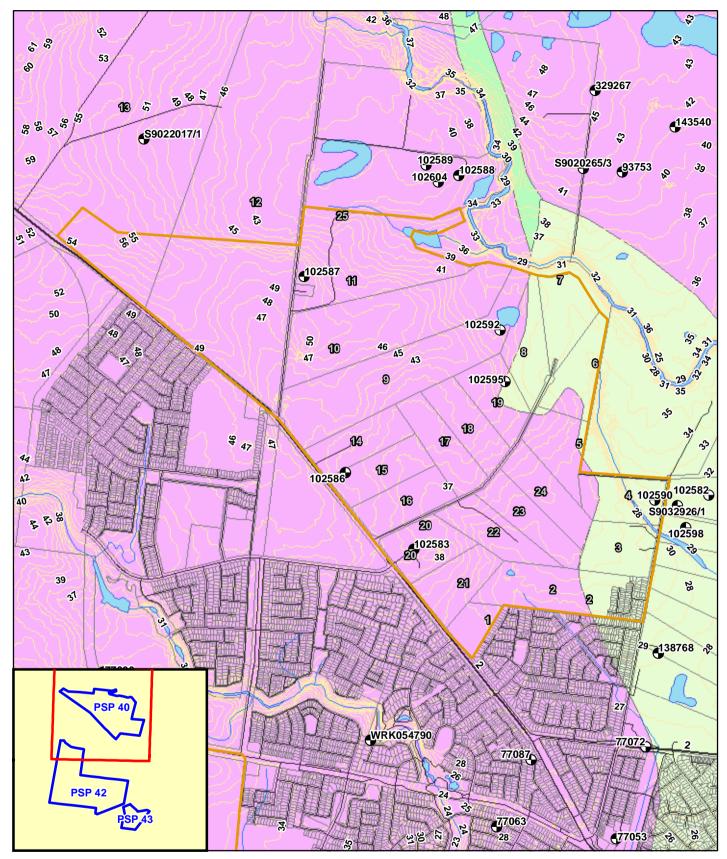
Stage 1 - Desktop Site Contamination, Hydrogeological and Geotechnical Assessment Growth Areas Authority





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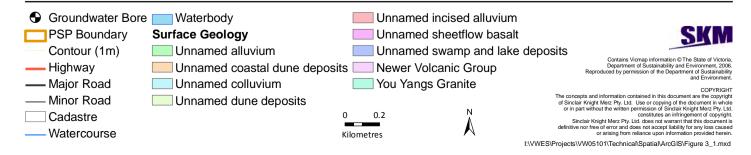
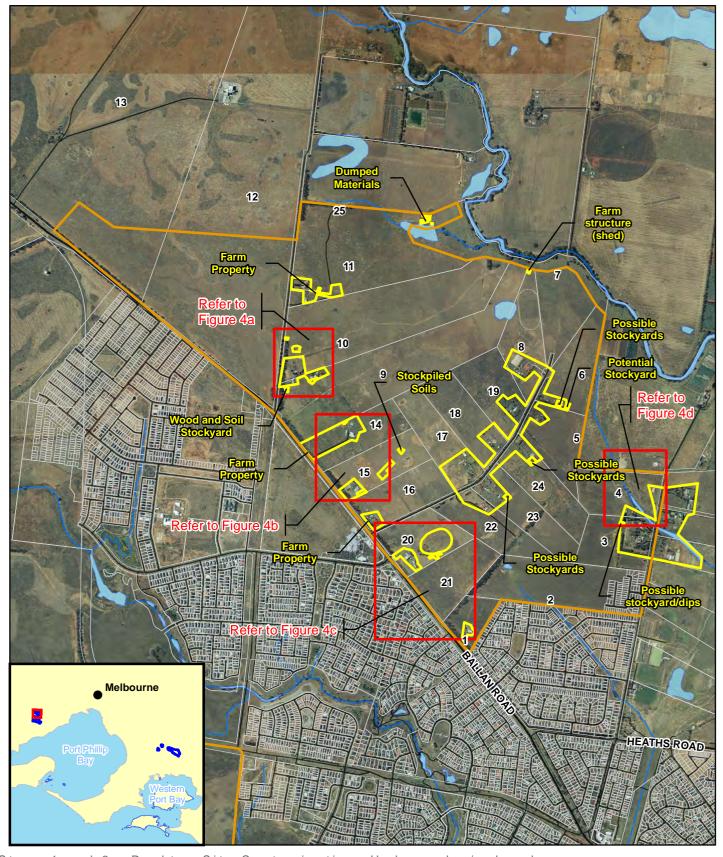


Figure 4 - PSP 40 Potential Sources of Contamination



Stage 1 and 2 - Desktop Site Contamination, Hydrogeological and Geotechnical Assessment Growth Areas Authority

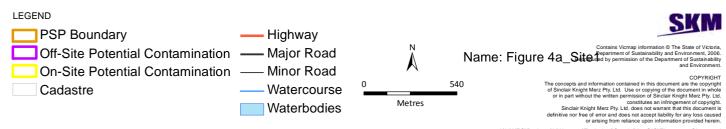


Figure 4a - PSP 40 Potential Sources of Contamination



Stage 1 and 2 - Desktop Site Contamination, Hydrogeological and Geotechnical Assessment Growth Areas Authority

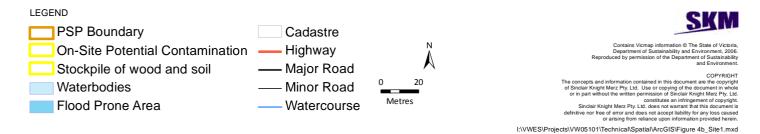
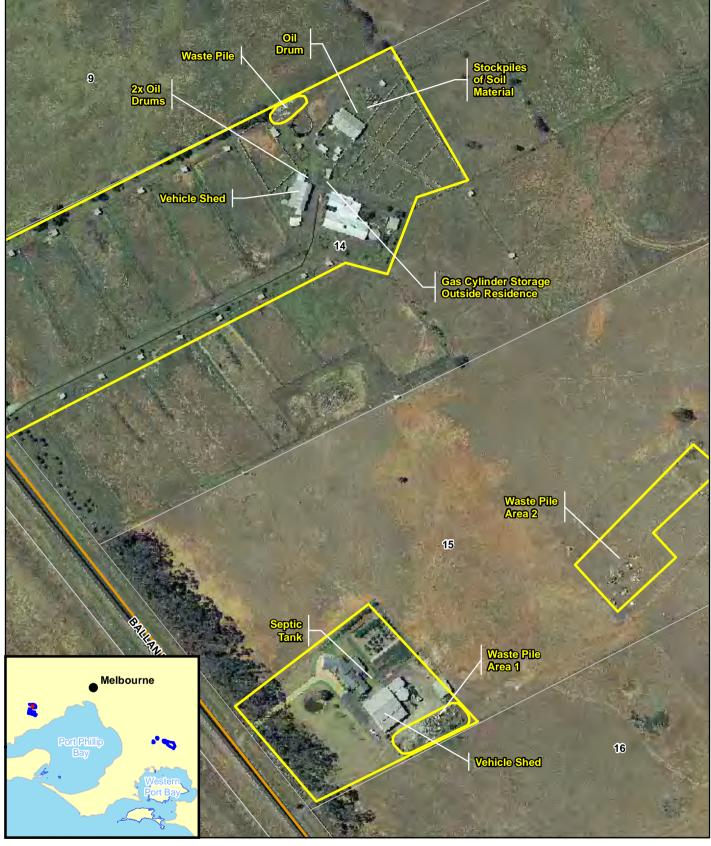


Figure 4b - PSP 40 Potential Sources of Contamination



Stage 1 and 2 - Desktop Site Contamination, Hydrogeological and Geotechnical Assessment Growth Areas Authority

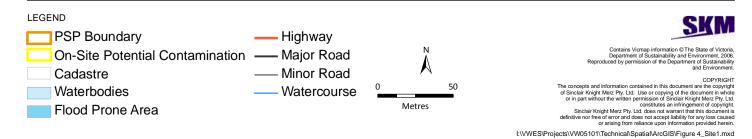


Figure 4c - PSP 40 Potential Sources of Contamination



Stage 1 and 2 - Desktop Site Contamination, Hydrogeological and Geotechnical Assessment Growth Areas Authority

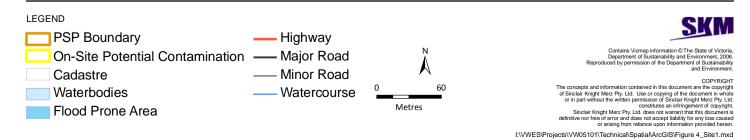


Figure 4d - PSP 40 Potential Sources of Contamination



Stage 1 and 2 - Desktop Site Contamination, Hydrogeological and Geotechnical Assessment Growth Areas Authority

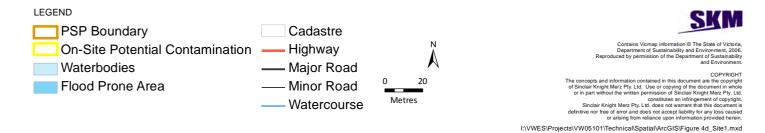
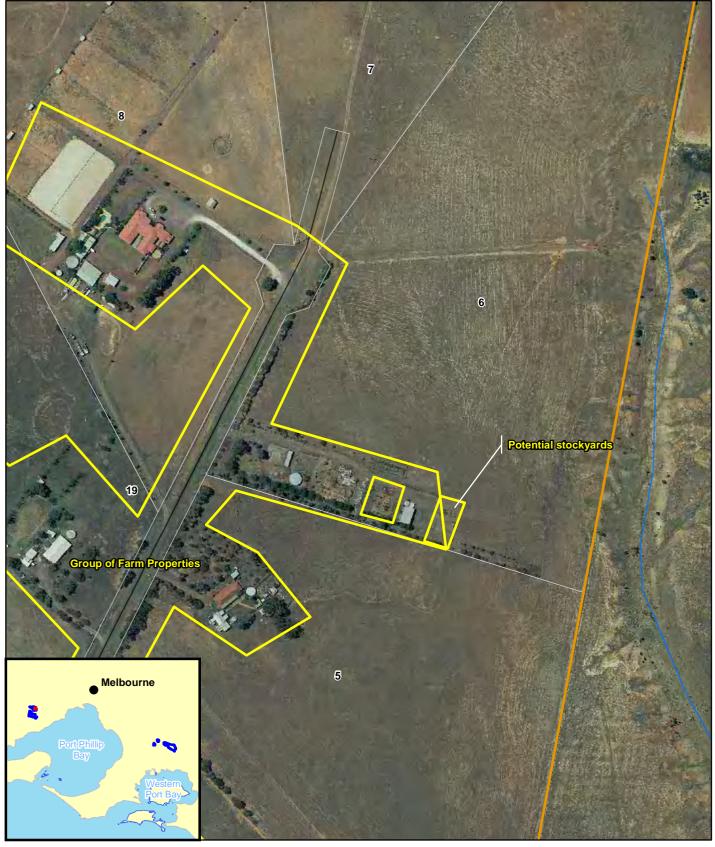


Figure 4e - PSP 40 Potential Sources of Contamination



Stage 1 and 2 - Desktop Site Contamination, Hydrogeological and Geotechnical Assessment Growth Areas Authority

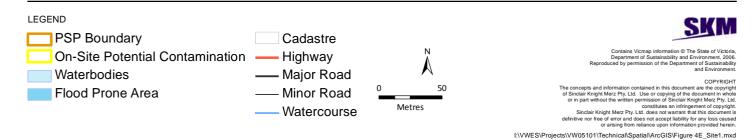
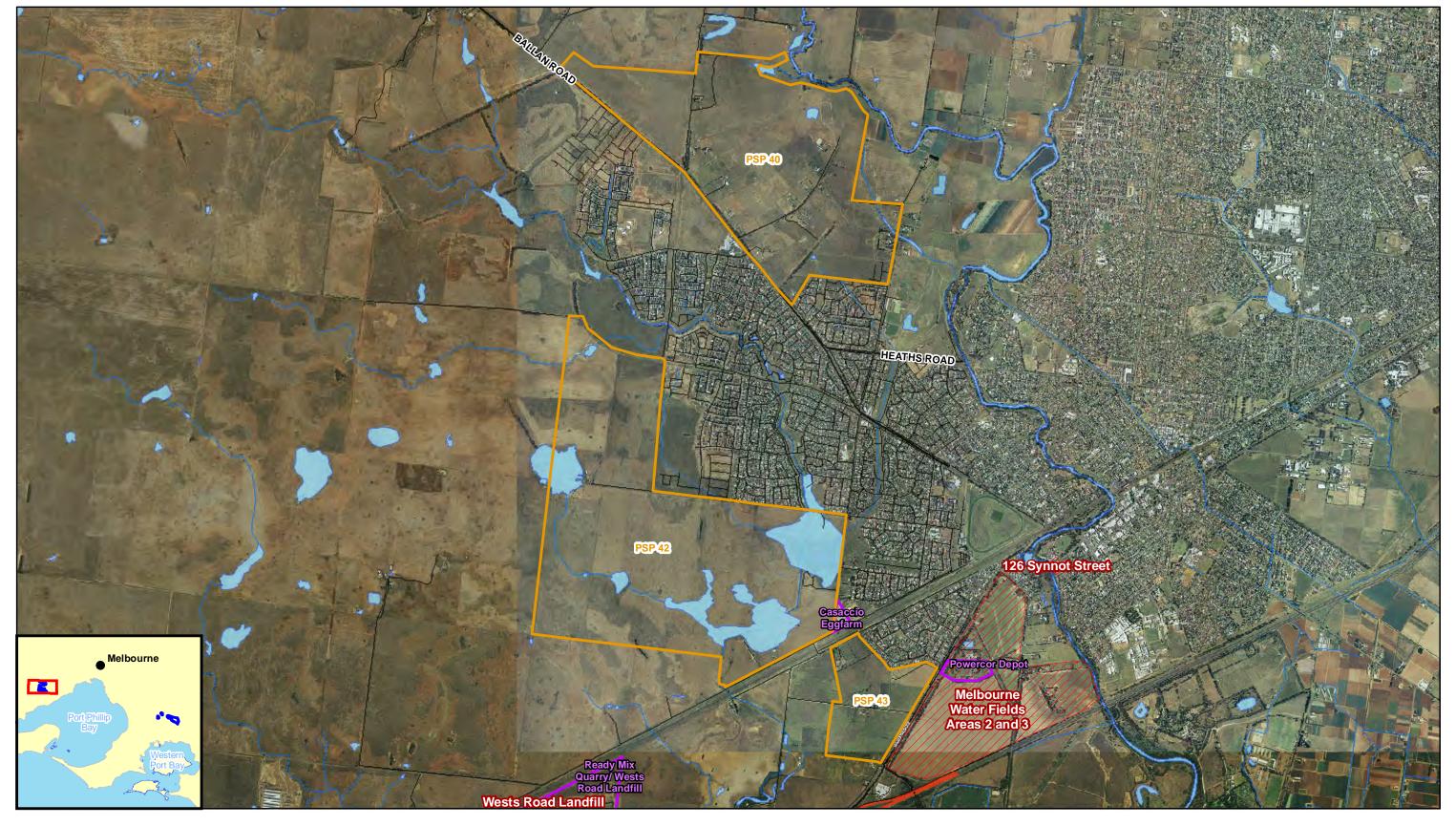


Figure 5 - PSP 43, PSP 42 and PSP 40 Potential Sources of Offsite Contamination



Stage 1 - Desktop Site Contamination, Hydrogeological and Geotechnical Assessment Growth Areas Authority





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Appendix A. SEPP Information



A.1 Land SEPP

A.1.1 Land Use Categories

The following land use categories are defined in Clause 9(1) of the Land SEPP:

- > "Sensitive uses: consisting of land used for residential use, a child care centre, pre-school, or primary school. A sensitive use may occur in an area of high density)where development makes maximum use of available land space and there is minimal access to soil) or in Other low density areas (where there is generally substantial access to soil)";
- > "Agricultural: consisting of rural areas involved in agricultural or horticultural practices"
- > "Parks and Gardens: consisting of parks and forested area as defined in any Victorian or Commonwealth legislation or subordinate legislation, or any regions designated by the Authority or Department of Natural Resources and Environment"
- > "Recreation / Open Space: consisting of general open space and public recreation areas";
- > "Commercial: consisting of a range of commercial and business activities"; and
- > "Industrial: consisting of utilities and a range of industrial activities".

We understand that the end use of the site is yet to be determined and may comprise one or more of the above land uses.

A.1.2 Beneficial Uses of Land to be Protected

The Land SEPP (2002) states that the following beneficial uses must be protected for the following land uses:

Table A11.1: Beneficial Uses of Land

Land Use/ Beneficial Use	Parks & Reserves	Agricultural	Sensitive Use High Density Other		Recreation / Open Space	Commercial	Industrial
Maintenance of Ecosystems							
Natural Ecosystems	✓						
Modified Ecosystems	✓	✓		✓	✓		
Highly Modified Ecosystems		✓	✓	√	✓	✓	✓
Human Health	✓	✓	✓	✓	✓	✓	✓
Buildings and Structures	✓	✓	✓	✓	✓	✓	✓
Aesthetics	✓		✓	✓	✓	✓	
Production of food, flora & fibre	√	~		√			



A.2 Groundwater SEPP

A.2.1 Beneficial Uses of Groundwater to be Protected

Table A11.2: Beneficial Uses of Groundwater

	Segment (TDS)					
Segment / Beneficial Use	Segment A1 (0- 500 mg//L)	Segment A2 (501- 1000 mg//L)	Segment B (1001- 3500 mg//L)	Segment C (3501-13000 mg/L)	Segment D (> 13,000 mg/L)	
Maintenance of Ecosystems	✓	✓	✓	√	✓	
Potable Water Supply						
a) Desirable	✓					
b) Acceptable		✓				
Potable Mineral Water Supply	√	√	√			
Agricultural, parks & gardens	✓	✓	✓			
Stock Watering	✓	✓	✓	√		
Industrial Water Use	✓	✓	✓	✓	✓	
Primary Contact Recreation	√	✓	✓	√		
Buildings and Structures	√	✓	√	√	√	



Appendix B. Certificate of Title Information

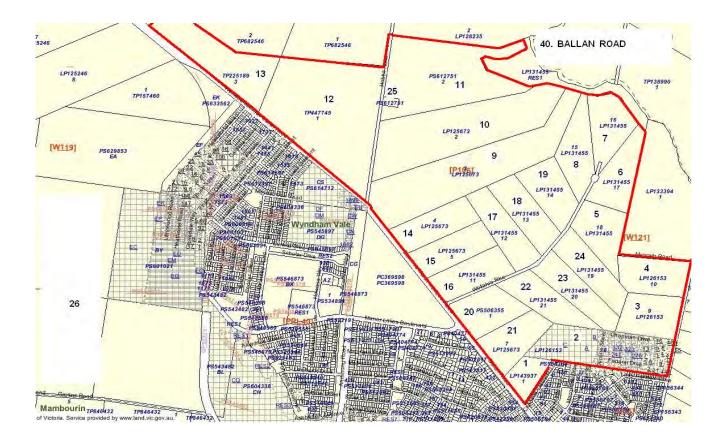
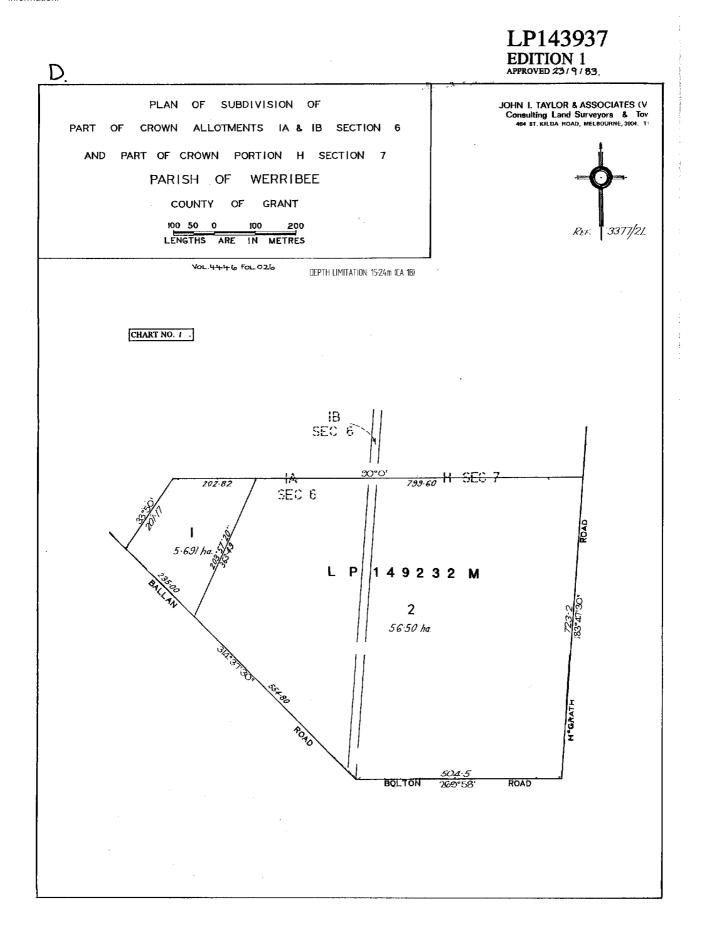


Table B1. Current Titles for PSP Area 40 – Ballan Road, Wyndham Vale, Victoria.

