



Environmental Division



# CERTIFICATE OF ANALYSIS

Work Order

: EB1321071

Page

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Client : MAGNESIUM OXIDE BOARD CORP

Laboratory : Environmental Division Brisbane

Contact : MR STEVE MARSHELL (coc/sm)

Contact : Customer Services

Address : PO BOX 9302

Address : 2 Byth Street Stafford QLD Australia 4053

PACIFIC PARADISE QLD 4564

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Project : VOC TEST

QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Order number : MgO CORP VOC&13

Date Samples Received : 29-AUG-2013

C-O-C number : ---

Issue Date : 04-SEP-2013

Sampler : ---

No. of samples received : 1

Site : ---

No. of samples analysed : 1

Quote number : ---

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



WORLD RECOGNISED ACCREDITATION

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

### Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Matt Frost	Senior Organic Chemist	Brisbane Inorganics
Matt Frost	Senior Organic Chemist	Brisbane Organics





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Client : MAGNESIUM OXIDE BOARD CORP  
Project : VOC TEST

### General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting



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 Client : MAGNESIUM OXIDE BOARD CORP  
 Project : VOC TEST

### Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)

Compound	CAS Number	LOR	Client sampling date / time		CMA - CM40009	Unit	Client sample ID
			---	---			
<b>EA055: Moisture Content</b>							
Moisture Content (dried @ 103°C)	---	1.0	%	14.2	---	---	---
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
Benzene	71-43-2	0.2	mg/kg	<0.2	---	---	---
Toluene	108-88-3	0.5	mg/kg	<0.5	---	---	---
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	---	---	---
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	---	---	---
Styrene	100-42-5	0.5	mg/kg	<0.5	---	---	---
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	---	---	---
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	---	---	---
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	---	---	---
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	---	---	---
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	---	---	---
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	---	---	---
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	---	---	---
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	---	---	---
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	---	---	---
<b>EP074B: Oxygenated Compounds</b>							
Vinyl Acetate	108-05-4	5	mg/kg	<5	---	---	---
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	---	---	---
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	---	---	---
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	---	---	---
<b>EP074C: Sulfonated Compounds</b>							
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	---	---	---
<b>EP074D: Fumigants</b>							
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	---	---	---
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	---	---	---
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	---	---	---
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	---	---	---
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	---	---	---
<b>EP074E: Halogenated Aliphatic Compounds</b>							
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	---	---	---
Chloromethane	74-87-3	5	mg/kg	<5	---	---	---
Vinyl chloride	75-01-4	5	mg/kg	<5	---	---	---





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 Client : MAGNESIUM OXIDE BOARD CORP  
 Project : VOC TEST

### Analytical Results

Compound	CAS Number	LOR	Client sample ID		CMA - CM40009				
			CAS Number	Unit					
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>									
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5				
<b>EP074G: Trihalomethanes</b>									
Chloroform	67-66-3	0.5	mg/kg		<0.5				
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5				
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5				
Bromoform	75-25-2	0.5	mg/kg		<0.5				
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	mg/kg		<5				
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		116				
Toluene-D8	2037-26-5	0.1	%		101				
4-Bromofluorobenzene	460-00-4	0.1	%		89.2				



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Project : VOC TEST

### Surrogate Control Limits

Compound	CAS Number	Recovery Limits (%)	
		Low	High
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	52.7	133.7
Toluene-D8	2037-26-5	60.3	131.1
4-Bromofluorobenzene	460-00-4	59.2	126.6



Environmental Division



# QUALITY CONTROL REPORT

Work Order : **EB1321071**

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Client : **MAGNESIUM OXIDE BOARD CORP**  
Contact : **MR STEVE MARSHELL (oc/sm)**  
Address : **PO BOX 9302  
PACIFIC PARADISE QLD 4564**

Laboratory : **Environmental Division Brisbane**  
Contact : **Customer Services**  
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Facsimile : **+61 7 3243 7218**

Project : **VOC TEST**

QC Level : **NEPM 2013 Schedule B(3) and ALS QCS3 requirement**

Site : **---**

C-O-C number : **---**

Date Samples Received : **29-AUG-2013**

Sampler : **---**

Issue Date : **04-SEP-2013**

Order number : **MgO CORP VOC8/13**

No. of samples received : **1**

Quote number : **---**

No. of samples analysed : **1**

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits



NATA Accredited Laboratory 825



Accredited for compliance with ISO/IEC 17025.

### Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Matt Frost	Senior Organic Chemist	Brisbane Inorganics
Matt Frost	Senior Organic Chemist	Brisbane Organics

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Client : MAGNESIUM OXIDE BOARD CORP  
Project : VOC TEST

### General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :

Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot

CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

RPD = Relative Percentage Difference

# = Indicates failed QC



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 Client : MAGNESIUM OXIDE BOARD CORP  
 Project : VOC TEST

### Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting. Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Laboratory sample ID	Client sample ID	Method, Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report			Recovery Limits (%)
						Original Result	Duplicate Result	RPD (%)	
<b>EA055: Moisture Content (QC Lot: 3040119)</b>									
EB1321082-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	---	1.0	%	18.0	18.1	0.0	0% - 50%
EB1321139-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	---	1.0	%	9.2	9.2	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3039723)</b>									
EB1321071-001	CMA - CM40009	EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Styrene	106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: ortho-Xylene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Butylbenzene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 3039723)</b>									
EB1321071-001	CMA - CM40009	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3039723)</b>									
EB1321071-001	CMA - CM40009	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3039723)</b>									
EB1321071-001	CMA - CM40009	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3039723)</b>									
EB1321071-001	CMA - CM40009	EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



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 Client : MAGNESIUM OXIDE BOARD CORP  
 Project : VOC TEST

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report			Recovery Limits (%)
						Original Result	Duplicate Result	RPD (%)	
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3039723) - continued</b>									
EB1321071-001	CMA - CM40009	EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,2-Dichloroethane	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3039723)</b>									
EB1321071-001	CMA - CM40009	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 3039723)</b>									
EB1321071-001	CMA - CM40009	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



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 Client : MAGNESIUM OXIDE BOARD CORP  
 Project : VOC TEST

Sub-Matrix: SOIL		Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EB1321071-001	CMA - CM40009	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit

EP074H: Naphthalene (QC Lot: 3039723)



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 Project : VOC TEST

**Method Blank (MB) and Laboratory Control Spike (LCS) Report**

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
				Result	Recovery Limits (%)	Spike Concentration	LCS	Low	High
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3039723)</b>									
EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	---	1 mg/kg	87.2	64	110
EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	---	1 mg/kg	87.8	66	115
EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	---	---	---	---	---
EP074: meta- & para-Xylene	108-38-3	0.5	mg/kg	---	---	1 mg/kg	86.4	62	106
EP074: Styrene	106-42-3	0.5	mg/kg	<0.5	---	2 mg/kg	84.1	65	111
EP074: ortho-Xylene	100-42-5	0.5	mg/kg	<0.5	---	1 mg/kg	91.5	62	108
EP074: Isopropylbenzene	95-47-6	0.5	mg/kg	<0.5	---	1 mg/kg	86.1	67	111
EP074: n-Propylbenzene	98-82-8	0.5	mg/kg	<0.5	---	1 mg/kg	80.7	66	110
EP074: 1,3,5-Trimethylbenzene	103-65-1	0.5	mg/kg	<0.5	---	1 mg/kg	88.8	62	108
EP074: sec-Butylbenzene	108-67-8	0.5	mg/kg	<0.5	---	1 mg/kg	90.1	68	107
EP074: 1,2,4-Trimethylbenzene	135-98-8	0.5	mg/kg	<0.5	---	1 mg/kg	86.7	67	110
EP074: tert-Butylbenzene	95-63-6	0.5	mg/kg	<0.5	---	1 mg/kg	89.6	68	110
EP074: p-Isopropyltoluene	98-06-6	0.5	mg/kg	<0.5	---	1 mg/kg	89.7	66	110
EP074: n-Butylbenzene	99-87-6	0.5	mg/kg	<0.5	---	1 mg/kg	89.5	66	112
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	---	1 mg/kg	87.0	66	110
<b>EP074B: Oxygenated Compounds (QCLot: 3039723)</b>									
EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	---	10 mg/kg	87.5	64	113
EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	---	10 mg/kg	111	60	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	---	10 mg/kg	83.8	56	107



