Douglas Partners
Geotechnics • Environment • Groundwater

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MJT:jlb
Project 37387
8 October 2004

Waste Service NSW
Level 4
821 Pacific Highway
CHATSWOOD NSW 2067

Attention: Mr Mohan Selvaraj

Dear Sir

ARROWBIO SOLID WASTE TREATMENT PROCESS
RESULTS OF SOIL ANALYSIS

1. INTRODUCTION

This brief letter report provides the results of testing undertaken on samples of soil obtained from the Arrow Ecology Ltd plant in Tel Aviv, Israel. The report is an addendum to the Independent Technical Review prepared for Waste Service NSW and ANZ Investment Bank.

2. BACKGROUND

Douglas Partners has been engaged by Waste Service NSW and ANZ Investment Bank as the Independent Technical Expert to undertake a Due Diligence Technical Evaluation of a selected Mechanical Biological Treatment (MBT) process to be utilised in Waste Service plant at Belrose. The MBT is an integrated system of waste treatment that avoids many of the limitations of other treatment technologies by using well established techniques for the treatment of the organic fraction of a municipal solid waste stream. The objectives of the evaluation undertaken by Douglas Partners was to assess whether the proposed MBT facility would be technically feasible and sustainable for the management of MSW in New South Wales.

This addendum report provides the results of testing which was not available when the Independent Technical Review report was prepared on 29 September 2004. It also provides comments on the results of various tests undertaken by Arrow Ecology Ltd and Douglas Partners.

In carrying out the review of the results of laboratory analyses we have used a number of different guidelines and standards, as follows:

- Australian Standard AS4419-2003 “Soil for Landscaping and Garden use”
- Australian Standard AS4454-2003 “Compost Soil Conditioner and Mulches”
- Use and Disposal of Biosolid Products - EPA Guideline dated October, 1997
- Guideline on Investigation Levels for Soil and Groundwater - National Environment Protection Council 1999
- Solid Waste Guidelines - EPA.

Whilst these documents have been used as general background information in assessing the results of the chemical analysis no single document has been used for direct comparison purposes to ascertain the suitability of the fertilizer from the Tel Aviv plant for use in landscaping and as a soil conditioner.

3. SAMPLING AND TESTING

Whilst in Israel, Douglas Partners were provided with results of testing of the sludges from the acidogenic and methanogenic reactors and for the biogas produced by the treatment process. In addition, sample from the acidogenic and methanogenic reactors were sent by Arrow Ecology Ltd to Australia for verification testing by Douglas Partners. The results of these tests are given in Appendix A and comments are given below.

3.1 Soil Analysis

Table 1 shows the results of soil analysis for samples from the acidogenic and methanogenic reactors tested by Arrow Ecology Ltd and those tested by Douglas Partners. It also provides results of leachability testing undertaken using the Toxicity Characteristics Leaching Procedure (TCLP) as outlined in the solid waste guidelines. The Table also shows a number of commonly used guideline values for assessing the contamination of soil for comparison purposes.

The results of the analyses undertaken by Arrow Ecology Ltd and Douglas Partners indicate that the material taken from the acidogenic and methanogenic reactors have high calcium, sodium and magnesium concentrations but the TCLP testing performed by Douglas Partners indicates that these cations are not very mobile and have relatively low leachability. The concentrations in the leachate are at least one or two orders of magnitude lower than the total concentrations and are within the TCLP guidelines for inert waste. On this basis either material could be utilised as fertiliser on the Belrose site.

The Biosolids Guidelines for Grade A material has very low allowable concentrations for copper, magnesium and zinc and these are well below the health investigation guideline levels for standard residential developments with gardens and accessible soils. It would therefore be considered inappropriate to apply these guidelines particularly as the leachability of the materials is demonstrated to be very low. In addition, the Biosolids Guidelines are for sewage sludges only and are therefore not really applicable for the materials produced by a waste processing plant. Even so the output from the Tel Aviv plant meets the requirements for Class B, C and D material and could therefore be used as landscaping material on top of existing landfill. The material is suitable because it has high nutrient value and very low leachability of heavy metals and could if required, be blended to meet the Biosolids Guidelines for Class A material.

In addition to the tests for the major cations, analysis was undertaken to detect pathogenic organisms. In material taken from the pilot plant at Hadera in Israel, there was no salmonella bacteria detected in samples from the methanogenic reactor or from the output sludge from the treatment process. Testing by SGS Laboratories in Sydney however has indicated the presence of some salmonella in the methanogenic reactor and some listeria species in acidogenic reactor. We have been informed by the laboratory that this situation is common when testing compost materials. For this reason it would be prudent to undertake additional testing once the plant commences operations to determine whether sterilisation is necessary.

Table 1

SUMMARY OF SOIL ANALYSIS							GUIDELINE VALUES				
Analyte	Tested by Arrow (mg / kg)		Tested by DP				H.I.L. (mg / kg)	Biosolids Grade A (mg / kg)	Background Range (mg / kg)	Waste Classification Inert Waste	
			SCC (mg / kg)		TCLP (mg / L)						
	A.R.	M.R.	A.R.	M.R.	A.R.	M.R.				SCC (mg / kg)	TCLP (mg / L)
AL	4,018	9,772	5,500	5,200	0.06	I.S.					
AS	<5		<3	<3	<0.05	I.S.	100	20	1 - 50	500	0.5
Ca	37,190	118,900	36,305	95,870							
Cd	1	2	<0.5	1.0	<0.006	I.S.	20	3	1	100	0.1
Cr	36	140	17	48	<0.005	I.S.	100	100		1,900	0.5
Cu	57	182	50	130	0.03	I.S.	1,000	100	2 - 100		
Fe	5,389	12,380	3,000	6,100	0.37	I.S.					
Hg	2	4	0.42	0.34	<0.0005	I.S.	15			50	0.02
K	2,742	5,119	2,100	4,900	42	I.S.					
Mg	2,808	6,950	1,700	5,800	18	I.S.		1	0.03		
Na	2,276	3,277	3,400	8,100	530	I.S.					
Ni	12	24	8	13	0.008	I.S.	600	60	5 - 500	0.2	1,050
P	5,888	25,310									
Pb	30	58	15	34	<0.04	I.S.	300	150	2 - 200	1,500	0.5
S	7,450	17,490	3,600	9,200							
Zn	335	1122	160	540	0.14	I.S.	7,000	200	10 - 300		

A.R. = Acidogenic Reactor
M.R. = Methanogenic Reactor
I.S. = Insufficient Sample
SCC = Specific contaminant concentration (Total Concentration)
TCLP = Toxicity Characteristics Leaching Procedure (Leachate Concentration)
H.I.L. = Health Investigation Limited

3.2 Biogas

Arrow Ecology provided results of analysis on the Biogas from the Tel Aviv plant to demonstrate the relatively low concentrations of volatile organics produced by the anaerobic digestion. The results are given in Table 2.

Table 2 - Summary of Biogas Analysis

Analyte	Tel Aviv Plant
Methane %	81
CO^2 %	17.5
H_2S (ppm)	90
O^2	<0.5
NH_3	1.3
Cl	<1
F	<1
Br	<1
BTEX	<1
Mercaptons	0.9
S	<1
Methylsulphide	<1
Vinyl Chloride	<1
Chloroform	<1
CCl4	<1
Chlorobenzene	<1
Ethane	<5
Butane	<5
Ethylene	<5
Ethanol	<1
Isopropyl Alcohol	<1
Acetone	<1

The results indicate that approximately 99% of the gas produced by the anaerobic digestion is methane or carbon dioxide with very low concentrations of odourous materials such as hydrogen sulphide and mercaptons. Depending upon the final use for the biogas, there may be a necessity to scrub the exhaust gas from either flares or a power plant but it is recommended that further analysis be undertaken when the Belrose plant commences production to determine the requirement for any treatment of exhaust gases. On the basis of the analysis provided this is highly unlikely, given that the hydrogen sulphide concentrations are less than 100 parts per million and the volatile organics are below 5 parts per million.

3.3 Odouriferous Compounds

During the site visit at Tel Aviv it was noted that there was virtually no odour once the municipal solid waste was pushed underwater in the flotation tank. There was a distinct odour of garbage as the material was deposited on the walking floor from the compactor truck but this disappeared immediately upon inundation. The plant was visited on three separate occasions are there was virtually no smell at any time.

Information provided by Arrow Ecology Ltd indicates that the pilot plant at Hadera was subject to an assessment of odour by Dr Rifka Kolban-Shapira in May 2000. During two visits Dr Kolban-Shapira noted that there was no odour originating from the system itself. When the doors to the facility were closed the odour problem which appeared to emanate from a nearby wastewater treatment plant disappeared. This observation is similar to that made by the writer in August 2004 when several extended visits were made to the site to observe the plant treating MSW. On no occasion was there a strong odour once the waste had entered the flotation tank.