Parcel		Certificate of T	itle Information	
No.	Address	Volume/Folio	Lot/Plan	- Owner
1	340-376 Ballan Road Wyndham Vale 3024	9530/273	1/LP143937	James Joseph Bonello & Carmen Bonello
2	445-479 McGrath Road Wyndham Vale	9464/477	8/LP126153	Transurban Developments (Aust) Pty Ltd
3	481-523 McGrath Road Wyndham Vale	9464/478	9/LP126153	Constantino Ballan, Mario Ballan & Luigi Ballan
4	525-559 McGrath Road Wyndham Vale	9464/479	10/LP126153	Gwenith Alice Rowe
5	Wollahra Rise Wyndham Vale 3024	9569/127	18/LP131455	Robert William Warwick & Joan Elaine Warwick
6	Wollahra Rise Wyndham Vale 3024	9464/470	17/LP131455	Giovanni Salamone & Dominica Salamone
7	Wollahra Rise Wyndham Vale 3024	9464/469	16/LP131455	Constantino Ballan, Mario Joseph Ballan & Luigino Anthony Ballan
8	Wollahra Rise Wyndham Vale 3024	9464/468	15/LP131455	Brett Anthony Copley & Dianna Louise Copley

Parcel		Certificate of T	itle Information	0	
No.	Address	Volume/Folio Lot/Plan		- Owner	
9	Hobbs Road Wyndham Vale	9317/265	3/LP125673	Charlie Grima & Carmen Grima	
10	40 Hobbs Road Wyndham Vale	9317/264	2/LP125673	Charlie Grima & Carmen Grima	
11	Hobbs Road Wyndham Vale	11194/801	2/PS612751	Angelina Velinos	
12	Ballan Road Wyndham Vale 3024	7649/106	1/TP447745	Lotus Oaks Pty Ltd	
13	Ballan Road Wyndham Vale 3024	11085/720	3/TP225189	Lotus Oaks Pty Ltd	
14	504-530 Ballan Road Wyndham Vale	9317/266	4/LP125673	Total Person Pty Ltd	
15	468-502 Ballan Road Wyndham Vale	9317/267	5/LP125673	James Grima & Lillian Grima	
16	Ballan Road Wyndham Vale 3024	9464/464	11/LP131455	Palmo Peter Samartino & Elizabeth Ann Sammartino	
17	Wollahra Rise Wyndham Vale 3024	9464/465	12/LP131455	Graham Brian Elliot & Susan Ann Elliot	
18	Wollahra Rise Wyndham Vale 3024	9464/466	13/LP131455	Fortune Developments Pty Ltd	
19	Wollahra Rise Wyndham Vale 3024	9464/467	14/LP131455	Anita Gayle Peatling & Frank Vella	
20	418-438 Ballan Road Wyndham	10731/092	1/PS506355	Wyndham Vale Christian Centre Inc.	
21	378-416 Ballan Road Wyndham Vale	9317/269	7/LP125673	Penbury Downs Pty Ltd	
22	Wollahra Rise Wyndham Vale 3024	10488/902	21/LP131455	Toorak Developments (Vic) Pty Ltd	
23	Wollahra Rise Wyndham Vale 3024	9464/473	20/LP131455	Malake & Ali Holdings Pty Ltd	
24	Wollahra Rise Wyndham Vale 3024	9464/472	19/LP131455	Forrest Creek Developments Pty Ltd	
25	Hobbs Road Wyndham Vale	11194/800	1/PS612751	Angelina Velinos	

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Certificate type: titles Matter: 40_1

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09530 FOLIO 273

Security no : 124033791109M Produced 20/05/2010 01:51 pm

LAND DESCRIPTION

Lot 1 on Plan of Subdivision 143937. PARENT TITLE Volume 04446 Folio 026 Created by instrument LP143937 20/10/1983

REGISTERED PROPRIETOR

Estate Fee Simple Joint Proprietors

nt Proprietors

JAMES JOSEPH BONELLO

CARMEN BONELLO both of 24 ROBERT ST. SPOTSWOOD

K809883A 21/03/1984

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AG275995L 05/01/2009

AUSTRALIA AND NEW ZEALAND BANKING GROUP LTD

CAVEAT AH078299X 04/03/2010

Caveator

BENNI ARONI

Capacity PURCHASER/FEE SIMPLE

Lodged by

COLMAN LEGAL PTY. LTD.

Notices to

COLMAN LEGAL PTY LTD of 81 CITY ROAD SOUTHBANK VIC 3006

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP143937 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NUMBER

-----END OF REGISTER SEARCH STATEMENT-----

STATUS

DATE

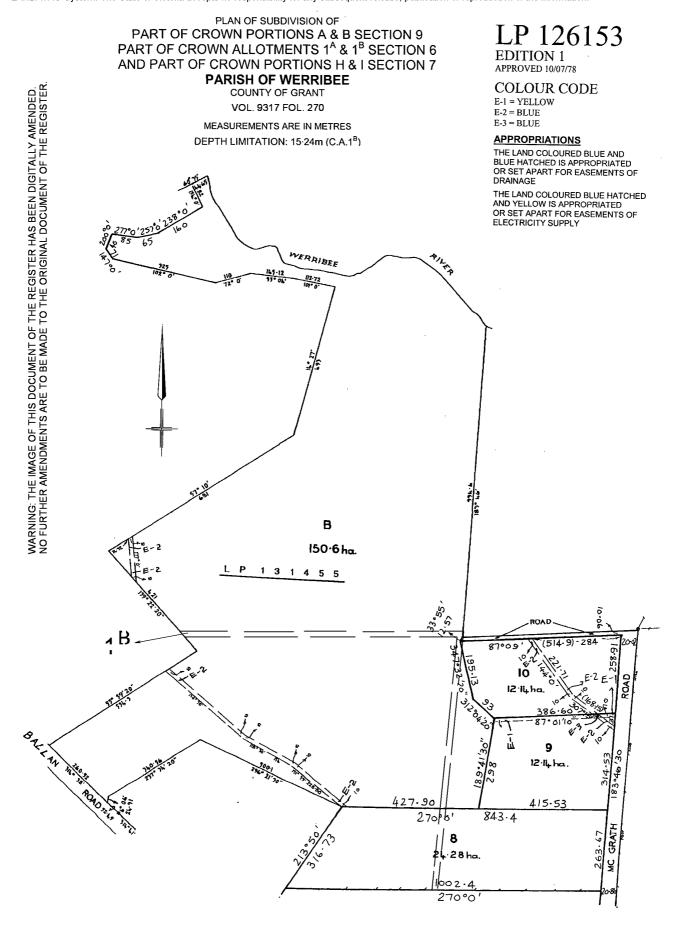
Additional information: (not part of the Register Search Statement)

Street Address: 340-376 BALLAN ROAD WYNDHAM VALE VIC 3024

 $Doc\ id: LP126153 \quad Matter: PSIP40 \quad Search\ generated\ on\ 20/05/2010\ at\ 13:54 \quad Page\ 1\ of\ 1$

Delivered by LANDATA®. Land Victoria timestamp 20/05/2010 13:54 Page 1 of 1

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Doc id: 9464/477 Matter: PSIP40 Search generated on 20/05/2010 at 13:53

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09464 FOLIO 477

Security no : 124033791139E

Produced 20/05/2010 01:53 pm

LAND DESCRIPTION

Lot 8 on Plan of Subdivision 126153. PARENT TITLE Volume 09317 Folio 270 Created by instrument LP126153 04/05/1982

REGISTERED PROPRIETOR

Estate Fee Simple

Sole Proprietor

TRANSURBAN DEVELOPMENTS (AUST) PTY LTD of SUITE 1 LEVEL 2 17 BARRY DRIVE CANBERRA ACT 2600

AG936635L 21/12/2009

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AG936636J 21/12/2009

ST. GEORGE BANK LTD

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DIAGRAM LOCATION

SEE LP126153 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

-----END OF REGISTER SEARCH STATEMENT-----

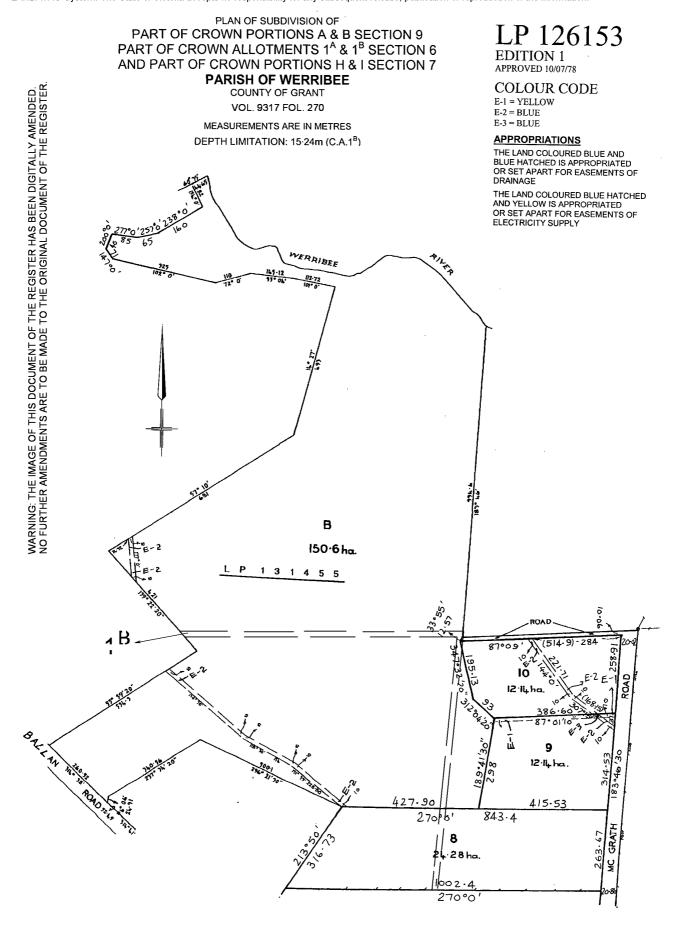
Additional information: (not part of the Register Search Statement)

Street Address: 445-479 MCGRATH ROAD WYNDHAM VALE VIC 3024

 $Doc\ id: LP126153 \quad Matter: PSIP40 \quad Search\ generated\ on\ 20/05/2010\ at\ 13:54 \quad Page\ 1\ of\ 1$

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Doc id: 9464/478 Matter: PSIP40 Search generated on 20/05/2010 at 13:53

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09464 FOLIO 478

Security no : 124033791141B Produced 20/05/2010 01:53 pm

LAND DESCRIPTION

Lot 9 on Plan of Subdivision 126153.

PARENT TITLE Volume 09317 Folio 270

Created by instrument LP126153 04/05/1982

REGISTERED PROPRIETOR

Estate Fee Simple

TENANTS IN COMMON

As to 1 of a total of 3 equal undivided shares

Sole Proprietor

CONSTANTINO BALLAN of 56 PRINCES HIGHWAY WERRIBEE

As to 1 of a total of 3 equal undivided shares

Sole Proprietor

MARIO BALLAN of 56 PRINCES HIGHWAY WERRIBEE As to 1 of a total of 3 equal undivided shares Sole Proprietor

LUIGI BALLAN of 56 PRINCES HIGHWAY WERRIBEE

H713002 08/10/1979

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE P169669R 04/05/1989

COMMONWEALTH BANK OF AUSTRALIA

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP126153 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

-----END OF REGISTER SEARCH STATEMENT-----

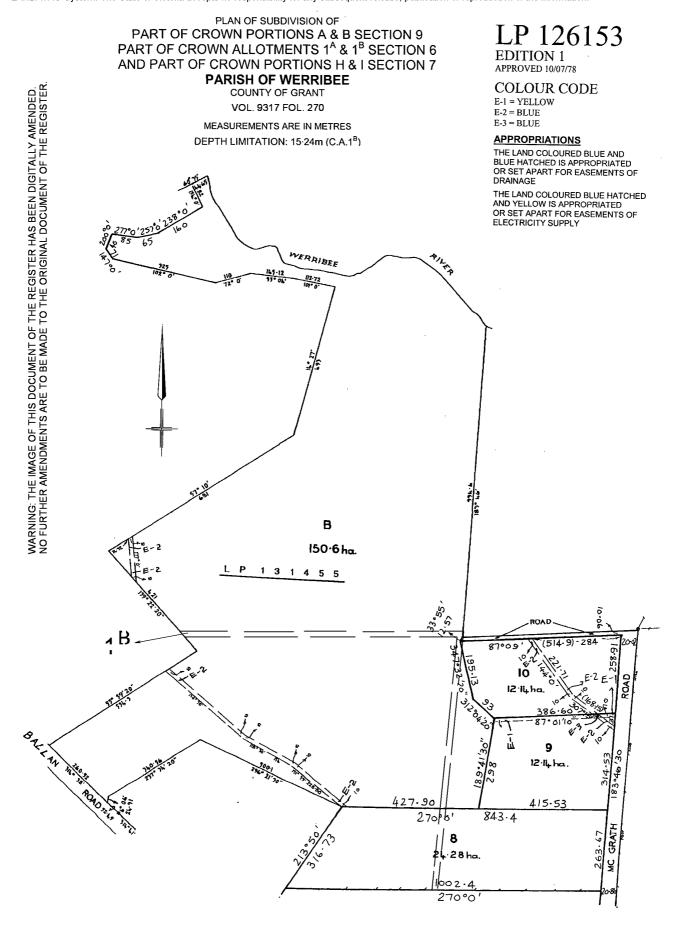
Additional information: (not part of the Register Search Statement)

Street Address: 481-523 MCGRATH ROAD WYNDHAM VALE VIC 3024

 $Doc\ id: LP126153 \quad Matter: PSIP40 \quad Search\ generated\ on\ 20/05/2010\ at\ 13:54 \quad Page\ 1\ of\ 1$

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09464 FOLIO 479

Security no : 124033791143A Produced 20/05/2010 01:53 pm

LAND DESCRIPTION

Lot 10 on Plan of Subdivision 126153. PARENT TITLE Volume 09317 Folio 270 Created by instrument LP126153 04/05/1982

REGISTERED PROPRIETOR

Estate Fee Simple Sole Proprietor

GWENETH ALICE ROWE of 525 MCGRATH RD NORTH WERRIBEE 3030

T699995U 26/05/1995

ENCUMBRANCES, CAVEATS AND NOTICES

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP126153 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: 525-559 MCGRATH ROAD WYNDHAM VALE VIC 3024

Doc id: 9569/127 Matter: PSIP40 Search generated on 20/05/2010 at 13:59

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09569 FOLIO 127

Security no : 124033791284W Produced 20/05/2010 01:59 pm

LAND DESCRIPTION

Lot 18 on Plan of Subdivision 131455.

PARENT TITLE Volume 09464 Folio 471

Created by instrument L197610W 09/08/1984

REGISTERED PROPRIETOR

Estate Fee Simple Joint Proprietors

ROBERT WILLIAM WARWICK

JOAN ELAINE WARWICK both of 65 TYRONE STREET WERRIBEE

L197610W 09/08/1984

ENCUMBRANCES, CAVEATS AND NOTICES

CAVEAT **AE702350C** 01/11/2006

Caveator

MALAKIE AND ALI HOLDINGS PTY LTD

Capacity PURCHASER/FEE SIMPLE

Lodged by

PEARSONS BARRISTERS & SOLICITORS

Notices to

PEARSONS of 794 PASCOE VALE ROAD GLENROY VIC 3046

CAVEAT AH171299D 20/04/2010

Caveator

DONALD JAMES ERSKINE

BARBARA MARY ERSKINE

Capacity SEE CAVEAT

Lodged by

PROFESSIONAL LEGAL GROUP

Notices to

PROFESSIONAL LEGAL GROUP of 1 GUNYAH DRIVE TRENTHAM VIC 3458

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP131455 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

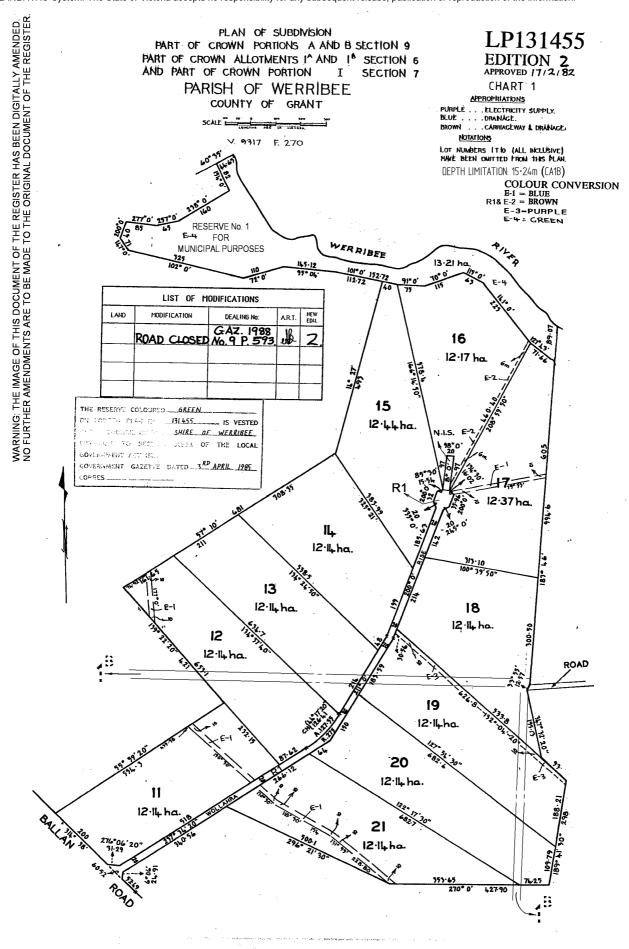
NUMBER STATUS DATE

AH171299D CAVEAT Registered 20/04/2010

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: WOLLAHRA RISE WYNDHAM VALE VIC 3024



Doc id: 9464/470 Matter: PSIP40 Search generated on 20/05/2010 at 13:59

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09464 FOLIO 470

Security no : 124033791278D Produced 20/05/2010 01:59 pm

LAND DESCRIPTION

Lot 17 on Plan of Subdivision 131455.

PARENT TITLE Volume 09317 Folio 270

Created by instrument LP131455 04/05/1982

REGISTERED PROPRIETOR

Estate Fee Simple

Joint Proprietors

GIOVANNI SALAMONE

DOMINICA SALAMONE both of 1 SCOTSBURN GROVE WERRIBEE

K346678 27/04/1983

ENCUMBRANCES, CAVEATS AND NOTICES

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP131455 FOR FURTHER DETAILS AND BOUNDARIES

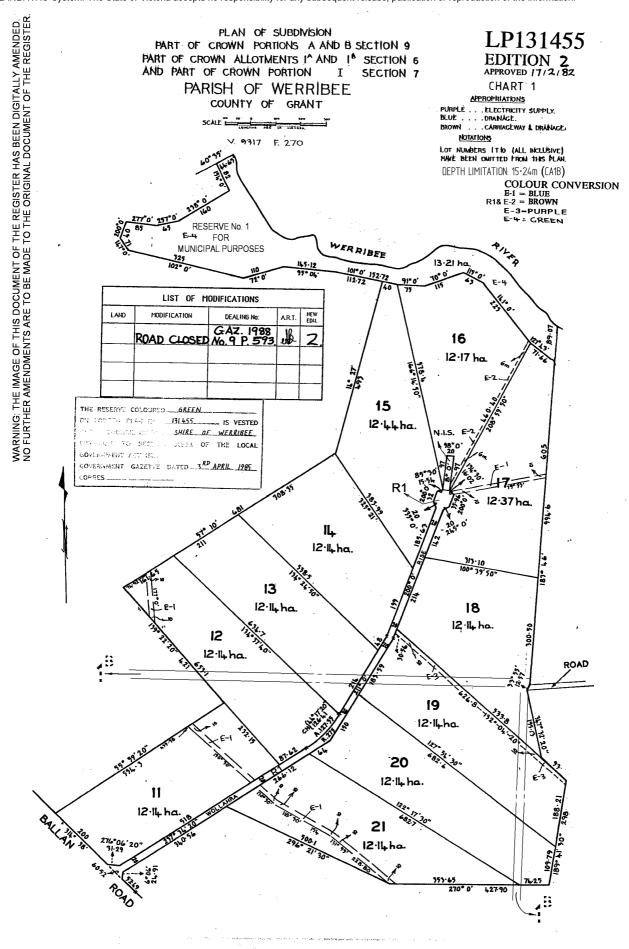
ACTIVITY IN THE LAST 125 DAYS

NIL

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: WOLLAHRA RISE WYNDHAM VALE VIC 3024



Doc id: 9464/469 Matter: PSIP40 Search generated on 20/05/2010 at 13:58

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09464 FOLIO 469

Security no : 124033791270M Produced 20/05/2010 01:58 pm

LAND DESCRIPTION

Lot 16 on Plan of Subdivision 131455. PARENT TITLE Volume 09317 Folio 270 Created by instrument LP131455 04/05/1982

REGISTERED PROPRIETOR

Estate Fee Simple

TENANTS IN COMMON

As to 1 of a total of 3 equal undivided shares

Sole Proprietor

CONSTANTINO BALLAN of 56 PRINCES HIGHWAY WERRIBEE

As to 1 of a total of 3 equal undivided shares

Sole Proprietor

MARIO JOSEPH BALLAN of 56 PRINCES HIGHWAY WERRIBEE

As to 1 of a total of 3 equal undivided shares

Sole Proprietor

LUIGINO ANTHONY BALLAN of 56 PRINCES HIGHWAY WERRIBEE

K019928 23/07/1982

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AF687993B 01/03/2008

COMMONWEALTH BANK OF AUSTRALIA

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP131455 FOR FURTHER DETAILS AND BOUNDARIES

