

Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES0818896	Page	: 1 of 11
Client	: C M JEWELL & ASSOC PTY LTD	Laboratory	: Environmental Division Sydney
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Project	: J1418	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: KIRRAWEE BRICK PIT	Date Samples Received	: 22-DEC-2008
C-O-C number	: —	Issue Date	: 06-JAN-2009
Sampler	: DVE/CBW	No. of samples received	: 16
Order number	: —	No. of samples analysed	: 16
Quote number	: SY/100/08		

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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Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and returns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: WATER							
Method	Sample Date	Extraction / Preparation		Analysis		Evaluation	
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural							
BP:01:3.5, BP:02:3.5, BP:03:5.5, BP:04:6.0, BP:05:6.0, BP:06:2.0; BP:07: 4.0, BP:D2	20-DEC-2008	—	—	—	29-DEC-2008	03-JAN-2009	✓
ED041: Sulfate (Turbidimetric) as SO4 2-							
Clear Plastic Bottle - Natural							
BP:01:3.5, BP:02:3.5, BP:03: 5.5, BP:04: 6.0, BP:05: 6.0, BP:06: 2.0, BP:07: 4.0, BP:D2	20-DEC-2008	—	—	—	29-DEC-2008	17-JAN-2009	✓
ED045G: Chloride Discrete analyser							
Clear Plastic Bottle - Natural							
BP:01:3.5, BP:02:1.5, BP:03:2.5, BP:04:2.5, BP:05: 2.5, BP:06:0.5, BP:07: 1.0, BP:D1	20-DEC-2008	—	—	—	23-DEC-2008	17-JAN-2009	✓



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Matrix: WATER		Evaluation: x = Holding time breach ; ✓ = Within holding time.			
Method	Sample Date	Extraction / Preparation		Analysis	
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Due for analysis
ED093F: Dissolved Major Cations					
Clear Plastic Bottle - Natural					
BP-01; 3.5, BP-02; 3.5, BP-03; 5.5, BP-04; 6.0, BP-05; 6.0, BP-06; 2.0, BP-07; 4.0, BP-D1, BP-D2	20-DEC-2008	---	---	---	17-JAN-2009
EG020F: Dissolved Metals by ICP-MS					
Clear Plastic Bottle - Nitric Acid; Filtered					
BP-01; 3.5, BP-02; 3.5, BP-03; 5.5, BP-04; 6.0, BP-05; 6.0, BP-06; 2.0, BP-07; 4.0, BP-D1, BP-D2	20-DEC-2008	---	---	---	18-JUN-2009
EG035F: Dissolved Mercury by FIMS					
Clear Plastic Bottle - Nitric Acid; Filtered					
BP-01; 3.5, BP-02; 3.5, BP-03; 5.5, BP-04; 6.0, BP-05; 6.0, BP-06; 0.5	20-DEC-2008	---	---	---	17-JAN-2009
Clear Plastic Bottle - Nitric Acid; Filtered					
BP-06; 2.0, BP-07; 4.0, BP-D1, BP-D2	20-DEC-2008	---	---	---	17-JAN-2009
EK055G: Ammonia as N by Discrete Analyser					
Clear Plastic Bottle - Sulphuric Acid					
BP-01; 3.5, BP-02; 3.5, BP-03; 5.5, BP-04; 6.0, BP-05; 6.0, BP-06; 2.0, BP-07; 4.0, BP-D1, BP-D2	20-DEC-2008	---	---	---	17-JAN-2009



