

Appendix 5: Preliminary Contamination Investigation, Envirowest 2024

Preliminary contamination investigation

34L Pinedale Road, Lot 103 DP 1143590, Dubbo NSW 2830

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Document control					
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Summary report

Background

A rural-residential subdivision is proposed for Lot 103 DP1143590 34L Pinedale Road, Dubbo NSW. The approved 8ha lots will be changed to 5ha lots under a rezoning application. A preliminary contamination assessment of the site is required to determine the suitability for rural residential land-use.

Objectives of investigation

The objective of the investigation was to determine suitability of the site for the proposed land-use.

Scope

The scope was to identify past potentially contaminating activities, identify potential contamination types, discuss the site condition, provide an assessment of site contamination and suitability for residential land-use. The scope of works included a desktop study and a review of available information.

Summary

A desktop study was conducted to inspect the site in February 2024. The current and historical land-use is grazing of sheep and horses. The site is in a rural locality with rural residential lots in the neighboring land.

One dwelling was constructed after subdivisions from a larger lot in the early 2000's. Two dams are located on the site.

Pasture species comprising native and introduced species are located on the site. White cypress pine in northern section of site.

No evidence of orchards, mines, sheep dips, mixing sheds or contaminating industrial activities are known to have been located on the site from the review of site history, desktop study and past owners. No agricultural chemicals or other contaminant sources are known to have been used on the site.

Recommendations

The site is suitable for rural residential land-use, as described in the rezoning application.

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1. Introduction

A rural-residential change of land-use is proposed for Lots 103 DP1143590 34L Pinedale Road, Dubbo NSW. Land-use change is a rezoning from 8ha lots to 5ha lots.

Agriculture including stock grazing and pasture improvement is the most recent and historical land-use. A preliminary contamination assessment of the site is required to determine the suitability for large lot rural residential land-use.

2. Objectives

The objective of the investigation was to determine suitability of the site for the proposed land-use change.

3. Scope of work

Envirowest Consulting Pty Ltd was commissioned by Rebecca Rice-Ward to undertake a preliminary contamination investigation, in accordance with the contaminated land management planning guidelines, from the *Contaminated Land Management Act 1997* and the *SEPP (Hazards and Resilience)* of Lot 103 DP1143590 34L Pinedale Road, Dubbo NSW. The scope of works included a desktop study and a review of available information.

4. Site identification

Address	34L Pinedale Road Dubbo NSW 2800
Deposited plans	Lot 103 DP1143590
Latitude and longitude	-32.25° 148.71°
Geographic coordinates	55H E660925m S6430193m
Client	Rebecca Rice-Ward
Owner	Rebecca Rice-Ward
Current occupier	Vacant pasture
Area	Approximately 45ha
Local government area	Dubbo Regional Council
Current zoning	R5 – Large Lot Residential (Dubbo Regional LEP 2022)
Trigger for investigation	Change in land-use
Locality map	Figure 1

5. Site history

5.1 Land-uses

The current and historical land-use is grazing of horses and sheep on semi-improved pastures.

5.2 Summary of council records

34L Pinedale Road Dubbo is not mapped as an area of concern by the Dubbo Regional Council. According to the NSW Planning Portal, there is no current indication of:

- Significant contamination
- Subject to a management order
- Subject of an approval voluntary management proposal
- Subject to an ongoing maintenance order
- Subject to a site audit statement

5.3 EPA databases

The site is not listed on the NSW EPA register of contaminated sites (8 February 2024) or sites notified to the EPA (8 February 2024).

No sites listed on NSW EPA register of contaminated sites or sites notified to the EPA have been identified within 1km of the site.

5.4 Safework NSW Storage of hazardous chemicals

A search of the SafeWork NSW dangerous goods database was not considered necessary as no use of fuels was indicated from the searches and past land-uses.

5.5 POEO public register

No current or delicensed and former licensed activities under the POEO Act 1997 have been identified for the site.

Sites listed on NSW EPA POEO public register have not been identified within 1km of the site.

5.6 Other government agency databases

The site is not listed on the following databases:

- National Waste Management Site database
- National Liquid Fuel Facilities database
- The NSW Government PFAS Investigation Program
- Defence PFAS Investigation Program
- Defence PFAS Management Program
- Airservices Australia National PFAS Management Program

No sites listed on government agency databases have been identified within 1km of the investigation area.

