

Appendix B

Preliminary Contamination Investigation

Preliminary contamination assessment

Lot 21 DP1077442, 1225 Eumungerie Road, Burroway NSW



Ref: R14261c

Date: 10 June 2014

Envirowest Consulting Pty Ltd ABN 18 103 955 246

• 9 Cameron Place, PO Box 8158, Orange NSW 2800 • Tel (02) 6361 4954 •
• Fax (02) 6360 3960 • Email admin@envirowest.net.au • Web www.envirowest.net.au •

Environmental
Geotechnical
Asbestos
Services



Prepared by: Envirowest Consulting Pty Ltd
9 Cameron Place
Orange NSW 2800

Client: Malcom White
C/- Geolyse Pty Ltd
PO Box 1842
Dubbo NSW 2830

Assessor: Dave Langston *BNEWS*
Environmental Scientist

Authorising Officer: Leah Desborough *BNatRes (Hons)*
Environmental Scientist

Interested authorities: Narromine Shire Council

Report number: R14261c

Date: 10 June 2014

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Executive summary

Background

A change in land-use is proposed for Lot 21 DP1077442 Eumungerie Road, Burroway NSW. Land-use will change from rural to rural residential. Potential exists for contaminating activities to have been undertaken on the site which may impact on suitability for the proposed land-use.

An investigation is required to determine potential for contamination from past activities.

Objectives

A preliminary site investigation was conducted in accordance with the contaminated land management planning guidelines State Environmental Planning Policy No. 55 (SEPP 55) to determine the potential for soil contamination of Lot 21 DP1077442 Eumungerie Road, Burroway NSW.

Investigation and conclusions

The site is located approximately 10km north east of the township of Narromine along the Eumungerie Road and has an area of approximately 420 hectares. The site has had an agricultural history of grazing and dry land cropping.

No historical contamination investigation reports are known to have been undertaken on the site.

The contamination status of the site was assessed from a site inspection and desktop study. No soil samples were collected for laboratory analysis.

The site is farmland with a current land-use of stock grazing and intermittent dry land cropping. Small amounts of cropping for stock fodder production have occurred in the past. The site has a small gravel quarry which is no longer in operation, measuring 40m x 130m. The quarry serviced the local council for road construction within the area. Aerial photos show the quarry in operation in 1965. There is no evidence of supporting infrastructure such as buildings, loading ramps and sheds being associated with the quarry.

Two small holding pens used for stock loading and unloading were located in the central section of the site. Dips were not associated with the stock yards. A shed is located on the site used for the storage of machinery. No contaminating activities are expected to be associated with the holding pens.

Potential contamination sources associated with the historical land-use of the site includes:

- Rural supplies store – agricultural chemicals and oils and fuels
- Illegal disposal of material including soil, building material and other wastes

No contaminating activities were identified on the site. No fill, staining or evidence of contaminating activities were observed on the site. The site is suitable for rural residential land-use.

Recommendations

No further investigations are necessary and the site is suitable for rural residential land-use.

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1. Introduction

A change in land-use is proposed for Lot 21 DP1077442 Eumungerie Road, Burroway NSW. Land-use will change from rural to rural residential. Potential exists for contaminating activities to have been undertaken on the site which may impact on suitability for the proposed land-use.

A site inspection, desktop study and a review of the available history were undertaken of the site to determine sources of potential contamination. No soil samples were collected.

2. Scope of work

Envirowest Consulting Pty Ltd was commissioned by Malcom White to undertake a preliminary contamination investigation of Lot 21 DP1077442 Eumungerie Road, Burroway NSW. The objective was to identify past potentially contaminating activities, identify potential contamination types, provide a preliminary assessment of site contamination and assess the need for further investigation or suitability for the residential land-use. The scope did not include soil sampling.

3. Site identification

Address	Penville Park 1225 Eumungerie Road Burroway NSW
Owner(s)	Malcom White
Deposited plans	Lot 21 DP1077442
Australian Map Grid	55H E623940m N6441180m
Locality map	Figure 1
Aerial photograph	Figure 2
Photograph(s)	Figure 3
Area	Approximately 420 hectares

4. Site history

4.1 Zoning

The site is zoned Primary production under the Narromine Shire Council Local Environmental Plan 2011.

4.2 Land-use

The current land-use of the site is stock grazing and intermittent pasture cropping. This appears to have also been the historical land-use. The historical land-use included dry land cropping and cattle grazing.

Surrounding land is still used for agricultural purposes

4.3 Summary of council records

No information regarding contamination issues identified in Narromine Shire Council records. The site is not identified as contaminated land and no documents relating to contamination were found.

