

Black Cockatoo Habitat Tree Survey



Concession Street (SLK 0.00 to 1.88) Mungalup

June 2020

Version 1



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SUMMARY

This report details the results of a black cockatoo habitat tree survey carried out along the length of Concession Street (SLK 0.00 and SLK 1.88), Mungalup, in the Shire of Collie (the Shire).

It is understood that the Shire will soon be applying for a Permit to Clear to allow for road upgrades. The Shire have estimated that up to 243 trees (in addition to 19 pine trees and 69 grass trees) along the length of Concession Street will require removal.

The black cockatoo habitat tree survey detailed here has been carried out to identify any “habitat trees” (a tree with a hollow suitable for black cockatoos to use for nesting purposes) within the proposed works footprint so that appropriate management measures can be employed to ensure no impact occurs in accordance with anticipated requirements of the Department of Water and Environmental Regulation (DWER).

A summary of trees with a DBH >50cm observed within the survey area is provided in Table 1 below. The location of the trees recorded are shown in Figure 1.

The currently defined works footprint was found to contain 33 trees with a DBH \geq 50cm, most of which were not observed to contain hollows of any size.

One tree (wpt022 - Shire ID - HAB 10 situated at ~ SLK 1.19) was found to contain a large (+50cm entrance) chimney type hollow. The hollow, examined with a drone, showed no apparent evidence of use by black cockatoos (i.e. chipping/chew marks) or any other fauna.

If approval to remove the tree is obtained it is recommended that appropriate management practices be employed (e.g. fauna spotter in attendance to ensure hollow is vacant at time of removal) as while it may not be used by black cockatoos other fauna may utilise it at times (e.g. common brushtail possums).

This report should be forwarded to DWER for their review during the clearing permit approval process.

1. INTRODUCTION

This report details the results of a black cockatoo habitat tree survey carried out along the length of Concession Street (SLK 0.00 and SLK 1.88), Mungalup, in the Shire of Collie (the Shire).

It is understood that the Shire will soon be applying for a Permit to Clear to allow for road upgrades. The Shire have estimated that up to 243 trees (in addition to 19 pine trees and 69 grass trees) along the length of Concession Street will require removal.

The black cockatoo habitat tree survey detailed here has been carried out to identify any “habitat trees” (a tree with a hollow suitable for black cockatoos to use for nesting purposes) within the proposed works footprint so that appropriate management measures can be employed to ensure no impact occurs in accordance with anticipated requirements of the Department of Water and Environmental Regulation (DWER).

2. SCOPE OF WORKS

The scope of works is to carry out a black cockatoo “habitat tree” survey with the aim of identifying any trees currently or likely to be in use by black cockatoos for the purpose of nesting located within and near the proposed works footprint. The Shire defined the survey area to be the works footprint and a 10 metre buffer (excluding private property).

Note: For the purposes of this report the term black cockatoo is in reference to Baudin’s black cockatoo *Calyptorhynchus baudinii*, Carnaby’s black cockatoo *Calyptorhynchus latirostris* and the forest red-tailed black cockatoo *Calyptorhynchus banksii naso*. All three species are known to frequent the area.

3. METHODS

An inspection of the survey area was carried out by Greg Harewood (Zoologist - 17 years’ experience) on the 1 June 2020. The assessment has involved the identification of all suitable trees species within or near the survey area that have a diameter at breast height (DBH) of equal to or over 50cm (30 cm for wandoo if present) with special attention paid to those containing hollows or apparent hollows. The DBH of each tree was estimated using a pre-made “caliper”.

Target tree species included marri and jarrah and any other *Corymbia/Eucalyptus* species of a suitable size that are present. Peppermints, banksia, sheoak and melaleuca tree species (for example) were not be assessed as they typically do not develop hollows that are used by black cockatoos.

The location of each tree identified fitting the required criteria (i.e. DBH \geq 50cm/30cm for wandoo) were recorded with a GPS and details on tree species, number and size of hollows (if any) noted.