4. CONCLUSIONS

Based on the results of the analysis performed by Arrow Ecology Ltd and Douglas Partners and observations made at the Tel Aviv plant it is considered that the process is suitable for treating MSW at Belrose. The output from the plant can be used as landscaping or top-dressing on the adjacent landfill because there is a low potential for mobility of heavy metals. The materials has a high nutrient value which can be utilised as a growing medium for the landfill cover. The plant at Tel Aviv operates with an almost total absence of odour so there should be no difficulties in this respect from neighbours. Douglas Partners has no hesitation in confirming that the ArrowBio System is an innovative integration of well proven water treatment technologies for processing of municipal solid waste.

Yours faithfully
DOUGLAS PARTNERS PTY LTD

Reviewed by

Michael J Thom
Principal

Ronnie Tong
Principal

APPENDIX A
Results of Chemical Analyses

SGS

8 October 2004

TEST REPORT

Douglas Partners Pty Ltd
96 Hermitage Road
WEST RYDE
NSW 2114

Your Reference: 37387, Waste Service
Report Number: 31972

Attention: Ronnie Tong

Dear Ronnie
The following samples were received from you on the date indicated.

Samples: Qty.	1 Fertiliser Sample
Date of Receipt of Samples:	24/09/04
Date of Receipt of Instructions:	24/09/04
Date Preliminary Report Faxed:	Not Issued

These samples were analysed in accordance with your written instructions.
A copy of the instructions is attached with the analytical report.

The results and associated quality control are contained in the following pages of this report. Unless otherwise stated, solid samples are expressed on a dry weight basis (moisture has been supplied for your information only), air and liquid samples as received.

Should you have any queries regarding this report please contact the undersigned.

Yours faithfully
SGS ENVIRONMENTAL SERVICES

Jacinta Hurst
Operations Manager

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Member of the SGS Group

PROJECT: 37387, Waste Service

REPORT NO: 31972

Acid Extractable Metals in Soil Our Reference: Your Reference	UNITS ---------- ----------	31972-1 Osmocote Lawn Builder
Arsenic	mg/kg	<3
Cadmium	mg/kg	<0.5
Chromium	mg/kg	9
Copper	mg/kg	9
Lead	mg/kg	<2
Mercury	mg/kg	<0.05
Nickel	mg/kg	8
Zinc	mg/kg	110

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TRH/BTEX in Soil Our Reference: Your Reference	UNITS ---------- ----------	31972-1 Osmocote Lawn Builder
TRH C_6 - C_9 P&T	mg/kg	<20
TRH C_{10} - C_{14}	mg/kg	<20
TRH C_{15} - C_{28}	mg/kg	1,600
TRH C_{29} - C_{36}	mg/kg	3,200
Benzene	mg/kg	<0.50
Toluene	mg/kg	<0.50
Ethylbenzene	mg/kg	<0.50
Total Xylenes	mg/kg	<1.5
Surrogate	%	80

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PAHs in Soil Our Reference: Your Reference	UNITS ---------- ----------	31972-1 Osmocote Lawn Builder
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo[*a*]anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo[*b,k*]fluoranthene	mg/kg	<0.2
Benzo[*a*]pyrene	mg/kg	<0.05
Indeno[*123-cd*]pyrene	mg/kg	<0.1
Dibenzo[*ah*]anthracene	mg/kg	<0.1
Benzo[*ghi*]perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	0.00
Surrogate	%	84

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OC Pesticides in Soil Our Reference: Your Reference	UNITS ---------- ----------	31972-1 Osmocote Lawn Builder
HCB	mg/kg	<0.10
alpha-BHC	mg/kg	<0.10
gamma-BHC(Lindane)	mg/kg	<0.10
Heptachlor	mg/kg	<0.10
Aldrin	mg/kg	<0.10
beta-BHC	mg/kg	<0.10
delta-BHC	mg/kg	<0.10
Heptachlor Epoxide	mg/kg	<0.10
o,p'-DDE	mg/kg	<0.10
alpha-Endosulfan	mg/kg	<0.10
trans-Chlordane	mg/kg	<0.10
cis-Chlordane	mg/kg	<0.10
trans-Nonachlor	mg/kg	<0.10
p,p'-DDE	mg/kg	<0.10
Dieldrin	mg/kg	<0.10
Endrin	mg/kg	<0.10
o,p'-DDD	mg/kg	<0.10
o,p'-DDT	mg/kg	<0.10
beta-Endosulfan	mg/kg	<0.10
p,p'-DDD	mg/kg	<0.10
p,p'-DDT	mg/kg	<0.10
Endosulfan Sulphate	mg/kg	<0.10
Endrin Aldehyde	mg/kg	<0.10
Methoxychlor	mg/kg	<0.10
Endrin Ketone	mg/kg	<0.10
Surrogate	%	96

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OP Pesticides in Soil Our Reference: Your Reference	UNITS ---------- ----------	31972-1 Osmocote Lawn Builder
Chlorpyrifos	mg/kg	<0.10
Fenitrothion	mg/kg	<0.10
Bromofos Ethyl	mg/kg	<0.10
Ethion	mg/kg	<0.10
Surrogate	%	96

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PCBs in Soil Our Reference: Your Reference	UNITS ---------- ----------	31972-1 Osmocote Lawn Builder
Arochlor 1016	mg/kg	<0.10
Arochlor 1221	mg/kg	<0.10
Arochlor 1232	mg/kg	<0.10
Arochlor 1242	mg/kg	<0.10
Arochlor 1248	mg/kg	<0.10
Arochlor 1254	mg/kg	<0.10
Arochlor 1260	mg/kg	<0.10
Arochlor 1262	mg/kg	<0.10
Arochlor 1268	mg/kg	<0.10
Total Positive PCB	mg/kg	<0.90
Surrogate	%	96

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Total Phenolics in Soil Our Reference: Your Reference	UNITS ---------- ----------	31972-1 Osmocote Lawn Builder
Total Phenolics (as Phenol)	mg/kg	<0.50

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Moisture Our Reference: Your Reference	UNITS ---------- ----------	31972-1 Osmocote Lawn Builder
Moisture	%	4.5

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Metals on TCLP extract Our Reference: Your Reference	UNITS ---------- ----------	31972-1 Osmocote Lawn Builder
pH of soil for fluid# determ.	pH units	3.45
pH of soil for fluid # determ. (acid)	pH units	[NT]
Extraction fluid used		[NT]
pH of final Leachate	pH units	4.71
Arsenic	mg/L	<0.050
Cadmium	mg/L	0.007
Chromium	mg/L	0.026
Copper	mg/L	<0.01
Lead	mg/L	<0.04
Mercury	mg/L	<0.0005
Nickel	mg/L	0.24
Zinc	mg/L	2.1

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Metals in TCLP (AS4439) Our Reference: Your Reference	UNITS ---------- ----------	31972-1 Osmocote Lawn Builder
pH of final Leachate	pH units	3.63
Arsenic	mg/L	<0.050
Cadmium	mg/L	0.01
Chromium	mg/L	0.068
Copper	mg/L	0.17
Lead	mg/L	<0.04
Mercury	mg/L	0.0007
Nickel	mg/L	0.30
Zinc	mg/L	5.4
Aluminium	mg/L	36
Calcium	mg/L	110
Iron (Soluble)	mg/L	690
Potassium	mg/L	2,000
Magnesium	mg/L	73
Sodium	mg/L	21
Sulphur*	mg/L	6,330

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Inorganics Our Reference: Your Reference	UNITS ---------- ----------	31972-1 Osmocote Lawn Builder
Nitrate as N* 1:5 soil:water	mg/kg	150
Nitrite as N* 1:5 soil:water	mg/kg	<15
Ortho Phosphate as P* 1:5 soil:water	mg/kg	[NT]
Calorific Value	MJ/kg	8.1
Aluminium	mg/kg	990
Calcium by AAS	mg/kg	31
Iron	mg/kg	26,000
Potassium	mg/kg	790
Magnesium	mg/kg	41
Sodium	mg/kg	7.2
Sulphur*	mg/kg	92,900
Sulphate, SO4* 1:5 soil:water	mg/kg	21,000
ASLP Sulphate, SO4	mg/L	16,000
Salinity as NACL *	mg/kg	290,000
pH 1:5 soil:water	pH Units	3.4

