

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Number	Parameter	Units	LOR	Result
LB204153.001	Mercury	mg/L	0.0001	<0.0001

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB204121.001	Mercury	mg/kg	0.05	<0.05

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB204127.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
	Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
	Benzo(ghi)perylene	mg/kg	0.1	<0.1
	Total PAH (18)	mg/kg	0.8	<0.8
Surrogates	d5-nitrobenzene (Surrogate)	%	-	94
	2-fluorobiphenyl (Surrogate)	%	-	92
	d14-p-terphenyl (Surrogate)	%	-	92

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB204148.001	Naphthalene	µg/L	0.1	<0.1
	2-methylnaphthalene	µg/L	0.1	<0.1
	1-methylnaphthalene	µg/L	0.1	<0.1
	Acenaphthylene	µg/L	0.1	<0.1
	Acenaphthene	µg/L	0.1	<0.1
	Fluorene	µg/L	0.1	<0.1
	Phenanthrene	µg/L	0.1	<0.1
	Anthracene	µg/L	0.1	<0.1
	Fluoranthene	µg/L	0.1	<0.1
	Pyrene	µg/L	0.1	<0.1
	Benzo(a)anthracene	µg/L	0.1	<0.1
	Chrysene	µg/L	0.1	<0.1
	Benzo(a)pyrene	µg/L	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
	Dibenzo(ah)anthracene	µg/L	0.1	<0.1
	Benzo(ghi)perylene	µg/L	0.1	<0.1
Surrogates	d5-nitrobenzene (Surrogate)	%	-	62
	2-fluorobiphenyl (Surrogate)	%	-	74
	d14-p-terphenyl (Surrogate)	%	-	88

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB204119.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB204119.001	Zinc, Zn	mg/kg	2	<2.0

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB204130.001	Arsenic, As	µg/L	1	<1
	Cadmium, Cd	µg/L	0.1	<0.1
	Chromium, Cr	µg/L	1	<1
	Copper, Cu	µg/L	1	<1
	Lead, Pb	µg/L	1	<1
	Nickel, Ni	µg/L	1	<1
	Zinc, Zn	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB204127.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB204148.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200
	TRH C37-C40	µg/L	200	<200

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB204126.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	91
		d8-toluene (Surrogate)	%	-	114
		Bromofluorobenzene (Surrogate)	%	-	73
	Totals	Total BTEX	mg/kg	0.6	<0.6

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB204155.001	Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	0.5	<0.5
		Toluene	µg/L	0.5	<0.5
		Ethylbenzene	µg/L	0.5	<0.5
		m/p-xylene	µg/L	1	<1
		o-xylene	µg/L	0.5	<0.5
	Polycyclic VOCs	Naphthalene	µg/L	0.5	<0.5
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	111
		d8-toluene (Surrogate)	%	-	100
		Bromofluorobenzene (Surrogate)	%	-	97

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result
LB204126.001	TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result
LB204155.001	TRH C6-C9	µg/L	40	<40
	Surrogates			
	d4-1,2-dichloroethane (Surrogate)	%	-	111
	d8-toluene (Surrogate)	%	-	100
	Bromofluorobenzene (Surrogate)	%	-	97

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = \frac{|OriginalResult - ReplicateResult|}{Mean} \times 100$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \frac{SDL}{Mean} + LR$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE208531.003	LB204153.014	Mercury	µg/L	0.0001	-0.01114	-0.0044	200	0
SE208604.004	LB204153.023	Mercury	µg/L	0.0001	<0.0001	<0.0001	200	0

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE208604.003	LB204121.023	Mercury	mg/kg	0.05	<0.05	<0.05	160	0
SE208606.003	LB204121.014	Mercury	mg/kg	0.05	1.6	1.2	34	30

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE208604.003	LB204119.024	Arsenic, As	mg/kg	1	10	10	40	3
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	14	14	34	3
		Copper, Cu	mg/kg	0.5	14	16	33	13
		Nickel, Ni	mg/kg	0.5	4.0	3.8	43	6
		Lead, Pb	mg/kg	1	53	64	32	20
SE208606.003	LB204119.014	Zinc, Zn	mg/kg	2	92	110	32	14
		Arsenic, As	mg/kg	1	6	6	47	2
		Cadmium, Cd	mg/kg	0.3	<0.3	0.6	101	65
		Chromium, Cr	mg/kg	0.5	23	32	32	30
		Copper, Cu	mg/kg	0.5	33	42	31	24
		Nickel, Ni	mg/kg	0.5	12	8.7	35	31
		Lead, Pb	mg/kg	1	110	100	31	10
		Zinc, Zn	mg/kg	2	170	230	31	29

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE208604.004	LB204130.007	Arsenic, As	µg/L	1	<1	<1	200	0
		Cadmium, Cd	µg/L	0.1	<0.1	<0.1	200	0
		Chromium, Cr	µg/L	1	<1	<1	200	0
		Copper, Cu	µg/L	1	<1	<1	200	0
		Lead, Pb	µg/L	1	<1	<1	200	0
		Nickel, Ni	µg/L	1	<1	<1	200	0
		Zinc, Zn	µg/L	5	<5	<5	200	0

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE208604.005	LB204127.012	TRH C10-C14	mg/kg	20	<20	0	200	0
		TRH C15-C28	mg/kg	45	<45	0	200	0
		TRH C29-C36	mg/kg	45	<45	0	200	0
		TRH C37-C40	mg/kg	100	<100	0	200	0
		TRH C10-C36 Total	mg/kg	110	<110	0	200	0
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	0	200	0
		TRH >C10-C16	mg/kg	25	<25	0	200	0
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	0	200	0
		TRH >C16-C34 (F3)	mg/kg	90	<90	0	200	0
		TRH >C34-C40 (F4)	mg/kg	120	<120	0	200	0

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE208604.003	LB204126.013	Monocyclic	Benzene	mg/kg	0.1	<0.1	0	200	0
			Aromatic	Toluene	mg/kg	0.1	<0.1	0.0034985117	200
			Ethylbenzene	mg/kg	0.1	<0.1	0.0010128764	200	0
			m/p-xylene	mg/kg	0.2	<0.2	0.0024160734	200	0
			o-xylene	mg/kg	0.1	<0.1	0.0011194505	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	0.0051171649	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.2	8.4276314316	50	9
			d8-toluene (Surrogate)	mg/kg	-	12.0	11.0710708126	50	8
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.2	6.5574001050	50	10
		Totals	Total Xylenes	mg/kg	0.3	<0.3	0.0035355240	200	0



DUPLICATES

SE208604 R0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-(ENV)AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE208604.003	LB204126.013	Totals	Total BTEX	mg/kg	0.6	<0.6	0	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-(ENV)AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE208604.003	LB204126.013		TRH C6-C10	mg/kg	25	<25	0	200	0
			TRH C6-C9	mg/kg	20	<20	0	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.2	8.4276314316	30	9
			d8-toluene (Surrogate)	mg/kg	-	12.0	11.0710708126	30	8
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.2	6.5574001050	30	10
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	0	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	0	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB204121.002	Mercury	mg/kg	0.05	0.22	0.2	70 - 130	110

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB204127.002	Naphthalene	mg/kg	0.1	4.0	4	60 - 140	101
	Acenaphthylene	mg/kg	0.1	4.5	4	60 - 140	112
	Acenaphthene	mg/kg	0.1	4.6	4	60 - 140	116
	Phenanthrene	mg/kg	0.1	4.2	4	60 - 140	105
	Anthracene	mg/kg	0.1	4.3	4	60 - 140	107
	Fluoranthene	mg/kg	0.1	4.6	4	60 - 140	115
	Pyrene	mg/kg	0.1	4.6	4	60 - 140	114
	Benzo(a)pyrene	mg/kg	0.1	4.4	4	60 - 140	109
	Surrogates						
	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	82

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB204148.002	Naphthalene	µg/L	0.1	31	40	60 - 140	77
	Acenaphthylene	µg/L	0.1	31	40	60 - 140	78
	Acenaphthene	µg/L	0.1	31	40	60 - 140	78
	Phenanthrene	µg/L	0.1	35	40	60 - 140	88
	Anthracene	µg/L	0.1	31	40	60 - 140	77
	Fluoranthene	µg/L	0.1	33	40	60 - 140	82
	Pyrene	µg/L	0.1	35	40	60 - 140	88
	Benzo(a)pyrene	µg/L	0.1	37	40	60 - 140	92
	Surrogates						
	d5-nitrobenzene (Surrogate)	µg/L	-	0.3	0.5	40 - 130	66
	2-fluorobiphenyl (Surrogate)	µg/L	-	0.3	0.5	40 - 130	68
	d14-p-terphenyl (Surrogate)	µg/L	-	0.4	0.5	40 - 130	70

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB204119.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	103
	Cadmium, Cd	mg/kg	0.3	4.9	5.41	80 - 120	91
	Chromium, Cr	mg/kg	0.5	40	38.31	80 - 120	105
	Copper, Cu	mg/kg	0.5	290	290	80 - 120	100
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	98
	Lead, Pb	mg/kg	1	90	89.9	80 - 120	100
	Zinc, Zn	mg/kg	2	270	273	80 - 120	99

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB204130.002	Arsenic, As	µg/L	1	19	20	80 - 120	95
	Cadmium, Cd	µg/L	0.1	21	20	80 - 120	104
	Chromium, Cr	µg/L	1	21	20	80 - 120	106
	Copper, Cu	µg/L	1	22	20	80 - 120	108
	Lead, Pb	µg/L	1	20	20	80 - 120	100
	Nickel, Ni	µg/L	1	21	20	80 - 120	105
	Zinc, Zn	µg/L	5	21	20	80 - 120	104

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB204127.002	TRH C10-C14	mg/kg	20	37	40	60 - 140	93
	TRH C15-C28	mg/kg	45	<45	40	60 - 140	75
	TRH C29-C36	mg/kg	45	<45	40	60 - 140	75
	TRH >C10-C16	mg/kg	25	35	40	60 - 140	88
	TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	78
	TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	75

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR
---------------	-----------	-------	-----

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

TRH (Total Recoverable Hydrocarbons) in Water (continued)

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB204148.002	TRH C10-C14	µg/L	50	870	1200	60 - 140	72
	TRH C15-C28	µg/L	200	1000	1200	60 - 140	87
	TRH C29-C36	µg/L	200	830	1200	60 - 140	70
	TRH F Bands	µg/L	60	950	1200	60 - 140	79
	TRH >C16-C34 (F3)	µg/L	500	1100	1200	60 - 140	89
	TRH >C34-C40 (F4)	µg/L	500	560	600	60 - 140	93

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB204126.002	Monocyclic	Benzene	mg/kg	0.1	4.5	5	60 - 140	89
	Aromatic	Toluene	mg/kg	0.1	4.0	5	60 - 140	81
		Ethylbenzene	mg/kg	0.1	4.1	5	60 - 140	82
		m/p-xylene	mg/kg	0.2	8.3	10	60 - 140	83
		o-xylene	mg/kg	0.1	4.1	5	60 - 140	81
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.3	10	70 - 130
	d8-toluene (Surrogate)	mg/kg	-	9.2	10	70 - 130	92	
	Bromofluorobenzene (Surrogate)	mg/kg	-	8.4	10	70 - 130	84	

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB204155.002	Monocyclic	Benzene	µg/L	0.5	47	45.45	60 - 140	103
	Aromatic	Toluene	µg/L	0.5	50	45.45	60 - 140	109
		Ethylbenzene	µg/L	0.5	48	45.45	60 - 140	105
		m/p-xylene	µg/L	1	97	90.9	60 - 140	107
		o-xylene	µg/L	0.5	49	45.45	60 - 140	108
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.3	10	60 - 140	103
		d8-toluene (Surrogate)	µg/L	-	9.6	10	70 - 130	96
		Bromofluorobenzene (Surrogate)	µg/L	-	9.9	10	70 - 130	99

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB204126.002	TRH C6-C10	mg/kg	25	68	92.5	60 - 140	74	
	TRH C6-C9	mg/kg	20	62	80	60 - 140	77	
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.3	10	70 - 130	93
		Bromofluorobenzene (Surrogate)	mg/kg	-	8.4	10	70 - 130	84
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	43	62.5	60 - 140	69

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB204155.002	TRH C6-C10	µg/L	50	770	946.63	60 - 140	81	
	TRH C6-C9	µg/L	40	680	818.71	60 - 140	84	
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.3	10	60 - 140	103
		d8-toluene (Surrogate)	µg/L	-	9.6	10	70 - 130	96
		Bromofluorobenzene (Surrogate)	µg/L	-	9.9	10	70 - 130	99
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	480	639.67	60 - 140	75

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE208593.001	LB204121.004	Mercury	mg/kg	0.05	0.29	<0.05	0.2	120

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE208593.001	LB204119.004	Arsenic, As	mg/kg	1	49	2	50	94
		Cadmium, Cd	mg/kg	0.3	43	<0.3	50	85
		Chromium, Cr	mg/kg	0.5	54	6.9	50	94
		Copper, Cu	mg/kg	0.5	54	7.1	50	94
		Nickel, Ni	mg/kg	0.5	49	2.9	50	93
		Lead, Pb	mg/kg	1	69	26	50	86
		Zinc, Zn	mg/kg	2	89	41	50	97

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE208566.006	LB204130.004	Arsenic, As	µg/L	1	20	-0.003	20	99
		Cadmium, Cd	µg/L	0.1	21	0.002	20	107
		Chromium, Cr	µg/L	1	22	0.039	20	110
		Copper, Cu	µg/L	1	22	-0.03	20	112
		Lead, Pb	µg/L	1	21	0.008	20	105
		Nickel, Ni	µg/L	1	22	0.059	20	109
		Zinc, Zn	µg/L	5	25	1.821	20	114



MATRIX SPIKE DUPLICATES

SE208604 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here: <https://www.sgs.com.au/~media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf>

- * NATA accreditation does not cover the performance of this service.
 - ** Indicative data, theoretical holding time exceeded.
 - Sample not analysed for this analyte.
 - IS Insufficient sample for analysis.
 - LNR Sample listed, but not received.
 - LOR Limit of reporting.
 - QFH QC result is above the upper tolerance.
 - QFL QC result is below the lower tolerance.
-
- ① At least 2 of 3 surrogates are within acceptance criteria.
 - ② RPD failed acceptance criteria due to sample heterogeneity.
 - ③ Results less than 5 times LOR preclude acceptance criteria for RPD.
 - ④ Recovery failed acceptance criteria due to matrix interference.
 - ⑤ Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
 - ⑥ LOR was raised due to sample matrix interference.
 - ⑦ LOR was raised due to dilution of significantly high concentration of analyte in sample.
 - ⑧ Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
 - ⑨ Recovery failed acceptance criteria due to sample heterogeneity.
 - ⑩ LOR was raised due to high conductivity of the sample (required dilution).
 - † Refer to relevant report comments for further information.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law .