Possible hollows were placed into one of four categories, based on the size of the apparent hollow entrance, these being:

- Small = \sim <5cm diameter (i.e. entrance appears too small for a black cockatoo);
- Medium = \sim 5cm-10cm diameter (i.e. entrance appears too small for a black cockatoo);
- Large = \sim >10cm diameter (entrance appears large enough for a black cockatoo, but possible hollow appears to be unsuitable for nesting i.e. wrong orientation, too small, too low or too shallow); or
- Large (cockatoo) = \sim >10cm diameter (entrance appears big enough to provide access to a possible hollow that maybe suitable for a black cockatoo to use for nesting).

Based on this assessment trees present within the permit area have been placed into one of four categories:

- Tree < 50cm DBH or an unsuitable species (not assessed/recorded);
- Tree >50cm DBH, no hollows seen;
- Tree >50cm DBH, one or more potential hollows seen, none of which were considered suitable for black cockatoos to use for nesting; or
- Tree >50cm DBH, one or more potential hollows seen, with at least one considered possibly suitable for black cockatoos to use for nesting.

For the purposes of this assessment a tree containing a potential cockatoo nest hollow has been defined as:

Generally, any tree which is alive or dead that contains one or more visible hollows (cavities within the trunk or branches) or possible hollows considered potentially suitable for occupation by a black cockatoo for the purpose of nesting/breeding. Hollows that had an entrance greater than about 10cm in diameter and would allow the entry of a black cockatoo into a suitably orientated and sized branch/trunk were recorded as a “potential black cockatoo nest hollow”.

Identified hollows were examined using binoculars for evidence of actual use by black cockatoos (e.g. chewing around hollow entrance, scarring and scratch marks on trunks and branches).

Where the ground-based assessment of possible large hollows was inconclusive a drone was available for use (if considered warranted and feasible) to examine and photograph potential hollows in more detail.

The Shire provided a map of trees which they had identified within and near the proposed works footprint and had also marked all trees that are to be cleared or retained with paint for easy identification in the field. The boundary of the proposed works footprint was also marked with steel pegs and red flagging tape.

4. SURVEY CONSTRAINTS

No seasonal sampling has been carried out as part of this fauna assessment. The conclusions presented are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of the field assessments. It should also be recognised that site conditions can change with time.

During the black cockatoo habitat survey trees with hollows were searched for. It should be noted that identifying hollows suitable for fauna species from ground level has limitations. Generally, the full characteristics of any hollow seen are not fully evident (e.g. internal dimensions). It is also difficult to locate all hollows within all trees as some are not observable from ground level, though to a certain extent some of these limitations can be overcome by using a drone or pole camera to examine possible hollows in more detail (where considered warranted and feasible).

5. RESULTS

The survey area largely follows the existing Concession Street alignment (a narrow gravel road) with bordering vegetation being comprised of open forest/woodland mostly comprised of marri (*Corymbia calophylla*), blackbutt (*Eucalyptus. patens*) and jarrah (*E. marginata*) and trees over an open shrubland. A small number of non-endemic and exotic plant species (e.g. pines) are also present. Vegetation is for the most part confined to the northern side of the road, as the southern boundary borders cleared/partly cleared farmland.

A summary of trees with a DBH \geq 50cm observed within the survey area is provided in Table 1 below. The location of the trees recorded are shown in Figure 1.

The table is divided into those trees within the currently defined works footprint and those within 10m of the currently proposed footprint. Trees within the currently defined works footprint will need to be cleared whereas those outside will not be removed unless a change in the position of site works is required.

Table 1: Summary of Trees (DBH \geq 50cm) within the Survey Area

Tree Status	Total Number of Habitat Trees (i.e. DBH \geq 50cm)	Number of Habitat Trees <u>without</u> hollows or apparent hollows	Number of Habitat Trees <u>with hollows</u> considered <u>unsuitable</u> for black cockatoos	Number of Habitat Trees <u>with hollows</u> considered <u>potentially suitable</u> for black cockatoos
In Current Works Footprint	33	30	2	1
Within 10m of Current Works Footprint	23	22	1	0

The majority of trees present within the area surveyed area were found to be relatively young and contained no obvious hollows. Two trees within the current works footprint contained hollows considered unsuitable for black cockatoos either due to being too small or having an unfavourable orientation.