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Method ID	Methodology Summary
SEM-010	Metals - Determination of various metals by ICP-AES following aqua regia digest.
SEM-005	Mercury - Determination of Mercury by Cold Vapour Generation Atomic Absorption Spectroscopy.
SEO-017	BTEX/TRH C6-C9 - Determination by Purge and Trap Gas Chromatography with Flame Ionisation Detection (FID) and Photo Ionisation Detection (PID). The surrogate spike used is aaa-trifluorotoluene.
SEO-020	TRH - Determination of Total Recoverable Hydrocarbons by gas chromatography following extraction with DCM/Acetone for solids and DCM for liquids.
SEO-030	PAHs by GC/MS - Determination of Polynuclear Aromatic Hydrocarbons (PAH's) by Gas Chromatography / Mass Spectrometry following extraction with dichloromethane or dichloromethane/acetone. The surrogate spike used is p-Terphenyl-d14.
SEO-005	OC/OP/PCB - Determination of a suite of Organchlorine Pesticides, Chlorinated Organo-phosphorus Pesticides and Polychlorinated Biphenyls (PCB's) by sonication extraction using dichloromethane for waters or acetone / hexane for soils followed by Gas Chromatographic separation with Electron Capture Detection (GC /ECD). The surrogate spike used is 2,4,5,6-Tetrachloro-m-xylene.
SEI-065	Total Phenolics - determined colorimetrically following steam stripping of the sample. Based on APHA 20th ED, 5530-D.
SEP-001	Air Dry - Cover air drying at 40 C, moisture content at 103 C - 105 C, wet slurrying, compositing and preparation of a 1:5 soil suspension.
SEP-003	Toxicity Characteristic Leaching Procedure (TCLP) and AS Bottle leach procedure.
SEM-001	Metals - Determination of various metals using Air / Acetylene Flame Atomic Absorption Spectroscopy. In accordance with APHA 20th ED, 3111A, C.
SEI-038	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA 20th ED, 4110 -B.
Ext-036	Analysed by HRL Technology (Vic)
SEI-010	Conductivity and Salinity - measured using a conductivity cell and dedicated meter, in accordance with APHA2510 20th ED.
SEI-001	pH - Measured using pH meter and electrode in accordance with APHA 20th ED, 4500-H+.

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QUALITY CONTROL Acid Extractable Metals in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Arsenic	mg/kg	3	SEM-010	<3	[NT]	[NT]	Sand	96 || 96 || RPD: 0
Cadmium	mg/kg	0.5	SEM-010	<0.5	[NT]	[NT]	Sand	103 || 103 || RPD: 0
Chromium	mg/kg	0.5	SEM-010	<0.5	[NT]	[NT]	Sand	96 || 96 || RPD: 0
Copper	mg/kg	0.5	SEM-010	<0.5	[NT]	[NT]	Sand	95 || 96 || RPD: 1
Lead	mg/kg	2	SEM-010	<2	[NT]	[NT]	Sand	95 || 94 || RPD: 1
Mercury	mg/kg	0.05	SEM-005	<0.05	[NT]	[NT]	Sand	85 || 89 || RPD: 5
Nickel	mg/kg	0.2	SEM-010	<0.2	[NT]	[NT]	Sand	96 || 96 || RPD: 0
Zinc	mg/kg	0.5	SEM-010	<0.5	[NT]	[NT]	Sand	97 || 97 || RPD: 0
QUALITY CONTROL TRH/BTEX in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
TRH C_6 - C_9 P&T	mg/kg	20	SEO-017	<20	[NT]	[NT]	Batch	71 || 75 || RPD: 5
TRH C_{10} - C_{14}	mg/kg	20	SEO-020	<20	[NT]	[NT]	Batch	71 || 70 || RPD: 1
TRH C_{15} - C_{28}	mg/kg	50	SEO-020	<50	[NT]	[NT]	Batch	85 || 84 || RPD: 1
TRH C_{29} - C_{36}	mg/kg	50	SEO-020	<50	[NT]	[NT]	Batch	93 || 91 || RPD: 2
Benzene	mg/kg	0.5	SEO-017	<0.50	[NT]	[NT]	Batch	75 || 77 || RPD: 3
Toluene	mg/kg	0.5	SEO-017	<0.50	[NT]	[NT]	Batch	68 || 69 || RPD: 1
Ethylbenzene	mg/kg	0.5	SEO-017	<0.50	[NT]	[NT]	Batch	64 || 74 || RPD: 14
Total Xylenes	mg/kg	1.5	SEO-017	<1.5	[NT]	[NT]	Batch	78 || 83 || RPD: 6
Surrogate	%		SEO-017	[NT]	[NT]	[NT]	Batch	82 || 82 || RPD: 0
QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Naphthalene	mg/kg	0.10	SEO-030	<0.1	[NT]	[NT]	Batch	104 || 108 || RPD: 4
Acenaphthylene	mg/kg	0.10	SEO-030	<0.1	[NT]	[NT]	Batch	93 || 96 || RPD: 3
Acenaphthene	mg/kg	0.10	SEO-030	<0.1	[NT]	[NT]	Batch	86 || 89 || RPD: 3
Fluorene	mg/kg	0.10	SEO-030	<0.1	[NT]	[NT]	Batch	[NT]
Phenanthrene	mg/kg	0.10	SEO-030	<0.1	[NT]	[NT]	Batch	82 || 86 || RPD: 5
Anthracene	mg/kg	0.10	SEO-030	<0.1	[NT]	[NT]	Batch	101 || 106 || RPD: 5
Fluoranthene	mg/kg	0.10	SEO-030	<0.1	[NT]	[NT]	Batch	98 || 102 || RPD: 4
Pyrene	mg/kg	0.10	SEO-030	<0.1	[NT]	[NT]	Batch	100 || 104 || RPD: 4
Benzo[*a*]anthracene	mg/kg	0.10	SEO-030	<0.1	[NT]	[NT]	Batch	[NT]
Chrysene	mg/kg	0.10	SEO-030	<0.1	[NT]	[NT]	Batch	[NT]
Benzo[*b.k*]fluoranthene	mg/kg	0.20	SEO-030	<0.2	[NT]	[NT]	Batch	[NT]
Benzo[*a*]pyrene	mg/kg	0.050	SEO-030	<0.05	[NT]	[NT]	Batch	101 || 105 || RPD: 4
Indeno[*123-cd*]pyrene	mg/kg	0.10	SEO-030	<0.1	[NT]	[NT]	Batch	[NT]
Dibenzo[*ah*]anthracene	mg/kg	0.10	SEO-030	<0.1	[NT]	[NT]	Batch	[NT]
Benzo[*ghi*]perylene	mg/kg	0.10	SEO-030	<0.1	[NT]	[NT]	Batch	[NT]
Total +ve PAH's	mg/kg	0	SEO-030	0.00	[NT]	[NT]	Batch	[NT]
Surrogate	%		SEO-030	[NT]	[NT]	[NT]	Batch	86 || 91 || RPD: 6

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PROJECT: 37387, Waste Service **REPORT NO: 31972**

QUALITY CONTROL OC Pesticides in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
HCB	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
alpha-BHC	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
gamma-BHC(Lindane)	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
Heptachlor	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	115 || 114 || RPD: 1
Aldrin	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	117 || 116 || RPD: 1
beta-BHC	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
delta-BHC	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	114 || 113 || RPD: 1
Heptachlor Epoxide	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
o,p'-DDE	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
alpha-Endosulfan	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
trans-Chlordane	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
cis-Chlordane	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
trans-Nonachlor	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
p,p'-DDE	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
Dieldrin	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	115 || 114 || RPD: 1
Endrin	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
o,p'-DDD	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
o,p'-DDT	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
beta-Endosulfan	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
p,p'-DDD	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
p,p'-DDT	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	117 || 114 || RPD: 3
Endosulfan Sulphate	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	107 || 106 || RPD: 1
Endrin Aldehyde	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
Methoxychlor	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
Endrin Ketone	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
Surrogate	%		SEO-005	[NT]	[NT]	[NT]	Batch	108 || 108 || RPD: 0

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PROJECT: 37387, Waste Service **REPORT NO: 31972**

QUALITY CONTROL OP Pesticides in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Chlorpyrifos	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	102 || 102 || RPD: 0
Fenitrothion	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
Bromofos Ethyl	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
Ethion	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
Surrogate	%		SEO-005	[NT]	[NT]	[NT]	Batch	108 || 108 || RPD: 0
QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Arochlor 1016	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
Arochlor 1221	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
Arochlor 1232	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
Arochlor 1242	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
Arochlor 1248	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
Arochlor 1254	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	128 || 128 || RPD: 0
Arochlor 1260	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
Arochlor 1262	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
Arochlor 1268	mg/kg	0.1	SEO-005	<0.10	[NT]	[NT]	Batch	[NT]
Total Positive PCB	mg/kg	0.9	SEO-005	0.90	[NT]	[NT]	Batch	[NT]
Surrogate	%		SEO-005	[NT]	[NT]	[NT]	Batch	108 || 106 || RPD: 2
QUALITY CONTROL Total Phenolics in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Total Phenolics (as Phenol)	mg/kg	0.5	SEI-065	<0.50	31972-1	<0.50 || <0.50	Batch	87 || [N/T]
QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank				
Moisture	%		SEP-001	[NT]				
QUALITY CONTROL Metals on TCLP extract	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
pH of soil for fluid# determ.	pH units	0.1	SEP-003	[NT]	[NT]	[NT]	Blank	[NT]
pH of soil for fluid # determ. (acid)	pH units	0.1	SEP-003	[NT]	[NT]	[NT]	Blank	[NT]
Extraction fluid used		1	SEP-003	1	[NT]	[NT]	Blank	[NT]
pH of final Leachate	pH units	0.1	SEP-003	4.93	[NT]	[NT]	Blank	[NT]
Arsenic	mg/L	0.05	SEM-010	<0.050	[NT]	[NT]	Blank	103 || 102 || RPD: 1
Cadmium	mg/L	0.006	SEM-010	<0.006	[NT]	[NT]	Blank	113 || 113 || RPD: 0
Chromium	mg/L	0.005	SEM-010	<0.005	[NT]	[NT]	Blank	99 || 99 || RPD: 0
Copper	mg/L	0.01	SEM-010	<0.01	[NT]	[NT]	Blank	96 || 96 || RPD: 0

