



Report

Stage 1 Preliminary Contamination Assessment
Proposed Rezoning of Land, 123 Golden Valley Road, Jamberoo

Prepared for:

Branco Simicic c/- TCG Planning

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Executive Summary

TCG Planning commissioned Network Geotechnics Pty Ltd (NG) on behalf of Branco Simicic to carry out a Stage I Contamination Assessment in accordance with the Planning Guidelines SEPP 55 – Remediation of Land and Contamination Land Management Act 1997 for 123 Golden Valley Road, Jamberoo. It is understood that this report is required as part of a planning proposal for the land to be rezoned from RU2 Rural Landscape to R2 Low Density Residential.

The objective of this investigation was to carry out a Contamination Assessment in order to assess the risks of site contamination and to assess the suitability of the site for the proposed rezoning. An assessment of potential geotechnical and acid sulphate soil issues were also included in the study.

The scope of work undertaken to achieve the objectives included:

- An assessment of previous site use based on a review of historical title records and historical aerial photographs.
- Walk-over assessment of the site.
- Preparation of a Stage 1 Contamination Assessment report in accordance with Planning Guidelines SEPP 55 – Remediation of Land and Contamination Land Management Act 1997.
- Preliminary geotechnical and acid sulphate assessment based on visual assessment and desktop study.

Based on a review of the sites historical records, and other relevant available information, the following observations can be made:

- The site covers approximately 4.7ha of gently sloping land.
- The aerial photographs and other records reviewed indicate the past site usage to have been agricultural, specifically for dairy cattle grazing.
- No structures have been constructed on the site.

Based on the site inspection carried out by an NG Environmental Scientist on 28 October 2015 the following observations can be made:

- The subject site is covered with grass and a small dam is located in the south-western corner of the site. A concrete water trough is located near the eastern boundary of the site.
- There was no evidence of ACM observed on the ground surface, no visible staining of soil surfaces and no hydrocarbon odours in the surface material. Furthermore, there was no evidence of recent disturbance of the ground surface.
- There is assessed to be a low potential for acid sulphate soils to be present within the natural soils at the subject site.
- Potential geotechnical issues include the likely presence of fill and high plasticity clays.

Based on the desk study and walk-over assessment the risk of site contamination at 123 Golden Valley Road, Jamberoo is assessed to be low. During the site inspection no illegally dumped material, ACM or disturbed ground was observed. In the unlikely event that contamination is discovered during earthworks, an environmental consultant should be

contacted in order to provide advice on suitable remediation. Therefore, it is concluded that the site is suitable for the proposed industrial development from a site contamination perspective.

1.0 Introduction

TCG Planning commissioned Network Geotechnics Pty Ltd (NG) on behalf of Branco Simicic to carry out a Stage I Contamination Assessment in accordance with the Planning Guidelines SEPP 55 – Remediation of Land and Contamination Land Management Act 1997 for 123 Golden Valley Road, Jamberoo. An assessment of potential geotechnical and acid sulphate soil issues will also be made. It is understood that this report is required as part of a planning proposal for the land to be rezoned from RU2 Rural Landscape to R2 Low Density Residential.

The investigation was undertaken in accordance with NG Proposal W07/3548 dated 23 September 2015.

2.0 Scope of Work

The objective of this investigation was to carry out a Contamination Assessment in order to assess the risks of site contamination and to assess the suitability of the site for the proposed rezoning. An assessment of potential geotechnical and acid sulphate soil issues were also included in the study.

The scope of work undertaken to achieve the objectives included:

- An assessment of previous site use based on a review of historical title records and historical aerial photographs.
- Walk-over assessment of the site.
- Preparation of a Stage 1 Contamination Assessment report in accordance with Planning Guidelines SEPP 55 – Remediation of Land and Contamination Land Management Act 1997.
- Preliminary geotechnical and acid sulphate assessment based on visual assessment and desktop study.

