Wentworth Shire Council
26-28 Adelaide St
Wentworth
NSW 2648

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Report	**649312-W**
Project name	BURONGA LANDFILL
Project ID	MARCH 2019
Received Date	Apr 03, 2019

Client Sample ID **Sample Matrix** **Eurofins | mgt Sample No.** **Date Sampled** Test/Reference	LOR	Unit	**BH2** **Water** **M19-Ap08649** **Apr 02, 2019**	**BH3** **Water** **M19-Ap08650** **Apr 02, 2019**	**BH4** **Water** **M19-Ap08651** **Apr 02, 2019**
BTEX					
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Ammonia (as N)	0.01	mg/L	0.45	0.56	1.5
Chloride	1	mg/L	25000	22000	18000
Conductivity (at 25°C)	1	uS/cm	67000	60000	48000
Fluoride	0.5	mg/L	1.1	0.6	0.9
Nitrate & Nitrite (as N)	0.05	mg/L	0.54	0.19	45
pH (at 25°C)	0.1	pH Units	7.1	5.8	4.5
Phenolics (total)	0.05	mg/L	< 0.25	< 0.25	0.11
Sulphate (as SO4)	5	mg/L	3500	2900	3300
Total Organic Carbon	5	mg/L	18	22	15
Alkalinity (speciated)					
Total Alkalinity (as CaCO3)	20	mg/L	120	< 20	< 20
Heavy Metals					
Arsenic	0.001	mg/L	0.021	0.095	0.036
Lead	0.001	mg/L	0.055	0.057	0.097
Manganese	0.005	mg/L	1.8	2.9	1.9
Alkali Metals					
Calcium	0.5	mg/L	440	350	290
Magnesium	0.5	mg/L	1800	1600	1300
Potassium	0.5	mg/L	200	180	150
Sodium	0.5	mg/L	14000	14000	11000

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
BTEX	Melbourne	Apr 05, 2019	14 Day
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Ammonia (as N)	Melbourne	Apr 05, 2019	28 Day
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Chloride	Melbourne	Apr 05, 2019	28 Day
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
Conductivity (at 25°C)	Melbourne	Apr 05, 2019	28 Day
- Method: LTM-INO-4030 Conductivity			
Fluoride	Melbourne	Apr 05, 2019	28 Day
- Method: APHA 4500 F-C Fluoride by Ion Selective Electrode			
Nitrate & Nitrite (as N)	Melbourne	Apr 05, 2019	28 Day
- Method: APHA 4500-NO3/NO2 Nitrate-Nitrite Nitrogen by FIA			
pH (at 25°C)	Melbourne	Apr 05, 2019	0 Hours
- Method: LTM-GEN-7090 pH in water by ISE			
Phenolics (total)	Melbourne	Apr 05, 2019	7 Day
- Method: APHA 5530B & D Phenols			
Sulphate (as SO4)	Melbourne	Apr 05, 2019	28 Day
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Total Organic Carbon	Melbourne	Apr 05, 2019	28 Day
- Method: APHA 5310B Total Organic Carbon			
Alkalinity (speciated)	Melbourne	Apr 05, 2019	14 Day
- Method: APHA 2320 Alkalinity by Titration			
Heavy Metals	Melbourne	Apr 08, 2019	180 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Alkali Metals	Melbourne	Apr 05, 2019	180 Day
- Method: LTM-MET-3010 Alkali Metals S Si and P by ICP-AES			

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Company Name: Wentworth Shire Council
Address: 26-28 Adelaide St
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Project Name: BURONGA LANDFILL
Project ID: MARCH 2019

