

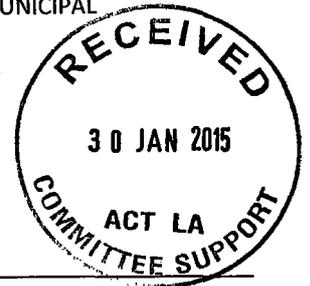


**LEGISLATIVE ASSEMBLY**  
FOR THE AUSTRALIAN CAPITAL TERRITORY

STANDING COMMITTEE ON PLANNING, ENVIRONMENT AND TERRITORY AND MUNICIPAL SERVICES

Ms Yvette Berry MLA (Chair), Mr Alistair Coe MLA (Deputy Chair),  
Dr Chris Bourke MLA, Mr Andrew Wall MLA

ANSWER TO QUESTION TAKEN ON NOTICE <sup>24</sup>  
DURING PUBLIC HEARINGS



Asked by Mr Wall on 16 December 2014: Mr Walters took on notice the following question(s):

Ref: Hansard Transcript 16 December 2014 PAGE 129

In relation to Water runoff Mugga Lane tip – how often is testing carried out by the EPA and what are the test results for the past 12 years:

**MR WALL:** And how frequently are those tests carried out?

**Mr Walters:** I think there is quarterly testing, but I would have to take that on notice. We could actually provide you with the results from that. That is public information.

**MR WALL:** And where is that publicly available? Is that on the EPA website?

**Mr Walters:** As to authorisations themselves, we have just gone through a program of uploading all of those onto the directorate's website, which is a really good initiative to get public access to all the information, terms and conditions. The actual monitoring results you would have to request from the authority.

**MR WALL:** If in this forum we are able to request that the most recent—

**Mr Corbell:** Happy to provide it.

**MR WALL:** And perhaps the test results over the last annual period, the last 12-month calendar period?

**MINISTER CORBELL:** The answer to the Member's question is as follows:—

Monitoring is undertaken on a quarterly basis in line with the requirements as outlined in section 18.1 of the Authorisation. Please see attached reports for the past 12 months of monitoring.

Attachment A November 2013 quarter

Attachment D August 2014 quarter

Attachment B February 2014 quarter

Attachment E November 2014 quarter

Attachment C May 2014 quarter

Attachment F Authorisation 0375 Remondis Australia PTY LTD

Please note that monitoring undertaken at the 6 month and 12 month intervals cover a wider range of testing.

Approved for circulation to the Standing Committee on Planning, Environment and Territory and Municipal Services

Signature:

Date: 27.1.15

By the Minister for the Environment, Simon Corbell MLA





NATA Accredited  
Laboratory No. 992

Accredited for  
compliance with  
ISO/IEC 17025



Environmental Division (Water Resources Group)

### CERTIFICATE OF ANALYSIS

<b>Batch No:</b>	<b>MUGGA_128339</b>	<b>Page</b>	Page 1 of 4	
<b>Final Report:</b>	MUGGA_128339_MKOK5	<b>Laboratory</b>	Canberra Laboratory	
<b>Client:</b>	Remondis Australia Pty Ltd	<b>Address</b>	PO Box 1834, Fyshwick, Canberra. ACT 2609.	
<b>Contact:</b>	Russell Cairns	<b>Phone</b>	02 6202 5401	
<b>Address:</b>	PO Box 9 Fyshwick ACT 2609	<b>Fax</b>	02 6202 5452	
		<b>Contact:</b>	Shane Reynolds Laboratory Manager EcowiseCustomerService@alsglobal.com;shane.reynolds@alsglobal.com	
<b>Client Ref:</b>	Mugga Landfill 3 monthly	<b>Date Sampled:</b>	05-Nov-2013	<b>Date Samples Received:</b> 07-Nov-2013
<b>Client PO:</b>	PO 3284784	<b>Date Issued:</b>	15-Nov-2013	<b>Date Testing Commenced:</b> 07-Nov-2013
		<b>No. of Samples Received:</b>	14	<b>No. Of Samples Analysed:</b> 14

Address 16B Lithgow Street Canberra ACT Australia 2602 | PHONE +61-2-6202 5400 | Facsimile +61-2-6202 5452  
Environmental Division Canberra ABN 84 009 936 029 Part of the ALS Group

The sample(s) referred to in this report were analysed by the following method(s):

# - NATA accreditation does not cover the performance of this service

Analysis	Method	Laboratory	NATA No.	Analysis	Method	Laboratory	NATA No.	Analysis	Method	Laboratory	NATA No.
TOC (as NPOC)	290	CANBERRA	992	Status	N/A#	CANBERRA	992	Susp.Solids	260	CANBERRA	992
Ammonia (asN)	32	CANBERRA	992	Nitrate (asN)	150 152	CANBERRA	992	Nitrite (asN)	150	CANBERRA	992
T.Oxid Nit(asN)	150	CANBERRA	992	Total Phenolics	EP035	ALS_SYD	825	Depth to Water	N/A#	CANBERRA	992
Temp/DO/pH/Cond	371	CANBERRA	992								

Temperature on receipt at Lab: 12.5

**Sampling**

Sampling was carried out by the following accredited samplers.

**Signatories**

These results have been electronically signed by the authorised signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11. Any subcontracted analyses have been authorised by approved signatories at their respective laboratories.

Name	Title	Name	Title	Name	Title	Name	Title
Anthony Freeman	Sampler	Chau Lethitran	Nutrients	Damien Badowski	Senior Sampler	Geetha Ramasundera	Chemistry
		Shane Reynolds	Laboratory Manager	Terry O'Brien	Supervisor Nutrients		

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 Batch No: MUGGA\_128339  
 Report Number: MUGGA\_128339\_MKOK5  
 Client: Remondis Australia Pty Ltd  
 Client Ref: Mugga Landfill 3 monthly



<b>Analytical Results</b>				<b>Sample No.</b>	<b>962338</b>	<b>962339</b>	<b>962340</b>	<b>962341</b>	<b>962342</b>	<b>962343</b>	<b>962344</b>
				SR Dam	Bore 4	Bore 5	Bore 6	Bore 12	Bore 14	Bore 15	
				1							
				<b>Client Sample ID.</b>	<b>Mugga SR Dam 1</b>	<b>Bore 4</b>	<b>Bore 5</b>	<b>Bore 6</b>	<b>Bore 12</b>	<b>Bore 14</b>	
				<b>Sample Point.</b>	MGSR01	MGB204	MGB205	MGB206	MGB312	MGB314	MGB115
				<b>Sample Date.</b>	05-Nov-2013 2:00:00PM	06-Nov-2013 3:50:00PM	06-Nov-2013 4:00:00PM	06-Nov-2013 4:10:00PM	05-Nov-2013 10:10:00AM	06-Nov-2013 3:25:00PM	06-Nov-2013 3:40:00PM
<b>Analysis</b>	<b>Analyte</b>	<b>LOR</b>	<b>Units</b>								
Ammonia (asN)	Ammonia	<0.1	mg/L N	1.1	<0.1	<0.1	<0.1	1.5	<0.1	<0.1	
Depth to Water	Depth_to_Water_Level	<0.01	m		3.79	3.80	2.80	1.16	1.29	4.28	
	Depth_to_Water_Sampling	<0.01	m		3.79	3.80	2.90	2.19	1.31	4.28	
Nitrate (asN)	Nitrate	<0.01	mg/L N	0.85							
Nitrite (asN)	Nitrite	<0.01	mg/L N	0.10							
Susp.Solids	Susp_solids	<2	mg/L	63							
T.Oxid Nit(asN)	Oxidised_N	<0.05	mg/L N	0.95							
Temp/DO/pH/Cond	Temp	<0.1	deg C	28.9	15.5	15.1	14.7	18.8	16.5	16.9	
	Diss_Oxygen	<0.1	mg/L	6.2	5.0	3.2	3.7	0.7	6.3	2.9	
	pH	<0.1	pH units	7.4	7.3	7.0	7.0	6.2	6.6	6.9	
	Conductance	<0.1	uS/cm	750	1000	1300	1100	610	520	1700	
TOC (as NPOC)	TOC	<1	mg/L	23	9	9	9	13	8	7	
Total Phenolics	Phenolics Total	<0.05	mg/L	<0.05							

<b>Analytical Results</b>				<b>Sample No.</b>	<b>962345</b>	<b>962346</b>	<b>962347</b>	<b>962348</b>	<b>962349</b>	<b>962350</b>	<b>962351</b>
				Bore 16	Bore 17	Bore 18	Bore 19	Bore 20	Bore 21	Bore 22	
								<b>Bore 20</b>	<b>Mugga Bore 2.6</b>	<b>Mugga Bore 2.6</b>	
				<b>Client Sample ID.</b>	MGBR16	MGBL17	MGBL18	MGBL19	MGB20	MGB21	MGB22
				<b>Sample Point.</b>							
				<b>Sample Date.</b>	05-Nov-2013 9:45:00AM	05-Nov-2013 11:00:00AM	05-Nov-2013 12:00:00AM	05-Nov-2013 11:15:00AM	05-Nov-2013 10:30:00AM	05-Nov-2013 12:00:00AM	05-Nov-2013 9:00:00AM
<b>Analysis</b>	<b>Analyte</b>	<b>LOR</b>	<b>Units</b>								
Ammonia (asN)	Ammonia	<0.1	mg/L N	0.1	<0.1		<0.1	0.2			
Depth to Water	Depth_to_Water_Level	<0.01	m	2.49	1.11		1.18	1.11		0.98	
	Depth_to_Water_Sampling	<0.01	m	2.61	1.92		1.18	3.26		0.98	
Status	Status	N/A				Bore kinked.			Bore dry.		
Temp/DO/pH/Cond	Temp	<0.1	deg C	14.2	15.8		15.2	14.9			
	Diss_Oxygen	<0.1	mg/L	0.5	0.2		0.1	1.7			
	pH	<0.1	pH units	6.3	6.0		6.6	6.9			
	Conductance	<0.1	uS/cm	1900	1500		1900	1800			
TOC (as NPOC)	TOC	<1	mg/L	34	6		8	8			