This test report shall not be reproduced, except in full.



SGS Environmental Services Sydney
 Unit 16, 33 Maddox Street
 Alexandria NSW 2015
 telephone No: (02) 85940400
 facsimile No: (02) 85940499
 email: au.samp@sgs.com

ab ID Number: (please quote on correspondence)

SGS ID	Client Sample ID	Report ID
1	Block H BR01	
2	Block H BR02	1
3	Block H BR03	
4	Block H BR04	2
5	Block H BR05	
6	Block H BR06	
7	RB120720	3
8	TB120720	4
9	TS120720	5
10	QA01	6
11	QA01A	

Relinquished By: / WSP: Poushali Talukder

Relinquished By: _____

amples Intact: Yes / No

Comments / Subcontracting details:

Date/Time: 12/07/2020

Date/Time: _____

Temperature: 14 °C

Received By: George Zhi

Received By: _____

Sample Security Sealed: Yes No

Date/Time: 13/7/20 @ 3:45 pm

Date/Time: _____

Hazards: e.g. may contain Asbestos

Notes/Guidelines/LOR/
Special Instructions

SGS EHS Sydney COC
SE208604





SAMPLE RECEIPT ADVICE

SE208604

CLIENT DETAILS

Contact Hamish Donovan
Client WSP AUSTRALIA PTY LIMITED
Address Level 27, Ernst & Young Centre
680 George St
NSW 2000

Telephone 02 9272 1453
Facsimile 02 9272 5101
Email Hamish.Donovan@wsp.com

Project **PS119057-WWPS Blk F Ramp 9**
Order Number **PS119057**
Samples 6

LABORATORY DETAILS

Manager Huong Crawford
Laboratory SGS Alexandria Environmental
Address Unit 16, 33 Maddox St
Alexandria NSW 2015

Telephone +61 2 8594 0400
Facsimile +61 2 8594 0499
Email au.environmental.sydney@sgs.com

Samples Received Mon 13/7/2020
Report Due Tue 14/7/2020
SGS Reference **SE208604**

SUBMISSION DETAILS

This is to confirm that 6 samples were received on Monday 13/7/2020. Results are expected to be ready by COB Tuesday 14/7/2020. Please quote SGS reference SE208604 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	5 Soil, 1 Water
Date documentation received	13/7/2020	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	14°C	Sufficient sample for analysis	Yes
Turnaround time requested	Next Day		

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

Sampling date was not provided. It is assumed to be as date samples were relinquished.
5 samples have been placed on hold as no tests have been assigned for them by the client. These samples will not be processed.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.



SAMPLE RECEIPT ADVICE

SE208604

CLIENT DETAILS

Client WSP AUSTRALIA PTY LIMITED

Project PS119057-WWPS Blk F Ramp 9

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	Total Recoverable Elements in Soil/Waste	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	Block H BR02	1	26	7	10	11	7
002	Block H BR04	1	26	7	10	11	7
003	Block H BR06	1	26	7	10	11	7
005	TB120720	-	-	-	10	11	7
006	TS120720	-	-	-	-	11	-

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .



SAMPLE RECEIPT ADVICE

SE208604

CLIENT DETAILS

Client WSP AUSTRALIA PTY LIMITED

Project PS119057-WWPS Blk F Ramp 9

SUMMARY OF ANALYSIS

No.	Sample ID	Moisture Content	PAH (Polynuclear Aromatic Hydrocarbons) in Water	Trace Metals (Dissolved) in Water by ICPMS	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
001	Block H BR02	1	-	-	-	-	-
002	Block H BR04	1	-	-	-	-	-
003	Block H BR06	1	-	-	-	-	-
004	RB120720	-	22	7	9	11	7
005	TB120720	1	-	-	-	-	-

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .



SAMPLE RECEIPT ADVICE

SE208604

CLIENT DETAILS

Client **WSP AUSTRALIA PTY LIMITED**

Project **PS119057-WWPS Blk F Ramp 9**

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in
		Water
004	RB120720	1

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

APPENDIX I-2
ASBESTOS RESULTS

WSP

GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

WENTWORTHVILLE PUBLIC SCHOOL
BLOCK H

APRIL 2020





GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

WENTWORTHVILLE PUBLIC SCHOOL BLOCK H

WSP

WSP
LEVEL 27, 680 GEORGE STREET
SYDNEY NSW 2000
GPO BOX 5394
SYDNEY NSW 2001

TEL: +61 2 9272 5100
FAX: +61 2 9272 5101
WSP.COM

REV	DATE	DETAILS
A	21/04/2020	Wentworthville Public School Block H_SYD-PS119057-128400.pdf

	NAME	DATE	SIGNATURE
Prepared by:	Sneha Shakya	21/04/2020	
Reviewed by:	Sneha Shakya	21/04/2020	

ABBREVIATIONS

A	Amosite Asbestos Detected
ACM	Asbestos Containing Material
AF	Asbestos Fines
C	Crocidolite Asbestos Detected
CH	Chrysotile Asbestos Detected
FA	Fibrous Asbestos
NAD	No Asbestos Detected
NEPM	National Environment Protection Measures
OF	Organic Fibres Detected
PLM	Polarised Light Microscopy
SMF	Synthetic Mineral Fibres Detected
UMF	Unknown Mineral Fibres Detected

ANALYSIS METHODOLOGY

AS 4964-2004 - Soils: Samples received by the laboratory are analysed in accordance with section 8.2.3 *Soil Samples* of Australian Standard (AS 4964-2004). Trace analysis is conducted in accordance with section 8.4 *Trace analysis criteria* of the standard. Asbestos analysis is conducted in accordance with the standard section 8.3.3 *Analytical criteria*, and follows methodology outlined in Appendix D *Simplified flowchart for bulk asbestos identification*.

Quantification of Asbestos in Soils: There is no accepted valid analytical method in Australia for estimating the concentration of asbestos in soils. NATA does not accredit facilities for the estimation of the concentration of ACM or free asbestos fibres in soils. This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation, and Management of Asbestos-Contaminated Sites in Western Australia - May 2009* and Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)].

Percentages for asbestos content in materials and reporting limits of percentage weight for weight asbestos in soil are based on values outlined in Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)]. Non-Friable (ACM) weight is calculated based on the assumption of 15% asbestos by weight in non-friable ACM products used in Australia. Friable asbestos weight, including Fibrous Asbestos (AF) and Asbestos Fines (AF), is calculated based on the assumption of 100% asbestos by weight.

The reporting limit 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 reporting limit is not applicable to free fibres (Respirable Fibres). Loose respirable fibres are detected under criteria set by Australian Standard (AS 4964-2004), section 8.4 *Trace analysis criteria*, with an implied detection and reporting limit of 0.1g/kg.

METHOD SPECIFIC DEFINITION

- Asbestos Containing Materials (ACM) - comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
- Fibrous Asbestos (FA) - comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded (friable) or was previously bonded and is now significantly degraded (crumbling).
- Asbestos Fines (AF) - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

All calculations of percentage asbestos under this method are approximate and should be used as a guide only. Such results cannot be used in place of field evaluations.

These quantitative results are not covered by the scope of NATA accreditation.

ANALYSIS RESULTS

	UNIT	LIMIT OF REPORTING	SAMPLE: VS03_0.0	SAMPLE: VS03A_0.0	SAMPLE: VS03B_0.0	SAMPLE: VS04_0.0	SAMPLE: VS05_0.0	SAMPLE: VS05A_0.0	SAMPLE: VS11_0.0	SAMPLE: VS12_0.0	SAMPLE: VS13_0.0	SAMPLE: VS14_0.0
Total Soil Weight	g	1	574	512	591	574	536	476	648	538	576	451
Asbestos Type Detected	N/A	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Free Fibres (Respirable Fibres) in <2mm Sample	g/kg	0.1	No	No	No	No	No	No	No	No	No	No
ACM in >7mm Sample	g	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
FA & AF	g	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
ACM in >7mm Sample (as 15% Asbestos)	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
FA & AF (as 100% asbestos)	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

These quantitative results are not covered by the scope of NATA accreditation.

LEGEND:

NAD	No Asbestos Detected
CH	Chrysotile Asbestos Detected
A	Amosite Asbestos Detected
C	Crocidolite Asbestos Detected
UMF	Unknown Mineral Fibres Detected

APPENDIX A

AS 4964 LABORATORY CERTIFICATES





**WSP Australia
Pty Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Wentworthville Public School, Block H

CERTIFICATE NO: SYD-PS119057-128400

CLIENT: WSP - CLM Team NSW

DATE\S SAMPLED: 15/04/2020

CLIENT ADDRESS: 680 George Street, Sydney NSW 2000

DATE RECEIVED: 20/04/2020

TELEPHONE: 0400 359 547

DATE ANALYSED: 21/04/2020

EMAIL: hamish.donovan@wsp.com

ORDER NUMBER: N/A

CONTACT: Hamish Donovan

SAMPLED BY: Poushali Talukder

TEST METHOD: Qualitative identification of asbestos fibres in bulk and soil samples at WSP Corporate Laboratories by polarised light microscopy, including dispersion staining, in accordance with AS4964 (2004) Method for the qualitative identification of asbestos in bulk samples and WSP's Laboratory Procedure (LP3 - Identification of Asbestos Fibres). Trace analysis carried out on all non-homogenous samples. Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Sample Description	Sample Dimensions	Identification Type
001	VS03_0.0	Soil	574 gm	OF, NAD*
002	VS03A_0.0	Soil	512 gm	OF, NAD*
003	VS03B_0.0	Soil	591 gm	OF, NAD*
004	VS04_0.0	Soil	574 gm	OF, NAD*
005	VS05_0.0	Soil	536 gm	OF, NAD*
006	VS05A_0.0	Soil	476 gm	OF, NAD*
007	VS11_0.0	Soil	648 gm	OF, NAD*
008	VS12_0.0	Soil	538 gm	OF, NAD*
009	VS13_0.0	Soil	576 gm	OF, NAD*
010	VS14_0.0	Soil	451 gm	OF, NAD*

LEGEND:

- NAD - No Asbestos Detected
- CH - Chrysotile Asbestos Detected
- A - Amosite Asbestos Detected
- C - Crocidolite Asbestos Detected
- UMF - Unknown Mineral Fibres Detected
- SMF - Synthetic Mineral Fibres Detected
- OF - Organic Fibres Detected
- Trace - Trace Asbestos Detected
- * - No trace asbestos detected at the reporting limit of 0.1 g/kg



Approved Identifier

Name: Melanie Reed

Approved Signatory

Name: Sneha Shakya

AUTHORISATION DATE

Tuesday, 21 April 2020

Hand picked refers to small discrete amounts of asbestos distributed unevenly in a large body of non asbestos material.

Notes:

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. NATA does not accredit the sampling process, therefore sampling is not covered by the scope of accreditation. This document may not be reproduced except in full.

WSP

GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

70 - 100 FULLAGAR ROAD,
WENTWORTHVILLE

APRIL 2020



GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

70 - 100 FULLAGAR ROAD,
WENTWORTHVILLE

WSP

WSP
LEVEL 27, 680 GEORGE STREET
SYDNEY NSW 2000
GPO BOX 5394
SYDNEY NSW 2001

TEL: +61 2 9272 5100
FAX: +61 2 9272 5101
WSP.COM

REV	DATE	DETAILS
A	20/04/2020	70 - 100 Fullagar Road Wentworthville_SYD-PS119057-128317

	NAME	DATE	SIGNATURE
Prepared by:	Sneha Shakya	20/04/2020	
Reviewed by:	Sneha Shakya	20/04/2020	

ABBREVIATIONS

A	Amosite Asbestos Detected
ACM	Asbestos Containing Material
AF	Asbestos Fines
C	Crocidolite Asbestos Detected
CH	Chrysotile Asbestos Detected
FA	Fibrous Asbestos
NAD	No Asbestos Detected
NEPM	National Environment Protection Measures
OF	Organic Fibres Detected
PLM	Polarised Light Microscopy
SMF	Synthetic Mineral Fibres Detected
UMF	Unknown Mineral Fibres Detected

ANALYSIS METHODOLOGY

AS 4964-2004 - Soils: Samples received by the laboratory are analysed in accordance with section 8.2.3 *Soil Samples* of Australian Standard (AS 4964-2004). Trace analysis is conducted in accordance with section 8.4 *Trace analysis criteria* of the standard. Asbestos analysis is conducted in accordance with the standard section 8.3.3 *Analytical criteria*, and follows methodology outlined in Appendix D *Simplified flowchart for bulk asbestos identification*.

Quantification of Asbestos in Soils: There is no accepted valid analytical method in Australia for estimating the concentration of asbestos in soils. NATA does not accredit facilities for the estimation of the concentration of ACM or free asbestos fibres in soils. This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation, and Management of Asbestos-Contaminated Sites in Western Australia - May 2009* and Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)].

Percentages for asbestos content in materials and reporting limits of percentage weight for weight asbestos in soil are based on values outlined in Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)]. Non-Friable (ACM) weight is calculated based on the assumption of 15% asbestos by weight in non-friable ACM products used in Australia. Friable asbestos weight, including Fibrous Asbestos (AF) and Asbestos Fines (AF), is calculated based on the assumption of 100% asbestos by weight.

The reporting limit 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 reporting limit is not applicable to free fibres (Respirable Fibres). Loose respirable fibres are detected under criteria set by Australian Standard (AS 4964-2004), section 8.4 *Trace analysis criteria*, with an implied detection and reporting limit of 0.1g/kg.

METHOD SPECIFIC DEFINITION

- Asbestos Containing Materials (ACM) - comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
- Fibrous Asbestos (FA) - comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded (friable) or was previously bonded and is now significantly degraded (crumbling).
- Asbestos Fines (AF) - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

All calculations of percentage asbestos under this method are approximate and should be used as a guide only. Such results cannot be used in place of field evaluations.