5.7 Sources of information

A desktop study was conducted in February 2024 by Georgina Moir of Envirowest Consulting Pty Ltd
NSW EPA records of public notices under the CLM Act 1997

Soil and geological maps

Historical aerial photographs (1964, 1971, 1980, 1995, 2009, 2023) including NSW Government historical imagery and Google Earth

Dubbo Regional Local Environmental Plan 2022

Interview with owner representatives

5.8 Review of historic aerial photographs, maps and plans

5.8.1 Aerial photographs

Year	Visual observations on site	Surrounding area
1964	The site is in a rural locality and primarily cleared agricultural land. A cluster of trees is seen near the north site boundary and further trees are scattered throughout the site. Land-use appears to be grazing. Access road via Pinedale Road veers southwest onto adjacent property. Vehicle track on site visible halfway into site (Appendix 1).	Land-use on all surrounding areas appears to be agricultural comprising grazing. Pinedale Road to the south is identifiable as a tree corridor. A dirt track and tree corridor are identifiable as part of the north site boundary. Beni State Conservation Area to the East of the site.
1971	Tree cluster near north site boundary appears to have been removed. Small dam constructed towards the Southeast corner of the site.	Tree and shrubbery cluster on properties to the north and east appear to have also been removed.
1980	Previously removed woodland tree cluster appears to have regrown minimally or been replanted.	Small number of rural-residential dwellings constructed on the surrounding properties to the east.
1995	Dam constructed in the Northwest corner of the site. Vehicle track within the site extended northwest towards the site boundary (Appendix 2).	Multiple additional rural-residential dwellings constructed on the surrounding properties.
2009	Existing vehicle tracks on site are more pronounced and additional supporting vehicle tracks have been developed throughout the site.	Subdivision of surrounding sites and further rural-residential dwellings appear in the immediate surrounds.
2023	New bitumen access road created from Pinedale Road to main site. Four dwellings constructed in the Northwest corner of the site (Figure 2).	Additional tree corridors, tree clusters and subdivision of plots emerge in the area. Rural-residential dwellings and infrastructure increase further in the surrounding area.

5.8.2 Topographic maps

The 1986 topographic map based in 1980 aerial photography and 1985 field revision depicts scattered timber on the southern half of the site and scrub on the remaining northern half of the site. The layout of Lot 105 is as current Lot 103 is expressed.

The current topographic map (SIX Maps) aligns with the 1986 map, depicting an area of medium timber on the northern half of the site.

5.8.3 Historical parish maps

The site is situated in the parish of Beni, County of Lincoln.

Map date	Owner	Details
1884	Benoit Veyrard	Part of larger holding, Portion 105, 100 acres and Portion 106, 300 acres.
1892	Benoit Veyrard	Part of larger holding, Portion 105, 100 acres and Portion 106, 300 acres.
1902	Benoit Veyrard	Part of larger holding, Portion 105, 100 acres and Portion 106, 300 acres.
1908	Benoit Veyrard	Part of larger holding, Portion 105, 100 acres and Portion 106 300 acres.
1914	Benoit Veyrard	As current layout, Portion 105, 100 acres.
1919	E.V. Brown	Portion 105, 100 acres.
1930	E.V. Brown	Part of larger holding, Portion 105, 100 acres and Portion 25, 50 acres.
1954	E.V. Brown	Part of larger holding, Portion 105, 100 acres and Portion 25, 50 acres.
1968	E.V. Brown	Part of larger holding, Portion 105, 100 acres and Portion 25, 50 acres.
1970	E.V. Brown	Part of larger holding, Portion 105, 100 acres and Portion 25, 50 acres.

5.9 Interview with site owner

Discussions with current owner representative were undertaken. A Statutory Declaration from the previous owner outlined between 1980 and 2010 the land-use was agricultural including, but not limited to, stock grazing both cattle and sheep, pasture improvement. Currently horses have been grazed on the property since she received ownership (Appendix 3).

5.10 Chronological list of site uses

The site has a historical broadacre agricultural land-use comprising semi improved grazing. No cropping is known on the site. The site has most recently occupied half a dozen horses and is currently vacant.

5.11 Heritage listings

The site is not listed on the following government heritage databases:

- Commonwealth Heritage List
- National Heritage List
- State Heritage Register
- Local Environmental Plan (Dubbo LEP 2022)

The site is identified as being within 1km of an area subject to Heritage conservation as designated by the relevant NSW environmental planning instrument (EPI) under the Environmental Planning and Assessment Act 1979. 24L Eulomogo Road Dubbo, is directly south and not expected to have impacted the contamination status of the site.