3.0 Site Identification

The site is identified as 123 Golden Valley Road, Jamberoo (Lot 2 DP 626183) and covers an area of approximately 4.7ha. The site is bounded by:

- Lot 1 DP 798624 to the East.
- Golden Valley Road to the West.
- 2-16 Hyam Place to the North.
- Lot 3 DP 798624 to the South.

A plan of the site is included in Appendix B.

4.0 Site History

4.1 Zoning

The lot is currently zoned as RU2 Rural Landscape and is proposed to be rezoned to R2 Low Density Residential.

4.2 Title Records

A record of ownership/leasing as can be inferred from title records is given in Table 1 below.

Table 1 Historical Ownership			
Date	Lot /DP Number	Volume/Folio	Remarks
16 March 1840	POR 29		Crown Grant to Michael Hyam
7 March 1908		Bk 850 No 43	John Murphy (farmer) deceased to Thomas Murphy
16 March 1964		Bk 2695 No 297	Thomas Murphy to John Patrick Murphy (dairy farmer)
2 July 1973		Bk 3106 No 179	John Patrick Murphy to T & A Developments Pty Ltd and Miltonbrook Developments Pty Ltd
1 November 1979		Bk 3391 No 589	T & A Developments Pty Ltd & Miltonbrook Developments Pty Ltd to T & A Developments Pty Ltd
1 December 1982	2/626183	14839-232	T & A Investments Pty Ltd to B Simicic Pty Ltd

4.3 Aerial Photographs

Aerial photographs for the subject site were purchased from NSW Department of Lands. A summary of findings are presented in Table 2.

Table 2 Summary of Aerial Photograph Review		
Year of Photo	Colour	Site Description
1949	Black & White	The subject site is vacant and covered with grass. There is a house and sheds to the east of the subject and site and some residences to the west. Surrounding land appears to be used for agricultural and residential purposes. A creek is visible to the east of the subject site.
1963	Black & White	A dam has been constructed towards the southern end of the subject site. Minimal changes have occurred on surrounding properties.

1980	Black & White	No visible changes have been made to the subject site. An increase in the density of houses to the west of the subject site was observed. Land to the east still appears to be used for agricultural purposes.
1993	Colour	No visible changes have been made to the subject site. A new street and residence have been constructed on land adjacent to the subject site. An electrical substation is visible to the south-west of the subject site.
2006	Colour	No visible changes have been made to the subject site. Minimal changes have occurred on surrounding properties.

4.4 Land Use

Aerial photographs and title records indicate the subject site has been used for agricultural purposes since 1908 and possibly earlier. The site is likely to have been used as grazing land for dairy cattle during this time. The site is currently vacant with a dam to the southern end of the site and appears to be used as grazing land. It is understood that the site is proposed to be rezoned to R2 Low Density Residential.

4.5 Adjacent Land

Historical photographs indicate that the adjacent land has been used for residential and agricultural purposes from 1949 to present. The risk of site contamination migration on to the site is assessed to be low.

4.6 POEO Register

A search of the online public register under the *Protection of the Environment Operations Act 1997* (POEO) indicated that the subject site and surrounding sites are not listed on the contaminated land register.

4.7 Potential Contamination

The potential contamination on-site, due to past usage of the site is as follows:

- Possible pesticide and hydrocarbon contamination from use for agricultural purposes.
- Possible fill material in areas such as the dam wall.

5.0 Site Condition & Surrounding Environment

5.1 Topography

The subject site generally has an east to south-east facing slope of 3° to 6°. It was observed that surface water runoff would flow in an easterly to south-easterly direction from the Golden Valley Road to the eastern boundary.

5.2 Site Observations

A site inspection was carried out by an NG Environmental Scientist on 28 October 2015.

The subject site is covered with grass and surrounded by a post and wire fence. A small dam is located in the south-western corner of the site. The dam wall which is located on the eastern side of the dam is likely to contain fill material. A concrete water trough is located near the eastern boundary of the site.

It was observed that a creek is approximately 120m east of the boundary of the subject site.

There was no evidence of ACM observed on the ground surface, no visible staining of soil surfaces and no hydrocarbon odours in the surface material. Furthermore, there was no evidence of recent disturbance of the ground surface.