These quantitative results are not covered by the scope of NATA accreditation.

ANALYSIS RESULTS

	UNIT	LIMIT OF REPORTING	SAMPLE: WC01_0.1	SAMPLE: WC02_0.2	SAMPLE: WC03_0.6	SAMPLE: VS07_0.0	SAMPLE: VS15_0.0	SAMPLE: VS16_0.0	SAMPLE: VS17_0.1	SAMPLE: VS17_0.3	SAMPLE: VS18_0.1	SAMPLE: VS18_0.3
Total Soil Weight	g	1	484	451	480	429	505	441	438	453	533	440
Asbestos Type Detected	N/A	-	NAD	CH	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Free Fibres (Respirable Fibres) in <2mm Sample	g/kg	0.1	No	No	No	No	No	No	No	No	No	No
ACM in >7mm Sample	g	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
FA & AF	g	0.001	<0.001	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
ACM in >7mm Sample (as 15% Asbestos)	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
FA & AF (as 100% asbestos)	%w/w	0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

These quantitative results are not covered by the scope of NATA accreditation.

LEGEND:

NAD	No Asbestos Detected
CH	Chrysotile Asbestos Detected
A	Amosite Asbestos Detected
C	Crocidolite Asbestos Detected
UMF	Unknown Mineral Fibres Detected

APPENDIX A

AS 4964 LABORATORY CERTIFICATES





**WSP Australia
Pty Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: 70 - 100 Fullagar Road, Wentworthville

CERTIFICATE NO: SYD-PS119057-128317

CLIENT: WSP - CLM Team NSW

DATE\S SAMPLED: 16/04/2020

CLIENT ADDRESS: 680 George Street, Sydney NSW 2000

DATE RECEIVED: 20/04/2020

TELEPHONE: 0400 359 547

DATE ANALYSED: 20/04/2020

EMAIL: hamish.donovan@wsp.com

ORDER NUMBER: N/A

CONTACT: Hamish Donovan

SAMPLED BY: Poushali Talukder

TEST METHOD: Qualitative identification of asbestos fibres in bulk and soil samples at WSP Corporate Laboratories by polarised light microscopy, including dispersion staining, in accordance with AS4964 (2004) Method for the qualitative identification of asbestos in bulk samples and WSP's Laboratory Procedure (LP3 - Identification of Asbestos Fibres). Trace analysis carried out on all non-homogenous samples. Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Sample Description	Sample Dimensions	Identification Type
001	WC01_0.1		Soil	484 gm	OF, NAD*
002	WC02_0.2		Soil	451 gm	OF, SMF*
002A	WC02_0.2	Subsample of WC02_0.2	Fibre Cement Debris	0.002 gm	CH
002B	WC02_0.2	Subsample of WC02_0.2	Loose Fibre Bundle	0.001 gm	CH
003	WC03_0.6		Soil	480 gm	OF, NAD*
004	FR01		Fibre Cement Debris	77 gm	CH, OF
005	VS07_0.0		Soil	429 gm	OF, NAD*
006	VS15_0.0		Soil	505 gm	OF, NAD*
007	VS16_0.0		Soil	441 gm	OF, NAD*
008	VS17_0.1		Soil	438 gm	OF, NAD*
009	VS17_0.3		Soil	453 gm	OF, NAD*
010	VS18_0.1		Soil	533 gm	OF, NAD*
011	VS18_0.3		Soil	440 gm	OF, NAD*



**WSP Australia
Pty Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: 70 - 100 Fullagar Road, Wentworthville

CERTIFICATE NO: SYD-PS119057-128317

LEGEND:

- NAD - No Asbestos Detected
- CH - Chrysotile Asbestos Detected
- A - Amosite Asbestos Detected
- C - Crocidolite Asbestos Detected
- UMF - Unknown Mineral Fibres Detected
- SMF - Synthetic Mineral Fibres Detected
- OF - Organic Fibres Detected
- Trace - Trace Asbestos Detected
- * - No trace asbestos detected at the reporting limit of 0.1 g/kg



Approved Identifier

Name: Melanie Reed

Approved Signatory

Name: Sneha Shakya

AUTHORISATION DATE

Monday, 20 April 2020

Hand picked refers to small discrete amounts of asbestos distributed unevenly in a large body of non asbestos material.

Notes:

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. NATA does not accredit the sampling process, therefore sampling is not covered by the scope of accreditation. This document may not be reproduced except in full.

WSP

GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

WENTWORTHVILLE PUBLIC SCHOOL
BLOCK H

APRIL 2020





GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

WENTWORTHVILLE PUBLIC SCHOOL BLOCK H

WSP

WSP
LEVEL 27, 680 GEORGE STREET
SYDNEY NSW 2000
GPO BOX 5394
SYDNEY NSW 2001

TEL: +61 2 9272 5100
FAX: +61 2 9272 5101
WSP.COM

REV	DATE	DETAILS
A	22/04/2020	Wentworthville Public School Block H_SYD-PS119057-128447.pdf

	NAME	DATE	SIGNATURE
Prepared by:	Sneha Shakya	22/04/2020	
Reviewed by:	Sneha Shakya	22/04/2020	

ABBREVIATIONS

A	Amosite Asbestos Detected
ACM	Asbestos Containing Material
AF	Asbestos Fines
C	Crocidolite Asbestos Detected
CH	Chrysotile Asbestos Detected
FA	Fibrous Asbestos
NAD	No Asbestos Detected
NEPM	National Environment Protection Measures
OF	Organic Fibres Detected
PLM	Polarised Light Microscopy
SMF	Synthetic Mineral Fibres Detected
UMF	Unknown Mineral Fibres Detected

ANALYSIS METHODOLOGY

AS 4964-2004 - Soils: Samples received by the laboratory are analysed in accordance with section 8.2.3 *Soil Samples* of Australian Standard (AS 4964-2004). Trace analysis is conducted in accordance with section 8.4 *Trace analysis criteria* of the standard. Asbestos analysis is conducted in accordance with the standard section 8.3.3 *Analytical criteria*, and follows methodology outlined in Appendix D *Simplified flowchart for bulk asbestos identification*.

Quantification of Asbestos in Soils: There is no accepted valid analytical method in Australia for estimating the concentration of asbestos in soils. NATA does not accredit facilities for the estimation of the concentration of ACM or free asbestos fibres in soils. This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation, and Management of Asbestos-Contaminated Sites in Western Australia - May 2009* and Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)].

Percentages for asbestos content in materials and reporting limits of percentage weight for weight asbestos in soil are based on values outlined in Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)]. Non-Friable (ACM) weight is calculated based on the assumption of 15% asbestos by weight in non-friable ACM products used in Australia. Friable asbestos weight, including Fibrous Asbestos (AF) and Asbestos Fines (AF), is calculated based on the assumption of 100% asbestos by weight.

The reporting limit 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 reporting limit is not applicable to free fibres (Respirable Fibres). Loose respirable fibres are detected under criteria set by Australian Standard (AS 4964-2004), section 8.4 *Trace analysis criteria*, with an implied detection and reporting limit of 0.1g/kg.

METHOD SPECIFIC DEFINITION

- Asbestos Containing Materials (ACM) - comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
- Fibrous Asbestos (FA) - comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded (friable) or was previously bonded and is now significantly degraded (crumbling).
- Asbestos Fines (AF) - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

All calculations of percentage asbestos under this method are approximate and should be used as a guide only. Such results cannot be used in place of field evaluations.

These quantitative results are not covered by the scope of NATA accreditation.

ANALYSIS RESULTS

	UNIT	LIMIT OF REPORTING	SAMPLE: STP01_0.3	SAMPLE: STP01A_0.3	SAMPLE: STP01B_0.3
Total Soil Weight	g	1	738	854	732
Asbestos Type Detected	N/A	-	NAD	NAD	NAD
Free Fibres (Respirable Fibres) in <2mm Sample	g/kg	0.1	No	No	No
ACM in >7mm Sample	g	0.001	<0.001	<0.001	<0.001
FA & AF	g	0.001	<0.001	<0.001	<0.001
ACM in >7mm Sample (as 15% Asbestos)	%w/w	0.01	<0.01	<0.01	<0.01
FA & AF (as 100% asbestos)	%w/w	0.001	<0.001	<0.001	<0.001

These quantitative results are not covered by the scope of NATA accreditation.

LEGEND:

NAD	No Asbestos Detected
CH	Chrysotile Asbestos Detected
A	Amosite Asbestos Detected
C	Crocidolite Asbestos Detected
UMF	Unknown Mineral Fibres Detected

APPENDIX A

AS 4964 LABORATORY CERTIFICATES





**WSP Australia
Pty Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Wentworthville Public School, Block H

CERTIFICATE NO: SYD-PS119057-128447

CLIENT: WSP - CLM Team NSW

DATE\S SAMPLED: 20/04/2020

CLIENT ADDRESS: 680 George Street, Sydney NSW 2000

DATE RECEIVED: 21/04/2020

TELEPHONE: 0400 359 547

DATE ANALYSED: 22/04/2020

EMAIL: hamish.donovan@wsp.com

ORDER NUMBER: N/A

CONTACT: Hamish Donovan

SAMPLED BY: Poushali Talukder

TEST METHOD: Qualitative identification of asbestos fibres in bulk and soil samples at WSP Corporate Laboratories by polarised light microscopy, including dispersion staining, in accordance with AS4964 (2004) Method for the qualitative identification of asbestos in bulk samples and WSP's Laboratory Procedure (LP3 - Identification of Asbestos Fibres). Trace analysis carried out on all non-homogenous samples. Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Sample Description	Sample Dimensions	Identification Type
001	STP01_0.3	Soil	738 gm	OF, NAD*
002	STP01A_0.3	Soil	854 gm	OF, NAD*
003	STP01B_0.3	Soil	732 gm	OF, NAD*

LEGEND:

NAD	- No Asbestos Detected
CH	- Chrysotile Asbestos Detected
A	- Amosite Asbestos Detected
C	- Crocidolite Asbestos Detected
UMF	- Unknown Mineral Fibres Detected
SMF	- Synthetic Mineral Fibres Detected
OF	- Organic Fibres Detected
Trace	- Trace Asbestos Detected
*	- No trace asbestos detected at the reporting limit of 0.1 g/kg



Approved Identifier

Name: Sneha Shakya

Approved Signatory

Name: Sneha Shakya

AUTHORISATION DATE

Wednesday, 22 April 2020

Hand picked refers to small discrete amounts of asbestos distributed unevenly in a large body of non asbestos material.

Notes:

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. NATA does not accredit the sampling process, therefore sampling is not covered by the scope of accreditation. This document may not be reproduced except in full.

WSP

GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

70-100 FULLAGAR ROAD,
WENTWORTHVILLE, NSW

APRIL 2020



GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

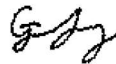
70-100 FULLAGAR ROAD,
WENTWORTHVILLE, NSW

WSP

WSP
LEVEL 27, 680 GEORGE STREET
SYDNEY NSW 2000
GPO BOX 5394
SYDNEY NSW 2001

TEL: +61 2 9272 5100
FAX: +61 2 9272 5101
WSP.COM

REV	DATE	DETAILS
A	22/04/2020	70-100 Fullagar Road, Wentworthville, NSW_SYD-PS119057-128473.pdf

	NAME	DATE	SIGNATURE
Prepared by:	Gavin Young	22/04/2020	
Reviewed by:	Shannon Bradford	22/04/2020	

ABBREVIATIONS

A	Amosite Asbestos Detected
ACM	Asbestos Containing Material
AF	Asbestos Fines
C	Crocidolite Asbestos Detected
CH	Chrysotile Asbestos Detected
FA	Fibrous Asbestos
NAD	No Asbestos Detected
NEPM	National Environment Protection Measures
OF	Organic Fibres Detected
PLM	Polarised Light Microscopy
SMF	Synthetic Mineral Fibres Detected
UMF	Unknown Mineral Fibres Detected

ANALYSIS METHODOLOGY

AS 4964-2004 - Soils: Samples received by the laboratory are analysed in accordance with section 8.2.3 *Soil Samples* of Australian Standard (AS 4964-2004). Trace analysis is conducted in accordance with section 8.4 *Trace analysis criteria* of the standard. Asbestos analysis is conducted in accordance with the standard section 8.3.3 *Analytical criteria*, and follows methodology outlined in Appendix D *Simplified flowchart for bulk asbestos identification*.

Quantification of Asbestos in Soils: There is no accepted valid analytical method in Australia for estimating the concentration of asbestos in soils. NATA does not accredit facilities for the estimation of the concentration of ACM or free asbestos fibres in soils. This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation, and Management of Asbestos-Contaminated Sites in Western Australia - May 2009* and Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)].

Percentages for asbestos content in materials and reporting limits of percentage weight for weight asbestos in soil are based on values outlined in Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)]. Non-Friable (ACM) weight is calculated based on the assumption of 15% asbestos by weight in non-friable ACM products used in Australia. Friable asbestos weight, including Fibrous Asbestos (AF) and Asbestos Fines (AF), is calculated based on the assumption of 100% asbestos by weight.

The reporting limit 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 reporting limit is not applicable to free fibres (Respirable Fibres). Loose respirable fibres are detected under criteria set by Australian Standard (AS 4964-2004), section 8.4 *Trace analysis criteria*, with an implied detection and reporting limit of 0.1g/kg.

METHOD SPECIFIC DEFINITION

- Asbestos Containing Materials (ACM) - comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
- Fibrous Asbestos (FA) - comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded (friable) or was previously bonded and is now significantly degraded (crumbling).
- Asbestos Fines (AF) - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

All calculations of percentage asbestos under this method are approximate and should be used as a guide only. Such results cannot be used in place of field evaluations.

These quantitative results are not covered by the scope of NATA accreditation.

ANALYSIS RESULTS

	UNIT	LIMIT OF REPORTING	SAMPLE: STP02_0.3	SAMPLE: STP02A_0.3	SAMPLE: STP02B_0.3
Total Soil Weight	g	1	525	559	410
Asbestos Type Detected	N/A	-	NAD	NAD	NAD
Free Fibres (Respirable Fibres) in <2mm Sample	g/kg	0.1	No	No	No
ACM in >7mm Sample	g	0.001	<0.001	<0.001	<0.001
FA & AF	g	0.001	<0.001	<0.001	<0.001
ACM in >7mm Sample (as 15% Asbestos)	%w/w	0.01	<0.01	<0.01	<0.01
FA & AF (as 100% asbestos)	%w/w	0.001	<0.001	<0.001	<0.001

These quantitative results are not covered by the scope of NATA accreditation.