Sub-Matrix: SOIL				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report		
Method/Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	Recovery Limits (%)
							Low	High
<b>EP074B: Oxygenated Compounds (QCLot: 3039723) - continued</b>								
EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	10 mg/kg	80.9	57	113
<b>EP074C: Sulfonated Compounds (QCLot: 3039723)</b>								
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	94.7	62	111
<b>EP074D: Fumigants (QCLot: 3039723)</b>								
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	78.7	51	130
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	82.3	60	112
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	2 mg/kg	90.6	58	114
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	2 mg/kg	86.4	55	117
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	96.4	63	113
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3039723)</b>								
EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	10 mg/kg	104	84	127
EP074: Chloromethane	74-87-3	5	mg/kg	<5	10 mg/kg	96.5	67	128
EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	10 mg/kg	109	66	132
EP074: Bromomethane	74-83-9	5	mg/kg	<5	10 mg/kg	93.7	56	121
EP074: Chloroethane	75-00-3	5	mg/kg	<5	10 mg/kg	87.9	72	120
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	10 mg/kg	89.7	62	123
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	96.8	67	114
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	92.1	56	111
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	94.4	59	109
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	91.2	54	125
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	88.4	64	108



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Sub-Matrix: SOIL		Method Blank (MB) Report			Laboratory Control Spike (LCS) Report			
Method/Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3039723) - continued</b>								
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	87.7	64	112
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	89.8	64	112
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	93.5	60	115
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	91.4	65	109
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	99.3	66	112
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	90.6	64	114
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	# 131	63	116
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	83.3	68	114
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	81.3	74	126
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	87.0	65	110
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	93.0	48	130
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	86.9	49	130
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	85.3	68	108
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	69.0	61	121
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	90.7	42	115
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	113	54	131
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	91.2	53	117
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3039723)</b>								
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	94.1	68	112
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	97.7	68	109



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Sub-Matrix: SOIL	Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report		
					Result	Spike Concentration	Spike Recovery (%)		High
							LCS	Low	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3039723) - continued</b>									
EP074: 2-Chlorotoluene		95-49-8	0.5	mg/kg	<0.5	1 mg/kg	90.4	66	106
EP074: 4-Chlorotoluene		106-43-4	0.5	mg/kg	<0.5	1 mg/kg	86.1	66	106
EP074: 1,3-Dichlorobenzene		541-73-1	0.5	mg/kg	<0.5	1 mg/kg	87.4	68	108
EP074: 1,4-Dichlorobenzene		106-46-7	0.5	mg/kg	<0.5	1 mg/kg	88.5	68	106
EP074: 1,2-Dichlorobenzene		95-50-1	0.5	mg/kg	<0.5	1 mg/kg	93.3	68	108
EP074: 1,2,4-Trichlorobenzene		120-82-1	0.5	mg/kg	<0.5	1 mg/kg	93.8	60	113
EP074: 1,2,3-Trichlorobenzene		87-61-6	0.5	mg/kg	<0.5	1 mg/kg	86.7	63	113
<b>EP074G: Trihalomethanes (QCLot: 3039723)</b>									
EP074: Chloroform		67-66-3	0.5	mg/kg	<0.5	1 mg/kg	90.2	66	112
EP074: Bromodichloromethane		75-27-4	0.5	mg/kg	<0.5	1 mg/kg	92.4	56	116
EP074: Dibromochloromethane		124-48-1	0.5	mg/kg	<0.5	1 mg/kg	83.6	62	114
EP074: Bromoform		75-25-2	0.5	mg/kg	<0.5	1 mg/kg	76.7	53	122
<b>EP074H: Naphthalene (QCLot: 3039723)</b>									
EP074: Naphthalene		91-20-3	5	mg/kg	<5	1 mg/kg	77.6	63	109

### Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- No Matrix Spike (MS) Results are required to be reported.