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QUALITY CONTROL Metals on TCLP extract	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Lead	mg/L	0.04	SEM-010	<0.04	[NT]	[NT]	Blank	98 || 98 || RPD: 0
Mercury	mg/L	0.0005	SEM-005	<0.0005	[NT]	[NT]	Blank	92 || 96 || RPD: 4
Nickel	mg/L	0.004	SEM-010	<0.004	[NT]	[NT]	Blank	101 || 101 || RPD: 0
Zinc	mg/L	0.005	SEM-010	<0.005	[NT]	[NT]	Blank	109 || 109 || RPD: 0
QUALITY CONTROL Metals in TCLP (AS4439)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
pH of final Leachate	pH units	0.1	SEP-003	[NT]	[NT]	[NT]	Blank	[NT]
Arsenic	mg/L	0.05	SEM-010	<0.050	[NT]	[NT]	Blank	110 || 109 || RPD: 1
Cadmium	mg/L	0.006	SEM-010	<0.006	[NT]	[NT]	Blank	120 || 120 || RPD: 0
Chromium	mg/L	0.005	SEM-010	<0.005	[NT]	[NT]	Blank	107 || 107 || RPD: 0
Copper	mg/L	0.01	SEM-010	<0.01	[NT]	[NT]	Blank	103 || 103 || RPD: 0
Lead	mg/L	0.04	SEM-010	<0.04	[NT]	[NT]	Blank	107 || 107 || RPD: 0
Mercury	mg/L	0.0005	SEM-005	<0.0005	[NT]	[NT]	Blank	98 || 101 || RPD: 3
Nickel	mg/L	0.004	SEM-010	<0.004	[NT]	[NT]	Blank	108 || 108 || RPD: 0
Zinc	mg/L	0.005	SEM-010	<0.005	[NT]	[NT]	Blank	115 || 115 || RPD: 0
Aluminium	mg/L	0.03	SEM-010	<0.03	[NT]	[NT]	Blank	96 || 96 || RPD: 0
Calcium	mg/L	0.01	SEM-001	<0.01	[NT]	[NT]	Blank	106 || 106 || RPD: 0
Iron (Soluble)	mg/L	0.1	SEM-010	<0.10	[NT]	[NT]	Blank	109 || 109 || RPD: 0
Potassium	mg/L	0.2	SEM-001	<0.20	[NT]	[NT]	Blank	110 || 109 || RPD: 1
Magnesium	mg/L	0.03	SEM-001	<0.03	[NT]	[NT]	Blank	107 || 107 || RPD: 0
Sodium	mg/L	0.2	SEM-001	<0.20	[NT]	[NT]	Blank	103 || 108 || RPD: 5
Sulphur*	mg/L	0.5	SEM-010	<0.50	[NT]	[NT]	Blank	102 || 102 || RPD: 0

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QUALITY CONTROL Inorganics	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Nitrate as N* 1:5 soil: water	mg/kg	0.5	SEI-038	<0.50	[NT]	[NT]	Sand	[NT]
Nitrite as N* 1:5 soil: water	mg/kg	1	SEI-038	<1.0	[NT]	[NT]	Sand	[NT]
Ortho Phosphate as P* 1 :5 soil:water	mg/kg	1.5	SEI-038	<1.5	[NT]	[NT]	Sand	[NT]
Calorific Value	MJ/kg	0.1	Ext-036	<0.10	[NT]	[NT]	Sand	[NT]
Aluminium	mg/kg	2	SEM-010	<2.0	[NT]	[NT]	Sand	89 || 89 || RPD: 0
Calcium by AAS	mg/kg	0.1	SEM-001	<0.1	[NT]	[NT]	Sand	106 || 106 || RPD: 0
Iron	mg/kg	5	SEM-010	<5.0	[NT]	[NT]	Sand	109 || 106 || RPD: 3
Potassium	mg/kg	3	SEM-001	<3	[NT]	[NT]	Sand	110 || 109 || RPD: 1
Magnesium	mg/kg	3	SEM-001	<3	[NT]	[NT]	Sand	107 || 107 || RPD: 0
Sodium	mg/kg	0.002	SEM-001	<0.002	[NT]	[NT]	Sand	103 || 108 || RPD: 5
Sulphur*	mg/kg	5	SEM-010	<5.0	[NT]	[NT]	Sand	105 || 104 || RPD: 1
Sulphate, SO4* 1:5 soil :water	mg/kg	2	SEI-038	<2.0	[NT]	[NT]	Sand	[NT]
ASLP Sulphate, SO4	mg/L	0.4	SEI-038	<0.40	[NT]	[NT]	Sand	[NT]
Salinity as NACL *	mg/kg	3	SEI-010	<3.0	[NT]	[NT]	Sand	[NT]
pH 1:5 soil:water	pH Units		SEI-001	[NT]	[NT]	[NT]	Sand	[NT]

QUALITY CONTROL Inorganics	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Nitrate as N* 1:5 soil:water	mg/kg	[NT]	[NT]	Blank	99 || [N/T]
Nitrite as N* 1:5 soil:water	mg/kg	[NT]	[NT]	Blank	100 || [N/T]
Ortho Phosphate as P* 1:5 soil:water	mg/kg	[NT]	[NT]	Blank	92 || [N/T]
Calorific Value	MJ/kg	[NT]	[NT]	Blank	[NT]
Aluminium	mg/kg	[NT]	[NT]	Blank	[NT]
Calcium by AAS	mg/kg	[NT]	[NT]	Blank	[NT]
Iron	mg/kg	[NT]	[NT]	Blank	[NT]
Potassium	mg/kg	[NT]	[NT]	Blank	[NT]
Magnesium	mg/kg	[NT]	[NT]	Blank	[NT]
Sodium	mg/kg	[NT]	[NT]	Blank	[NT]
Sulphur*	mg/kg	[NT]	[NT]	Blank	[NT]
Sulphate, SO4* 1:5 soil: water	mg/kg	[NT]	[NT]	Blank	97 || [N/T]
ASLP Sulphate, SO4	mg/L	[NT]	[NT]	Blank	97 || [N/T]
Salinity as NACL *	mg/kg	[NT]	[NT]	Blank	[NT]
pH 1:5 soil:water	pH Units	[NT]	[NT]	Blank	[NT]

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PROJECT: 37387, Waste Service **REPORT NO: 31972**

Result Codes

[INS]	:	Insufficient Sample for this test	[HBG]	:	Results not Reported due to High Background Interference
[NR]	:	Not Requested	*	:	Not part of NATA Accreditation
[NT]	:	Not tested	[N/A]	:	Not Applicable

Result Comments

Date Organics extraction commenced: 30/09/04
NATA Corporate Accreditation No. 2562, Site No 4354
Note: Test results are not corrected for recovery (excluding Dioxins/Furans and PAH in XAD and PUF).

Quality Control Protocol

Reagent Blank: Sample free reagents carried through the preparation/extraction/digestion procedure and analysed at the beginning of every sample batch analysis. For larger projects, a reagent blank is prepared and analysed with every 20 samples.
Duplicate: A separate portion of a sample being analysed which is treated the same as the other samples in the batch. A duplicate is prepared at least every 20 samples.
Matrix Spike Duplicates: Sample replicates spiked with identical concentrations of target analyte(s). The spiking occurs during the sample preparation and prior to the extraction/digestion procedure. They are used to document the precision and bias of a method in a given sample matrix. Where there is not enough sample available to prepare a spiked sample, another known soil/sand or water (or Milli-Q water) may be used. A duplicate spiked sample is prepared at least every 20 samples.
Surrogate Spike: Added to all samples requiring analysis for organics (where relevant) prior to extraction. Used to determine the extraction efficiency. They are organic compounds which are similar to the target analyte(s) in chemical composition and behaviour in the analytical process, but which are not normally found in environmental samples.
Internal Standard: Added to all samples requiring analysis for organics (where relevant) after the extraction process; the compounds serve to give a standard of retention time and response, which is invariant from run-to-run with the instruments.
Control Standards: Prepared from a source independent of the calibration standards. At least one control standard is included in each run to confirm calibration validity.
Additional QC Samples: A calibration standard and blank are run after every 20 samples of an instrumental analysis run to assess analytical drift.

