

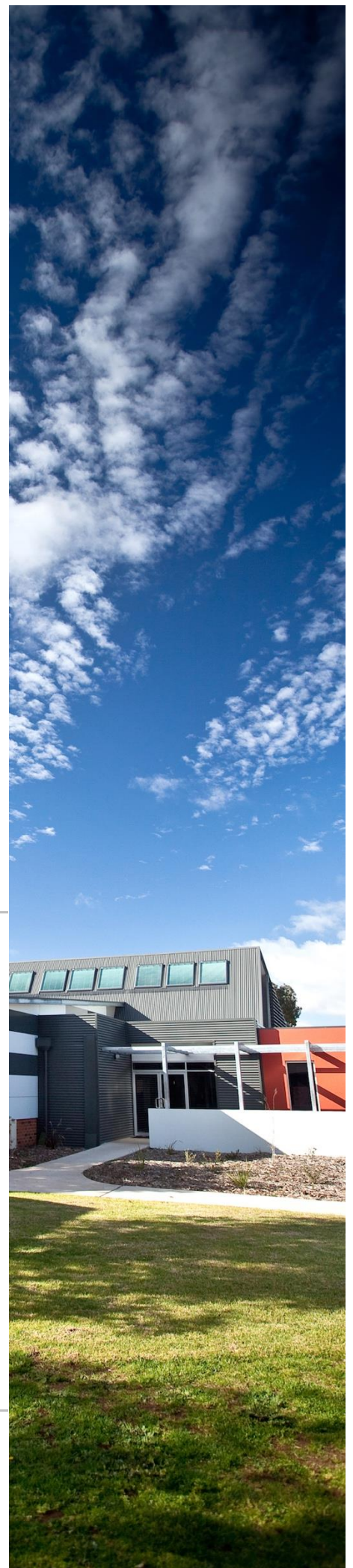


Preliminary Site Contamination Assessment

39 Calderwood Road
Rylstone NSW

(Our Reference:36965 ER01)

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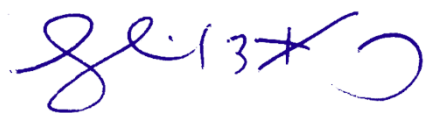


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Client:	Ms. Fiona Hemmy
Project No.	36965
Report Reference	36965 ER01
Date:	13/08/2021
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Prepared by:	Reviewed by:
	
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EXECUTIVE SUMMARY

Barnson was engaged by Ms. Fiona Hemmy to undertake a preliminary contaminated site investigation in support of a Planning Proposal for the rezoning and future subdivision of multiple lots at 37, 39, 139 and 141 Calderwood Road, Rylstone NSW (hereafter referred to as the Subject Site).

The investigation had as its objectives to identify contamination issues that may affect the suitability of the Subject Site for future rezoning and possible residential development, by assessing the need for possible further investigations, remediation or management of any contamination issues identified.

The investigation was based on a desktop review of information available for the Subject Site, as well as the findings of a site inspection and confirmatory sampling and analysis of surface soils collected at the site.

A review of the available historical information, including contaminated sites databases, indicated no recorded activities with the potential to significantly contaminate the site.

Although the potential for *significant* environmental contamination to be present across the site was concluded to be low, activities associated with the current and historical use of the Subject Site were identified as having a potential to contaminate surface soil. The following potential sources and areas of contamination were identified:

- Historical farming activities.
- Cropping and feed production.
- Vehicles and equipment.
- Use of unclassified fill.
- Indiscriminate disposal of waste.

A site inspection, supplemented with confirmatory sampling and analysis, was conducted to determine the presence and significance of potential contamination associated with the identified sources.

Based on the findings of the desktop review and site investigation it can be stated with a reasonable level of confidence that the areas comprising the Subject Site that may be further developed for residential use, subsequent to the proposed re-zoning and sub-division, are unlikely to be contaminated. This finding is supported with analytical results of surface soil samples collected at the Subject Site, in which no contaminants were detected above health-risk based screening criteria. These areas are therefore considered suitable for the proposed re-development and use for residential purposes.

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Appendix A – Chain of Custody and Laboratory Report

1.0 INTRODUCTION

1.1 Background

Barnson was engaged by Ms. Fiona Hemmy (the Client) to undertake a preliminary contaminated site investigation in support of a Planning Proposal for the rezoning and subdivision of multiple lots at 37, 39, 139 and 141 Calderwood Road, Rylstone NSW (hereafter referred to as the Subject Site).

The Client submitted a Planning Proposal to Mid-Western Regional Council for sections of the Subject Site to be rezoned for large lot residential development.

In accordance with the State Environmental Planning Policy 55 (Remediation of Land) the consent authority must determine if land is contaminated and, if so, whether it is suitable for the intended purpose or require remediation.

1.2 Objectives

The objectives of the investigation are:

- Identify contamination that may affect the site's suitability for residential development, and;
- Assess the need for possible further investigations, remediation or management of any contamination identified.

1.3 Scope of Work

To meet the objectives, Barnson completed the following scope of work:

- Site identification including a review of site history, site condition, surrounding environment, geology and, where available, hydrogeology.
- Desktop review of site history and assessment of potential sources of contamination.
- Development of a Conceptual Site Model (CSM) with information gathered from the data review and site inspection.
- Site inspection to assess site conditions.
- Collection of confirmatory soil samples and analysis to determine nature of possible contamination.
- Provide conclusions as to the suitability of the site for the intended future land use.
- Preparation of a report.

1.4 Purpose of this report

The purpose of this report is to document, with cognisance of the guidelines for Consultants Reporting on Contaminated sites (NSW EPA, 2020), works undertaken, in accordance with the scope of works as described in Section 1.3, results of the desktop review and site inspection, and recommendations for further actions required to determine fitness of the site for use.

1.5 Assumptions and Limitations

The following assumptions have been made in preparing this report:

- The future use of the site will be for residential purposes. This assumption forms the basis for the conceptual site model (Section 5).
- All information pertaining to the contamination status of the site has been obtained through public record searches, a preliminary site inspection and analysis of confirmatory samples collected at the Subject Site. All documents and information in relation to the Subject Site, which were obtained from public records, are accepted to be correct and has not been independently verified or checked.

It should be recognised that even the most comprehensive site assessments may fail to detect all contamination on a site. This is because contaminants may be present in areas that were not previously surveyed or sampled or may migrate to areas that showed no signs of contamination when sampled. Investigative works undertaken at the Subject Site by Barnson identified actual conditions only at those locations in which sampling and analysis were performed. Opinions regarding the conditions of the site have been expressed based on historical information and analytical data obtained and interpreted from previous assessments of the site. Barnson does not take responsibility for any consequences as a result of variations in site conditions.

2.0 SITE DESCRIPTION

2.1 Site Identification

Table 2.1 presents a summary of the available information pertaining to the identification of the Subject Site. The Subject Site is comprised of 6 adjoining lots, all zoned for Primary Production (RU1). The lots comprising the Subject Site are listed in Table 2.1 below.

Figure 2.1 presents a map indicating the location of the Subject Site.

Table 2.1: Summary of Subject Site identification details.