4.4 Sources of information

Topographic map of area (Narromine 1:50,000 CMA of NSW) 1980

NSW OEH records of public notices under the CLM Act 1997

Aerial photograph 1965, 1983, 1996 and 2010

Historical parish maps 1884, 1898, 1908, 1921 and 1935

Lands Department title records

Site inspection on 27 May 2014

4.5 Chronological list of site uses

4.5.1 Historical parish maps

A review of the 1884, 1898, 1908, 1921 and 1935 historical parish maps indicated the site has been relatively unchanged. The lots were owned/ leased by Bank of Australasia, A. J Maybury and Comm Banking of Sydney.

4.5.3 Aerial photographs

4.5.3.1 1965 aerial photograph

- Land-use was dominated by agriculture with grazing on cleared land.
- Gravel quarry in operation.

4.5.3.2 1983 aerial photograph

No new features were identified in the 1983 aerial photograph.

4.5.3.3 1996 aerial photograph

New features identified in the 1996 aerial photograph were:

- The southern section of the investigation area appeared to have been contoured.
- Two dams created.

4.5.3.4 2010 aerial photograph

New features identified in the 2010 aerial photograph were:

- The land-use of the investigation area appeared to have been grazing.
- Increase in dam numbers from 2 to 6.
- 10m x 30m galvanised shed built which is still in use.

4.5.4 1978 topographic map

No features are identified in the investigation area on the 1980 topographic map. A minor settlement is located to the west called 'Rocky Point' with access from Eumungerie Road.

4.5.5 Land and Property Information

4.5.5.1 Previous title reference – Volume 9786, Folio 54

Volume 9786, Folio 54 was believed to previously be Crown Land that was leased for grazing and sold at auction on 24 January 1927 to Thomas Sydney Smith (farmer and grazier) and Robina Frazer Smith.

Owen Mackinnon Smith was added to the title on 9 September 1964.

Owen Mackinnon Smith, of Narromine, farmer and grazier and Robina Frazer Smith, widow, had equal shares in 27 June 1973.

Owen Mackinnon Smith, of Narromine, farmer and grazier had full title on 2 April 1974.

4.5.5.2 Previous title reference – Volume 15109, Folio 31

Volume 15109, Folio 31 was previously owned by Owen Mackinnon Smith who sold the property to N. & M. Tuck Pty. Ltd. on 30 August 1983.

4.6 Other information

Application of persistent pesticides or biosolids is unlikely to have occurred on the site.

4.7 Buildings and infrastructure

The boundaries of the site are fenced. Several internal fences traverse the site separating the investigation area into paddocks.

Five (5) 50m x 50m dams and one (1) 100m x 250m dam are located on site and are a part of a drainage system which flows to the south west of the property.

One bore was located on site and is not listed on NSW Natural Resource Atlas. The bore fills two (2) 22,000L tanks proximal to the shed and are likely to fill trough and stock water.

Two (2) medium sized (20m x 20m) stock yards with loading ramp are located in the central section of the site. A number of water troughs and natural water ways are located throughout the site servicing stock needs.

A medium sized (10m x 30m) galvanised shed is located proximal to one of the stock yards. The fully enclosed shed currently consists of dirt floor and small work bench. The shed is being used for machinery storage which includes tractors and motorbikes. No oil or surface staining was observed and 3 x 20L herbicide and wetting agent products were found in the shed.

No other infrastructure was identified on the site.

4.8 Contaminant sources

Pesticides may have been stored and applied to the investigation area as part of farm management.

4.9 Contaminants of concern

- Fill (metals, hydrocarbons, pesticides)
- Organochlorine pesticides (OCP)
- Oils and fuel (TPH & BTEXN)

4.10 Relevant complaint history

Nil

4.11 Contaminated site register

The investigation area is not listed on the NSW EPA Contaminated Land record or the list of NSW contaminated sites notified to the EPA (accessed 29 May 2014). Neighbouring properties are also not listed.

4.12 Previous investigations

No previous contamination investigations are known to have been undertaken on the site.

4.13 Neighbouring land-use

North – Grazing

South – Rural-residential

East – Eumungerie Road and rural beyond

West – Grazing

The neighbouring land-uses are not expected to impact on the contamination status of the site.

4.14 Integrity assessment

The site history was obtained from a history review. The information to the best of the assessor's knowledge is accurate.

5. Site condition and environment

5.1 Surface cover

Most native trees have been cleared. Surface cover consisted of pasture species including red grass, windmill grass, wallaby grass, clover and barley grass. Weed species included thistle, biddi bush, saffron and Paterson's curse. Open woodland trees comprising of eucalypt and pines are scattered on site.