A site plan is attached in Appendix B.

6.0 Geology & Hydrogeology

6.1 Geology

Reference to Wollongong 1:250,000 geological map indicates the site is underlain by Gerringong Volcanics Kiama Tuff which contains trachytic tuff with pebbly bands.

6.2 Groundwater

The nearest groundwater bore is within 100m to the east and down slope of the subject site. The standing water level in this bore is 6m below ground level.

7.0 Potential Geotechnical Issues

From site observations made during the walk-over assessment and other readily available information the following comments can be made:

- The site has a slope of approximately 7° from the western to eastern boundary in the northern section of the site. The slope of the site is approximately 3° from west to east near the dam.
- There may be potential areas of fill throughout the site. The dam wall is likely to contain fill material of unknown quality.
- A groundwater bore (GW013508) is located within 100m to the east of the site boundary. The standing water level in this bore is 6m below ground level. The following soil log was included in the bore record.

Layer/Description	Depth to Base of Layer (m)
Soil, black	0.0 – 0.6
Clay, plastic, red, gravel, hard packed	0.6 – 5.18
Rock, volcanic, broken	5.18 – 6.09
Tuff, grey, hard	6.09 – 10.36
Tuff, hard (water encountered)	10.36 – 1.66
- From this log it is evident that high plasticity clays are likely to be present on the subject site. These soils could be highly reactive. - Based on the visual observations and desk study, it is assessed that there would be no geotechnical constraints preventing subdivision development.	

8.0 Potential Acid Sulphate Soil Issues

The following comments relate to the potential for the presence of acid sulphate soils on the subject site:

- The Kiama Local Environment Plan 2011 acid sulphate soils map indicates that the subject site is located within an area of Class 5 acid sulphate soils. This means that no further investigation is required unless works are likely lower the water table. The nearest ground water bore has a standing water level of 6m below ground surface.
- Acid sulphate soils are typically located in soil horizons less than 10m AHD. The lowest elevation at the subject site is approximately 23m AHD. Therefore, soils less than 10m AHD are unlikely to be disturbed.
- From the geological maps and soil log from nearby bore, it is unlikely that the site is underlain by sediments of either Holocene or Pleistocene age. These sediments are typically associated with acid sulphate soils.

Therefore, there is assessed to be a low potential for acid sulphate soils to be present within the natural soils at the subject site.

9.0 Results & Discussion

9.1 Summary of Desk Study

Based on a review of the sites historical records, and other relevant available information, the following observations can be made:

- The aerial photographs and other records reviewed indicate the past site usage to have been agricultural, specifically for dairy cattle grazing.
- No structures have been constructed on the site.

9.2 Summary of Visual Assessment

Based on the site inspection carried out by an NG Environmental Scientist on 28 October 2015 the following observations can be made:

- The subject site is covered with grass and a small dam is located in the south-western corner of the site. A concrete water trough is located near the eastern boundary of the site.
- There was no evidence of ACM observed on the ground surface, no visible staining of soil surfaces and no hydrocarbon odours in the surface material. Furthermore, there was no evidence of recent disturbance of the ground surface.

10.0 Conclusions

Based on the desk study and walk-over assessment the risk of site contamination at 123 Golden Valley Road, Jamberoo is assessed to be low. During the site inspection no illegally dumped material, ACM or disturbed ground was observed. In the unlikely event that contamination is discovered during earthworks, an environmental consultant should be contacted in order to provide advice on suitable remediation. Therefore, it is concluded that the site is suitable for the proposed rezoning from a site contamination perspective.

11.0 References

1. NSW EPA, 2013, National Environment Protection Measure (NEPM).
2. Contaminated Land Management Act 1997.
3. Planning Guidelines SEPP 55 – Remediation of Land.

12.0 Limitations

This report has been prepared for Branco Simicic c/- TCG Planning in accordance with NG's proposal dated 23 September 2015 (Ref W07/3548) under NG's Terms of Engagement.

The report is provided for the exclusive use of Branco Simicic and TCG Planning for the specific development and purpose as described in the report. The report may not contain sufficient information for developments or purposes other than that described in the report or for parties other than Branco Simicic and TCG Planning.