Information	Details
Site address	37, 39, 139, and 141 Calderwood Road, Rylstone NSW 2849
Lot and Deposited Plan No.	Lot 1 DP 130555 Lots 93, 94, 97, and 98 DP 755426 Lot 1 DP 712926
Zoning	RU1 – Primary Production
County	Phillip
Parish	Dabee
Local Government Area	Mid-Western Regional Council

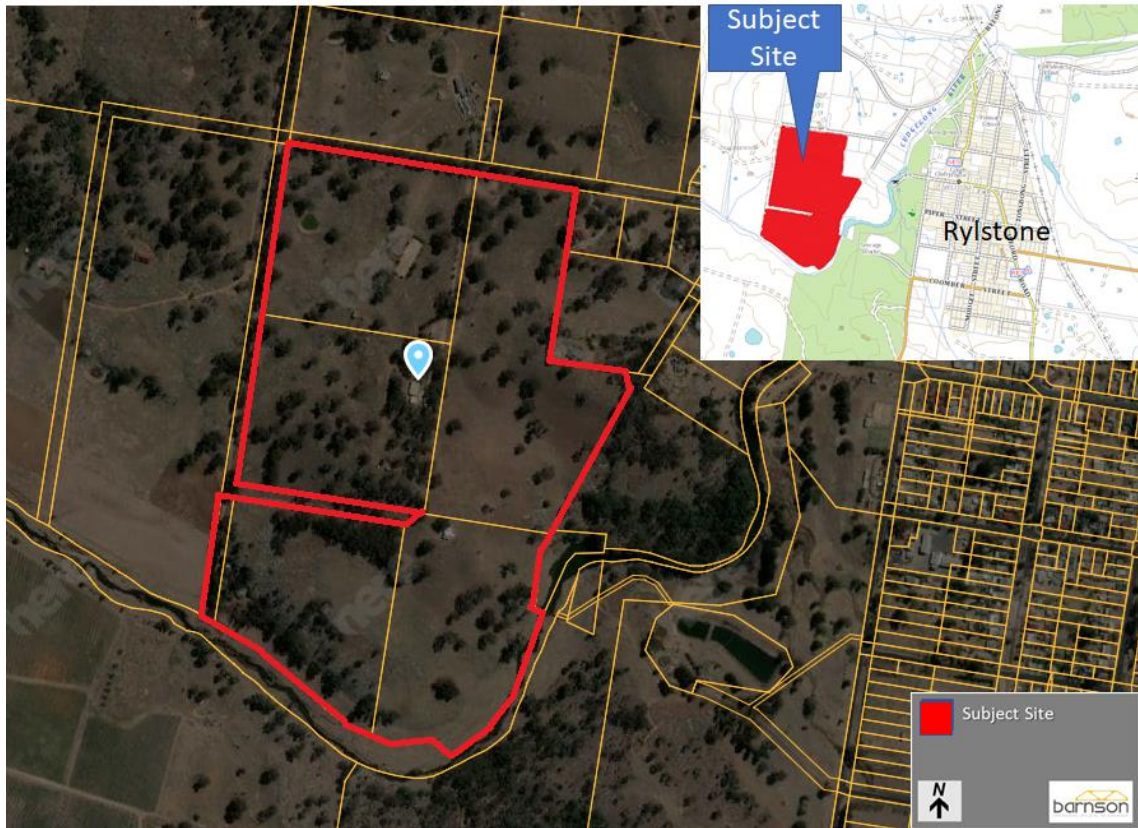


Figure 2.1: Location of the Subject Site.

2.2 Layout and Features

The Subject Site has an approximate area of 42 hectares. The site is located to the west of Rylstone and has a frontage to Calderwood Road to the north. Calderwood Road extends around the site along the western boundary and then into the site. The Subject Site also has a southern frontage to the Cudgegong River to the south.

The Subject Site is used for agricultural purposes and is largely unoccupied except for fencing, animal pens and free-standing sheds, these are located all over the Subject Site, they are not concentrated in a certain location. The Subject Site is covered with maintained grass and there is an earthen farm dam and horse arena present in the north-western quadrant of the Subject Site.

Figure 2.2 presents a plan of the Subject Site that is supplemented with photographs showing the different elements of the Site (Figure 2.3 to Figure 2.7). Figure 2.2 includes markers indicating the vantage point and direction of the photographs.

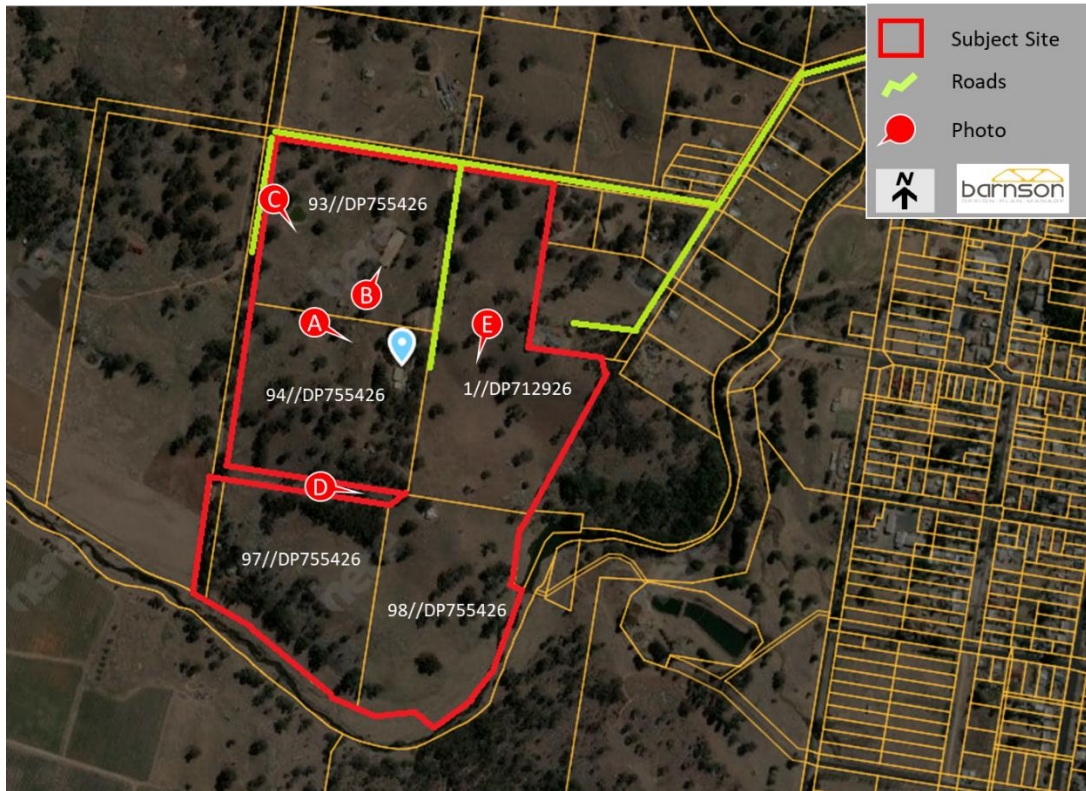


Figure 2.2: Existing Subject Site layout.



Figure 2.3: Photo A –Existing sheep/cattle yards (Lot94//DP755426) in a north-west direction



Figure 2.4: Photo B – View of Horse Arena, looking north-east (Lot93//DP755426).



Figure 2.5: Photo C – View across north- western portion of Subject Site looking in south - easterly direction (Lot93&94//DP755426).



Figure 2.6: Photo D - Driveway and shed house on Lot93//DP755426.



Figure 2.7: Photo E – View looking across the Subject Site in a southerly direction.

2.3 Proposed Development

The Mid-Western Regional Council resolved to support the rezoning of the Subject Site, which is situated close to the Rylstone township. The proposed development looks to support a planning proposal for the rezoning of 4 adjacent lots of land from RU1 Primary Production to R5 Large Lot Residential. This will change the minimum lot size (MLS) for the Subject Site from 40/100ha to 2/5ha.

3.0 SITE SETTING

3.1 Geology

A review of the 1:100000 Geology map of Mudgee (refer to Figure 3.1) shows that geologically, a portion of the Subject Site is underlain by Permian age polymitic conglomerate, lithic sandstone, shale, siltstone, claystone, minor carbonate and evaporite, while another portion is underlain by Permian age Rhyolitic to dacitic pyroclastic rocks; tuffaceous sandstone, thin airfall tuff horizons, lavas.