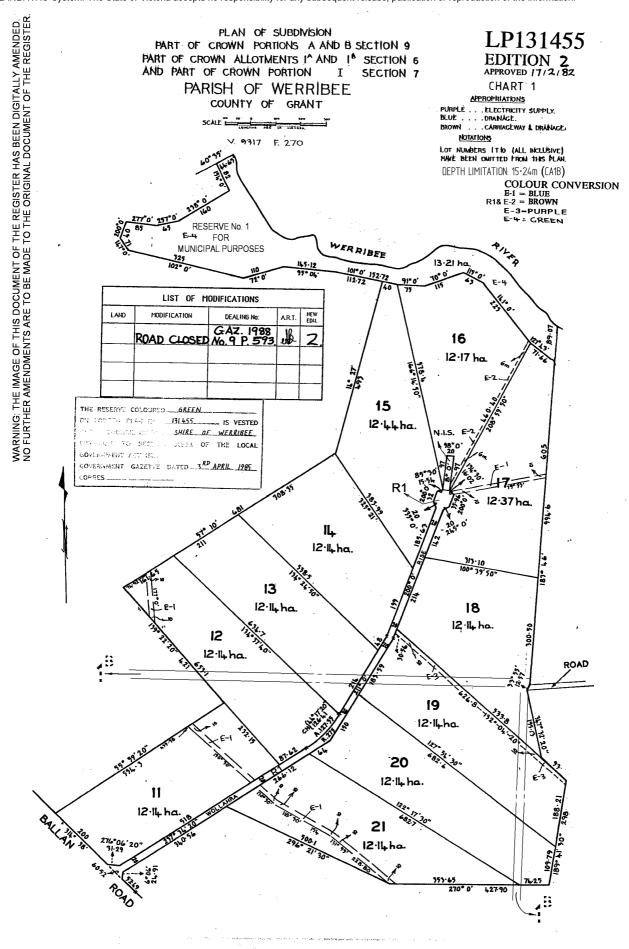
ACTIVITY IN THE LAST 125 DAYS

NIL

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: WOLLAHRA RISE WYNDHAM VALE VIC 3024



Doc id: 9464/468 Matter: PSIP40 Search generated on 20/05/2010 at 13:58

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09464 FOLIO 468

Security no : 124033791260X Produced 20/05/2010 01:58 pm

LAND DESCRIPTION

Lot 15 on Plan of Subdivision 131455. PARENT TITLE Volume 09317 Folio 270 Created by instrument LP131455 04/05/1982

REGISTERED PROPRIETOR

Estate Fee Simple Joint Proprietors

BRETT ANTHONY COPLEY

DREIT ANTHONY COFEE

DIANNA LOUISE COPLEY both of WOLLARAH RISE WERRIBEE 3030

X091986L 12/10/2000

ENCUMBRANCES, CAVEATS AND NOTICES

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP131455 FOR FURTHER DETAILS AND BOUNDARIES

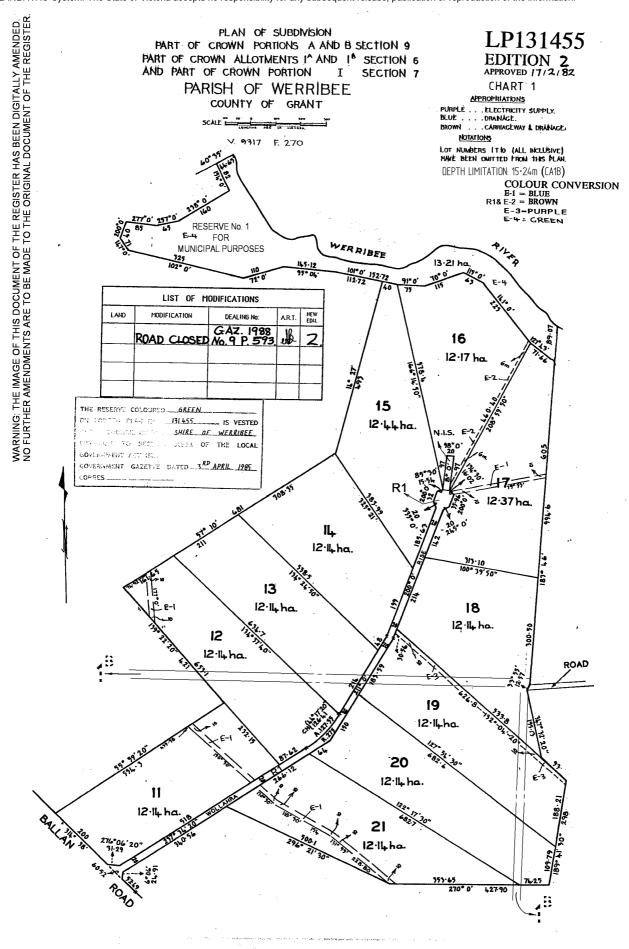
ACTIVITY IN THE LAST 125 DAYS

NIL

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: WOLLAHRA RISE WYNDHAM VALE VIC 3024



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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09317 FOLIO 265

Security no : 124033791314P

Produced 20/05/2010 02:00 pm

LAND DESCRIPTION

Lot 3 on Plan of Subdivision 125673.

PARENT TITLES :

Volume 03491 Folio 090 Volume 03707 Folio 205

Created by instrument LP125673 21/03/1979

REGISTERED PROPRIETOR

Estate Fee Simple

Joint Proprietors

CHARLIE GRIMA

CARMEN GRIMA both of 83 MARION STREET NORTH ALTONA

J389895 20/03/1981

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AF451750W 03/11/2007

CRG NOMINEES PTY LTD

CAVEAT AF338996U 13/09/2007

Caveator

CRG NOMINEES PTY LTD

Capacity PURCHASER/FEE SIMPLE

Lodged by

DEACONS

Notices to

DEACONS of 15 485 BOURKE STREET MELBOURNE VIC 3000

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP125673 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

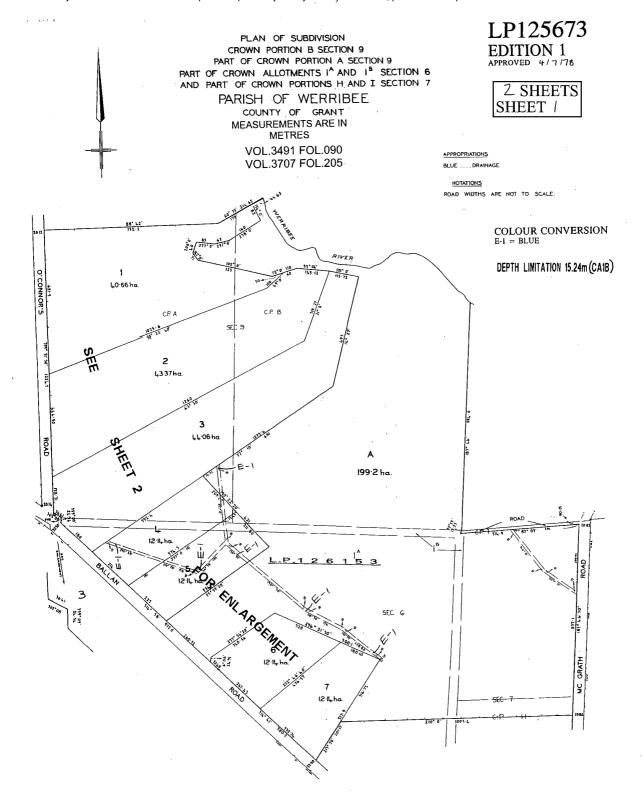
NIL

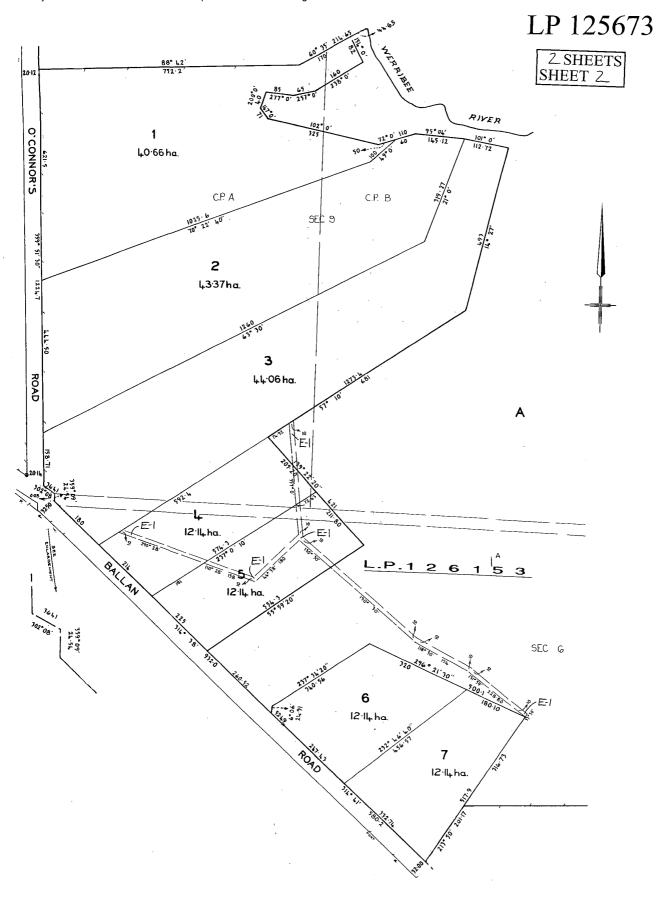
-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: HOBBS ROAD WYNDHAM VALE VIC 3024

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Doc id: 9317/264 Matter: PSIP40 Search generated on 20/05/2010 at 14:00

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09317 FOLIO 264

Security no : 124033791312R Produced 20/05/2010 02:00 pm

LAND DESCRIPTION

Lot 2 on Plan of Subdivision 125673.

PARENT TITLE Volume 03491 Folio 090

Created by instrument LP125673 21/03/1979

REGISTERED PROPRIETOR

Estate Fee Simple Joint Proprietors

CHARLIE GRIMA

CARMEN GRIMA both of 83 MARION ST NORTH ALTONA 3025

V065278N 29/10/1997

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AF451750W 03/11/2007

CRG NOMINEES PTY LTD

CAVEAT AF339015G 13/09/2007

Caveator

CRG NOMINEES PTY LTD

Capacity PURCHASER/FEE SIMPLE

Lodged by

DEACONS

Notices to

DEACONS of 15 485 BOURKE STREET MELBOURNE VIC 3000

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP125673 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

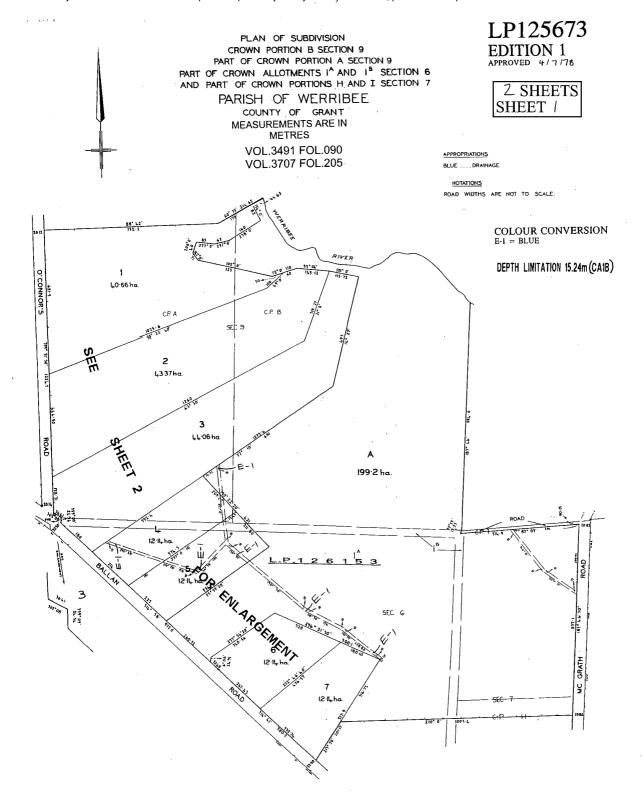
NIL

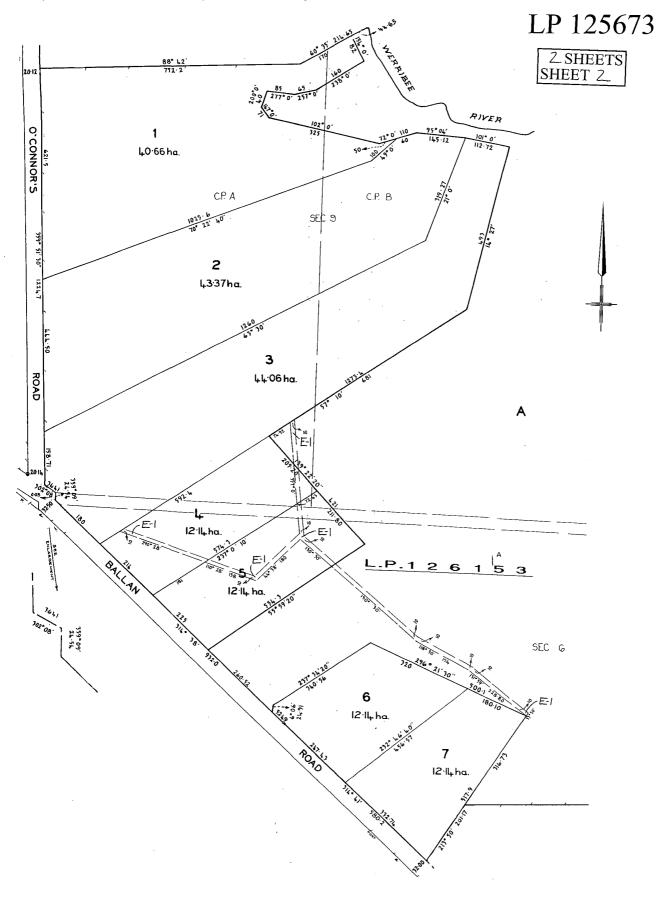
-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: 40 HOBBS ROAD WYNDHAM VALE VIC 3024

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Doc id: 11194/801 Matter: PSIP40 Search generated on 20/05/2010 at 14:03

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 11194 FOLIO 801

Security no : 124033791371B Produced 20/05/2010 02:03 pm

LAND DESCRIPTION

Lot 2 on Plan of Subdivision 612751Q. PARENT TITLE Volume 09317 Folio 263

Created by instrument **PS612751Q** 06/04/2010

REGISTERED PROPRIETOR

Estate Fee Simple

Sole Proprietor

ANGELINA VELINOS of 70 HOBBS ROAD WYNDHAM VALE VIC 3024

PS612751Q 06/04/2010

ENCUMBRANCES, CAVEATS AND NOTICES

CAVEAT AH157963B 14/04/2010

Caveator

MENN DEVELOPMENT PTY LTD

Capacity PURCHASER/FEE SIMPLE

Lodged by

FISCHER MCCRAE

Notices to

FISCHER MCCRAE of LEVEL 3 389 LONSDALE STREET MELBOURNE VIC 3000

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan set out under DIAGRAM LOCATION below.

AGREEMENT Section 173 Planning and Environment Act 1987

AH001595C 28/01/2010

DIAGRAM LOCATION

SEE PS612751Q FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NUMBER STATUS DATE

 PS612751Q
 PLAN OF SUBDIVISION
 Registered
 06/04/2010

 AH157963B
 CAVEAT
 Registered
 14/04/2010

------END OF REGISTER SEARCH STATEMENT------

Additional information: (not part of the Register Search Statement)

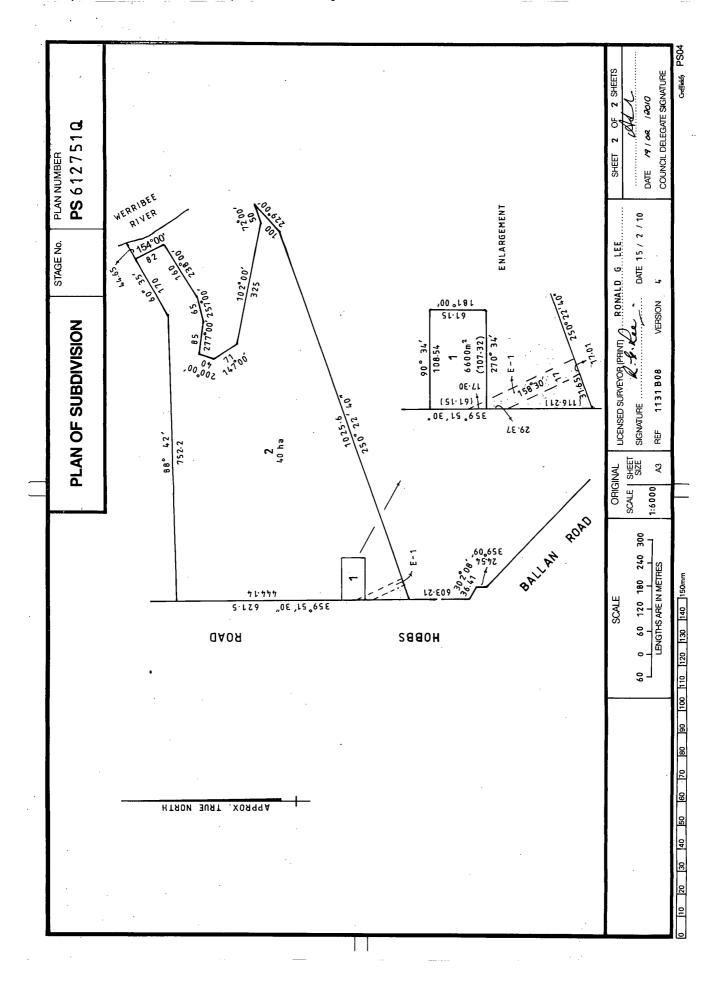
Street Address: HOBBS ROAD WYNDHAM VALE VIC 3024

Doc id: PS612751Q Matter: PSIP40 Search generated on 20/05/2010 at 14:04 Pages 1 - 2 of 2

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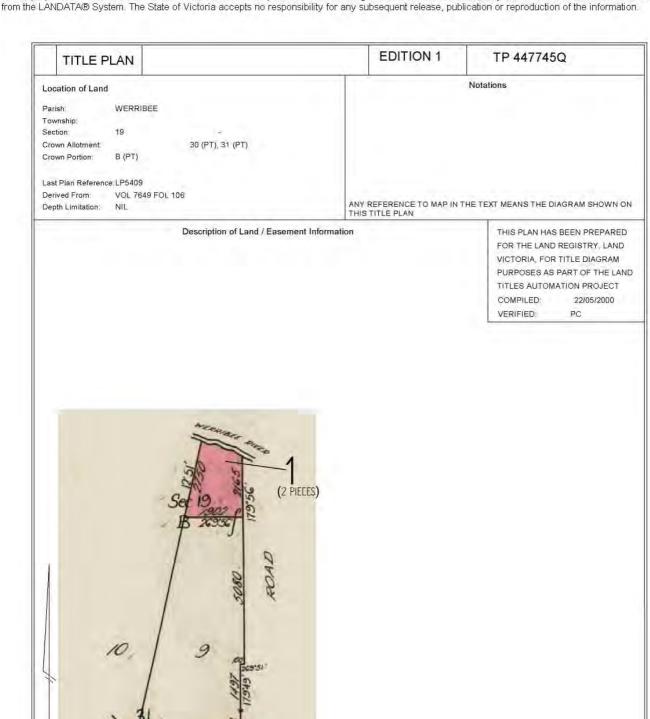
	,							PS612751Q			
	PL	AN OF SU	BDIVIS	ION STAGE I	No.	EDITION	1	PLAN 10/02/2010 \$869.80 PS			
LOCATION OF LAND				COUNCIL CERTIFICATION AND ENDORSEMENT							
PARISH	WERRIB	E E .		COLING	NIABAT	. WANDUAN	CITY 60	Wyp3u12/09			
TOWNS	HIP:				COUNCIL NAME: WYNDHAM CITY COUNCIL REF:いって osus Note 1. This plan is certified under Section 6 of the Subdivision Act 1988.						
SECTIO	N: 9			2. This p	olan is o	ertified under Sect al certification und	ion 11(7) o er Section	of the Subdivision Act 1988. 6. 18/12/2009			
CROWN	ALLOTMENT:			3. This i	This is a statement of compliance issued under Section 21 of the Subdivision Act 1988.						
		PART OF A &	В	OPEN SF	OPEN SPACE (i) A requirement for public open space under Section 18 of the Subdivision Act 1988						
	SE RECORD: YEFERENCES:	VICMAP DIGITA	AL PROPER	. 	has/has not been made. (ii) The requirement has been satisfied.						
VOL	9317 FOL 2	263		, ,	(iii) The requirement is to be satisfied in Stage						
		E/S: LOT 1 I		Coun	Gouncil Delegate Council Seal- Date //						
(At time	of subdivision)	HOBBS ROAD	WYNDHAM	VALE Date	, –	 /					
MGA 94 -AMG: Co-ordinates (of approx centre of land N 5807 100 ZONE: 55 in plan)			: 55 Coun Coun	Re-certified under Section 11(7) of the Subdivision Act 1988. Council Delegate Council Seal Date 19 92 1920							
		ROADS AND/OR									
IDENTIFIE	R	COUNCIL/BODY	//PERSON				NOTATIO	NC			
l,	NIL	\	NIL	STAGING	This ter	is not a staged subdiving permit No.		NO .			
·			11.5	DEPTH UN			· · · · · · · · · · · · · · · · · · ·				
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				SURVEY.	THIS PLA	NN IS/ IS NOT BASED (ON SURVEY				
	THIS SURVEY HAS BEEN CONNECTED TO PERMANENT MARKS No.(s) IN PROCLAIMED SURVEY AREA No.										
EASEMENT INFORM								LTO USE ONLY			
LEGEND A - Appurtenant Easement E - Encumbering B			mbering Easement	R - E	ncumbering Easer	nent (Road	STATEMENT OF COMPLIANCE/				
							EXEMPTION STATEMENT				
Easement Reference	• Pur	pose	Width (Metres)	Origin		Land Benefited/In Fav	our Of	RECEIVED			
E-1	POWERLINE	PURPOSES	SEE DIAG.	OF THE ELECTRICIT			A LTD.	DATE. 10/02/10			
				INDUSTRY ACT 2000				LTO USE ONLY			
								PLAN REGISTERED			
								TIME 11.56 DATE 06/ 04 / 2010			
								DAIE 00/ 04/2010			
								lan R Mcleod			
		·						Assistant Registrar of Titles SHEET 1 OF 2 SHEETS			
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26 CHU	26 CHURCH STREET WERRIBEE 3030 SIGNAT			SIGNATURE	R	Lan S	15/2	· 1			
TEL / FAX 97423786 REF			REF 1131 B:08	\leq	VERSION4	J.	COUNCIL DELEGATE SIGNATURE				
77423700			1				ORIGINAL SHEET SIZE A3				



Doc id: TP447745Q Matter: PSIP40 Search generated on 20/05/2010 at 14:05 Page 1 of 1

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TOTAL AREA = 179A OR 21P

TABLE OF PARCEL **IDENTIFIERS**

WARNING: Where multiple parcels are referred to or shown on this Title Plan this does not imply separately disposable parcels under Section 8A of the Sale of Land Act 1962

PARCEL 1 = LOT 9 (PTS) ON LP5409

LENGTHS ARE IN LINKS

Metres = 0.3048 x Feet Metres = 0.201168 x Links

Sheet 1 of 1 sheets

Doc id: 7649/106 Matter: PSIP40 Search generated on 20/05/2010 at 14:04

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 07649 FOLIO 106

Security no : 124033791393D

Produced 20/05/2010 02:04 pm

LAND DESCRIPTION

Lot 1 on Title Plan 447745Q (formerly known as part of Lot 9 on Plan of Subdivision 005409).