The information in this report is considered accurate at the date of issue with regard to the current conditions of the site. The conclusions drawn in the report are based on interpolation between boreholes or test pits. Conditions can vary between test locations that cannot be explicitly defined or inferred by investigation.

The report, or sections of the report, should not be used as part of a specification for a project, without review and agreement by NG, as the report has been written as advice and opinion rather than instructions for construction.

The report must be read in conjunction with the attached Information Sheets and any other explanatory notes and should be kept in its entirety without separation of individual pages or sections. NG cannot be held responsible for interpretations or conclusions from review by others of this report or test data, which are not otherwise supported by an expressed statement,

interpretation, outcome or conclusion stated in this report. In preparing the report NG has necessarily relied upon information provided by the client and/or their agents.

Network Geotechnics Pty Ltd

Appendix A

General Notes

General Notes About This Report



INTRODUCTION

These notes have been prepared by Network Geotechnics Pty Ltd (NG) to help our Clients interpret and understand the limitations of this report. Not all sections below are necessarily relevant to all reports.

SCOPE OF SERVICES

This report has been prepared in accordance with the scope of services set out in NG's proposal under NG's Terms of Engagement, or as otherwise agreed with the Client. The scope of work may have been limited by a range of factors including time, budget, access and/or site constraints.

RELIANCE ON INFORMATION PROVIDED

In preparing the report NG has necessarily relied upon information provided by the Client and/or their Agents. Such data may include surveys, analyses, designs, maps and plans. NG has not verified the accuracy or completeness of the data except as stated in this report.

GEOTECHNICAL AND ENVIRONMENTAL REPORTING

Geotechnical and environmental reporting relies on the interpretation of factual information based on judgment and opinion and is far less exact than other engineering or design disciplines.

Geotechnical and environmental reports are for a specific purpose, development and site as described in the report and may not contain sufficient information for other purposes, developments or sites (including adjacent sites) other than that described in the report.

SUBSURFACE CONDITIONS

Subsurface conditions can change with time and can vary between test locations. For example, the actual interface between the materials may be far more gradual or abrupt than indicated and contaminant presence may be affected by spatial and temporal patterns.

Therefore, actual conditions in areas not sampled may differ from those predicted since no subsurface investigation, no matter how comprehensive, can reveal all subsurface details and anomalies.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes or groundwater fluctuations can also affect subsurface conditions and thus the continuing adequacy of a geotechnical report. NG should be kept informed of any such events and should be retained to identify variances, conduct additional tests if required, and recommend solutions to

problems encountered on site.

GROUNDWATER

Groundwater levels indicated on borehole and test pit logs are recorded at specific times. Depending on ground permeability, measured levels may or may not reflect actual levels if measured over a longer time period. Also, groundwater levels and seepage inflows may fluctuate with seasonal and environmental variations and construction activities.

INTERPRETATION OF DATA

Data obtained from nominated discrete locations, subsequent laboratory testing and empirical or external sources are interpreted by trained professionals in order to provide an opinion about overall site conditions, their likely impact with respect to the report purpose and recommended actions in accordance with any relevant industry standards, guidelines or procedures.

SOIL AND ROCK DESCRIPTIONS

Soil and rock descriptions are based on AS 1726 – 1993, using visual and tactile assessment except at discrete locations where field and / or laboratory tests have been carried out. Refer to the accompanying soil and rock terms sheet for further information.

