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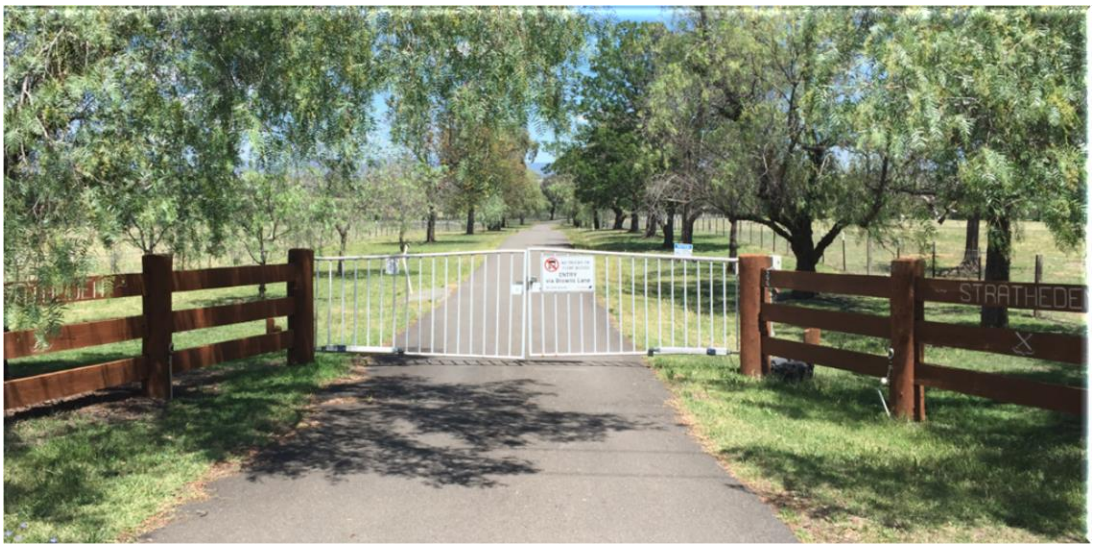

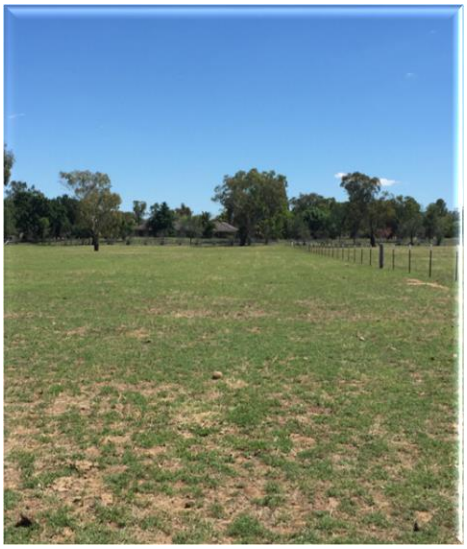

PRELIMINARY CONTAMINATED SITE INVESTIGATION

"STRATHEDEN"

815 Manilla Road, Tamworth NSW 2340

September 2022

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"STRATHEDEN"

815 Manilla Road, Tamworth NSW 2340

Prepared by: SMK Consultants

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September 2022

Document Control

Project Name	*Contaminated Site Investigation*
Proponent	Bath Stewart Associates
Project Reference	18/231
Report Number	18/231 – PSI
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Revision History			
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0	January 2019	Peter Taylor	Initial Constraints report
1	February 2022	Peter Taylor	Additional land
2	September 2022	Peter Taylor	Issued to Client for review
3	October 2022	Peter Taylor	Final version

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1 Introduction

1.1 Development Background

SMK Consultants were engaged by Bath Stewart Associates, who are acting on behalf of Pivotal Business Systems, to undertake a range of assessments associated with the development of part of the property "Stratheden" encompassing the following lots:

Table 1: Subject Site Property Description

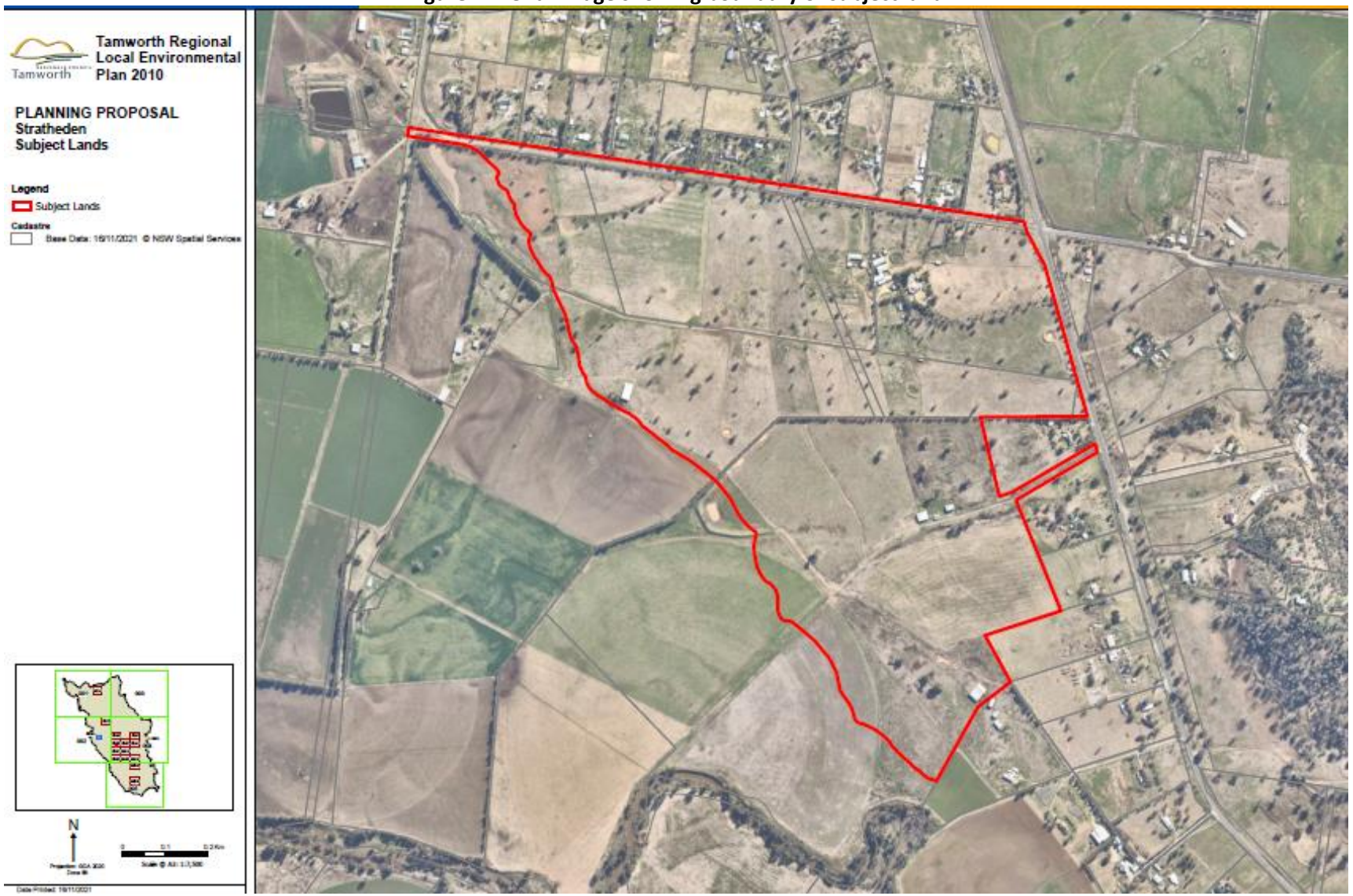
Lot	Deposited Plan
1, 2, & Part 3	997767
341	622077
12	245544
3 & 5	209387
Part Lot 4	212658
Part Lot 708	1252037
Part 3	DP212658

The development proposal involves a re-zoning of approximately 100 Ha of land.
The property is located on the northern edge of Tamworth along the Manilla Road and is within surrounding areas of rural residential and primary production land. A locality plan of the development site is presented in Figure 1.

1.2 Scope and Purpose of Investigation

The scope of this report is a preliminary contaminated site investigation. The purpose of the assessment is to review current and historical landuse on the property to assess any potential contamination that may have been created from previous landuse and if contamination is present, to determine whether remediation is required prior to any change in landuse.
The rezoning proposal will allow use of the subject land for residential purposes and therefore assessment of the land is based on this intended use. It should be noted that residential land has the most stringent criteria for contaminants.

Figure 1: Aerial Image showing boundary of subject land



2 Landuse history

Stratheden and the adjoining land has been historically cleared and farmed for grazing and cropping purposes. The land includes several sheds and a homestead complex utilised for horse breeding.

Records and advice from the Client and farm management indicated that clearing for agricultural purposes occurred prior to 1990. Clearing involved removal of most native trees and all ground cover for the purpose of cultivation. Selected mature trees were retained and additional tree corridors have been planted around the boundary and within the property.

Cultivation and production of a range of crops for hay and grazing pastures is undertaken on a rotational basis. The lower western part of Stratheden can be irrigated and used for production of lucerne hay, cattle feed, and grains such as sorghum. These lower fields are irrigated from groundwater and therefore production is relatively continuous.

The remainder of the farmed land is cropped on a dryland basis for production of improved pastures, fodder and various grains. The land incorporated within the proposal to the south includes parts of Lot 708 DP1252037. This land is cropped for dryland production of mainly winter grains.

The property of Stratheden has an extended history of horse breeding which commenced some 50-years ago. Part of the facilities in this eastern section of the property include a shed and stable complex for breeding and horse management. Paddocks around these sheds have been fenced into small paddocks to support the breeding enterprise.

Operation of the horse stud has included sowing of various crops such as oats and grasses to maintain pasture production when natural soil moisture is available. The regularity of sowing is dependent on soil moisture and the number of horses held on the farm. During periods where a lot of horses have been kept on the farm, the sown pasture has degraded. When opportunities to sow new pastures and crops occur (soil moisture is available), the paddocks have been cultivated and cropped to replace the degraded pasture.

The property has access to groundwater and the Peel River for irrigation water. A system of below ground pipes has been installed for spray irrigation across most of the property. This water also supplies stock water for the horse and cattle enterprise.