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Matrix: WATER		Evaluation: * = Holding time breach ; ✓ = Within holding time.			
Method	Sample Date	Extraction / Preparation		Analysis	
Container / Client Sample ID(s)		Date extracted	Due for extraction	Date analysed	Due for analysis
EK057G: Nitrate as N by Discrete Analyser					
Clear Plastic Bottle - Natural	20-DEC-2008	---	---	22-DEC-2008	22-DEC-2008
BP:01; 3.5, BP:02; 3.5, BP:03; 5.5, BP:04; 6.0, BP:05; 2.5, BP:06; 2.0, BP:07; 4.0, BP:D1, BP:D2					✓
EK059G: NOX as N by Discrete Analyser					
Clear Plastic Bottle - Sulphuric Acid	20-DEC-2008	---	---	23-DEC-2008	17-JAN-2009
BP:01; 3.5, BP:02; 3.5, BP:03; 5.5, BP:04; 6.0, BP:05; 2.5, BP:06; 0.5, BP:07; 1.0, BP:D1, BP:D2					✓
EK067G: Total Phosphorus as P by Discrete Analyser					
Clear Plastic Bottle - Sulphuric Acid	20-DEC-2008	24-DEC-2008	17-JAN-2009	24-DEC-2008	17-JAN-2009
BP:01; 3.5, BP:02; 3.5, BP:03; 5.5, BP:04; 6.0, BP:05; 2.5, BP:06; 0.5, BP:07; 1.0, BP:D1, BP:D2				✓	✓
EK071G: Reactive Phosphorus as P by discrete analyser					
Clear Plastic Bottle - Natural	20-DEC-2008	---	---	22-DEC-2008	22-DEC-2008
BP:01; 3.5, BP:02; 3.5, BP:03; 5.5, BP:04; 6.0, BP:05; 2.5, BP:06; 0.5, BP:07; 1.0, BP:D1, BP:D2				---	✓



Matrix: WATER		Evaluation: x = Holding time breach; ✓ = Within holding time.					
Method	Sample Date	Extraction / Preparation		Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP002: Dissolved Organic Carbon (DOC)							
DOC filtered- sulphuric preserved							
BP:01; 3.5, BP:02; 3.5, BP:03; 5.5, BP:04; 6.0, BP:05; 6.0, BP:06; 2.0, BP:07; 4.0, BP:D1, BP:D2	20-DEC-2008	---	---	---	29-DEC-2008	17-JAN-2009	✓
EP020: Oil and Grease (O&G)							
Amber Glass Bottle - Sulphuric Acid							
BP:01; 1.5, BP:02; 1.5, BP:03; 2.5, BP:04; 2.5, BP:05; 2.5, BP:06; 0.5, BP:07; 1.0, BP:D1	20-DEC-2008	---	---	---	31-DEC-2008	17-JAN-2009	✓
EP030: Biochemical Oxygen Demand (BOD)							
Clear Plastic Bottle - Natural							
BP:01; 1.5, BP:02; 1.5, BP:03; 2.5, BP:04; 2.5, BP:05; 2.5, BP:06; 0.5, BP:07; 1.0, BP:D1	20-DEC-2008	---	---	---	22-DEC-2008	22-DEC-2008	✓

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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(were) 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: WATER									
Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification									
Quality Control Sample Type		Method		Count		Rate (%)		Quality Control Specification	
Analytical Methods				QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)									
Alkalinity by PC Titrator	ED037-P	4	40	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	EK055G	2	17	11.8	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
Ammonia as N by Discrete analyser	EP030	3	19	15.8	13.3	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	ED045G	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
Chloride by Discrete Analyser	EG035F	4	40	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	EG020A-F	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
Dissolved Mercury by FIMS	EP002	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	ED093F	3	26	11.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
Dissolved Organic Carbon	EK059G	2	19	10.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	EK057G	2	16	12.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
Major Cations - Filtered	EK071G	2	16	12.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	ED041	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK067G	4	34	11.3	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	EP080	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
Laboratory Control Samples (LCS)									
Alkalinity by PC Titrator	ED037-P	2	40	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	EK055G	1	17	5.9	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
Ammonia as N by Discrete analyser	EP030	2	19	10.5	6.7	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	ED045G	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
Chloride by Discrete Analyser	EG035F	2	40	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	EG020A-F	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
Dissolved Mercury by FIMS	EP002	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	ED093F	2	26	7.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
Dissolved Organic Carbon	EK059G	1	19	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	EK057G	1	16	6.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
Major Cations - Filtered	EP020	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	EK071G	1	16	6.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
Nitrite and Nitrate as N (NOx) by Discrete Analyser	ED041	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	EK067G	2	34	5.9	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
TPH - Semivolatile Fraction	EP071	1	16	6.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	EP080	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
Method Blanks (MB)									
Ammonia as N by Discrete analyser	EK055G	1	17	5.9	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	EP030	2	19	10.5	6.7	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
Biochemical Oxygen Demand (BOD)							NEPM 1999 Schedule B(3) and ALS QCS3 requirement		
	ED045G	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement		



