talis consultants

Asbestos Visual Inspection and Collection

Watkins Road Waste Transfer Station and Recycling Centre

Shire of Serpentine Jarrahdale

Prepared for Shire of Serpentine Jarrahdale

24 October 2023

Project Number: TE23090

Assets | Engineering | Environment | Noise | Spatial | Waste

DOCUMENT CONTROL

Version	Description	Date	Author	Reviewer	Approver
0.1	First Draft	24/10/2023	NB		
0.2	Internal Review	24/10/2023	NB	AJM	
1.0	Released to Client	24/10/2023	NB	AJM	AJM

Approval for Release

Name	Position	File Reference
Andrew Mack	Associate Director	TE23090_Watkins Road Site Inspection_1.0

Signature	Andrew Mack Digitally signed by Andrew Mack Date: 2023-10-24 20:06:36

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Tables

Appendices

1 Introduction

Talis Consultants Pty Ltd (Talis) was engaged by the Shire of Serpentine Jarrahdale (the Shire) to complete an asbestos containing material (ACM) visual inspection and collection by hand picking (emu-bob) at the Watkins Road Waste Transfer Station and Recycling Centre, located at 40 Watkins Road, Mundijong, Western Australia (the Site). The work completed by Talis incorporates a visual inspection and opportunistic soil and fragment sampling as an initial screening exercise. The intention of the work was not to undertake a full investigation, but to determine an initial level of risk posed by the site and associated activities and identify future investigations that would be required.

1.1 Background and Purpose

The Site is currently authorised to operate as a waste transfer station under the Department of Water and Environmental Regulation (DWER) licence L9073/2017/1. Operations at the Site include the receival and storage prior to transfer off-site of greenwaste and mulch, municipal household waste, tyres, drainage material, and C&D waste; in addition to crushing C&D waste, and mulching greenwaste.

The Site is understood to be situated on a historical landfill (Mundijong Tip) which operated for over 50 years and received both domestic putrescible waste and inert waste. The landfilling activities ceased in July 2000, and the fill area was capped with clean fill with the plan for it to be rehabilitated (Shire of Serpentine-Jarrahdale, 2000). Until recently, the southern portion of the landfill remained operational as a waste transfer station (the Site).

Asbestos containing material (ACM) was observed on the Site in 2023 prompting the Shire to investigate the former landfill area (ERC, 2023) and subsequently cease operations of the waste transfer station on 5 October 2023 following recommendations from Talis and pending further investigation.

1.2 DWER Site Classification

The Department of Water and Environmental Regulation (DWER) currently records information of contaminated sites within WA on the Contaminated Sites Database, in accordance with the Contaminated Sites Act, 2003 (the CS Act). All sites of known or suspected contamination reported to the DWER are classified under the CS Act as one of the following:

- Report not substantiated;
- Decontaminated;
- Possibly contaminated – investigation required;
- Not contaminated – restricted use;
- Contaminated – restricted use;
- Contaminated – remediation required; or
- Remediated for restricted use.

Of the above, only the last three bullet points are publicly displayed on the DWER Contaminated Sites Database. As of 23 October 2023, the Site was not listed on the Contaminated Sites Database although it is understood that the site has been reported and is listed as Possibly Contaminated – Investigation Required.

1.3 Objective

The objective of the Visual Inspection was to conduct a high-level risk assessment of the Site to determine requirements for Immediate Response Actions and Contingency Plans for the operations of the Site, and identify potential future risks associated with the current and future activities to be conducted onsite.

The work would also seek to support (or otherwise) previous recommendations provided by Talis in relation to the cessation of activity onsite.

1.4 Scope of Work

In order to meet the objective, the following scope of work was undertaken:

- Visual inspection walkover of the Site investigation areas for asbestos contamination including collection by hand (emu-bob) picking;
- Visual inspection of stockpile surfaces for evidence of asbestos contamination;
- Judgemental sample collection of bonded ACM fragments encountered for laboratory analysis 'Asbestos ID – Bulk Materials';
- Judgemental sample collection of surficial soil samples for laboratory analysis 'Asbestos ID - Soil';
- Appropriate disposal of ACM and associated PPE at a licenced waste facility; and
- Preparation of this report to document the outcomes of the ACM collection by hand (emu-bob) picking.

2 Site Identification

The Site locality and layout are presented in **Appendix A**, Figures 1 and 2 respectively, the Site identification details are summarised in **Table 2-1**.

Table 2-1: Site identification

Attributes	Details
Site Address	40 Watkins Road, Mundijong WA 6123
Lot Number	Lot 512 on Plan 53922
Local Government Authority	Shire of Serpentine-Jarrahdale
Total Site Area	2.87 ha
Land Ownership	Shire of Serpentine-Jarrahdale
Current land use	Transfer Station
Future land use	No change
Licence	L9073/2017/1
Licence categories held	Category 13: Crushing of building material
	Category 57: Used tyre storage

	Category 61A: Solid waste facility
	Category 62: Solid waste depot
Zoning (Shire of Serpentine-Jarrahdale Local Planning Scheme No. 3)	Parks and recreation
Certificate of Title	Volume: 3141 Folio: 929

3 Site History

3.1 Previous Investigation Summary

The following investigation was conducted on the Site following the discovery of ACM on the surface of the Green Waste area:

Environmental Risk Consultants (ERC), 2023:

A visual inspection of the Site was conducted for evidence of surficial asbestos contamination, the sinking of 11 mechanically excavated test pits to the depth of 1 m below ground level (bgl), and one manual test pit to the depth of 0.3 m bgl. The walls and soil of each test pit were visually inspected for ACM, in addition to 10 L of soil being sieved for ACM fragments at each location.

A total of six soil samples were collected for laboratory analysis of asbestos fines (AF) and fibrous asbestos (FA). Two locations were visually observed to contain ACM fragments beneath the cap (TP06, TP08), with bulk analysis confirming the asbestos materials to be chrysotile and amosite asbestos (TP06); and chrysotile and crocidolite asbestos (TP08). Test pit location TP08 was also confirmed to contain 0.09 g of AF in the soil analysed (0.002 % w/w asbestos).

ERC concluded based on observations during test pitting that the thickness off the cap ranged from 0.35 m to 0.9 m before waste materials were encountered, with the cap being the thinnest at locations TP01 and TP04. Recommendations were made that excavation into the landfill cap should be avoided unless Site specific asbestos exposure risks are addressed using an AMP or similar documentation; the Shire should consider increasing the thickness of the cap in the thinnest areas to reduce the risk of accidental mechanical breach; and the development of a Site specific procedure for the operation of machinery to mitigate the risk of further eroding the landfill cap (ERC, 2023).

4 Methodology

4.1 Visual Inspection Methodology

The visual inspection was conducted over three main areas of the Site: the 'hardstand', the 'green waste stockpiles', and the 'balance of the Site' (As shown in **Appendix A**, Figure 2). All activities undertaken in this investigation are considered preliminary in nature for the basis of immediate risk evaluation.

The work conducted by Talis comprised both the collection of both visual and physical evidence from the three main areas described above, and included the following activities:

- The Site investigation areas and stockpile surfaces were visually inspected for signs of asbestos contamination;
- Geolocated photographs were taken of the Site, any suspected contamination, and any samples collected;
- Samples of suspected bonded ACM fragments and samples of potentially contaminated soil were collected into appropriately labelled laboratory supplied plastic bags (double wrapped) prior to being sent for analysis;

- Samples were sent to a NATA accredited laboratory for the analysis of Asbestos Identification; and
- Appropriate disposal of ACM not sampled and associated waste at a licenced waste facility.

4.2 Limitations

The following limitations have been identified for this investigation:

- The 'Hardstand' area consists of compact earth and raking was considered not possible;
- A portion of the Sites ground surface and stockpile surface was covered with dense vegetation and was considered inaccessible for a visual inspection;
- Some stockpiles on the Site were considered too tall, steep or densely vegetated to be considered accessible;
- The centre of the 'Hardstand' area contained gravel stockpiles which prevented visual inspection of the Sites surface beneath them; and
- This investigation is considered preliminary only and should not be relied upon to classify the Site or any waste found on the Site without further investigation.

5 Results

5.1 Visual Inspection

Talis mobilised a suitable experienced environmental consultant to undertake a Site inspection and hand (emu-bob) picking walkover on 10 October 2023. Visual inspection results are summarised in **Table 5-1**, and photographs taken during the inspection shown in **Appendix C**. The following observations were made during the Site inspection:

- ACM fragments were qualitatively assessed for signs of weathering via observation of exposed fibres and were observed to be ranging in condition from 'poor-moderate' to 'good', with the majority of fragments observed to be in 'moderate' condition;
- No Asbestos Fines (AF) or Fibrous Asbestos (FA) were visually identified during the investigation;
- A total of 95 fragments comprising 1.066 kg of ACM in the form of bonded, fibro cement sheeting was collected during the work completed by Talis;
- The majority of the ACM (by weight) was located in or within the vicinity of the 'Hardstand' area (368 g, 48 fragments), followed by the 'Green Waste Stockpiles' area (262 g, 10 fragments), and the 'Balance of the Site' containing the lowest amount of observable ACM fragments (173 g, 23 fragments);
- ACM fragments were also observed outside of the investigation areas beside the skip bins (263 g, and 14 fragments);
- In the 'Balance of the Site' area, the drainage waste stockpiles (west) and the C&D stockpiles (north) were visually inspected where accessible, with no visual evidence of asbestos contamination being present;
- Greenwaste stockpiles in the north of the 'Green Waste Stockpiles' area were visually inspected where accessible. Whilst there was no visual evidence at surface of asbestos contamination, , surficial ACM fragments were observed at the base of stockpiles and on the Sites surface;

- A stockpile in the east of the Site running parallel to the Site boundary was observed to contain ACM fragments; and
- A large number of fragments were observed to be embedded in the surface of the Site in the northern portion of the 'Hardstand' area.

Table 5-1: ACM Visual Inspection Summary

Investigation Area	Weight (g)	Number of Fragments	Size range (cm^2)
Balance of the Site	173	23	1 – 49
Green Waste Stockpiles	262	10	20 – 96
Hardstand	368	48	6 – 40
Outside of investigation area	263	14	12 – 160
Total	**1,066**	**95**	**1 – 160**

5.2 Analytical Results

A total of 31 suspected ACM fragments and 14 soil samples were collected during the Site inspection and sent for analysis of asbestos identification. Sample locations are shown in Figure 2, **Appendix A**. The samples were analysed at NATA accredited laboratory MPL, with certificates shown in **Appendix B**.

All 31 ACM fragments sent for analysis were confirmed to contain Chrysotile asbestos, with 24 also containing Amosite asbestos, and five samples also containing Crocidolite asbestos. Results are shown below in **Table 5-2**.

Table 5-2: Asbestos ID of fragments summary

Sample ID	Chrysotile Asbestos	Crocidolite Asbestos	Amosite Asbestos
ACM1	Detected	Not detected	Not detected
ACM2	Detected	Detected	Not detected
ACM3	Detected	Detected	Not detected
ACM4	Detected	Not detected	Detected
ACM5	Detected	Not detected	Detected
ACM6	Detected	Not detected	Detected
ACM7	Detected	Detected	Not detected
ACM8	Detected	Not detected	Detected
ACM9	Detected	Not detected	Detected
ACM10	Detected	Detected	Not detected
ACM11	Detected	Not detected	Detected
ACM12	Detected	Not detected	Detected

ACM13	Detected	Not detected	Detected
ACM14	Detected	Not detected	Detected
ACM15	Detected	Not detected	Detected
ACM16	Detected	Detected	Detected
ACM17	Detected	Not detected	Detected
ACM18	Detected	Not detected	Detected
ACM19	Detected	Not detected	Detected
ACM20	Detected	Not detected	Detected
ACM21	Detected	Not detected	Detected
ACM22	Detected	Not detected	Detected
ACM23	Detected	Not detected	Detected
ACM24	Detected	Not detected	Detected
ACM25	Detected	Not detected	Detected
ACM26	Detected	Not detected	Detected
ACM27	Detected	Not detected	Not detected
ACM28	Detected	Not detected	Detected
ACM29	Detected	Not detected	Detected
ACM30	Detected	Not detected	Not detected
ACM31	Detected	Not detected	Detected

Of the 14 soil samples collected, three contained Chrysotile asbestos, with two of the three also containing Amosite asbestos. Sample ACMS11 contained the largest percentage of asbestos weight for weight (w/w) at 0.236 %. Results are shown below in **Table 5-3**.