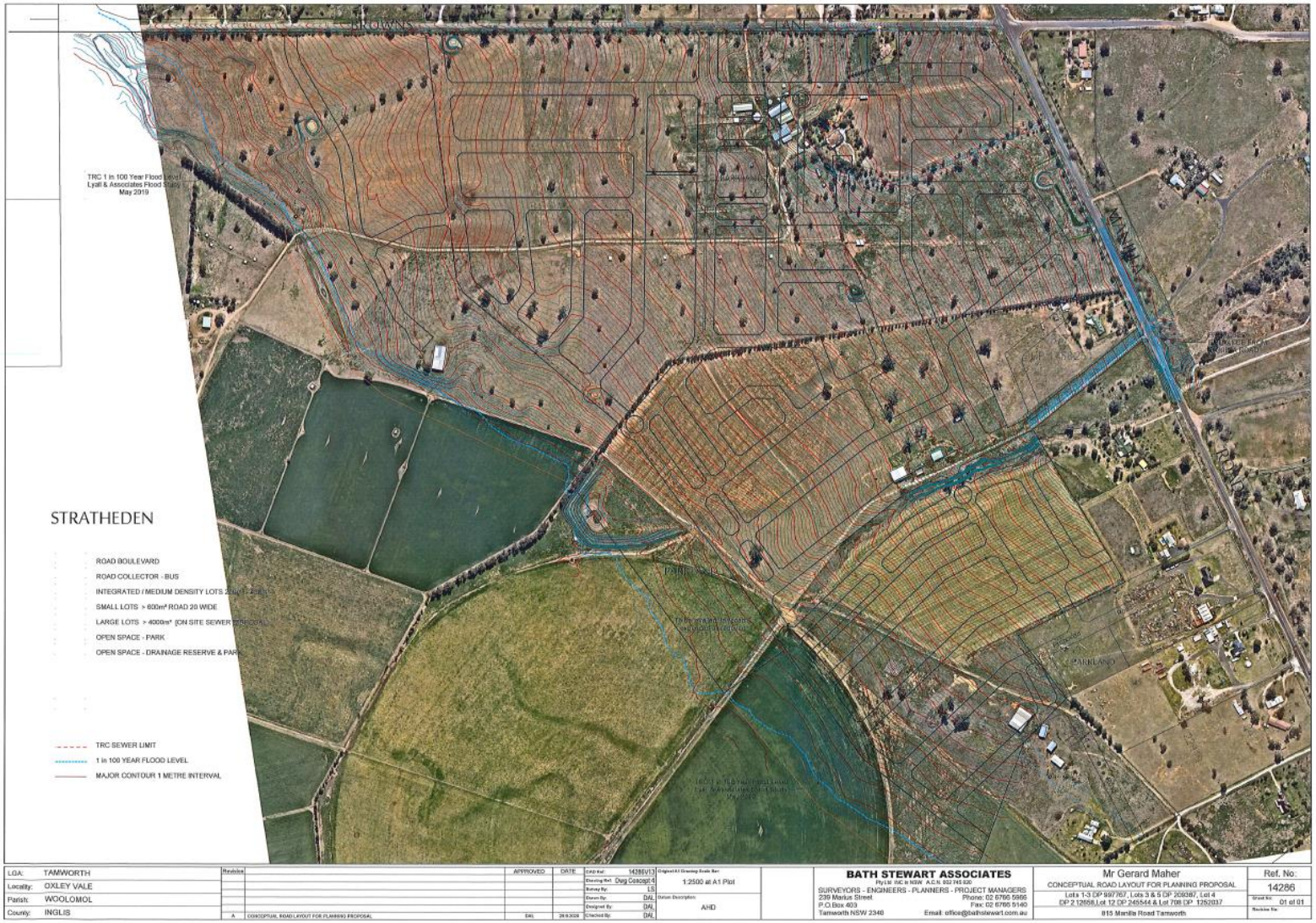
2.1 Development Footprint

A preliminary subdivision layout has been prepared for planning purposes. Figure 2 shows the property plan. Figure 2 presents the preliminary plan of a proposed subdivision. It is noted that the plan is a draft only and is liable to change in future as it will be subject to Council approval of a rezoning for smaller lot subdivision. From the draft plans provided, the total footprint of the development area for smaller Lots is calculated to be approximately 100 ha.

The development will involve ground disturbance associated with landscaping and construction works for roads and houses. It is expected that most grazing paddocks will be disturbed. The initial intent is to preserve all established mature trees that are not located within a road corridor or would disrupt a building site. The planted tree corridors around the perimeter of the property would be retained within the rezoned area as natural tree buffers within the landscape.

The development area is constrained to the elevated part of the property due to flood potential of the lower parts which are located on the Peel River floodplain. Final flood peak heights are being determined at present which will define the boundary of the proposed development on the property.

Figure 2: 2018 Aerial Image of "Stratheden" showing the property boundary and the area subject to investigation



3 Preliminary Contamination Assessment

A preliminary contaminated site investigation was completed in accordance with the provisions of State Environmental Planning Policy 55 – Remediation of Land and relevant NSW EPA Guidelines for investigation of potential contaminated land.

3.1 Scope and Methodology

The scope of the investigation involved examining the development area to identify any potential areas of contamination. The methodology adopted involved the following process:

- Review of aerial imagery available to identify any historical buildings, infrastructure or other development or landscape features (including onsite waste dumps and spray/dip facilities) which may have resulted in some residual contamination;
- A site inspection of the property;
- Where required, undertake preliminary soil testing to determine the extent of soil contamination at any identified contaminated site; and
- Prepare a preliminary contaminated site report outlining the above processes, recommendations and conclusion.

3.2 Site Details

This investigation has been undertaken on the land as outlined in figure 1. Figures 1 and 2 provide locality plans for the property and outline the study area.

The proposal involves a rezoning to reduce the permissible subdivision size. If rezoning is permitted, the property would be developed for closer residential development. The intended use of this property is therefore classified as residential.

3.3 Current Land Use

Landuse is dominated by cropping and grazing. The land is utilised as a horse stud and commercial cropping enterprise. This includes irrigation for production of fodder for use on-farm and sale. Fodder crops include lucerne hay, various grain crops and improved pasture. Irrigation water is sourced from groundwater aquifers associated with the Peel River floodplain and surface water pumped out of the Peel River under general security entitlements released from Chaffey dam.

The lower western section of the property is continually cropped under both irrigated and dryland conditions. This western section of the farm is utilised for commercial production of lucerne hay and includes facilities for hay storage and a machinery workshop. This section of the farm is outside of the area subject to a potential rezoning proposal as identified in the above plans.

The northern half of the land currently supports a grazing enterprise utilised for breeding of horses. The horse breeding facilities include extensive covered stables and training facilities. These buildings are adjacent to the main homestead area. A worker's cottage is located on Lot 341 DP622077.

Grazing paddocks in the northern sector of the property consist of planted pasture which is cultivated and replanted on a seasonal basis. Current farm management has indicated that the paddocks are cropped with species such as oats and a range of improved pasture. The cropping is undertaken to maintain fodder cover to allow continuous grazing by mainly horses. The grazing demand from the number of stock run on the property is unsustainable

on native pasture and therefore this is supported by crop production within the paddocks and supplies of hay from the western sector of cropping paddocks.