PARENT TITLE Volume 03502 Folio 391 Created by instrument 2408421 05/06/1951

REGISTERED PROPRIETOR

Estate Fee Simple Sole Proprietor

LOTUS OAKS PTY LTD of 54 CHAPEL RD KEYSBOROUGH 3173

V600593F 24/08/1998

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AC550762N 17/12/2003 WESTPAC BANKING CORPORATION

> Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE TP447745Q FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

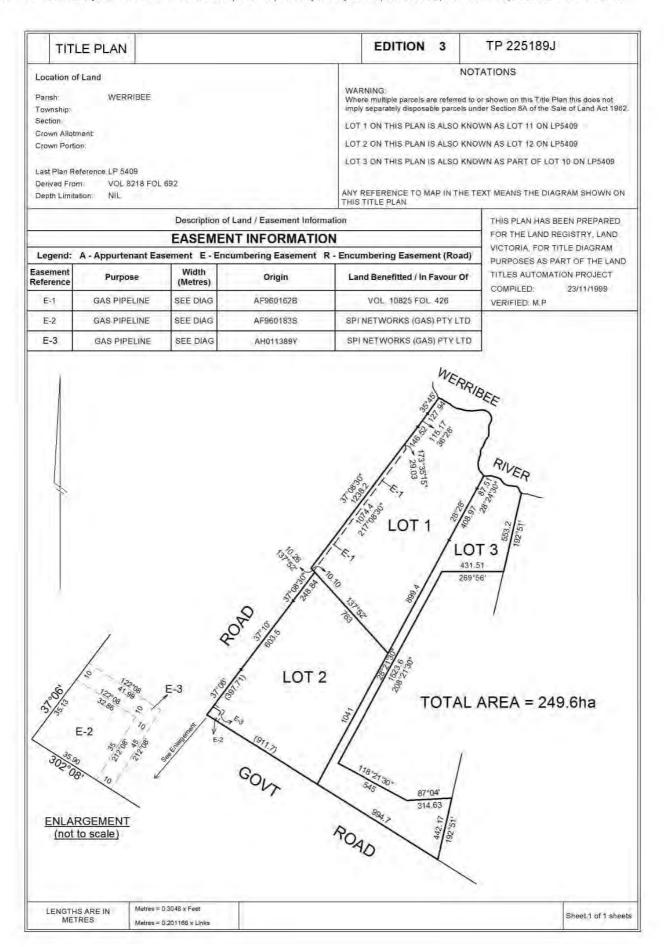
NTT.

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: BALLAN ROAD WYNDHAM VALE VIC 3024

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MODIFICATION TABLE

RECORD OF ALL ADDITIONS OR CHANGES TO THE PLAN

PLAN NUMBER TP225189J

WARNING: THE IMAGE OF THIS DOCUMENT OF THE REGISTER HAS BEEN DIGITALLY AMENDED. NO FURTHER AMENDMENTS ARE TO BE MADE TO THE ORIGINAL DOCUMENT OF THE REGISTER.

AFFECTED LAND/PARCEL	LAND/PARCEL IDENTIFIER CREATED	MODIFICATION	DEALING NUMBER	DATE	EDITION NUMBER	ASSISTANT REGISTRAR OF TITLES
LOT 1	E-1	CREATION OF EASEMENT	AF960162B	10/7/08	2	SN
LOT 2	E-2	CREATION OF EASEMENT	AF960183S	10/7/08	2	SN
LOT 2	E-3	CREATION OF EASEMENT	AH011389Y	02/02/10	3	R.SPEER

Doc id: 11085/720 Matter: PSIP40 Search generated on 20/05/2010 at 14:04

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 11085 FOLIO 720

Security no : 124033791414F

Produced 20/05/2010 02:04 pm

LAND DESCRIPTION

Lots 1,2 and 3 on Title Plan 225189J (formerly known as part of Lot 10 on Plan of Subdivision 005409, Lots 11 and 12 on Plan of Subdivision 005409). PARENT TITLE Volume 08218 Folio 692

Created by instrument AF960162B 10/07/2008

REGISTERED PROPRIETOR

Estate Fee Simple Sole Proprietor

LOTUS OAKS PTY LTD of 54 CHAPEL ROAD KEYSBOROUGH VIC 3173

V600594C 24/08/1998

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AC550762N 17/12/2003 WESTPAC BANKING CORPORATION

COVENANT as to part AF960162B 10/07/2008

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE TP225189J FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NUMBER STATUS DATE AH011389Y CREATION OF EASEMENT Registered 08/02/2010

Doc id: 9317/266 Matter: PSIP40 Search generated on 20/05/2010 at 14:00

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09317 FOLIO 266

Security no : 124033791318K Produced 20/05/2010 02:00 pm

LAND DESCRIPTION

Lot 4 on Plan of Subdivision 125673.

PARENT TITLE Volume 03491 Folio 090

Created by instrument LP125673 21/03/1979

REGISTERED PROPRIETOR

Estate Fee Simple

Sole Proprietor

TOTAL PERSON PTY LTD of LEVEL 1 427 BLACKBURN ROAD MT WAVERLEY VIC 3149 AE065868H 15/12/2005

ENCUMBRANCES, CAVEATS AND NOTICES

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP125673 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

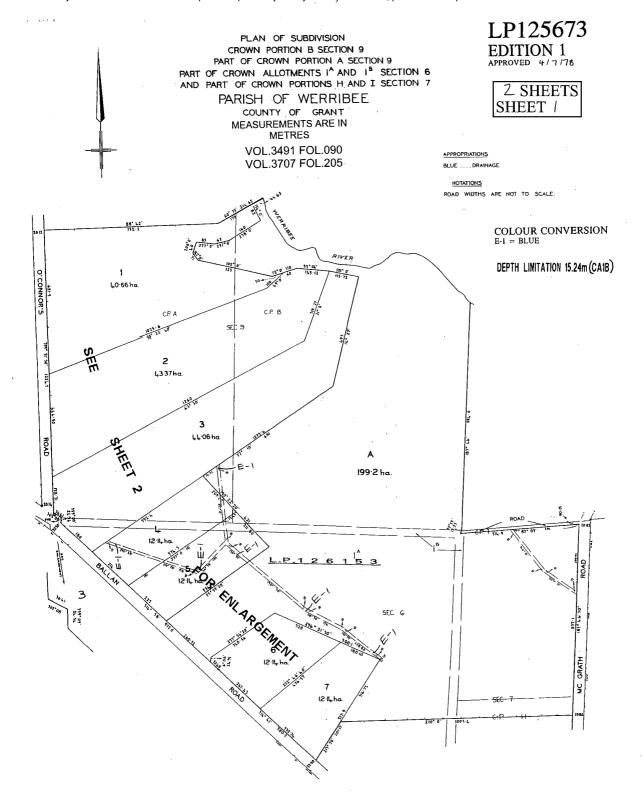
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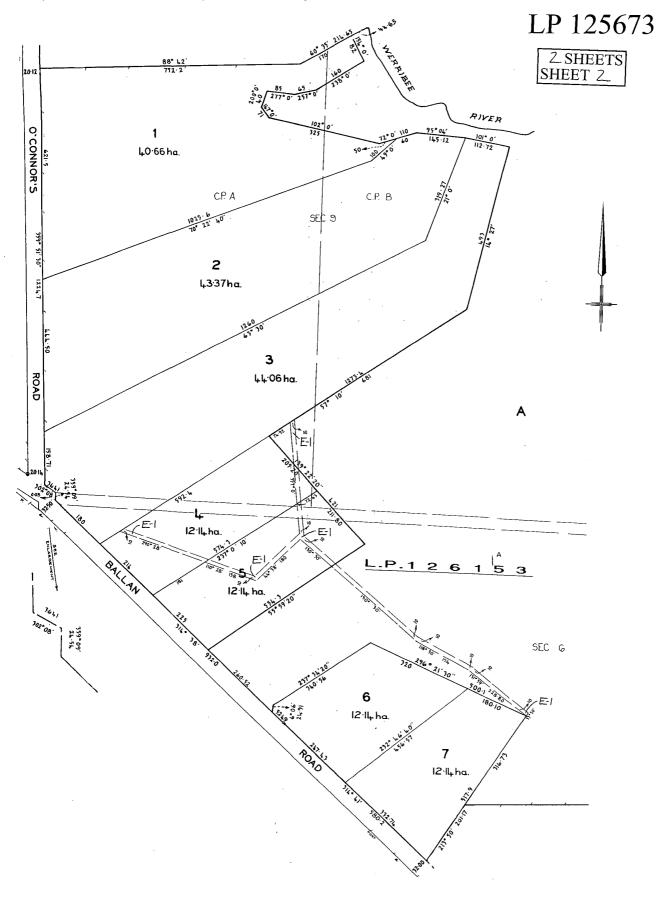
----- STATEMENT-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: 504-530 BALLAN ROAD WYNDHAM VALE VIC 3024

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Doc id: 9317/267 Matter: PSIP40 Search generated on 20/05/2010 at 14:00

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09317 FOLIO 267

Security no : 124033791320H

Produced 20/05/2010 02:00 pm

LAND DESCRIPTION

Lot 5 on Plan of Subdivision 125673.

PARENT TITLES :

Volume 03491 Folio 090 Volume 03707 Folio 205

Created by instrument LP125673 21/03/1979

REGISTERED PROPRIETOR

Estate Fee Simple Joint Proprietors

JAMES GRIMA

LILLIAN GRIMA both of 14 WEEDEN DR WERRIBEE 3030

U805026N 04/06/1997

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AD500505J 16/03/2005

AUSTRALIA AND NEW ZEALAND BANKING GROUP LTD

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP125673 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

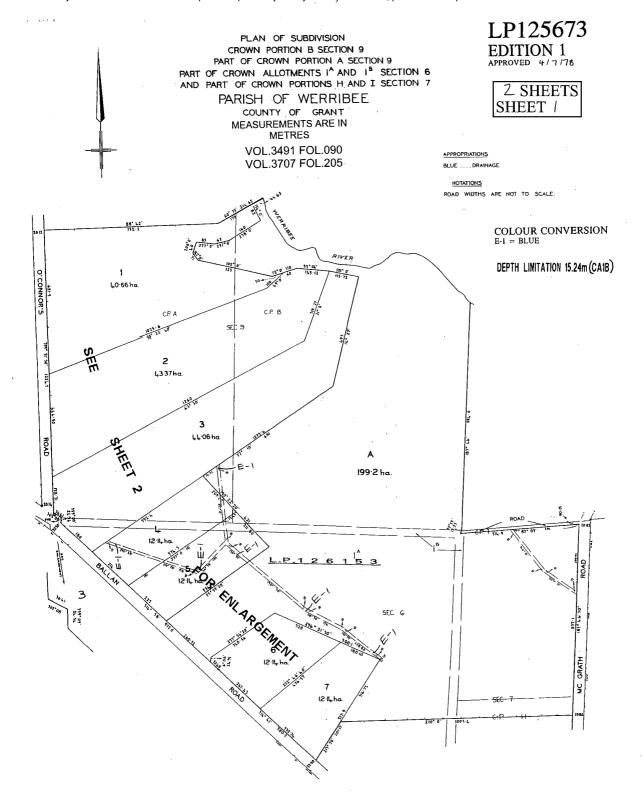
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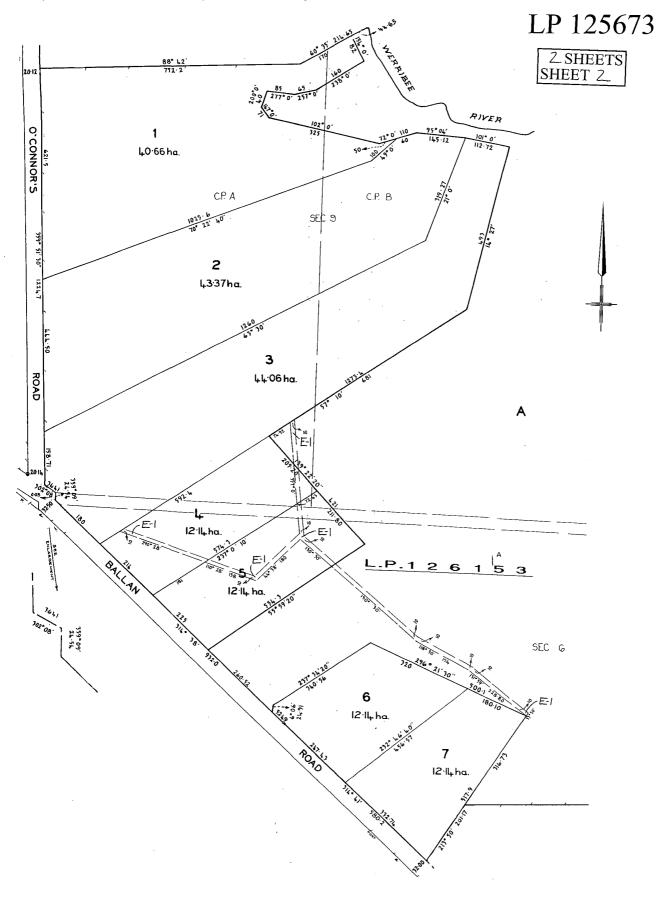
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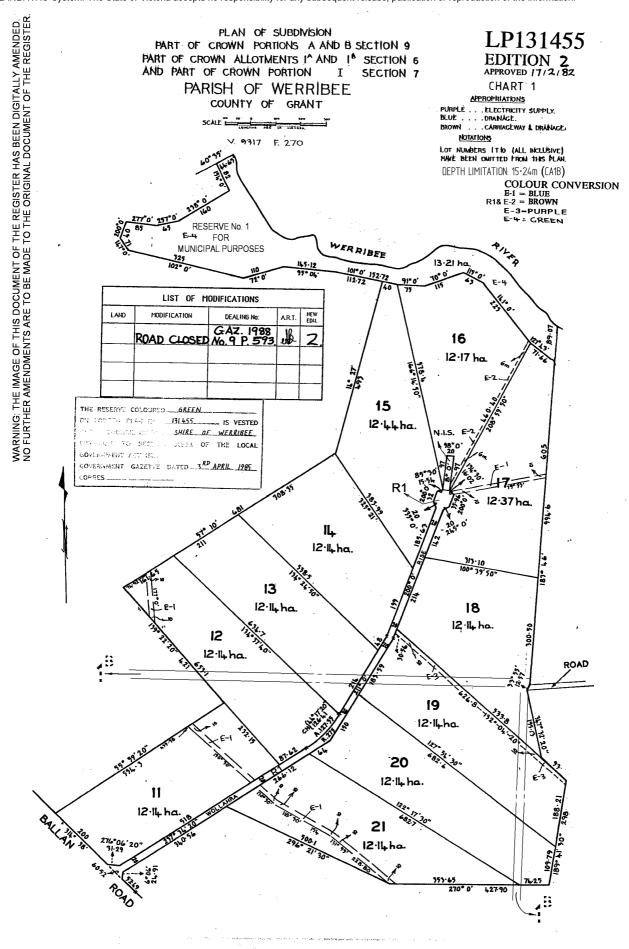
Additional information: (not part of the Register Search Statement)

Street Address: 468-502 BALLAN ROAD WYNDHAM VALE VIC 3024

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Doc id: 9464/464 Matter: PSIP40 Search generated on 20/05/2010 at 13:58

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09464 FOLIO 464

Security no : 124033791244Q Produced 20/05/2010 01:58 pm

LAND DESCRIPTION

Lot 11 on Plan of Subdivision 131455.

PARENT TITLE Volume 09317 Folio 270

Created by instrument LP131455 04/05/1982

REGISTERED PROPRIETOR

Estate Fee Simple

Joint Proprietors

PALMO PETER SAMMARTINO

ELIZABETH ANN SAMMARTINO both of 6 RAINSFORD STREET WERRIBEE

K040094 10/08/1982

ENCUMBRANCES, CAVEATS AND NOTICES

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP131455 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: BALLAN ROAD WYNDHAM VALE VIC 3024

Doc id: 9464/465 Matter: PSIP40 Search generated on 20/05/2010 at 13:58

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09464 FOLIO 465

Security no : 124033791248L

Produced 20/05/2010 01:58 pm

LAND DESCRIPTION

Lot 12 on Plan of Subdivision 131455.

PARENT TITLE Volume 09317 Folio 270

Created by instrument LP131455 04/05/1982

REGISTERED PROPRIETOR

Estate Fee Simple

Joint Proprietors

GRAHAM BRIAN ELLIOTT

SUSAN ANN ELLIOTT both of 6 TORRENS STREET WERRIBEE

K606943 28/10/1983

ENCUMBRANCES, CAVEATS AND NOTICES

CAVEAT AF148574G 22/06/2007

Caveator

MALAKE & ALI HOLDINGS PTY LTD

Capacity PURCHASER/FEE SIMPLE

Lodged by

PEARSONS BARRISTERS & SOLICITORS

Notices to

PEARSONS BARRISTERS & SOLICITORS of 794 PASCOE VALE ROAD GLENROY VIC 3046

CAVEAT AH147430V 09/04/2010

Caveator

DONALD JAMES ERSKINE

BARBARA MARY ERSKINE

Capacity SEE CAVEAT

Lodged by

PROFESSIONAL LEGAL GROUP

Notices to

PROFFESSIONAL LEGAL GROUP of 1 GUNYAH DRIVE TRENTHAM VIC 3458

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DIAGRAM LOCATION

SEE LP131455 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NUMBER STATUS DATE

AH147430V CAVEAT Registered 09/04/2010

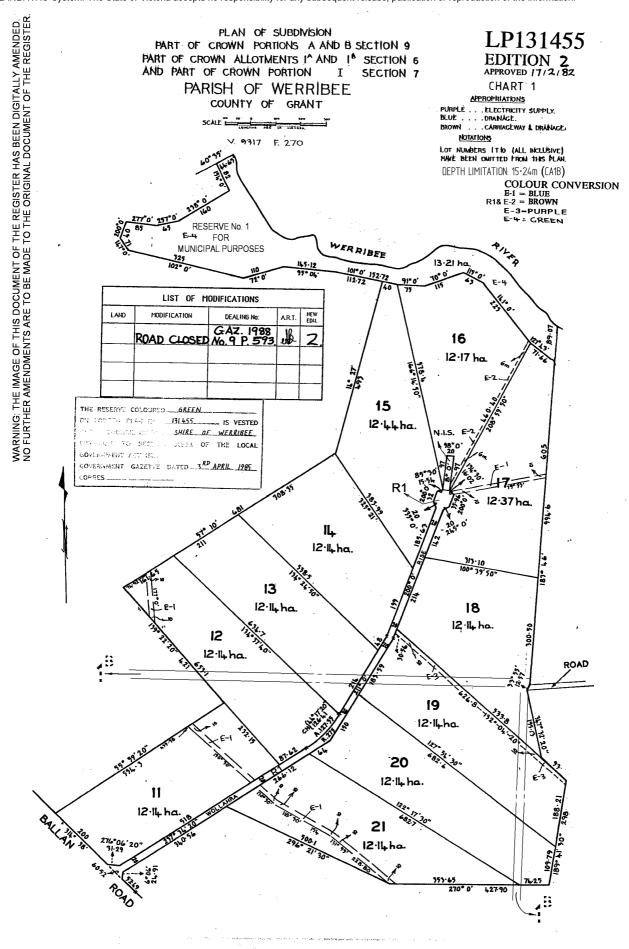
AH186588M CAVEAT Registered 28/04/2010

AH222613U WITHDRAWAL OF CAVEAT Registered 15/05/2010

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: WOLLAHRA RISE WYNDHAM VALE VIC 3024



Doc id: 9464/466 Matter: PSIP40 Search generated on 20/05/2010 at 13:58

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09464 FOLIO 466

Security no: 124033791249K

Produced 20/05/2010 01:58 pm

LAND DESCRIPTION

Lot 13 on Plan of Subdivision 131455.