Table 5-3: Asbestos ID in Soil summary

Sample ID	Chrysotile Asbestos	Crocidolite Asbestos	Amosite Asbestos	Total asbestos content (% w/w)
ACMS1	Detected	Not detected	Not detected	0.095
ACMS2	Not detected	Not detected	Not detected	-
ACMS3	Not detected	Not detected	Not detected	-
ACMS4	Not detected	Not detected	Not detected	-
ACMS5	Not detected	Not detected	Not detected	-
ACMS6	Not detected	Not detected	Not detected	-
ACMS7	Not detected	Not detected	Not detected	-
ACMS8	Not detected	Not detected	Not detected	-
ACMS9	Not detected	Not detected	Not detected	-
ACMS10	Not detected	Not detected	Not detected	-

ACMS11	Detected	Not detected	Detected	0.236
ACMS12	Detected	Not detected	Detected	0.185
ACMS13	Not detected	Not detected	Not detected	-
ACMS14	Not detected	Not detected	Not detected	-

6 Conclusions and Recommendations

Based on the limited investigation undertaken, Talis has drawn the following conclusions:

- A total of 1.066 kg of ACM in the form of bonded, fibro cement sheeting was observed and collected from the Site;
- The majority of the ACM was located in the 'Hardstand' area (368 g, 48 fragments), however, ACM was also found in the 'Green Waste Stockpiles' area (262 g, 10 fragments), and the 'Balance of the Site' (173 g, 23 fragments);
- ACM fragments were also observed outside of the investigation areas beside the skip bins (263 g, and 14 fragments);
- All 31 potential ACM fragments sampled contained Chrysotile asbestos, with 24 also containing Amosite asbestos, and five also containing Crocidolite asbestos;
- Three soil samples contained Chrysotile asbestos, with two of the three also containing Amosite asbestos; and
- The Site is currently not classified in the DWER 'Contaminated Sites Database'.

6.1 Recommendations

Despite the limited work completed on site, Talis suggests there is enough evidence to confirm a potential risk to the environment and human health as a result of the asbestos identified onsite. As such, the recommendations that Talis has previously provided are considered appropriate and are reiterated below:

- All operations at the Site should not be resumed until further investigation and appropriate remediation and/or mitigation occurs. Talis will provide a framework for the investigation and management of the site in accordance with the Shire's requirements (a Detailed Site Investigation);
- All staff and visitors should be made aware of the presence of asbestos on the Site by:
  - Placing a notice on the Sites entrance announcing the potential asbestos risk, and prohibiting unauthorised access or activities; and
  - Requiring all staff and visitors to sign a register upon entry acknowledging the presence of asbestos on Site and any control measures the Shire has implemented to mitigate its disturbance;
- Any queries from the public should be responded to factually and the Shire's webpage regarding the progress of the Site updated regularly when relevant information is available;
- A site-specific plan should be developed to mitigate risks for any staff or visitors authorised access and activities on Site; this plan should include vehicle movements, mechanical operations, dust management and PPE requirements;
- Water sprays or a binding agent (e.g. Hydromulch, Dustex) should be available and utilised when performing activities on Site which are anticipated to or observed to generate dust;

- Where dust generation is unavoidable, boundary dust monitoring should be considered; and
- DWER should be informed of the current status and risk of the Site with the completion and submission of a Form 1 Notification.

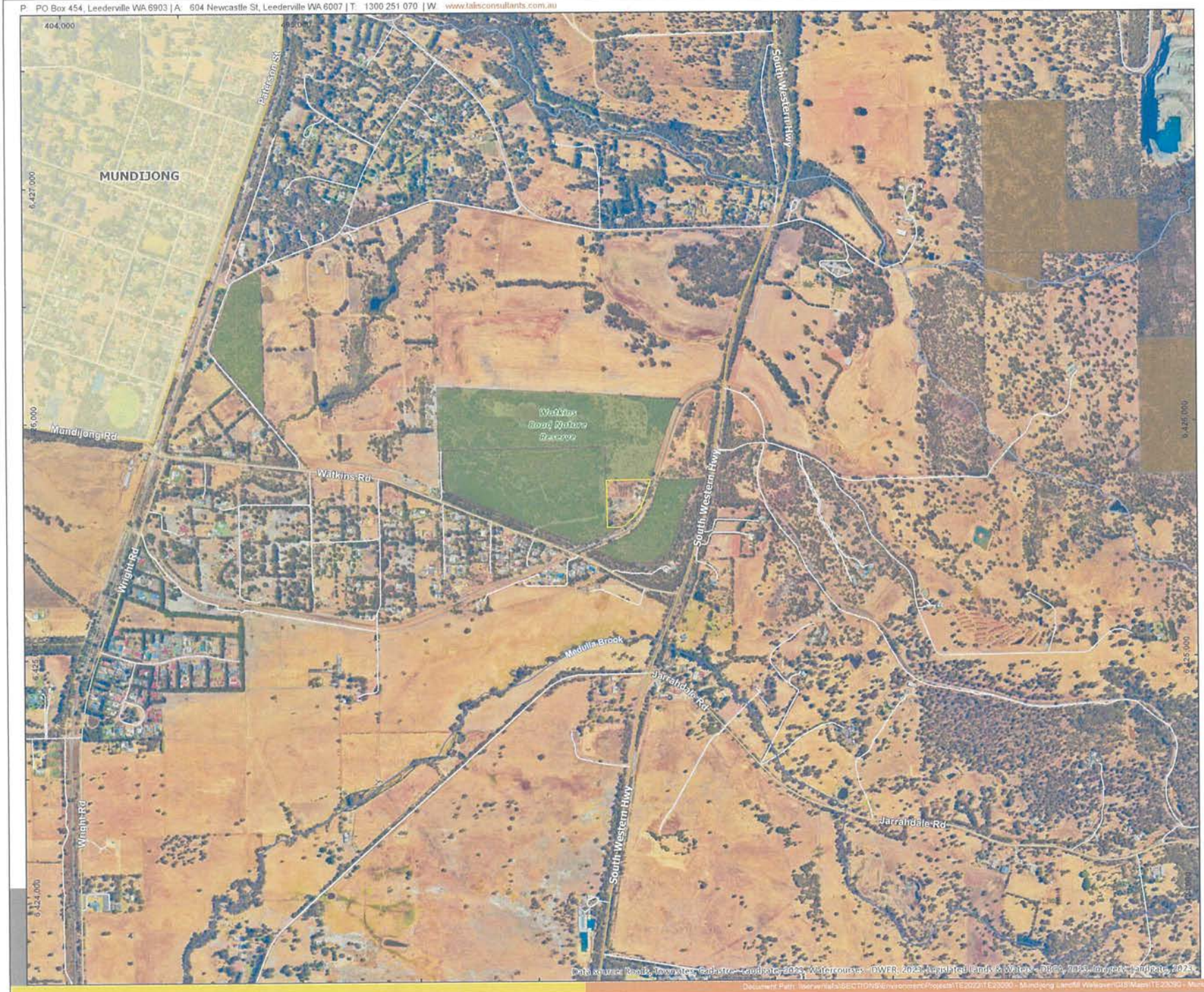
7 References

Environmental Risk Consultants (2023). *Preliminary Asbestos in Soil Assessment: Mundijong Waste and Recycling Transfer Station*. 18 September 2023.

Shire of Serpentine-Jarrahdale (2000). *Rehabilitation Plan: Mundijong Waste Disposal Site*. 3 April 2000.

Appendix A
Figures

P: PO Box 454, Leederville WA 6903 | A: 604 Newcastle St, Leederville WA 6007 | T: 1300 251 070 | W: www.talisconsultants.com.au



LEGEND

- Lot Boundary
- Townsites

Water Courses

- Major River
- Minor River

Legislated Lands and Waters

- Nature Reserve
- Section 5(1)(h) Reserve

Western Australian Roads

- Freeway / Highway
- Main Road
- Minor Road
- Other

LOCALITY

0 20 40 60 80 100 km

SITE LOCALITY

Landfill Walkover
Watkins Road Waste Transfer Station & Recycling Centre

Shire of Serpentine Jarrahdale

0 100 200 300 400 500 600 m

Coordinate System: GDA2020 MGA Zone 50
Scale @ A3: 1:15,000

Prepared:	E Jackson	Date:	23/10/2023
Reviewed:	N Booth	Revision:	A
Project:	TE23090		

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Figure 01

Document Path: \\serverdata\SECTION\Environment\Projects\TE2023\TE23090 - Mundijong Landfill Walkover\GIS\Maps\TE23090 - Mundijong Landfill Walkover\TE23090 - Mundijong Landfill Walkover.aprx


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LEGEND
Lot Boundary
Investigation Areas
Hardstand
Green Waste Stockpiles
Balance of the Site
Sample Points
ACM Sample Points
ACM Sample (Asbestos Detected)
Soil Sample Points
Soil Sample (Asbestos Detected)
Soil Sample
LOCALITY
Perth
Mundijong
Mandurah
0 20 40 60 80 100 km
SITE LAYOUT & SAMPLE DISTRIBUTION
Landfill Walkover
Watkins Road Waste Transfer Station & Recycling Centre
Shire of Serpentine Jarrahdale
0 10 20 30 40 m
Coordinate System: GDA2020 MGA Zone 50
Scale @ A3: 1:500
Prepared: E Jackson
Date: 23/10/2023
Reviewed: N Booth
Revision: A
Project: TE23090
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Figure 02
ACM2
ACM3
ACM4
ACM5
ACM6
ACM7
ACM8
ACM9
ACM10
ACM11
ACM12
ACM15
ACM16
ACM17
ACM18
ACM19
ACM20
ACM22
ACM23
ACM24
ACM25
ACM26
ACM27
ACM28 and ACM29
ACM30 and ACM31
ACMS1
ACMS2
ACMS3
ACMS4
ACMS5
ACMS6
ACMS8
ACMS9
ACMS10
ACMS11
ACMS12
ACMS13
ACMS14

Appendix B
Laboratory Certificates

CHAIN OF CUSTODY

Laboratory:	**MPL, Myaree**	**Quote:**	
Project Manager:	Natalie Booth	**Project No.:**	TE23090
Email results to:	natalie.booth@talisconsultants.com.au	**Project:**	TE23090
Invoice to:	accounts@talisconsultants.com.au	**Sample date:**	10/10/2023
Sampled by:	NB	Page 1 of 4 pages	
Results required:	5 days TAT		

talis delivering solutions

Address: 604 Newcastle Street
Leederville WA 6007

Phone: 1300 251 070
Direct line: 08 6557 5210

Sample Information			Analysis Required			Comments:
Lab ID	**Sample ID**	**Soil (s) or Water (w)**	E15310 - ACM Soil	E15350 - Bulk Materials		
1	ACMS1	S	X			
2	ACMS2	S	X			
3	ACMS3	S	X			
4	ACMS4	S	X			
5	ACMS5	S	X			
6	ACMS6	S	X			
7	ACMS7	S	X			
8	ACMS8	S	X			
9	ACMS9	S	X			
10	ACMS10	S	X			
11	ACMS11	S	X			
12	ACMS12	S	X			