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SGS

6 October 2004

TEST REPORT

Douglas Partners Pty Ltd
96 Hermitage Road
WEST RYDE
NSW 2114

Your Reference: 37387, Waste Service
Report Number: 31779

Attention: Ronnie Tong

Dear Ronnie
The following samples were received from you on the date indicated.

Samples: Qty.	2 Fertiliser Samples
Date of Receipt of Samples:	15/09/04
Date of Receipt of Instructions:	15/09/04
Date Preliminary Report Faxed:	06/10/04

These samples were analysed in accordance with your written instructions.
A copy of the instructions is attached with the analytical report.

The results and associated quality control are contained in the following pages of this report.
Unless otherwise stated, solid samples are expressed on a dry weight basis (moisture has been supplied for your information only), air and liquid samples as received.

Should you have any queries regarding this report please contact the undersigned.

Yours faithfully
SGS ENVIRONMENTAL SERVICES

Jacinta Hurst
Operations Manager

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SGS Australia Pty Ltd
ABN 44 000 964 278
Environmental Services Botany Industrial Park Gate 3, Denison Street, Matraville 2036 NSW Australia
t +61 (0)2 9666 1426 f +61 (0)2 9666 1364 url www.sgs.com

Member of the SGS Group

Acid Extractable Metals in Soil Our Reference: Your Reference	UNITS ---------- ----------	31779-1 Acidogenic	31779-2 Methanogenic
Arsenic	mg/kg	<3	<3
Cadmium	mg/kg	<0.5	1
Chromium	mg/kg	17	48
Copper	mg/kg	50	130
Lead	mg/kg	15	34
Mercury	mg/kg	0.42	0.34
Nickel	mg/kg	8	13
Zinc	mg/kg	160	540

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CN, Phenolics Our Reference: Your Reference	UNITS ---------- ----------	31779-1 Acidogenic	31779-2 Methanogenic
Total Phenolics (as Phenol)	mg/kg	<0.50	INS

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Inorganics Our Reference: Your Reference	UNITS ---------- ----------	31779-1 Acidogenic	31779-2 Methanogenic
Total Kjeldahl Nitrogen *	%	1.2	2.4
Nitrate as N* 1:5 soil:water	mg/kg	2.9	24
Nitrite as N* 1:5 soil:water	mg/kg	<0.30	130
Ortho Phosphate as P* 1:5 soil:water	mg/kg	22	4.0
Total Organic Carbon	%	50	37
Calorific Value	MJ/kg	9.9	7.5

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Method ID	Methodology Summary
SEM-010	Metals - Determination of various metals by ICP-AES following aqua regia digest.
SEM-005	Mercury - Determination of Mercury by Cold Vapour Generation Atomic Absorption Spectroscopy.
SEI-065	Total Phenolics - determined colorimetrically following steam stripping of the sample. Based on APHA 20th ED, 5530-D.
Ext-003	Analysis subcontracted to SGS Environmental Perth.
SEI-038	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA 20th ED, 4110 -B.
Ext-001	Analysis subcontracted to AEL Melbourne.
Ext-036	Analysed by HRL Technology (Vic)

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QUALITY CONTROL Acid Extractable Metals in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Arsenic	mg/kg	3	SEM-010	<3	[NT]	[NT]	31779-1	[NT]
Cadmium	mg/kg	0.5	SEM-010	<0.5	[NT]	[NT]	31779-1	[NT]
Chromium	mg/kg	0.5	SEM-010	<0.5	[NT]	[NT]	31779-1	[NT]
Copper	mg/kg	0.5	SEM-010	<0.5	[NT]	[NT]	31779-1	[NT]
Lead	mg/kg	2	SEM-010	<2	[NT]	[NT]	31779-1	[NT]
Mercury	mg/kg	0.05	SEM-005	<0.05	[NT]	[NT]	31779-1	[NT]
Nickel	mg/kg	0.2	SEM-010	<0.2	[NT]	[NT]	31779-1	[NT]
Zinc	mg/kg	0.5	SEM-010	<0.5	[NT]	[NT]	31779-1	[NT]
QUALITY CONTROL CN, Phenolics	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Total Phenolics (as Phenol)	mg/kg	0.5	SEI-065	<0.50	[NT]	[NT]	Batch	89 || 87 || RPD: 2
QUALITY CONTROL Inorganics	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Total Kjeldahl Nitrogen *	%	1.0	Ext-003	<1.0	[NT]	[NT]	Batch	[NT]
Nitrate as N* 1:5 soil: water	mg/kg	0.5	SEI-038	<0.50	[NT]	[NT]	Batch	94 || 100 || RPD: 6
Nitrite as N* 1:5 soil: water	mg/kg	0.3	SEI-038	<0.30	[NT]	[NT]	Batch	99 || 95 || RPD: 4
Ortho Phosphate as P* 1 :5 soil:water	mg/kg	1.5	SEI-038	<1.5	[NT]	[NT]	Batch	102 || 99 || RPD: 3
Total Organic Carbon	%	5	Ext-001	<5	[NT]	[NT]	Batch	[NT]
Calorific Value	MJ/kg	0.1	Ext-036	<0.10	[NT]	[NT]	Batch	[NT]

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Result Codes

[INS]	:	Insufficient Sample for this test	[HBG]	:	Results not Reported due to High Background Interference
[NR]	:	Not Requested	*	:	Not part of NATA Accreditation
[NT]	:	Not tested	[N/A]	:	Not Applicable

Result Comments

TKN and Organic Carbon analysed by Watertest Report No. WP1346.
Calorific Value calculated by Oilcheck Pty Ltd Report No. 553118.
Date Organics extraction commenced: N/A
NATA Corporate Accreditation No. 2562, Site No 4354
Note: Test results are not corrected for recovery (excluding Dioxins/Furans and PAH in XAD and PUF).

Quality Control Protocol

Reagent Blank: Sample free reagents carried through the preparation/extraction/digestion procedure and analysed at the beginning of every sample batch analysis. For larger projects, a reagent blank is prepared and analysed with every 20 samples.
Duplicate: A separate portion of a sample being analysed which is treated the same as the other samples in the batch. A duplicate is prepared at least every 20 samples.
Matrix Spike Duplicates: Sample replicates spiked with identical concentrations of target analyte(s). The spiking occurs during the sample preparation and prior to the extraction/digestion procedure. They are used to document the precision and bias of a method in a given sample matrix. Where there is not enough sample available to prepare a spiked sample, another known soil/sand or water (or Milli-Q water) may be used. A duplicate spiked sample is prepared at least every 20 samples.
Surrogate Spike: Added to all samples requiring analysis for organics (where relevant) prior to extraction. Used to determine the extraction efficiency. They are organic compounds which are similar to the target analyte(s) in chemical composition and behaviour in the analytical process, but which are not normally found in environmental samples.
Internal Standard: Added to all samples requiring analysis for organics (where relevant) after the extraction process; the compounds serve to give a standard of retention time and response, which is invariant from run-to-run with the instruments.
Control Standards: Prepared from a source independent of the calibration standards. At least one control standard is included in each run to confirm calibration validity.
Additional QC Samples: A calibration standard and blank are run after every 20 samples of an instrumental analysis run to assess analytical drift.

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SGS

5 October 2004

TEST REPORT

Douglas Partners Pty Ltd
96 Hermitage Road
WEST RYDE
NSW 2114

Your Reference: 37387, Waste Service
Report Number: 31779A

Attention: Ronnie Tong

Dear Ronnie
The following samples were received from you on the date indicated.

Samples: Qty.	2 Fertiliser Samples
Date of Receipt of Samples:	15/09/04
Date of Receipt of Instructions:	20/09/04
Date Preliminary Report Faxed:	Not Issued

These samples were analysed in accordance with your written instructions.
A copy of the instructions is attached with the analytical report.

The results and associated quality control are contained in the following pages of this report.
Unless otherwise stated, solid samples are expressed on a dry weight basis (moisture has been supplied for your information only), air and liquid samples as received.

Should you have any queries regarding this report please contact the undersigned.