PARENT TITLE Volume 09317 Folio 270

Created by instrument LP131455 04/05/1982

REGISTERED PROPRIETOR

Estate Fee Simple

Sole Proprietor

FORTUNE DEVELOPMENTS PTY LTD of 493 BURKE ROAD CAMBERWELL VIC 3124 AG594306J 29/06/2009

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AH205780V 07/05/2010 R.M.B.L. INVESTMENTS LTD

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DIAGRAM LOCATION

SEE LP131455 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

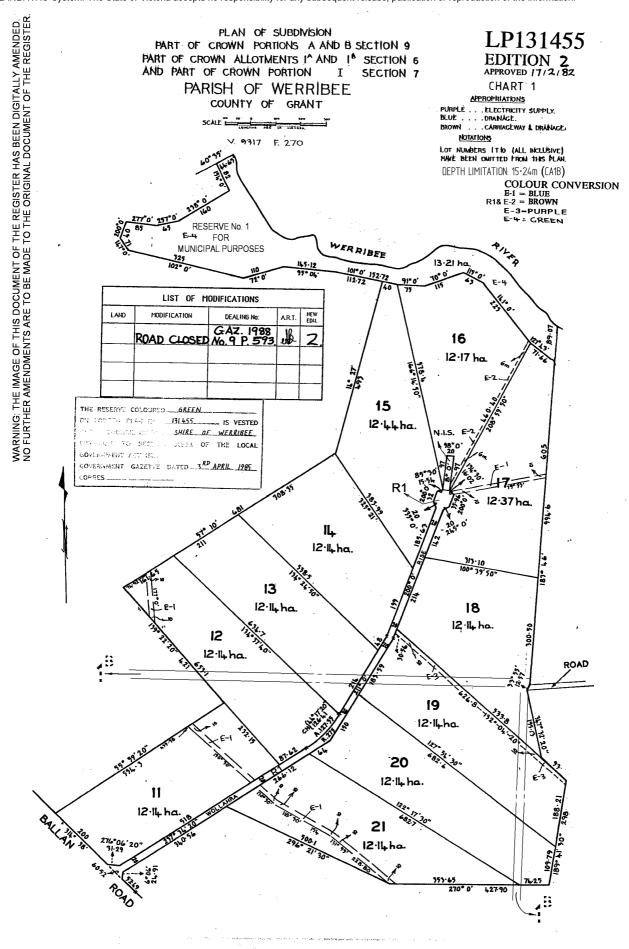
NUMBER STATUS DATE

AH205780V MORTGAGE Registered 07/05/2010

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: WOLLAHRA RISE WYNDHAM VALE VIC 3024



Doc id: 9464/467 Matter: PSIP40 Search generated on 20/05/2010 at 13:58

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09464 FOLIO 467

Security no : 124033791253F

Produced 20/05/2010 01:58 pm

LAND DESCRIPTION

Lot 14 on Plan of Subdivision 131455. PARENT TITLE Volume 09317 Folio 270 Created by instrument LP131455 04/05/1982

REGISTERED PROPRIETOR

Estate Fee Simple

Joint Proprietors

ANITA GAYLE PEATLING

FRANK VELLA both of WOLLAHRA RS WYNDHAM VALE 3024

AD902297W 28/09/2005

ENCUMBRANCES, CAVEATS AND NOTICES

CAVEAT AE798982V 20/12/2006

Caveator

MALAKE & ALI HOLDINGS PTY LTD

Capacity PURCHASER/FEE SIMPLE

Lodged by

PEARSONS BARRISTERS & SOLICITORS

Notices to

PEARSONS BARRISTERS & SOLICITORS of 794 PASCOE VALE RD GLENROY VIC 3046

CAVEAT AH222616N 15/05/2010

Caveator

TOORAK DEVELOPMENTS (VIC) PTY LTD

Capacity SEE CAVEAT

Lodged by

FELDMAN J G

Notices to

JOHN G. FELDMAN of 24-26 AUTUMN PLACE DOVETON VIC 3177

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DIAGRAM LOCATION

SEE LP131455 FOR FURTHER DETAILS AND BOUNDARIES

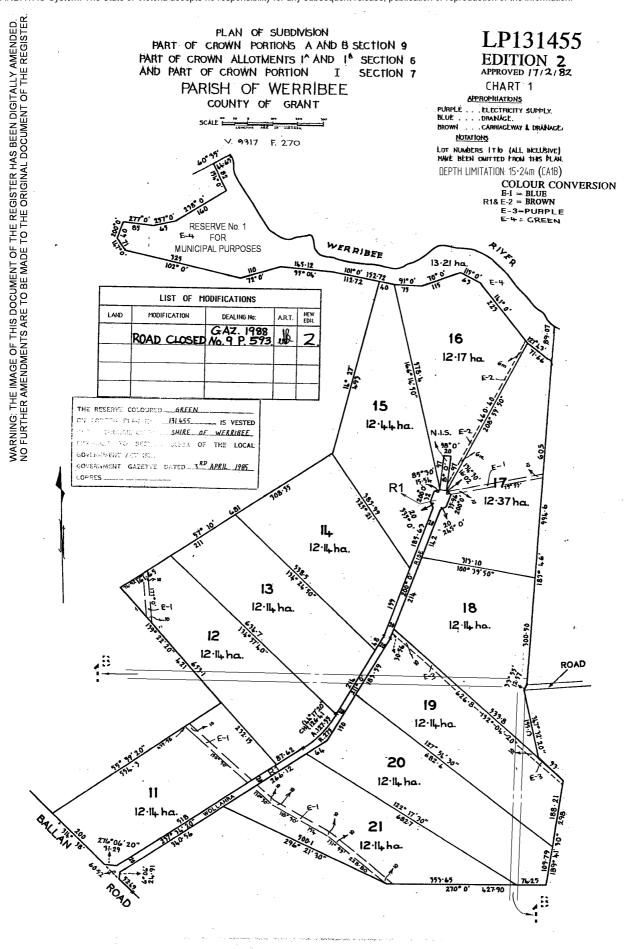
ACTIVITY IN THE LAST 125 DAYS

NUMBER STATUS DATE TRANSFER Unregistered 18/05/2010 AH229163M MORTGAGE AH229164K Unregistered 18/05/2010 AH222616N CAVEAT Registered 15/05/2010

-----END OF REGISTER SEARCH STATEMENT-----

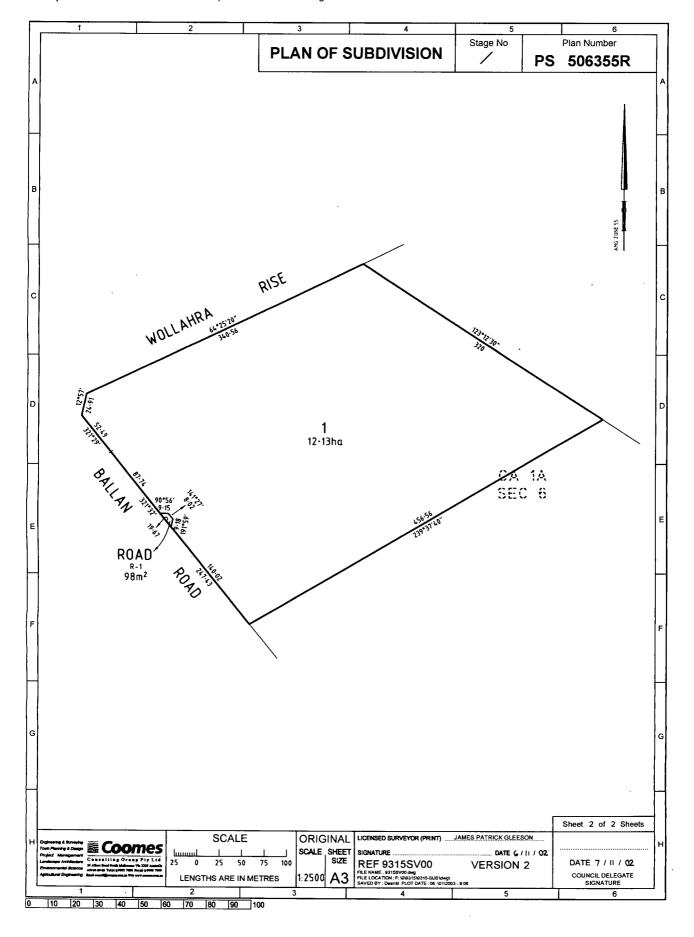
Additional information: (not part of the Register Search Statement)

Street Address: WOLLAHRA RISE WYNDHAM VALE VIC 3024



Doc id: PS506355R Matter: PSIP40 Search generated on 20/05/2010 at 14:06 Pages 1 - 2 of 2

					Stage No.	LR use only	Plan Number
	F	PLAN OF	SUBD	IVISION	/	EDITION	PS 506355R
Parish: Townsh Section: Crown A Crown F	•	268	3	2. This plan is Date of orig 3. This is a sta Subdivision OPEN SPA (i) A requirem hae/has not	me: WYNDH s-cortified under Sec s certified under sec inal certification und aterment of compliar a Act 1988. CE	I Certification and End HAM CITY COUNCI etion 6 of the Subdivision Au- tion 11(7) of the Subdivision ler section 6 3. / 9 / 02 nce issued under section 21 space under Section 18 Su	orsement L Ref: WYP 1961
(At time of s	Address: 418-43- subdivision) WERRI 0-ordinates centre of plan)		Zone	(iii) The require	oment is to be satisfi e gate II-		·
	Vesting of Rentifier		es ody/Person RPORATION	Council dele	egate	') of the Subdivision Act 198	
					n is based on survey I where applicable)		
			F	in Proclaimed Su		permanent mark no(s)	
egend:	A - Appurte	nant Easement E			rvey Area no	ad)	R use only tatement of compliance/
	A - Appurte Purp			in Proclaimed Sur t Information	rvey Area no ering Easement (Roa	ad) Si ed/in Favour Of	
			- Encumberi	in Proclaimed Sur t Information ng Easement R - Encumber	rvey Area no ering Easement (Roa	ad) SI Ex ed/in Favour Of R	tatement of compliance/ exemption Statement eceived
			- Encumberi	in Proclaimed Sur t Information ng Easement R - Encumber	rvey Area no ering Easement (Roa	ad) Si Exaction Favour Of Ri Lf Pl Ti	Date: 11 / 4 / 03 Ruse only LAN REGISTERED ME 9:48 A.M. ate: 16 / 6 / 03
egend:			- Encumberi	in Proclaimed Sur t Information ng Easement R - Encumber	rvey Area no ering Easement (Roa	ad) SI Exactly in Favour Of Lift Pi T1 Date	Date: 11 / 4 / 03 Ruse only LAN REGISTERED ME 9:48 A.M.



Doc id: 10731/092 Matter: PSIP40 Search generated on 20/05/2010 at 14:05

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 10731 FOLIO 092

Security no : 124033791432L Produced 20/05/2010 02:05 pm

LAND DESCRIPTION

Lot 1 on Plan of Subdivision 506355R.

PARENT TITLE Volume 09317 Folio 268

Created by instrument PS506355R 16/06/2003

REGISTERED PROPRIETOR

Estate Fee Simple

Sole Proprietor

WYNDHAM VALE CHRISTIAN CENTRE INC of 418-434 BALLAN ROAD WERRIBEE 3030 PS506355R 16/06/2003

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AF823489J 06/05/2008

AUSTRALIA AND NEW ZEALAND BANKING GROUP LTD

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE PS506355R FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

Doc id: 9317/269 Matter: PSIP40 Search generated on 20/05/2010 at 14:00

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09317 FOLIO 269

Security no : 124033791323E Produced 20/05/2010 02:00 pm

IAND DECODED ON

LAND DESCRIPTION

Lot 7 on Plan of Subdivision 125673.

PARENT TITLE Volume 03707 Folio 205

Created by instrument LP125673 21/03/1979

REGISTERED PROPRIETOR

Estate Fee Simple Sole Proprietor

PENBURY DOWNS PTY LTD of MCGRATH RD WYNDHAMVALE 3030

U511224D 19/11/1996

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE **U511225A** 19/11/1996

COMMONWEALTH BANK OF AUSTRALIA

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP125673 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

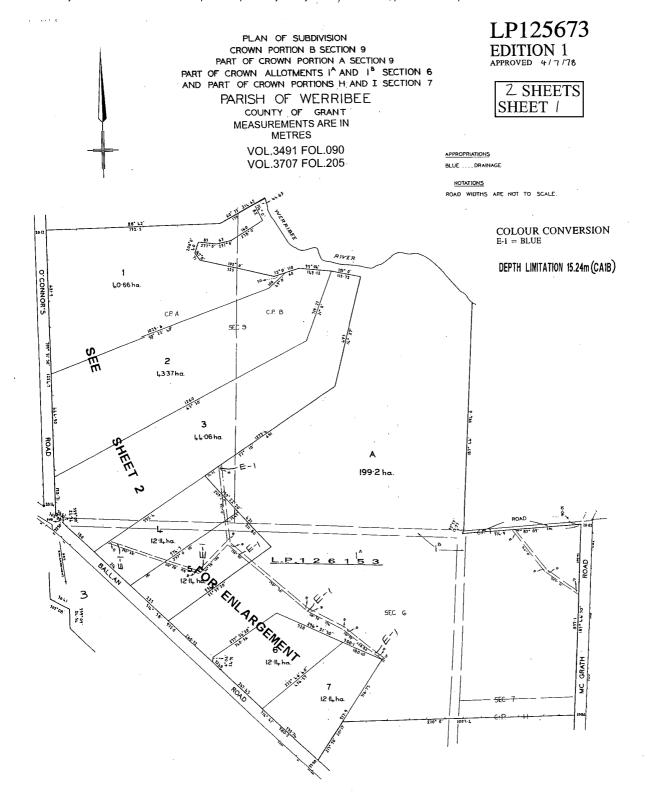
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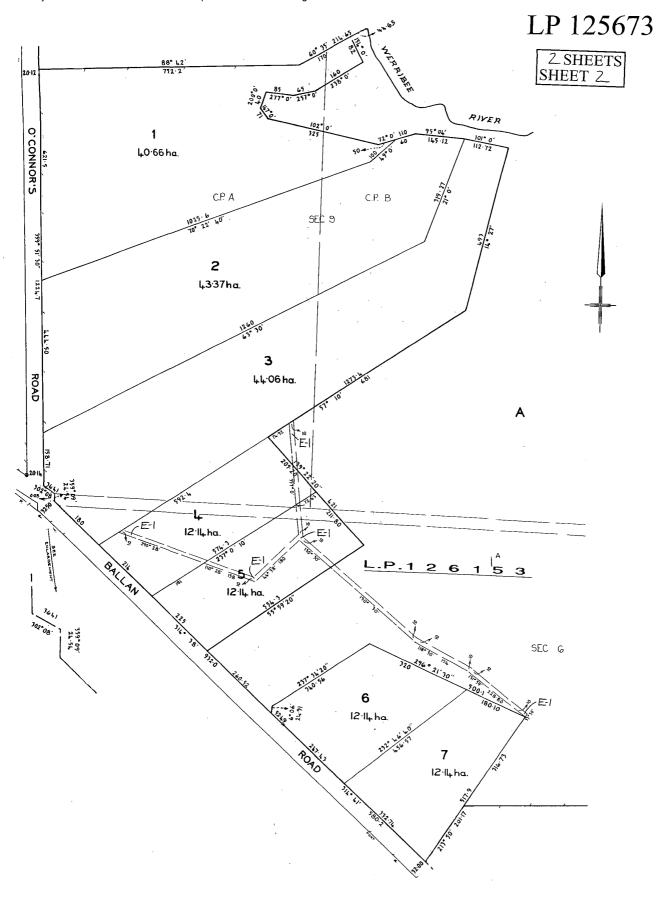
----- STATEMENT-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: 378-416 BALLAN ROAD WYNDHAM VALE VIC 3024

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Doc id: 10488/902 Matter: PSIP40 Search generated on 20/05/2010 at 13:59

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 10488 FOLIO 902

Security no : 124033791291P Produced 20/05/2010 01:59 pm

LAND DESCRIPTION

Lot 21 on Plan of Subdivision 131455. PARENT TITLE Volume 09464 Folio 474 Created by instrument W335136E 07/10/1999

REGISTERED PROPRIETOR

Estate Fee Simple

Sole Proprietor

TOORAK DEVELOPMENTS (VIC) PTY LTD of 493 BURKE ROAD CAMBERWELL VIC 3124 AG624995T 14/07/2009

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AG872600K 17/11/2009
BANK OF CYPRUS AUSTRALIA LTD

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

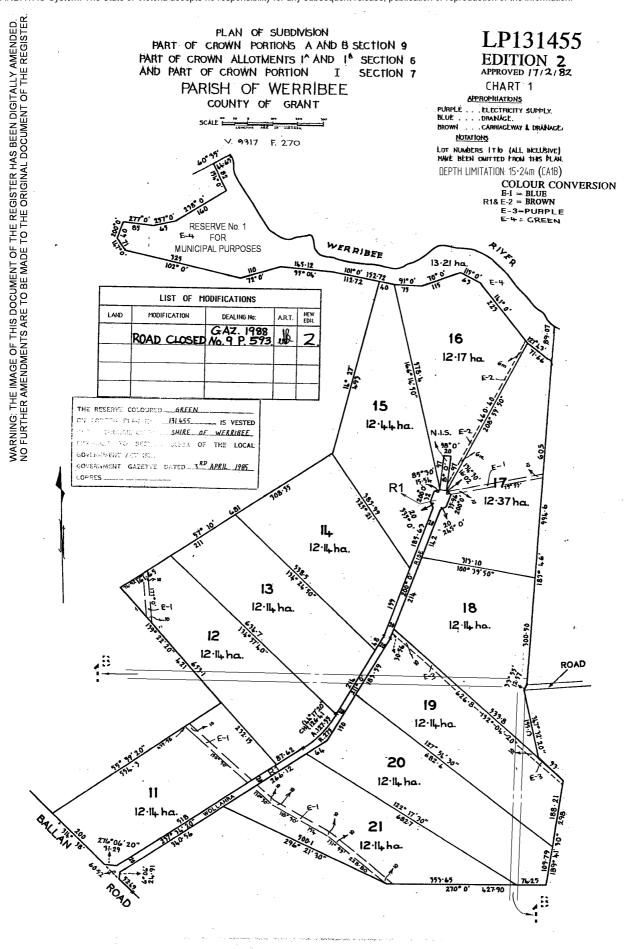
SEE LP131455 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

Additional information: (not part of the Register Search Statement)

Street Address: WOLLAHRA RISE WYNDHAM VALE VIC 3024



Doc id: 9464/473 Matter: PSIP40 Search generated on 20/05/2010 at 13:59

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09464 FOLIO 473

Security no: 124033791288S

Produced 20/05/2010 01:59 pm

LAND DESCRIPTION

Lot 20 on Plan of Subdivision 131455. PARENT TITLE Volume 09317 Folio 270 Created by instrument LP131455 04/05/1982

REGISTERED PROPRIETOR

Estate Fee Simple

Sole Proprietor

MALAKE & ALI HOLDINGS PTY LTD of 35-77 EMU ROAD MAIDSTONE VIC 3012 AG829248R 22/10/2009

ENCUMBRANCES, CAVEATS AND NOTICES

CAVEAT AH186549X 28/04/2010

Caveator

FORTUNE DEVELOPMENTS PTY LTD Capacity PURCHASER/FEE SIMPLE

Lodged by FELDMAN J G

Notices to

JOHN G. FELDMAN of 24-26 AUTUMN PLACE DOVETON VIC 3177

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP131455 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

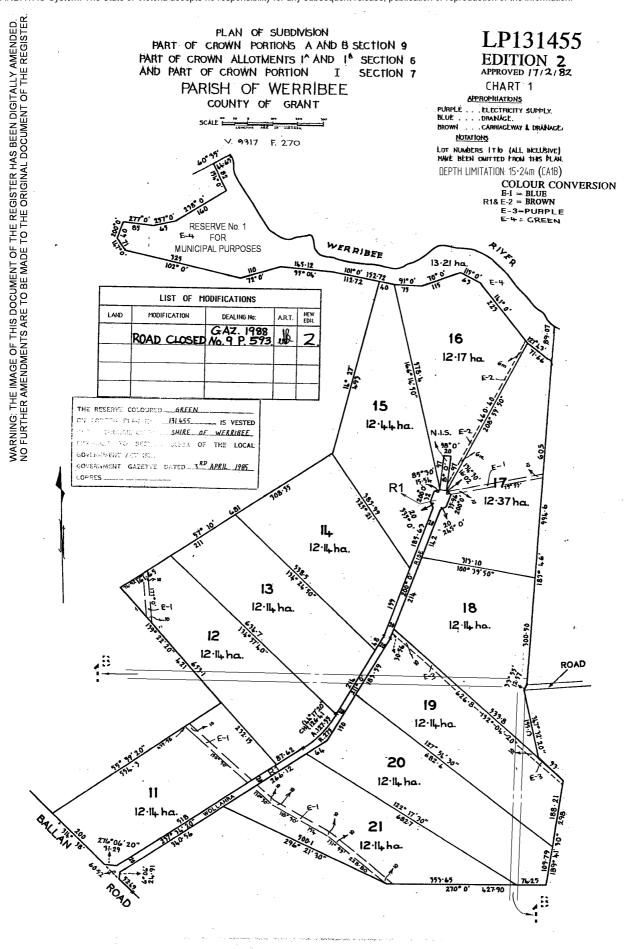
NUMBER STATUS DATE

AH186549X CAVEAT Registered 28/04/2010

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: WOLLAHRA RISE WYNDHAM VALE VIC 3024



Doc id: 9464/472 Matter: PSIP40 Search generated on 20/05/2010 at 13:59

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09464 FOLIO 472

Security no : 124033791285V

Produced 20/05/2010 01:59 pm

LAND DESCRIPTION

Lot 19 on Plan of Subdivision 131455. PARENT TITLE Volume 09317 Folio 270 Created by instrument LP131455 04/05/1982

REGISTERED PROPRIETOR

Estate Fee Simple

Sole Proprietor

FORREST CREEK DEVELOPMENTS PTY LTD of LEVEL 1 20 COUNCIL STREET HAWTHORN EAST VIC 3123

AF504016L 30/11/2007

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AF504017J 30/11/2007

R.M.B.L.INVESTMENTS LTD

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP131455 FOR FURTHER DETAILS AND BOUNDARIES

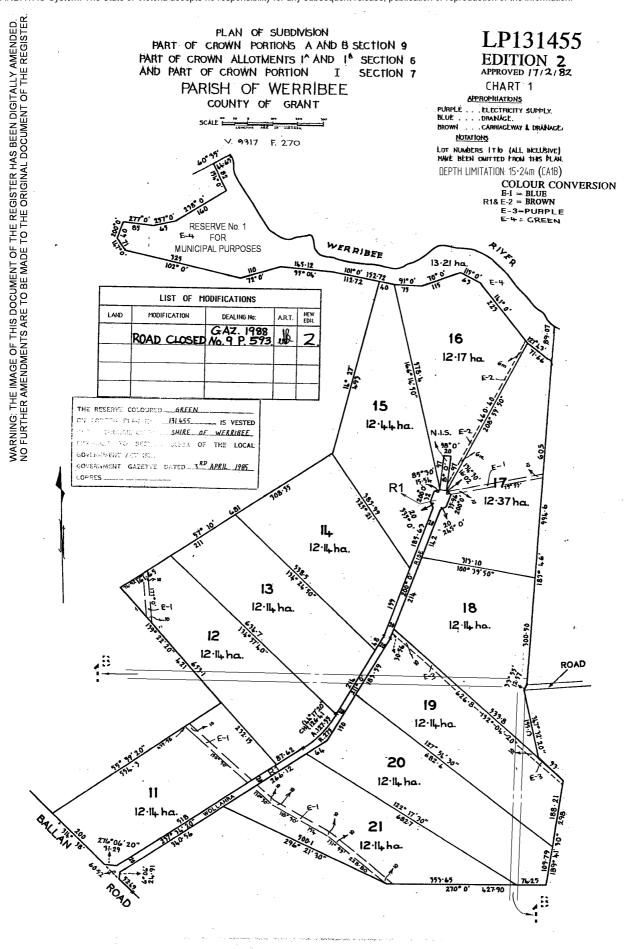
ACTIVITY IN THE LAST 125 DAYS

NIL

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: WOLLAHRA RISE WYNDHAM VALE VIC 3024