The southern part of the development area supports a dryland cropping area, and ancillary development in the form of sheds for storage of farm equipment and produce.

3.4 History and Adjoining Land Use

The development area is located immediately north of Tamworth. Originally, the area would have supported open woodland which was developed for grazing. As the town moved north along Manilla road, properties were subdivided into smaller farms and then rural residential development advanced to create smaller farms, now hobby farms and small lots. Industrial development did not expand into the rural residential areas to the north of Tamworth. Major industrial areas were generally created on the western and southern sides of Tamworth.

No facilities in the form of a woolshed or dipping facility were identified on the land. Such facilities are common to many farms around the Tamworth area as a result of mainly sheep production.

Historical searches of the property indicate that the homestead was built in the 1930's. This suggests a grazing property with frontage to the Peel River or extending across the Peel River. Sale documentation from 2013 indicates that the horse stud had been operating for 40-years. This places a commencement date for the horse breeding facility of about 1970. The facility produced high value horses for the racing industry. This would have meant that these horses that were worth more than $100,000 each would have been well cared for. The paddocks used to spell the horses would have been highly managed to ensure the safety of the horses. Such sites as old wool sheds or sheep dips would have been removed in the early 70's and the property would have been manicured to promote the sale of horses bred and managed.

The infrastructure relating to the horse breeding history has been retained.

The adjoining properties support rural residential dwellings interspersed with a range of grazing and cropping enterprises. No intensive agricultural activities or industrial type activities are conducted within the local catchment area. An active dairy enterprise is located on the western boundary of the property. Other adjoining farms are utilised for cropping and grazing of mainly cattle and horses. A small poultry or pig farm was located on Browns Lane to the east of Manilla road. This facility has decreased in size from 5-sheds to 1-shed since 2001.

Historical aerial images were accessed to review historical development on the property. The images available start in 1976. This image presented in figure 4 shows the main homestead and surrounding horse related infrastructure. Paddocks contain a few horse shelters and self-feeders. Inly one small shed is present in the western part of the property. Approximately one third of the property was cultivated. The remainder appears as natural or improved pasture. The buildings in this photo remain in place.

A 1984 aerial image shows some minor expansion of the horse facilities and hay storage. The second house and main hay shed appear in this image. All ground disturbance can be related to grazing animals, roads, cultivation and old stock dams. No structures of concern are present.

The 1993 aerial image shows further expansion of the horse related infrastructure including additional stables, horse shelters and self-feeders. All additions relate to the horse enterprise.

A 1998 aerial image shows similar development to 1993 under a wet season where grass and crop is present. Minimal additional buildings are present other than a worker's cottage and additional hay storage sheds associated with the irrigated cropping area.

A 2022 image shows minor changes. Additional training facilities have been added to the structures around the homestead.

In general, landuse has not changed between 1976 and 2022. This aligns with the history of the property available from records. For the past 50-years, the property has been utilised for horse production and cropping of mainly forage and hay products.

