

Remedial Action Plan

407 & 457 Crookwell Rd, Kingsdale, NSW

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Prepared by:	CSH Consulting PTY LTD

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Author: Julia NoonanB.Sc



Signed:

Reviewer: Joshua King

Signed:

Approved by: Kevin King..... Director

Signed:



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1. Executive Summary

CSH Consulting Pty Ltd were engaged by IPG Invest Projects to prepare a Remedial Action Plan (RAP) to support the Detailed Site Investigation (DSI Report No DSI2022-218) for two properties at 407 and 457 Crookwell Rd, Kingsdale. See map of the site in Figure 1. The RAP details the sampling, analysis, management of the demolition of the house, garage and sheds and removal of contaminated waste.

During the development of the DSI, the extent of potential contamination on this site has been reduced to 2 locations:

- PAEC01 – House and garage
- PAEC06 – sheds

Based on the investigative site inspection conducted in October 2022, and in conjunction with the DSI report, SAQP the other areas show that the potential for contamination and the risk to human and environmental health is low.

Based on the desktop and site investigation the potential contaminants are assumed to be present. Prior to demolition of the house and garages sampling and analysis to be carried out to assess the extent of potential contamination. The soils around the sheds are to be sampled after demolition and removal of sheds and concrete to encompass the soils in the area. The analysis results to verify the remediation plan and classification for disposal of waste.

2. Introduction

CSH Consulting Pty Ltd were engaged by IPG Invest Projects to prepare a Remedial Action Plan (RAP) for the areas of concern identified in the detailed site investigation for two properties at 407 and 457 Crookwell Rd, Kingsdale (DSI2022-218). See map of the site in Figure 1.



Figure 1: Site Location

3. Scope of works

The report identifies the sampling and analysis requirements for the areas of concern based on the knowledge obtained from the PSI and DSI.

The management of the demolition of the house, garage and sheds and removal of contaminated waste is outlined and may be dependent on analysis results.

4. Site identification

4.1. Property details

The site address covered by this report is 407 and 457 Crookwell Road, Kingsdale, NSW (Lot 70 DP 1006688 and Lot 73 DP 1006688, respectively).

4.2. Location and General Description

The properties are located approximately 4km to the North of Goulburn. The boundary of property No 407 has an irregular shape that covers an area of 40.83 hectares. The boundary of property No 457 has a regular rectangular shape that covers an area of 9.668 hectares and sits to the North East of property No 407.

Property No 407 has a residential building consisting of a house and detached double garage and 3 sheds situated to the North of the residential building. Property 457 has no residential buildings and is mostly used for grazing sheep.

4.3. Local Government Area

The properties are located within the Goulburn Mulwaree Council Local Government Area (LGA) and falls under the Local Aboriginal Council of Pejar and the Regional Council of Wiradjuri. The properties are zoned as RU6: Transition.

4.4. Catchment Area

The properties 407 and 457 are located within the Warragamba Local catchment area. This catchment is part of the schedule 1 Controlled area within the outer catchment of the Greater Sydney Drinking water catchment.

5. Site History Review and Previous Report Review

As part of the Preliminary Site Investigation (PSI) report conducted by CSH Consulting Pty Ltd, areas of environmental concern (AEC) for potentially contaminated sites were identified using various means. Onsite field inspections were carried out in August 2022 and September 2022 with locations and observations being recorded. With review of the historical photos, survey from the owners and observations from onsite, 6 areas of concern were identified.

The day sampling was to be carried out (25/10/2022), further detailed visual inspections and intrusive investigation were carried out for each of the PAEC, along with discussions with current owner and development personnel (Scott Colman) to assess the areas of concern and the extent of the potential contaminants listed in the PSI and the risk of these contaminants. The results from the onsite visit and discussions and further requirements for these areas are summarised in Table 1 below, extracted from the DSI report and shown in Figure 3.