5.2 Topography

The site is located on a lower-slope. Undulating slope is very gently to gently inclined ranging from 0 to 5%. Aspect is predominantly south west.

5.3 Soils and geology

The soil at the site comprise Red Earths which have red brown clay loam topsoil and red brown to brown light to medium clay subsoils.

The site is within the Narromine 1:250, 000 geology sheet and the area is underlain by the Pilliga and Purlawaugh sediments which consist of sandstone/ mudstone sediments and quartz pebble conglomerates which have later been intruded by the Gonbondery Granite.

5.4 Surface water and groundwater

A drainage line traverses the site from north east to south west. Surface water on the site flows into the drainage line which refills a number of dams within the area.

The nearest waterway to the site is the Macquarie River which is 4.5km to the west, surface water from site looks like it does not reach the Macquarie River due to the extensive network of dams and drainage lines.

The Australian Natural Resources Atlas identifies the site within the Unincorporated Area – Lower Macquarie Alluvium Groundwater Management Unit. The management unit has an area of 238,277km² with approximately 45.4 GL consumed per year. Salinity levels are variable ranging from less than 1,000µg/L to greater than 1,500µg/L. Groundwater is located in small discontinuous sand lenses and varies in quality and yield. These factors have limited the use of groundwater to stock purposes with some domestic use.

One bores was identified on site but is not listed in the NSW Natural Resource Atlas. Two bores to the east on the neighbouring property are within 1km of the site. Bores in the locality are licensed for domestic and stock with water bearing zones located at depths greater than 20m in sandstone.

5.5 Evidence of contamination checklist

Site layout showing industrial processes	None identified
Sewer and service plans	None identified
Manufacturing processes	None identified
Underground tanks	None identified
Product spills and loss history	None identified
Discharges to land, water and air	None expected
Disposal locations, presence of drums, wastes and fill materials	Discarded fencing material located in the historic quarry
Soil staining	None identified
Visible signs of plant stress, bare areas	None identified
Odours	None identified
Ruins	None identified
Other	-

6. Sampling analysis plan and sampling methodology

No soil samples collected

7. Results and discussion

The site is rural land and has a land-use history of grazing and rotational dry land cropping on cleared areas. Cropping for fodder production is expected to have been undertaken in the past. There was no evidence of fill, sheep dips, orchards, mines or other contaminating activities from the historical review. No significant building or commercial activity was observed from the aerial photographs.

Historical aerial photographs indicate the site has been unchanged for 50 years. The Lands Department title records indicate the owners of the site were generally farmers and graziers.

Two stockyards are located in the central section of the site. The yards are expected to have used for ease of loading and unloading stock. No potential contamination is associated with the holding pen.

A 10m x 30m fully enclosed galvanised shed is located on site with it primarily used for storage of machinery. No surface staining was observed.

The historic quarry has not been in use under the current owner (>10 years) and discarded fencing has been disposed in the area will require removal.

No contaminating activities were identified from the site inspection or desktop study.

8. Conclusions and recommendations

8.1 Summary

The site is located approximately 10km north east of the township of Narromine along the Eumungerie Road and has an area of approximately 420 hectares. The site has had a long agricultural history.

No historical contamination investigations are known to have been undertaken on the site.

The contamination status of the site was assessed from a site inspection and desktop study. No soil samples were collected for laboratory analysis.

The site is farmland with a current land-use of stock grazing and intermittent cropping. Small amounts of cropping for stock fodder production have occurred in the past.

The site has a small gravel quarry which is no longer in operation, measuring 40m x 130m. The quarry serviced the local council for road construction within the area. Aerial photos show the quarry in operation in 1965. There is no evidence of supporting infrastructure such as buildings, loading ramps and sheds being associated with the quarry over the period of use.

The historic quarry has not been in use under the current owner (>10 years) and discarded fencing has been disposed in the area will require removal.

Two stockyards used for stock loading and unloading are located in the central section of the site. No contaminating activities are expected to be associated with the holding pens. Dips were not associated with the stock yards.

A 10m x 30m fully enclosed galvanised shed is located on site with it primarily used for storage of machinery. No surface staining was observed.

No contaminating activities were identified on the site. No fill, staining or evidence of contaminating activities were observed on the site. The site is expected to be suitable for residential land-use.

8.2 Assumptions used in reaching the conclusions

An accurate history has been obtained and typical past farming practices were adopted.

8.3 Suitability of proposed use

Rural residential land-use is suitable on the site.