Figure 3: 1976 Aerial image of Stratheden

Figure 4: 1984 Aerial image of Stratheden

Figure 5: 1993 aerial image of Stratheden

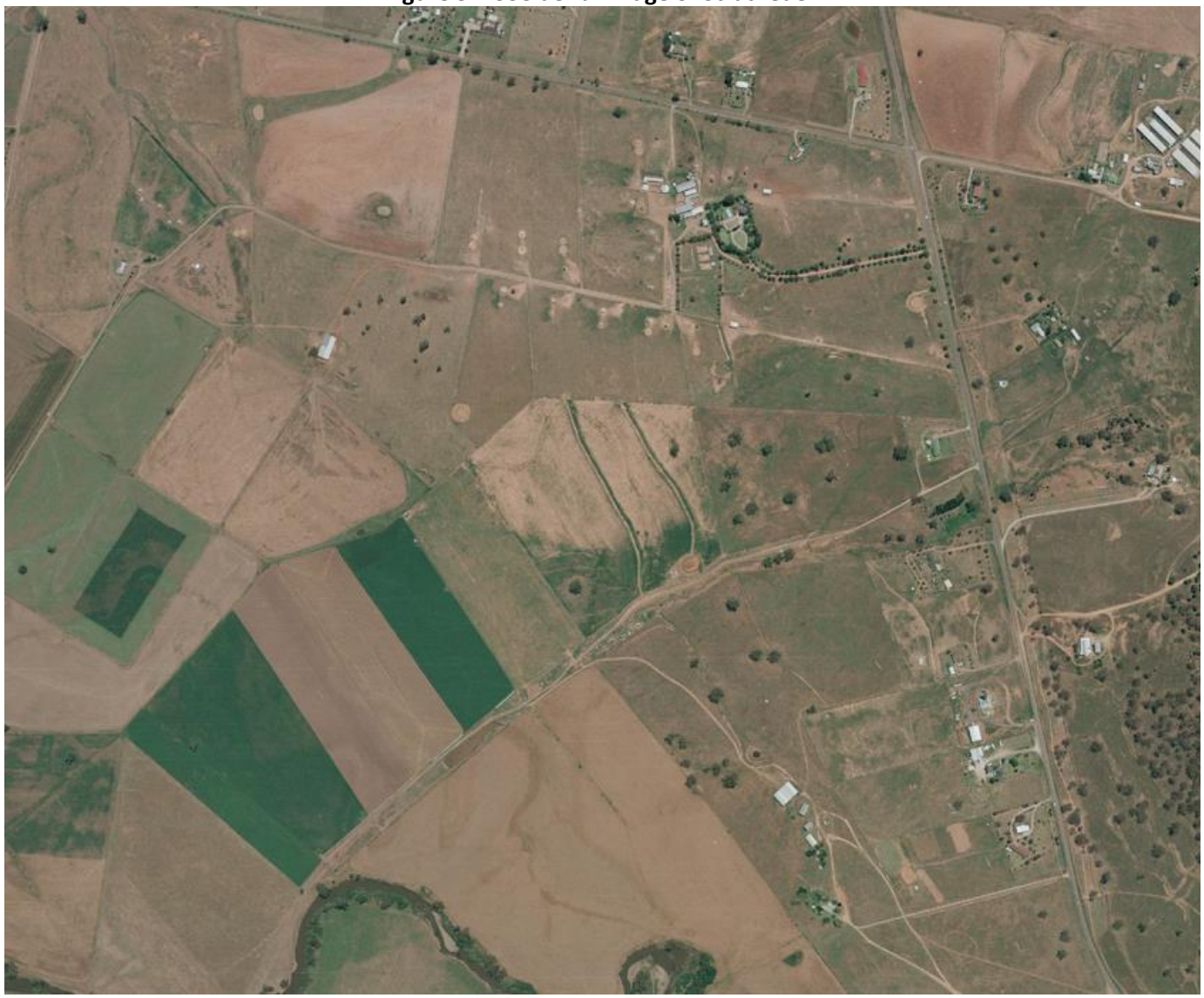


Figure 6: 1998 Aerial Image showing existing development on Stratheden – Northern section

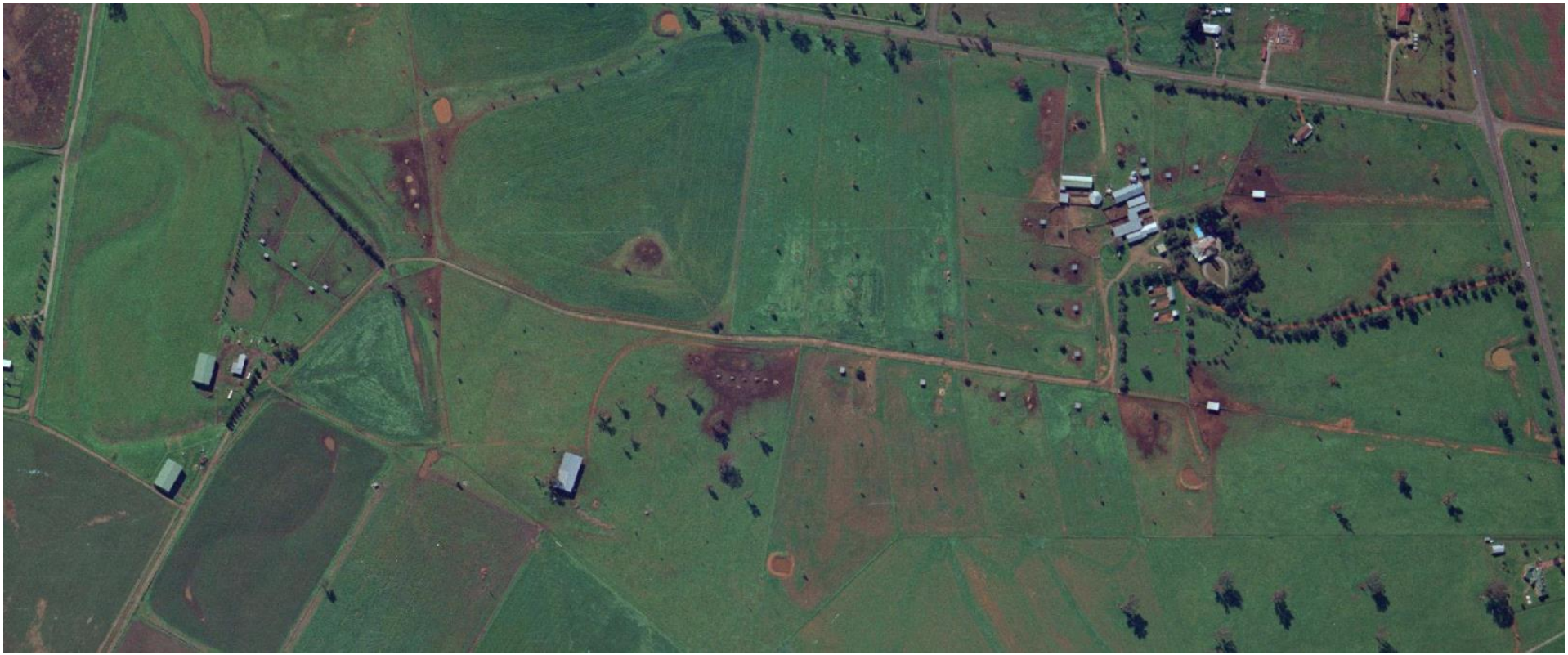


Figure 7: 1998 Aerial Image showing existing development on Stratheden – southern section