The extent of potential contamination on this site has been reduced to 2 locations (Table 2):

- PAEC01 – House and garage
- PAEC06 – sheds

Site History Review

A review of the historical activities conducted on the site was carried out in order to determine if there were any records of contamination that occurred on site to identify any locations as areas of environmental concern (AEC). Some of the key points are outlined below.

- The Department of Lands Title records does not indicate potential contaminating activities but lists the gas pipe and water pipe easements on both properties.
- A survey was given to the property owners at the time in 2022, identifying that for property 407 some dirt and building rubble was brought onto site from external sources and was dumped in the gully and in the paddock along the fence line next to house.
- Review of historical aerial photos indicate the installation of a gas and water pipeline runs through both properties and development of residential buildings to property 407 since 1987.

Table 1: Area of concern analysis		
PAEC No	Findings	Further requirements
PAEC01	It was advised that the house and garage will continue to be occupied and will be removed prior to works commencement on site.	A hazardous materials survey, including sampling, is to be carried out and a remedial action plan is to be developed for the safe demolition and removal of any contaminated waste.
PAEC02	Further investigation of the material associated with the pump sheds indicated that only the housing was left onsite. No evidence of potential hazardous causing materials could be seen to initiate further investigation.	Housing was removed from site. No further investigation required
PAEC03	The 3 piles of fill contained brick, timber and other anthropogenic materials. The timber was untreated and contained no lead paint. There was no evidence of fibre cement sheeting and the fill was able to be scrapped down to virgin land with no evidence of hazardous materials that would cause harm to human health or the environment	Fill was removed from site. No further investigation required
PAEC04	The carcasses were disposed of in a pit.	No further investigation required.
PAEC05	Similarly to PAEC03, the fill contained concrete blocks, tyres and some plastic. As the fill was dug into and scrapped, there was no evidence of any hazardous materials that would cause harm to human health or the environment. The concrete blocks and tyres have been used as erosion inhibitors.	Fill was removed from site. No further investigation required.
PAEC06	The sheds are to remain and will be demolished at the same time as the house and garage.	Sampling of this area to be conducted prior to demolition and will be included in the

		remediation action plan with PAEC01
PAEC07	The old fuel tank on the neighbouring property has a berm around the tank to direct any runoff from the tank to remain on the property and not seep into the Property 407.	No further investigation required.



Figure 3: Approximate locations of potential areas of environmental concern (PAEC).

Table 2: Potential areas of Environmental Concern (PAEC) and potential contaminants		
PAEC No	Area descriptor	Potential contaminants
PAEC01	Residential building and garage	Asbestos, SMF, lead (paint) and polychlorinated biphenyls (PCB)
PAEC06	Sheds to North of residence contained weed killer chemicals including a 20-litre container of glyphosate.	TRH; BTEX; PAH; OCP; Glyphosate and other herbicides

6. Site Condition and surrounding environment

The PSI report looked at various aspects of the property from onsite inspections and information from other sources to understand the landscape.

According to the PSI report, the property contains Sooley Soil Landscape and low risk of acid sulphate soils.

The property No 407 ranges in elevation between 650 m to 680 m above height datum. The highest point is located in the South Eastern section of the site where the buildings sit at the top and the lowest point is located in the North Western section of the site. A ridgeline is evident running North East to South West direction in the South Eastern section of the site.

The average slope across the property No 407 is 5.5% with a maximum slope of 11.3%.

The property No 457 ranges in elevation between 665 m and 674 m above height datum. The property undulates across the property from the East to West with the highest point following the line of trees to the Western side of the property. The lowest point of the property is in the gully lines and the dam.

The average slope for property No 457 is 5.6% with a maximum slope of 10.5%.

Most of the site across both properties has been cleared of all native vegetation and is covered predominantly by pasture grass suitable for grazing of cattle and sheep.

There are trees scattered around the Eastern section of property No 407 around the house and shed with a hedge line of trees from the back of the house and garage northwards toward the back of the sheds and meeting Crookwell Road. Some trees are also dotted along the Eastern bank of the gully towards the Northern property line.