Yours faithfully
SGS ENVIRONMENTAL SERVICES

Jacinta Hurst
Operations Manager

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Member of the SGS Group

Metals on TCLP extract Our Reference: Your Reference	UNITS ---------- ----------	31779A-1 Acidogenic	31779A-2 Methanogenic
pH of soil for fluid# determ.	pH units	0.400	INS
pH of soil for fluid # determ. (acid)	pH units	1.97	INS
Extraction fluid used		1	INS
pH of final Leachate	pH units	5.95	INS
Arsenic	mg/L	<0.050	INS
Cadmium	mg/L	<0.006	INS
Chromium	mg/L	<0.005	INS
Copper	mg/L	0.03	INS
Lead	mg/L	<0.04	INS
Mercury	mg/L	<0.0005	INS
Nickel	mg/L	0.008	INS
Zinc	mg/L	0.14	INS

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Microbiologocal Testing Our Reference: Your Reference	UNITS ---------- ----------	31779A-1 Acidogenic	31779A-2 Methanogenic
Total Cell Count	CFU/g	>25,000,000	>25,000,000
Salmonella		Not Detected	Salmonella Detected
Listeria		Listeria Species Detected	Listeria Not Detected

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Metals in TCLP (AS4439) Our Reference: Your Reference	UNITS ---------- ----------	31779A-1 Acidogenic	31779A-2 Methanogenic
pH of final Leachate	pH units	7.17	INS
Arsenic	mg/L	<0.050	INS
Cadmium	mg/L	<0.006	INS
Chromium	mg/L	<0.005	INS
Copper	mg/L	0.03	INS
Lead	mg/L	<0.04	INS
Mercury	mg/L	<0.0005	INS
Nickel	mg/L	0.008	INS
Zinc	mg/L	0.14	INS
Aluminium	mg/L	0.06	INS
Calcium	mg/L	150	INS
Iron (Soluble)	mg/L	0.37	INS
Potassium	mg/L	42	INS
Magnesium	mg/L	18	INS
Sodium	mg/L	530	INS
Sulphur*	mg/L	41	INS

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Inorganics Our Reference: Your Reference	UNITS ---------- ----------	31779A-1 Acidogenic	31779A-2 Methanogenic
Aluminium	mg/kg	5,500	5,200
Calcium by AAS	mg/kg	36,305	95,870
Iron	mg/kg	3,000	6,100
Potassium	mg/kg	2,100	4,900
Magnesium	mg/kg	1,700	5,800
Sodium	mg/kg	3,400	8,100
Sulphur*	mg/kg	3,600	9,230
Sulphate, SO4* 1:5 soil:water	mg/kg	1,900	14,000
ASLP Sulphate, SO4	mg/L	100	INS
Salinity as NACL *	mg/kg	6,000	INS
pH 1:5 soil:water	pH Units	6.6	INS

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Method ID	Methodology Summary
SEP-003	Toxicity Characteristic Leaching Procedure (TCLP) and AS Bottle leach procedure.
SEM-010	Metals - Determination of various metals by ICP-AES following aqua regia digest.
SEM-005	Mercury - Determination of Mercury by Cold Vapour Generation Atomic Absorption Spectroscopy.
Ext-008	Subcontracted to Barratt & Smith Pathlogy. NATA Accreditation No. 2178.
SEM-001	Metals - Determination of various metals using Air / Acetylene Flame Atomic Absorption Spectroscopy. In accordance with APHA 20th ED, 3111A, C.
SEI-038	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA 20th ED, 4110 -B.
SEI-010	Conductivity and Salinity - measured using a conductivity cell and dedicated meter, in accordance with APHA2510 20th ED.
SEI-001	pH - Measured using pH meter and electrode in accordance with APHA 20th ED, 4500-H+.

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QUALITY CONTROL Metals on TCLP extract	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
pH of soil for fluid# determ.	pH units	0.1	SEP-003	[NT]	[NT]	[NT]	Blank	[NT]
pH of soil for fluid # determ. (acid)	pH units	0.1	SEP-003	[NT]	[NT]	[NT]	Blank	[NT]
Extraction fluid used		1	SEP-003	1	[NT]	[NT]	Blank	[NT]
pH of final Leachate	pH units	0.1	SEP-003	4.93	[NT]	[NT]	Blank	[NT]
Arsenic	mg/L	0.05	SEM-010	<0.050	[NT]	[NT]	Blank	103 || 103 || RPD: 0
Cadmium	mg/L	0.006	SEM-010	<0.006	[NT]	[NT]	Blank	112 || 113 || RPD: 1
Chromium	mg/L	0.005	SEM-010	<0.005	[NT]	[NT]	Blank	102 || 102 || RPD: 0
Copper	mg/L	0.01	SEM-010	<0.01	[NT]	[NT]	Blank	101 || 101 || RPD: 0
Lead	mg/L	0.04	SEM-010	<0.04	[NT]	[NT]	Blank	87 || 87 || RPD: 0
Mercury	mg/L	0.0005	SEM-005	<0.0005	[NT]	[NT]	Blank	98 || 102 || RPD: 4
Nickel	mg/L	0.004	SEM-010	<0.004	[NT]	[NT]	Blank	88 || 88 || RPD: 0
Zinc	mg/L	0.005	SEM-010	<0.005	[NT]	[NT]	Blank	107 || 106 || RPD: 1

QUALITY CONTROL Microbiologocal Testing	UNITS	PQL	METHOD	Blank
Total Cell Count	CFU/g	0	Ext-008	0
Salmonella		0	Ext-008	0.0
Listeria		10	Ext-008	<10

QUALITY CONTROL Metals in TCLP (AS4439)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
pH of final Leachate	pH units	0.1	SEP-003	[NT]	[NT]	[NT]	Blank	[NT]
Arsenic	mg/L	0.05	SEM-010	<0.050	[NT]	[NT]	Blank	103 || 103 || RPD: 0
Cadmium	mg/L	0.006	SEM-010	<0.006	[NT]	[NT]	Blank	113 || 113 || RPD: 0
Chromium	mg/L	0.005	SEM-010	<0.005	[NT]	[NT]	Blank	102 || 102 || RPD: 0
Copper	mg/L	0.01	SEM-010	<0.01	[NT]	[NT]	Blank	101 || 101 || RPD: 0
Lead	mg/L	0.04	SEM-010	<0.04	[NT]	[NT]	Blank	102 || 102 || RPD: 0
Mercury	mg/L	0.0005	SEM-005	<0.0005	[NT]	[NT]	Blank	98 || 102 || RPD: 4
Nickel	mg/L	0.004	SEM-010	<0.004	[NT]	[NT]	Blank	104 || 104 || RPD: 0
Zinc	mg/L	0.005	SEM-010	<0.005	[NT]	[NT]	Blank	107 || 106 || RPD: 1
Aluminium	mg/L	0.03	SEM-010	<0.03	[NT]	[NT]	Blank	94 || 94 || RPD: 0
Calcium	mg/L	0.01	SEM-001	<0.01	[NT]	[NT]	Blank	104 || 105 || RPD: 1
Iron (Soluble)	mg/L	0.1	SEM-010	<0.10	[NT]	[NT]	Blank	87 || 86 || RPD: 1
Potassium	mg/L	0.03	SEM-001	<0.03	[NT]	[NT]	Blank	107 || 107 || RPD: 0
Magnesium	mg/L	0.03	SEM-001	<0.03	[NT]	[NT]	Blank	107 || 108 || RPD: 1
Sodium	mg/L	0.002	SEM-001	<0.002	[NT]	[NT]	Blank	117 || 116 || RPD: 1
Sulphur*	mg/L	0.5	SEM-010	<0.50	[NT]	[NT]	Blank	87 || 88 || RPD: 1

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QUALITY CONTROL Inorganics	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Aluminium	mg/kg	3	SEM-010	<3.0	[NT]	[NT]	Sand	94 || 94 || RPD: 0
Calcium by AAS	mg/kg	1	SEM-001	<1	[NT]	[NT]	Sand	92 || 89 || RPD: 3
Iron	mg/kg	5	SEM-010	<5.0	[NT]	[NT]	Sand	107 || 98 || RPD: 9
Potassium	mg/kg	3	SEM-001	<3	[NT]	[NT]	Sand	95 || 94 || RPD: 1
Magnesium	mg/kg	3	SEM-001	<3	[NT]	[NT]	Sand	105 || 105 || RPD: 0
Sodium	mg/kg	0.2	SEM-001	<0.2	[NT]	[NT]	Sand	121 || 121 || RPD: 0
Sulphur*	mg/kg	5	SEM-010	<5.0	[NT]	[NT]	Sand	87 || 88 || RPD: 1
Sulphate, SO4* 1:5 soil :water	mg/kg	2	SEI-038	<2.0	[NT]	[NT]	Sand	[NT]
ASLP Sulphate, SO4	mg/L	0.4	SEI-038	<0.40	[NT]	[NT]	Sand	[NT]
Salinity as NACL *	mg/kg	1	SEI-010	<1.0	[NT]	[NT]	Sand	[NT]
pH 1:5 soil:water	pH Units		SEI-001	[NT]	[NT]	[NT]	Sand	[NT]

QUALITY CONTROL Inorganics	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Aluminium	mg/kg	[NT]	[NT]	Batch	[NT]
Calcium by AAS	mg/kg	[NT]	[NT]	Batch	[NT]
Iron	mg/kg	[NT]	[NT]	Batch	[NT]
Potassium	mg/kg	[NT]	[NT]	Batch	[NT]
Magnesium	mg/kg	[NT]	[NT]	Batch	[NT]
Sodium	mg/kg	[NT]	[NT]	Batch	[NT]
Sulphur*	mg/kg	[NT]	[NT]	Batch	[NT]
Sulphate, SO4* 1:5 soil: water	mg/kg	[NT]	[NT]	Batch	102 || [N/T]
ASLP Sulphate, SO4	mg/L	[NT]	[NT]	Batch	102 || [N/T]
Salinity as NACL *	mg/kg	[NT]	[NT]	Batch	[NT]
pH 1:5 soil:water	pH Units	[NT]	[NT]	Batch	[NT]

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Result Codes

[INS]	:	Insufficient Sample for this test	[HBG]	:	Results not Reported due to High Background Interference
[NR]	:	Not Requested	*	:	Not part of NATA Accreditation
[NT]	:	Not tested	[N/A]	:	Not Applicable

Result Comments

Micro analysed by Sonic Healthcare Lab Nos. 76133529 & 76133530.
Date Organics extraction commenced: N/A
NATA Corporate Accreditation No. 2562, Site No 4354
Note: Test results are not corrected for recovery (excluding Dioxins/Furans and PAH in XAD and PUF).