LEGEND:

NAD	No Asbestos Detected
CH	Chrysotile Asbestos Detected
A	Amosite Asbestos Detected
C	Crocidolite Asbestos Detected
UMF	Unknown Mineral Fibres Detected

APPENDIX A

AS 4964 LABORATORY CERTIFICATES





**WSP Australia
Pty Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: 70-100 Fullagar Road, Wentworthville, NSW

CERTIFICATE NO: SYD-PS119057-128473

CLIENT: WSP - CLM Team NSW

DATE\S SAMPLED: 21/04/2020

CLIENT ADDRESS: 680 George Street, Sydney NSW 2000

DATE RECEIVED: 21/04/2020

TELEPHONE: 0400 359 547

DATE ANALYSED:

EMAIL: hamish.donovan@wsp.com

ORDER NUMBER: N/A

CONTACT: Hamish Donovan

SAMPLED BY: Poushali Talukder

TEST METHOD: Qualitative identification of asbestos fibres in bulk and soil samples at WSP Corporate Laboratories by polarised light microscopy, including dispersion staining, in accordance with AS4964 (2004) Method for the qualitative identification of asbestos in bulk samples and WSP's Laboratory Procedure (LP3 - Identification of Asbestos Fibres). Trace analysis carried out on all non-homogenous samples. Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Sample Description	Sample Dimensions	Identification Type
001	STP02_0.3	Stockpile 2 from Block H	Soil	525 gm	OF, NAD*
002	STP02A_0.3	Stockpile 2 from Block H	Soil	559 gm	OF, NAD*
003	STP02B_0.3	Stockpile 2 from Block H	Soil	410 gm	OF, NAD*

LEGEND:

NAD	- No Asbestos Detected
CH	- Chrysotile Asbestos Detected
A	- Amosite Asbestos Detected
C	- Crocidolite Asbestos Detected
UMF	- Unknown Mineral Fibres Detected
SMF	- Synthetic Mineral Fibres Detected
OF	- Organic Fibres Detected
Trace	- Trace Asbestos Detected
*	- No trace asbestos detected at the reporting limit of 0.1 g/kg



Approved Identifier

Name: Melanie Reed

Approved Signatory

Name: Shannon Bradford

AUTHORISATION DATE

Wednesday, 22 April 2020

Hand picked refers to small discrete amounts of asbestos distributed unevenly in a large body of non asbestos material.

Notes:

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. NATA does not accredit the sampling process, therefore sampling is not covered by the scope of accreditation. This document may not be reproduced except in full.

WSP

GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

WENTWORTHVILLE PUBLIC SCHOOL
BLOCK H

APRIL 2020





GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

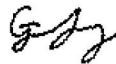
WENTWORTHVILLE PUBLIC SCHOOL BLOCK H

WSP

WSP
LEVEL 27, 680 GEORGE STREET
SYDNEY NSW 2000
GPO BOX 5394
SYDNEY NSW 2001

TEL: +61 2 9272 5100
FAX: +61 2 9272 5101
WSP.COM

REV	DATE	DETAILS
A	23/04/2020	Wentworthville Public School Block H_SYD-PS119057-128509.pdf

	NAME	DATE	SIGNATURE
Prepared by:	Gavin Young	23/04/2020	
Reviewed by:	Shannon Bradford	23/04/2020	

ABBREVIATIONS

A	Amosite Asbestos Detected
ACM	Asbestos Containing Material
AF	Asbestos Fines
C	Crocidolite Asbestos Detected
CH	Chrysotile Asbestos Detected
FA	Fibrous Asbestos
NAD	No Asbestos Detected
NEPM	National Environment Protection Measures
OF	Organic Fibres Detected
PLM	Polarised Light Microscopy
SMF	Synthetic Mineral Fibres Detected
UMF	Unknown Mineral Fibres Detected

ANALYSIS METHODOLOGY

AS 4964-2004 - Soils: Samples received by the laboratory are analysed in accordance with section 8.2.3 *Soil Samples* of Australian Standard (AS 4964-2004). Trace analysis is conducted in accordance with section 8.4 *Trace analysis criteria* of the standard. Asbestos analysis is conducted in accordance with the standard section 8.3.3 *Analytical criteria*, and follows methodology outlined in Appendix D *Simplified flowchart for bulk asbestos identification*.

Quantification of Asbestos in Soils: There is no accepted valid analytical method in Australia for estimating the concentration of asbestos in soils. NATA does not accredit facilities for the estimation of the concentration of ACM or free asbestos fibres in soils. This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation, and Management of Asbestos-Contaminated Sites in Western Australia - May 2009* and Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)].

Percentages for asbestos content in materials and reporting limits of percentage weight for weight asbestos in soil are based on values outlined in Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)]. Non-Friable (ACM) weight is calculated based on the assumption of 15% asbestos by weight in non-friable ACM products used in Australia. Friable asbestos weight, including Fibrous Asbestos (AF) and Asbestos Fines (AF), is calculated based on the assumption of 100% asbestos by weight.

The reporting limit 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 reporting limit is not applicable to free fibres (Respirable Fibres). Loose respirable fibres are detected under criteria set by Australian Standard (AS 4964-2004), section 8.4 *Trace analysis criteria*, with an implied detection and reporting limit of 0.1g/kg.

METHOD SPECIFIC DEFINITION

- Asbestos Containing Materials (ACM) - comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
- Fibrous Asbestos (FA) - comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded (friable) or was previously bonded and is now significantly degraded (crumbling).
- Asbestos Fines (AF) - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

All calculations of percentage asbestos under this method are approximate and should be used as a guide only. Such results cannot be used in place of field evaluations.

These quantitative results are not covered by the scope of NATA accreditation.

ANALYSIS RESULTS

	UNIT	LIMIT OF REPORTING	SAMPLE: VS03D_0.0	SAMPLE: VS03E_0.0	SAMPLE: VS03F_0.0	SAMPLE: VS01_0.0	SAMPLE: VS02_0.0	SAMPLE: VS06_0.0	SAMPLE: VS07A_0.0
Total Soil Weight	g	1	639	443	415	387	393	636	327
Asbestos Type Detected	N/A	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Free Fibres (Respirable Fibres) in <2mm Sample	g/kg	0.1	No	No	No	No	No	No	No
ACM in >7mm Sample	g	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
FA & AF	g	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
ACM in >7mm Sample (as 15% Asbestos)	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
FA & AF (as 100% asbestos)	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

These quantitative results are not covered by the scope of NATA accreditation.

LEGEND:

NAD	No Asbestos Detected
CH	Chrysotile Asbestos Detected
A	Amosite Asbestos Detected
C	Crocidolite Asbestos Detected
UMF	Unknown Mineral Fibres Detected

ANALYSIS RESULTS

	UNIT	LIMIT OF REPORTING	SAMPLE: VS08_0.0	SAMPLE: VS09_0.0	SAMPLE: VS10_0.0	SAMPLE: VS19_0.1	SAMPLE: VS19_0.3	SAMPLE: VS20_0.3
Total Soil Weight	g	1	363	428	357	408	384	436
Asbestos Type Detected	N/A	-	NAD	NAD	NAD	NAD	NAD	NAD
Free Fibres (Respirable Fibres) in <2mm Sample	g/kg	0.1	No	No	No	No	No	No
ACM in >7mm Sample	g	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
FA & AF	g	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
ACM in >7mm Sample (as 15% Asbestos)	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
FA & AF (as 100% asbestos)	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

These quantitative results are not covered by the scope of NATA accreditation.

LEGEND:

NAD	No Asbestos Detected
CH	Chrysotile Asbestos Detected
A	Amosite Asbestos Detected
C	Crocidolite Asbestos Detected
UMF	Unknown Mineral Fibres Detected

APPENDIX A

AS 4964 LABORATORY CERTIFICATES





**WSP Australia
Pty Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Wentworthville Public School

CERTIFICATE NO: SYD-PS119057-128509

CLIENT: WSP - CLM Team NSW

DATE\S SAMPLED: Unavailable

CLIENT ADDRESS: 680 George Street, Sydney NSW 2000

DATE RECEIVED: 22/04/2020

TELEPHONE: 0400 359 547

DATE ANALYSED: 23/04/2020

EMAIL: hamish.donovan@wsp.com

ORDER NUMBER: N/A

CONTACT: Hamish Donovan

SAMPLED BY: Poushali Talukder

TEST METHOD: Qualitative identification of asbestos fibres in bulk and soil samples at WSP Corporate Laboratories by polarised light microscopy, including dispersion staining, in accordance with AS4964 (2004) Method for the qualitative identification of asbestos in bulk samples and WSP's Laboratory Procedure (LP3 - Identification of Asbestos Fibres). Trace analysis carried out on all non-homogenous samples. Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Sample Description	Sample Dimensions	Identification Type
001	VS03D_0.0	Block H - Wentworthville public school	Soil	639 gm	OF, NAD*
002	VS03E_0.0	Block H - Wentworthville public school	Soil	443 gm	OF, NAD*
003	VS03F_0.0	Block H - Wentworthville public school	Soil	415 gm	OF, NAD*
004	VS01_0.0	Block H - Wentworthville public school	Soil	387 gm	OF, NAD*
005	VS02_0.0	Block H - Wentworthville public school	Soil	393 gm	OF, NAD*
006	VS06_0.0	Block H - Wentworthville public school	Soil	636 gm	OF, NAD*
007	VS07A_0.0	Block H - Wentworthville public school	Soil	327 gm	OF, NAD*
008	VS08_0.0	Block H - Wentworthville public school	Soil	363 gm	OF, NAD*
009	VS09_0.0	Block H - Wentworthville public school	Soil	428 gm	OF, NAD*
010	VS10_0.0	Block H - Wentworthville public school	Soil	357 gm	OF, NAD*
011	VS19_0.1	Block H - Wentworthville public school	Soil	408 gm	OF, NAD*
012	VS19_0.3	Block H - Wentworthville public school	Soil	384 gm	OF, NAD*
013	VS20_0.3	Block H - Wentworthville public school	Soil	436 gm	OF, NAD*



**WSP Australia
Pty Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Wentworthville Public School

CERTIFICATE NO: SYD-PS119057-128509

LEGEND:

- NAD - No Asbestos Detected
- CH - Chrysotile Asbestos Detected
- A - Amosite Asbestos Detected
- C - Crocidolite Asbestos Detected
- UMF - Unknown Mineral Fibres Detected
- SMF - Synthetic Mineral Fibres Detected
- OF - Organic Fibres Detected
- Trace - Trace Asbestos Detected
- * - No trace asbestos detected at the reporting limit of 0.1 g/kg



Approved Identifier

Name: Melanie Reed

Approved Signatory

Name: Shannon Bradford

AUTHORISATION DATE

Thursday, 23 April 2020

Hand picked refers to small discrete amounts of asbestos distributed unevenly in a large body of non asbestos material.

Notes:

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. NATA does not accredit the sampling process, therefore sampling is not covered by the scope of accreditation. This document may not be reproduced except in full.

WSP

GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

70-100 FULLAGAR ROAD,
WENTWORTHVILLE, NSW

APRIL 2020



GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

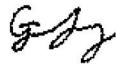
70-100 FULLAGAR ROAD,
WENTWORTHVILLE, NSW

WSP

WSP
LEVEL 27, 680 GEORGE STREET
SYDNEY NSW 2000
GPO BOX 5394
SYDNEY NSW 2001

TEL: +61 2 9272 5100
FAX: +61 2 9272 5101
WSP.COM

REV	DATE	DETAILS
A	22/04/2020	70-100 Fullagar Road, Wentworthville, NSW_SYD-PS119057-128459.pdf

	NAME	DATE	SIGNATURE
Prepared by:	Gavin Young	22/04/2020	
Reviewed by:	Shannon Bradford	22/04/2020	

ABBREVIATIONS

A	Amosite Asbestos Detected
ACM	Asbestos Containing Material
AF	Asbestos Fines
C	Crocidolite Asbestos Detected
CH	Chrysotile Asbestos Detected
FA	Fibrous Asbestos
NAD	No Asbestos Detected
NEPM	National Environment Protection Measures
OF	Organic Fibres Detected
PLM	Polarised Light Microscopy
SMF	Synthetic Mineral Fibres Detected
UMF	Unknown Mineral Fibres Detected

ANALYSIS METHODOLOGY

AS 4964-2004 - Soils: Samples received by the laboratory are analysed in accordance with section 8.2.3 *Soil Samples* of Australian Standard (AS 4964-2004). Trace analysis is conducted in accordance with section 8.4 *Trace analysis criteria* of the standard. Asbestos analysis is conducted in accordance with the standard section 8.3.3 *Analytical criteria*, and follows methodology outlined in Appendix D *Simplified flowchart for bulk asbestos identification*.

Quantification of Asbestos in Soils: There is no accepted valid analytical method in Australia for estimating the concentration of asbestos in soils. NATA does not accredit facilities for the estimation of the concentration of ACM or free asbestos fibres in soils. This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation, and Management of Asbestos-Contaminated Sites in Western Australia - May 2009* and Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)].

Percentages for asbestos content in materials and reporting limits of percentage weight for weight asbestos in soil are based on values outlined in Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)]. Non-Friable (ACM) weight is calculated based on the assumption of 15% asbestos by weight in non-friable ACM products used in Australia. Friable asbestos weight, including Fibrous Asbestos (AF) and Asbestos Fines (AF), is calculated based on the assumption of 100% asbestos by weight.

The reporting limit 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 reporting limit is not applicable to free fibres (Respirable Fibres). Loose respirable fibres are detected under criteria set by Australian Standard (AS 4964-2004), section 8.4 *Trace analysis criteria*, with an implied detection and reporting limit of 0.1g/kg.

METHOD SPECIFIC DEFINITION

- Asbestos Containing Materials (ACM) - comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
- Fibrous Asbestos (FA) - comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded (friable) or was previously bonded and is now significantly degraded (crumbling).
- Asbestos Fines (AF) - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

All calculations of percentage asbestos under this method are approximate and should be used as a guide only. Such results cannot be used in place of field evaluations.