Property 457 has 3 rows of trees running in a slight North West – South East direction towards the Western portion of the property that starts in the middle of the Western part of the Northern boundary and ends where the gas pipeline easement runs through the property. There is also a small group of trees in the centre of the property

Property No 407 hosts one residential building with a detached garage and three metal sheds. There is also a stock loading ramp in a stock handling yard to the South East corner of the property.

Property No 457 does not have any buildings situated on the property.

There are two dams located on the property No 407, one located in the North Western corner of the site and the other in the South Eastern corner, and one dam on property 457 located towards the middle of the Eastern side of the block. A portion of the neighbours dam is located approximately 350m North West of the house on property No 407. There are several minor intermittent drainage lines across the property.

Lake Sooley is located approximately 1.5 km to the West of the property and Wollondilly River is approximately 750 m South of the property.

The PSI report conducted a search for water bores present in or around the property and, found 2 bores located on the property and 28 bores within 1 km of both properties.

7. Remediation Criteria

7.1 Pre demolition assessment

Based on the desktop and site investigations conducted for the PSI and DSI, the potential contaminants are assumed to be present. A pre demolition survey should be carried out on the house, garages and soils around sheds to assess the extent of contamination, if any, in order verify the remediation plan and classification of waste for disposal.

The sheds and concrete should be demolished prior to sampling the soils in order to encompass the soil beneath the concrete. The house and garage should be sampled and analysed prior to demolition. The number of samples and the analysis required is shown in table 3. Table 4 should indicates the remediation of contaminants should they be found to be present based on the analysis results.

Table 3: Pre demolition sampling and assessment

PAEC No	Sampling requirements	Analysis
PAEC01 House and garage	<ol style="list-style-type: none"> Up to 4 samples of suspected asbestos containing materials (kitchen, bathroom, laundry, eaves) 1 sample of insulation Up to 4 paint samples 	<ol style="list-style-type: none"> Asbestos and SMF Lead in paint
PAEC06 sheds	Up to 2 soil samples for chemical analysis and 1 soil sample for asbestos per shed	TRH; BTEX; PAH; OCP; Glyphosate and other herbicides, and asbestos

Table 4: Remediation plan for potential contaminants

PAEC No	Potential contaminant	Remediation plan
PAEC01 House and garage	<ol style="list-style-type: none"> Asbestos and SMF Lead paint PCBs 	<ol style="list-style-type: none"> Remove prior to demolition under controlled asbestos conditions following the relevant Safe Work NSW Code of Practice. Clearance Certificate to be issued as required. Demolition to be carried out under controlled conditions to minimise dust. Fluorescent tubing to be removed prior to demolition
PAEC06 sheds	TRH; BTEX; PAH; OCP; Glyphosate and other herbicides, and asbestos	Sampling and analysis of this area to be conducted after demolition of sheds and removal concrete slabs and a clearance and classification certificate issued as required.

7.2 Post analysis and demolition

Asbestos and SMF to be disposed of as Special Waste, asbestos waste. Clearance Certificate to be issued on completion of removal.

Clearance and Classification certificates to be issued for soil samples as required.

Any classified materials will be disposed of at facilities licenced to receive this product. Tipping receipts will be retained.

During demolition and levelling of site, an unexpected finds protocol should be implemented.

8. Conclusions and recommendations

By reviewing the previous reports (PSI and DSI), Sampling and Analysis Quality Plan (SAQP), findings from site visit and information provided by the owner and developers, the extent of potential contamination on this site has been reduced to 2 locations:

- PAEC01 – House and garage
- PAEC06 – sheds

Based on the investigative site inspection conducted in October 2022, and in conjunction with the DSI report, SAQP the other areas show that the potential for contamination and the risk to human and environmental health is low.

Prior to demolition of the house and garages sampling and analysis to be carried out to assess the extent of potential contamination. The soils around the sheds are to be sampled after demolition and removal of sheds and concrete to encompass the soils in the area. The analysis results to verify the remediation plan and classification for disposal of waste

A pre demolition survey and sampling will be conducted on the PAECs noted in this report when required.