Empl Laboratories ENVIROLAB
Job No.:- TEJ0814
Date Rec - 12 OCT 2023
Time Rec - 1105
Rec By - SH
AT Req - SAME 1 / 2 / 3 / STD
Temp - cool / ambient 23
Cooling - Ice / Ice pack / None
Security Seal - Yes / No

Relinquished by:	Camilo Rivas	Received by:	MPL	**Format report required**	**ESDAT**
Date & time:	12/10/2023	Date & time:	12 OCT 2023 1105		**pdf and excel**
Signature:	Camilo Rivas Digitally signed by Camilo Rivas Date: 2023.10.12 08:27:00 +08'00'	Signature:	SH	Lab date & signature:	

CHAIN OF CUSTODY

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delivering solutions

Laboratory:	**MPL, Myaree**	**Quote:**	
Project Manager:	Natalie Booth	**Project No.:**	TE23090
Email results to:	natalie.booth@talisconsultants.com.au	**Project:**	TE23090
Invoice to:	accounts@talisconsultants.com.au	**Sample date:**	10/10/2023
Sampled by:	NB	**Page**	2 of 4 pages
Results required:	5 days TAT		

Address: 604 Newcastle Street
Leederville WA 6007
Phone: 1300 251 070
Direct line: 08 6557 5210

Sample Information			Analysis Required			Comments:
Lab ID	Sample ID	Soil (s) or Water (w)	E15310 - ACM Soil	E15350 - Bulk Materials		
13	ACMS13	S	X			
14	ACMS14	S	X			
15	ACM1	S		X		
16	ACM2	S		X		
17	ACM3	S		X		
18	ACM4	S		X		
19	ACM5	S		X		
20	ACM6	S		X		
21	ACM7	S		X		
22	ACM8	S		X		
23	ACM9	S		X		
24	ACM10	S		X		

Relinquished by:	Camilo Rivas	Received by:	12 OCT 2023 MPL 1105	Format report required	ESDAT
Date & time:	12/10/2023	Date & time:			pdf and excel
Signature:	Camilo Rivas Digitally signed by Camilo Rivas Date: 2023.10.12 09:23:23+08'00'	Signature:	SM	Lab date & signature:	

2/4

CHAIN OF CUSTODY

Laboratory:	**MPL, Myaree**	**Quote:**	
Project Manager:	Natalie Booth	**Project No.:**	TE23090
Email results to:	natalie.booth@talisconsultants.com.au	**Project:**	TE23090
Invoice to:	accounts@talisconsultants.com.au	**Sample date:**	10/10/2023
Sampled by:	NB	**Page**	3 of 4 pages
Results required:	5 days TAT		

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Address: 604 Newcastle Street
Leederville WA 6007
Phone: 1300 251 070
Direct line: 08 6557 5210

Sample Information			Analysis Required														Comments:
Lab ID	Sample ID	Soil (s) or Water (w)	E15310 - ACM Soil	E15350 - Bulk Materials													
25	ACM11	S		X													
26	ACM12	S		X													
27	ACM13	S		X													
28	ACM14	S		X													
29	ACM15	S		X													
30	ACM16	S		X													
31	ACM17	S		X													
32	ACM18	S		X													
33	ACM19	S		X													
34	ACM20	S		X													
35	ACM21	S		X													
36	ACM22	S		X													

Relinquished by:	Camilo Rivas	Received by:	MPL	Format report required	ESDAT
Date & time:	12/10/2023	Date & time:	12 OCT 2023 1105		pdf and excel
Signature:	Camilo Rivas Digitally signed by Camilo Rivas Date: 2023.10.12 09:23:53+08'00'	Signature:	SH	Lab date & signature:	

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CHAIN OF CUSTODY

Laboratory:	**MPL, Myaree**	**Quote:**	
Project Manager:	Natalie Booth	**Project No.:**	TE23090
Email results to:	natalie.booth@talisconsultants.com.au	**Project:**	TE23090
Invoice to:	accounts@talisconsultants.com.au	**Sample date:**	10/10/2023
Sampled by:	NB	**Page**	4 of 4 pages
Results required:	5 days TAT		

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Address: 604 Newcastle Street
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Phone: 1300 251 070
Direct line: 08 6557 5210

Sample Information			Analysis Required														Comments:
Lab ID	Sample ID	Soil (s) or Water (w)	E15310 - ACM Soil	E15350 - Bulk Materials													
37	ACM23	S		X													
38	ACM24	S		X													
39	ACM25	S		X													
40	ACM26	S		X													
41	ACM27	S		X													
42	ACM28	S		X													
43	ACM29	S		X													
44	ACM30	S		X													
45	ACM31	S		X													

Relinquished by:	Camilo Rivas	Received by:	MPL	Format report required	ESDAT
Date & time:	12/10/2023	Date & time:	12 OCT 2023 1105		pdf and excel
Signature:	Camilo Rivas Digitally signed by Camilo Rivas Date: 2023.10.12 09:24:13+08'00'	Signature:		Lab date & signature:	

4/4

Envirolab Services (WA) Pty Ltd trading as MPL Laboratories
ABN 53 140 099 207
16-18 Hayden Court Myaree WA 6154
ph +61 8 9317 2505 fax +61 8 9317 4163
lab@mpl.com.au
www.mpl.com.au

Sample Receipt Advice PEJ0814

Client Details

Client	Talis Consultants
Attention	Natalie Booth

Sample Login Details

Your Reference	TE23090
Envirolab Reference	PEJ0814
Date Sample Received	12/10/2023
Date Instructions Received	12/10/2023
Date Interim Results Expected	16/10/2023
Date Final Results Expected	19/10/2023

Sample Condition

Samples received in appropriate condition for analysis	See Comments
Number of Samples	31 Material, 14 Soil
Turnaround Time	5 Days
Temperatures / Cooling Methods	23.0°C No Cooling

Additional Info

Sample storage - waters are routinely disposed at approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Where no sampling date has been supplied for some or all samples, the date of sample receipt has been used as the associated sampling date. The sampling dates are used to assess compliance to recommended Technical Holding Times.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

Please direct any queries to:

Heram Halim

Phone	08 9317 2505
Fax	08 9317 4163
Email	hhalim@mpl.com.au

Meredith Conroy

Phone	08 9317 2505
Fax	08 9317 4163
Email	mconroy@mpl.com.au

Analysis underway, details on the following page

Sample Receipt Advice PEJ0814

Analysis Grid

The • indicates the testing you have requested. ***THIS IS NOT A REPORT OF THE RESULTS.***

	Asbestos-Bulk Materials	Asbestos ID - NEPM (WA Only)
PEJ0814-01 Soil | 10/10/2023 ACMS1		•
PEJ0814-02 Soil | 10/10/2023 ACMS2		•
PEJ0814-03 Soil | 10/10/2023 ACMS3		•
PEJ0814-04 Soil | 10/10/2023 ACMS4		•
PEJ0814-05 Soil | 10/10/2023 ACMS5		•
PEJ0814-06 Soil | 10/10/2023 ACMS6		•
PEJ0814-07 Soil | 10/10/2023 ACMS7		•
PEJ0814-08 Soil | 10/10/2023 ACMS8		•
PEJ0814-09 Soil | 10/10/2023 ACMS9		•
PEJ0814-10 Soil | 10/10/2023 ACMS10		•
PEJ0814-11 Soil | 10/10/2023 ACMS11		•
PEJ0814-12 Soil | 10/10/2023 ACMS12		•
PEJ0814-13 Soil | 10/10/2023 ACMS13		•
PEJ0814-14 Soil | 10/10/2023 ACMS14		•
PEJ0814-15 Material | 10/10/2023 ACM1	•	
PEJ0814-16 Material | 10/10/2023 ACM2	•	

Sample Receipt Advice PEJ0814

Analysis Grid *(Cont.)*

	Asbestos-Bulk Materials	Asbestos ID - NEPM (WA Only)
PEJ0814-17 Material | 10/10/2023 ACM3	•	
PEJ0814-18 Material | 10/10/2023 ACM4	•	
PEJ0814-19 Material | 10/10/2023 ACM5	•	
PEJ0814-20 Material | 10/10/2023 ACM6	•	
PEJ0814-21 Material | 10/10/2023 ACM7	•	
PEJ0814-22 Material | 10/10/2023 ACM8	•	
PEJ0814-23 Material | 10/10/2023 ACM9	•	
PEJ0814-24 Material | 10/10/2023 ACM10	•	
PEJ0814-25 Material | 10/10/2023 ACM11	•	
PEJ0814-26 Material | 10/10/2023 ACM12	•	
PEJ0814-27 Material | 10/10/2023 ACM13	•	
PEJ0814-28 Material | 10/10/2023 ACM14	•	
PEJ0814-29 Material | 10/10/2023 ACM15	•	
PEJ0814-30 Material | 10/10/2023 ACM16	•	
PEJ0814-31 Material | 10/10/2023 ACM17	•	
PEJ0814-32 Material | 10/10/2023 ACM18	•	

Sample Receipt Advice PEJ0814

Analysis Grid *(Cont.)*

	Asbestos-Bulk Materials	Asbestos ID - NEPM (WA Only)
PEJ0814-33 Material | 10/10/2023 ACM19	•	
PEJ0814-34 Material | 10/10/2023 ACM20	•	
PEJ0814-35 Material | 10/10/2023 ACM21	•	
PEJ0814-36 Material | 10/10/2023 ACM22	•	
PEJ0814-37 Material | 10/10/2023 ACM23	•	
PEJ0814-38 Material | 10/10/2023 ACM24	•	
PEJ0814-39 Material | 10/10/2023 ACM25	•	
PEJ0814-40 Material | 10/10/2023 ACM26	•	
PEJ0814-41 Material | 10/10/2023 ACM27	•	
PEJ0814-42 Material | 10/10/2023 ACM28	•	
PEJ0814-43 Material | 10/10/2023 ACM29	•	
PEJ0814-44 Material | 10/10/2023 ACM30	•	
PEJ0814-45 Material | 10/10/2023 ACM31	•	

Suite Details

Suite Name	Suite Analyses
Asbestos-Bulk Materials | Material	Description, Dimension, Material, Trace
Asbestos ID - NEPM (WA Only) | Soil	ACM, ACM Calc, Asbestos ID NEPM, Description, Mass, Trace

Envirolab Services (WA) Pty Ltd trading as MPL Laboratories
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16-18 Hayden Court Myaree WA 6154
ph +61 8 9317 2505 fax +61 8 9317 4163
lab@mpl.com.au
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Certificate of Analysis PEJ0814

Client Details

Client	Talis Consultants
Contact	Natalie Booth
Address	604 Newcastle St, LEEDERVILLE, WA, 6007

Sample Details

Your Reference	TE23090
Number of Samples	31 Material, 14 Soil
Date Samples Received	12/10/2023
Date Instructions Received	12/10/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date Results Requested by	19/10/2023
Date of Issue	19/10/2023

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Accredited for compliance with ISO/IEC 17025. Tests not covered by NATA are denoted with *.