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Batch No: MUGGA\_128339  
Report Number: MUGGA\_128339\_MKOK5  
Client: Remondis Australia Pty Ltd  
Client Ref: Mugga Landfill 3 monthly

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*These samples were analysed as received into the Laboratory.*

*Tests marked # are not NATA accredited.*

*A blank space indicates no test performed. A 'P' indicates results are pending authorisation*

*Soil results expressed in mg/kg dry weight unless specified otherwise*

*Gross Alpha/Beta and Radium results are Acid Extractable values, at time of analysis.*

*LOR = Limit of reporting. When a reported LOR is higher than the standard LOR, this may due to high moisture content, insufficient sample or matrix interference.*

*The analytical procedures in this report (including house methods) are developed from internationally recognised procedures such as those published by USEPA, APHA and NEPM*

*Pres\_Count means presumptive count. Conf\_Count means confirmed count*

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 Batch No: MUGGA\_129516  
 Report Number: MUGGA\_129516\_NCLK1  
 Client: Remondis Australia Pty Ltd  
 Client Ref: Mugga Landfill 12 monthly February



**Analytical Results**

			Sample No.	974141	974142	974143	974144	974145	974146	974147
			Client Sample ID.	Bore 15	Bore 16	Bore 17	Bore 18	Bore 19	Bore 20	Bore 21
			Sample Point.	MGB115	MGBR16	MGBL17	MGBL18	MGBL19	Bore 20	Mugga Bore 2.6
			Sample Date.	28-Feb-2014 10:10:00AM	28-Feb-2014 8:30:00AM	28-Feb-2014 9:25:00AM	28-Feb-2014 12:00:00AM	28-Feb-2014 10:00:00AM	28-Feb-2014 9:40:00AM	28-Feb-2014 12:00:00AM
Analysis	Analyte	LOR	Units							
Ammonia (asN)	Ammonia	<0.1	mg/L N	<0.1	<0.1	<0.1		<0.1	<0.1	
Depth to Water	Depth_to_Water_Level	<0.01	m	3.26	2.23	1.16		1.1	1.1	
	Depth_to_Water_Sampling	<0.01	m	3.26	2.68	1.17		1.1	1.1	
Diss. Arsenic	Diss_As	<1	ug/L	2	2	<1		2	2	
Diss. Cadmium	Diss_Cd	<0.05	ug/L	<0.05	<0.05	<0.05		<0.05	<0.05	
Diss. Chromium	Diss_Cr	<2	ug/L	<2	<2	<2		<2	<2	
Diss. Copper	Diss_Cu	<0.5	ug/L	0.9	2.6	0.6		0.9	1.1	
Diss. Iron	Diss_Fe	<0.01	mg/L	<0.01	2.2	<0.01		<0.01	<0.01	
Diss. Lead	Diss_Pb	<0.05	ug/L	<0.05	<0.05	0.13		<0.05	<0.05	
Diss. Mercury	Diss_Hg	<0.1	ug/L	<0.1	<0.1	<0.1		0.1	<0.1	
Faecal Coliform	Pres_Count	<1	CFU/100mL	4	880	6		<2	<2	
Env.	Conf_Count	<1	CFU/100mL	4	700	4		<2	<2	
Nitrate (asN)	Nitrate	<0.01	mg/L N	0.33	<0.05	<0.05		2.8	2.0	
Nitrite (asN)	Nitrite	<0.01	mg/L N	<0.01	<0.01	<0.01		<0.01	<0.01	
OC Pesticides	Aldrin	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	alpha-BHC	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	beta-BHC	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	delta-BHC	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	4,4'-DDD	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	4,4'-DDE	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	4,4'-DDT	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	Dieldrin	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	alpha-Endosulfan	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	beta-Endosulfan	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	Endosulfan sulfate	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	Endrin	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	Endrin aldehyde	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	Endrin ketone	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	Heptachlor	<0.005	ug/L	<0.005	<0.005	<0.005		<0.005	<0.005	
	Heptachlor epoxide	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	Hexachlorobenzene (HCB)	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	gamma-BHC	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	Methoxychlor	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	cis-Chlordane	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	

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 Report Number: MUGGA\_129516\_NCLK1  
 Client: Remondis Australia Pty Ltd  
 Client Ref: Mugga Landfill 12 monthly February



				974141	974142	974143	974144	974145	974146	974147
				Bore 15	Bore 16	Bore 17	Bore 18	Bore 19	Bore 20	Bore 21
									Bore 20	Mugga Bore 2.6
				MGB115	MGBR16	MGBL17	MGBL18	MGBL19	MGB20	MGB21
				28-Feb-2014 10:10:00AM	28-Feb-2014 8:30:00AM	28-Feb-2014 9:25:00AM	28-Feb-2014 12:00:00AM	28-Feb-2014 10:00:00AM	28-Feb-2014 9:40:00AM	28-Feb-2014 12:00:00AM
OC Pesticides	trans-Chlordane	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
	Oxychlordane	<0.010	ug/L	<0.010	<0.010	<0.010		<0.010	<0.010	
PCBs	Total PCB	<1	ug/l	<1	<1	<1		<1	<1	
	Aroclor 1016	<1	ug/l	<1	<1	<1		<1	<1	
	Aroclor 1221	<1	ug/l	<1	<1	<1		<1	<1	
	Aroclor 1232	<1	ug/l	<1	<1	<1		<1	<1	
	Aroclor 1242	<1	ug/l	<1	<1	<1		<1	<1	
	Aroclor 1248	<1	ug/l	<1	<1	<1		<1	<1	
	Aroclor 1254	<1	ug/l	<1	<1	<1		<1	<1	
	Aroclor 1260	<1	ug/l	<1	<1	<1		<1	<1	
Aroclor 1262	N/A	ug/l	<1	<1	<1		<1	<1		
Status	Status	N/A					Kinked			Dry
T.Oxid Nit(asN)	Oxidised_N	<0.05	mg/L N	0.33	<0.05	<0.05		2.8	2.0	
Temp/DO/pH/Cond	Temp	<0.1	deg C	17.9	18.5	19.0		18.4	18.4	
	Diss_Oxygen	<0.1	mg/L	3.5	2.4	2.5		2.8	2.7	
	pH	<0.1	pH units	6.5	6.3	6.5		6.6	6.5	
	Conductance	<0.1	uS/cm	1900	1500	1500		2000	1800	
TOC (as NPOC)	TOC	<1	mg/L	5	38	6		4	4	
Total Petroleum Hyd	C6 - C9 Fraction	<20	ug/L	<20	<20	<20		<20	<20	
	C10 - C14 Fraction	<50	ug/L	<50	<50	<50		<50	<50	
	C15 - C28 Fraction	<100	ug/L	<100	620	<100		<100	<100	
	C29 - C36 Fraction	<50	ug/L	<50	200	<50		<50	<50	
	Total_C10_C36	<50	ug/L	<50	820	<50		<50	<50	
Total Phenolics	Phenolics Total	<0.05	mg/L	<0.05	<0.05	<0.05		<0.05	<0.05	

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 Batch No: MUGGA\_129516  
 Report Number: MUGGA\_129516\_NCLK1  
 Client: Remondis Australia Pty Ltd  
 Client Ref: Mugga Landfill 12 monthly February



**Analytical Results**

<b>Sample No.</b>	974291
<b>Client Sample ID.</b>	Dog Trap Creek
<b>Sample Point.</b>	XSITE
<b>Sample Date.</b>	28-Feb-2014 2:05:04PM

Analysis	Analyte	LOR	Units	
Ammonia (asN)	Ammonia	<0.1	mg/L N	<0.1
Diss. Arsenic	Diss_As	<1	ug/L	2
Diss. Cadmium	Diss_Cd	<0.05	ug/L	<0.05
Diss. Chromium	Diss_Cr	<2	ug/L	<2
Diss. Copper	Diss_Cu	<0.5	ug/L	1.0
Diss. Iron	Diss_Fe	<0.01	mg/L	0.02
Diss. Lead	Diss_Pb	<0.05	ug/L	<0.05
Diss. Mercury	Diss_Hg	<0.1	ug/L	<0.1
Nitrate (asN)	Nitrate	<0.01	mg/L N	<0.05
Nitrite (asN)	Nitrite	<0.01	mg/L N	<0.01
OC Pesticides	a-BHC	<0.5	ug/L	<0.5
	HCB	<0.5	ug/L	<0.5
	b-BHC	<0.5	ug/L	<0.5
	g-BHC	<0.5	ug/L	<0.5
	d-BHC	<0.5	ug/L	<0.5
	Heptachlor	<0.5	ug/L	<0.5
	Aldrin	<0.5	ug/L	<0.5
	Heptachlor epoxide	<0.5	ug/L	<0.5
	Chlordane - trans	<0.5	ug/L	<0.5
	Endosulfan 1	<0.5	ug/L	<0.5
	Chlordane - cis	<0.5	ug/L	<0.5
	Dieldrin	<0.5	ug/L	<0.5
	44-DDE	<0.5	ug/L	<0.5
	Endrin	<0.5	ug/L	<0.5
	Endosulfan 2	<0.5	ug/L	<0.5
	44-DDD	<0.5	ug/L	<0.5
	Endrin aldehyde	<0.5	ug/L	<0.5
	Endosulfan sulfate	<0.5	ug/L	<0.5
	44-DDT	<2	ug/L	<2.0
	Endrin ketone	<0.5	ug/L	<0.5
Methoxychlor	<2	ug/L	<2.0	
PCBs	Total PCB	<1	ug/l	<1
	Aroclor 1016	<1	ug/l	<1
	Aroclor 1221	<1	ug/l	<1