These quantitative results are not covered by the scope of NATA accreditation.

ANALYSIS RESULTS

	UNIT	LIMIT OF REPORTING	SAMPLE: VS03C_0.0	SAMPLE: Tank base 01	SAMPLE: Tank base 02	SAMPLE: Tank base 03
Total Soil Weight	g	1	659	995	983	797
Asbestos Type Detected	N/A	-	NAD	NAD	NAD	NAD
Free Fibres (Respirable Fibres) in <2mm Sample	g/kg	0.1	No	No	No	No
ACM in >7mm Sample	g	0.001	<0.001	<0.001	<0.001	<0.001
FA & AF	g	0.001	<0.001	<0.001	<0.001	<0.001
ACM in >7mm Sample (as 15% Asbestos)	%w/w	0.01	<0.01	<0.01	<0.01	<0.01
FA & AF (as 100% asbestos)	%w/w	0.001	<0.001	<0.001	<0.001	<0.001

These quantitative results are not covered by the scope of NATA accreditation.

LEGEND:

NAD	No Asbestos Detected
CH	Chrysotile Asbestos Detected
A	Amosite Asbestos Detected
C	Crocidolite Asbestos Detected
UMF	Unknown Mineral Fibres Detected

APPENDIX A

AS 4964 LABORATORY CERTIFICATES





**WSP Australia
Pty Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: 70-100 Fullagar Road, Wentworthville, NSW

CERTIFICATE NO: SYD-PS119057-128459

CLIENT: WSP - CLM Team NSW

DATE\S SAMPLED: 21/04/2020

CLIENT ADDRESS: 680 George Street, Sydney NSW 2000

DATE RECEIVED: 21/04/2020

TELEPHONE: 0400 359 547

DATE ANALYSED: 22/04/2020

EMAIL: hamish.donovan@wsp.com

ORDER NUMBER: N/A

CONTACT: Hamish Donovan

SAMPLED BY: Poushali Talukder

TEST METHOD: Qualitative identification of asbestos fibres in bulk and soil samples at WSP Corporate Laboratories by polarised light microscopy, including dispersion staining, in accordance with AS4964 (2004) Method for the qualitative identification of asbestos in bulk samples and WSP's Laboratory Procedure (LP3 - Identification of Asbestos Fibres). Trace analysis carried out on all non-homogenous samples. Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Sample Description	Sample Dimensions	Identification Type
001	VS03C_0.0	Tank wall	Soil	659 gm	OF, NAD*
002	Tank base 01	Tank base	Soil	995 gm	OF, NAD*
003	Tank base 02	Tank base	Soil	983 gm	OF, NAD*
004	Tank base 03	Tank base	Soil	797 gm	OF, NAD*

LEGEND:

- NAD - No Asbestos Detected
- CH - Chrysotile Asbestos Detected
- A - Amosite Asbestos Detected
- C - Crocidolite Asbestos Detected
- UMF - Unknown Mineral Fibres Detected
- SMF - Synthetic Mineral Fibres Detected
- OF - Organic Fibres Detected
- Trace - Trace Asbestos Detected
- * - No trace asbestos detected at the reporting limit of 0.1 g/kg



Approved Identifier

Name: Melanie Reed

Approved Signatory

Name: Shannon Bradford

AUTHORISATION DATE

Wednesday, 22 April 2020

Hand picked refers to small discrete amounts of asbestos distributed unevenly in a large body of non asbestos material.

Notes:

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. NATA does not accredit the sampling process, therefore sampling is not covered by the scope of accreditation. This document may not be reproduced except in full.

WSP

GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

BLOCK H, 70-100 FULLAGAR ROAD,
WENTWORTHVILLE, NSW

APRIL 2020



GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

**BLOCK H, 70-100 FULLAGAR ROAD,
WENTWORTHVILLE, NSW**

WSP

WSP
LEVEL 27, 680 GEORGE STREET
SYDNEY NSW 2000
GPO BOX 5394
SYDNEY NSW 2001

TEL: +61 2 9272 5100
FAX: +61 2 9272 5101
WSP.COM

REV	DATE	DETAILS
A	21/04/2020	Block H, 70-100 Fullagar Road, Wentworthville, NSW_SYD-PS119057-128584.pdf

	NAME	DATE	SIGNATURE
Prepared by:	Shannon Bradford	24/04/2020	
Reviewed by:	Melanie Reed	24/04/2020	

ABBREVIATIONS

A	Amosite Asbestos Detected
ACM	Asbestos Containing Material
AF	Asbestos Fines
C	Crocidolite Asbestos Detected
CH	Chrysotile Asbestos Detected
FA	Fibrous Asbestos
NAD	No Asbestos Detected
NEPM	National Environment Protection Measures
OF	Organic Fibres Detected
PLM	Polarised Light Microscopy
SMF	Synthetic Mineral Fibres Detected
UMF	Unknown Mineral Fibres Detected

ANALYSIS METHODOLOGY

AS 4964-2004 - Soils: Samples received by the laboratory are analysed in accordance with section 8.2.3 *Soil Samples* of Australian Standard (AS 4964-2004). Trace analysis is conducted in accordance with section 8.4 *Trace analysis criteria* of the standard. Asbestos analysis is conducted in accordance with the standard section 8.3.3 *Analytical criteria*, and follows methodology outlined in Appendix D *Simplified flowchart for bulk asbestos identification*.

Quantification of Asbestos in Soils: There is no accepted valid analytical method in Australia for estimating the concentration of asbestos in soils. NATA does not accredit facilities for the estimation of the concentration of ACM or free asbestos fibres in soils. This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation, and Management of Asbestos-Contaminated Sites in Western Australia - May 2009* and Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)].

Percentages for asbestos content in materials and reporting limits of percentage weight for weight asbestos in soil are based on values outlined in Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)]. Non-Friable (ACM) weight is calculated based on the assumption of 15% asbestos by weight in non-friable ACM products used in Australia. Friable asbestos weight, including Fibrous Asbestos (AF) and Asbestos Fines (AF), is calculated based on the assumption of 100% asbestos by weight.

The reporting limit 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 reporting limit is not applicable to free fibres (Respirable Fibres). Loose respirable fibres are detected under criteria set by Australian Standard (AS 4964-2004), section 8.4 *Trace analysis criteria*, with an implied detection and reporting limit of 0.1g/kg.

METHOD SPECIFIC DEFINITION

- Asbestos Containing Materials (ACM) - comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
- Fibrous Asbestos (FA) - comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded (friable) or was previously bonded and is now significantly degraded (crumbling).
- Asbestos Fines (AF) - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

All calculations of percentage asbestos under this method are approximate and should be used as a guide only. Such results cannot be used in place of field evaluations.

These quantitative results are not covered by the scope of NATA accreditation.

ANALYSIS RESULTS

	UNIT	LIMIT OF REPORTING	SAMPLE: VS21_0.0
Total Soil Weight	g	1	510
Asbestos Type Detected	N/A	-	NAD
Free Fibres (Respirable Fibres) in <2mm Sample	g/kg	0.1	No
ACM in >7mm Sample	g	0.001	<0.001
FA & AF	g	0.001	<0.001
ACM in >7mm Sample (as 15% Asbestos)	%w/w	0.01	<0.01
FA & AF (as 100% asbestos)	%w/w	0.001	<0.001

These quantitative results are not covered by the scope of NATA accreditation.

LEGEND:

NAD	No Asbestos Detected
CH	Chrysotile Asbestos Detected
A	Amosite Asbestos Detected
C	Crocidolite Asbestos Detected
UMF	Unknown Mineral Fibres Detected

APPENDIX A

AS 4964 LABORATORY CERTIFICATES





**WSP Australia
Pty Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Block H, 70/100 Fullagar Road, Wentworthville NSW

CERTIFICATE NO: SYD-PS119057-128584

CLIENT: WSP - CLM Team NSW

DATE\S SAMPLED: 23/04/2020

CLIENT ADDRESS: 680 George Street, Sydney NSW 2000

DATE RECEIVED: 23/04/2020

TELEPHONE: 0400 359 547

DATE ANALYSED: 24/04/2020

EMAIL: hamish.donovan@wsp.com

ORDER NUMBER: N/A

CONTACT: Hamish Donovan

SAMPLED BY: Poushali Talukder

TEST METHOD: Qualitative identification of asbestos fibres in bulk and soil samples at WSP Corporate Laboratories by polarised light microscopy, including dispersion staining, in accordance with AS4964 (2004) Method for the qualitative identification of asbestos in bulk samples and WSP's Laboratory Procedure (LP3 - Identification of Asbestos Fibres). Trace analysis carried out on all non-homogenous samples. Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Sample Description	Sample Dimensions	Identification Type
001	VS21_0.0	Middle tree	Soil	510 gm	OF, NAD*

LEGEND:

- NAD - No Asbestos Detected
- CH - Chrysotile Asbestos Detected
- A - Amosite Asbestos Detected
- C - Crocidolite Asbestos Detected
- UMF - Unknown Mineral Fibres Detected
- SMF - Synthetic Mineral Fibres Detected
- OF - Organic Fibres Detected
- Trace - Trace Asbestos Detected
- * - No trace asbestos detected at the reporting limit of 0.1 g/kg



Approved Identifier

Name: Melanie Reed

Approved Signatory

Name: Melanie Reed

Hand picked refers to small discrete amounts of asbestos distributed unevenly in a large body of non asbestos material.

Notes:

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. NATA does not accredit the sampling process, therefore sampling is not covered by the scope of accreditation. This document may not be reproduced except in full.

AUTHORISATION DATE

Friday, 24 April 2020

WSP

GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

BLOCK H, 70-100 FULLAGAR ROAD,
WENTWORTHVILLE, NSW

APRIL 2020



GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

**BLOCK H, 70-100 FULLAGAR ROAD,
WENTWORTHVILLE, NSW**

WSP

WSP
LEVEL 27, 680 GEORGE STREET
SYDNEY NSW 2000
GPO BOX 5394
SYDNEY NSW 2001

TEL: +61 2 9272 5100
FAX: +61 2 9272 5101
WSP.COM

REV	DATE	DETAILS
A	28/04/2020	Block H, 70-100 Fullagar Road, Wentworthville, NSW_SYD-PS119057-128758.pdf

	NAME	DATE	SIGNATURE
Prepared by:	Melanie Reed	28/04/2020	
Reviewed by:	Melanie Reed	28/04/2020	

ABBREVIATIONS

A	Amosite Asbestos Detected
ACM	Asbestos Containing Material
AF	Asbestos Fines
C	Crocidolite Asbestos Detected
CH	Chrysotile Asbestos Detected
FA	Fibrous Asbestos
NAD	No Asbestos Detected
NEPM	National Environment Protection Measures
OF	Organic Fibres Detected
PLM	Polarised Light Microscopy
SMF	Synthetic Mineral Fibres Detected
UMF	Unknown Mineral Fibres Detected

ANALYSIS METHODOLOGY

AS 4964-2004 - Soils: Samples received by the laboratory are analysed in accordance with section 8.2.3 *Soil Samples* of Australian Standard (AS 4964-2004). Trace analysis is conducted in accordance with section 8.4 *Trace analysis criteria* of the standard. Asbestos analysis is conducted in accordance with the standard section 8.3.3 *Analytical criteria*, and follows methodology outlined in Appendix D *Simplified flowchart for bulk asbestos identification*.

Quantification of Asbestos in Soils: There is no accepted valid analytical method in Australia for estimating the concentration of asbestos in soils. NATA does not accredit facilities for the estimation of the concentration of ACM or free asbestos fibres in soils. This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation, and Management of Asbestos-Contaminated Sites in Western Australia - May 2009* and Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)].

Percentages for asbestos content in materials and reporting limits of percentage weight for weight asbestos in soil are based on values outlined in Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)]. Non-Friable (ACM) weight is calculated based on the assumption of 15% asbestos by weight in non-friable ACM products used in Australia. Friable asbestos weight, including Fibrous Asbestos (AF) and Asbestos Fines (AF), is calculated based on the assumption of 100% asbestos by weight.

The reporting limit 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 reporting limit is not applicable to free fibres (Respirable Fibres). Loose respirable fibres are detected under criteria set by Australian Standard (AS 4964-2004), section 8.4 *Trace analysis criteria*, with an implied detection and reporting limit of 0.1g/kg.

METHOD SPECIFIC DEFINITION

- Asbestos Containing Materials (ACM) - comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
- Fibrous Asbestos (FA) - comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded (friable) or was previously bonded and is now significantly degraded (crumbling).
- Asbestos Fines (AF) - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

All calculations of percentage asbestos under this method are approximate and should be used as a guide only. Such results cannot be used in place of field evaluations.

These quantitative results are not covered by the scope of NATA accreditation.

ANALYSIS RESULTS

	UNIT	LIMIT OF REPORTING	SAMPLE: VS03G_0.1	SAMPLE: VS03H_0.1
Total Soil Weight	g	1	535	509
Asbestos Type Detected	N/A	-	CH, A, C	NAD
Free Fibres (Respirable Fibres) in <2mm Sample	g/kg	0.1	No	No
ACM in >7mm Sample	g	0.001	4.372	<0.001
FA & AF	g	0.001	<0.001	<0.001
ACM in >7mm Sample (as 15% Asbestos)	%w/w	0.01	0.12	<0.01
FA & AF (as 100% asbestos)	%w/w	0.001	<0.001	<0.001

These quantitative results are not covered by the scope of NATA accreditation.