5.12 Buildings and infrastructure

One dwelling and three sheds are situated in the Northwest corner of the site, built between 2009 and 2012 (Sixmap Aerial Imagery). The sheds are for the storage of machinery, horse exercise yards and garage. Two dams have been constructed on the site, one located south of the dwelling cluster and one Northeast of the site entrance. Historically, the access road via Pinedale Road was unsealed and provided access to the neighbouring plot. Currently, the access road from Pinedale Road is sealed and forms the site boundary.

5.13 Spills, losses or discharges

No bulk chemicals have been stored or used on the site.

5.14 Relevant complaint history

None expected.

5.15 Previous investigations

No previous investigation for contamination on the site are known.

5.16 Historical neighbouring land-use

North – Rural, Whitewood Road

South – Pinedale Road, Rural, Agricultural

East – Rural, Beni Drive, Beni State Conservation Area

West – Rural, Whitewood Road

5.17 Contaminant sources

The farm has been a low input operation and no known contamination sources have been used or stored on the site. No cropping is known to have occurred on the site consequently fertilisers and pesticides have not been used. Grazing comprised local and naturalised species and the application of pesticides and fertilisers was not considered necessary. No bio solids are known to have been applied to the site.

5.18 Contaminants of concern

Based on historical activities and available online information, there are no potential contaminants of concern associated with agricultural land-use.

5.19 Integrity assessment

The site history was obtained from a desktop study and history review. The information is consistent with the current site condition and to the best of the assessor's knowledge keep.

6. Site condition and surrounding environment

6.1 Site inspection

A desktop study was conducted to examine the site by Georgina Moir of Envirowest Consulting Pty Ltd in February 2024.

6.2 Land-use

The current land-use is grazing by horses.

6.3 Current neighbouring land-use

North – Rural-Residential, Whitewood Road

South – Pinedale Road, Rural-Residential

East – Rural-Residential, Beni Drive, Beni State Conservation Area

West – Rural-Residential, Whitewood Road

6.4 Surface cover and vegetation

The site was vegetated with a ranged of natural and opportunistic species.

6.5 Evidence of visible contamination

Nil.

6.6 Topography

The site morphology is a mid-slope with very gently declined slope of 0 to 1% to the southwest. The average elevation is 353 metres above sea level.

6.7 Soils and geology

The site is part within the Eulomogo and Wongarbron Soil Landscapes. Soil in the Eulomogo Soil Landscape is dominated by red earths consisting of dark reddish-brown to light reddish-brown sandy loam topsoil with a gradual boundary to dark reddish-brown to light reddish-brown, fine sandy clay loam subsoil. Mottled yellow and grey clay occurs at depth. Parent materials consist of in-situ and colluvial-alluvial material with pockets of basaltic alluvium.

Euchrozems and red cracking clays are co-dominate soils in the Wongarbron Soil Landscape. Euchrozems consist of dark reddish-brown clay loam to light clay topsoil with a gradual change to dark reddish-brown light to medium clay to dark red light to medium clay subsoil. Red cracking clays consist of reddish-brown medium clay with a gradual change to Reddish-brown heavy clay subsoil.

6.8 Water

6.8.1 Surface water

Surface water flow to the south west. Troy Creek is located 1.5km from the site.

6.8.2 Groundwater

One groundwater bore was identified on the site using NSW Government Water website (2024). The on-site bore is not viable and has been abandoned. Two additional groundwater bores are within 500m of the site on the NSW Government Water website (2024). No Water-Bearing Zones (WBZ) or Standing Water Level (SWL) data was available, and the bore status was identified as abandoned or unknown respectively.

No.	Date drilled	Location	SWL (m)	Use	Status
GW068437	26/01/1990	350m SW	-	-	Abandoned
GW800042	15/11/1991	400m SW	-	Stock	Abandoned
GW002027	01/03/1927	Onsite	-	Not known	-

6.9 Evidence of possible naturally occurring contaminants

No natural sources of PAH were identified.

The site is not mapped as an acid sulphate soil risk (State Government of NSW and Department of Planning, Industry and Environment 1998).

The site is not mapped as a geological unit with asbestos potential (State Government of NSW and Department of Regional New South Wales 2015).

6.10 Environmentally sensitive features or habitats

The site is cleared agricultural land. No environmentally sensitive features or habitats were identified on the site. The tree cluster on northern half of the site and a tree corridor to the south of the site along Pinedale Road are identified as biodiversity on the Terrestrial Biodiversity Map (Dubbo LEP 2022).