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 Batch No: MUGGA\_129516  
 Report Number: MUGGA\_129516\_NCLK1  
 Client: Remondis Australia Pty Ltd  
 Client Ref: Mugga Landfill 12 monthly February



<b>974291</b>			
Dog Trap Creek			
XSITE			
28-Feb-2014 2:05:04PM			

PCBs	Aroclor 1232	<1	ug/l	<1
	Aroclor 1242	<1	ug/l	<1
	Aroclor 1248	<1	ug/l	<1
	Aroclor 1254	<1	ug/l	<1
	Aroclor 1260	<1	ug/l	<1
	Aroclor 1262	N/A	ug/l	<1
Susp.Solids 105°C	Susp_solids	<2	mg/L	15
T.Oxid Nit(asN)	Oxidised_N	<0.05	mg/L N	<0.05
Temp/DO/pH/Cond	Temp	<0.1	deg C	16.5
	Diss_Oxygen	<0.1	mg/L	6.7
	pH	<0.1	pH units	7.5
	Conductance	<0.1	uS/cm	1400
TOC (as NPOC)	TOC	<1	mg/L	8
Total Petroleum Hyd	C6 - C9 Fraction	<20	ug/L	<20
	C10 - C14 Fraction	<50	ug/L	<50
	C15 - C28 Fraction	<100	ug/L	<100
	C29 - C36 Fraction	<50	ug/L	<50
	Total_C10_C36	<50	ug/L	<50
Total Phenolics	Phenolics Total	<0.05	mg/L	<0.05

These samples were analysed as received into the Laboratory.

Tests marked # are not NATA accredited.

Result for pH in water tested in the Laboratory may be indicative only as holding time is generally not achievable.

A blank space indicates no test performed. A 'P' indicates results are pending authorisation

Soil results expressed in mg/kg dry weight unless specified otherwise

Gross Alpha/Beta and Radium results are Acid Extractable values, at time of analysis.

LOR = Limit of reporting. When a reported LOR is higher than the standard LOR, this may be due to high moisture content, insufficient sample or matrix interference.

The analytical procedures in this report (including house methods) are developed from internationally recognised procedures such as those published by USEPA, APHA and NEPM

Results listed as Total Metals are actually Total Recoverable Metals



NATA Accredited  
Laboratory No. 992

Accredited for  
compliance with  
ISO/IEC 17025



Environmental Division (Water Resources Group)

### CERTIFICATE OF ANALYSIS

<b>Batch No:</b>	<b>MUGGA_129516</b>	<b>Page</b>	Page 1 of 8	
<b>Final Report:</b>	MUGGA_129516_NCLK1	<b>Laboratory</b>	Canberra Laboratory	
<b>Client:</b>	<b>Remondis Australia Pty Ltd</b>	<b>Address</b>	PO Box 1834, Fyshwick, Canberra. ACT 2609.	
<b>Contact:</b>	<b>Russell Cairns</b>	<b>Phone</b>	02 6202 5401	
<b>Address:</b>	PO Box 9 Fyshwick ACT 2609	<b>Fax</b>	02 6202 5452	
		<b>Contact:</b>	Shane Reynolds Laboratory Manager EcowiseCustomerService@alsglobal.com;shane.reynolds@alsglobal.com	
<b>Client Ref:</b>	<b>Mugga Landfill 12 monthly February</b>	<b>Date Sampled:</b>	28-Feb-2014	<b>Date Samples Received:</b> 28-Feb-2014
		<b>Date Issued:</b>	<b>12-Mar-2014</b>	<b>Date Testing Commenced:</b> 28-Feb-2014
<b>Client PO:</b>	PO 2966793	<b>No. of Samples Received:</b>	<b>15</b>	<b>No. Of Samples Analysed:</b> 15

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The sample(s) referred to in this report were analysed by the following method(s):

# - NATA accreditation does not cover the performance of this service

Analysis	Method	Laboratory	NATA No.	Analysis	Method	Laboratory	NATA No.	Analysis	Method	Laboratory	NATA No.
TOC (as NPOC)	290	CANBERRA	992	Faecal Coliform Env.	550	CANBERRA	992	Status	N/A#	CANBERRA	992
Temperature	400	CANBERRA	992	Conductivity	65	CANBERRA	992	Diss. O2	170	CANBERRA	992
Susp.Solids 105°C	260	CANBERRA	992	pH	210	CANBERRA	992	Diss. Arsenic	121	CANBERRA	992
Diss. Cadmium	121	CANBERRA	992	Diss. Chromium	121	CANBERRA	992	Diss. Copper	121	CANBERRA	992
Diss. Iron	120	CANBERRA	992	Diss. Lead	121	CANBERRA	992	Diss. Mercury	121	CANBERRA	992
Ammonia (asN)	32	CANBERRA	992	Nitrate (asN)	150 152	CANBERRA	992	Nitrite (asN)	150	CANBERRA	992
T.Oxid Nit(asN)	150	CANBERRA	992	OC Pesticides	EP131A	ALS_SYD	825	OC Pesticides	EP068A	ALS_SYD	825
OC Pesticides	EP131A	ALS_SYD	825	PCBs	EP066-AR	ALS_SYD	825	Total Petroleum Hyd	EP080/071	ALS_SYD	825
Total Phenolics	EP035	ALS_SYD	825	Depth to Water	N/A#	CANBERRA	992	Temp/DO/pH/Cond	371	CANBERRA	992

Temperature on receipt at Lab: 10.2

**Sampling**

Sampling was carried out by the following accredited samplers.

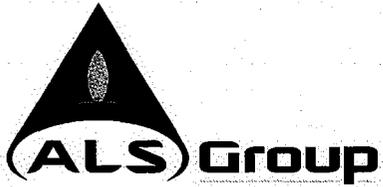
**Signatories**

These results have been electronically signed by the authorised signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11. Any subcontracted analyses have been authorised by approved signatories at their respective laboratories.

Name	Title	Name	Title	Name	Title	Name	Title
Anthony Freeman	Sampler	Amanda Gonzalez	Chemistry	Anthony Freeman	Sampler	Christopher Gauthier-Co	Biology
		Geetha Ramasundera	Chemistry	Shane Reynolds	Laboratory Manager	Terry Obrien	Supervisor Nutrients







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Environmental Division (Water Resources Group)

### CERTIFICATE OF ANALYSIS

<b>Batch No:</b>	<b>MUGGA_130197</b>	<b>Page</b>	Page 1 of 4	
<b>Final Report:</b>	MUGGA_130197_NEK1	<b>Laboratory</b>	Canberra Laboratory	
<b>Client:</b>	<b>Remondis Australia Pty Ltd</b>	<b>Address</b>	PO Box 1834, Fyshwick, Canberra. ACT 2609.	
<b>Contact:</b>	<b>Russell Cairns</b>	<b>Phone</b>	02 6202 5408	
<b>Address:</b>	PO Box 9 Fyshwick ACT 2609	<b>Fax</b>	02 6202 5452	
<b>Client Ref:</b>	<b>Mugga Landfill 3 monthly</b>	<b>Contact:</b>	Ramya Watawala Supervisor QC EcowiseCustomerService@alsglobal.com;ramya.watawala@alsglobal.com	
<b>Client PO:</b>	PO 3284784	<b>Date Sampled:</b>	20-May-2014	<b>Date Samples Received:</b> 20-May-2014
		<b>Date Issued:</b>	<b>29-May-2014</b>	<b>Date Testing Commenced:</b> 20-May-2014
		<b>No. of Samples Received:</b>	12	<b>No. Of Samples Analysed:</b> 12

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The sample(s) referred to in this report were analysed by the following method(s):

# - NATA accreditation does not cover the performance of this service

Analysis	Method	Laboratory	NATA No.	Analysis	Method	Laboratory	NATA No.	Analysis	Method	Laboratory	NATA No.
TOC (as NPOC)	290	CANBERRA	992	TSS 104°C +/- 1°C	260	CANBERRA	992	Ammonia (asN)	32	CANBERRA	992
Nitrate (asN)	150 152	CANBERRA	992	Nitrite (asN)	150	CANBERRA	992	T.Oxid Nit(asN)	150	CANBERRA	992
Total Phenolics	EP035	ALS_SYD	825	Depth to Water	N/A#	CANBERRA	992	Temp/DO/pH/Cond	371	CANBERRA	992

Bore 18 still kinked, bore 21 dry. DB 20/05/14.

Temperature on receipt at Lab: 14.4

**Sampling**

Sampling was carried out by the following accredited samplers.

**Signatories**

These results have been electronically signed by the authorised signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11. Any subcontracted analyses have been authorised by approved signatories at their respective laboratories.