LEGEND:

NAD	No Asbestos Detected
CH	Chrysotile Asbestos Detected
A	Amosite Asbestos Detected
C	Crocidolite Asbestos Detected
UMF	Unknown Mineral Fibres Detected

APPENDIX A

AS 4964 LABORATORY CERTIFICATES





**WSP Australia
Pty Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Block H, 70-100 Fullagar Road, Wentworthville
NSW 2145

CERTIFICATE NO: SYD-PS119057-128758

CLIENT: WSP - CLM Team NSW

DATE\S SAMPLED: 27/04/2020

CLIENT ADDRESS: 680 George Street, Sydney NSW 2000

DATE RECEIVED: 27/04/2020

TELEPHONE: 0400 359 547

DATE ANALYSED: 28/04/2020

EMAIL: hamish.donovan@wsp.com

ORDER NUMBER: N/A

CONTACT: Hamish Donovan

SAMPLED BY: Poushali Talukder

TEST METHOD: Qualitative identification of asbestos fibres in bulk and soil samples at WSP Corporate Laboratories by polarised light microscopy, including dispersion staining, in accordance with AS4964 (2004) Method for the qualitative identification of asbestos in bulk samples and WSP's Laboratory Procedure (LP3 - Identification of Asbestos Fibres). Trace analysis carried out on all non-homogenous samples. Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Sample Description	Sample Dimensions	Identification Type
001	VS03G_0.1	Tank base	Soil	535 gm	OF*
001A	VS03G_0.1	Subsample of VS03G_0.1	Fibre Cement Debris	4.372 gm	A, C, CH
002	VS03H_0.1	Tank base	Soil	509 gm	OF, NAD*

LEGEND:

- NAD - No Asbestos Detected
- CH - Chrysotile Asbestos Detected
- A - Amosite Asbestos Detected
- C - Crocidolite Asbestos Detected
- UMF - Unknown Mineral Fibres Detected
- SMF - Synthetic Mineral Fibres Detected
- OF - Organic Fibres Detected
- Trace - Trace Asbestos Detected
- * - No trace asbestos detected at the reporting limit of 0.1 g/kg



Approved Identifier

Name: Sneha Shakya

Approved Signatory

Name: Melanie Reed

Hand picked refers to small discrete amounts of asbestos distributed unevenly in a large body of non asbestos material.

Notes:

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. NATA does not accredit the sampling process, therefore sampling is not covered by the scope of accreditation. This document may not be reproduced except in full.

AUTHORISATION DATE

Tuesday, 28 April 2020

WSP

**GRAVIMETRIC DETERMINATION AND
QUANTIFICATION OF ASBESTOS IN
SOIL
WENTWORTHVILLE PUBLIC SCHOOL**

MAY 2020





GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

WENTWORTHVILLE PUBLIC SCHOOL

WSP

WSP
LEVEL 27, 680 GEORGE STREET
SYDNEY NSW 2000
GPO BOX 5394
SYDNEY NSW 2001

TEL: +61 2 9272 5100
FAX: +61 2 9272 5101
WSP.COM

REV	DATE	DETAILS
A	19/05/2020	Wentworthville Public School_SYD-PS119057-129927.pdf

	NAME	DATE	SIGNATURE
Prepared by:	Melanie Reed	19/5/2020	
Reviewed by:	Sneha Shakya	19/5/2020	

ABBREVIATIONS

A	Amosite Asbestos Detected
ACM	Asbestos Containing Material
AF	Asbestos Fines
C	Crocidolite Asbestos Detected
CH	Chrysotile Asbestos Detected
FA	Fibrous Asbestos
NAD	No Asbestos Detected
NEPM	National Environment Protection Measures
OF	Organic Fibres Detected
PLM	Polarised Light Microscopy
SMF	Synthetic Mineral Fibres Detected
UMF	Unknown Mineral Fibres Detected

ANALYSIS METHODOLOGY

AS 4964-2004 - Soils: Samples received by the laboratory are analysed in accordance with section 8.2.3 *Soil Samples* of Australian Standard (AS 4964-2004). Trace analysis is conducted in accordance with section 8.4 *Trace analysis criteria* of the standard. Asbestos analysis is conducted in accordance with the standard section 8.3.3 *Analytical criteria*, and follows methodology outlined in Appendix D *Simplified flowchart for bulk asbestos identification*.

Quantification of Asbestos in Soils: There is no accepted valid analytical method in Australia for estimating the concentration of asbestos in soils. NATA does not accredit facilities for the estimation of the concentration of ACM or free asbestos fibres in soils. This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation, and Management of Asbestos-Contaminated Sites in Western Australia - May 2009* and Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)].

Percentages for asbestos content in materials and reporting limits of percentage weight for weight asbestos in soil are based on values outlined in Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)]. Non-Friable (ACM) weight is calculated based on the assumption of 15% asbestos by weight in non-friable ACM products used in Australia. Friable asbestos weight, including Fibrous Asbestos (AF) and Asbestos Fines (AF), is calculated based on the assumption of 100% asbestos by weight.

The reporting limit 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 reporting limit is not applicable to free fibres (Respirable Fibres). Loose respirable fibres are detected under criteria set by Australian Standard (AS 4964-2004), section 8.4 *Trace analysis criteria*, with an implied detection and reporting limit of 0.1g/kg.

METHOD SPECIFIC DEFINITION

- Asbestos Containing Materials (ACM) - comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
- Fibrous Asbestos (FA) - comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded (friable) or was previously bonded and is now significantly degraded (crumbling).
- Asbestos Fines (AF) - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

All calculations of percentage asbestos under this method are approximate and should be used as a guide only. Such results cannot be used in place of field evaluations.

These quantitative results are not covered by the scope of NATA accreditation.

ANALYSIS RESULTS

	UNIT	LIMIT OF REPORTING	SAMPLE: VS20_0.1
Total Soil Weight	g	1	383
Asbestos Type Detected	N/A	-	NAD
Free Fibres (Respirable Fibres) in <2mm Sample	g/kg	0.1	No
ACM in >7mm Sample	g	0.001	<0.001
FA & AF	g	0.001	<0.001
ACM in >7mm Sample (as 15% Asbestos)	%w/w	0.01	<0.01
FA & AF (as 100% asbestos)	%w/w	0.001	<0.001

These quantitative results are not covered by the scope of NATA accreditation.

LEGEND:

NAD	No Asbestos Detected
CH	Chrysotile Asbestos Detected
A	Amosite Asbestos Detected
C	Crocidolite Asbestos Detected
UMF	Unknown Mineral Fibres Detected

APPENDIX A

AS 4964 LABORATORY CERTIFICATES





**WSP Australia
Pty Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Wentworthville Public School

CERTIFICATE NO: SYD-PS119057-129927

CLIENT: WSP - CLM Team NSW

DATE\S SAMPLED: 21/04/2020

CLIENT ADDRESS: 680 George Street, Sydney NSW 2000

DATE RECEIVED: 19/05/2020

TELEPHONE: 0400 359 547

DATE ANALYSED: 19/05/2020

EMAIL: hamish.donovan@wsp.com

ORDER NUMBER: N/A

CONTACT: Hamish Donovan

SAMPLED BY: Poushali Talukder

TEST METHOD: Qualitative identification of asbestos fibres in bulk and soil samples at WSP Corporate Laboratories by polarised light microscopy, including dispersion staining, in accordance with AS4964 (2004) Method for the qualitative identification of asbestos in bulk samples and WSP's Laboratory Procedure (LP3 - Identification of Asbestos Fibres). Trace analysis carried out on all non-homogenous samples. Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Sample Description	Sample Dimensions	Identification Type
001	VS20_0.1	Soil	383 gm	OF, NAD*

LEGEND:

- NAD - No Asbestos Detected
- CH - Chrysotile Asbestos Detected
- A - Amosite Asbestos Detected
- C - Crocidolite Asbestos Detected
- UMF - Unknown Mineral Fibres Detected
- SMF - Synthetic Mineral Fibres Detected
- OF - Organic Fibres Detected
- Trace - Trace Asbestos Detected
- * - No trace asbestos detected at the reporting limit of 0.1 g/kg



Approved Identifier

Name: Sneha Shakya

Approved Signatory

Name: Melanie Reed

AUTHORISATION DATE

Tuesday, 19 May 2020

Hand picked refers to small discrete amounts of asbestos distributed unevenly in a large body of non asbestos material.

Notes:

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. NATA does not accredit the sampling process, therefore sampling is not covered by the scope of accreditation. This document may not be reproduced except in full.

WSP

GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

70-100 FULLAGAR ROAD,
WENTWORTHVILLE NSW 2145

JUNE 2020



GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

70-100 FULLAGAR ROAD,
WENTWORTHVILLE NSW 2145

WSP

WSP
LEVEL 27, 680 GEORGE STREET
SYDNEY NSW 2000
GPO BOX 5394
SYDNEY NSW 2001

TEL: +61 2 9272 5100
FAX: +61 2 9272 5101
WSP.COM

REV	DATE	DETAILS
A	10/06/2020	70-100 Fullagar Road, Wentworthville NSW 2145_SYD-PS119057-130867.pdf

	NAME	DATE	SIGNATURE
Prepared by:	Sneha Shakya	10/06/2020	
Reviewed by:	Sneha Shakya	10/06/2020	

ABBREVIATIONS

A	Amosite Asbestos Detected
ACM	Asbestos Containing Material
AF	Asbestos Fines
C	Crocidolite Asbestos Detected
CH	Chrysotile Asbestos Detected
FA	Fibrous Asbestos
NAD	No Asbestos Detected
NEPM	National Environment Protection Measures
OF	Organic Fibres Detected
PLM	Polarised Light Microscopy
SMF	Synthetic Mineral Fibres Detected
UMF	Unknown Mineral Fibres Detected

ANALYSIS METHODOLOGY

AS 4964-2004 - Soils: Samples received by the laboratory are analysed in accordance with section 8.2.3 *Soil Samples* of Australian Standard (AS 4964-2004). Trace analysis is conducted in accordance with section 8.4 *Trace analysis criteria* of the standard. Asbestos analysis is conducted in accordance with the standard section 8.3.3 *Analytical criteria*, and follows methodology outlined in Appendix D *Simplified flowchart for bulk asbestos identification*.

Quantification of Asbestos in Soils: There is no accepted valid analytical method in Australia for estimating the concentration of asbestos in soils. NATA does not accredit facilities for the estimation of the concentration of ACM or free asbestos fibres in soils. This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation, and Management of Asbestos-Contaminated Sites in Western Australia - May 2009* and Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)].

Percentages for asbestos content in materials and reporting limits of percentage weight for weight asbestos in soil are based on values outlined in Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)]. Non-Friable (ACM) weight is calculated based on the assumption of 15% asbestos by weight in non-friable ACM products used in Australia. Friable asbestos weight, including Fibrous Asbestos (AF) and Asbestos Fines (AF), is calculated based on the assumption of 100% asbestos by weight.

The reporting limit 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 reporting limit is not applicable to free fibres (Respirable Fibres). Loose respirable fibres are detected under criteria set by Australian Standard (AS 4964-2004), section 8.4 *Trace analysis criteria*, with an implied detection and reporting limit of 0.1g/kg.

METHOD SPECIFIC DEFINITION

- Asbestos Containing Materials (ACM) - comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
- Fibrous Asbestos (FA) - comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded (friable) or was previously bonded and is now significantly degraded (crumbling).
- Asbestos Fines (AF) - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

All calculations of percentage asbestos under this method are approximate and should be used as a guide only. Such results cannot be used in place of field evaluations.

These quantitative results are not covered by the scope of NATA accreditation.

ANALYSIS RESULTS

	UNIT	LIMIT OF REPORTING	SAMPLE: VS03I_0.1
Total Soil Weight	g	1	465
Asbestos Type Detected	N/A	-	NAD
Free Fibres (Respirable Fibres) in <2mm Sample	g/kg	0.1	No
ACM in >7mm Sample	g	0.001	<0.001
FA & AF	g	0.001	<0.001
ACM in >7mm Sample (as 15% Asbestos)	%w/w	0.01	<0.01
FA & AF (as 100% asbestos)	%w/w	0.001	<0.001

These quantitative results are not covered by the scope of NATA accreditation.

LEGEND:

NAD	No Asbestos Detected
CH	Chrysotile Asbestos Detected
A	Amosite Asbestos Detected
C	Crocidolite Asbestos Detected
UMF	Unknown Mineral Fibres Detected

APPENDIX A

AS 4964 LABORATORY CERTIFICATES





**WSP Australia
Pty Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: 70-100 Fullagar Road, Wentworthville NSW 2145 **CERTIFICATE NO:** SYD-PS119057-130867

CLIENT: WSP - CLM Team NSW **DATE\S SAMPLED:** 5/06/2020
CLIENT ADDRESS: 680 George Street, Sydney NSW 2000 **DATE RECEIVED:** 8/06/2020
TELEPHONE: 0400 359 547 **DATE ANALYSED:** 10/06/2020
EMAIL: hamish.donovan@wsp.com **ORDER NUMBER:** N/A
CONTACT: Hamish Donovan **SAMPLED BY:** Poushali Talukder

TEST METHOD: Qualitative identification of asbestos fibres in bulk and soil samples at WSP Corporate Laboratories by polarised light microscopy, including dispersion staining, in accordance with AS4964 (2004) Method for the qualitative identification of asbestos in bulk samples and WSP's Laboratory Procedure (LP3 - Identification of Asbestos Fibres). Trace analysis carried out on all non-homogenous samples. Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Sample Description	Sample Dimensions	Identification Type
001	VSO3I_0.1	OSD tank-Block H	Soil	465 gm	OF, NAD*

LEGEND:

NAD - No Asbestos Detected
CH - Chrysotile Asbestos Detected
A - Amosite Asbestos Detected
C - Crocidolite Asbestos Detected
UMF - Unknown Mineral Fibres Detected
SMF - Synthetic Mineral Fibres Detected
OF - Organic Fibres Detected
Trace - Trace Asbestos Detected
* - No trace asbestos detected at the reporting limit of 0.1 g/kg



Approved Identifier

Name: Sneha Shakya

Approved Signatory

Name: Sneha Shakya

AUTHORISATION DATE

Wednesday, 10 June 2020

Hand picked refers to small discrete amounts of asbestos distributed unevenly in a large body of non asbestos material.

Notes:

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. NATA does not accredit the sampling process, therefore sampling is not covered by the scope of accreditation. This document may not be reproduced except in full.