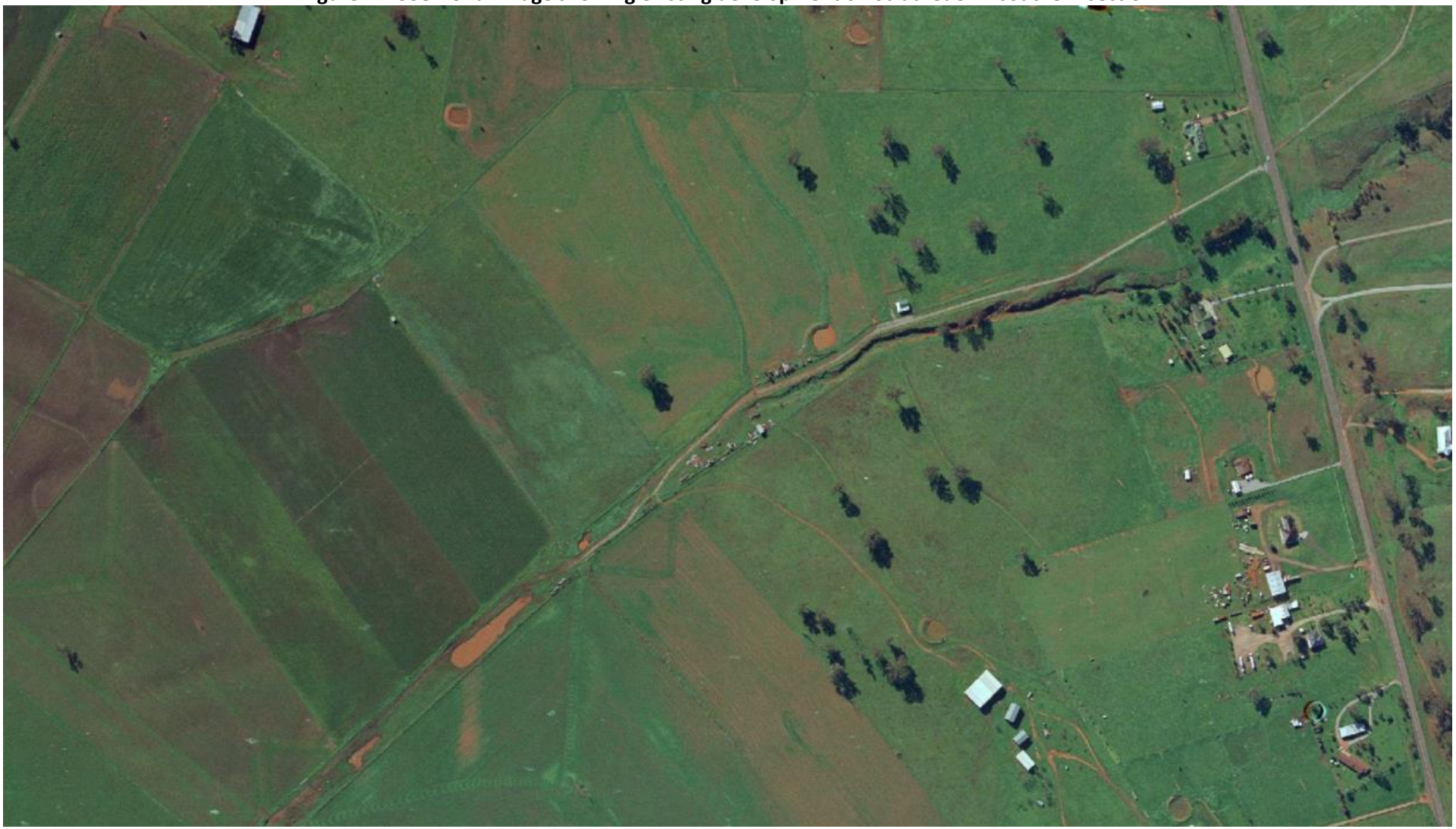
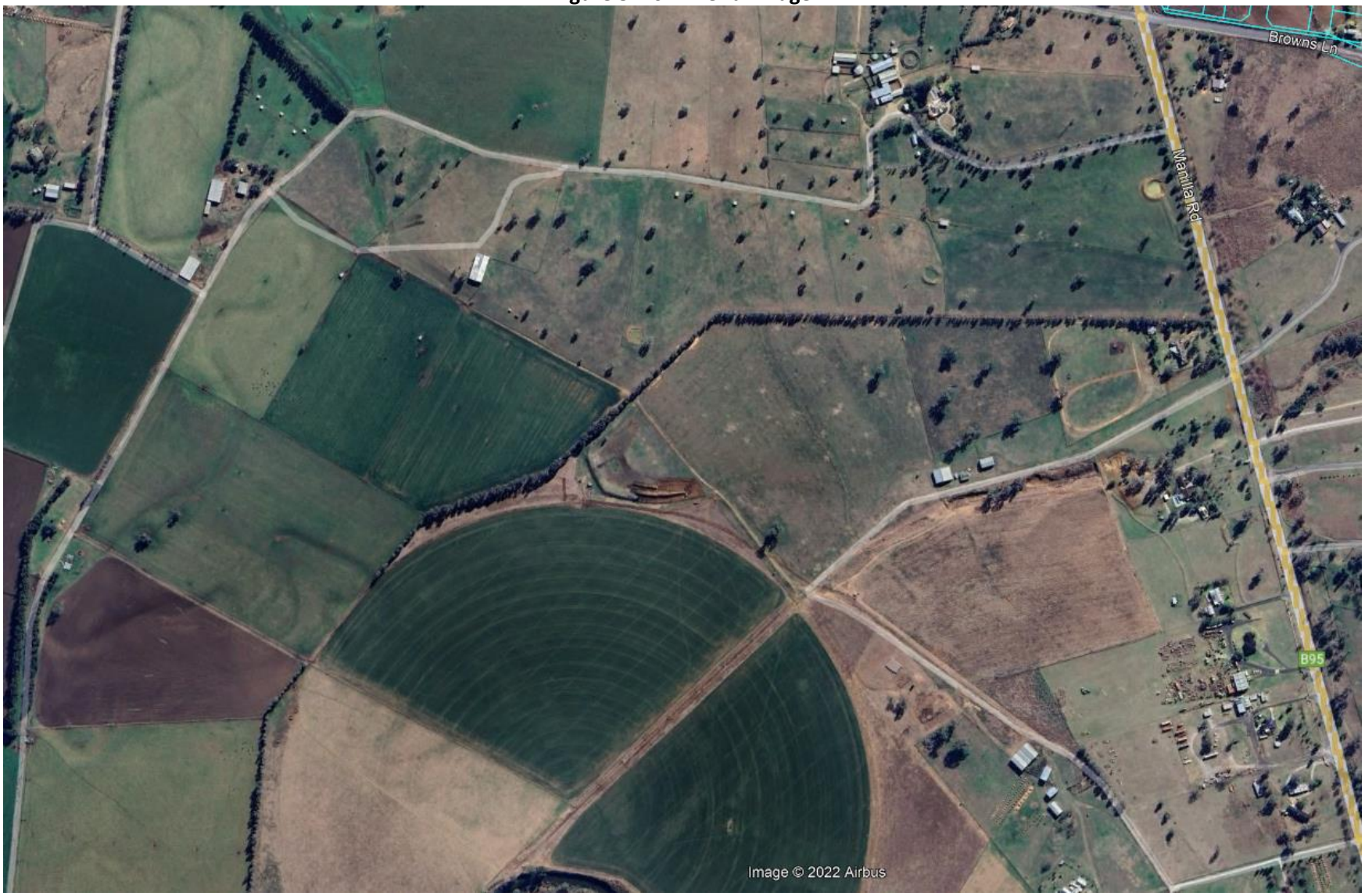