Name	Title	Name	Title	Name	Title	Name	Title
Damien Badowski	Senior Sampler	Chau Lethitran	Nutrients	Damien Badowski	Senior Sampler	Geetha Ramasundara	Chemistry
		Ramya Watawala	Supervisor QC	Terry Obrien	Supervisor Nutrients		

Page: 3 of 4  
 Batch No: MUGGA\_130197  
 Report Number: MUGGA\_130197\_NEK1  
 Client: Remondis Australia Pty Ltd  
 Client Ref: Mugga Landfill 3 monthly



**Analytical Results**

				Sample No.	980568	980569	980570	980571	980572	980573	980574
				Client Sample ID.	SR Dam 1	Bore 4	Bore 5	Bore 6	Bore 12	Bore 14	Bore 15
				Sample Point.	Mugga SR Dam 1	Bore 4	Bore 5	Bore 6	Bore 12	Bore 14	
				Sample Date.	MGSR01	MGB204	MGB205	MGB206	MGB312	MGB314	MGB115
				20-May-2014	20-May-2014	20-May-2014	20-May-2014	20-May-2014	20-May-2014	20-May-2014	20-May-2014
				9:50:00AM	9:33:00AM	9:36:00AM	9:41:00AM	8:55:00AM	10:07:00AM	9:26:00AM	
Analysis	Analyte	LOR	Units								
Ammonia (asN)	Ammonia	<0.1	mg/L N	1.6	<0.1	<0.1	0.1	4.4	<0.1	<0.1	
Depth to Water	Depth_to_Water_Level	<0.01	m		3.51	3.55	2.64	0.83	1.60	3.88	
	Depth_to_Water_Sampling	<0.01	m		4.00	3.55	2.70	0.84	1.60	4.00	
Nitrate (asN)	Nitrate	<0.01	mg/L N	0.13							
Nitrite (asN)	Nitrite	<0.01	mg/L N	0.04							
T.Oxid Nit(asN)	Oxidised_N	<0.05	mg/L N	0.17							
Temp/DO/pH/Cond	Temp	<0.1	deg C	13.1	17.1	17.1	17.4	18.1	15.0	18.0	
	Diss_Oxygen	<0.1	mg/L	5.7	4.1	3.6	3.3	3.3	5.8	3.4	
	pH	<0.1	pH units	7.8	6.9	6.9	6.9	6.1	6.7	6.7	
	Conductance	<0.1	uS/cm	760	1100	1300	970	1100	570	1700	
TOC (as NPOC)	TOC	<1	mg/L	24	8	8	9	26	9	6	
Total Phenolics	Phenolics Total	<0.05	mg/L	<0.05							
TSS 104°C +/- 1°C	Susp_solids	<2	mg/L	19							

**Analytical Results**

				Sample No.	980575	980576	980578	980579	980581
				Client Sample ID.	Bore 16	Bore 17	Bore 19	Bore 20	Bore 22
				Sample Point.				Bore 20	Mugga Bore 2.6
				Sample Date.	MGBR16	MGBL17	MGBL19	MGB20	MGB22
				20-May-2014	20-May-2014	20-May-2014	20-May-2014	20-May-2014	20-May-2014
				10:30:00AM	9:10:00AM	9:21:00AM	9:05:00AM	10:45:00AM	
Analysis	Analyte	LOR	Units						
Ammonia (asN)	Ammonia	<0.1	mg/L N	<0.1	<0.1	<0.1	<0.1	<0.1	
Depth to Water	Depth_to_Water_Level	<0.01	m	2.41	1.02	1.03	1.04	1.37	
	Depth_to_Water_Sampling	<0.01	m	2.50	1.00	1.00	1.00	1.37	
Temp/DO/pH/Cond	Temp	<0.1	deg C	17.6	16.1	15.9	15.0		
	Diss_Oxygen	<0.1	mg/L	3.2	2.9	2.8	4.4		
	pH	<0.1	pH units	6.5	6.8	6.7	6.6		
	Conductance	<0.1	uS/cm	1300	1500	1900	1700		
TOC (as NPOC)	TOC	<1	mg/L	29	8	7	6		

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Batch No: MUGGA\_130197  
Report Number: MUGGA\_130197\_NEK1  
Client: Remondis Australia Pty Ltd  
Client Ref: Mugga Landfill 3 monthly

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*These samples were analysed as received into the Laboratory.*

*Tests marked # are not NATA accredited.*

*Result for pH in water tested in the Laboratory may be indicative only as holding time is generally not achievable.*

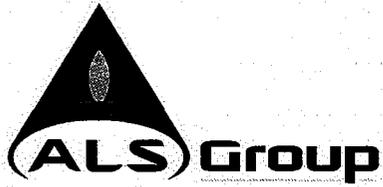
*A blank space indicates no test performed. A 'P' indicates results are pending authorisation*

*Soil results expressed in mg/kg dry weight unless specified otherwise*

*Gross Alpha/Beta and Radium results are Acid Extractable values, at time of analysis.*

*LOR = Limit of reporting. When a reported LOR is higher than the standard LOR, this may be due to high moisture content, insufficient sample or matrix interference.*

*The analytical procedures in this report (including house methods) are developed from internationally recognised procedures such as those published by USEPA, APHA and NEPM*



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Environmental Division (Water Resources Group)

### CERTIFICATE OF ANALYSIS

<b>Batch No:</b>	<b>MUGGA_130944</b>	<b>Page</b>	Page 1 of 6	
<b>Final Report:</b>	MUGGA_130944_NIBK3	<b>Laboratory</b>	Canberra Laboratory	
<b>Client:</b>	Remondis Australia Pty Ltd	<b>Address</b>	PO Box 1834, Fyshwick, Canberra. ACT 2609.	
<b>Contact:</b>	Russell Cairns	<b>Phone</b>	02 6202 5408	
<b>Address:</b>	PO Box 9 Fyshwick ACT 2609	<b>Fax</b>	02 6202 5452	
<b>Client Ref:</b>	Mugga Landfill 6 monthly August	<b>Contact:</b>	Ramy Watawala Supervisor QC EcwiseCustomerService@alsglobal.com;ramya.watawala@alsglobal.com	
<b>Client PO:</b>	PO 3284784	<b>Date Sampled:</b>	13-Aug-2014	<b>Date Samples Received:</b> 13-Aug-2014
		<b>Date Issued:</b>	<b>02-Sep-2014</b>	<b>Date Testing Commenced:</b> 13-Aug-2014
		<b>No. of Samples Received:</b>	12	<b>No. Of Samples Analysed:</b> 12

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Environmental Division Canberra ABN 84 009 936 028 Part of the ALS Group

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The sample(s) referred to in this report were analysed by the following method(s):

# - NATA accreditation does not cover the performance of this service

Analysis	Method	Laboratory	NATA No.	Analysis	Method	Laboratory	NATA No.	Analysis	Method	Laboratory	NATA No.
TOC (as NPOC)	290	CANBERRA	992	Faecal Coliform Env.	550	CANBERRA	992	Temperature	400	CANBERRA	992
Conductivity	65	CANBERRA	992	Diss. O2	170	CANBERRA	992	TSS 104°C +/- 1°C	260	CANBERRA	992
pH	210	CANBERRA	992	Diss. Arsenic	121	CANBERRA	992	Diss. Cadmium	121	CANBERRA	992
Diss. Chromium	121	CANBERRA	992	Diss. Copper	121	CANBERRA	992	Diss. Iron	120	CANBERRA	992
Diss. Lead	121	CANBERRA	992	Diss. Mercury	121	CANBERRA	992	Ammonia (asN)	32	CANBERRA	992
Nitrate (asN)	150 152	CANBERRA	992	Nitrite (asN)	150	CANBERRA	992	T.Oxid Nit(asN)	150	CANBERRA	992
OC Pesticides	EP131A	ALS_SYD	825	Total Phenolics	EP035	ALS_SYD	825	Depth to Water	N/A#	CANBERRA	992
Temp/DO/pH/Cond	371	CANBERRA	992								

Temperature on receipt at Lab: 11.4

**Sampling**

Sampling was carried out by the following accredited samplers.

**Signatories**

These results have been electronically signed by the authorised signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11. Any subcontracted analyses have been authorised by approved signatories at their respective laboratories.

Name	Title	Name	Title	Name	Title	Name	Title
Camilla Brent	Sampler	Amanda Gonzalez	Chemistry	Chau Lethitran	Nutrients	Damien Badowski	Senior Sampler
		Geetha Ramasundara	Chemistry	Ramya Watawala	Supervisor QC	Shane Reynolds	Laboratory Manager



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 Batch No: MUGGA\_130944  
 Report Number: MUGGA\_130944\_NIBK3  
 Client: Remondis Australia Pty Ltd  
 Client Ref: Mugga Landfill 6 monthly August



				987503	987504	987505	987506	987507	987508	987509
				SR Dam 1	Leach. Dam 2	Bore 4	Bore 5	Bore 6	Bore 12	Bore 14
				<b>Mugga SR Dam 1</b>	<b>Leachate Dam 2</b>	<b>Bore 4</b>	<b>Bore 5</b>	<b>Bore 6</b>	<b>Bore 12</b>	<b>Bore 14</b>
				MGSR01	MGLD02	MGB204	MGB205	MGB206	MGB312	MGB314
				13-Aug-2014 12:40:00PM	13-Aug-2014 11:30:00AM	13-Aug-2014 12:00:00PM	13-Aug-2014 12:10:00PM	13-Aug-2014 12:20:00PM	13-Aug-2014 9:45:00AM	13-Aug-2014 1:15:00PM
OC Pesticides	gamma-BHC	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
	Methoxychlor	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
	cis-Chlordane	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
	trans-Chlordane	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
	Oxychlorane	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
pH	pH	<0.1	pH units		8.0					
T.Oxid Nit(asN)	Oxidised_N	<0.05	mg/L N	0.98	10	<0.05	<0.05	0.06	<0.05	<0.05
Temp/DO/pH/Cond	Temp	<0.1	deg C	9.7		15.0	14.8	14.2	12.7	10.8
	Diss_Oxygen	<0.1	mg/L	10.2		4.3	4.1	4.1	3.0	6.9
	pH	<0.1	pH units	7.8		7.1	6.9	7.0	6.2	6.5
	Conductance	<0.1	uS/cm	890		1100	1200	1300	840	530
Temperature	Temp	<0.1	deg C		9.2					
TOC (as NPOC)	TOC	<1	mg/L	22	120	17	16	21	18	11
Total Phenolics	Phenolics Total	<0.05	mg/L	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05
TSS 104°C +/- 1°C	Susp_solids	<2	mg/L	16	41					