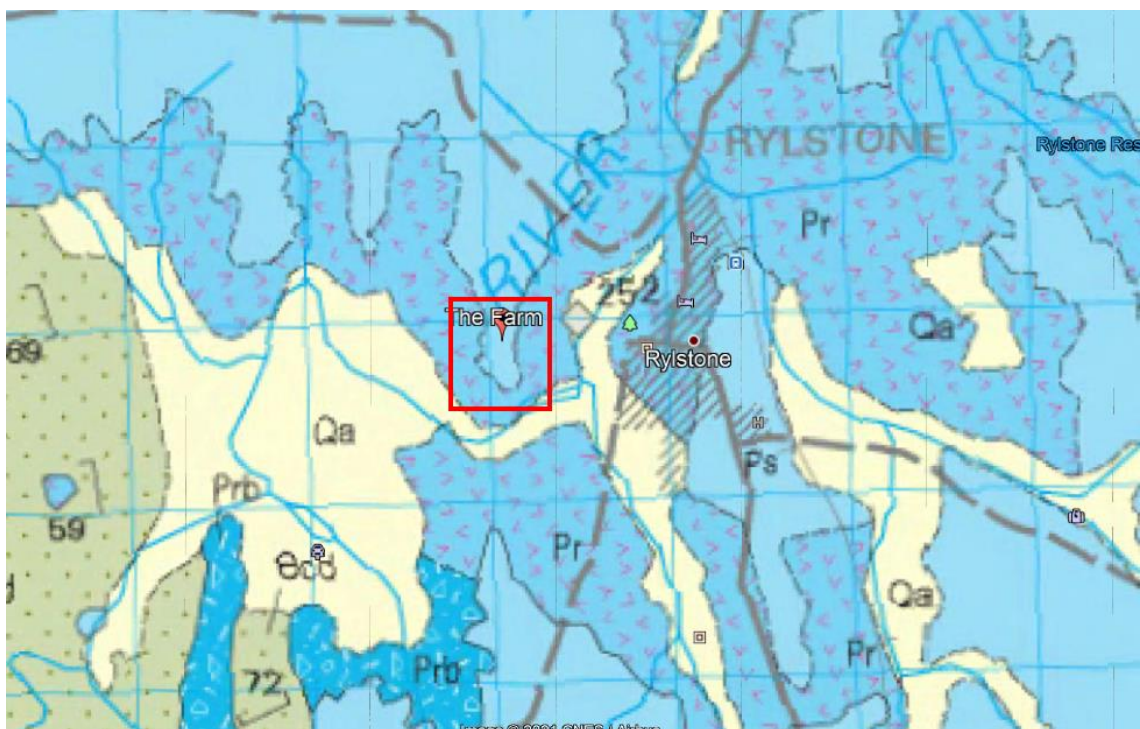


Figure 3.1: Mudgee 1:100000 geology map showing the location of the Subject Site

An examination of the Geological Survey of NSW maps of Naturally Occurring Asbestos (accessed on 03rd of August 2021), shows that the geological units underlying the Subject Site has no asbestos potential.

3.2 Soils

The Subject Site is mapped within the Rylstone soil landscape. The dominant soil type in this landscape is siliceous sands that are described as of low fertility with low waterholding capacity and high erosion hazard.

The Atlas of Australian Acid Sulfate Soil has the Subject Site in an area of 'very low' probability of occurrence (a 0-5% chance of occurrence).

3.3 Topography and Drainage

Figure 3.2 presents topographical information overlain on the map of the Subject Site. The presented data shows that the Subject Site is sloped away from the middle of the adjacent lots up to Calderwood Road. Surface water runoff is therefore expected to move in a southern direction from the northern portion, and also a westerly direction from the east and an easterly direction from the west of the Subject Site.

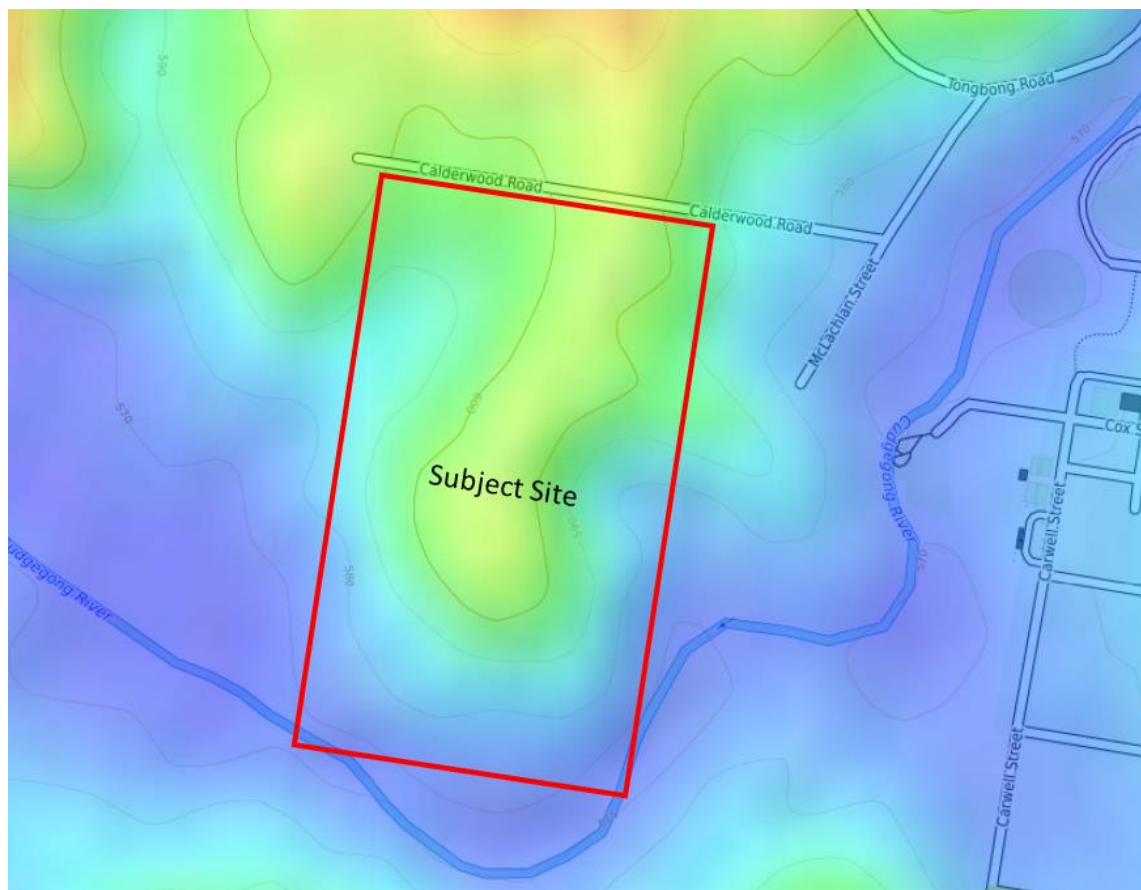


Figure 3.2: Subject Site topography.

The nearest natural water body to the Subject Site is the Cudgegong River, which at its closest is located at a distance of approximately 10m to the south-east.

3.4 Groundwater Resources

A review of existing groundwater bore records (WaterNSW, 2021) indicate no registered groundwater bores inside the boundary of the Subject Site. Although there are several off-site bores registered within 1km of the Subject Site boundary, only the three nearest bores, located to the east of the Site, are considered (see Figure 3.3).