Authorisation Details

Asbestos Approved By	Analysed by Asbestos Approved Analyst: Lalanee Rupasinghe Analysed by Asbestos Approved Analyst: Shirleen Goh Authorised by Asbestos Approved Signatory: Thomas Edwards
Results Approved By	Thomas Edwards, OHL Supervisor
Laboratory Manager	Michael Kubiak

Certificate of Analysis PEJ0814

Samples in this Report

Envirolab ID	Sample ID	Matrix	Date Sampled	Date Received
PEJ0814-01	ACMS1	Soil	10/10/2023	12/10/2023
PEJ0814-02	ACMS2	Soil	10/10/2023	12/10/2023
PEJ0814-03	ACMS3	Soil	10/10/2023	12/10/2023
PEJ0814-04	ACMS4	Soil	10/10/2023	12/10/2023
PEJ0814-05	ACMS5	Soil	10/10/2023	12/10/2023
PEJ0814-06	ACMS6	Soil	10/10/2023	12/10/2023
PEJ0814-07	ACMS7	Soil	10/10/2023	12/10/2023
PEJ0814-08	ACMS8	Soil	10/10/2023	12/10/2023
PEJ0814-09	ACMS9	Soil	10/10/2023	12/10/2023
PEJ0814-10	ACMS10	Soil	10/10/2023	12/10/2023
PEJ0814-11	ACMS11	Soil	10/10/2023	12/10/2023
PEJ0814-12	ACMS12	Soil	10/10/2023	12/10/2023
PEJ0814-13	ACMS13	Soil	10/10/2023	12/10/2023
PEJ0814-14	ACMS14	Soil	10/10/2023	12/10/2023
PEJ0814-15	ACM1	Material	10/10/2023	12/10/2023
PEJ0814-16	ACM2	Material	10/10/2023	12/10/2023
PEJ0814-17	ACM3	Material	10/10/2023	12/10/2023
PEJ0814-18	ACM4	Material	10/10/2023	12/10/2023
PEJ0814-19	ACM5	Material	10/10/2023	12/10/2023
PEJ0814-20	ACM6	Material	10/10/2023	12/10/2023
PEJ0814-21	ACM7	Material	10/10/2023	12/10/2023
PEJ0814-22	ACM8	Material	10/10/2023	12/10/2023
PEJ0814-23	ACM9	Material	10/10/2023	12/10/2023
PEJ0814-24	ACM10	Material	10/10/2023	12/10/2023
PEJ0814-25	ACM11	Material	10/10/2023	12/10/2023
PEJ0814-26	ACM12	Material	10/10/2023	12/10/2023
PEJ0814-27	ACM13	Material	10/10/2023	12/10/2023
PEJ0814-28	ACM14	Material	10/10/2023	12/10/2023
PEJ0814-29	ACM15	Material	10/10/2023	12/10/2023
PEJ0814-30	ACM16	Material	10/10/2023	12/10/2023
PEJ0814-31	ACM17	Material	10/10/2023	12/10/2023
PEJ0814-32	ACM18	Material	10/10/2023	12/10/2023
PEJ0814-33	ACM19	Material	10/10/2023	12/10/2023
PEJ0814-34	ACM20	Material	10/10/2023	12/10/2023
PEJ0814-35	ACM21	Material	10/10/2023	12/10/2023

Certificate of Analysis PEJ0814

Samples in this Report

Envirolab ID	Sample ID	Matrix	Date Sampled	Date Received
PEJ0814-36	ACM22	Material	10/10/2023	12/10/2023
PEJ0814-37	ACM23	Material	10/10/2023	12/10/2023
PEJ0814-38	ACM24	Material	10/10/2023	12/10/2023
PEJ0814-39	ACM25	Material	10/10/2023	12/10/2023
PEJ0814-40	ACM26	Material	10/10/2023	12/10/2023
PEJ0814-41	ACM27	Material	10/10/2023	12/10/2023
PEJ0814-42	ACM28	Material	10/10/2023	12/10/2023
PEJ0814-43	ACM29	Material	10/10/2023	12/10/2023
PEJ0814-44	ACM30	Material	10/10/2023	12/10/2023
PEJ0814-45	ACM31	Material	10/10/2023	12/10/2023

Certificate of Analysis PEJ0814

Asbestos ID in Material

Client ID	Envirolab ID	Description	Result
ACM1	PEJ0814-15	45x20x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Organic fibres detected
ACM2	PEJ0814-16	50x40x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Crocidolite asbestos detected
ACM3	PEJ0814-17	40x30x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Crocidolite asbestos detected Organic fibres detected
ACM4	PEJ0814-18	40x30x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected
ACM5	PEJ0814-19	40x30x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected
ACM6	PEJ0814-20	35x30x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected
ACM7	PEJ0814-21	30x25x5nn Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Crocidolite asbestos detected
ACM8	PEJ0814-22	50x30x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected
ACM9	PEJ0814-23	70x40x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected
ACM10	PEJ0814-24	90x50x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Crocidolite asbestos detected
ACM11	PEJ0814-25	50x35x55mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected

Certificate of Analysis PEJ0814

Asbestos ID in Material

Client ID	Envirolab ID	Description	Result
ACM12	PEJ0814-26	80x60x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected
ACM13	PEJ0814-27	100x80x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected
ACM14	PEJ0814-28	30x20x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected
ACM15	PEJ0814-29	30x20x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected
ACM16	PEJ0814-30	50x20x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected Organic fibres detected
ACM17	PEJ0814-31	30x20x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected
ACM18	PEJ0814-32	30x20x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected
ACM19	PEJ0814-33	50x30x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected
ACM20	PEJ0814-34	60x40x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected
ACM21	PEJ0814-35	70x40x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected

Certificate of Analysis PEJ0814

Asbestos ID in Material

Client ID	Envirolab ID	Description	Result
ACM22	PEJ0814-36	60x30x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected
ACM23	PEJ0814-37	50x20x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected
ACM24	PEJ0814-38	60x40x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected
ACM25	PEJ0814-39	40x35x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected
ACM26	PEJ0814-40	45x30x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected
ACM27	PEJ0814-41	35x25x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected
ACM28	PEJ0814-42	70x50x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected
ACM29	PEJ0814-43	150x110x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected
ACM30	PEJ0814-44	60x50x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected
ACM31	PEJ0814-45	50x25x5mm Fibre Cement	**Asbestos Detected** **Trace Analysis Not Applicable** Chrysotile asbestos detected Amosite asbestos detected

Asbestos ID in Soil

Client ID	Envirolab ID	Description	Result

Certificate of Analysis PEJ0814

Asbestos ID in Soil

Client ID	Envirolab ID	Description	Result
ACMS1	PEJ0814-01	550g Soil	**Asbestos Detected >0.1g/kg** **No trace fibres detected** Chrysotile asbestos detected Organic fibres detected ACM >7mm Est. 0.5205g of ACM ACM >7mm Est. 0.095% w/w FA and AF Est. <0.001% w/w Total Asbestos Content 0.095% w/w Total Asbestos Content 0.94636g/kg
ACMS2	PEJ0814-02	400g Soil	**No Asbestos Detected >0.1g/kg** **No trace fibres detected** Organic fibres detected ACM >7mm Est. <0.01% w/w FA and AF Est. <0.001% w/w
ACMS3	PEJ0814-03	320g Soil	**No Asbestos Detected >0.1g/kg** **No trace fibres detected** Organic fibres detected ACM >7mm Est. <0.01% w/w FA and AF Est. <0.001% w/w
ACMS4	PEJ0814-04	740g Soil	**No Asbestos Detected >0.1g/kg** **No trace fibres detected** Organic fibres detected ACM >7mm Est. <0.01% w/w FA and AF Est. <0.001% w/w
ACMS5	PEJ0814-05	540g Soil	**No Asbestos Detected >0.1g/kg** **No trace fibres detected** Organic fibres detected ACM >7mm Est. <0.01% w/w FA and AF Est. <0.001% w/w
ACMS6	PEJ0814-06	240g Soil	**No Asbestos Detected >0.1g/kg** Organic fibres detected ACM >7mm Est. <0.01% w/w FA and AF Est. <0.001% w/w
ACMS7	PEJ0814-07	350g Soil	**No Asbestos Detected >0.1g/kg** **No trace fibres detected** Organic fibres detected ACM >7mm Est. <0.01% w/w FA and AF Est. <0.001% w/w
ACMS8	PEJ0814-08	750g Soil	**No Asbestos Detected >0.1g/kg** **No trace fibres detected** Organic fibres detected ACM >7mm Est. <0.01% w/w FA and AF Est. <0.001% w/w
ACMS9	PEJ0814-09	400g Soil	**No Asbestos Detected >0.1g/kg** **No trace fibres detected** Organic fibres detected ACM >7mm Est. <0.01% w/w FA and AF Est. <0.001% w/w

Certificate of Analysis PEJ0814

Asbestos ID in Soil

Client ID	Envirolab ID	Description	Result
ACMS10	PEJ0814-10	480g Soil	**No Asbestos Detected >0.1g/kg** **No trace fibres detected** Organic fibres detected ACM >7mm Est. <0.01% w/w FA and AF Est. <0.001% w/w
ACMS11	PEJ0814-11	600g Soil	**Asbestos Detected >0.1g/kg** **No trace fibres detected** Chrysotile asbestos detected Amosite asbestos detected ACM >7mm Est. 1.413g of ACM ACM >7mm Est. 0.235% w/w FA and AF Est. <0.001% w/w Total Asbestos Content 0.236% w/w Total Asbestos Content 2.355g/kg
ACMS12	PEJ0814-12	370g Soil	**Asbestos Detected >0.1g/kg** **No trace fibres detected** Chrysotile asbestos detected Amosite asbestos detected AF Est. 0.684g of ACM ACM >7mm Est. <0.01% w/w FA and AF Est. 0.185% w/w Total Asbestos Content 0.185% w/w Total Asbestos Content 1.84865g/kg
ACMS13	PEJ0814-13	620g Soil	**No Asbestos Detected >0.1g/kg** **No trace fibres detected** Organic fibres detected ACM >7mm Est. <0.01% w/w FA and AF Est. <0.001% w/w
ACMS14	PEJ0814-14	560g Soil	**No Asbestos Detected >0.1g/kg** **No trace fibres detected** Organic fibres detected ACM >7mm Est. <0.01% w/w FA and AF Est. <0.001% w/w

Certificate of Analysis PEJ0814

Method Summary

Method ID	Methodology Summary
ASB-001_AS4964	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004. When mineral fibres of unknown type are detected by polarized light microscopy including dispersion staining, the fibres detected may or may not be asbestos fibres. To confirm the identities, another independent analytical technique may be required.
ASB-001_NEPM	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. NOTE #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) NOTE#2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.

Certificate of Analysis PEJ0814

Result Definitions

Identifier	Description
NR	Not reported
NEPM	National Environment Protection Measure
NS	Not specified
LCS	Laboratory Control Sample
RPD	Relative Percent Difference
>	Greater than
<	Less than
PQL	Practical Quantitation Limit
INS	Insufficient sample for this test
NA	Test not required
NT	Not tested
DOL	Samples rejected due to particulate overload (air filters only)
RFD	Samples rejected due to filter damage (air filters only)
RUD	Samples rejected due to uneven deposition (air filters only)
##	Indicates a laboratory acceptance criteria outlier, for further details, see Result Comments and/or QC Comments

Quality Control Definitions

Blank

This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, and is determined by processing solvents and reagents in exactly the same manner as for samples.

Surrogate Spike

Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

LCS (Laboratory Control Sample)

This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Matrix Spike

A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

Duplicate

This is the complete duplicate analysis of a sample from the process batch. The sample selected should be one where the analyte concentration is easily measurable.

Certificate of Analysis PEJ0814

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria. Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction. Spikes for Physical and Aggregate Tests are not applicable. For VOCs in water samples, three vials are required for duplicate or spike analysis.

General Acceptance Criteria (GAC) - Analyte specific criteria applies for some analytes and is reflected in QC recovery tables.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% - see ELN-P05 QAQC tables for details (available on request); <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase. Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was typically insufficient in order to satisfy laboratory QA/QC protocols.

Miscellaneous Information

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached. We have taken the sampling date as being the date received at the laboratory.

Two significant figures are reported for the majority of tests and with a high degree of confidence, for results <10*PQL, the second significant figure may be in doubt i.e. has a relatively high degree of uncertainty and is provided for information only.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS where sediment/solids are included by default.

Urine Analysis - The BEI values listed are taken from the 2022 edition of *TLVs and BEIs Threshold Limits by ACGIH.*

Air volume measurements are not covered by Envirolab's NATA accreditation.