Quality Control Protocol

Reagent Blank: Sample free reagents carried through the preparation/extraction/digestion procedure and analysed at the beginning of every sample batch analysis. For larger projects, a reagent blank is prepared and analysed with every 20 samples.
Duplicate: A separate portion of a sample being analysed which is treated the same as the other samples in the batch. A duplicate is prepared at least every 20 samples.
Matrix Spike Duplicates: Sample replicates spiked with identical concentrations of target analyte(s). The spiking occurs during the sample preparation and prior to the extraction/digestion procedure. They are used to document the precision and bias of a method in a given sample matrix. Where there is not enough sample available to prepare a spiked sample, another known soil/sand or water (or Milli-Q water) may be used. A duplicate spiked sample is prepared at least every 20 samples.
Surrogate Spike: Added to all samples requiring analysis for organics (where relevant) prior to extraction. Used to determine the extraction efficiency. They are organic compounds which are similar to the target analyte(s) in chemical composition and behaviour in the analytical process, but which are not normally found in environmental samples.
Internal Standard: Added to all samples requiring analysis for organics (where relevant) after the extraction process; the compounds serve to give a standard of retention time and response, which is invariant from run-to-run with the instruments.
Control Standards: Prepared from a source independent of the calibration standards. At least one control standard is included in each run to confirm calibration validity.
Additional QC Samples: A calibration standard and blank are run after every 20 samples of an instrumental analysis run to assess analytical drift.

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SPECTROLAB

ספקטרולאב בע"מ
מעבדה כימית אנליטית
ת.ד. 2046 רחובות 76120 טל' 08-9474583
E-Mail spec-lab@inter.net.il

פקס 08-9461032
http://www.spectrolab.co.il

לכבוד
אמיר אסא
חץ אקולוגיה

21.12.01

שלום רב,

הנדון: דו"ח בדיקה מעבדתית מס' 0601201

דוגמתכם: ראקטור מתאנוגני
תאריך הגעה: 04.12.01 **דיגום ע"י:** הלקוח **בדיקה אחרונה:** 20.12.01
סוג הבדיקה: **הזמנתכם מס':**

תוצאות:

HYDERA ANALYIS

TOTAL COLIFORM

SALMONELLA

דוגמה	קוליפורם ל- 1 מ"ל	סלמונלה ל- 20 מ"ל
ראקטור מתאנוגני	5×10^4	שלילי

REACTOR METHANOGENIC

Zero

בברכה

אלי בר-נס
מנהל המעבדה

- יש להתייחס למסמך זה במלואו ואין להעתיק ממנו למסמכים אחרים.
- הנתונים המפורטים משקפים במדויק את התוצאות שנתקבלו במעבדה והינם נכונים לדוגמה הנבדקת בלבד.
- **מסמך זה מכיל** **עמודים**

SPECTROLAB

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http://www spectrolab.co.il

לכבוד
אמיר אסא
חץ אקולוגיה

21.12.01

שלום רב,

הנדון: דו"ח בדיקה מעבדתית מס' 0611201

דוגמתכם: קולחין
תאריך הגעה: 04.12.01 **דיגום ע"י:** הלקוח **בדיקה אחרונה:** 20.12.01
סוג הבדיקה: **הזמנתכם מס':**

תוצאות: ~~HAD~~ HADERA PLANT

דוגמה	קוליפורם ל- 1 מ"ל	סלמונלה ל- 20 מ"ל
קולחין	1×10^2	שלילי

OUTPUT OF SLUDGE FROM AN AEROBIC SYSTEM

בברכה

אלי בר-נס
מנהל המעבדה

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- **מסמך זה מכיל** **עמודים**

SPECTROLAB
INTEGRATED LABORATORY, ELEMENT ANALYSES & ENVIRONMENTAL SERVICES.

לכבוד
אמיר אסא
חץ אקולוגיה בע"מ

17.12.03

שלום רב,

BioGAS

הנדון: דו"ח בדיקה מעבדתית מס' 0371203

דוגמתכם: ביו-גז
תאריך הגעה: 02.12.03 **דיגום ע"י:** המעבדה **בדיקה אחרונה:**
סוג הבדיקה: לפי דרישה **הזמנתכם מס':** מכתב

דיגום ביו-גז ממתקן חץ בחיריה ביום 02.12.03 בשעה 14:15.
טמפרטורת אויר בזמן הדיגום - 17.2°.
הדיגום בוצע מברז במתקן לשקית TEDLAR בנפח 5 ליטר.
לפני הדיגום בוצעה מדידה ע"י מר אמיר אסא בעזרת מד נייד. המד הראה 78% מתאן.

תוצאות:

טמפרטורת ביו-גז נדגם	-	14.6°	Temperature
מתאן	-	81%	CH_4
חמצן	-	< 0.5%	O_2
לחות	-	3.8 מ"ג/ליטר	Humidity mg/L

מאשר הדו"ח: אלי בר-נס, מנהל המעבדה

ת.ד. 2046 רחובות 76120
08-9474583 פקס 08-9461032

ab

ספקטרולאב בע"מ
מעבדה כימית אנליטית
ת.ד. 2046 רחובות 76120
טל' 08-9474583 פקס 08-9461032
E-Mail spec-lab@inter.net.il
http://www.spectrolab.co.il

לכבוד
בועז צדיק
חץ אקולוגיה בע"מ
22.10.03

שלום רב, BioQAS

הנדון: דו"ח בדיקה מעבדתית מס' 1140903

דוגמתכם: ביוגז - מזבלת חיריה
תאריך הגעה: 16.09.03 **דיגום ע"י:** המעבדה **בדיקה אחרונה:** 26.09.03
סוג הבדיקה: לפי דרישה **הזמנתכם מס':** מכתבכם

דיגום ביום 16.09.03 בשעה 10:30 בוצע ע"י נציג המעבדה אלי בר-נס בנוכחות אינג' דני שטרנברג מאיגוד ערים דן לתברואה ואמיר מחברת "חץ אקולוגיה".

תוצאות: (ביחידות נפחיות)
ppm except as %

סוג בדיקה	תוצאה
מתאן, % CH4	81
CO_2, %	17.5
H_2S, ח"מ	90
חמצן, % O_2	< 0.5
אמוניה, ח"מ Ammonia	1.3
כלורידים, ח"מ Cl	< 1
פלואורידים, ח"מ F	< 1
ברומידים, ח"מ Br	< 1
BTEX, ח"מ	< 1
מרקפטנים, ח"מ Mercaptan	0.9
אתיל סולפיד, ח"מ Sulphide	< 1
מתיל סולפיד, ח"מ Methyl S	< 1
דימתיל סולפיד, ח"מ Di Methyl S	< 1
ויניל כלוריד, ח"מ Vinyl Cl.	< 1
מתילן כלוריד, ח"מ Methyl Cl.	< 1
אתילן כלוריד, ח"מ Ethylene Cl	< 1
כלורופורם, ח"מ Chloroform	< 1
פחמן טטרא כלורי, ח"מ CCl4	< 1
כלורובנזן, ח"מ Chlorobenzene	< 1
CCl_2F_2, ח"מ	< 1
אלדהידים, ח"מ Aldehyde	< 1

--- המשך דוח בעמ' 2 ---

- יש להתייחס למסמך זה במלואו ואין להעתיק ממנו למסמכים אחרים.
- הנתונים המפורטים משקפים במדויק את התוצאות שנתקבלו במעבדה והינם נכונים לדוגמה הנבדקת בלבד.
- **מסמך זה מכיל** 2 **עמודים**