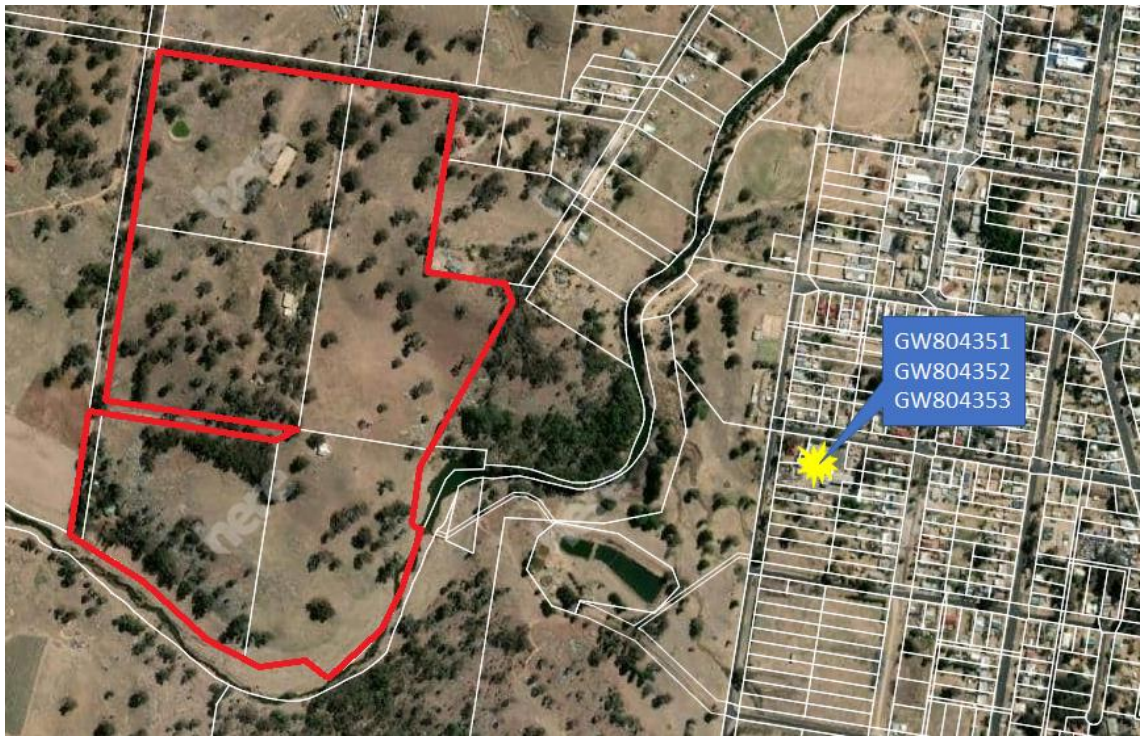


Figure 3.3: Groundwater bores near the Subject Site.

The information recorded in the database for the three closest off-site bores indicate the depth of the bores ranging from 4.7m to 10.3m with a standing water level of between 4.3m and 4.46m reported. The shallowest water bearing zone is recorded for the GW804353 bore at 4m. According to the database entry the bores are used for monitoring purposes.

The Mid-Western Regional Council Local Environmental Plan (MWRC LEP, 2011) shows the Subject Site inside the zone of groundwater vulnerability.

4.0 SITE HISTORY

4.1 Historical Land Use

Historical aerial images show that the Subject Site has been used for agricultural activities, mainly livestock grazing, for an extended period of time. Photos of the north-western portion of the Site show the addition of a few dams as well as clear signs of periodic feed cropping taking place at the site. The Subject Site has several structures located in several sections of the site including; a dwelling, horse arena and cattle/sheep yards.

4.2 Historical Record of Site Contamination

Datasets maintained by the Office of Environment and Heritage (OEH) including notices under CLM Act, POEO Environment Protection License Register and environmental incidents were reviewed.

- **List of NSW contaminated sites notified to EPA** – The sites appearing on the OEH "List of NSW contaminated sites notified to the EPA" indicate that the notifiers consider that the sites are contaminated and warrant reporting to EPA. However, the contamination may or may not be significant enough to warrant regulation by the EPA. The EPA needs to review information before it can make a determination as to whether the site warrants regulation. A search of the listing returned no record for the Subject Site.
- **Contaminated Land Record of Notices** – A site will be on the Contaminated Land Record of Notices only if the EPA has issued a regulatory notice in relation to the site under the *Contaminated Land Management Act* 1997. A search of the register in June 2021. returned no record for the Subject Site and indicated no listings for any site within a radius of 1,000m.

There is further no record of the Subject Site or within a radius of 1,000m from these areas, in any of the following databases:

- Former Gasworks database
- EPA PFAS Investigation Program
- Defence PFAS Investigation & Management Program
- Airservices Australia National PFAS Management Program
- Defence 3 Year Regional Contamination Investigation Program

4.3 Previous Site Investigations

No information relating to any previous assessment of contamination at the Subject Site was available for review.

5.0 CONCEPTUAL SITE MODEL

5.1 General

The conceptual site model (CSM) is intended to provide an understanding of the potential for contamination and exposure to contaminants within the investigation areas. The CSM draws together the available historical information for the site, with site specific geological, and hydrogeological information to identify potential contaminants, contamination sources, migration and exposure pathways and sensitive receptors.

5.2 Sources

The identification of sources presented here is based on the review of available historical information and photographs, as well as an understanding of current conditions at the Subject Site. The following is a summary of the potentially contaminated areas and sources of contamination identified:

- Historical farming activities.

All six (6) lots comprising the Subject Site have historically been used in the operation of the livestock farming activities. Potential sources of contamination associated with these activities include the animal pens and yards, as well as the disposal of animal wastes. Activities associated with the management of animal health, including sheep dip or spraying for the control of parasites could further result in localised contamination. Potential contaminants include pesticides, hydrocarbons, heavy metals, and elevated nutrients.

- Cropping and feed production.

Historical photographs of the Subject Site indicate periodic pasture improvement activities in the northern half of the Site. Improving pasture in moderate to low fertility soils likely required the use of chemicals such as fertilisers and pesticides in the maintenance of the grasses. Potential contaminants associated with these chemicals include heavy metals, organochlorine and organophosphate pesticides. Intensive use of fertiliser can also lead to the build-up of heavy metals in surface soil particularly zinc and cadmium, depending on the type and source of the fertiliser.

- Vehicles and equipment.

Operation of farm often involves the use of motorised vehicles and equipment used for a variety of applications such as transport, earth moving or pumping water. The use, storage, maintenance and refuelling of the equipment and vehicles has the potential to contribute to localised contamination of surface soils.

- Use of unclassified fill

Construction of the horse yard noted in Lot 93 DP755426 required a significant quantity of fill material to be imported to the Site for levelling. Imported fill, depending on its source, may include a variety of contaminants including hydrocarbons, heavy metals and asbestos.

- Uncontrolled disposal of waste

The Subject Site is further fenced and it is unlikely that large quantities of domestic or demolition waste would have been disposed of at the Site. However, foreign or potentially hazardous materials or wastes sporadically disposed of at the site could contribute a variety of contaminants to localised areas of the Site. Contaminants may include hydrocarbons and heavy metals.

5.3 Contaminants of Potential Concern

Considering the potential sources relevant to the Subject Site, a wide variety of contaminants may be present. With the historical agricultural activities considered the primary potential source of contamination, the residues of agricultural chemicals such as pesticides and fertilisers are accepted as the most likely contaminants. Of interest here are chlorinated organic compounds which historically have been widely used as insecticides, fungicides, herbicides and soil fumigants in agriculture and which are stable enough in the environment (persistent) to remain in soil for extended periods of time. Inorganic compounds that contain heavy metal including arsenic, copper, lead and mercury were also historically used as pesticides, particularly in the control of external parasites on animals. The use of fertiliser, although not commonly considered a source of soil contamination, potentially could lead to a build-up of heavy metals such as cadmium in soils in areas where it has been extensively applied.