Data Quality Assessment Summary PEJ0814

Client Details

Client	Talis Consultants
Your Reference	TE23090
Date Issued	19/10/2023

Recommended Holding Time Compliance

No recommended holding time exceedances

Quality Control and QC Frequency

QC Type	Compliant	Details
Blank	Yes	No Outliers
LCS	Yes	No Outliers
Duplicates	Yes	No Outliers
Matrix Spike	Yes	No Outliers
Surrogates / Extracted Internal Standards	Yes	No Outliers
QC Frequency	Yes	No Outliers

Surrogates/Extracted Internal Standards, Duplicates and/or Matrix Spikes are not always relevant/applicable to certain analyses and matrices. Therefore, said QC measures are deemed compliant in these situations by default. See Laboratory Acceptance Criteria for more information

Data Quality Assessment Summary PEJ0814

Recommended Holding Time Compliance

Analysis	Sample Number(s)	Date Sampled	Date Extracted	Date Analysed	Compliant
Asbestos-Bulk Materials | Material	15-45	10/10/2023	19/10/2023	19/10/2023	Yes
Asbestos ID - NEPM | Soil	1-14	10/10/2023	19/10/2023	19/10/2023	Yes

Appendix C
Photolog

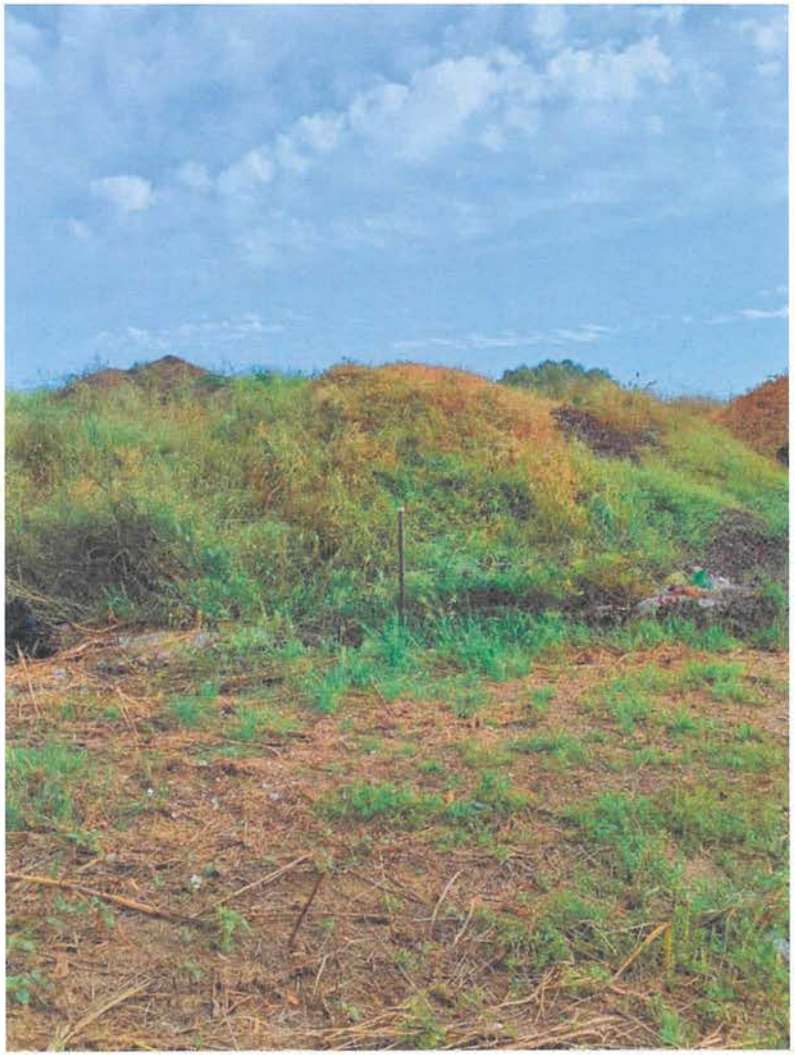

Photo 1: Drainage Stockpiles, south end, facing north

Photo 2: Drainage stockpiles, south end, facing west

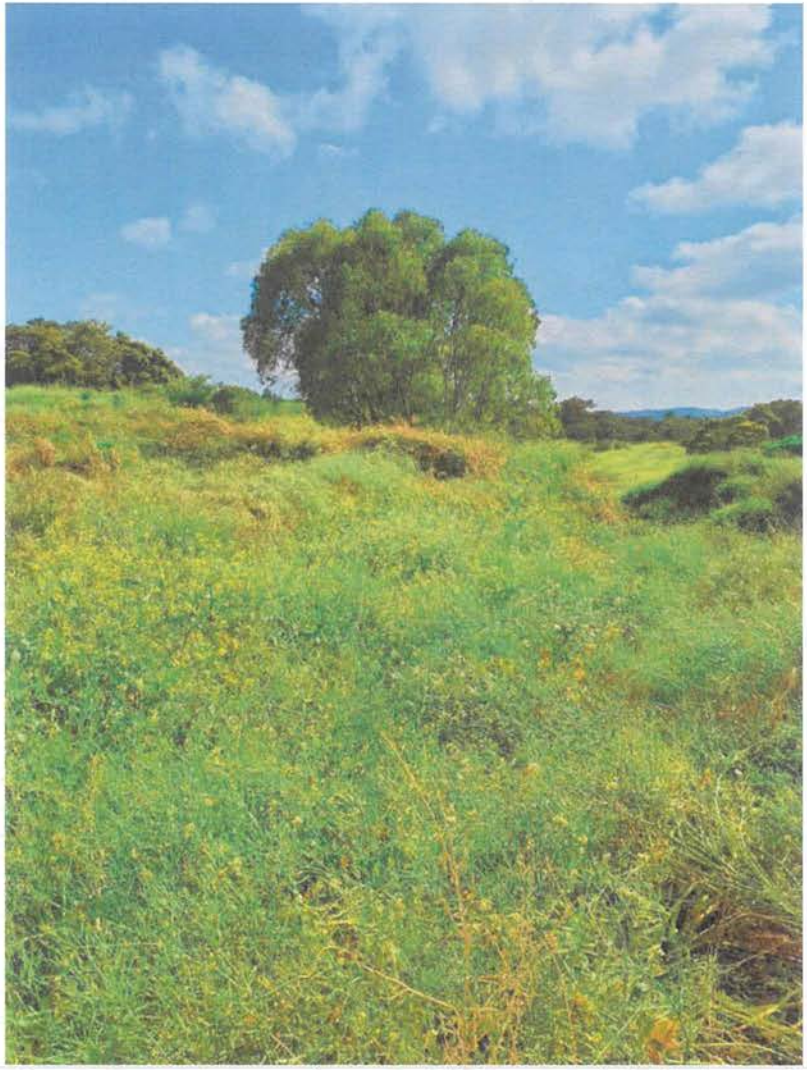

Photo 3: Vegetation growth on top of drainage stockpile, facing north

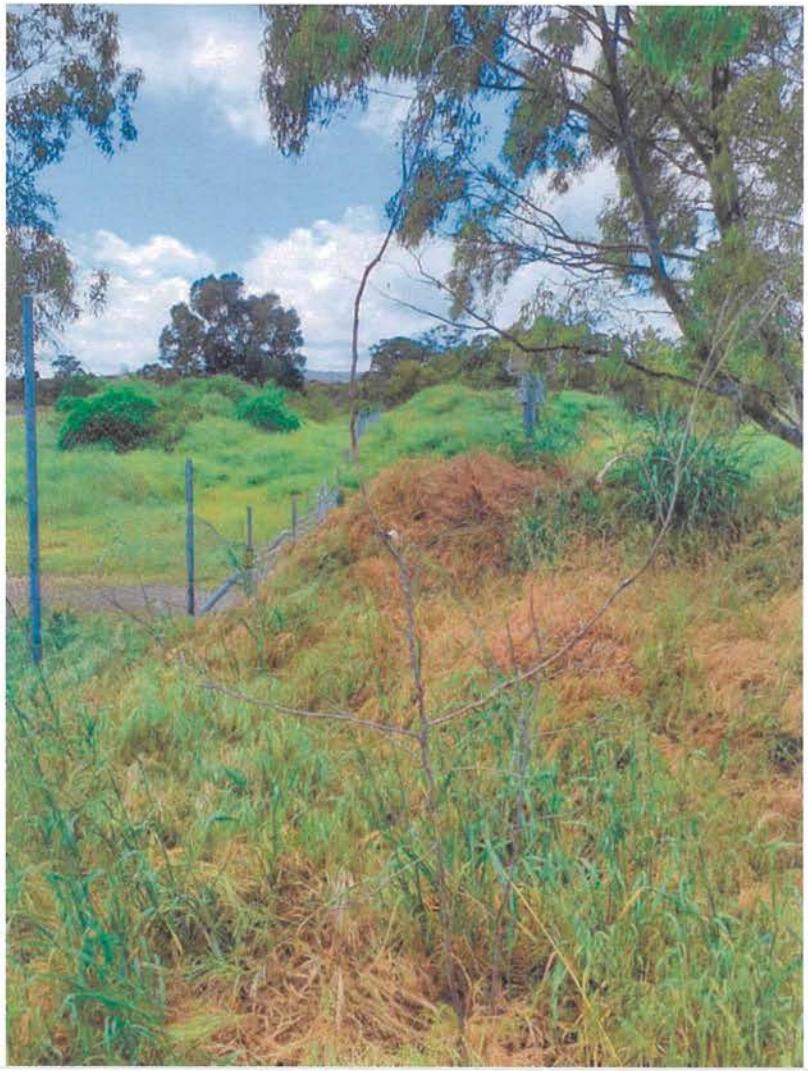

Photo 4: North end of drainage stockpile, facing east

Photo 5: South-east corner of 'Green Waste Stockpile' area, facing north-west

Photo 6: South-east corner of 'Green Waste Stockpile' area, facing north

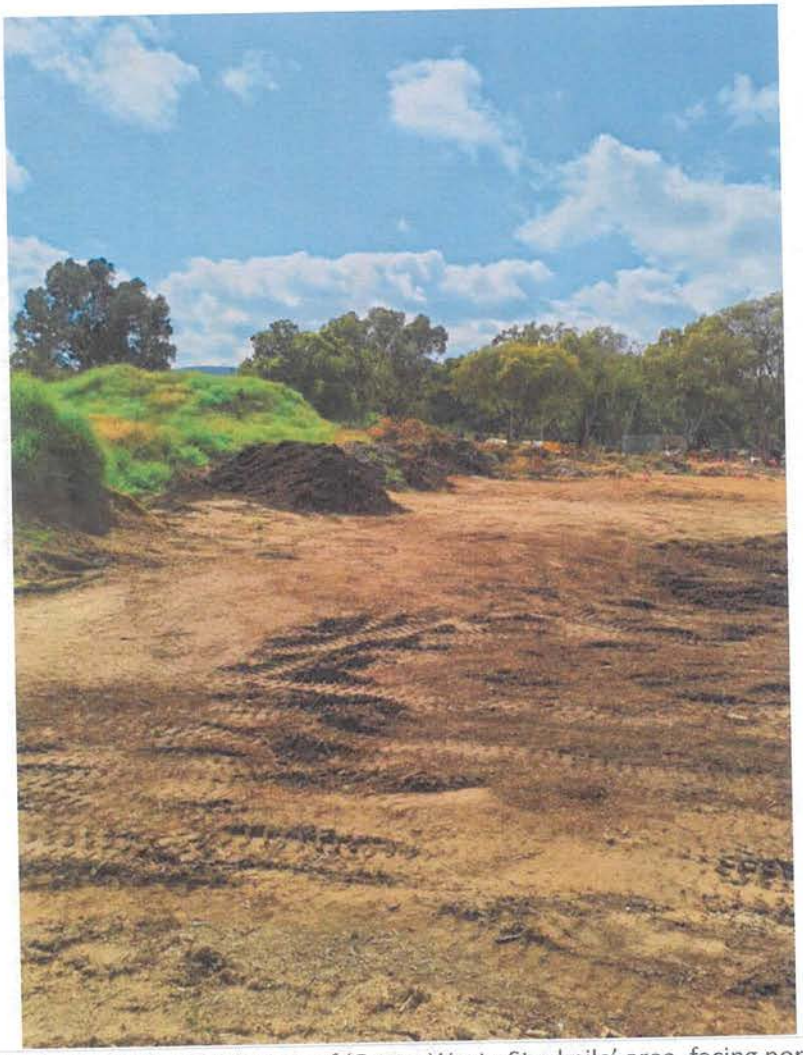

Photo 7: South-west corner of 'Green Waste Stockpile' area, facing north

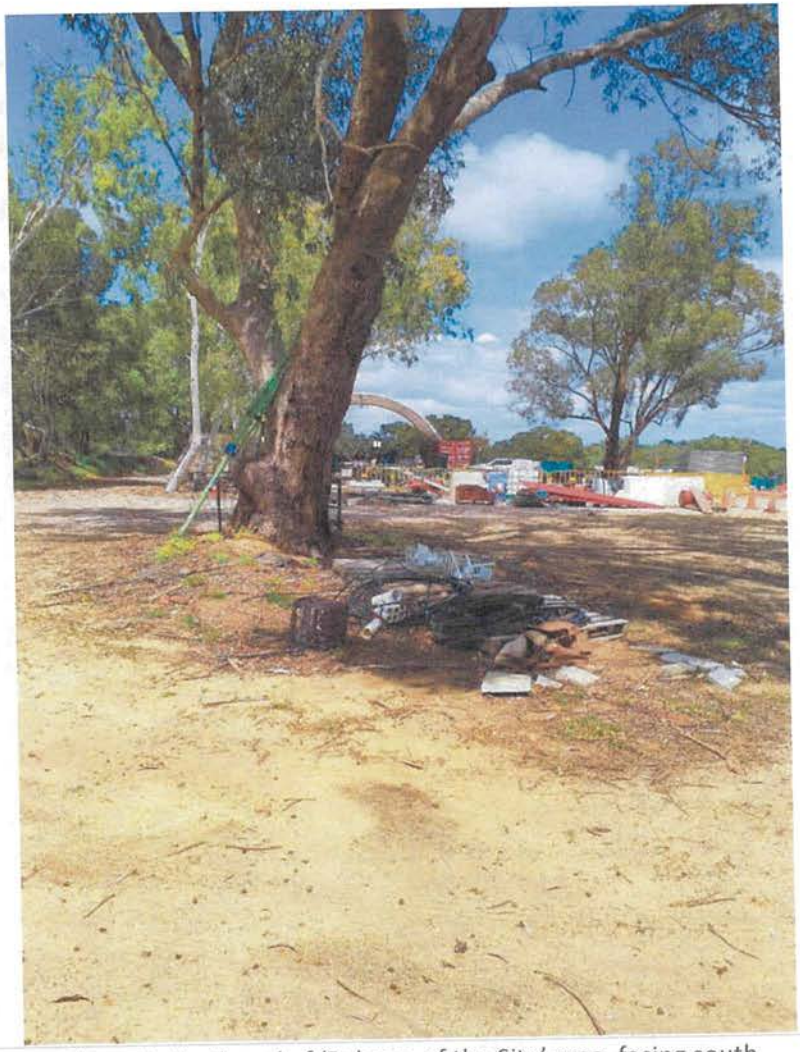

Photo 8: North end of 'Balance of the Site' area, facing south