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



Environmental Division



# INTERPRETIVE QUALITY CONTROL REPORT

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Client	: MAGNESIUM OXIDE BOARD CORP	Laboratory	: Environmental Division Brisbane
Contact	: MR STEVE MARSHELL (coc/sm)	Contact	: Customer Services
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Telephone	: +61 07 5450 7314	Telephone	: +61 7 3243 7222
Facsimile	: +61 07 5450 7051	Facsimile	: +61 7 3243 7218
Project	: VOC TEST	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ---	Date Samples Received	: 29-AUG-2013
C-O-C number	: ---	Issue Date	: 04-SEP-2013
Sampler	: ---	No. of samples received	: 1
Order number	: MgO CORP VOC8/13	No. of samples analysed	: 1
Quote number	: ---		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



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 Project : VOC TEST

## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and returns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method	Container / Client Sample ID(s)	Sample Date		Extraction / Preparation		Analysis	
		Date extracted	Due for extraction	Date analysed	Due for analysis	Evaluation	Evaluation
<b>EA055: Moisture Content</b>							
Snap Lock Bag (EA055-103)							
CMA - CM40009		29-AUG-2013	---	02-SEP-2013	12-SEP-2013	✓	✓
<b>EP074D: Fumigants</b>							
Snap Lock Bag (EP074)		29-AUG-2013	02-SEP-2013	05-SEP-2013	05-SEP-2013	✓	✓
CMA - CM40009							
<b>EP074E: Halogenated Aliphatic Compounds</b>							
Snap Lock Bag (EP074)		29-AUG-2013	02-SEP-2013	05-SEP-2013	05-SEP-2013	✓	✓
CMA - CM40009							
<b>EP074F: Halogenated Aromatic Compounds</b>							
Snap Lock Bag (EP074)		29-AUG-2013	02-SEP-2013	05-SEP-2013	05-SEP-2013	✓	✓
CMA - CM40009							
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
Snap Lock Bag (EP074)		29-AUG-2013	02-SEP-2013	05-SEP-2013	05-SEP-2013	✓	✓
CMA - CM40009							
<b>EP074H: Naphthalene</b>							
Snap Lock Bag (EP074)		29-AUG-2013	02-SEP-2013	05-SEP-2013	05-SEP-2013	✓	✓
CMA - CM40009							
<b>EP074B: Oxygenated Compounds</b>							
Snap Lock Bag (EP074)		29-AUG-2013	02-SEP-2013	05-SEP-2013	05-SEP-2013	✓	✓
CMA - CM40009							
<b>EP074C: Sulfonated Compounds</b>							
Snap Lock Bag (EP074)		29-AUG-2013	02-SEP-2013	05-SEP-2013	05-SEP-2013	✓	✓
CMA - CM40009							
<b>EP074G: Trihalomethanes</b>							
Snap Lock Bag (EP074)		29-AUG-2013	02-SEP-2013	05-SEP-2013	05-SEP-2013	✓	✓
CMA - CM40009							



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### Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(when) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: SOIL

Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)		Quality Control Specification	
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Moisture Content	EA055-103	2	15	13.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	1	100.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
Volatile Organic Compounds	EP074	1	1	100.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Volatile Organic Compounds	EP074	1	1	100.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



### Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Volatile Organic Compounds	EP074	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 501)
Preparation Methods	Method	Matrix	Method Descriptions
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.



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 Project : VOC TEST

## Summary of Outliers

### Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QM/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

### Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: SOIL

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Laboratory Control Spike (LCS) Recoveries</b>							
EP074E: Halogenated Aliphatic Compounds	3619926-002		1,1,2-Trichloroethane	79-00-5	131 %	63-116%	Recovery greater than upper control limit

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Duplicate outliers occur.
- For all matrices, no Matrix Spike outliers occur.

### Regular Sample Surrogates

- For all regular sample matrices, no surrogate recovery outliers occur.

### Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- No Analysis Holding Time Outliers exist.

### Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- No Quality Control Sample Frequency Outliers exist.