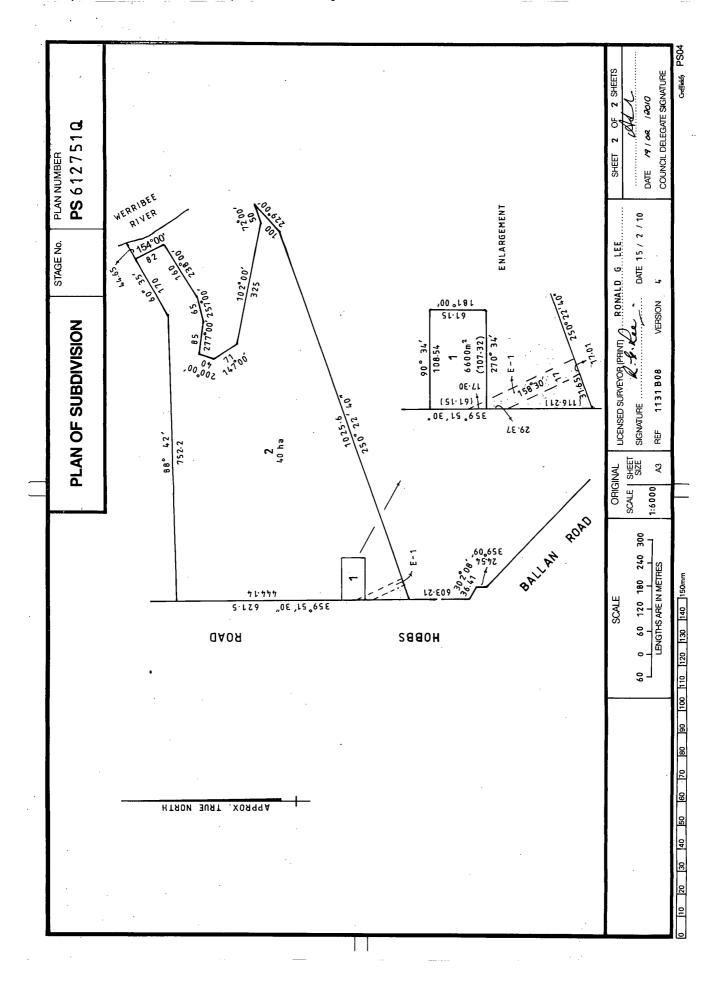


Doc id: PS612751Q Matter: PSIP40 Search generated on 20/05/2010 at 14:04 Pages 1 - 2 of 2

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	,							PS612751Q
	PL	AN OF SU	BDIVIS	STAGE	No.	EDITION	1	PLAN 10/02/2010 \$869.80 PS
	LOCA	TION OF LA	ND	l l	COUN	ICIL CERTIFIC	CATION	AND ENDORSEMENT
PARISH	WERRIB	EE ·		COLING	L NIABAT	. WANDUAN	CITY CO	Wyp3u12/09
TOWNS	HIP:			COUNCI				UNCIL REF:いめょのヒルヨーマ
SECTIO	N : 9			2. This pate	olan is o	ertified under Sect al certification und	ion 11(7) o er Section	of the Subdivision Act 1988.
CROWN	ALLOTMENT:			1	s a stat			I under Section 21 of the Subdivision Act
		PART OF A &	В	OPEN SI	PACE juiremei	nt for public open s	space und	ler Section 18 of the Subdivision Act 1988
	SE RECORD: \ EFERENCES:	VICMAP DIGITA	AL PROPER	\T\		been made. Bent has been satis	fied.	•
VOL	9317 FOL 2	263			equiren eil Del e	rent is to be satisfie gato	d in Stage)
		E/S: LOT 1 I		Coun	cil Seal			•
(At time	of subdivision)	HOBBS ROAD	WYNUHAM	VALE Date	, –	 /		
	o-ordinates ox centre of land	E 2905 N 58071		: 55 Coun	cil Dele cil Scal	gate //	•	odivision Act 1988.
		ROADS AND/OR						
IDENTIFIE	R	COUNCIL/BODY	//PERSON				NOTATIO	NC
l,	NIL	 ,	11 L	STAGING	This ter	is not a staged subdiving permit No.		NO .
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				THIS SURVE	HAS BE	NN IS# S NOT BASED (EN CONNECTED TO I VEY AREA No.		T MARKS No.(s)
LEGEND	A Annuat		EASEMENT	INFORMATION				LTO USE ONLY
LEGEND	A - Appurte	nant Easement	E - ENCU	mbering Easement	H - E	ncumbering Easer	nent (Road	STATEMENT OF COMPLIANCE/ EXEMPTION STATEMENT
Easement Reference	• Pur	pose	Width (Metres)	Origin		Land Benefited/In Fav	our Of	RECEIVED
E-1	POWERLINE	PURPOSES	SEE DIAG.	THIS PLAN -SEC.B	ď	RCOR AUSTRALI	A LTD.	DATE. 10/ 02 / 10
				INDUSTRY ACT 200				LTO USE ONLY
								PLAN REGISTERED
								TIME 11.56 DATE 06/ 04 / 2010
!								Dail 00/ 04/2010
								lan R Mcleod Assistant Registrar of Titles SHEET 1 OF 2 SHEETS
R	G LEE			LICENSED SURVEYO	R (PRINT	RONALD G	LEE	11
		T WERRIBEE	3030	SIGNATURE	R	Lan \	15/2	/ 10 DATE 19 / 02 / 2010
	EL / FAX					VERSION 4		COUNCIL DELEGATE SIGNATURE
				1	_			ORIGINAL SHEET SIZE A3



Doc id: 11194/800 Matter: PSIP40 Search generated on 20/05/2010 at 14:03

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REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 11194 FOLIO 800

Security no: 124033791368F

Produced 20/05/2010 02:03 pm

LAND DESCRIPTION

Lot 1 on Plan of Subdivision 612751Q.

PARENT TITLE Volume 09317 Folio 263

Created by instrument PS612751Q 06/04/2010

REGISTERED PROPRIETOR

Estate Fee Simple

Sole Proprietor

ANGELINA VELINOS of 70 HOBBS ROAD WYNDHAM VALE VIC 3024

PS612751Q 06/04/2010

ENCUMBRANCES, CAVEATS AND NOTICES

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan set out under DIAGRAM LOCATION below.

AGREEMENT Section 173 Planning and Environment Act 1987 AH001595C 28/01/2010

DIAGRAM LOCATION

SEE PS612751Q FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NUMBER STATUS DATE

PS612751Q PLAN OF SUBDIVISION Registered 06/04/2010

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: HOBBS ROAD WYNDHAM VALE VIC 3024

Stage 1 and 2 - Desktop Environmental, Hydrogeological and Geotechnical Assessment
Report on PSP Area 40 - Ballan Road



Appendix C. Groundwater Management System Data

SITE LOCATION REPORT

Printed 19.05.2010 @ 11:35

SITE NO	OLD SITE NO	RIG NO./ LIC NO.	MGA ZONE	EAST	NORTH	DATE COMPLETED	TOTAL DEPTH (m)	RLNS	SITE TYPE	USES	DRILL METHOD	LOGS G	LOGS D	AQUIF FROM (m)	AQUIF TO (m)	TSS mg/L
WRK054790		WLE045491	55	290279.00	5804146.00		15.70		BOR	DS	ROA	N	Υ		and the first	N/A
44387		NONE	55	292442.00	5806536.00	02.11.2009	47.00		BOR	IR	ROA	N	Υ			N/A
2518 DEUTGA	M														L	
59869	3251810038	13954	55	293310.13	5803910.17	19.11.1980	15.00		BOR	DM	ROT	N	Υ	8.00	15.00	TSS
59999	3251810168	21512	55	292893.13	5803104.17	15.10.1983	21.34		BOR	DM	СВТ	N	Υ			N/A
59969	3251810138	24276	55	292343.13	5803524.17	31.10.1983	24.38		BOR	ST DM	ROA	N	Υ	0.00	0.00	TDS
59959	3251810128	23724	55	293283.13	5803414.17	25.07.1983	18.29		BOR	ST DM	DHH	N	Υ	0.00	0.00	TDS
132471		47408	55	292410.00	5802881.00	16.03.1997	16.50		BOR	DM	ROA	N	Υ			N/A
S9019433/1		S9019433	55	292817.00	5803549.00	26.03.2004	23.00		BOR	DS	ROA	N	Υ			N/A
3047 MAMBO	URIN								•	•		-				
77061	3304710025	19540	55	293343.13	5803314.17	15.01.1983	34.00		BOR	NKN	ROA	N	Υ			N/A
77062	3304710026	19540	55	293353.13	5803324.17	18.01.1983	40.70		BOR	DM	ROM	N	Υ	0.00	0.00	TDS
77063	3304710027	21588	55	291013.12	5803644.17	28.02.1983	31.70		BOR	DM	ROA	N	Υ	0.00	0.00	TDS
77058	3304710022	22337	55	293003.13	5803504.17	12.03.1983	24.38		BOR	DM	ROA	N	Υ	0.00	0.00	TDS
77064	3304710028	20199	55	292663.13	5802964.17	22.03.1983	15.24		BOR	DM	ROA	N	Υ			N/A
77067	3304710031	20802	55	293237.13	5803402.17	27.02.1983	34.70		BOR	ST DM	DHH	N	Υ	0.00	0.00	TDS
77069	3304710033	19315	55	293353.13	5803394.17	15.12.1982	15.00		BOR	NKN	DHH	N	Υ			N/A
77071	3304710035	21856	55	293265.13	5803320.17	10.03.1983	34.09		BOR	ST DM	ROA	N	Υ	0.00	0.00	TDS
77072	3304710036	21862	55	291880.13	5804109.17	09.03.1983	37.80		BOR	DM ST	ROA	N	Υ	0.00	0.00	TDS
77038	3304710002	3369	55	292479.13	5803334.17	16.02.1973	18.28		BOR	ST DM	ROT	N	Υ	15.24	18.28	TSC
77053	3304710017	20570	55	291709.13	5803572.17	11.02.1983	30.48		BOR	DM	ROA	N	Υ			N/A
77076	3304710040	20324	55	292233.13	5803044.17	29.01.1983	30.00		BOR	DM	ROA	N	Υ	0.00	0.00	TDS
77080	3304710045	18713	55	293053.13	5803094.17	17.11.1982	13.72		BOR	ST DM	AGH	N	Υ			N/A
77082	3304710047	25240	55	292633.13	5803444.17	01.06.1984	15.24		BOR	ST DM	ROA	N	Υ			N/A
77083	3304710048	25341	55	292953.13	5803064.17	03.06.1984	24.38		BOR	ST DM	ROA	N	Υ			N/A
77085	3304710050	24171	55	292693.13	5802864.17	15.10.1983	21.95		BOR	DM	ROA	N	Υ	0.00	0.00	TDS
77086	3304710051	24164	55	291533.12	5802884.17	12.10.1983	23.78		BOR	DM	ROA	N	Υ	0.00	0.00	TDS
77087	3304710052	24195	55	291213.13	5804034.17	13.10.1983	39.58		BOR	DM	ROA	N	Υ			N/A
77088	3304710053	25241	55	292913.13	5803234.17	02.06.1984	21.34		BOR	DM	ROA	N	Υ	0.00	0.00	TDS
77090	3304710055	27866	55	288725.12	5804542.17	30.10.1985	20.50		BOR	ST DM	ROT	N	Υ	0.00	0.00	TDS
77074	3304710038	24301	55	292513.13	5803524.17	05.11.1983	15.24		BOR	DM	ROA	N	Υ	0.00	0.00	TDS

Groundwater Management System

SITE LOCATION REPORT

SITE NO	OLD SITE NO	RIG NO./ LIC NO.	MGA ZONE	EAST	NORTH	DATE COMPLETED	TOTAL DEPTH (m)	RLNS	SITE TYPE	USES	DRILL METHOD	LOGS G	LOGS D	AQUIF FROM (m)	AQUIF TO (m)	TSS mg/L
77073	3304710037	24061	55	292823.13	5803004.17	30.10.1983	15.24		BOR	DM	ROA	N	Υ	0.00	0.00	TDS
77036	3304708004	NONE	55	292734.13	5802889.17	31.12.1965	20.00		BOR	IR	NKN	N	N			N/A
S9018600/1		S9018600	55	293285.13	5803462.17	21.01.2004	33.00		BOR	DS	ROA	N	Υ			N/A
S9020266/1		S9020266	55	290228.12	5802547.17	18.06.2004	10.50		BOR	IV	ROA	N	Υ			N/A
S9029146/1		S9029146	55	292956.00	5803365.00	19.02.2007	18.00		BOR	DS	DHH	N	N			N/A
S9030896/1		S9030896	55	293292.00	5803457.00		40.00		BOR			N	N			N/A
77037	3304710001	3135	55	292706.13	5803256.17	02.02.1973	21.94		BOR	ST DM	ROT	N	Υ	18.28	21.94	TSC
3552 TARNEIT																
93750	3355210014	17475	55	291513.13	5809184.18	22.09.1982	37.50		BOR	ST DM	ROA	N	Υ	31.10	37.50	TSC
93751	3355210015	18262	55	293693.13	5805564.17	15.12.1982	30.48		BOR	NKN	ROA	N	Υ			N/A
93744	3355210008	9080	55	292789.13	5804086.17	05.09.1977	34.00		BOR	IR	ROT	N	Υ			N/A
93752	3355210016	18262	55	293673.13	5805444.17	16.12.1982	37.00		BOR	NKN	ROA	N	Υ			N/A
93753	3355210017	16976	55	291744.13	5807454.18	13.11.1982	91.40		BOR	DM ST	ROT	N	N			N/A
93761	3355210025	17849	55	293081.13	5806370.17	14.03.1983	36.00		BOR	IR	DHH	N	Υ			N/A
93762	3355210026	23514	55	293482.13	5803773.17	17.07.1983	18.29		BOR	IR	ROA	N	Υ			N/A
93766	3355210030	23058	55	293493.13	5806344.17	27.04.1983	45.00		BOR	NKN	DHH	N	Υ			N/A
93723	3355208017	NONE	55	293879.13	5806138.17	31.12.1970	0.00		BOR	NKN	NKN	N	N			N/A
93733	3355208027	NONE	55	293047.13	5807874.17	31.12.1970	0.00		BOR	NKN	NKN	N	N			N/A
93774	3355210038	17191	55	293403.13	5806554.17	19.02.1984	53.00		BOR	NKN	DHH	N	Υ			N/A
93775	3355210039	21070	55	293653.13	5805124.17	01.03.1983	28.95		BOR	NKN	DHH	N	Υ	24.38	28.95	TDS
93776	3355210040	28823	55	293693.13	5807184.17	25.03.1986	28.00		BOR	ST DM	ROA	N	Υ	0.00	0.00	TDS
93779	3355210043	32489	55	293628.13	5807944.17	20.04.1988	29.00		BOR	ST	DHH	N	Υ	23.00	29.00	TDS
93780	3355210044	32409	55	294203.13	5807234.17	20.04.1988	26.00		BOR	ST DM	DHH	N	Υ	20.00	26.00	TDS
93791	3355215010	38270	55	293073.13	5804084.17	13.05.1991	25.00		BOR	DS	DHH	N	Υ	20.00	22.00	TDS
93718	3355208012	NONE	55	292464.13	5806578.17	31.12.1964	24.40		BOR	ST DM IR	NKN	N	N			N/A
S9035165/1		S9035165	55	292822.00	5804760.00	13.10.2008	23.00		BOR	DS	ROA	N	Υ			N/A
93722	3355208016	NONE	55	293624.13	5806027.17	31.12.1970	0.00		BOR	NKN	NKN	N	N			N/A
93721	3355208015	NONE	55	293716.13	5806280.17	31.12.1970	0.00		BOR	NKN	NKN	N	N			N/A
93773	3355210037	17191	55	293403.13	5806554.17	18.02.1984	49.00		BOR	NKN	DHH	N	Υ			N/A
93772	3355210036	18357	55	294273.13	5806844.17	22.12.1982	27.43		BOR	ST	ROA	N	Υ	13.71	22.86	TSS
S9034311/1		S9034311	55	293061.00	5806455.00	19.04.2008	30.00		BOR	IR	ROA	N	Υ			N/A

SITE LOCATION REPORT

SITE NO	OLD SITE NO	RIG NO./ LIC NO.	MGA ZONE	EAST	NORTH	DATE COMPLETED	TOTAL DEPTH (m)	RLNS	SITE TYPE	USES	DRILL METHOD	LOGS G	LOGS D	AQUIF FROM (m)	AQUIF TO (m)	TSS mg/L
329273	3355208032	NONE	55	293157.13	5807123.17	17.10.1981	243.00		BOR	NG		Ν	N			N/A
329267	3355200010	NONE	55	291587.13	5807927.18	02.10.1975	65.83		BOR	NG		Ν	N			N/A
S9030681/1		S9030681	55	293167.00	5803981.00	08.05.2007	17.50		BOR	DS	ROA	N	Υ			N/A

329264 33	255200007														
	355200007	NONE	55	294220.13	5807100.17	15.08.1975	62.17	В	OR	NG		N	N		N/A
S9029557/1		S9029557	55	292867.00	5804833.00	02.03.2007	26.00	В	OR	DS	ROA	N	Υ		N/A
S9028108/1		S9028108	55	293607.00	5805360.00	05.01.2006	60.00	В	OR	DS	DHH	N	Υ		N/A
S9033429/1		S9033429	55	293587.00	5805571.00	17.01.2008	150.00	В	OR			N	N		N/A
S9034321/1		S9034321	55	293878.00	5806316.00		150.00	В	OR			N	N		N/A
93719 33	355208013	NONE	55	293172.13	5807139.17	31.12.1970	0.00	В	OR	NKN	NKN	N	N		N/A
113118		39729	55	292813.13	5804734.17	02.05.1992	15.00	В	OR	DM	ROA	N	Υ		N/A
115139		40534	55	293053.13	5804154.17	24.01.1993	25.00	В	OR	DM	ROA	N	Υ		N/A
129562		46672	55	294233.13	5805564.17	15.12.1996	57.00	В	OR	DM IR	ROA	N	Υ		N/A
131568		48426	55	293593.13	5804964.17	13.09.1997	24.00	В	OR	DM	ROA	N	Υ		N/A
132268		47139	55	292993.13	5804664.17	08.03.1997	21.00	В	OR	DM	ROA	N	Υ		N/A
93716 33	355208010	NONE	55	293044.13	5809005.18	31.12.1970	22.80	В	OR	ST DM	NKN	N	N		N/A
133251		50512	55	292693.13	5804184.17	05.04.1998	21.00	В	OR	DM	ROA	N	Υ		N/A
134755		50970	55	292753.13	5804104.17	16.05.1998	21.00	В	OR	DM	ROA	N	Υ		N/A
142525		56492	55	293783.13	5805734.17	05.10.2000	33.60	В	OR	DM	DHH	N	Υ		N/A
S9027422/1		S9027422	55	293523.00	5805993.00	04.01.2007	45.00	В	OR	DS	DHH	N	Υ		N/A
S9027501/1		S9027501	55	293468.00	5805883.00	08.01.2007	38.00	В	OR	DS	DHH	N	N		N/A
142114		54910	55	292763.13	5804524.17	05.01.2000	28.00	В	OR	DM	ROA	N	Υ		N/A
S9020265/3		S9020265	55	291518.13	5807475.18		30.00	В	OR			N	N		N/A
143540		53513	55	292053.13	5807714.18	26.06.1999	91.50	В	OR	IR	ROA	N	Υ		N/A
S9025990/1		S9025990	55	290415.00	5809405.00	01.08.2006	30.00	В	OR	DS	ROA	N	N		N/A
S61911/1		S61911	55	292790.13	5804273.17	04.07.2003	18.00	В	OR	DS	ROA	N	Υ		N/A
93709 33	355208003	NONE	55	293456.13	5804479.17	23.01.1960	0.00	В	OR	NKN	NKN	N	N		N/A
S9020265/2		S9020265	55	293150.13	5807188.17	16.06.2004	17.50	В	OR	IV	ROA	N	Υ		N/A
3797 WERRIBEE															
102596 33	379710018	29615	55	292675.13	5805384.17	30.10.1986	36.00	В	OR	IR	ROA	N	Υ		N/A
138768	_	53729	55	291953.13	5804654.17	28.06.1999	42.00	В	OR	MI	DHH	N	Υ		N/A
102588 33	379710008	19893	55	290793.13	5807434.18	06.06.1984	27.00	В	OR	NKN	DHH	N	Υ		N/A