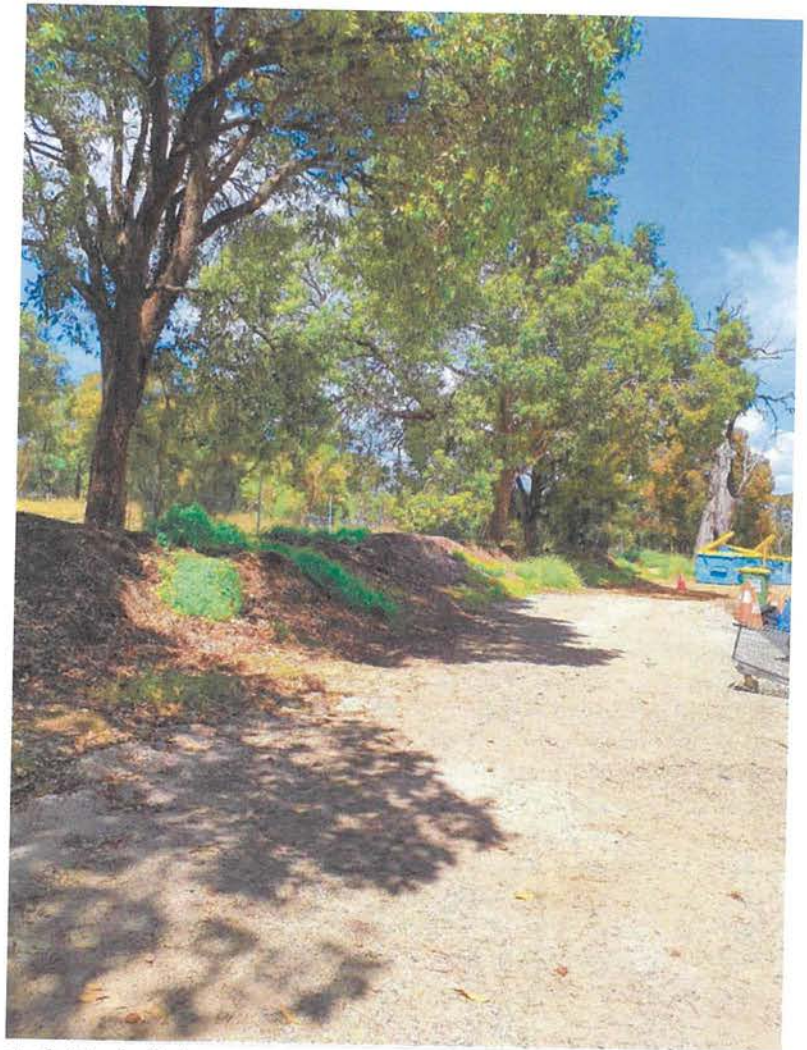

Photo 9: Stockpile in east portion of 'Balance of the Site' area, facing south

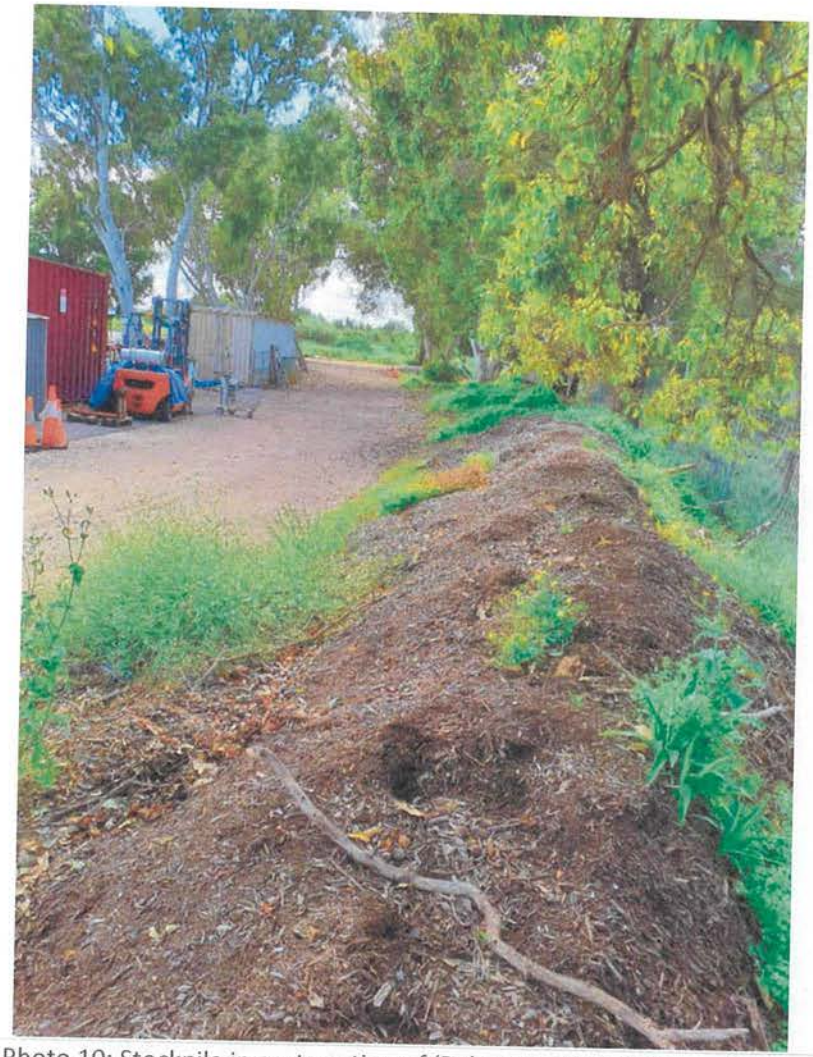

Photo 10: Stockpile in east portion of 'Balance of the Site' area, facing north

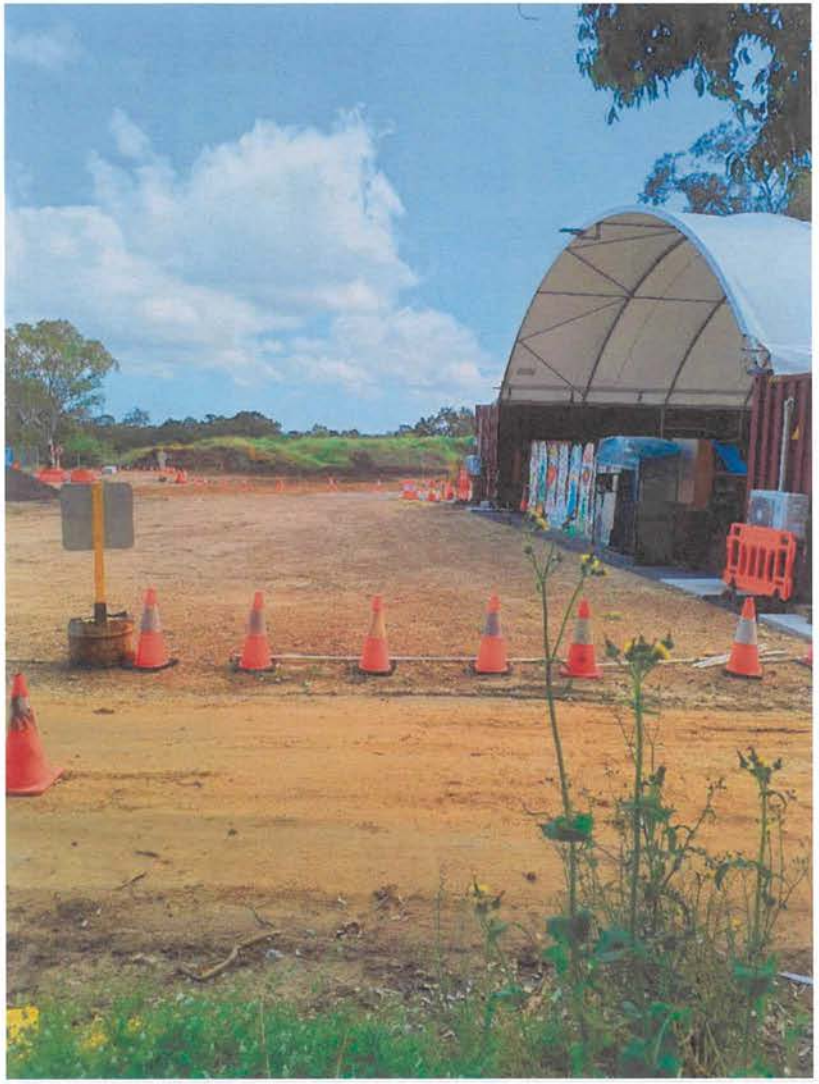

Photo 11: 'Hardstand' area, facing west

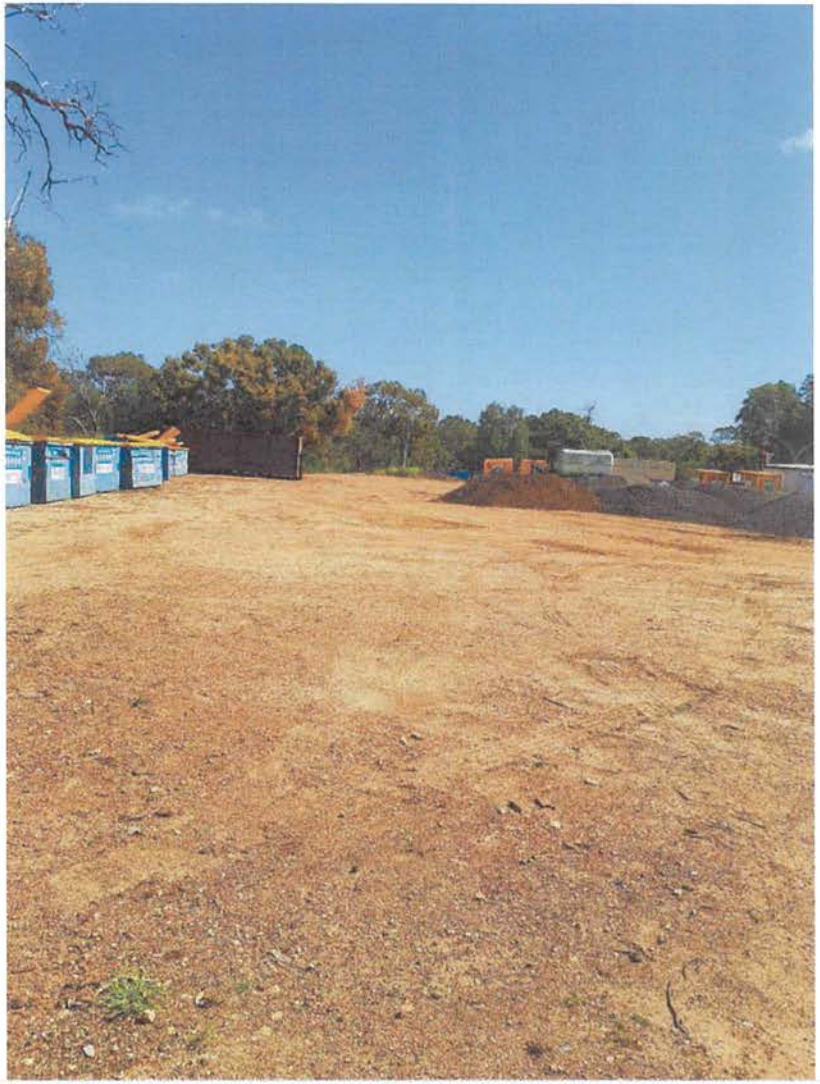

Photo 12: North end of 'Hardstand' area, facing south

Photo 13: Gravel stockpiles in centre of 'Hardstand' area

Photo 14: ACM fragments in 'Balance of the Site' area (ACM3)

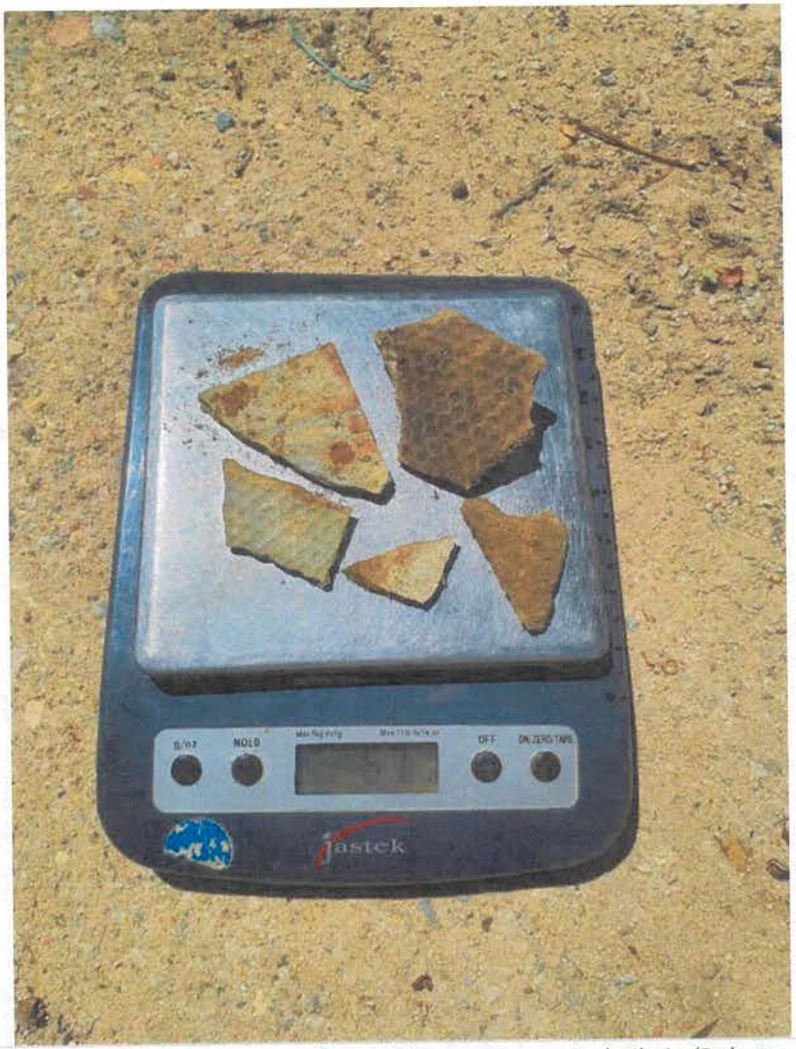

Photo 15: ACM fragments collected from eastern stockpile in 'Balance of the Site' (ACM10)

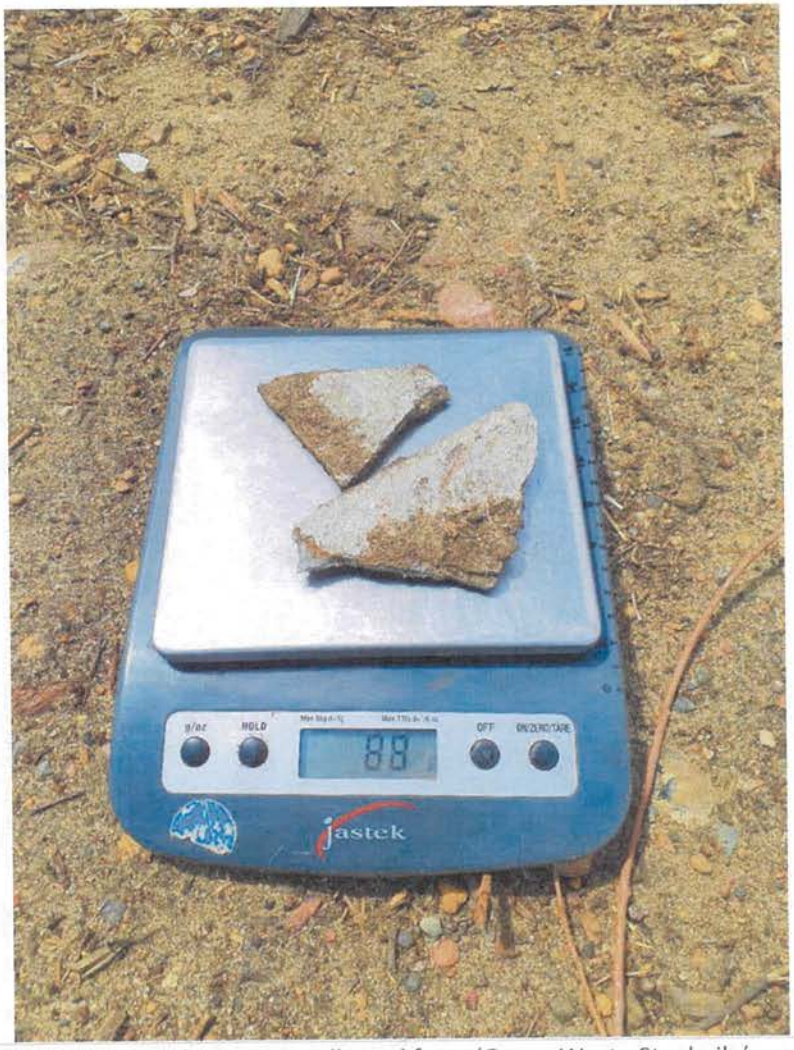

Photo 16: ACM fragments collected from 'Green Waste Stockpile' area (ACM12)

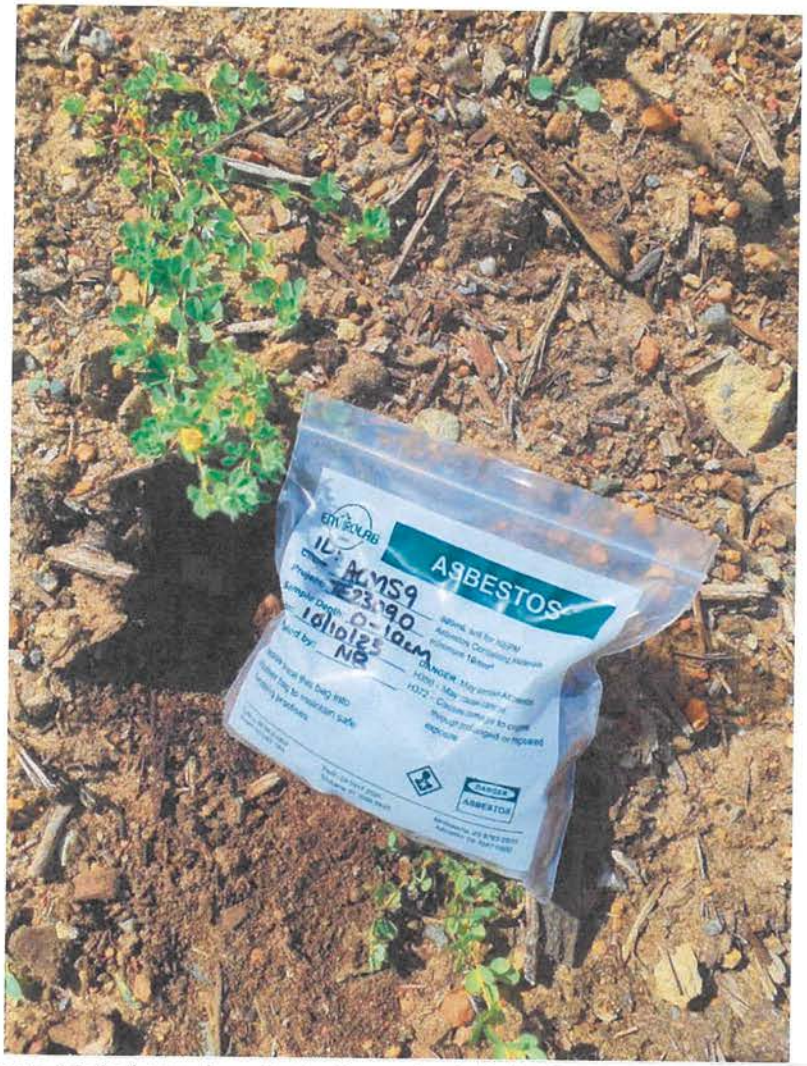

Photo 17: Soil sample collected from stockpile in 'Green Waste Stockpile' area (ACMS9)