**Analytical Results**

				Sample No.	987510	987511	987512	987514	987515
				Client Sample ID.	Bore 15	Bore 16	Bore 17	Bore 19	Bore 20
				Sample Point.					<b>Bore 20</b>
				Sample Date.	MGB115	MGBR16	MGBL17	MGBL19	MGB20
					13-Aug-2014 11:45:00AM	13-Aug-2014 1:30:00PM	13-Aug-2014 11:00:00AM	13-Aug-2014 11:15:00AM	13-Aug-2014 10:45:00AM
Analysis	Analyte	LOR	Units						
Ammonia (asN)	Ammonia	<0.1	mg/L N	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Depth to Water	Depth_to_Water_Level	<0.01	m	3.70	2.72	0.93	0.89	0.83	
	Depth_to_Water_Sampling	<0.01	m	3.69	2.30	1.02	1.04	0.91	
Diss. Arsenic	Diss_As	<1	ug/L	4	2	1	2	2	
Diss. Cadmium	Diss_Cd	<0.05	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	
Diss. Chromium	Diss_Cr	<2	ug/L	2	<2	<2	<2	<2	
Diss. Copper	Diss_Cu	<0.5	ug/L	0.6	0.6	0.6	<0.5	0.9	
Diss. Iron	Diss_Fe	<0.01	mg/L	<0.01	2.2	0.01	<0.01	<0.01	
Diss. Lead	Diss_Pb	<0.05	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	
Diss. Mercury	Diss_Hg	<0.1	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Faecal Coliform	Pres_Count	<1	CFU/100mL	<2	<2	<2	<2	<2	

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 Batch No: MUGGA\_130944  
 Report Number: MUGGA\_130944\_NIBK3  
 Client: Remondis Australia Pty Ltd  
 Client Ref: Mugga Landfill 6 monthly August



				987510	987511	987512	987514	987515
				Bore 15	Bore 16	Bore 17	Bore 19	Bore 20
				MGB115	MGBR16	MGBL17	MGBL19	MGB20
				13-Aug-2014 11:45:00AM	13-Aug-2014 1:30:00PM	13-Aug-2014 11:00:00AM	13-Aug-2014 11:15:00AM	13-Aug-2014 10:45:00AM
Faecal Coliform	Conf_Count	<1	CFU/100mL	<2	<2	<2	<2	<2
Nitrate (asN)	Nitrate	<0.01	mg/L N	0.38	<0.05	<0.05	3.0	0.79
Nitrite (asN)	Nitrite	<0.01	mg/L N	<0.01	<0.01	<0.01	<0.01	<0.01
OC Pesticides	Aldrin	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	alpha-BHC	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	beta-BHC	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	delta-BHC	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	4,4'-DDD	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	4,4'-DDE	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	4,4'-DDT	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	Dieldrin	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	alpha-Endosulfan	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	beta-Endosulfan	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	Endosulfan sulfate	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	Endrin	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	Endrin aldehyde	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	Endrin ketone	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	Heptachlor	<0.005	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005
	Heptachlor epoxide	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	Hexachlorobenzene (HCB)	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	gamma-BHC	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	Methoxychlor	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
	cis-Chlordane	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010
trans-Chlordane	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Oxychlordane	<0.010	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	
T.Oxid Nit(asN)	Oxidised_N	<0.05	mg/L N	0.38	<0.05	<0.05	3.0	0.79
Temp/DO/pH/Cond	Temp	<0.1	deg C	15.8	12.3	12.5	12.8	11.2
	Diss_Oxygen	<0.1	mg/L	3.5	3.1	3.9	2.9	3.8
	pH	<0.1	pH units	6.7	6.6	6.8	6.9	6.3
	Conductance	<0.1	uS/cm	1900	1600	1600	1900	1900
TOC (as NPOC)	TOC	<1	mg/L	25	37	20	14	9
Total Phenolics	Phenolics Total	<0.05	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05

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Batch No: MUGGA\_130944  
Report Number: MUGGA\_130944\_NIBK3  
Client: Remondis Australia Pty Ltd  
Client Ref: Mugga Landfill 6 monthly August

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*These samples were analysed as received into the Laboratory.*

*Tests marked # are not NATA accredited.*

*Result for pH in water tested in the Laboratory may be indicative only as holding time is generally not achievable.*

*A blank space indicates no test performed. A 'P' indicates results are pending authorisation*

*Soil results expressed in mg/kg dry weight unless specified otherwise*

*Gross Alpha/Beta and Radium results are Acid Extractable values, at time of analysis.*

*LOR = Limit of reporting. When a reported LOR is higher than the standard LOR, this may be due to high moisture content, insufficient sample or matrix interference.*

*The analytical procedures in this report (including house methods) are developed from internationally recognised procedures such as those published by USEPA,*

*APHA and NEPM*

*Results listed as Total Metals are actually Total Recoverable Metals*



NATA Accredited  
Laboratory No. 992

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Environmental Division (Water Resources Group)

### CERTIFICATE OF ANALYSIS

<b>Batch No:</b>	<b>MUGGA_131583</b>	<b>Page</b>	Page 1 of 4	
<b>Final Report:</b>	MUGGA_131583_NKQK2	<b>Laboratory</b>	Canberra Laboratory	
<b>Client:</b>	<b>Remondis Australia Pty Ltd</b>	<b>Address</b>	PO Box 1834, Fyshwick, Canberra. ACT 2609.	
<b>Contact:</b>	<b>Russell Cairns</b>	<b>Phone</b>	02 6202 5408	
<b>Address:</b>	PO Box 9 Fyshwick ACT 2609	<b>Fax</b>	02 6202 5452	
<b>Client Ref:</b>	<b>Mugga Landfill 3 monthly</b>	<b>Contact:</b>	Ramy Watawala Supervisor QC EcwiseCustomerService@alsglobal.com;ramya.watawala@alsglobal.com	
<b>Client PO:</b>	PO 3284784	<b>Date Sampled:</b>	04-Nov-2014	<b>Date Samples Received:</b> 04-Nov-2014
		<b>Date Issued:</b>	<b>17-Nov-2014</b>	<b>Date Testing Commenced:</b> 04-Nov-2014
		<b>No. of Samples Received:</b>	<b>14</b>	<b>No. Of Samples Analysed:</b> 14

Address 16B Lithgow Street Canberra ACT Australia 2602 | PHONE +61-2-6202 5400 | Facsimile +61-2-6202 5452  
Environmental Division Canberra ABN 84 009 936 029 Part of the ALS Group

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The sample(s) referred to in this report were analysed by the following method(s):

# - NATA accreditation does not cover the performance of this service

Analysis	Method	Laboratory	NATA No.	Analysis	Method	Laboratory	NATA No.	Analysis	Method	Laboratory	NATA No.
TOC (as NPOC)	290	CANBERRA	992	Status	N/A#	CANBERRA	992	TSS 104°C +/- 1°C	260	CANBERRA	992
Ammonia (asN)	32	CANBERRA	992	Nitrate (asN)	150 152	CANBERRA	992	Nitrite (asN)	150	CANBERRA	992
T.Oxid Nit(asN)	150	CANBERRA	992	Total Phenolics	EP035	ALS_SYD	825	Depth to Water	N/A#	CANBERRA	992
Temp/DO/pH/Cond	371	CANBERRA	992								

BH18 kinked, BH21 missing. DB 04/11/14.

Temperature on receipt at Lab: 14.1

**Sampling**

Sampling was carried out by the following accredited samplers.

**Signatories**

These results have been electronically signed by the authorised signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11. Any subcontracted analyses have been authorised by approved signatories at their respective laboratories.