SITE LOCATION REPORT

SITE NO	OLD SITE NO	RIG NO./ LIC NO.	MGA ZONE	EAST	NORTH	DATE COMPLETED	TOTAL DEPTH (m)	RLNS	SITE TYPE	USES	DRILL METHOD	LOGS G	LOGS D	AQUIF FROM (m)	AQUIF TO (m)	TSS mg/L
S9022017/1		S9022017	55	288962.13	5807645.18	22.03.2005	85.50		BOR	DS	ROA	Ν	N			N/A
102589	3379710009	19893	55	290603.13	5807494.18	06.06.1984	42.00		BOR	NKN	DHH	N	Υ			N/A
102599	3379715003	NONE	55	292574.13	5806140.17	01.01.1988	51.80		BOR	NKN	NKN	Ν	N			N/A
102598	3379715002	35675	55	292113.13	5805384.17	01.02.1990	46.00		BOR	ST DM	DHH	N	Υ	3.00	46.00	TDS
102595	3379710016	29667	55	291063.13	5806234.17	02.11.1986	31.00		BOR	DM	DHH	N	Υ	0.00	0.00	TDS
102587	3379710007	17148	55	289893.13	5806844.18	03.06.1984	46.00		BOR	NKN	DHH	Ν	Υ			N/A
102592	3379710012	21689	55	291033.13	5806534.17	06.03.1983	42.67		BOR	DM	ROA	N	Υ	0.00	0.00	TDS
102590	3379710010	14727	55	291933.13	5805544.17	11.05.1981	70.00		BOR	IR	CBT	N	Υ			N/A
102586	3379710006	19323	55	290133.13	5805704.17	05.06.1984	42.00		BOR	DM ST	DHH	N	Υ			N/A

S9032926/1		S9032926	55	292065.00	5805512.00		150.00	BOR			N	N			N/A
102604	3379715008	NONE	55	290674.13	5807396.18	31.12.1969	66.00	BOR	IR	NKN	N	N			N/A
102605	3379715009	NONE	55	292362.13	5806281.17	01.01.1988	60.00	BOR	ST	NKN	N	N			N/A
102606	3379715010	NONE	55	292437.13	5806131.17	01.01.1988	0.00	BOR	ST DM	NKN	N	N			N/A
S9034847/1		S9034847	55	292607.00	5804396.00		150.00	BOR			N	N			N/A
102584	3379710004	13562	55	292713.13	5805109.17	27.08.1980	42.00	BOR	IV	DHH	N	Υ	26.00	38.00	TSS
102582	3379710001	85	55	292248.13	5805571.17	06.05.1971	33.52	BOR	NKN	NKN	N	Υ	12.80	27.43	TSS
102583	3379710002	7203	55	290531.13	5805259.17	20.02.1976	28.95	BOR	ST	СВТ	N	Υ	24.00	28.00	TSS

SITE WATER LEVEL REPORT

SITE NO	DITR NO	READING DATE	METHOD	RWL (mAHD)	DBNS (m)	WLDP (m)	BORE COND'N	EC (uS/cm)
44387								
WRK054790		1						
2518 DEUTGA	M							
132471							-	
59869	3251810038							
59959	3251810128							
59969	3251810138							
59999	3251810168							
S9019433/1							_	
3047 MAMBO	DURIN							
77036	3304708004							
77037	3304710001							
77038	3304710002							
77053	3304710017							
77058	3304710022							
77061	3304710025							
77062	3304710026							
77063	3304710027							
77064	3304710028							
77067	3304710031							
77069	3304710033							
77071	3304710035							

77072	3304710036
77073	3304710037
77074	3304710038
77076	3304710040
77080	3304710045
77082	3304710047
77083	3304710048
77085	3304710050
77086	3304710051

SITE WATER LEVEL REPORT

SITE NO	DITR NO	READING DATE	METHOD	RWL (mAHD)	DBNS (m)	WLDP (m)	BORE COND'N	EC (uS/cm)
77087	3304710052							
77088	3304710053							
77090	3304710055							
S9018600/1]						
S9020266/1]						
S9029146/1]						
S9030896/1								
3552 TARNEIT	Ţ	-						
113118							-	
115139								
129562								

131568		
132268		
133251		
134755		
142114		
142525		
143540		
329264	3355200007	
329267	3355200010	
329273	3355208032	
93709	3355208003	
93716	3355208010	
93718	3355208012	
93719	3355208013	
93721	3355208015	
93722	3355208016	
93723	3355208017	
93733	3355208027	
93744	3355210008	
93750	3355210014	
-		

SITE WATER LEVEL REPORT

93751	3355210015
93752	3355210016
93753	3355210017
93761	3355210025
93762	3355210026
93766	3355210030
93772	3355210036
93773	3355210037
93774	3355210038
93775	3355210039
93776	3355210040
93779	3355210043
93780	3355210044
93791	3355215010
S61911/1	
S9020265/2	
S9020265/3	
S9025990/1	
S9027422/1	
S9027501/1	
S9028108/1	
S9029557/1	
S9030681/1	
S9033429/1	
S9034311/1	
S9034321/1	
S9035165/1	
3797 WERRIB	EE
102582	3379710001
102583	3379710002
102584	3379710004

SITE WATER LEVEL REPORT

SITE NO	DITR NO	READING DATE	METHOD	RWL (mAHD)	DBNS (m)	WLDP (m)	BORE COND'N	EC
102586	3379710006			•				
102587	3379710007	1						
102588	3379710008]						
102589	3379710009							
102590	3379710010]						
102592	3379710012]						
102595	3379710016]						
102596	3379710018							
102598	3379715002]						
102599	3379715003]						
102604	3379715008							
102605	3379715009]						
102606	3379715010]						
138768								
S9022017/1								
S9032926/1								
S9034847/1]						

SITE CHEMISTRY REPORT

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SITE NO	DITR NO	SAMPLE NO	SAMPLE DATE	METHOD	SAMPLE FROM (m)	SAMPLE TO (m)	TSS mg/L	CL mg/L	CO3 mg/L	HCO3 mg/L	TOT ALK mg/L	SO4 mg/L	N mg/L	CA mg/L	MG mg/L	NA mg/L	K mg/L	FE mg/L	HARD mg/L	PH	EC uS/cm
44387																					
WRK054790		1																			
2518 DEUTGA	M	•																			
132471																					
59869		4993	12.12.1980	AIR	8.000	15.0	3200.000	1361.000		497.000		290.000	1.129	111.000	207.000	696.000	15.000	15.000		7.300	4600.000
59959		31613	25.07.1983	NKN				600.000		280.488	230.000	85.000		16.000	66.000	410.000	10.000		314.512	8.800	2400.000
59969		31615	31.10.1983	NKN				1900.000		329.268	270.000	260.000		160.000	250.000	880.000	13.000	16.000	1439.520	8.100	6600.000
59999		31758	15.10.1983	NKN																8.600	1200.000
S9019433/1																					
3047 MAMBO	URIN																				
77036																					
77037		11666	02.02.1973	FLO	18.280	21.9		1268.000		576.000			17.833	111.000	172.000			0.100		8.000	4960.000
77038		11667	16.02.1973	PUM	15.240	18.3		1815.000		598.000		330.000	15.350	186.000	303.000			0.400		7.500	6397.000
77053																					
77058		30934	12.03.1983	NKN				1100.000		231.707	190.000	140.000		46.000	190.000	420.000	13.000	4.920	905.262	8.300	3800.000
77061																					
77062		30031	18.01.1983	NKN				860.000		317.073	260.000	51.000		62.000	170.000	310.000	9.700	3.960	862.014	8.000	3150.000
77063		31256	28.02.1983	NKN				4600.000		439.024	360.000	670.000		100.000	440.000	2500.000	34.000	0.040	2080.100	7.900	15000.000
77064																					
77067		31283	27.02.1983	NKN				830.000		304.878	250.000	110.000		30.000	130.000	400.000	5.600	150.000	615.710	8.600	3200.000
77069																					
77071		31110	10.03.1983	NKN				950.000		207.317	170.000	120.000		54.000	160.000	420.000	9.600		800.438	8.300	3400.000
77072		31111	09.03.1983	NKN				3700.000		219.512	180.000	620.000		50.000	340.000	2000.000	31.000		1539.250	8.500	12000.000
77073		31736	30.10.1983	NKN				1600.000		341.463	280.000	200.000		80.000	260.000	650.000	12.000	8.700	1300.000	8.100	5200.000
77074		31630	05.11.1983	NKN				780.000		353.659	290.000	110.000		100.000	140.000	330.000	6.800	1.900	832.100	8.200	3100.000
77076		30250	29.01.1983	NKN				1500.000		304.878	250.000	210.000		72.000	140.000	810.000	14.000	6.800	762.184	7.300	5300.000
77080																					
77082		32603	01.06.1984	NKN	11.280	14.1														8.000	5500.000
77083		32647	03.06.1984	NKN	15.840	18.7														8.100	8500.000
77085		31741	15.10.1983	NKN				1900.000		231.707	190.000	240.000		170.000	310.000	660.000	8.000	29.000	1600.000	8.200	5700.000
77086		31739	12.10.1983	NKN				4400.000		390.244	320.000	620.000		130.000	460.000	2200.000	32.000	0.000	2000.000	8.300	14000.000

Groundwater Management System

SITE CHEMISTRY REPORT

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SITE NO	DITR NO	SAMPLE NO	SAMPLE DATE	METHOD	SAMPLE FROM (m)	SAMPLE TO (m)	TSS mg/L	CL mg/L	CO3 mg/L	HCO3 mg/L	TOT ALK mg/L	SO4 mg/L	N mg/L	CA mg/L	MG mg/L	NA mg/L	K mg/L	FE mg/L	HARD mg/L	PH	EC uS/cm
77087		31755	13.10.1983	NKN																7.900	18000.000
77088		32461	02.06.1984	NKN				1100.000		365.854	300.000	150.000		100.000	170.000	460.000	8.300	6.500	930.000	8.300	4000.000
77090		36339	15.06.1986	NKN				2000.000		524.390	430.000	350.000		47.000	170.000	1400.000	24.000	0.610	824.559	7.000	7300.000
S9018600/1																					

S9020266/1 S9029146/1

S9030896/1]					 											
3552 TARNEIT																	
113118	46240	08.05.1992	NKN			1300.000		260.000	140.000	140.000	180.000	530.000	5.800			7.400	4500.000
115139	48594	24.01.1993	NKN							95.000	170.000	510.000				8.000	4000.000
129562	83042	15.12.1996	NKN							15.000	27.000	430.000		0.850	150.000	9.200	2600.000
131568																	
132268	83872	01.08.1997	NKN							150.000	190.000	720.000		0.600		8.100	520.000
133251																	
134755																	
142114																	
142525																	
143540																	
329264																	
329267																	
329273																	
93709																	
93716																	
93718																	
93719																	
93721																	
93722																	
93723																	
93733																	
93744						 											
93750	52465	17.11.1982	AIR	31.100	37.5	10490.000	117.000	·								7.950	29000.000

SITE CHEMISTRY REPORT

SITE NO	DITR NO	SAMPLE NO	SAMPLE DATE	METHOD	SAMPLE FROM (m)	SAMPLE TO (m)	TSS mg/L	CL mg/L	CO3 mg/L	HCO3 mg/L	TOT ALK mg/L	SO4 mg/L	N mg/L	CA mg/L	MG mg/L	NA mg/L	K mg/L	FE mg/L	HARD mg/L	PH	EC uS/cm
93751																					
93752		1																			!
93753		1																			!
93761		31113	14.03.1983	NKN				360.000		426.829	350.000	170.000		42.000	100.000		10.000		520.874	8.400	2300.000
93762		31259	17.07.1983	NKN																8.300	3600.000
93766		30843	26.04.1983	NKN				620.000		512.195	420.000	270.000		100.000	140.000		13.000	22.000	832.100	6.200	3500.000
93772		52476	22.12.1982	AIR	13.710	22.9	3516.000	1540.000		395.000		300.000	15.801	29.000	173.000	945.000	16.000			7.800	5700.000
93773																					
93774																					
93775		34982	19.11.1985	PUM	24.380	29.0		590.000		560.976	460.000	140.000		31.000	71.000	510.000	13.000	1.900	372.767	7.900	3000.000
93776		35881	25.03.1986	NKN				1300.000		500.000	410.000	360.000		65.000	170.000	880.000	15.000	0.070	869.505	7.700	5500.000
93779		40576	20.04.1988	NKN	23.000	29.0		4200.000	24.390	341.463	280.000	650.000		100.000	480.000	2300.000	24.000	5.300	2246.500	8.500	13000.000
93780		40582	20.04.1988	NKN	20.000	26.0		4300.000		378.049	310.000	710.000		150.000	450.000	2300.000	29.000	8.400	2246.550	8.200	14000.000
93791		45001	13.05.1991	NKN	20.000	22.0		840.000		365.854	300.000	130.000		0.000	140.000	470.000	12.000		582.400	7.500	3300.000
S61911/1																					
S9020265/2																					ļ
S9020265/3																					ļ
S9025990/1																					ļ
S9027422/1																					!
S9027501/1																					!
S9028108/1																					!

S9029557/1																			
S9030681/1																			
S9033429/1																			
S9034311/1																			
S9034321/1																			
S9035165/1																			
3797 WERRIBE	EE																		
102582		20977	31.05.1971	BAL	12.800	27.4	957.000	242.000	20.000	332.000	41.000		23.000	36.000	219.000	6.000	17.600	8.550	1320.000
102583		20978	27.02.1978	AIR	24.000	28.0	8278.000	4130.000		469.000	688.000		79.000	337.000	2484.000	38.000	16.000	7.990	13150.000
102584		20979	08.10.1977	AIR	26.000	38.0	2044.000	809.000		385.000	 139.000	5.192	54.000	88.000	500.000	9.000		8.100	3250.000

SITE CHEMISTRY REPORT

SITE NO	DITR NO	SAMPLE NO	SAMPLE DATE	METHOD	SAMPLE FROM (m)	SAMPLE TO (m)	TSS mg/I	CL mg/L	CO3 mg/I	HCO3 mg/I	TOT ALK mg/L	SO4 mg/l	N mg/I	CA mg/l	MG mg/I	NA mg/L	K mg/l	FE mg/L	HARD mg/L	PH	EC uS/cm
102586		57 HVII 22 HV	37 tivii 22 37 ti 2	III.EIIIIOD	57.1111 22 7 110 111 (111)	57 tivil 22 10 (iii)	100 1116/ 2	C26/ 2	CO3g/ L	11000 1116/ 2	701 / LLK 1118/ L	56 1 mg/ L		C/ Tillg/ L		1171116/2	K6/ =	126/2			Le doj em
102587																					
102588																					
102589																					
102590																					
102592		30670	06.03.1983	NKN				3200.000		402.439	330.000	480.000		130.000	420.000	1600.000	26.000	59.200	2071.810	7.700	11000.000
102595		37239	02.11.1986	NKN				4600.000		414.634	340.000	720.000		96.000	410.000	2400.000	45.000	0.100	1945.312	8.200	14000.000
102596																					
102598		43083	01.02.1990	NKN	3.000	46.0		2000.000		329.268	270.000	310.000		120.000	190.000	1000.000	19.000		1090.040	8.200	6900.000
102599																					
102604																					
102605																					
102606																					
138768																					
S9022017/1																					
S9032926/1																					
S9034847/1																					

SITE NO	START DATE	DEPTH FROM (m)	DEPTH TO (m)	MATERIAL
44387	02.11.2009	0.0	2.0	Brown Clay
	02.11.2009	2.0	4.0	Grey Clay
	02.11.2009	4.0	5.8	Weathered Basalt
	02.11.2009	5.8	14.2	Basalt
	02.11.2009	14.2	16.0	Weathered/Fractured Basalt
	02.11.2009	16.0	22.4	Basalt
	02.11.2009	22.4	28.0	Weathered/Fractured Basalt
	02.11.2009	28.0	46.5	Basalt
	02.11.2009	46.5	47.0	Red Clay
WRK054790	05.02.2010	0.0	1.0	topsoil brown clay
	05.02.2010	1.0	2.0	brown clay
	05.02.2010	2.0	7.0	weathered shale
	05.02.2010	7.0	10.0	red basalt
	05.02.2010	10.0	12.0	grey shale
	05.02.2010	12.0	15.7	basalt
2518 DEUTGA	M			
132471	16.03.1997	0.0	1.0	CLAYEY BROWN SOIL
	16.03.1997	1.0	7.5	SILT
	16.03.1997	7.5	8.5	GREY CLAY
	16.03.1997	8.5	9.5	WHITE CLAY
	16.03.1997	9.5	11.8	SOFT BASALT
	16.03.1997	11.8	14.0	SCORIA
	16.03.1997	14.0	16.5	WEATHERED BASALT
59869	19.11.1980	0.0	8.0	SANDY CLAY
	19.11.1980	8.0	15.0	SAND AND GRAVEL
59959	25.07.1983	0.0	12.2	YELLOW CLAY
	25.07.1983	12.2	18.3	SOFT BASALT
59969	31.10.1983	0.0	1.5	OVERBURDEN
	31.10.1983	1.5	7.3	SAND
	31.10.1983	7.3	12.2	CLAY
	31.10.1983	12.2	12.7	SANDSTONE
	31.10.1983	12.7	24.4	BASALT

SITE NO	START DATE	DEPTH FROM (m)	DEPTH TO (m)	MATERIAL
59999	15.10.1983	0.0	1.2	OVERBURDEN
	15.10.1983	1.2	10.3	CLAY
	15.10.1983	10.3	11.6	SILT STONE
	15.10.1983	11.6	21.3	BASALT
S9019433/1	26.03.2004	0.0	1.0	BROWN CLAY
	26.03.2004	1.0	2.0	SILT
	26.03.2004	2.0	8.5	BROWN CLAY
	26.03.2004	8.5	16.0	BASALT
	26.03.2004	16.0	20.0	FRACTURED BASALT
	26.03.2004	20.0	23.0	BASALT
3047 MAMBO	DURIN			
77036				
77037	02.02.1973	0.0	0.6	TOPSOIL
	02.02.1973	0.6	6.1	RED GRANITE
	02.02.1973	6.1	21.9	GRANITE
77038	16.02.1973	0.0	0.9	TOP SOIL
	16.02.1973	0.9	12.8	RED CLAY
	16.02.1973	12.8	18.3	GRAVEL AND SAND
77053	11.02.1983	0.0	2.0	CLAY
	11.02.1983	2.0	30.5	BASALT
77058	12.03.1983	0.0	0.6	TOP SOIL
	12.03.1983	0.6	12.2	CLAY
	12.03.1983	12.2	24.4	BASALT
77061	15.01.1983	0.0	4.0	CLAY
	15.01.1983	4.0	8.0	SANDY CLAY
	15.01.1983	8.0	16.0	RIVER GRAVEL
	15.01.1983	16.0	24.0	WEATHERED BASALT
	15.01.1983	24.0	34.0	BASALT
77062	18.01.1983	0.0	4.0	CLAY
	18.01.1983	4.0	8.0	SANDY CLAY
	18.01.1983	8.0	16.0	RIVER GRAVEL
	18.01.1983	16.0	24.0	WEATHERED BASALT

	SITE NO	START DATE	DEPTH FROM (m)	DEPTH TO (m)) MATERIAL
ĺ		18.01.1983	24.0	40.0	BASALT

	18.01.1983	40.0	40.7	CLAY
77063	28.02.1983	0.0	0.3	TOP SOIL
	28.02.1983	0.3	2.4	CLAY
	28.02.1983	2.4	31.7	BASALT
77064	22.03.1983	0.0	6.7	CLAY
	22.03.1983	6.7	15.2	BASALT
77067	27.02.1983	0.0	1.5	TOP SOIL
	27.02.1983	1.5	10.3	RED CLAY
	27.02.1983	10.3	34.7	BASALT
77069	15.12.1982	0.0	9.0	CLAY
	15.12.1982	9.0	15.0	BASALT
77071	10.03.1983	0.0	2.1	TOP SOIL
	10.03.1983	2.1	9.7	RED CLAY
	10.03.1983	9.7	34.1	BASALT
77072	09.03.1983	0.0	2.4	CLAY
	09.03.1983	2.4	37.8	BASALT
77073	30.10.1983	0.0	2.6	OVER BURDEN
	30.10.1983	2.6	10.1	CLAY
	30.10.1983	10.1	10.7	SANDSTONE
	30.10.1983	10.7	15.2	BASALT
77074	05.11.1983	0.0	1.5	OVERBURDEN
	05.11.1983	1.5	7.0	SAND
	05.11.1983	7.0	7.6	CLAY
	05.11.1983	7.6	15.2	BASALT
77076	29.01.1983	0.0	4.2	GREY CLAY
	29.01.1983	4.2	30.0	BASALT
77080	17.11.1982	0.0	0.5	LOAM
	17.11.1982	0.5	10.0	CLAY
	17.11.1982	10.0	13.7	DECOMPOSED BASALT
77082	01.06.1984	0.0	2.1	OVERBURDEN
	01.06.1984	2.1	9.4	CLAY

SITE NO	START DATE	DEPTH FROM (m)	DEPTH TO (m)	MATERIAL
	01.06.1984	9.4	10.7	SILTSTONE
	01.06.1984	10.7	15.2	BASALT
77083	03.06.1984	0.0	3.6	OVERBURDEN
	03.06.1984	3.6	13.1	CLAY
	03.06.1984	13.1	14.0	SILTSTONE
	03.06.1984	14.0	24.4	BASALT

77085	15.10.1983	0.0	1.0	TOP SOIL
	15.10.1983	1.0	2.0	RED CLAY
	15.10.1983	2.0	9.0	SOFT WHITE CLAY
	15.10.1983	9.0	9.5	RIVER PEBBLES
	15.10.1983	9.5	21.9	BASALT
77086	12.10.1983	0.0	0.6	TOP SOIL
	12.10.1983	0.6	3.6	CLAY
	12.10.1983	3.6	23.8	BASALT
77087	13.10.1983	0.0	0.3	TOP SOIL
	13.10.1983	0.3	3.0	CLAY
	13.10.1983	3.0	39.6	BASALT
77088	02.06.1984	0.0	2.5	OVERBURDEN
	02.06.1984	2.5	12.3	CLAY
	02.06.1984	12.3	13.2	SILTSTONE
	02.06.1984	13.2	21.3	BASALT
77090	30.10.1985	0.0	4.0	LIGHT GREY CLAYS
	30.10.1985	4.0	14.8	BASALT (FRACT)
	30.10.1985	14.8	20.5	CEMENTED SANDS AND GRAVEL
S9018600/1	21.01.2004	0.0	0.8	OVERBURDEN
	21.01.2004	0.8	4.3	BROWN CLAY
	21.01.2004	4.3	10.1	BROWN SILT
	21.01.2004	10.1	28.0	BASALT
	21.01.2004	28.0	31.5	FRACTURED BASALT
	21.01.2004	31.5	33.0	BLUESTONE
S9020266/1	18.06.2004	0.0	5.0	DRY BROWN CLAY
	18.06.2004	5.0	6.0	MOIST GREY CLAY