The potential presence of fuels and lubricants are further potentially relevant to the on-site storage, maintenance or movement of vehicles and equipment in the operation of the farms.

Based on this understanding of the site history and activities, the contaminants of potential concern identified for the investigation of the Subject Site include:

- pesticides (organochlorines, organophosphates);
- hydrocarbons (mainly fuel and lubricants); and
- heavy metals (As, Cd, Cr, Cu, Pb, Hg, Ni and Zn)

5.4 Pathways

The primary pathways by which receptors could be exposed to the contaminants outlined above include:

- Inhalation of dust or vapours.
- Dermal contact with contaminated soils.
- Incidental ingestion of contaminated soils.
- Surface runoff, sediment transport and discharge to surface waters.
- Vertical and horizontal migration of contamination through the soils into the underlying groundwater.

Of the listed potential pathways, the contamination of water resources through infiltration is considered the most unlikely. The Subject Site is not indicated as a groundwater vulnerable zone and the depth to groundwater at the site is reported as >18m in the east of the Site and >30m in the west. This depth to groundwater and the slope of the site would limit vertical migration of any contaminants which may be entering the surface soil from above.

5.5 Receptors

Potential receptors may include:

Human receptor populations

- Future residents of the subdivided lots.
- Visitors to the site (e.g. workers conducting maintenance, contractors, members of the public);
- Workers involved in the construction of residential dwellings for future residents of the Subject Site; and
- Workers conducting agricultural activities on the subdivided lots of the Subject Site.

Environmental Receptors

- Local drainage channels and receiving surface water bodies; and
- Groundwater resources beneath the site (negligible likelihood of contamination expected).

5.6 Potential for Contamination

The Development Area is not listed in any of the contaminated land databases. Based on the results of the desktop assessment, the overall likelihood for *significant* chemical contamination to be present within the site is low.

Although former land use and activities at the site is reasoned to have a potential for contaminating surface soils, the type and quantity of contaminants introduced through this land use is not expected to have led to significant contamination.

6.0 SITE INSPECTION

6.1 General

The objective of the investigation is to determine whether there are any environmental risks associated with the Subject Site that could affect the proposed future development and would require further investigation or action to render the site suitable for its intended use.

The desktop evaluation of the site history and current use of the site did not identify any significant risks in this regard but did identify both historical and current land use activities that could contribute to contamination of the surface soils of the Subject Site.

Barnson conducted an inspection of the Subject Site on 14 July 2021. The purpose of the site inspection was to verify the findings of the desktop assessment, as well as to collect confirmatory samples of soil from areas of the Subject Site where development is proposed or contamination is suspected.

Based on the findings of the CSM the inspection and sampling were focussed on the surface soils (50-300mm). The site inspection included all areas of the Subject Site.

During the site inspection the following observations were made:

- The Subject Site is fenced and access to the site is controlled. There are several informal vehicle paths traversing the individual Lots comprising the Subject Site and there are access gates and paths to each of the Lots from all street frontages.
- At the time Barnson conducted the site inspection, most of the Subject Site was covered with pasture grass. Three of the four Lots comprising the Subject Site include a permanent dwelling structure, and associated outbuildings and sheds. Lots 93 & 94 DP755426 are the most developed with the greater number of buildings and sheds.
- All four (4) distinct areas of the Subject Site were attended by vehicle and all visible open ground and prominent features were inspected. No visible discoloration or staining of open ground or soil, and no obvious discoloration or irregularities in the occurrence of vegetation was observed during the site inspection.
- Lot 94 DP755426, includes an area used for the storage of with old farm equipment and fuel drums (see Figure 6.1), while Lot 93 DP755426 includes a shed used as workshop for vehicles with a ramp structure used for servicing vehicles noted (see Figure 6.2).



Figure 6.1: Old equipment and drums on Lot 94 DP 755426.



Figure 6.2: Vehicle servicing ramp Lot 93 DP 755426.

- The Subject Site is divided into different paddocks with steel wire fencing and gates allowing access to the different areas. The parts of the Subject Site was actively grazed during the site inspection.
- There is a livestock yard located on Lot 98 DP 755426 near the boundary with Lot 97 DP 755426 (see Figure 6.3).
- Evidence of waste disposal was discovered in a localised area on Lot 138 DP 755434 under a tree near one of the access roads. The materials found include engine parts such as oil filters and empty cans of engine lubricant. No general waste or any demolition waste was observed in any other part of the Subject Site during the site inspection.



Figure 6.3: Disused livestock pens.x

6.2 Confirmatory Sampling

The purpose of collecting confirmatory samples as part of the site inspection is to determine if any of the potential contaminants identified from the CSM are present. The samples are not intended for statistically valid characterisation or quantification of contamination levels. The collection of surface soil samples at the site was therefore focussed on areas where contamination of the surface soil could most likely have occurred.

Samples of soil were collected from the paddocks, near structures as well as the livestock management infrastructure. The sheds and areas used for equipment storage in the north-western part of the Subject Site was also specifically investigated with separate surface soil samples collected. Individual samples collected over large areas were combined into composite samples for analysis. Figure 6.4 presents a map of the Subject Site with the locations of the surface soil samples indicated. Table 6.1 is a summary description of the collected samples as well as indicating which samples were combined for analysis.



Figure 6.4: Locations of confirmatory surface soil samples.

The pattern followed for the soil sampling can be described as Judgement Sampling, where points are selected on the basis of the investigator's knowledge of the proposed land use and likely distribution of contaminants at a site. It is an efficient sampling method for confirmatory sampling that utilises knowledge of the site history and field observations to direct sample collection (NSW EPA, 1995).

The individual sample increments collected were combined in a 5 litre bucket, as presented in Table 6.1, and transferred to the Barnson office in Mudgee for sub-sampling and laboratory submission. The volume of soil in each bucket was reduced by following a 'cone-and-quarter' technique. The increments in each bucket were thoroughly mixed by heaping into a cone and turning the cone over to form a new cone until the operation has been carried out three times. The heap is flattened and quartered along two diameters which intersect at a right angle in the centre of the cone (see Figure 6.5).

One pair of diagonally opposite quarters are removed and the remainder is scooped into a cone and the procedure repeated until a mass of sample sufficient to fill two 250ml glass jars is produced (see Figure 6.6).

Table 6.1 – Summary of sample details.

Reference in Figure 6.4	Description	Composite sample number submitted for analysis
1	Surface soil (50-300mm) sample collected from fill material used in construction of the horse yard.	Sample submitted as 'CR-01' for analysis.
2	Surface soil (50-300mm) sample collected from area of painted shed structure on Lot 93.	Sample submitted as 'CR-02' for analysis.
3a-3b	Surface soil (50-300mm) samples collected from equipment storage and maintenance areas at lots 93 and 94.	Composite sample prepared of sample 3a and 3b, submitted as composite sample 'CR-03' for analysis.
4	Surface soil (50-300mm) samples collected from cattle yard lot 98.	Sample submitted as 'CR-04' for analysis.
5a to 5i	Surface soil (50-300mm) samples collected from paddock areas of Lots 93, 94 DP755426 and Lot 1 DP712926 Subject Site.	Composite sample prepared of sample 5a and 5i, submitted as composite sample 'CR-05' for analysis.
6a to 6e	Surface soil (50-300mm) samples collected from waste disposal area.	Composite sample prepared of sample 6a and 6b, submitted as composite sample 'CR-06' for analysis..



Figure 6.5: Cone and quartering.



Figure 6.6: Sample volume reduction.