Name	Title	Name	Title	Name	Title	Name	Title
Damien Badowski	Senior Sampler	Chau Lethitran	Nutrients	Damien Badowski	Senior Sampler	Geetha Ramasundara	Chemistry
		Ramya Watawala	Supervisor QC	Terry Obrien	Supervisor Nutrients		

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 Client: Remondis Australia Pty Ltd  
 Client Ref: Mugga Landfill 3 monthly



**Analytical Results**

				Sample No.	993897	993898	993899	993900	993901	993902	993903
				Client Sample ID.	SR Dam 1	Bore 4	Bore 5	Bore 6	Bore 12	Bore 14	Bore 15
				Sample Point.	Mugga SR Dam 1	Bore 4	Bore 5	Bore 6	Bore 12	Bore 14	
				Sample Date.	MGSR01	MGB204	MGB205	MGB206	MGB312	MGB314	MGB115
					04-Nov-2014 11:30:00AM	04-Nov-2014 11:00:00AM	04-Nov-2014 11:05:00AM	04-Nov-2014 11:10:00AM	04-Nov-2014 9:55:00AM	04-Nov-2014 11:40:00AM	04-Nov-2014 10:40:00AM
Analysis	Analyte	LOR	Units								
Ammonia (asN)	Ammonia	<0.1	mg/L N	1.3	<0.1	<0.1	<0.1	<0.1	3.6	<0.1	<0.1
Depth to Water	Depth_to_Water_Level	<0.01	m		3.60	3.67	2.67	0.91	1.15	3.84	
	Depth_to_Water_Sampling	<0.01	m		3.57	3.65	2.65	1.08	1.10	3.85	
Nitrate (asN)	Nitrate	<0.01	mg/L N	0.43							
Nitrite (asN)	Nitrite	<0.01	mg/L N	0.07							
T.Oxid Nit(asN)	Oxidised_N	<0.05	mg/L N	0.50							
Temp/DO/pH/Cond	Temp	<0.1	deg C	20.4	16.9	17.7	14.9	17.4	16.0	16.9	
	Diss_Oxygen	<0.1	mg/L	7.3	5.5	5.0	3.7	4.3	6.6	4.0	
	pH	<0.1	pH units	8.0	7.1	7.0	6.9	6.3	6.7	6.9	
	Conductance	<0.1	uS/cm	990	1100	1200	1100	810	580	1700	
TOC (as NPOC)	TOC	<1	mg/L	19	8	8	8	18	9	5	
Total Phenolics	Phenolics Total	<0.05	mg/L	<0.05							
TSS 104°C +/- 1°C	Susp_solids	<2	mg/L	8							

**Analytical Results**

				Sample No.	993904	993905	993906	993907	993908	993909	993910
				Client Sample ID.	Bore 16	Bore 17	Bore 18	Bore 19	Bore 20	Bore 21	Bore 22
				Sample Point.					Bore 20	Mugga Bore 2.6	Mugga Bore 2.6
				Sample Date.	MGBR16	MGBL17	MGBL18	MGBL19	MGB20	MGB21	MGB22
					04-Nov-2014 12:00:00PM	04-Nov-2014 10:20:00AM	04-Nov-2014 2:09:00PM	04-Nov-2014 10:30:00AM	04-Nov-2014 10:08:00AM	04-Nov-2014 2:09:00PM	04-Nov-2014 9:40:00AM
Analysis	Analyte	LOR	Units								
Ammonia (asN)	Ammonia	<0.1	mg/L N	0.1	<0.1		<0.1	<0.1			
Depth to Water	Depth_to_Water_Level	<0.01	m	2.21	1.09		1.14	1.09			0.71
	Depth_to_Water_Sampling	<0.01	m	2.20	1.07		1.14	1.06			0.71
Status	Status	N/A					Bore kinked			Bore missing	
Temp/DO/pH/Cond	Temp	<0.1	deg C	15.5	16.6		15.8	15.6			
	Diss_Oxygen	<0.1	mg/L	3.8	3.6		3.4	3.7			
	pH	<0.1	pH units	6.7	6.9		6.9	6.8			
	Conductance	<0.1	uS/cm	1400	1500		2000	1700			
TOC (as NPOC)	TOC	<1	mg/L	25	6		6	7			

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Report Number: MUGGA\_131583\_NKQK2  
Client: Remondis Australia Pty Ltd  
Client Ref: Mugga Landfill 3 monthly

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*These samples were analysed as received into the Laboratory.*

*Tests marked # are not NATA accredited.*

*Result for pH in water tested in the Laboratory may be indicative only as holding time is generally not achievable.*

*A blank space indicates no test performed. A 'P' indicates results are pending authorisation*

*Soil results expressed in mg/kg dry weight unless specified otherwise*

*Gross Alpha/Beta and Radium results are Acid Extractable values, at time of analysis.*

*LOR = Limit of reporting. When a reported LOR is higher than the standard LOR, this may due to high moisture content, insufficient sample or matrix interference.*

*The analytical procedures in this report (including house methods) are developed from internationally recognised procedures such as those published by USEPA, APHA and NEPM*

*Pres\_Count means presumptive count. Conf\_Count means confirmed count*



**ACT**  
Government

Environment and  
Sustainable Development

F

Authorisation No. 0375

**AUSTRALIAN CAPITAL TERRITORY**

**ENVIRONMENTAL AUTHORISATION UNDER THE  
ENVIRONMENT PROTECTION ACT 1997**

**Note: This is a variation of the original environmental authorisation granted on 21 May 2002 and includes the variations of 24 March 2004, 5 April 2005, 31 August 2006, 23 July 2008 and 24 August 2010.**

The Environment Protection Authority (the Authority), pursuant to section 49(1) (a) of the *Environment Protection Act 1997* (the Act), hereby authorises:

Name: **Remondis Australia PTY LTD**  
ABN: **95 002 429 781**  
ACN: **002 429 781**  
Street: **PO Box 9**  
Suburb: **FYSHWICK ACT**  
Postcode: **2609**

to conduct the following activity/activities:

- **the operation of a commercial landfill facility that receives, or is intended to be received, by the operator to receive, more than 5000t of waste per year.**

For the purpose: operation of a commercial landfill facility:

On: Block: **part of Block 2114 as detailed in Attachment A.**  
District: **Jerrabomberra ACT**

for: the operation of a commercial landfill facility.

subject to the conditions set out in **Schedules 1 and 2** attached, for an unlimited period or until earlier surrendered by Remondis Australia Pty Ltd or cancelled or suspended by the Authority.

This is a **standard** environmental authorisation. This authorisation will be reviewed annually.

.....  
Delegate for the Environment Protection Authority

Dated this 20<sup>th</sup> day of September 2012

## SCHEDULE 1: GENERAL CONDITIONS

### Definitions

For the purposes of this Authorisation the following terms are defined as:

**Authority:** means the ACT Environment Protection Authority.

**Acceptable waste:**

- wastes as defined in Tables 1, 2 & 3 of the “ACT’s Environmental Standards: Assessment and Classification of Liquid and Non-liquid Wastes (June 2000)”.
- material classified by the Authority as inert or solid waste based on the “ACT’s Environmental Standards: Assessment and Classification of Liquid and Non-liquid Wastes (June 2000)”.
- low level radioactive waste; and
- animal carcasses.

**Clean stormwater runoff:** means uncontaminated stormwater runoff from surrounding land (including rehabilitated areas of the landfill) diverted around the landfill site.

**Leachate:** means water which has percolated through or drained from putrescible wastes and is contaminated with substances other than soil particles.

**Groundwater:** means water occurring or obtained from below the surface of the ground, including water occurring in or obtained from a bore or an aquifer, but not including water occurring in or obtained from any other system for the distribution, reticulation, transportation, storage or treatment of water or waste.

**Rainfall event:** means any rainfall which leads to the sediment retention dams being filled to greater than twenty per cent of their capacity.

**Stormwater runoff:** means water which drains off the surface of a catchment area during or after a fall of precipitation.

**Suitably Qualified Person:** means a person formally trained in Sampling Practices and Procedures.

**Site:** Mugga Lane Resource Management Centre - Part of Block 2114 Jerrabomberra ACT as detailed in Attachment A.

**1. Compliance with Environmental Authorisation**

1.1 The Authorisation holder shall:

(a) comply with any authorisation condition immediately where no time for compliance is stated;

(b) notify the Authority in writing within twenty-four (24) hours of becoming aware of:

- i. any event that causes, or is likely to cause, any authorisation condition to be exceeded; or
- ii. any monitoring data that show that a condition of the authorisation has been exceeded.

**2 Activities must be carried out to protect the environment**

2.1 All activities carried out on the site shall be carried out in such a manner that adverse impact on the environment is minimised.

2.2 The Authorisation holder shall comply with the requirements of the *National Environment Protection (Movement of Controlled Waste between States and Territories) Measure* in regard to the movement of controlled wastes between States and Territories.

**3 Maintenance of plant and equipment**

3.1 All plant and equipment installed or used in or on the site shall be maintained in a safe and good condition and in accordance with manufacturer's recommendations.

3.2 Records of all maintenance and repairs performed on pollution control equipment including drainage systems, interceptors, separators and infrastructure shall be kept on site for a period of two (2) years and made available to the Authority on request.

3.3 "plant and equipment" includes drainage systems, infrastructure and pollution control equipment.

**4 Environmental Practices**

4.1 The Authorisation holder shall minimise emissions to the environment by:

- (a) adopting the practises set out in **Schedule 1 and 2**.

**5 Compliance with Australian Standards and Industry Codes of Practice**

5.1 The Authorisation holder shall comply with the provisions of the following Australian Standards, Guidelines and Industry Codes of Practice provided such provisions are not in conflict with the conditions in this Authorisation, and the provisions of any policies made by the Authority.

- AS 1940 - The Storage and Handling of Flammable and Combustible Liquids, Standards Association of Australia.
- Sampling of bores shall be in accordance with the Groundwater Sampling Guidelines, Victorian Environment Protection Authority, Publication 669, April 2000.

**6 Fuel Storage**

6.1 Where there are fuel storage tanks on the premises the authorisation holder shall ensure the tanks and associated pipe work are maintained in good condition. The proposed method of demonstrating the integrity of the tanks and associated pipe should be incorporated into the authorisation holders Environment Management Plan required under clause 17 of this schedule.

6.2 Further to the provisions of clause 6.1, special requirements are applied to the abandonment of any aboveground or underground tanks and should the need arise, the Authorisation holder agrees to contact the Authority and:

**ORS Workcover**

**Dangerous Substances and Workers Compensation**

Telephone: 02 6207 0200

Facsimile: 02 6205 0336

Block B, Level 3

Callam Offices

Easty Street

WODEN ACT 2606

(GPO Box 158 CANBERRA ACT 2601)

**7 Reporting of environmental harm**

7.1 In the event that an incident has caused, is causing or is likely to cause material or serious environmental harm, whether the harm occurs on or off the premises, the Authorisation holder, their employee or agent shall report the incident to the Authority immediately after it becomes known to the Authorisation holder or to their employee or agent in accordance with clause 7.2.