One tree (wpt022 - Shire ID - HAB 10 situated at ~ SLK 1.19) was found to contain a large (+50cm entrance) chimney type hollow at about 6 metres height. Photographs of this hollow with a drone found no evidence of use by cockatoos (i.e. chipping/chew marks). This suggests that the hollow has not been used for breeding purposes in the past. An example image is presented below.

Additional details of each tree can be found in Appendix A.

Plate 1: Large hollow in HAB 10 (showing no signs of use).



6. CONCLUSION

The assessment reported on here was primarily undertaken to identify trees within the Survey area that contain hollows suitable for use by black cockatoos for nesting purposes.

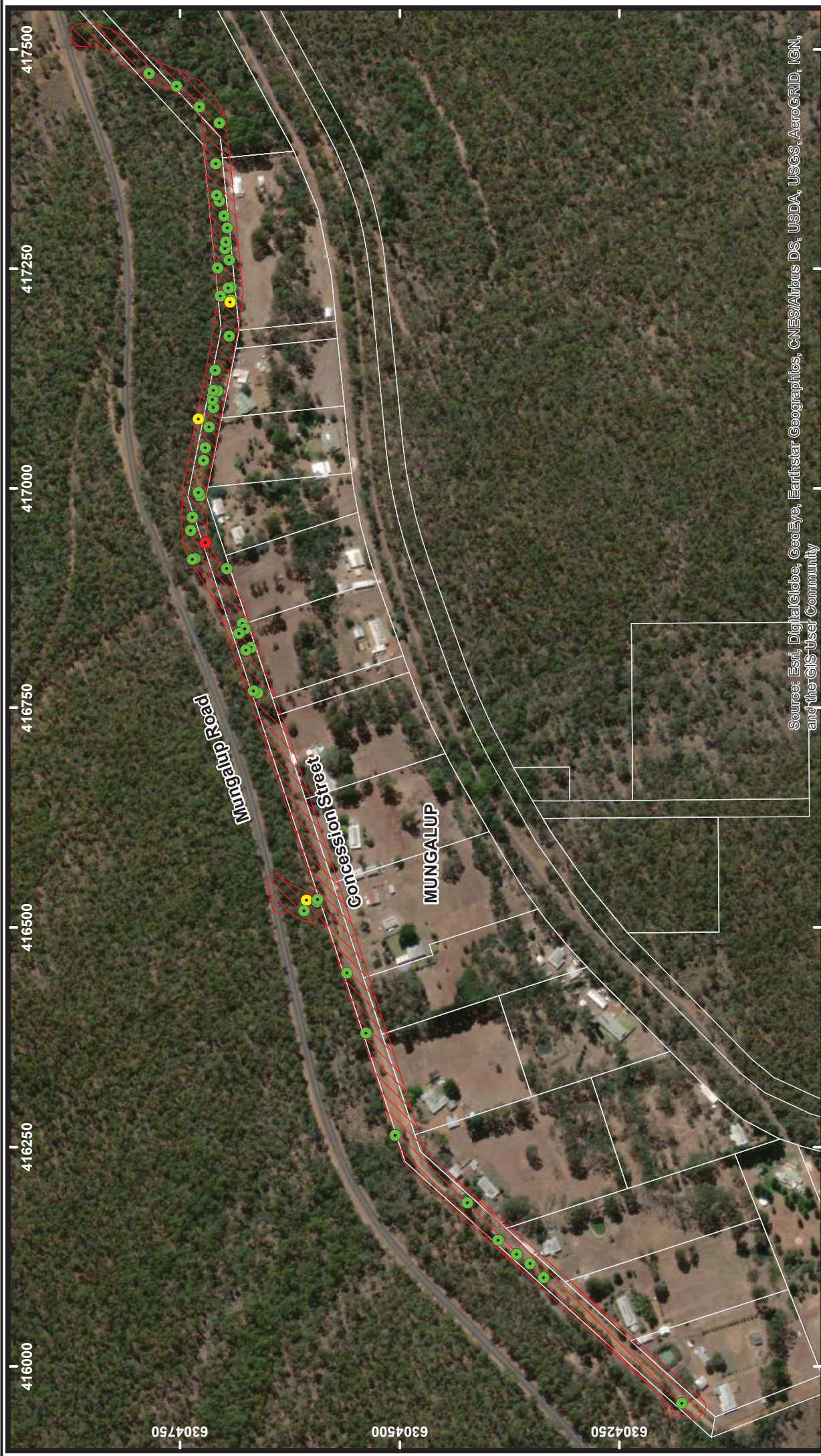
The currently defined works footprint was found to contain 33 trees with a DBH \geq 50cm which will require removal, most of which were not observed to contain hollows of any size.