8.4 Recommendation for further work

No further investigations are necessary and the site is suitable for rural residential land-use

9. Report limitations and intellectual property

This report has been prepared for the use of the client to achieve the objectives given the clients requirements. The level of confidence of the conclusion reached is governed by the scope of the investigation and the availability and quality of existing data. Where limitations or uncertainties are known, they are identified in the report. No liability can be accepted for failure to identify conditions or issues which arise in the future and which could not reasonably have been predicted using the scope of the investigation and the information obtained.

The investigation identifies the actual subsurface conditions only at those points where samples are taken, when they are taken. Data derived through sampling and subsequent laboratory testing is interpreted by geologists, engineers or scientists who then render an opinion about overall subsurface conditions, the nature and extent of the contamination, its likely impact on the proposed development and appropriate remediation measures. Actual conditions may differ from those inferred to exist, because no professional, no matter how well qualified, and no sub-surface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock or time. The actual interface between materials may be far more gradual or abrupt than a report indicates. Actual conditions in areas not sampled may differ from predictions. It is thus important to understand the limitations of the investigation and recognise that we are not responsible for these limitations.

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10. References

CMA (1978) *Narromine Topographic Map 1:50,000* (Central Mapping Authority of New South Wales, Bathurst)

DEC (2006) *Contaminated Sites: Guidelines for the NSW Site Auditors Scheme* (NSW Environment Protection Authority, Chatswood)

EPA (1995) *Contaminated sites: Sampling Design Guidelines* (NSW Environment Protection Authority, Chatswood)

Sherwin L., 1997, *Narromine 1:250 000 Geological Sheet SI/55-03, 2nd edition*, Geological Survey of New South Wales, Sydney.

NEPC (2013) *National Environment Protection (Assessment of Site Contamination) Measure 2013* (National Environment Protection Council Service Corporation, Adelaide)

Figures



Investigation area



Figure 1: Locality map

Lot 21 DP1077442 Eumungerie Road, Burroway NSW



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Drawn by: DL

Date: 10/06/2014



Legend

— Investigation area

Figure 2: Aerial photograph of the site (2010)

Lot 21 DP1077442 Eumungerie Road, Burroway NSW



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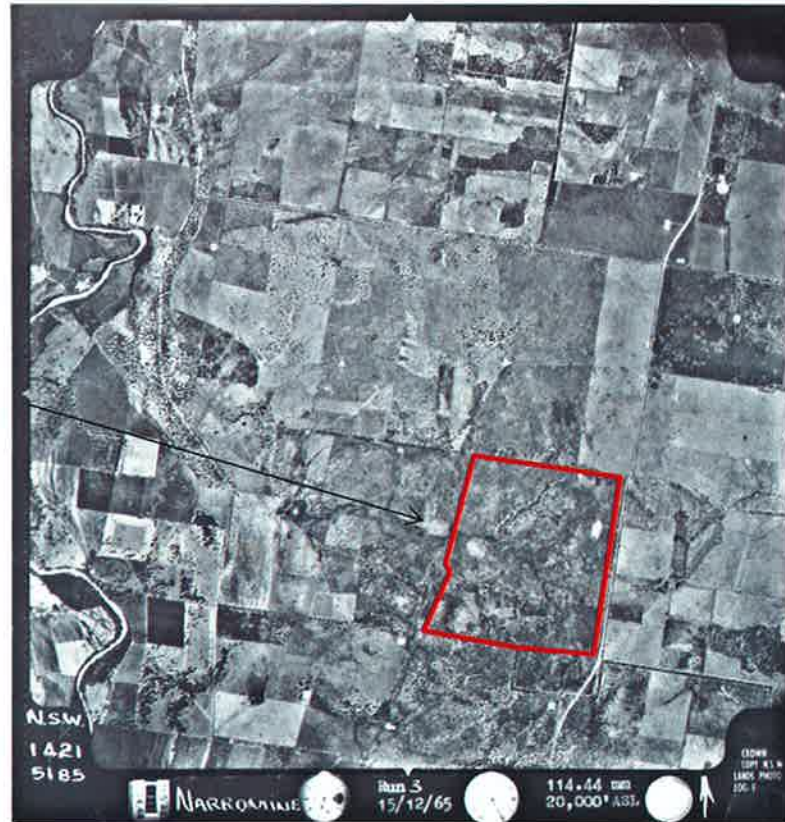
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Drawn by: DL

Date: 10/06/2014

Figure 3: Historical Aerial Photos

Investigation
area



1965 site photo (site outlined in red)

Investigation
area



1996 site photo (site outlined in red)

Figure 4: Photographs of the site



Looking south west over investigation area towards shed



One of two holding stock yards on site



Looking north over quarry with discarded fencing material



Northern extent of quarry which is inundated by standing water



Storage shed



Looking west over largest of the six dams