WSP

GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

WENTWORTHVILLE PUBLIC SCHOOL
BLOCK H SEWER + RAMP

JULY 2020





GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

WENTWORTHVILLE PUBLIC SCHOOL BLOCK H SEWER + RAMP

WSP

WSP
LEVEL 3, 51-55 BOLTON ST
NEWCASTLE NSW 2300
PO BOX 1162
NEWCASTLE NSW 2300

TEL: +61 2 4929 8300
FAX: +61 2 4929 8382
WSP.COM

REV	DATE	DETAILS
A	02/07/2020	Wentworthville Public School Block H Sewer + Ramp_SYD-PS119057-131717-RevA.pdf

	NAME	DATE	SIGNATURE
Prepared by:	Shannon Bradford	01/07/20	
Reviewed by:	Melanie Reed	02/07/20	

ABBREVIATIONS

A	Amosite Asbestos Detected
ACM	Asbestos Containing Material
AF	Asbestos Fines
C	Crocidolite Asbestos Detected
CH	Chrysotile Asbestos Detected
FA	Fibrous Asbestos
NAD	No Asbestos Detected
NEPM	National Environment Protection Measures
OF	Organic Fibres Detected
PLM	Polarised Light Microscopy
SMF	Synthetic Mineral Fibres Detected
UMF	Unknown Mineral Fibres Detected

ANALYSIS METHODOLOGY

AS 4964-2004 - Soils: Samples received by the laboratory are analysed in accordance with section 8.2.3 *Soil Samples* of Australian Standard (AS 4964-2004). Trace analysis is conducted in accordance with section 8.4 *Trace analysis criteria* of the standard. Asbestos analysis is conducted in accordance with the standard section 8.3.3 *Analytical criteria*, and follows methodology outlined in Appendix D *Simplified flowchart for bulk asbestos identification*.

Quantification of Asbestos in Soils: There is no accepted valid analytical method in Australia for estimating the concentration of asbestos in soils. NATA does not accredit facilities for the estimation of the concentration of ACM or free asbestos fibres in soils. This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation, and Management of Asbestos-Contaminated Sites in Western Australia - May 2009* and Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)].

Percentages for asbestos content in materials and reporting limits of percentage weight for weight asbestos in soil are based on values outlined in Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)]. Non-Friable (ACM) weight is calculated based on the assumption of 15% asbestos by weight in non-friable ACM products used in Australia. Friable asbestos weight, including Fibrous Asbestos (AF) and Asbestos Fines (AF), is calculated based on the assumption of 100% asbestos by weight.

The reporting limit 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 reporting limit is not applicable to free fibres (Respirable Fibres). Loose respirable fibres are detected under criteria set by Australian Standard (AS 4964-2004), section 8.4 *Trace analysis criteria*, with an implied detection and reporting limit of 0.1g/kg.

METHOD SPECIFIC DEFINITION

- Asbestos Containing Materials (ACM) - comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
- Fibrous Asbestos (FA) - comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded (friable) or was previously bonded and is now significantly degraded (crumbling).
- Asbestos Fines (AF) - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

All calculations of percentage asbestos under this method are approximate and should be used as a guide only. Such results cannot be used in place of field evaluations.

These quantitative results are not covered by the scope of NATA accreditation.

ANALYSIS RESULTS

	UNIT	LIMIT OF REPORTING	SAMPLE: SI01_0.3	SAMPLE: SI02_0.2-0.3	SAMPLE: SI03_0.2-0.3	SAMPLE: R01_0.2-0.3	SAMPLE: R02_0.2-0.3
Total Soil Weight	g	1	172	237	196	152	147
Asbestos Type Detected	N/A	-	NAD	NAD	A	NAD	NAD
Free Fibres (Respirable Fibres) in <2mm Sample	g/kg	0.1	No	No	No	No	No
ACM in >7mm Sample	g	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
FA & AF	g	0.001	<0.001	<0.001	0.001	<0.001	<0.001
ACM in >7mm Sample (as 15% Asbestos)	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
FA & AF (as 100% asbestos)	%w/w	0.001	<0.001	<0.001	0.001	<0.001	<0.001

These quantitative results are not covered by the scope of NATA accreditation.

LEGEND:

NAD	No Asbestos Detected
CH	Chrysotile Asbestos Detected
A	Amosite Asbestos Detected
C	Crocidolite Asbestos Detected
UMF	Unknown Mineral Fibres Detected

APPENDIX A

AS 4964 LABORATORY CERTIFICATES



APPENDIX I-3
AIR MONITORING RESULTS



**WSP Australia
Pty Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Wentworthville Public School Block H Sewer + Ramp

CERTIFICATE NO: SYD-PS119057-131717-RevA

CLIENT: WSP - CLM Team NSW

DATE\S SAMPLED: Unavailable

CLIENT ADDRESS: 680 George Street, Sydney NSW 2000

DATE RECEIVED: 30/06/2020

TELEPHONE: 0400 359 547

DATE ANALYSED: 1/07/2020

EMAIL: hamish.donovan@wsp.com

ORDER NUMBER: SY141023-1-IS

CONTACT: Hamish Donovan

SAMPLED BY: As Received

TEST METHOD: Qualitative identification of asbestos fibres in bulk and soil samples at WSP Corporate Laboratories by polarised light microscopy, including dispersion staining, in accordance with AS4964 (2004) Method for the qualitative identification of asbestos in bulk samples and WSP's Laboratory Procedure (LP3 - Identification of Asbestos Fibres). Trace analysis carried out on all non-homogenous samples. Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

This Certificate Replaces Certificate No. SYD-PS119057-131717: Hold samples added as requested by client.

Lab No	Sample ID	Location	Sample Description	Sample Dimensions	Identification Type
001	SI01_0.3		Soil	172 gm	OF, NAD*
002	SI02_0.2-0.3		Soil	237 gm	OF, NAD*
003	SI03_0.2-0.3		Soil	196 gm	OF*
003A	SI03_0.2-0.3	Subsample of SI03_0.2-0.3	Loose Fibre Bundles	0.001 gm	A
004	SI01_0.2		Fibre Cement Fragments	24 gm	A, CH
005	SI03_0.2-0.3		Fibre Cement Fragments	61 gm	A, CH
006	SI03_Fragments		Fibre Cement Fragments	70 gm	A, C, CH
007	R01_0.2-0.3		Soil	152 gm	OF, NAD*
008	R02_0.2-0.3		Soil	147 gm	OF, NAD*

LEGEND:

- NAD - No Asbestos Detected
- CH - Chrysotile Asbestos Detected
- A - Amosite Asbestos Detected
- C - Crocidolite Asbestos Detected
- UMF - Unknown Mineral Fibres Detected
- SMF - Synthetic Mineral Fibres Detected
- OF - Organic Fibres Detected
- Trace - Trace Asbestos Detected
- * - No trace asbestos detected at the reporting limit of 0.1 g/kg



Approved Identifier

Name: Melanie Reed

Approved Signatory

Name: Melanie Reed

Hand picked refers to small discrete amounts of asbestos distributed unevenly in a large body of non asbestos material.

Notes:

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. NATA does not accredit the sampling process, therefore sampling is not covered by the scope of accreditation. This document may not be reproduced except in full.

AUTHORISATION DATE

Thursday, 2 July 2020



**WSP Australia Pty
Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Block H, Wentworthville Public School

CERTIFICATE NO: SYD-PS119057-127998

CLIENT: Grindley Construction

DATE/S SAMPLED: 14/04/2020

CLIENT ADDRESS: 55 Grandview Street, Pymble NSW 2073

DATE RECEIVED: 14/04/2020

TELEPHONE: 0448936127

DATE ANALYSED: 14/04/2020

EMAIL:

ORDER NUMBER: N/A

CONTACT: Damien McGrath

SAMPLED BY: Poushali Talukder

TEST METHOD: Filters examined at WSP Corporate Laboratories in accordance with N.O.H.S.C (2005) Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres and WSP's Laboratory Procedure (LP4 - Counting of Asbestos and Synthetic Mineral Fibres). Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Results (Fibres/Field)	Concentration (Fibres/mL)
WIP:				
001	DL014880	South west corner, adjacent to wall on wooden fence	0.0 / 100	<0.01
002	CR637013	South east corner, adjacent to wall on wooden fence	2.0 / 100	<0.01
003	CO902367	North east corner, adjacent to temporary wall replacement on temporary power box	1.0 / 100	<0.01
004	CP138433	North west corner, adjacent to temporary wall replacement on wooden fence	0.0 / 100	<0.01

Approved Counter

Name: Melanie Reed

Approved Signatory

Name: Melanie Reed

AUTHORISATION DATE

Tuesday, 14 April 2020

NB: If the fibre count is less than 10 fibres per 100 fields then the count is not significantly above that of background. Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust. [N.O.H.S.C.:3003 (2005)]



The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. This document may not be reproduced except in full.



**WSP Australia Pty
Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Block H, Wentworthville Public School

CERTIFICATE NO: SYD-PS119057-128063

CLIENT: Grindley Construction

DATE/S SAMPLED: 15/04/2020

CLIENT ADDRESS: 55 Grandview Street, Pymble NSW 2073

DATE RECEIVED: 15/04/2020

TELEPHONE: 0448936127

DATE ANALYSED: 15/04/2020

EMAIL:

ORDER NUMBER: N/A

CONTACT: Damien McGrath

SAMPLED BY: Poushali Talukder

TEST METHOD: Filters examined at WSP Corporate Laboratories in accordance with N.O.H.S.C (2005) Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres and WSP's Laboratory Procedure (LP4 - Counting of Asbestos and Synthetic Mineral Fibres). Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Results (Fibres/Field)	Concentration (Fibres/mL)
WIP:				
001	CP139769	South west corner, adjacent to Garfield Street, on metal fence	0.0 / 100	<0.01
002	CP139875	South east corner, adjacent to demountable classroom, on wooden fence	0.0 / 100	<0.01
003	CP139854	North east corner, adjacent to temporary wall boundary, on an electric power box	0.0 / 100	<0.01
004	CO904420	North west corner, adjacent to Garfield Street, on a temporary fence	0.0 / 100	<0.01

NB: If the fibre count is less than 10 fibres per 100 fields then the count is not significantly above that of background. Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust. [N.O.H.S.C.:3003 (2005)]



Approved Counter

Name: Sneha Shakya

Approved Signatory

Name: Sneha Shakya

AUTHORISATION DATE

Wednesday, 15 April 2020

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. This document may not be reproduced except in full.



**WSP Australia Pty
Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Block H, Wentworthville Public School

CERTIFICATE NO: SYD-PS119057-128231

CLIENT: Grindley Construction

DATE/S SAMPLED: 17/04/2020

CLIENT ADDRESS: 55 Grandview Street, Pymble NSW 2073

DATE RECEIVED: 17/04/2020

TELEPHONE: 0448936127

DATE ANALYSED: 17/04/2020

EMAIL:

ORDER NUMBER: N/A

CONTACT: Damien McGrath

SAMPLED BY: Poushali Talukder

TEST METHOD: Filters examined at WSP Corporate Laboratories in accordance with N.O.H.S.C (2005) Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres and WSP's Laboratory Procedure (LP4 - Counting of Asbestos and Synthetic Mineral Fibres). Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Results (Fibres/Field)	Concentration (Fibres/mL)
WIP:				
001	CP138442	South west corner adjacent to Garfield Street, on temporary metal fence	0.0 / 100	<0.01
002	CO902700	South east corner adjacent to demountable classroom, on wooden fence	0.0 / 100	<0.01
003	WSP-115599	North east corner adjacent to temporary wall boundary, on temporary electric power box	2.0 / 100	<0.01
004	CP138334	North east corner adjacent to Garfield Street, on black metal fence	1.0 / 100	<0.01

NB: If the fibre count is less than 10 fibres per 100 fields then the count is not significantly above that of background. Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust. [N.O.H.S.C.:3003 (2005)]



Approved Counter

Name: Sneha Shakya

Approved Signatory

Name: Sneha Shakya

AUTHORISATION DATE

Friday, 17 April 2020

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. This document may not be reproduced except in full.



**WSP Australia Pty
Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Wentworthville Public School, Block H

CERTIFICATE NO: SYD-PS119057-128181

CLIENT: Grindley Construction

DATE/S SAMPLED: 16/04/2020

CLIENT ADDRESS: 55 Grandview Street, Pymble NSW 2073

DATE RECEIVED: 16/04/2020

TELEPHONE: 0448936127

DATE ANALYSED: 16/04/2020

EMAIL:

ORDER NUMBER: N/A

CONTACT: Damien McGrath

SAMPLED BY: Poushali Talukder

TEST METHOD: Filters examined at WSP Corporate Laboratories in accordance with N.O.H.S.C (2005) Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres and WSP's Laboratory Procedure (LP4 - Counting of Asbestos and Synthetic Mineral Fibres). Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Results (Fibres/Field)	Concentration (Fibres/mL)
WIP:				
001	CP138247	South west corner adjacent to Garfield Street on temporary metal fence	0.0 / 100	<0.01
002	CO902355	South east corner adjacent to demountable classroom on wooden fence	0.0 / 100	<0.01
003	CP138313	North east corner adjacent to temporary wall boundary on temporary electric box	0.0 / 100	<0.01
004	CO904503	North west corner adjacent to Garfield Street on temporary fence under a tree	0.0 / 100	<0.01

Approved Counter

Name: Melanie Reed

Approved Signatory

Name: Sneha Shakya

AUTHORISATION DATE

Thursday, 16 April 2020

NB: If the fibre count is less than 10 fibres per 100 fields then the count is not significantly above that of background. Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust. [N.O.H.S.C.:3003 (2005)]



The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. This document may not be reproduced except in full.



**WSP Australia Pty
Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Wentworthville Public School, Block H

CERTIFICATE NO: SYD-PS119057-128369

CLIENT: Grindley Construction

DATE/S SAMPLED: 18/04/2020

CLIENT ADDRESS: 55 Grandview Street, Pymble NSW 2073

DATE RECEIVED: 20/04/2020

TELEPHONE: 0448936127

DATE ANALYSED: 21/04/2020

EMAIL:

ORDER NUMBER: N/A

CONTACT: Damien McGrath

SAMPLED BY: Poushali Talukder

TEST METHOD: Filters examined at WSP Corporate Laboratories in accordance with N.O.H.S.C (2005) Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres and WSP's Laboratory Procedure (LP4 - Counting of Asbestos and Synthetic Mineral Fibres). Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Results (Fibres/Field)	Concentration (Fibres/mL)
WIP:				
001	CP139713	South west corner adjacent to Garfield Street on black metal fence	1.0 / 100	<0.01
002	CO902656	South east corner adjacent to demountable classroom on wooden fence	0.0 / 100	<0.01
003	CO904348	North east corner adjacent to wooden fence boundary on temporary electric power box	0.0 / 100	<0.01
004	CO902783	North west corner adjacent to Garfield Street, on temporary fence	0.0 / 100	<0.01

NB: If the fibre count is less than 10 fibres per 100 fields then the count is not significantly above that of background. Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust. [N.O.H.S.C.:3003 (2005)]



Approved Counter

Name: Sneha Shakya

Approved Signatory

Name: Sneha Shakya

AUTHORISATION DATE

Tuesday, 21 April 2020

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. This document may not be reproduced except in full.