One tree (wpt022 - Shire ID - HAB 10 situated at ~ SLK 1.19) was found to contain a large (+50cm entrance) chimney type hollow. The hollow, examined with a drone, showed no apparent evidence of use by black cockatoos (i.e. chipping/chew marks) or any other fauna.

If approval to remove the tree is obtained it is recommended that appropriate management practices be employed (e.g. fauna spotter in attendance to ensure hollow is vacant at time of removal) as while it may not be used by black cockatoos other fauna may utilise it at times (e.g. common brushtail possums).

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FIGURES



Drawn: G. Harewood
 Date: June 2020
 Scale: 1:5,750

Concession Street
 Mungilup
 Shire of Colliie

Tree Plan



- Tree DBH >50cm
One Large Hollow
- Tree DBH >50cm - One or more small/medium hollow
- Tree DBH >50cm
No hollows observed

- Legend**
- Survey Area

APPENDIX A

TREE DETAILS

Trees DBH >60cm
Datum - GDA 94

Entrance Size Ranges - Small = >5cm, Medium = 5 - 10cm, Large = >10cm

Waypoint Number	Tag Colour	Zone	mE	mN	Tree Species	DBH (cm)	Tree Height (m)	Number of Hollows	Estimated Hollow Entrance Size	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments	Distance from works footprint (m)
wpt001	Yellow	50H	415958	6304179	Jarrah	>50	15-20	0					Hab 14	
wpt002	Yellow	50H	416101	6304336	Flooded Gum	>50	15-20	0					Hab 13	
wpt003	Pink	50H	416117	6304352	Marri	>50	15-20	0						
wpt004	Pink	50H	416128	6304367	Flooded Gum	>50	15-20	0						
wpt005	Pink	50H	416144	6304388	Flooded Gum	>50	15-20	0						
wpt006	Pink	50H	416186	6304423	Marri	>50	15-20	0						
wpt007	None	50H	416263	6304505	Marri	>50	15-20	0					Outside footprint	6
wpt008	None	50H	416380	6304538	Marri	>50	15-20	0					Outside footprint	8
wpt009	None	50H	416448	6304560	Marri	>50	15-20	0					Outside footprint	8
wpt010	Yellow	50H	416519	6304609	Marri	>50	10-15	0					Hab 16 - Checked with drone - no hollow	
wpt011	Pink	50H	416531	6304606	Jarrah	>50	15-20	2+	Small & Medium	No Signs	No Signs	No		
wpt012	None	50H	416529	6304594	Jarrah	>50	15-20	0						
wpt013	None	50H	416532	6304593	Marri	>50	15-20	0					Outside footprint	2
wpt014	None	50H	416767	6304662	Marri	>50	15-20	0					Outside footprint	2
wpt015	None	50H	416769	6304666	Marri	>50	15-20	0					Outside footprint	3
wpt016	White	50H	416846	6304679	Blackbutt	>50	15-20	0					Outside footprint	
wpt017	White	50H	416840	6304676	Marri	>50	15-20	0					Outside footprint	
wpt018	Pink	50H	416835	6304683	Blackbutt	>50	15-20	0						
wpt019	Yellow	50H	416819	6304669	Blackbutt	>50	15-20	0					Hab 12	
wpt020	Pink	50H	416816	6304675	Blackbutt	>50	15-20	0						
wpt021	White	50H	416909	6304697	Marri	>50	15-20	0					Outside footprint	
wpt022	Yellow	50H	416938	6304721	Marri	>50	10-15	1	Large (Cockatoo)	No Signs	No Signs	Yes	Hab 11 - Checked with drone - large Chimney - no signs	
wpt023	None	50H	416920	6304733	Jarrah	>50	10-15	0					Outside footprint	3
wpt024	None	50H	416919	6304736	Marri	>50	15-20	0					Outside footprint	4
wpt025	None	50H	416952	6304738	Marri	>50	15-20	0					Outside footprint	
wpt026	Pink	50H	416967	6304736	Marri	>50	15-20	0					Outside footprint	3
wpt027	White	50H	416991	6304727	Dead Marri	>50	5-10	0					Outside footprint, Checked with drone - no hollow	
wpt028	None	50H	416995	6304729	Marri	>50	15-20	0					Outside footprint	3
wpt029	White	50H	417032	6304723	Marri	>50	15-20	0					Outside footprint	
wpt030	White	50H	417046	6304721	Marri	>50	15-20	0					Outside footprint	
wpt031	Pink	50H	417070	6304717	Marri	>50	15-20	0						
wpt032	None	50H	417079	6304729	Dead Marri	>50	20+	2+	Small & Medium	No Signs	No Signs	No	Outside footprint	3
wpt033	Yellow	50H	417092	6304712	Blackbutt	>50	20+	0						
wpt034	Yellow	50H	417101	6304713	Blackbutt	>50	20+	0						
wpt035	Yellow	50H	417111	6304707	Blackbutt	>50	20+	0					Hab 10	
wpt036	Yellow	50H	417112	6304712	Blackbutt	>50	20+	0					Hab 9	
wpt037	Pink	50H	417134	6304710	Marri	>50	15-20	0						
wpt039	Yellow	50H	417173	6304694	Marri	>50	15-20	0						
wpt040	Pink	50H	417214	6304692	Marri	>50	15-20	0						
wpt041	Yellow	50H	417212	6304693	Blackbutt	>50	15-20	1	Medium	No Signs	No Signs	No	Hab 6	
wpt042	None	50H	417219	6304704	Marri	>50	15-20	0					Outside footprint	3
wpt043	Yellow	50H	417229	6304692	Blackbutt	>50	15-20	0					Hab 5	
wpt044	Pink	50H	417228	6304695	Marri	>50	15-20	0						