The glass jars were filled, marked as indicated in Table 6.1, placed in a thermally isolated container with ice bricks and transferred to the analytical laboratory. All samples were submitted to the Australian Laboratory Services Pty Ltd (ALS), laboratory in Mudgee, for determination of the following parameters:

- metallic element (cadmium, chromium, copper, lead, nickel and zinc) concentrations, including arsenic and mercury in soil;
- extraction with organic solvent and analysis of Total Recoverable Hydrocarbons (TRH) fractions C6 to C40, benzene, toluene, ethylbenzene and total xylene (BTEX), Polycyclic Aromatic Hydrocarbons (PAHs), polychlorinated biphenyls (PCBs);
- extraction with organic solvent and analysis of Organochlorine (OCP) and Organophosphorus (OPP) Pesticides.

There is no reason to believe that asbestos contamination may be present in the surface soils of the Subject Site. The composite surface soil samples were therefore not analysed for the presence of asbestos fibres.

In addition to the surface soil samples, one sample of paint (marked RM-01) from a shed structures on Lot 93 DP755426 was collected for determination of the lead content of the paint. The paint from all the structures in this area was flaking and represent a potential source of contamination to surface soils should it contain significant quantities of lead.

The ALS laboratory is NATA accredited for all the analysis indicated above.

6.3 Analytical Results

The ALS laboratory report for the samples is attached as Appendix A. The laboratory report indicates that heavy metals, as well as mixtures of straight chain organic compounds ranging from C10 to C40 were detected in the soil. The concentrations of petroleum hydrocarbons, as well as persistent pesticide and herbicide compounds are indicated as below the limits of detection in the surface soil samples.

The metals detected include arsenic (As), chromium (Cr), copper (Cu), lead (Pb), nickel (Ni, and zinc (Zn). Concentrations of cadmium and mercury are reported to be below the limit of detection in all samples. Table 6.2 presents a summary of the analytical results for the elements and compounds detected.

Table 6.2 – Summary of metal and hydrocarbon concentrations detected in surface soil samples from the Subject Site.

Analyte	CR-01	CR-02	CR-03	CR-04	CR-05	CR-06
	mg.kg-1					
Metals (mg.kg ⁻¹)						
Arsenic (As)	9	7	<5	6	<5	7
Cadmium (Cd)	<1	<1	<1	<1	<1	<1
Chromium (Cr)	11	11	7	9	6	11
Copper (Cu)	5	9	6	9	<5	<5
Lead (Pb)	15	89	14	9	6	10
Mercury (Hg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel (Ni)	5	4	6	4	<2	12
Zinc (Zn)	20	257	67	201	7	36

<i>Hydrocarbons (mg.kg⁻¹)</i>						
TPH C10 - C14	<50	<50	60	140	<50	<50
TPH C15 - C28	<100	<100	130	470	<100	<100
TPH C29 - C36	<100	<100	110	830	<100	<100
C6 - C10 Fraction minus BTEX (F1)	<10	<10	<10	<10	<10	<10
TRH >C10-C16	<50	<50	70	160	<50	<50
TRH >C10 - C16 less Naphthalene (F2)	<50	<50	70	160	<50	<50
TRH >C16-C34 (F3)	<100	<100	170	930	<100	<100
TRH >C34-C40 (F4)	<100	<100	100	590	<100	<100

The sample of paint (RM-01) collected from the shed is reported to contain lead at a concentration of 2,610 mg/kg.

6.4 Analytical Data Quality

Samples were collected in new, clean containers using cleaned equipment and were placed in glass jars provided by the laboratory that were refrigerated after filling and transported in an insulated container to the laboratory. Chain of custody was recorded for all samples. A copy of the signed sheet is attached as Appendix A.

The analyses were undertaken at a NATA accredited laboratory. The laboratory quality control procedures in the form of duplicates as well as analyte and surrogate spikes were applied to all contaminant classes analysed. The results reported for the duplicate is within the Relative Percent Difference range of the acceptance criteria for a duplicate sample. The analyte spike recoveries reported for the different sets of organic analytes are indicated as within the acceptance criteria (see Appendix A).

All media appropriate to the objectives of this investigation have been adequately analysed and no area of significant uncertainty exist. It is concluded the data is usable for the purposes of the contaminated site investigation.

7.0 ASSESSMENT

7.1 Assessment Criteria - Human Health and Environmental Risk

Screening for human health and ecological risk, utilises published human health investigation levels (HILs) and ecological screening and investigation levels (ESLs & EILs) from the National Environment Protection (Assessment of Site Contamination) Measure (NEPC, 1999) to identify contaminant concentrations in soil that may pose a risk to future residents, people visiting the site, or to ecological receptors.

HILs are scientifically based, generic assessment criteria designed to be used in the screening of potential risks to human health from chronic exposure to contaminants. HIL's are conservatively derived and are designed to be protective of human health under the majority of

circumstances, soil types and human susceptibilities and thus represent a reasonable 'worst-case' scenario for specific land-use settings. The HILs selected for evaluation of the Subject Site are those derived for a standard residential scenario (HIL-A) and assumes a residential land use with garden/accessible soil (home grown produce <10% fruit and vegetable intake, and no poultry).

The health risks associated with petroleum hydrocarbon compounds are assessed using Health Screening Levels (HSLs) developed to be protective of human health by determining the reasonable maximum exposure from sources for a range of situations commonly encountered on contaminated sites. HSLs are derived for soil, groundwater and soil vapour and relate to exposure to petroleum hydrocarbons through the vapour inhalation exposure pathway only. Direct exposure pathways such as incidental soil ingestion and dermal exposure pathways are generally not the risk drivers when compared to inhalation exposure (NEPC, 1999). HSLs have been developed for BTEX and naphthalene plus four hydrocarbon fractions namely:

- C6 – C10- Fraction number F1
- >C10 – C16 less Naphthalene - Fraction number F2
- >C16 – C34 - Fraction number F3
- >C34 – C40 - Fraction number F4

Although the primary concern in most site assessments is protection of human health, the assessment should also include consideration of ecological risks and protection of groundwater resources that may result from site contamination. EILs provide screening criteria to assess the effect of contaminants on a soil ecosystem and afford species level protection for organisms that frequent or inhabit soil and protect essential soil processes.

Ecological investigation levels (EILs) have been derived for common metallic contaminants in soil. The values selected for the evaluation of the heavy metals detected in the soil samples from the Subject Site considers the physicochemical properties of soil and contaminants and the capacity of the soil to accommodate increases in contaminant levels above natural background while maintaining ecosystem protection for identified land uses.

Table 7.1 presents a summary of the health-risk based criteria and ecological investigation levels selected for assessment of the detected metal concentrations.

Table 7.1: Human health and ecological risk screening levels for metals.

Element	Health-based Investigation Levels	Ecological Investigation Levels (EIL)
	HIL A Residential mg.kg ⁻¹	Residential mg.kg ⁻¹
Arsenic (As)	100	100
Cadmium (Cd)	20	-
Chromium (Cr) (Total)	NR	230
Copper (Cu)	6,000	230
Lead (Pb)	300	1,100
Mercury (Hg)	40	-

Nickel (Ni)	400	270
Zinc (Zn)	7,400	300

Note: NR=not relevant due to low human toxicity of Cr(III). NA=No applicable screening level. EILs selected for urban residential and public open space land use scenario.

Ecological risks associated with hydrocarbons are evaluated by using ecological screening levels (ESLs), which are based on EC₂₅ weight-of-evidence ecotoxicity data, evaluated for a residential land use scenario (NEPC, 1999). The ESLs (Table 7.2) are evaluated for the same four carbon chain fraction ranges (F1 to F4) listed above. Screening values for both residential exposure scenarios are listed.

Table 7.2: Human health and ecological risk screening levels for hydrocarbon fractions.