Figure 8: 2022 Aerial image



4 Sampling and Analysis Plan

A Preliminary Site Investigation was undertaken in accordance with NSW Office of Environment and Heritage (OEH) Guidelines. The investigation involved an assessment of previous land use and identification of potential contamination. The objective of the investigation was to determine whether contamination existed on the property and whether this may impact on the proposed or future land use.

Based on history of use, activity on the property has been confined to agriculture related activities. Potential contaminants would therefore include stock dips or spray races, farm chemicals, or old onsite burial or property dumps. The use of farming equipment would involve storage of some chemicals such as fuel, oils and chemicals used for crop control.

5 Relevant Guidelines

The National Environmental Protection Measure 1999 (NEPM) provides a Nationally consistent approach to the assessment of site contamination and present parameters for a range of soil parameters and contaminants that are recommended levels in soil before they have the potential to affect health or the environment. The guideline values or site criteria are referred to as "Health Based Investigation Levels (HIL's) and Groundwater Investigation Levels (GIL's). Other similar documents have been prepared by NSW EPA and National Authorities to provide additional Threshold Levels for contaminants. The following list of Guidelines were utilised to determine acceptable levels of contamination during the preparation of this report:

- National Environment Protection (Assessment of Site Contamination) Measure 1999
- Contaminated Sites: Guidelines for Assessing Former Orchards and Market Gardens NSW EPA, 2005
- Contaminated Sites – Guidelines for the NSW Site Auditor Scheme – NSW EPA 1998
- Contaminated Sites – Guidelines for Assessing Service Station Sites – NSW EPA 1994
- Health based soil investigation levels, National Environmental Health Forum (NEHF), 1999

The Guidelines for maximum threshold levels are based on the existing or potential landuse for the investigation area based on risk of exposure to the contaminant material and potential ingestion pathways. In this case, the proposed use of the property will include residential use and therefore the adopted thresholds will need to account for this.

As such, the adopted contaminant thresholds for this investigation are:

- ***HIL A (Residential)*** [Table 1A(1) of Schedule B1 – Guideline to Investigating Levels for Soil and Groundwater, National Environment Protection (Assessment of Site Contamination) Measure 1999].

If soil samples are obtained as a result of field identification of potential contamination, test results will be compared with the threshold criteria for HIL A (residential). Potential pathways for ingestion would include children playing in soil around a house site.

6 Results

A review of aerial imagery across the site indicated that the investigation area supporting grazing paddocks, multiple sheds associated with horse breeding, hay storage, machinery storage and two homestead sites. Landuse has been relatively consistent for the past 50-years. No potential contaminants were observed around or within the sheds that would be of concern in relation to creating soil residues.

None of the structures were associated with industrial type activity such as large mechanical workshops. No specific areas of bare or highly disturbed ground were evident in aerial imagery that would signify a disturbed soil condition impacted by some form of contamination.

An inspection of the property included traverses on-foot across the paddocks. The paddocks support mainly cultivated fodder, cereal crops and grasses and therefore the area had been subject to farming. The presence of stud horses, foals and cattle would suggest that no chemicals that would be persistent and of risk have been used on the property that may be ingested by these high-cost stud horses.

No dumps or burial pits were noted during the property inspection or on aerial images dating back to 1976. Farm management and staff indicated that they do not have a farm dump for disposal of materials such as old chemical drums or waste generated from various activities.

Some minor farm herbicides are used as part of the farming practices for control of weeds. The main chemical used is glyphosate based. This chemical generally degrades rapidly into relatively harmless by-products when used. The level of glyphosate use is small and therefore no accumulation of by-products from this herbicide are predicted to be present.

No other chemical use is evident or occurs on the investigation area.

Small quantities of veterinarian drugs would have been occasionally stored in an office at the equine facilities adjoining the main residence. These veterinarian drugs are generally limited to antibiotics and other drugs that could be administered by staff in the absence of a Vet. The drugs would have been kept in a fridge in minor quantities and are not considered as a contamination risk.

A review of the northern part of the land indicated that the property had been established as a horse breeding facility in the early 1970's. Horse breeding has occurred on the property since then and continues at present. If the property had been used for sheep production and required a sheep dip or spray race, it is predicted that such sheep facilities would have been demolished or buried in 1970 or earlier. No such sites could be identified, and nobody can be contacted to identify whether such facilities were present prior to 1970. No cattle or sheep yards are present or appear in the 1976 aerial image. If such were present, there would be a higher probability that the property was used for sheep or cattle production and would therefore include some form of spray race or dip. The absence of handling yards, other than horse facilities provides some confidence that there is no buried or demolished site that may be contaminated by older chemicals such as arsenic.

It is also noted that horse breeding on this property involved extremely high value horses and if there was a risk that the horse could become poisoned or affected by residues from landuse prior to 1970, the owner would have removed this risk by disposing of the chemicals to avoid ingestion by the horses.

It is noted that the homestead was built in the 1930's. The homestead would have been subject to multiple renovations which may have included products such as asbestos or the use of earlier termite control chemicals such as dieldrin. Assessing the contamination risk of the original homestead is beyond the scope of this study in that the homestead is to be retained. If the homestead is subject to demolition and replacement, it is recommended that a site assessment is undertaken to specifically examine the homestead site once it is demolished.