Waypoint Number	Tag Colour	Zone	mE	mN	Tree Species	DBH (cm)	Tree Height (m)	Number of Hollows	Estimated Hollow Entrance Size	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments	Distance from works footprint (m)
wpt046	Yellow	50H	417260	6304694	Blackbutt	>50	15-20	0					Hab 4	
wpt047	None	50H	417251	6304707	Marri	>50	15-20	0					Outside footprint	3
wpt048	Pink	50H	417273	6304699	Marri	>50	15-20	0						
wpt049	Pink	50H	417280	6304698	Marri	>50	15-20	0						
wpt050	Pink	50H	417297	6304696	Blackbutt	>50	15-20	0						
wpt051	Pink	50H	417310	6304700	Marri	>50	15-20	0						
wpt052	Pink	50H	417327	6304705	Marri	>50	15-20	0						
wpt053	Yellow	50H	417334	6304708	Blackbutt	>50	15-20	0					Hab 3	
wpt054	Yellow	50H	417370	6304709	Marri	>50	15-20	0					Hab 2	
wpt055	None	50H	417416	6304705	Karri	>50	20+	0					Outside footprint, planted	3
wpt056	None	50H	417434	6304728	Jarra	>50	15-20	0					Outside footprint	5
wpt057	Yellow	50H	417458	6304754	Jarra	>50	15-20	0					Hab 1	
wpt058	None	50H	417472	6304785	Marri	>50	15-20	0					Outside footprint	4

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This fauna assessment report (“the report”) has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and Greg Harewood (“the Author”). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints. In accordance with the scope of services, the Author has relied upon the data and has conducted environmental field monitoring and/or testing in the preparation of the report. The nature and extent of monitoring and/or testing conducted is described in the report.

The conclusions are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of preparing the report. Also it should be recognised that site conditions, can change with time.

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