Fraction	Management limits for TPH in Soil	Health Screening Levels (HSLs) for vapour intrusion	Ecological Screening Levels (ESL)
	Residential mg.kg ⁻¹	Residential (silt) mg.kg ⁻¹	Residential mg.kg ⁻¹
F1	700	4	180
F2	1,000	230	120
F3	2,500	-	1,300
F4	10,000	-	5,600

It was confirmed that limits of detection reported by the laboratory are below the criteria values. All other contaminants analysed for in the soil samples that are reported below the limit of detection by the laboratory can therefore be excluded from further assessment.

7.2 Findings

Direct comparison of the analytical results presented in Table 6.2 with the assessment criteria (refer Table 7.1 and Table 7.2) show that detected metallic element and hydrocarbon concentrations for all samples are well below health-risk based screening values.

The general low concentrations of heavy metals detected in the surface soil samples at the Subject Site suggest naturally occurring element abundance and are most likely not related to contamination. The elevated concentrations of hydrocarbons are limited to the samples collected from the equipment storage/maintenance areas and the cattle yard.

The highest of the concentrations were detected in the cattle yard. The sample of soil was collected from the area inside the yard. The hydrocarbons observed relate to light oil and could potentially be from used oil motor applied to the surface of the yard to bind fine soil particles and prevent dust when animals are moving through the yard. Another practice sometimes seen is the dilution of external pesticide preparations applied to animals with mineral oil. When applied or sprayed onto animals, overspray or droplet that fall on the ground may contaminate surface soils. Whatever the source of the observed hydrocarbons, the contamination appears to be localised to the cattle yard. No discoloured soil or bare ground was observed in the immediate vicinity of this area.

Consequently, although the detected hydrocarbon fractions (F2) exceed the ecological screening criteria. It is considered unlikely that any surface or groundwater resources would be directly impacted by the contamination. The hydrocarbon concentrations detected in the equipment storage and maintenance areas are all below screening criteria.

No other contaminants evaluated were detected at concentrations exceeding screening criteria. The sample of paint collected from the shed structure was shown to contain lead. However, the soil samples collected at the horse yard (1), sheds (2) and the composite samples from the paddocks (5 and 6) show no elevated levels of pesticides, hydrocarbons or heavy metals.

The confirmatory soil samples thus support the assertion that significant and widespread chemical contamination is unlikely to be present within the Subject Site.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

In accordance with the objectives stated in Section 1.2, and based on the information contained within this assessment, the following conclusions are presented (subject to the limitations noted in Section 1.5):

- Activities associated with the historical and current use of the Subject Site were identified as having a potential to contaminate surface soil at the site.
- The following potential sources of contamination were identified:
 - Historical farming activities.
 - Cropping and feed production.
 - Vehicles and equipment.
 - Use of unclassified fill
- A review of the available historical information, including contaminated sites databases and aerial photographs, indicated a low potential for significant environmental contamination to be present across the Subject Site.
- A site investigation revealed evidence of motorised equipment storage, maintenance and use, as well as livestock management infrastructure, which are reasonable to assume to have contributed to localised contamination of surface soils.
- Confirmatory sampling confirmed that concentrations of all contaminants investigated were below health risk-based screening criteria in all surface soil samples collected. No persistent pesticides or herbicides were detected in any of the samples collected from the livestock management areas (yards and races), and elevated heavy metal concentrations were detected anywhere at the Site.
- Localised concentrations of hydrocarbons were detected in areas where equipment storage and maintenance activities were conducted, as well as at the livestock management area. The detected concentrations are below health-risk based criteria.

- The screening criteria used in the evaluation of the contaminant concentrations were appropriately conservative and suitable for assessment of the proposed residential land use categories.
- Based on the findings of the site investigation it is concluded that the concentrations of heavy metals and hydrocarbons detected in the surface soils of the Subject Site does not represent any potential risk to human health or the environment.

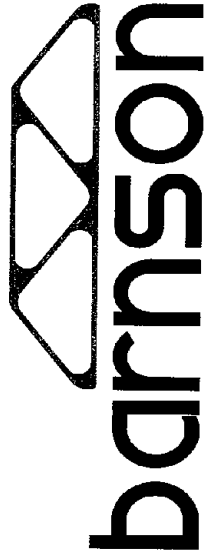
8.2 Recommendations

- Based on the findings of the desktop review and site investigation it can be stated with a reasonable level of confidence that the Subject Site is suitable for the proposed re-development and land use.
- It is recommended that the equipment storage and maintenance areas at Lots 93 and 94, as well as the livestock management area and associated infrastructure at Lot 97 of DP455426 be removed and appropriately disposed of prior to re-development of these areas.

9.0 REFERENCES

- MWRC LEP. (2011). *Mid-Western Regional Council Local Environmental Plan*. Mudgee: Mid-Western Regional Council.
- NEPC. (1999). *National Environment Protection (Assessment of Site Contamination) Measure (as amended, 2013)*. National Environment Protection Council.
- NSW EPA. (1995). *Contaminated Sites: Sampling Guidelines*. NSW Environmental Protection Agency.
- NSW EPA. (2020). *Consultants Reporting on Contaminated Land, Contaminated Land Guidelines*. Sydney: NSW Environmental Protection Authority.
- WaterNSW. (2021). *Real Time Data*. Retrieved June 17, 2021, from Water NSW: <https://realtimedata.watarnsw.com.au/water.stm>

Appendix A - Chain of Custody and Laboratory Report



a Unit 4 / 108-110 Market Street
Mudgee NSW 2850
t 1300 BARNSON (1300 227 676)
e generalenquiry@barnson.com.au
w www.barnson.com.au

CHAIN OF CUSTODY AND ANALYTICAL REQUEST

Job Number	36965	Date	15/07/2021
Laboratory	ALS Mudgee	Report to	Nardus Potgieter npotgieter@barnson.com.au
Sample Temperature on Receipt		Notes	
20 °C	Signature: <i>eld</i>		

Sample ID	Description	Sample Date/Time	Analysis request					
			1	2	3	4	5	6
1 CR-01	Imported fill for horse yard	14/07/2021	X					
2 CR-02	Soil from near shed with peeling paint	14/07/2021	X					
3 CR-03	Soil from scrap area	14/07/2021	X					
4 CR-04	Soil from cattle races	14/07/2021	X					
5 CR-05	Combo of paddock soil from Lot 1, 93 and 94	14/07/2021	X					
6 CR-06	Combo of soil from Lot 97 and 98	14/07/2021	X					
7 CRM-01	Shed paint	14/07/2021		X				

Analysis Request		ALS Method Code	
1	TRH (C6-C40) / BTEXN / PAH / Phenols / OC / OP / PCB / 8 Metals	S-19	
2	Lead in paint flakes	EG05P	
3			
4			
5			
6			

Relinquished by / Affiliation	Accepted by / Affiliation	Date
<i>[Signature]</i> / Barnson	<i>M. Mordt</i> / ALS Mudgee	15/07/2021 12:35

Environmental Division
Mudgee
Work Order Reference
ME2101164



CERTIFICATE OF ANALYSIS

Work Order : **ME2101164**
Client : **BARNSON**
Contact : Nardus Potgieter
Address : Unit 4 108-110 Market Street
MUDGEES NSW 2850
Telephone : 1300227676
Project : Soil
Order number : ----
C-O-C number : ----
Sampler : Barnson (Client Sampler)
Site : 36965
Quote number : SY/053/14
No. of samples received : 7
No. of samples analysed : 7

Page : 1 of 14
Laboratory : Environmental Division Mudgee
Contact : Mary Monds (ALS Mudgee Sampler)
Address : 1/29 Sydney Road Mudgee NSW Australia 2850
Telephone : +61 2 6372 6735
Date Samples Received : 15-Jul-2021 12:35
Date Analysis Commenced : 16-Jul-2021
Issue Date : 22-Jul-2021 08:03



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Edwandy Fadjjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EG005P: ALS is not NATA accredited for the analysis of metals in Paint matrix.