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FURTHER ADVICE

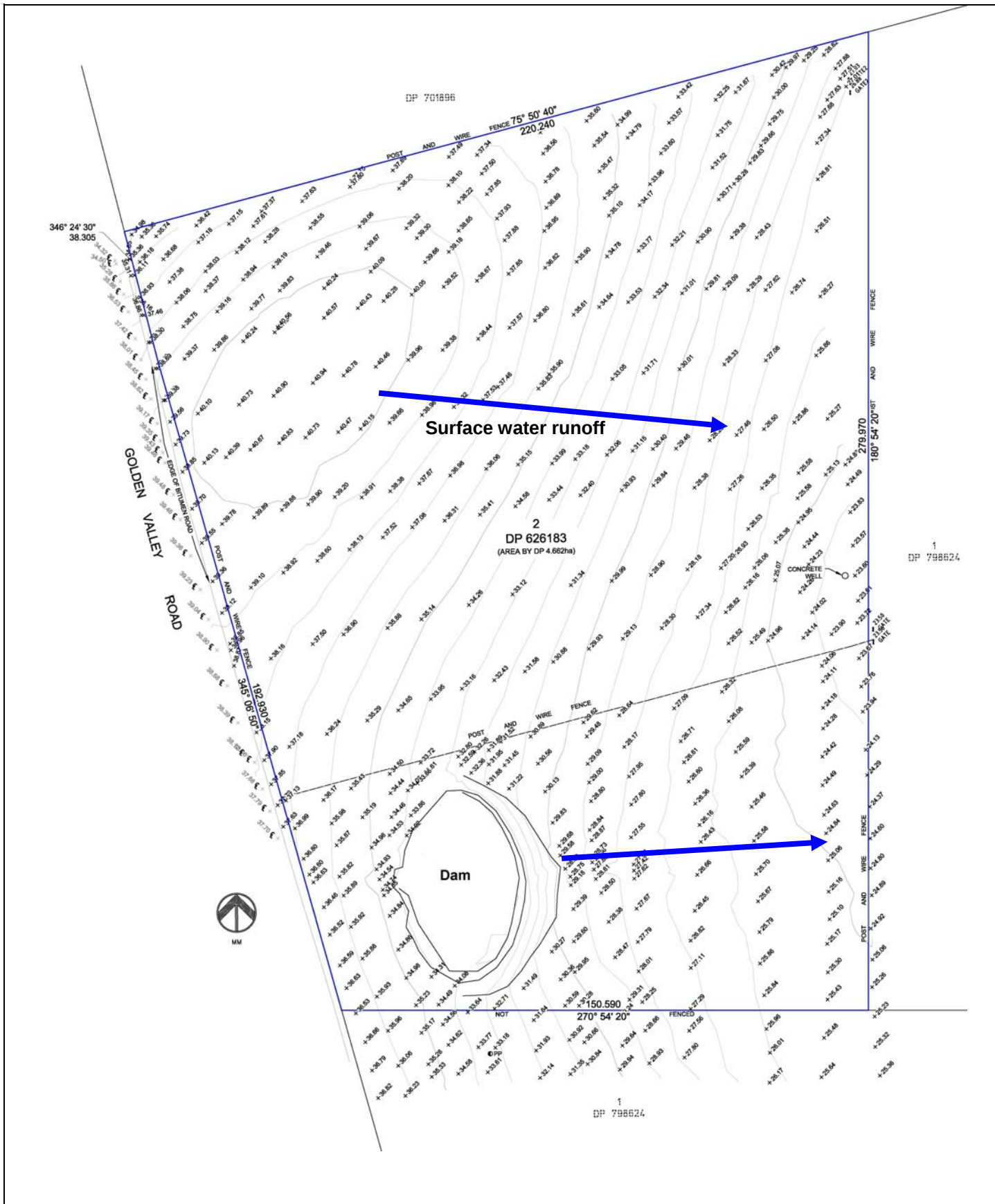
NG would be pleased to further discuss how any of the above issues could affect a specific project. We would also be pleased to provide further advice or assistance including:

- Assessment of suitability of designs and construction techniques;
- Contract documentation and specification;
- Construction control testing (earthworks, pavement materials, concrete);
- Construction advice (foundation assessments, excavation support).



Appendix B

Site Plan



	Scale: A4 – Not to scale		Client: Branco Simicic c/- TCG Planning	
	Date: 5/11/15		Project: Proposed Rezoning of Land	
	Drawing: TPR		Location: 123 Golden Valley Road, Jamberoo	
	Drawing No: W07/3548-1		Sheet: 1 OF 1	SITE PLAN