BIOGAS

סוג בדיקה	תוצאה
אתאן, ח"מ Ethane	< 5
בוטאן, ח"מ Butane	< 5
אתילן, ח"מ Ethylene	< 5
אתנול, ח"מ Ethanol	< 1
איזופרופיל אלכוהול, ח"מ	< 1
אצטון, ח"מ	< 1
חומצות שומניות C2-C5, ח"מ	3 (ח. אצטית)
NMHC כ- C, ח"מ	82

Isopropyl Alcohol
Acetone
Volatile Fatty Acid

בברכה

a

אלי בר-נס
מנהל המעבדה

- יש להתייחס למסמך זה במלואו ואין להעתיק ממנו למסמכים אחרים.
- הנתונים המפורטים משקפים במדויק את התוצאות שנתקבלו במעבדה והינם נכונים לדוגמה הנבדקת בלבד.
- **מסמך זה מכיל 2 עמודים**

אמינולאב בע"מ שרותי מעבדה אנליטיים לתעשיה, רפואה, חקלאות, מחקר ואיכות סביבה
סניף ראשי: קרית זיצמן ת.ד. 4074, נס ציונה 70400 טל: 08-9409690, פקס: 08-9408474
סניף צפון: בנין ר.מ.א, היוצרים 19, ת.ד. 1033, נהריא 20100 טל: 04-9586916, פקס: 04-9582154

18.08.2004
C 4492a 0804 מס' תעודה

לכבוד
מר אמיר אסא
חץ אקולוגיה בע"מ
שד' ההסתדרות 21, ת.ד. 25175 חיפה 31250
טל: 04-8412599 052-480062
פקס: 04-8412586

הנדון: תעודת בדיקה
מס' אמינולאב: **26061.04-C**

תאריך קבלה: 10.08.04
תאור הדוגמא: בוצה - אציטוגני
נדגם ע"י: הלקוח
סוג הדיגום: אקראי
בדיקה: לפי דרישה

תוצאות הבדיקות: SLUDGE ANALYSIS ACIDOGENIC REACTOR

מס' אמינולאב		26061
הבדיקה	**יחידות**	**בוצה - אציטוגני**
חנקן קלדל (TKN)	g/kg	7.4
אפר (550°C) Ash	%	11.7
כלל מוצקים נדיפים (550°C) Total VSS	%	41.4
רטיבות Humidity	%	46.9

תוצאות סריקת המתכות בדף מס' 2.

העתק: אמינולאב סניף צפון פקס 04-9582154.

נבדק ע"י: דינה ברודנר, ליליה איסקוב
אושר ע"י מנהל המחלקה: דר' צדוק שאבי

יש להתייחס לנתונים המופיעים במסמך זה רק במלואם ואין לשעתיק או לצטט את כולם או חלקם, למסמכים אחרים. הנתונים הספורטים משקפים במדויק את התוצאות שהתקבלו במעבדה לדוגמה שנמסרה לבדיקה.
אין לעשות שימוש בשמה של אמינולאב בעיתון או במוניטין שלה, בהקשר לנתונים או הממצאים המצוינים במסמך זה, אלא ובכפוף לאישורה המוקדם בכתב.

אמינולאב בע"מ שרותי מעבדה אנליטיים לתעשיה, רפואה, חקלאות, מחקר ואיכות הסביבה
סניף ראשי: קרית ויצמן ת.ד. 4074, נס ציונה 70400 טל: 08-9409690, פקס: 08-9408474
סניף צפון: בנין ד.מ.א, היוצרים 19, ת.ד. 1033, כרמיאל 20100 טל: 04-9586916, פקס: 04-9582154

18.08.2004
C 4492a 0804

מס' תעודה

תוצאות סריקת המתכות נתונות ב- mg/kg על בסיס דוגמא יבשה:

ACIDOGENIC REACTOR

מס' אמינולאב		26061
בדיקה	סימון	בוצה-אציטוגני
כסף	Ag	<5
אלומיניום	Al	4018
ארסן	As	<5
בורון	B	<5
בריום	Ba	119
בריליום	Be	<2
סידן	Ca	37190
קדמיום	Cd	1
קובלט	Co	5
כרום	Cr	36
נחושת	Cu	57
ברזל	Fe	5389
כספית	Hg	2
אשלגן	K	2742
ליתיום	Li	≤6
מגנזיום	Mg	2808
מנגן	Mn	151
מוליבדן	Mo	3
נתרן	Na	2276
ניקל	Ni	12
זרחן	P	5888
עופרת	Pb	30
גופרית	S	7450
סלניום	Se	<5
סטרונציום	Sr	120
טיטניום	Ti	46
וונדיום	V	9
אבץ	Zn	335

תוצאה מלווה בסימן '<' - לא נמצאו עקבות בדוגמה בגבול הרגישות המצוין.

נבדק ע"י: דינה ברודנר, ליליח איסקוב
אושר ע"י מנהל המחלקה: דר' צדוק שאבי

יש להתייחס לנתונים המופיעים במסמך זה רק במלואם ואין להעתיק או לצטט, אלא אם כל חלקיו. הנתונים המפורטים משקפים במדויק את התוצאות שהתקבלו במעבדה לדוגמה שנמסרה לבדיקה.
אין לעשות שימוש בשמה של אמינולאב בע"מ או במוניטין שלה, בהקשר לנתונים או המסקנות המצוינות במסמך זה, אלא ובכפוף לאישורה המוקדם בכתב.

אמינולאב בע"מ שרותי מעבדה אנליטיים לתעשיה, רפואה, חקלאות, מחקר ואיכות הסביבה
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C 4492b 0804 מס' תערה

תוצאות סריקת המתכות נתונות ב- mg/kg על בסיס דוגמא יבשה:
METHANOGENIC REACTOR

מס' אמינולאב		26062
בדיקה	סימון	בוצה - מתאנוגני
כסף	Ag	<5
אלומיניום	Al	9772
ארסן	As	<5
בורון	B	33
בריום	Ba	364
בריליום	Be	<2
סידן	Ca	118900
קדמיום	Cd	2
קובלט	Co	10
כרום	Cr	140
נחושת	Cu	182
ברזל	Fe	12380
כספית	Hg	4
אשלגן	K	5119
ליתיום	Li	≤16
מגנזיום	Mg	6950
מנגן	Mn	325
מוליבדן	Mo	5
נתרן	Na	3277
ניקל	Ni	24
זרחן	P	25310
עופרת	Pb	58
גופרית	S	17490
סלניום	Se	<5
סטרונציום	Sr	312
טיטניום	Ti	66
וונדיום	V	18
אבץ	Zn	1122

תוצאה מלווה בסימן '<' - לא נמצאו עקבות בדוגמה בגבול הרגישות המצוין.

נבדק ע"י: דינה ברודנר, ליליה איסקוב
אושר ע"י מנהל המחלקה: דר' צדוק שאבי

יש להתייחס לנתונים המופיעים במסמך זה רק במלואם ואין להעתיק או לצטט, את כולם או חלקם, למסמכים אחרים. הנתונים המפורטים משקפים במדויק את תוצאות שהתקבלו במעבדת לדוגמה שנמסרה למדיקות.
אין לעשות שימוש בשמה של אמינולאב בע"מ או במוניטין שלה, בהקשר למוצרים או המסמכים [illegible] אלא ובכפוף לאישורה חמוקדם ובכתב.

אמינולאב בע"מ שרותי מעבדה אנליטיים לתעשיה, רפואה, חקלאות, מחקר ואיכות הסביבה
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לכבוד
מר אמיר אסא
חץ אקולוגיה בע"מ
שדי ההסתדרות 21, ת.ד. 25175 חיפה 31250
טל: 04-8412599 052-480062
פקס: 04-8412586

הנדון: תעודת בדיקה
מס' אמינולאב: **26062.04C**

תאריך קבלה: 10.08.04
תאור הדוגמא: בוצה - מתאנוגני
נדגם ע"י: הלקוח
בדיקה: לפי דרישה

תוצאות הבדיקות: SLUDGE FROM METHANOGENIC REACTOR

מס' אמינולאב		26062
הבדיקה	**יחידות**	**בוצה - מתאנוגני**
חנקן קלדל (TKN)	g/kg	9.0
אפר (550^0C)	%	14.3
כלל מוצקים נדיפים (550^0C)	%	19.8
רטיבות	%	65.9

תוצאות סריקת המתכות בדף מס' 4.
העתק: אמינולאב סניף צפון פקס 04-9582154.

נבדק ע"י: דינה ברודנר, ליליה איסקוב
אושר ע"י מנהל המחלקה: דר' צדוק שאבי

יש לזהותיכם לנתונים המופיעים במסמך זה רק במלואם ואין להעתיק או לצטט, את כולם או חלקם, למסמכים אחרים. הנתונים המפורטים משקפים במדויק את התוצאות שהתקבלו במעבדה לדוגמה שנמסרה לבדיקה.
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