7.2 The incident shall be reported to the Authority by telephoning Canberra Connect on 132 281 during and outside business hours.

- 7.3 The Authorisation holder shall notify the Authority in accordance with clause 7.2 immediately after becoming aware that land is contaminated in such a way as to present, or to be likely to present –
- (a) a significant risk of harm to human health: or
  - (b) a risk of material environmental harm or serious environmental harm.
- 7.4 All incidents and /or contamination of land (including ground and surface waters) shall be reported in writing to the Authority within twenty four hours (24) of the Authorisation holder, their employee or agent becoming aware of any environmental harm in accordance with clause 7.2.
- 7.5 The Authorisation holder, their employee or agent is required to report an incident in writing and include:
- (a) incident or activity that has caused contamination or environmental harm;
  - (b) nature of contamination and chemicals of concern;
  - (c) area affected (on or off site);
  - (d) aspects of the environment affected; and
  - (e) any other relevant information.

**8 Record of pollution complaints**

- 8.1 The Authorisation holder shall keep a record of all complaints received by its employees or its agents, in relation to pollution from, or on, the site. This record is to be provided, on request, to the Authority.

**9 Record of activity levels**

- 9.1 The Authorisation holder shall maintain the following record(s):
- (a) the amount of waste material accepted for disposal.

**10 Records to be maintained**

- 10.1 The following records will be maintained and kept by the authorisation holder for a period of five years:
- (a) field sampling record sheets and chain-of-custody forms;
  - (b) results of monitoring of soils, groundwater and sediment retention dams;
  - (c) reconciliation records for all fuels, oils and hazardous materials and wastes utilised and stored on site;
  - (d) waste disposal certificates for any hazardous wastes disposed off-site; and
  - (e) keep a legible record of all complaints received by its employees or by its agents in relation to pollution associated with the activities.

**11 Responsible employees**

- 11.1 The Authorisation holder shall authorise at least two senior employees or agents:
- (a) to speak on behalf of the Authorisation holder; and
  - (b) to provide any information or document required under this authorisation.
- 11.2 The Authorisation holder shall inform the Authority of the names and telephone numbers (including after hours numbers) of those persons within five (5) working days of this authorisation coming into force. The details may be provided by facsimile to (02) 6207 6084 or by e-mail to [environment.protection@act.gov.au](mailto:environment.protection@act.gov.au).

11.3 The Authorisation holder shall inform the Authority of any change in the information provided under this condition within five (5) working days of the change.

11.4 Any person nominated by the Authorisation holder to meet the requirements of this condition shall be readily contactable on the person's nominated telephone numbers.

**12 Authorisation shall be kept at premises**

12.1 A copy of this authorisation shall be kept at the site and shall be available for inspection by any employee or agent of the Authorisation holder working at the premises.

**13 Waste**

13.1 The Authorisation holder shall develop and implement a management system to ensure, as far as practicable, that no disposal of wastes other than those defined as acceptable waste takes place at the site.

13.2 There must be no incineration or burning of any waste at the site.

**14 Hazardous Materials**

14.1 The Authorisation holder shall store and manage hazardous materials in a manner that prevents adverse impacts on the environment. The handling and storage of hazardous materials should be addressed in the Environment Management Plan required under clause 17 of this schedule.

**15 Discharge to stormwater**

15.1 There should be no discharges to the stormwater system from the premises without prior approval from the Authority. Approved stormwater discharges are only permitted from Sediment Retention Dams.

**16 New designs and innovations**

16.1 The provisions of this Authorisation are not intended to limit the appropriate use of alternative materials, equipment, designs, or methods because they are not included.

**17 Environment Management Plan**

- 17.1 The authorisation holder shall prepare and submit an Environment Management Plan (EMP) acceptable to the Authority within three (3) months of the date of this Authorisation.
- 17.2 The EMP should identify all activities that may have an adverse impact on the environment or the potential to cause environmental harm, and detail the mechanisms employed to prevent or minimise the impact of these activities. If required, the ways in which the conduct of the activity will be altered to minimise or reduce the adverse environmental impact of the activity is to be detailed including a timetable for implementation.
- 17.3 The EMP, once accepted by the Authority is to be immediately implemented. It will also form the basis for future authorisation conditions and environmental improvements.
- 17.1 The Authorisation holder shall review the approved EMP after any major improvement or change to the site/ activity or process or every 2 years from the date of this Authorisation to ensure that the document remains current/ relevant to activities undertaken on the site. The reviewed EMP shall be submitted to the Authority within 3 months of any improvements and/ or changes or the anniversary date of this Authorisation or within 10 working days of granting a variation.

**18 Monitoring Requirements**

18.1 The Authorisation holder shall monitor sediment retention Dam 1 for the parameters and frequencies set out in Table 1.

**Table 1: Parameters and Frequencies<sup>1</sup>**

Requirement					
The Authorisation holder shall monitor for the parameters and frequencies set out.					
Parameter <sup>2</sup>	Units	Dam 1	Bores	Leachate	Dog Trap Creek/ Dam 1 spillway
pH	pH	Quarterly	Quarterly	6 monthly	Every overflow event.
Temperature	°C	Quarterly	Quarterly	6 monthly	Every overflow event.
Ammonia	mg/L	Quarterly	Quarterly	6 monthly	
Conductivity	µs/cm	Quarterly	Quarterly	6 monthly	Every overflow event.
Suspended Solids	mg/L	Quarterly		6 monthly	Every overflow event.
Dissolved Oxygen	mg/L	Quarterly		6 monthly	Every overflow event.
Total organic carbon	mg/L	Quarterly	Quarterly	6 monthly	
Thermo tolerant coliforms	cfu/100ml		6 monthly		Every overflow event.
Nitrate-nitrogen	mg/L	Quarterly	6 monthly	6 monthly	
Phenolic compounds	µg/L	Quarterly	6 monthly	6 monthly	
Arsenic	µg/L	6 monthly	6 monthly	6 monthly	
Cadmium	µg/L	6 monthly	6 monthly	6 monthly	
Copper	µg/L	6 monthly	6 monthly	6 monthly	
Iron	µg/L	6 monthly	6 monthly	6 monthly	
Lead	µg/L	6 monthly	6 monthly	6 monthly	
Mercury	µg/L	6 monthly	6 monthly	6 monthly	
Chromium	µg/L	6 monthly	6 monthly	6 monthly	
Organochlorine Pesticides Scan	µg/L	6 monthly	6 monthly	6 monthly	
Total Petroleum Hydrocarbons	mg/L	12 monthly	12 monthly	12 monthly	N/A
Polychlorinated biphenyls	µg/L	12 monthly	12 monthly	12 monthly	N/A

1. 12 monthly monitoring shall be carried out in the first quarter of the calendar year.
2. Limits of detection for certain parameters are set out in Table 2.

Table 2: Limits of detection

Parameter	Detection Limit
Arsenic	50µg/L
Cadmium	0.2µg/L
Copper	2µg/L
Lead	1µg/L
Manganese	50µg/L
Mercury	0.1µg/L
Absorbable Organic Halogens	10µg/L
Phenolic compounds	50µg/L
Organochlorine Pesticides scan <sup>1</sup>	0.01µg/L
Polychlorinated biphenyls	0.1µg/L

1 Specifically: Chlordane; DDT; Dieldrin; Aldrin; Endrin; Heptachlor; and Lindane

18.2 The Authorisation holder shall monitor Dog Trap Creek (at the drop structure below clear water pond) and Dam 1 (at the v notch) for the parameters and frequencies set out in Table 1.

18.3 The Authorisation holder shall monitor leachate Dam 2 for the water quality parameters and frequencies in Table 1. The flow of leachate into the leachate dam shall be monitored on a continuous basis.

18.4 The Authorisation holder shall monitor the following bore locations (locations are in MGA coordinates) for the parameters and frequencies set out in Table 1, excluding Bore 22 which is monitored quarterly for water depth.

Table 3: Mugga Lane Landfill ground water monitoring bores

Bore	Easting	Northing
Bore 4	695210	6081104
Bore 5	695213	6081107
Bore 6	695210	6081107
Bore 12	694228	6081686
Bore 14	694101	6081775
Bore 15	695066	6081116
Bore 16	694055	6082230
Bore 17	694626	6081070
Bore 18	694736	6081016
Bore 19	694904	6080947
Bore 20	694870	6080899
Bore 21	695077	6081483
Bore 22	693862	6082866

18.5 The Authorisation holder shall analyse a soil sample from the irrigation zone of leachate dam water annually using the parameters in Table 4 and results provided to the Authority by September each year or sooner.

**Table 4 Soil Monitoring**

Parameter	Unit
Acidity	pH
Arsenic	mg/kg
Cadmium	mg/kg
Copper	mg/kg
Lead	mg/kg
Mercury	mg/kg
Organochlorine Pesticide	µg/kg
Phenols	mg/kg
Polychlorinated biphenyls	µg/kg

1 Specifically: Chlordane; DDT; Dieldrin; Aldrin; Endrin; Heptachlor; and Lindane.

## 19 Water Quality Standards

19.1 The Authorisation holder shall manage water quality in sediment retention Dam 1 with the object of being within the limits for the parameters listed in Table 5.