**WSP Australia Pty
Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Wentworthville Public School, Block H

CERTIFICATE NO: SYD-PS119057-128370

CLIENT: Grindley Construction

DATE/S SAMPLED: 20/04/2020

CLIENT ADDRESS: 55 Grandview Street, Pymble NSW 2073

DATE RECEIVED: 21/04/2020

TELEPHONE: 0448936127

DATE ANALYSED: 21/04/2020

EMAIL:

ORDER NUMBER: N/A

CONTACT: Damien McGrath

SAMPLED BY: Poushali Talukder

TEST METHOD: Filters examined at WSP Corporate Laboratories in accordance with N.O.H.S.C (2005) Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres and WSP's Laboratory Procedure (LP4 - Counting of Asbestos and Synthetic Mineral Fibres). Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Results (Fibres/Field)	Concentration (Fibres/mL)
WIP:				
001	DE288447	South west corner adjacent to Garfield Street on black metal fence	1.0 / 100	<0.01
002	CO904440	South east corner adjacent to demandable classroom on wooden fence	0.0 / 100	<0.01
003	DLO14776	North east corner adjacent to wooden fence on a temporary electric power box	0.0 / 100	<0.01
004	CR636212	North west corner adjacent to Garfield Street on temporary fence (under tree)	2.0 / 100	<0.01

NB: If the fibre count is less than 10 fibres per 100 fields then the count is not significantly above that of background. Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust. [N.O.H.S.C.:3003 (2005)]



Approved Counter

Name: Sneha Shakya

Approved Signatory

Name: Sneha Shakya

AUTHORISATION DATE

Tuesday, 21 April 2020

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. This document may not be reproduced except in full.



**WSP Australia Pty
Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Wentworthville Public School

CERTIFICATE NO: SYD-PS119057-128383

CLIENT: Grindley Construction

DATE/S SAMPLED: 21/04/2020

CLIENT ADDRESS: 55 Grandview Street, Pymble NSW 2073

DATE RECEIVED: 22/04/2020

TELEPHONE: 0448936127

DATE ANALYSED: 22/04/2020

EMAIL:

ORDER NUMBER: N/A

CONTACT: Damien McGrath

SAMPLED BY: Poushali Talukder

TEST METHOD: Filters examined at WSP Corporate Laboratories in accordance with N.O.H.S.C (2005) Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres and WSP's Laboratory Procedure (LP4 - Counting of Asbestos and Synthetic Mineral Fibres). Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Results (Fibres/Field)	Concentration (Fibres/mL)
WIP:				
001	CP139751	South east corner adjacent to Garfield Street on black metal fence	0.0 / 100	<0.01
002	CP138425	South east corner adjacent to demountable classroom on wooden fence	0.0 / 100	<0.01
003	CO902919	North east corner adjacent to wooden fence on temporary electric power box	0.0 / 100	<0.01
004	CO903141	North west corner adjacent to Garfield Street on temporary fence (under the tree)	0.0 / 100	<0.01

Approved Counter

Name: Melanie Reed

Approved Signatory

Name: Sneha Shakya

AUTHORISATION DATE

Wednesday, 22 April 2020

NB: If the fibre count is less than 10 fibres per 100 fields then the count is not significantly above that of background. Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust. [N.O.H.S.C.:3003 (2005)]



The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. This document may not be reproduced except in full.



**WSP Australia Pty
Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Wentworthville Public School

CERTIFICATE NO: SYD-PS119057-128490

CLIENT: Grindley Construction

DATE/S SAMPLED: 22/04/2020

CLIENT ADDRESS: 55 Grandview Street, Pymble NSW 2073

DATE RECEIVED: 22/04/2020

TELEPHONE: 0448936127

DATE ANALYSED: 22/04/2020

EMAIL:

ORDER NUMBER: N/A

CONTACT: Damien McGrath

SAMPLED BY: Poushali Talukder

TEST METHOD: Filters examined at WSP Corporate Laboratories in accordance with N.O.H.S.C (2005) Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres and WSP's Laboratory Procedure (LP4 - Counting of Asbestos and Synthetic Mineral Fibres). Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Results (Fibres/Field)	Concentration (Fibres/mL)
Control Air Monitoring:				
001	WSP-128038	South west corner, adjacent to Garfield Street, on black metal fence	1.0 / 100	<0.01
002	CO901866	South east corner, adjacent to demountable classroom, on wooden fence	1.0 / 100	<0.01
003	DK857653	North east corner, adjacent to wooden fence, on a temporary electric power box	1.0 / 100	<0.01
004	CP138237	North west corner, adjacent to Garfield Street, on temporary fence (under the tree)	0.0 / 100	<0.01

Approved Counter

Name: Melanie Reed

Approved Signatory

Name: Shannon Bradford

AUTHORISATION DATE

Wednesday, 22 April 2020

NB: If the fibre count is less than 10 fibres per 100 fields then the count is not significantly above that of background. Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust. [N.O.H.S.C.:3003 (2005)]



The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. This document may not be reproduced except in full.



**WSP Australia Pty
Limited**

Level 1, 121 Marcus Clarke Street,
Canberra ACT 2600 -
PO Box 1551, Canberra ACT 2600 -
Telephone +61 2 6201 9600
Facsimile +61 2 6201 9666
Email ANZLab@wsp.com

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

Certificate of Analysis

LOCATION: Wentworthville Public School

CERTIFICATE NO: ACT-PS119057-131948

CLIENT: Grindley Construction

DATE/S SAMPLED: 4/07/2020

CLIENT ADDRESS: 55 Grandview Street, Pymble NSW 2073

DATE RECEIVED: 6/07/2020

TELEPHONE: 0400359547

DATE ANALYSED: 6/07/2020

EMAIL: hamish.donovan@wsp.com

ORDER NUMBER: N/A

CONTACT: Hamish Donovan

SAMPLED BY: Ellie Diggins

TEST METHOD: Filters examined at WSP Corporate Laboratories in accordance with N.O.H.S.C (2005) Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres and WSP's Laboratory Procedure (LP4 - Counting of Asbestos and Synthetic Mineral Fibres). Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Results (Fibres/Field)	Concentration (Fibres/mL)
WIP:				
001	DJ763503	On fence between stockpile and pit, N border of site	1.0 / 100	<0.01
002	DJ763456	On fence next to pit, E border of site	2.0 / 100	<0.01
003	DJ763458	On fence between stockpile and pit, S border of site	0.0 / 100	<0.01
004	DJ763506	On fence next to stockpile, W border of site	0.0 / 100	<0.01

NB: If the fibre count is less than 10 fibres per 100 fields then the count is not significantly above that of background. Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust. [N.O.H.S.C.:3003 (2005)]



Approved Counter

Name: Bec McLean

Approved Signatory

Name: Bec McLean

AUTHORISATION DATE

Monday, 6 July 2020

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. This document may not be reproduced except in full.



**WSP Australia Pty
Limited**

Level 1, 121 Marcus Clarke Street,
Canberra ACT 2600 -
PO Box 1551, Canberra ACT 2600 -
Telephone +61 2 6201 9600
Facsimile +61 2 6201 9666
Email ANZLab@wsp.com

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

Certificate of Analysis

LOCATION: Wentworthville Public School

CERTIFICATE NO: ACT-PS119057-131952

CLIENT: Grindley Construction

DATE/S SAMPLED: 5/07/2020

CLIENT ADDRESS: 55 Grandview Street, Pymble NSW 2073

DATE RECEIVED: 6/07/2020

TELEPHONE: 0400359547

DATE ANALYSED: 6/07/2020

EMAIL: hamish.donovan@wsp.com

ORDER NUMBER: N/A

CONTACT: Hamish Donovan

SAMPLED BY: Ellie Diggins

TEST METHOD: Filters examined at WSP Corporate Laboratories in accordance with N.O.H.S.C (2005) Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres and WSP's Laboratory Procedure (LP4 - Counting of Asbestos and Synthetic Mineral Fibres). Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Results (Fibres/Field)	Concentration (Fibres/mL)
WIP:				
001	CT783415	On fence next to pit, N site boundary	1.0 / 100	<0.01
002	CT779663	On fence next to pit, E of site boundary	0.0 / 100	<0.01
003	CT779923	On fence next to pit, S of site boundary	1.0 / 100	<0.01
004	CT783438	On fence next to stockpile, W site boundary	1.0 / 100	<0.01

Approved Counter

Name: Bec McLean

Approved Signatory

Name: Bec McLean

AUTHORISATION DATE

Monday, 6 July 2020

NB: If the fibre count is less than 10 fibres per 100 fields then the count is not significantly above that of background. Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust. [N.O.H.S.C.:3003 (2005)]



The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. This document may not be reproduced except in full.



**WSP Australia Pty
Limited**

Level 27, 680 George Street Sydney
PO Box 20967, World Square
Telephone +61 2 9272 1407
Facsimile +61 2 9272 5101
Email ANZLab@wsp.com

Certificate of Analysis

ABN 80 078 004 798

NCSI Certified Quality System ISO 9001

LOCATION: Block H Ramp, 70-100 Fullagar Road,
Wentworthville NSW 2145

CERTIFICATE NO: SYD-PS119057-132148

CLIENT: WSP - CLM Team NSW

DATE/S SAMPLED: 11/07/2020

CLIENT ADDRESS: 680 George Street, Sydney NSW 2000

DATE RECEIVED: 13/07/2020

TELEPHONE: 0400 359 547

DATE ANALYSED: 13/07/2020

EMAIL: hamish.donovan@wsp.com

ORDER NUMBER: N/A

CONTACT: Hamish Donovan

SAMPLED BY: Poushali Talukder

TEST METHOD: Filters examined at WSP Corporate Laboratories in accordance with N.O.H.S.C (2005) Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres and WSP's Laboratory Procedure (LP4 - Counting of Asbestos and Synthetic Mineral Fibres). Accredited for compliance with ISO/IEC: 17025 – Testing (No. 17199).

Lab No	Sample ID	Location	Results (Fibres/Field)	Concentration (Fibres/mL)
WIP:				
001	WSP-126729	West boundary, adjacent to school playground on temporary fence	0.0 / 100	<0.01
002	WSP-126732	South west corner, adjacent to classroom/office building on air conditioning unit	Rejected: Dust overload	

NB: If the fibre count is less than 10 fibres per 100 fields then the count is not significantly above that of background. Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust. [N.O.H.S.C.:3003 (2005)]



Approved Counter

Name: Sneha Shakya

Approved Signatory

Name: Sneha Shakya

AUTHORISATION DATE

Monday, 13 July 2020

The results contained within this report relate only to the sample(s) submitted for testing. The laboratory accepts no responsibility for location, sampling date, sample ID, sampler, and client details provided by the sampler. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. This document may not be reproduced except in full.

APPENDIX J

SURVEY





M.G.A



NOTES

MERIDIAN: MGA ZONE 56
 COORDINATE SYSTEM: MGA2020
 NEARMAP IMAGE: OCTOBER 2020

WSP AUSTRALIA PTY LTD
PLAN SHOWING EXTENT OF
REMEDATION WORKS ON
LOT 1 IN DP1245593
70 FULLAGAR ROAD, WENTWORTHVILLE
LGA: CUMBERLAND
SCALE 1:800 (A3)



Sydney Office
 Level 2, 23-29 South Street
 Pydmere NSW 2116
 PO Box 1144
 Dundas
 NSW 2117
 t (02) 9685 2000
 e info@landpartners.com.au
 w www.landpartners.com.au

Surveyed: OE
 Drawn: CLP
 Date Surveyed: 08/10/2020
 Checked: GR

Dwg. No.
SY074981.000.7.1

----- DENOTES EXTENT OF REMEDIATION WORKS



SCALE 1:800



SURFACES:

Design: 1830 Wentworthville CG SURVEY VOLUMES 230420 - CG SURVEY 22-04-20
Natural: 1830 Wentworthville CG SURVEY VOLUMES 230420 - EXISTING 08-04-2020

REGION:

Boundary: DTM Boundary

SURFACE AREAS:

Design: 1577.1 (square meters)
Natural: 1501.1 (square meters)

PLAN AREAS:

Boundary: 1494.5 (square meters) within the boundary
Design: 1494.5 (square meters) within the boundary and within design surface
Natural: 1489.8 (square meters)

Factor:

Swell: 1.000
Shrink: 1.000

CUT/FILL/MATCHING AREAS:

Cut: 1489.8 (square meters)
Fill: 0.0 (square meters)
Matching: 0.0 (square meters)
Total Area: 1489.8 (square meters)
Cut 3D: 1501.1 (square meters)
Fill 3D: 0.0 (square meters)
Matching 3D: 0.0 (square meters)
Total Area 3D: 1501.1 (square meters)

▲ DHW 4
38.684

**VOLUME FROM EXISTING 08-04-2020
TO CGSURVEY 22-04-2020**
Cut to Fill Ratio: 0.000
Cut: 981.272 (cubic meters)
Fill: 0.000 (cubic meters)
Net: 981.272 (cubic meters) [cut]

Cut: 0.659 (cubic meters) / (square meters)
Fill: 0.000 (cubic meters) / (square meters)

Average Cut Depth: 0.659 (m)
Maximum Cut Depth: 2.327 (m)
Average Fill Depth: 0.000 (m)
Maximum Fill Depth: 0.000 (m)

GARFIELD STREET

Revision	Date	Description	Drawn By	Approved By
B	5/05/2020	Drafting amendments	CG	GH
A	23/04/20	Detail Survey	CG	GH

Surveyed By:



E-Mail: grh@grh.com.au | Mob: 0419 249 667
Web: www.grh.com.au

Title:

APRIL VOLUME 23-04-2020

BETWEEN EXISTING SURFACE 18-04-2020 AND 23-04-2020 SURVEY

WENTWORTHVILLE PUBLIC SCHOOL RE-DEVELOPMENT
70-100 FULLAGAR ROAD, WENTWORTHVILLE NSW

Scale Bar:



Surveyed By: CG
Job No: 1830
Contour Interval: 0.1
Print Scale: 1:200 @A3
Projection: MGA
Datum: AHD

Notes:

Computer File:
S:\GRH\GRH JOB Documents
1830 WENTWORTH CG VOLUMES

Surveyed For:



Rev: B
Page: 1 - 2