6.11 Integrity assessment

The site history was obtained from desktop study and history review. The information is consistent with the current site condition and to the best of the assessor's knowledge is accurate.

7. Conceptual site model

7.1 Contaminant sources

No known contaminants sources have been identified for the site. Pesticides and fertilisers are not known to have been used. The farmland has been low input grazing with semi improved naturalised and native species. No potential contaminating activities to have been identified from the review of site history.

7.2 Contaminants of concern

Based on historical activities and available online information, the potential contaminants of concern associated with agricultural land-use are:

- No contaminants identified

7.3 Potential receptors

The proposed land-use of the site is rural-residential. Current and historical land-use is low input grazing of sheep and horses.

Human receptors include:

- Residents (adults and children)
- Visitors
- Site workers
- Construction workers
- Intrusive maintenance workers

Ecological receptors include:

- Flora and fauna on the site and adjacent to the site
- Aquatic flora and fauna receptors off-site

7.4 Exposure pathways

Pathways for exposure to contaminants are:

- Dermal contact following soil disturbance
- Ingestion and inhalation after soil disturbance
- Surface water and sediment runoff into waterways
- Leaching of contaminants into the groundwater
- Direct contact of flora and fauna with the soil

7.5 Source receptor linkages

Potential source pathway receptor linkages are identified to enable evaluation of any adverse impact on human health or ecology.

No contaminant sources have been identified and consequently no viable linkages to health or the environment are present.

The source receptor linkage to aquatic organisms and ecosystems is considered incomplete as the site is well vegetated and movement of sediments from the site is unlikely.

Source/contaminants	Transport	Potential exposure pathways	Receptors
<input type="checkbox"/> Use of pesticides and fertilisers	<input type="checkbox"/> Wind	<input type="checkbox"/> Direct contact (ingestion and absorption) (human and environment)	<input type="checkbox"/> Residents (adults and children)
Heavy metals	<input type="checkbox"/> Sedimentation		<input type="checkbox"/> Visitors (adults and children)
Organochlorine pesticides	<input type="checkbox"/> Groundwater	<input checked="" type="checkbox"/> Inhalation	<input type="checkbox"/> Construction workers
	<input type="checkbox"/> Surface water	<input type="checkbox"/> Runoff	<input type="checkbox"/> Intrusive maintenance workers
	<input type="checkbox"/> Volatilisation	<input type="checkbox"/> Leaching	<input type="checkbox"/> Vegetation
			<input type="checkbox"/> Aquatic receptors

☒ Potential, ☐ unknown/unlikely

8. Results and discussion

The site is currently semi improved pasture. Historical land-use is low density grazing of sheep and horses. Four buildings and two dams were identified on the site from review of current and historical imagery. The buildings were constructed after 1990. Recent land use has been for the adjustment and storage of horses.

Discussions with site owner and review of aerial imagery was undertaken to determine the site history of grazing. The site was subdivided from farm land. No sheep yards or sheep dips are located on site. No use of fertilisers or farm chemical was identified from site historical review.

9. Site characterisation

Not applicable as no contamination sources were identified.

10. Conclusions and recommendations

10.1 Summary

A desktop study was conducted to inspect the site in February 2024. The current and historical land-use is grazing of sheep and horses. The site is in a rural locality with rural residential lots in the neighboring land.

One dwelling was constructed after subdivisions from a larger lot in the early 2000's. Two dams are located on the site.

Pasture species comprising native and introduced species are located on the site. White cypress pine in northern section of site.

No evidence of orchards, mines, sheep dips, mixing sheds or contaminating industrial activities are known to have been located on the site from the review of site history, desktop study and past owners. No agricultural chemicals or other contaminant sources are known to have been used on the site.

10.2 Assumptions in reaching the conclusions

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

10.3 Extent of uncertainties

The site history is typical of small farm in the locality.

10.4 Suitability for proposed use of the site

The site is suitable for rural-residential land-use.

10.5 Limitations and constraints on the use of the site

Nil

10.6 Recommendation for further work

Nil

11. 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.

This report, including data contained and its findings and conclusions, remains the intellectual property of Bamson Pty Ltd. A licence to use the report for the specific purpose identified is granted for the persons identified in that section after full payment for the services involved in preparation of the report. This report should not be used by persons or for purposes other than those stated and should not be reproduced without the permission of Bamson Pty Ltd.