Analytical Results

Sub-Matrix: BUILDING MATERIAL (Matrix: SOIL)				Sample ID	CRM-01 Shed paint	----	----	----	----
				Sampling date / time	15-Jul-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ME2101164-007	-----	-----	-----	-----
					Result	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
ø Lead	7439-92-1	5	mg/kg		2610	----	----	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				CR-01 Imported fill for horse yard	CR-02 Soil from near shed with peeling paint	CR-03 Soil from scrap area	CR-04 Soil from cattle races	CR-05 Combo of paddock soil from Lot 1, 93 and 94
Sampling date / time				14-Jul-2021 00:00	14-Jul-2021 00:00	14-Jul-2021 00:00	14-Jul-2021 00:00	14-Jul-2021 00:00
Compound	CAS Number	LOR	Unit	ME2101164-001	ME2101164-002	ME2101164-003	ME2101164-004	ME2101164-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	8.1	19.0	6.1	39.6	12.5
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	9	7	<5	6	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	11	11	7	9	6
Copper	7440-50-8	5	mg/kg	5	9	6	9	<5
Lead	7439-92-1	5	mg/kg	15	89	14	9	6
Nickel	7440-02-0	2	mg/kg	5	4	6	4	<2
Zinc	7440-66-6	5	mg/kg	20	257	67	201	7
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				CR-01 Imported fill for horse yard	CR-02 Soil from near shed with peeling paint	CR-03 Soil from scrap area	CR-04 Soil from cattle races	CR-05 Combo of paddock soil from Lot 1, 93 and 94
Sampling date / time				14-Jul-2021 00:00	14-Jul-2021 00:00	14-Jul-2021 00:00	14-Jul-2021 00:00	14-Jul-2021 00:00
Compound	CAS Number	LOR	Unit	ME2101164-001	ME2101164-002	ME2101164-003	ME2101164-004	ME2101164-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5-0-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				CR-01 Imported fill for horse yard	CR-02 Soil from near shed with peeling paint	CR-03 Soil from scrap area	CR-04 Soil from cattle races	CR-05 Combo of paddock soil from Lot 1, 93 and 94
Sampling date / time				14-Jul-2021 00:00	14-Jul-2021 00:00	14-Jul-2021 00:00	14-Jul-2021 00:00	14-Jul-2021 00:00
Compound	CAS Number	LOR	Unit	ME2101164-001	ME2101164-002	ME2101164-003	ME2101164-004	ME2101164-005
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				CR-01 Imported fill for horse yard	CR-02 Soil from near shed with peeling paint	CR-03 Soil from scrap area	CR-04 Soil from cattle races	CR-05 Combo of paddock soil from Lot 1, 93 and 94
Sampling date / time				14-Jul-2021 00:00	14-Jul-2021 00:00	14-Jul-2021 00:00	14-Jul-2021 00:00	14-Jul-2021 00:00
Compound	CAS Number	LOR	Unit	ME2101164-001	ME2101164-002	ME2101164-003	ME2101164-004	ME2101164-005
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
C10 - C14 Fraction	----	50	mg/kg	<50	<50	60	140	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	130	470	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	110	830	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	300	1440	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	70	160	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	170	930	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	100	590	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	340	1680	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	70	160	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	105	124	114	127	106
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	83.4	104	103	114	82.3
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	99.4	97.0	76.2	122	87.4
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	100	96.3	92.9	104	88.7
2-Chlorophenol-D4	93951-73-6	0.5	%	100	95.7	94.1	103	86.6



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				CR-01 Imported fill for horse yard	CR-02 Soil from near shed with peeling paint	CR-03 Soil from scrap area	CR-04 Soil from cattle races	CR-05 Combo of paddock soil from Lot 1, 93 and 94
Sampling date / time				14-Jul-2021 00:00	14-Jul-2021 00:00	14-Jul-2021 00:00	14-Jul-2021 00:00	14-Jul-2021 00:00
Compound	CAS Number	LOR	Unit	ME2101164-001	ME2101164-002	ME2101164-003	ME2101164-004	ME2101164-005
				Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued								
2,4,6-Tribromophenol	118-79-6	0.5	%	88.6	87.3	91.6	109	73.8
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	114	111	106	114	102
Anthracene-d10	1719-06-8	0.5	%	108	102	99.4	107	99.8
4-Terphenyl-d14	1718-51-0	0.5	%	102	98.8	96.4	101	93.5
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	96.0	91.3	104	73.2	97.8
Toluene-D8	2037-26-5	0.2	%	106	97.3	118	87.6	104
4-Bromofluorobenzene	460-00-4	0.2	%	100	92.4	104	79.3	100



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				CR-06 Combo of soil from Lot 97 and 98	----	----	----	----
Sampling date / time				14-Jul-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ME2101164-006	-----	-----	-----	-----
Result				Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	11.4	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	7	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	11	----	----	----	----
Copper	7440-50-8	5	mg/kg	<5	----	----	----	----
Lead	7439-92-1	5	mg/kg	10	----	----	----	----
Nickel	7440-02-0	2	mg/kg	12	----	----	----	----
Zinc	7440-66-6	5	mg/kg	36	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				CR-06 Combo of soil from Lot 97 and 98	----	----	----	----
Sampling date / time				14-Jul-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ME2101164-006	-----	-----	-----	-----
Result					----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	----
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	----
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	----	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	----	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	----	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	----	----	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				CR-06 Combo of soil from Lot 97 and 98	----	----	----	----
Sampling date / time				14-Jul-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ME2101164-006	-----	-----	-----	-----
Result				----	----	----	----	----
EP075(SIM)A: Phenolic Compounds - Continued								
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	----	----	----	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	----	----	----	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	----	----	----	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	----	----	----	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	----	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				CR-06 Combo of soil from Lot 97 and 98	----	----	----	----
Sampling date / time				14-Jul-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ME2101164-006	-----	-----	-----	-----
Result					----	----	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued								
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	109	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	86.0	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	79.9	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	93.4	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	92.5	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%	75.8	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	108	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%	103	----	----	----	----



Analytical Results

Sub-Matrix: **SOIL**
 (Matrix: **SOIL**)

Sample ID

				CR-06	----	----	----	----
				Combo of soil from Lot 97 and 98				
Sampling date / time				14-Jul-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ME2101164-006	-----	-----	-----	-----
				Result	----	----	----	----
EP075(SIM)T: PAH Surrogates - Continued								
4-Terphenyl-d14	1718-51-0	0.5	%	96.0	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	98.0	----	----	----	----
Toluene-D8	2037-26-5	0.2	%	105	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	99.2	----	----	----	----



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(SOIL) EP068A: Organochlorine Pesticides (OC)
 (SOIL) EP068B: Organophosphorus Pesticides (OP)
 (SOIL) EP068T: Organophosphorus Pesticide Surrogate
 (SOIL) EP068S: Organochlorine Pesticide Surrogate
 (SOIL) EG005(ED093)T: Total Metals by ICP-AES
 (SOIL) EA055: Moisture Content (Dried @ 105-110°C)
 (SOIL) EP066: Polychlorinated Biphenyls (PCB)
 (SOIL) EP066S: PCB Surrogate
 (SOIL) EG035T: Total Recoverable Mercury by FIMS
 (SOIL) EP080/071: Total Petroleum Hydrocarbons
 (SOIL) EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions
 (SOIL) EP080: BTEXN
 (SOIL) EP080S: TPH(V)/BTEX Surrogates
 (SOIL) EP075(SIM)B: Polynuclear Aromatic Hydrocarbons
 (SOIL) EP075(SIM)A: Phenolic Compounds
 (SOIL) EP075(SIM)S: Phenolic Compound Surrogates
 (SOIL) EP075(SIM)T: PAH Surrogates