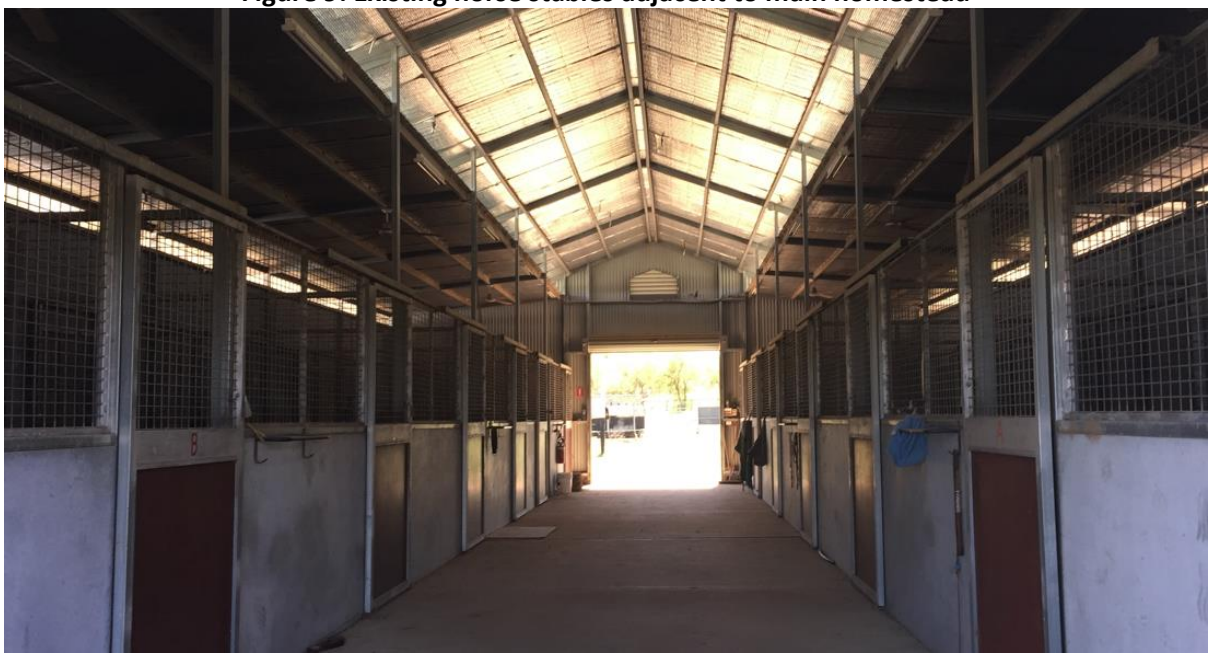
The southern section of the land has been farmed for an extensive period. Areas of bare ground were noted in historical photos. These areas were confirmed as being used for hay storage.

7 Discussion

A review of available aerial photography and field inspection across the property indicated that there are no areas or sites that represent a risk of contamination. No features or old structures were present that would suggest the presence of chemicals that would be of concern or pose a risk to human health or the environment.

The primary activity for the past 50-years on the northern part of the land has included high value horse breeding and irrigated farming centred on lucerne hay production. The buildings on this property identified in 1976 aerial images support this ongoing use. Over time, the buildings have expanded specifically for these two enterprises. The current buildings are relatively modern and reflect a high value horse industry which would avoid a property if it were contaminated.

Figure 9: Existing horse stables adjacent to main homestead



The breeding of horses does not require the use of chemicals that may present a long-term risk of ground contamination.

A minor volume of hydrocarbons was present in the workshop associated with lucerne production. Some minor surface spillage was present which is consistent with normal farming activities. The contamination was considered as surface only with a slight staining on the top of the ground and no deep penetration or risk of deeper contamination.

No soil sampling was undertaken on the basis that no contamination sources were present. If residual herbicides were used on the property, they would degrade over a period of 6 to 12 months. However, farm management indicated that no such chemicals are utilised within the proposed development area as this is utilised primarily for horses, including foals who could be susceptible to some chemicals if present.

8 Conclusion

This investigation of potential contamination has assessed the subject area on the basis that it will be occupied for residential use. Use of land for residential purposes has the most stringent criteria for contamination as a result of potential contact with the soil by children.

A review of the history of the property has indicated minimal potential for contaminated sites. This is mainly based on the knowledge that the property has been used for horse breeding of high value horse for nearly 50-years and as a result of this, if contamination was present that would place some risk to the horses or progeny, this risk would have been removed when the operation commenced. The remainder of the land has been utilised for crop production.

The methods adopted for this investigation are standard. This involved a thorough review of site history including surrounding landuse and potential offsite sources of contamination. The investigation did not identify any possible contamination sources or sites within the property that would potentially be contaminated from historical landuse. No visible signs of contamination were present.

Based on the site history and field inspections, it can be concluded that the property is not contaminated. If contamination is present, it is unknown to current management and not traceable from surface features.

Prepared by:

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Licensed Asbestos Assessor 000 180

9 Limitation Statement

The intention of this preliminary contamination assessment is to provide advice to the Client whether identifiable contamination is present within the study area. Contamination investigations are conducted in a conscientious and professional manner. Due to the nature and wide range of potential contaminants and random disposal of such contaminants, SMK Consultants cannot guarantee that there is no contamination within the study area. If contamination or suspected contamination is encountered on the site during any future work, it is recommended that the site should be appropriately restricted, and advice sought from a suitably qualified and experienced consultant/supervisor to assess the contamination to determine appropriate action for its management and removal prior to any further work on the site. SMK Consultant's inspection is undertaken to the best of our ability. However, we totally exclude any loss or damages which may arise from services provided to the Client and/or associated parties.