12. References

Environment Protection Authority (2020) *Consultants reporting on contaminated land* (NSW Environment Protection Authority, Chatswood)

EPA (2017) *Contaminated Sites: Guidelines for the NSW Site Auditors Scheme* (NSW Department of Environment and Conservation, Chatswood)

EPA (2022) *Contaminated Land Guidelines: Sampling design part 1 – application* (NSW Environment Protection Authority, Parramatta)

State Government of NSW and Department of Planning, Industry and Environment (2023) eSPADEV v2.2 (www.environment.nsw.gov.au/eSpade2WebApp)

NEPC (1999 revised 2013) *National Environment Protection (Assessment of Site Contamination) Measure 1999* (National Environment Protection Council Service Corporation, Adelaide)

NSW Government (n.d.) eSpadev2 (<http://www.environment.nsw.gov.au/eSpade2WebApp>)

State Government of NSW and Department of Regional New South Wales (2015) *Naturally occurring asbestos*, viewed October 2023 (datasets.seed.nsw.gov.au/dataset/naturally-occurring-asbestos)

State Government of NSW and Department of Planning, Industry and Environment (1998) *Acid sulphate soils risk*, viewed October 2023 (datasets.seed.nsw.gov.au/dataset/acid-sulfate-soils-risk0196c)

Figures





Figure 3. Photographs of the site



Appendices

Appendix 1. Historic Aerial Photograph of the site in 1964



Appendix 2. Historic Aerial Photograph of the site in 1995



Appendix 3. Statutory Declarations from previous landowners

Statutory Declaration
OATHS ACT 1900, NSW, NINTH SCHEDULE


I, ANTHONY JOHN RICE - LIARD, of 34L PINEDALE ROAD DUBBO NSW 283
[name of declarant] [residence]

do hereby solemnly declare and affirm that
We owned the property 34L Pinedale Road Dubbo from JUNE 2010 to NOW
During this time the land was used for
STOCK, HORSES.

[the facts to be stated according to the declarant's knowledge, belief, or information, severally]

And I make this solemn declaration, as to the matter (or matters) aforesaid, according to the law in this behalf made – and subject to the punishment by law provided for any wilfully false statement in any such declaration.

Declared at: DUBBO on 18th July 2022
[place] [date]

 [signature of declarant]


in the presence of an authorised witness, who states:

I, CHARLES STEWART ACHEN, a JUSTICE OF THE PEACE Reg No 110497
[name of authorised witness] [qualification of authorised witness]

certify the following matters concerning the making of this statutory declaration by the person who made it: [please cross out any text that does not apply]

- ~~"I saw the face of the person OR I did not see the face of the person because the person was wearing a face covering, but I am satisfied that the person had a special justification¹ for not removing the covering, and~~
- "I have known the person for at least 12 months OR "I have confirmed the person's identity using an identification document and the document I relied on was:

[describe identification document relied on]

 [signature of authorised witness] 18 July 2022 [date]

¹ The only "special justification" for not removing a face covering is a legitimate medical reason (at September 2018)

Statutory Declaration
OATHS ACT 1900, NSW, NINTH SCHEDULE

I, PATRICK RAYMOND CHARLES O'LEARY, of 6 WATERWAY CRESCENT, DUBBO NSW 2830
[name of declarant] [residence]

do hereby solemnly declare and affirm that

We owned the property 34L Pinedale Road Dubbo from OCTOBER 1980 to JUNE 2010

During this time the land was used for

STOCK - CATTLE & SHEEP GRAZING

[the facts to be stated according to the declarant's knowledge, belief, or information, severally]

And I make this solemn declaration, as to the matter (or matters) aforesaid, according to the law in this behalf made – and subject to the punishment by law provided for any wilfully false statement in any such declaration.

Declared at: DUBBO on 18th July 2022
[place] [date]

Pat. O'Leary [signature of declarant]
In the presence of an authorised witness, who states:

I, CHARLES STEWART ADELSON, a JUSTICE OF THE PEACE, REG. NO. 110497
[name of authorised witness] [qualification of authorised witness]

certify the following matters concerning the making of this statutory declaration by the person who made it: [I please cross out any text that does not apply]

1. "I saw the face of the person OR "I did not see the face of the person because the person was wearing a face covering, but I am satisfied that the person had a special justification¹ for not removing the covering, and

2. "I have known the person for at least 12 months OR "I have confirmed the person's identity using an identification document and the document I relied on was NSW DRIVERS LICENCE
NUMBER 9205JR [describe identification document relied on]

[Signature]
[signature of authorised witness]

18th July 2022
[date]

¹ The only "special justification" for not removing a face covering is a legitimate medical reason (at September 2018)