**Table 5 Water Quality Parameters**

Parameter	Criteria
Suspended solids	<60mg/L
Dissolved Oxygen	>4.0mg/L
Faecal coliforms	<1000cfu/100ml
pH	6.0 to 9.0

## 20 Reporting Requirements

- 20.1 The Authorisation holder shall provide monitored data as outlined in this Authorisation to the Authority as soon as the results are available or within 15 days of collecting the samples. The data shall be provided in an electronic form as specified by the Authority.
- 20.2 The Authorisation holder shall record the following data in relation to fires occurring at the site:
- (a) Time and date when the fire started;
  - (b) Whether the fire was authorised by the licensee, and, if not, the circumstances which ignited the fire;
  - (c) The time and date that the fire burnt out or was extinguished;
  - (d) The location of the fire (e.g. clean timber stockpile, putrescible garbage cell, etc).
  - (e) Prevailing weather conditions at the time of the fire.
  - (f) Observations made in regard to smoke direction and dispersion.
  - (g) The amount of waste that was combusted by the fire.
  - (h) Actions taken to extinguish the fire; and
  - (i) Action taken to prevent a reoccurrence.

The data must be recorded on each day that the fire is burning.

- 20.3 The Authorisation holder or its employee or agent shall notify the occurrence of all fires on the site in accordance with clause 7.2 and 7.4 as soon as practical after becoming aware of the fire.

## 21 Sampling Requirements

- 21.1 All sample collection, analysis and associated paperwork under this Authorisation shall be conducted in accordance with Australian Standard/New Zealand Standard 5667.1:1998, *"Guidance on the design of sampling programs, sampling techniques and the preservation and handling of sample"*, and with the American Public Health Association, American Water Works Association, and the Water Pollution Control Federation *Standard Methods for the Examination of Water and Wastewater*, 18<sup>th</sup> Edition, 1989, or other standards and methods agreed to by the Authority.
- 21.2 The sample collection shall be undertaken by a suitably qualified person and associated paperwork shall be countersigned by a person present on the site. When required all paperwork shall be made available for inspection by the Authority. Sample analysis of parameters shall be conducted by a person employed as an analyst in any of the following organisations:
- (a) a Government laboratory;
  - (b) an Australian university;
  - (c) a laboratory where Authorisation parameters are accredited by the National Association of Testing Authorities; or
  - (d) a laboratory approved by the Authority.

**22 Total Quantity to be Accepted**

N/A

**SCHEDULE 2**

**23 Waste Acceptance**

23.1 The Authorisation holder shall only accept the following material for disposal at the site;

- Wastes as defined in Tables 1, 2 & 3 of the *“ACT’s Environmental Standards: Assessment and Classification of Liquid and Non-liquid Wastes (June 2000)”*.
- Material classified by the Authority as inert or solid waste based on the *“ACT’s Environmental Standards: Assessment and Classification of Liquid and Non-liquid Wastes (June 2000)”*.
- Low level radioactive waste; and
- Animal carcasses.

23.2 The following material is not permitted for disposal at the site;

- Wastes as defined in Tables 4 & 5 of the *“ACT’s Environmental Standards: Assessment and Classification of Liquid and Non-liquid Wastes (June 2000)”*.

23.3 The Authorisation holder shall not accept waste for disposal at the site other than waste defined in this environmental authorisation as acceptable waste.

23.4 The Authorisation holder shall notify the Authority immediately if a load of incorrectly classified waste, which does not meet the definition of acceptable waste, is received at the site. The Authority shall be provided with information on the type of waste, the origins of the waste and the transporter, unless the waste is dumped by an unknown party.

23.5 The Authorisation holder shall dispose of waste in the area of the site located within the leachate control system.

23.6 The Authorisation holder shall dispose of low level radioactive waste in accordance with the recommendations of the ACT Radiation Council (Radiation Safety Health Protection Service ACT Health).

23.7 The Authorisation holder shall dispose of asbestos waste in a properly constructed and managed cell in accordance with waste acceptance procedures approved by the Authority.

23.8 The Authorisation holder shall prepare and submit a post closure plan to the Authority within 3 months prior to the last load of waste being accepted at the site.

**24 Landfill Operation**

- 24.1 The Authorisation holder shall ensure that exposed earth areas associated with sediment retention dam catchments are seeded, fertilised and mulched or otherwise stabilised as soon as practical, or such earlier time as directed by the Authority. The areas include the catchment zone and work zones including sediment retention dam embankments.
- 24.2 The Authorisation holder shall reduce the exposed area of active tipping face at all times to minimise:
- leachate generation potential;
  - ground water pollution;
  - fire hazard;
  - exposure of putrescible and sanitary waste; and
  - wind dispersal of litter, including any material that may be returned to receiving waters
- 24.3 The Authorisation holder shall cover and uncover the compacted waste material on a daily basis using a covering material approved by the Authority. The day cover shall be applied at the end of each operational day and removed prior to the commencement of the next day's operations.
- 24.4 The Authorisation holder shall ensure that the following wastes are disposed of in a dedicated area within the catchment of a leachate dam and immediately covered with appropriate materials;
- animal carcasses;
  - processing by-products from meat, poultry and fish; and
  - sanitary waste.
- 24.5 The Authorisation holder shall ensure that the total quantity of used, rejected or unwanted tyres (including shredded tyres and tyre pieces) stockpiled at the site does not exceed 50 tonnes.
- 24.6 The Authorisation holder shall ensure that stockpiles of used, rejected or unwanted tyres (including shredded tyres and tyre pieces) are located in a clearly defined area.
- 24.7 The Authorisation holder must ensure that measures are taken to prevent stockpiles of used, rejected or unwanted tyres (including shredded tyres and tyre pieces) from catching on fire.
- 24.8 The Authorisation holder shall ensure that, as far as practicable, litter is retained on the site and clear of dams and water courses.
- 24.9 The Authorisation holder shall undertake all reasonable steps to minimise pest, vermin and weed attraction and/or infestations on the site.
- 24.10 The Authorisation holder shall ensure that adequate fire prevention measures are in place, and ensure that site personnel are able to access fire-fighting equipment and manage fire outbreaks at any part of the site.

24.11 The Authorisation holder shall extinguish fires at the site as soon as possible.

## **25 Water Management**

- 25.1 The Authorisation holder shall not discharge any leachate to surface waters outside the site. All leachate shall be retained on site in a leachate dam and be disposed of by way of an efficiently operated irrigation system within the catchment of the leachate dam. Alternately, leachate may be re-injected into landfill waste within the new landfill cell(s) (subject to the submission of a revised Environment Management Plan acceptable to the Authority) or disposed to the sewer system with approval from the appropriate authorities.
- 25.2 The Authorisation holder shall operate the water management system to maintain separation between different water collection systems to ensure that;
- all leachate is directed to the leachate interception tank or leachate catchment dam;
  - all stormwater runoff contaminated with sediment is directed to sediment retention dams; and
  - all clean stormwater runoff is directed around the landfill site.
- 25.3 The Authorisation holder shall ensure that the infrastructure associated with the diversion, collection, storage, treatment and disposal of leachate, clean stormwater runoff or stormwater runoff contaminated with sediment are maintained in good operating condition.
- 25.4 The Authorisation holder shall not remove or alter any infrastructure associated with the diversion or collection, storage, treatment and disposal of the leachate or stormwater runoff contaminated with sediment without the approval in writing of the Authority.
- 25.5 The Authorisation holder shall take all reasonable steps to maintain the water in the leachate dam at a low level (less than twenty percent design capacity).
- 25.6 The Authorisation holder shall take all reasonable steps to maintain the sediment retention Dam 1 at a low water level (less than twenty percent of design capacity except in times when water for dust suppression is required) in readiness for containing stormwater runoff from further rainfall events.
- 25.7 The Authorisation holder shall treat and discharge the contents of the sediment retention dams as soon as practicable with the object of completing the discharge within ten days of the cessation of a rainfall event, or otherwise as directed by the Authority.
- 25.8 The Authorisation holder shall advise the Authority of an intention to discharge from the sediment retention dams, and shall carry out the discharge only after receiving written approval from the Authority to do so. Any release shall be conducted in such a manner as to avoid the discharge of stirred sediment. No discharge is to occur unless samples taken immediately prior to the proposed discharge indicate the suspended solids, dissolved oxygen, faecal coliforms and pH are within the limits set in *Table 5* or as otherwise authorised by the Authority.

- 25.9 The Authorisation holder shall monitor the total volume of water discharged by controlled releases from all stormwater sedimentation retention dams, as well as the volume of water which overflows from the dams into receiving waters.
- 25.10 The Authorisation holder shall ensure that the parameters in *Table 5* are measured during an uncontrolled discharge from sediment retention Dam 1.
- 25.11 The Authorisation holder shall ensure that no discharge from sediment retention dams causes erosion of the dam spillway or the channels or banks leading to a waterway.
- 25.12 The Authorisation holder shall provide to the Authority controlled and uncontrolled discharge volumes no later than 10 working days after the event.
- 25.13 The Authorisation holder shall desilt sediment retention dams and structures when the silt content is more than ten per cent of dam or structure capacity.
- 25.14 The Authorisation holder shall stabilise all embankments and soil stockpiles areas using vegetative or other appropriate means in accordance with the Landfill Management Plan, or as directed by the Authority.

**26 Air Pollution**

- 26.1 The Authorisation holder shall undertake all practicable steps to minimise dust, noise and odour emissions from the landfill.
- 26.2 The Authorisation holder shall pave, seal or otherwise treat and maintain all trafficked areas within the site to prevent or minimise the generation of airborne dust.

Attachment A – Site Map