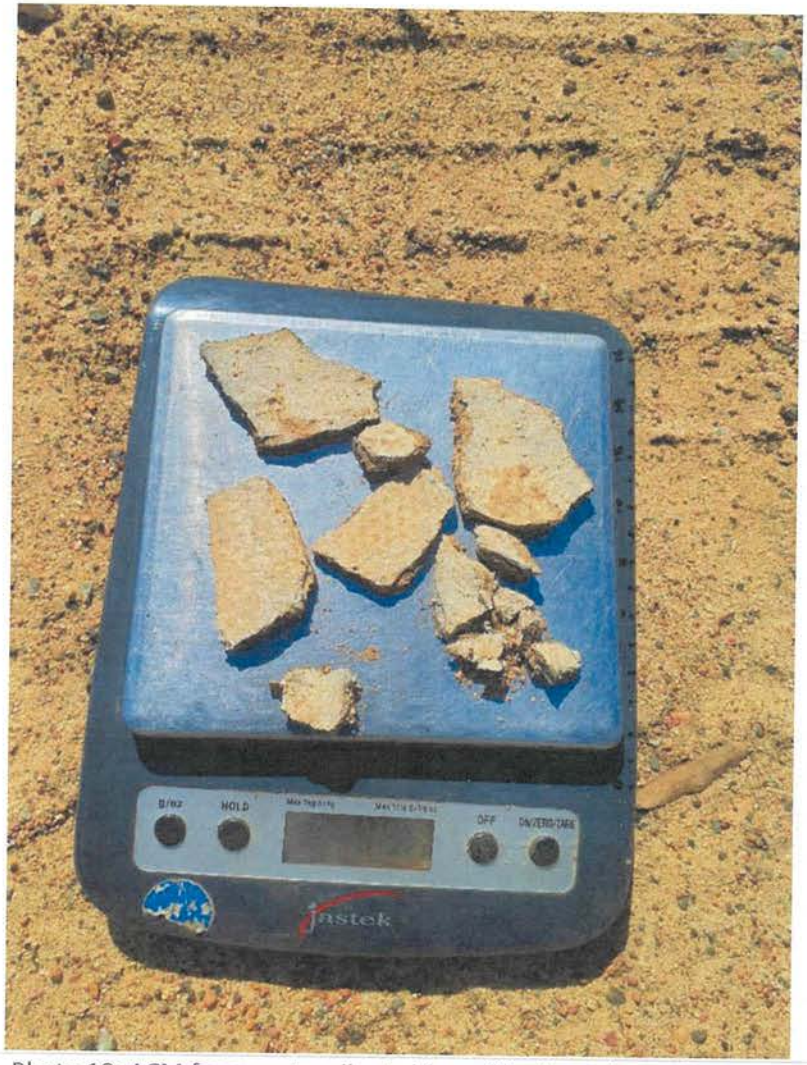

Photo 18: ACM fragments collected from 'Hardstand' area (ACM20)

Photo 19: Soil sample collected from 'Hardstand' area (ACMS11)

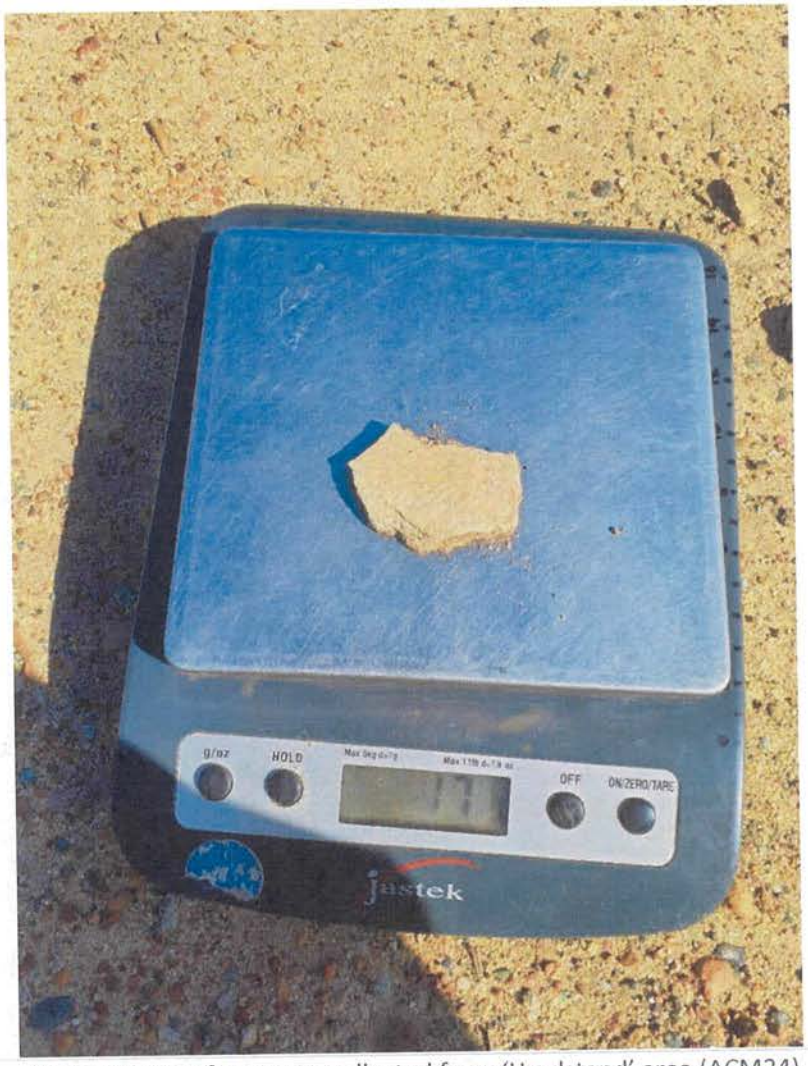

Photo 20: ACM fragments collected from 'Hardstand' area (ACM24)

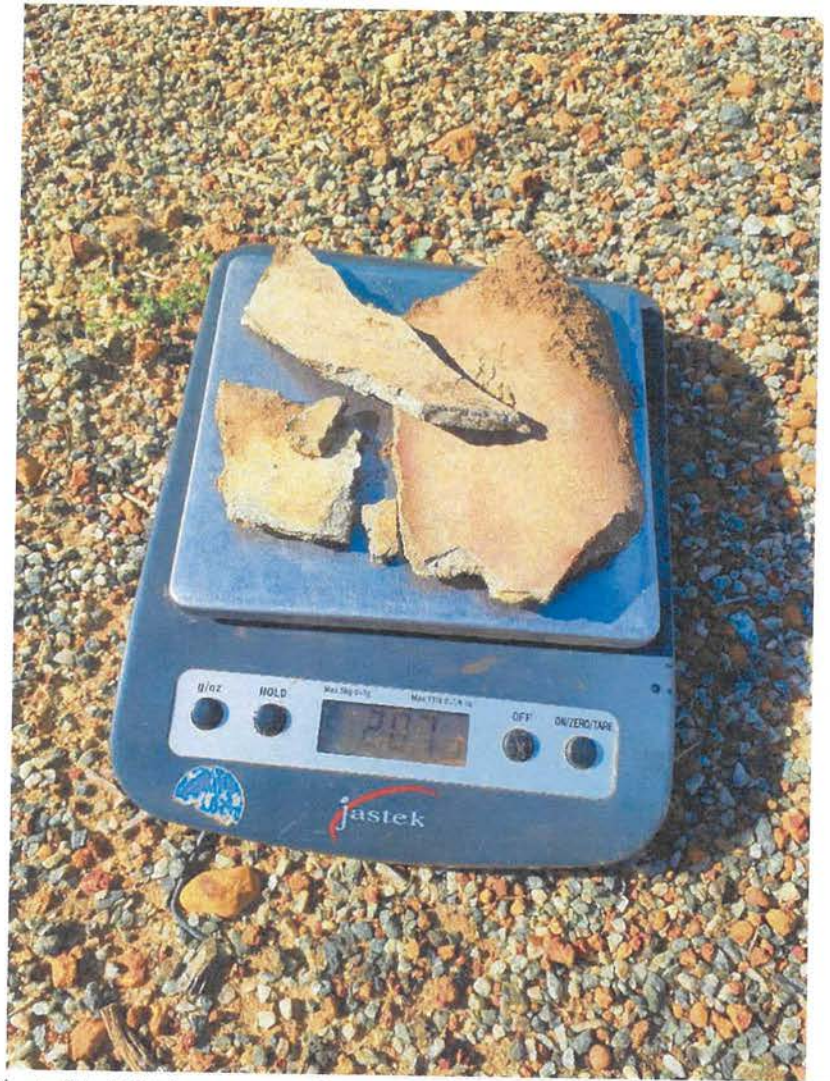

Photo 21: ACM fragments collected from south of the investigation areas (ACM28 and ACM 28)

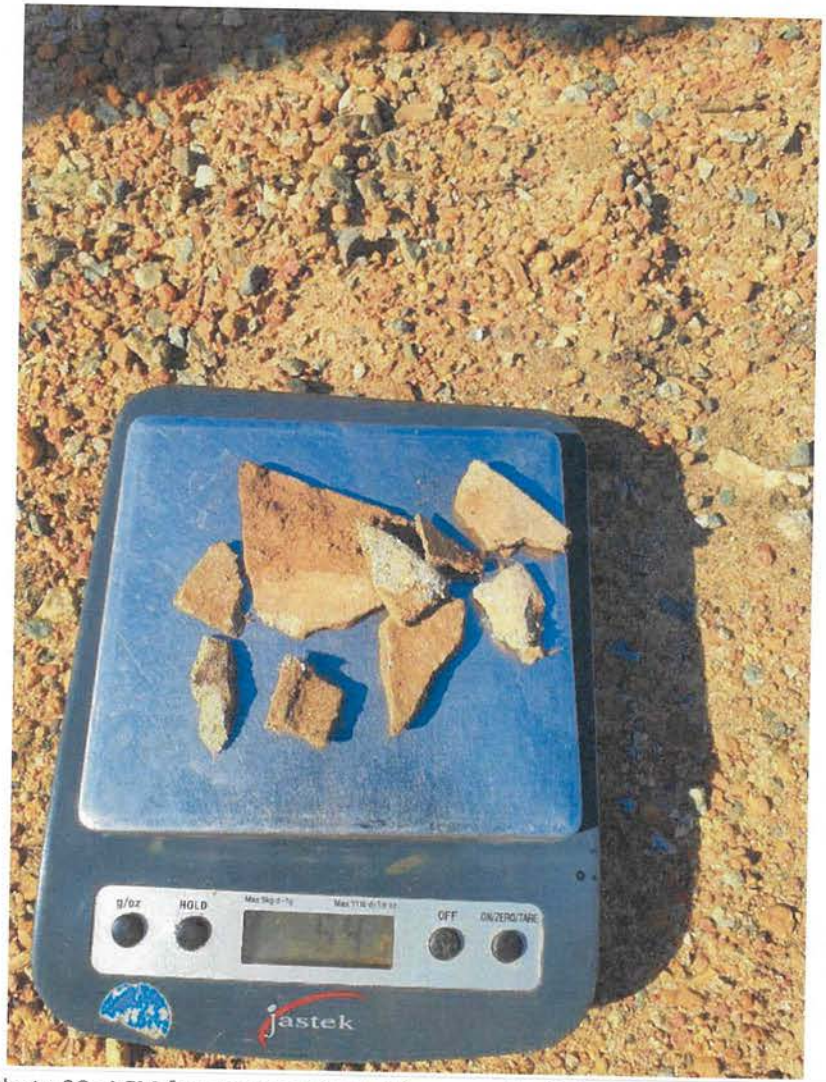

Photo 22: ACM fragments collected from south of the investigation areas (ACM30 and ACM 31)

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