SITE NO	START DATE	DEPTH FROM (m)	DEPTH TO (m)	MATERIAL
	18.06.2004	6.0	9.4	BASALT
	18.06.2004	9.4	10.5	FRACTURED BASALT
S9029146/1		-	-	
S9030896/1				
3552 TARNEIT	-			
113118	02.05.1992	0.0	4.0	OVERBURDEN
	02.05.1992	4.0	6.5	CLAY
	02.05.1992	6.5	11.0	BASALT
	02.05.1992	11.0	14.0	FRACTURED BASALT
	02.05.1992	14.0	15.0	HARD BASALT
115139	24.01.1993	0.0	3.0	OVERBURDEN

	24.01.1993	3.0	9.5	CLAYEY SOIL
	24.01.1993	9.5	13.0	BASALT (SOFT)
	24.01.1993	13.0	22.0	BASALT (HARD)
	24.01.1993	22.0	24.0	BASALT (POROUS)
	24.01.1993	24.0	25.0	SCORIA
129562	15.12.1996	0.0	4.5	GREY CALY
	15.12.1996	4.5	25.5	SOFT BASALT
	15.12.1996	25.5	42.5	HARD BASALT
	15.12.1996	42.5	46.0	BROWN CLAY
	15.12.1996	46.0	50.3	HARD BASALT
	15.12.1996	50.3	56.0	FRACTURED BASALT
	15.12.1996	56.0	57.0	HARD BASALT
131568	13.09.1997	0.0	3.0	BROWN CLAYEY SOIL
	13.09.1997	3.0	5.0	GREY CLAY
	13.09.1997	5.0	7.5	HARD BASALT
	13.09.1997	7.5	9.5	SOFT BASALT
	13.09.1997	9.5	11.5	HARD BASALT
	13.09.1997	11.5	19.0	FRACTURED BASALT
	13.09.1997	19.0	21.0	HARD BASALT
	13.09.1997	21.0	22.5	FRACTURED BASALT
	13.09.1997	22.5	24.0	HARD BASALT

SITE NO	START DATE	DEPTH FROM (m)	DEPTH TO (m)	MATERIAL
132268	08.03.1997	0.0	1.5	CLAYEY SOIL
	08.03.1997	1.5	5.5	GREY SOIL
	08.03.1997	5.5	12.0	SOFT BASALT
	08.03.1997	12.0	21.0	FRACTURED BASALT
	08.03.1997	21.0	0.0	HARD BASALT
133251	05.04.1998	0.0	0.5	OVERBURDEN
	05.04.1998	0.5	4.5	BROWN CLAYEY SOIL
	05.04.1998	4.5	6.5	GREY CLAY
	05.04.1998	6.5	10.5	SOFT BASALT
	05.04.1998	10.5	21.0	FRACTURED BASALT
134755	16.05.1998	0.0	1.0	OVERBURDEN
	16.05.1998	1.0	3.5	CLAYEY SILT
	16.05.1998	3.5	5.9	GREY CLAY
	16.05.1998	5.9	11.5	BASALT
	16.05.1998	11.5	19.0	FRACTURED BASALT
	16.05.1998	19.0	21.0	HARD BASALT

142114	05.01.2000	0.0	2.5	OVERBURDEN
	05.01.2000	2.5	4.0	SANDY SILT
	05.01.2000	4.0	6.0	GREY CLAY
	05.01.2000	6.0	15.0	BASALT
	05.01.2000	15.0	27.0	FRACTURED BASALT
	05.01.2000	27.0	28.0	HARD BASALT
142525	05.10.2000	0.0	5.0	SOIL & CLAY
	05.10.2000	5.0	21.0	WEATHERED BASALT
	05.10.2000	21.0	30.0	BASALT
	05.10.2000	30.0	33.6	WEATHERED BASALT
143540	26.06.1999	0.0	1.0	VOLCANIC TOP SOIL
	26.06.1999	1.0	11.0	GREY PUG CLAY
	26.06.1999	11.0	18.0	BASALT
_	26.06.1999	18.0	30.0	BLUESTONE
	26.06.1999	30.0	36.0	BROWN/BLUE CLAY
	26.06.1999	36.0	41.0	BASALT

SITE NO	START DATE	DEPTH FROM (m)	DEPTH TO (m)	MATERIAL
	26.06.1999	41.0	50.0	BROWN BASALT
	26.06.1999	50.0	64.0	VERY HARD BLUESTONE
	26.06.1999	64.0	91.5	BROWN BASALT
329264				
329267				
329273				
93709				
93716				
93718	1			
93719				
93721	1			
93722	1			
93723				
93733	1			
93744	05.09.1977	6.0	34.0	VISICULAR BASALT
93750	22.09.1982	0.0	0.6	TOP SOIL
	22.09.1982	0.6	1.1	STICKY BROWN CLAY
	22.09.1982	1.1	3.7	SICKY GREY CLAY
	22.09.1982	3.7	9.1	BROWN BASALT
	22.09.1982	9.1	17.4	GREY BASALT
_	22.09.1982	17.4	26.7	BROWN BASALT

	22.09.1982	26.7	37.5	DARK BROWN BASALT
93751	15.12.1982	0.0	6.1	YELLOW CLAY
	15.12.1982	6.1	30.5	BASALT
93752	16.12.1982	0.0	4.5	YELLOW CLAY
	16.12.1982	4.5	6.1	DECOM BASALT
	16.12.1982	6.1	37.0	BASALT
93753				
93761	14.03.1983	0.0	3.0	TOPSOIL
	14.03.1983	3.0	9.0	CLAY
	14.03.1983	9.0	36.0	BASALT
93762	17.07.1983	0.0	10.6	YELLOW CLAY

SITE NO	START DATE	DEPTH FROM (m)	DEPTH TO (m)	MATERIAL
	17.07.1983	10.6	12.2	BASALT-CLAY BANDS
	17.07.1983	12.2	18.3	BASALT
93766	27.04.1983	0.0	3.0	CLAY
	27.04.1983	3.0	6.0	BASALT
	27.04.1983	6.0	12.0	WEATHERED ROCK
	27.04.1983	12.0	15.0	BASALT
	27.04.1983	15.0	18.0	HONEYCOMB/WATER WAX
	27.04.1983	18.0	21.0	ROTTEN ROCK
	27.04.1983	21.0	24.0	BASALT
	27.04.1983	24.0	30.0	WEATHERED BASALT
	27.04.1983	30.0	36.0	BASALT
	27.04.1983	36.0	42.0	CLAY
	27.04.1983	42.0	45.0	BASALT ROTTEN CLAY
93772	22.12.1982	0.0	3.6	REDDISH CLAY
	22.12.1982	3.6	27.4	BASALT
93773	18.02.1984	0.0	2.0	CLAY
	18.02.1984	2.0	36.0	BASALT
	18.02.1984	36.0	41.0	GREY CLAY
	18.02.1984	41.0	49.0	BASALT
93774	19.02.1984	0.0	3.0	CLAY
	19.02.1984	3.0	36.0	BASALT
	19.02.1984	36.0	37.0	GREY CLAY
	19.02.1984	37.0	53.0	BASALT
93775	01.03.1983	0.0	1.0	TOP SOIL
	01.03.1983	1.0	7.2	GREY CLAY
	01.03.1983	7.2	28.9	BASALT

93776	25.03.1986	0.0	0.5	TOP SOIL
	25.03.1986	0.5	2.5	CLAY
	25.03.1986	2.5	28.0	BASALT
93779	20.04.1988	0.0	0.2	SOIL
	20.04.1988	0.2	1.3	CLAY
	20.04.1988	1.3	29.0	BASALT

93780	20.04.1988 20.04.1988 20.04.1988 13.05.1991 13.05.1991	0.0 0.5 2.5 0.0	2.5	TOPSOIL CLAY
93791	20.04.1988 13.05.1991 13.05.1991	2.5		
93791	13.05.1991 13.05.1991		26.0	
93791	13.05.1991	0.0		BASALT
		0.0	1.0	TOP SOIL & CLAY
		1.0	18.0	CLAY
	13.05.1991	18.0	25.0	WASH
S61911/1	04.07.2003	0.0	0.5	OVERBURDEN
	04.07.2003	0.5	3.2	BROWN CLAY
	04.07.2003	3.2	8.0	GREY CLAY
	04.07.2003	8.0	12.0	BASALT
	04.07.2003	12.0	18.0	FRACTURED BASALT
S9020265/2	16.06.2004	0.0	0.8	OVERBURDEN
	16.06.2004	0.8	3.0	GREY CLAY
	16.06.2004	3.0	4.0	WEATHERED BASALT
	16.06.2004	4.0	14.0	BASALT
	16.06.2004	14.0	15.9	WEATHERED BASALT
	16.06.2004	15.9	16.4	BASALT
	16.06.2004	16.4	17.5	FRACTURED BASALT
S9020265/3				
S9025990/1				
S9027422/1	04.01.2007	0.0	3.0	BROWN CLAY
	04.01.2007	3.0	7.0	BROWN SANDY LOAM
	04.01.2007	7.0	34.0	WEATHERED BASALT
	04.01.2007	34.0	44.0	FRACTURED BASALT
	04.01.2007	44.0	45.0	BROWN CLAY
S9027501/1				
S9028108/1	05.01.2006	0.0	5.0	BROWN CLAY
	05.01.2006	5.0	12.0	BASALT
	05.01.2006	12.0	22.0	WEATHERED BASALT
	05.01.2006	22.0	43.5	BLUESTONE
_	05.01.2006	43.5	46.5	BROWN CLAY

0	5.01.2006	46.5	57.0	BASALT

SITE NO	START DATE	DEPTH FROM (m)	DEPTH TO (m)	MATERIAL
	05.01.2006	57.0	60.0	FRACTURED BASALT
S9029557/1	02.03.2007	0.0	1.0	BROWN CLAY
	02.03.2007	1.0	5.5	BROWN LOAM
	02.03.2007	5.5	10.5	BASALT
	02.03.2007	10.5	15.5	WEATHERED BASALT
	02.03.2007	15.5	19.5	FRACTURED BASALT
	02.03.2007	19.5	26.0	BASALT
S9030681/1	08.05.2007	0.0	2.0	BROWN SANDY CLAY
	08.05.2007	2.0	5.0	BROWN CLAY
	08.05.2007	5.0	11.0	GREY CLAY
	08.05.2007	11.0	12.0	BASALT
	08.05.2007	12.0	17.5	FRACTURED BASALT
S9033429/1			•	
S9034311/1	19.04.2008	0.0	3.8	BROWN CLAY
	19.04.2008	3.8	5.9	WEATHERED BASALT & CLAY
	19.04.2008	5.9	24.0	WEATHERED BASALT
	19.04.2008	24.0	30.0	BASALT
S9034321/1				
S9035165/1	13.10.2008	0.0	0.5	TOP SOIL
	13.10.2008	0.5	5.0	BROWN SILT
	13.10.2008	5.0	6.0	BROWN CLAY
	13.10.2008	6.0	13.0	TIGHT BASALT
	13.10.2008	13.0	15.0	WEATHERED BASALT
	13.10.2008	15.0	23.0	BASALT
3797 WERRIB	EE			
102582	06.05.1971	0.0	0.6	TOP SOIL
	06.05.1971	0.6	3.0	RIVER SILT DRY
	06.05.1971	3.0	5.5	HARD DRY BLUE CLAY
	06.05.1971	5.5	9.1	BLUESTONE
	06.05.1971	9.1	12.8	BROWN BASALT
	06.05.1971	12.8	15.9	RED BASALT AND WATER
	06.05.1971	15.9	24.7	BROWN BASALT

SITE NO	START DATE	DEPTH FROM (m)	DEPTH TO (m)	MATERIAL
	06.05.1971	24.7	33.5	SOFT BLUESTONE
102583	20.02.1976	0.0	0.3	TOP SOIL
	20.02.1976	0.3	1.5	RED CLAY
	20.02.1976	1.5	28.9	BASALT
102584	27.08.1980	0.0	0.1	TOP SOIL
	27.08.1980	0.1	3.0	MEDIUM FIRM FINE SANDY CLAY FRAGILE
	27.08.1980	3.0	3.2	VERY FINE BASALTIC CLAY
	27.08.1980	3.2	10.3	MEDIUM HARD BASALT
				MEDIUM HARD PARTLY DECOMPOSED PINK
	27.08.1980	10.3	20.2	BASALT
	27.08.1980	20.2	24.5	HARD BLUE STONE
	27.08.1980	24.5	25.3	MEDIUM HARD BASALT AND TRACES OF ALIVENE
	27.08.1980	25.3		MEDIUM HARD PINK BASALT FRACTURED
	27.08.1980	28.5		MEDIUM HARD BROWN
	27.08.1980	33.2		MEDIUM HARD BLUE
	27.08.1980	40.2		HARD BASALT
	27.08.1980	41.5		BROWN BASALT CLAYEY
	27.08.1980	41.7		FIRM BLUE SANDY CLAY
102586	05.06.1984	0.0		SURFACE SOIL
	05.06.1984	0.1	37.0	BASALT
	05.06.1984	37.0	42.0	BROKEN BASALT
102587	03.06.1984	0.0	0.1	TOPSOIL
	03.06.1984	0.1	40.0	BASALT
	03.06.1984	40.0	43.0	BROKEN BASALT
	03.06.1984	43.0	46.0	BASALT
102588	06.06.1984	0.0	1.0	TOPSOIL
	06.06.1984	1.0	10.0	CLAY
	06.06.1984	10.0	27.0	CLAY DRY GRAVEL
102589	06.06.1984	0.0	1.0	TOPSOIL
	06.06.1984	1.0	25.0	BASALT
	06.06.1984	25.0	37.0	WEATHERED BASALT
	06.06.1984	37.0	42.0	BASALT AND CLAY
102590	11.05.1981	0.0	3.0	TOP SOIL AND RED CLAY

SITE NO	START DATE	DEPTH FROM (m)	DEPTH TO (m)	MATERIAL
	11.05.1981	3.0	7.5	MOTTLED CLAY
	11.05.1981	7.5	47.0	BASALT
	11.05.1981	47.0	51.0	RED CLAY
	11.05.1981	51.0	57.0	BROWN AND GREY CLAY
	11.05.1981	57.0	70.0	BASALT
102592	06.03.1983	0.0	3.6	CLAY
	06.03.1983	3.6	42.7	BASALT
102595	02.11.1986	0.0	0.5	RED TOPSOIL
	02.11.1986	0.5	9.0	BASALT
	02.11.1986	9.0	15.0	YELLOW/RED CLAY
	02.11.1986	15.0	31.0	BASALT
102596	30.10.1986	0.0	7.0	RED TOPSOIL & CLAY
	30.10.1986	7.0	36.0	BASALT
102598	01.02.1990	0.0	1.0	TOPSOIL
	01.02.1990	1.0	2.0	CLAY
	01.02.1990	2.0	46.0	BASALT
102599				
102604				
102605				
102606				
138768	28.06.1999	0.0	3.0	TOP SOIL AND BROWN CLAY
	28.06.1999	3.0	4.0	HARD YELLOW CLAY
	28.06.1999	4.0	6.0	SOFT BROWN BASALT
	28.06.1999	6.0	12.0	SOFT BLUE BASALT
	28.06.1999	12.0	40.0	VERY PORUS SOFT BLUE BASALT
_	28.06.1999	40.0	42.0	STICKY GREY CLAY
S9022017/1				
S9032926/1				
S9034847/1				

Stage 1 and 2 - Desktop Environmental, Hydrogeological and Geotechnical Assessment
Report on PSP Area 40 - Ballan Road



Appendix D. Site Inspection Photographs





Photo A.1: Waste water drain covers (foreground), Septic tank (background). Property 4.



Photo A.2: Disused quarry filled with waste. Property 9.





Photo A.3: Tractor shed. Property 10



Photo A.4 : Scrap metal waste piles. Property 14.





Photo A.5: Waste piles for various materials. Property 15



Photo A.6: Waste piles. Property 15

Stage 1 and 2 - Desktop Environmental, Hydrogeological and Geotechnical Assessment
Report on PSP Area 40 - Ballan Road



Appendix E. Historical Aerial Photographs



Site: PSP Area 40 - Ballan Road, Wyndham Vale, Victoria

Year: 2009

Scale: 1:14,66 (Enlarged)

Run: NA
Photo: NA
Source: AusImage



Site: PSP Area 40 - Ballan Road, Wyndham Vale, Victoria

Year: 1991

Scale: 1:15,000 (Enlarged)
Run: 20A and 21W

Photo: 172 and 173 (Run 20A) / 163 (Run 21W)

Source: Department of Sustainability and Environment – Land Information Centre

PSP40_Aerials.xlsx 2 of 7



Site: PSP Area 40 - Ballan Road, Wyndham Vale, Victoria

Year: 1979

Scale: 1:25,000 (Enlarged)

Run: 11

Photo: 114 and 116

Source: Department of Sustainability and Environment – Land Information Centre

PSP40_Aerials.xlsx 3 of 7



Site: PSP Area 40 - Ballan Road, Wyndham Vale, Victoria

Year: 1972

Scale: 1:9,600 (Enlarged) **Run:** 44W and 45W

Photo: 24, 26 and 28 (Run 44W) and 57 (Run 45W)

Source: Department of Sustainability and Environment – Land Information Centre

PSP40_Aerials.xlsx 4 of 7



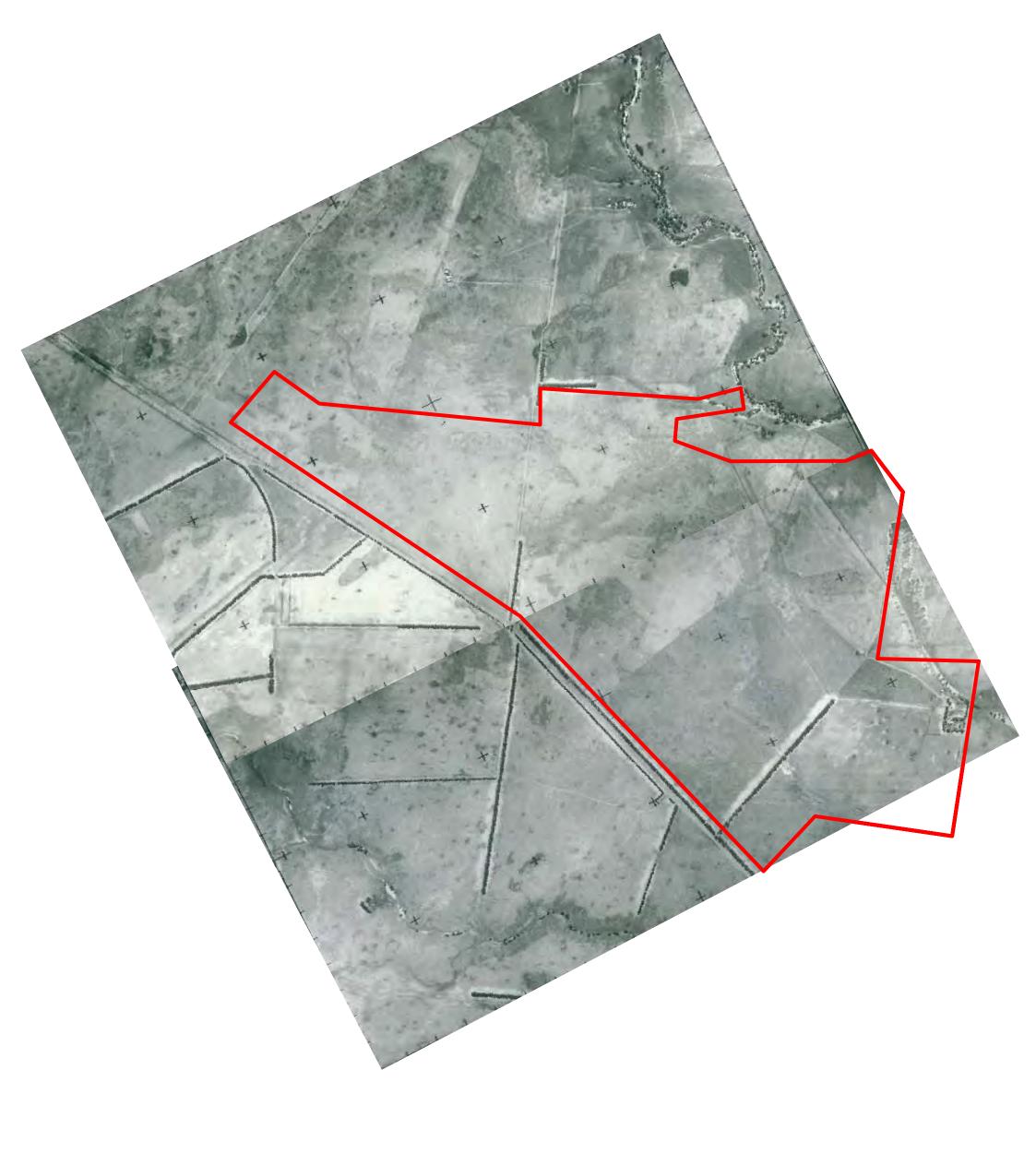
Site: PSP Area 40 - Ballan Road, Wyndham Vale, Victoria

Year: 1963

Scale: 1:9,600 (Enlarged) **Run:** 16 and 17W

Photo: 142 and 144 (Run 16) / 2 and 4 (Run 17W)

Source: Department of Sustainability and Environment – Land Information Centre



Site: PSP Area 40 - Ballan Road, Wyndham Vale, Victoria

Year: 1946

Scale: 1:15,480 (Enlarged)

Run: 2 Photo: 67394

Source: Department of Sustainability and Environment – Land Information Centre