Order No.:
Report #: 649312
Phone: 03 5027 5027
Fax: 03 5027 5000

Received: Apr 3, 2019 9:00 AM
Due: Apr 10, 2019
Priority: 5 Day

Eurofins | mgt Analytical Services Manager : Andrew Black

Sample Detail						Ammonia (as N)	Arsenic	Benzene	Calcium	Chloride	Conductivity (at 25°C)	Fluoride	Lead	Magnesium	Manganese	Nitrate & Nitrite (as N)	pH (at 25°C)	Phenolics (total)	Potassium	Sodium	Sulphate (as SO4)	Total Alkalinity (as CaCO3)	Total Organic Carbon
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																							
Brisbane Laboratory - NATA Site # 20794																							
Perth Laboratory - NATA Site # 23736																							
External Laboratory																							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																		
1	BH2	Apr 02, 2019		Water	M19-Ap08649	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	BH3	Apr 02, 2019		Water	M19-Ap08650	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	BH4	Apr 02, 2019		Water	M19-Ap08651	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure, April 2011 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Fluoride	mg/L	< 0.5			0.5	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Phenolics (total)	mg/L	< 0.05			0.05	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
Method Blank							
Alkalinity (speciated)							
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	112			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	100			70-130	Pass	
Chloride	%	110			70-130	Pass	
Fluoride	%	98			70-130	Pass	
Nitrate & Nitrite (as N)	%	95			70-130	Pass	
Phenolics (total)	%	115			70-130	Pass	
Sulphate (as SO4)	%	109			70-130	Pass	
Total Organic Carbon	%	101			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Total Alkalinity (as CaCO3)	%	86			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	98			80-120	Pass	
Lead	%	97			80-120	Pass	
Manganese	%	100			80-120	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	93			70-130	Pass	
Magnesium	%	89			70-130	Pass	
Potassium	%	94			70-130	Pass	
Sodium	%	96			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
BTEX				Result 1					
Benzene	M19-Ap01142	NCP	%	116			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chloride	M19-Ap09090	NCP	%	85			70-130	Pass	
Nitrate & Nitrite (as N)	M19-Ap07723	NCP	%	90			70-130	Pass	
Phenolics (total)	K19-Ap08871	NCP	%	110			70-130	Pass	
Sulphate (as SO4)	M19-Ap09330	NCP	%	71			70-130	Pass	
Spike - % Recovery									
Alkalinity (speciated)				Result 1					
Total Alkalinity (as CaCO3)	M19-Ap09336	NCP	%	102			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	K19-Ap06990	NCP	%	101			75-125	Pass	
Lead	K19-Ap06990	NCP	%	97			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	M19-Ap05264	NCP	%	100			70-130	Pass	
Magnesium	M19-Ap05264	NCP	%	107			70-130	Pass	
Potassium	M19-Ap05264	NCP	%	101			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	M19-Ap08651	CP	%	95			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M19-Ap07444	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	M19-Ap06780	NCP	mg/L	1400	1500	5.0	30%	Pass	
Conductivity (at 25°C)	M19-Ap08649	CP	uS/cm	67000	67000	<1	30%	Pass	
Nitrate & Nitrite (as N)	M19-Ap07723	NCP	mg/L	0.06	0.06	8.0	30%	Pass	
pH (at 25°C)	M19-Ap08649	CP	pH Units	7.1	7.0	pass	30%	Pass	
Phenolics (total)	K19-Ap08871	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Sulphate (as SO4)	M19-Ap06780	NCP	mg/L	53	54	2.0	30%	Pass	
Total Organic Carbon	M19-Ap06778	NCP	mg/L	20	20	<1	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Total Alkalinity (as CaCO3)	M19-Ap08649	CP	mg/L	120	120	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	K19-Ap06990	NCP	mg/L	0.001	0.001	2.0	30%	Pass	
Lead	K19-Ap06990	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	K19-Ap06990	NCP	mg/L	0.42	0.42	1.0	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	M19-Ap06777	NCP	mg/L	52	53	2.0	30%	Pass	
Magnesium	M19-Ap06777	NCP	mg/L	130	130	2.0	30%	Pass	
Potassium	M19-Ap06777	NCP	mg/L	< 5	< 5	<1	30%	Pass	
Sodium	M19-Ap05131	NCP	mg/L	9.7	9.5	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	M19-Ap08651	CP	mg/L	1.5	1.5	3.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black	Analytical Services Manager
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Harry Bacalis	Senior Analyst-Volatile (VIC)
Julie Kay	Senior Analyst-Inorganic (VIC)

Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.