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Matrix: WATER										Evaluation: ✖ = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.										
Quality Control Sample Type					Method		Count			Quality Control Specification										
Analytical Methods					QC	Regular	Actual	Expected	Rate (%)	Evaluation										
Method Blanks (MB) - Continued																				
Dissolved Mercury by FIMS					EG035F	2	40	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement									
Dissolved Metals by ICP-MS - Suite A					EG020A-F	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement									
Dissolved Organic Carbon					EP002	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement									
Major Cations - Filtered					ED093F	2	26	7.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement									
Nitrite and Nitrate as N (NOx) by Discrete Analyser					EK059G	1	19	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement									
Nitrite as N by Discrete Analyser					EK057G	1	16	6.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement									
Oil and Grease					EP020	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement									
Reactive Phosphorus as P-By Discrete Analyser					EK071G	1	16	6.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement									
Sulfate (Turbidimetric) as SO4 2-					ED041	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement									
Total Phosphorus as P By Discrete Analyser					EK067G	2	34	5.9	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement									
TPH - Semivolatile Fraction					EP071	1	16	6.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement									
TPH Volatiles/BTEX					EP080	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement									
Matrix Spikes (MS)																				
Ammonia as N by Discrete analyser					EK055G	1	17	5.9	5.0	✓	ALS QCS3 requirement									
Chloride by Discrete Analyser					ED045G	1	20	5.0	5.0	✓	ALS QCS3 requirement									
Dissolved Mercury by FIMS					EG035F	2	40	5.0	5.0	✓	ALS QCS3 requirement									
Dissolved Metals by ICP-MS - Suite A					EG020A-F	1	20	5.0	5.0	✓	ALS QCS3 requirement									
Dissolved Organic Carbon					EP002	1	20	5.0	5.0	✓	ALS QCS3 requirement									
Nitrite and Nitrate as N (NOx) by Discrete Analyser					EK059G	1	19	5.3	5.0	✓	ALS QCS3 requirement									
Nitrite as N by Discrete Analyser					EK057G	1	16	6.3	5.0	✓	ALS QCS3 requirement									
Reactive Phosphorus as P-By Discrete Analyser					EK071G	1	16	6.3	5.0	✓	ALS QCS3 requirement									
Total Phosphorus as P By Discrete Analyser					EK067G	2	34	5.9	5.0	✓	ALS QCS3 requirement									
TPH Volatiles/BTEX					EP080	1	20	5.0	5.0	✓	ALS QCS3 requirement									



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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 Description
Alkalinity by PC Titrator	ED037-P	WATER	APHA 21st ed., 2320 B This procedure determines alkalinity by both manual measurement and automated measurement (e.g. PC Titrator) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Sulfate (Turbidimetric) as SO4 2-	ED041	WATER	APHA 21st ed., 4500-SO4 Sulfate ions are precipitated in an acetic acid medium with barium chloride to form barium sulfate crystals. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Chloride by Discrete Analyser	ED045G	WATER	The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride in the presence of ferric ions the liberated thiocyanate forms highly coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Filtered	ED093F	WATER	APHA 21st ed., 3120; USEPA SW 846 - 6010 The ICPAES technique ionises filtered sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QM/EN/EG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Ammonia as N by Discrete analyser	EK055G	WATER	APHA 21st ed., 4500 NH3+G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Nitrite as N by Discrete Analyser	EK057G	WATER	APHA 21st ed., 4500 NO3-B. Nitrite is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Nitrate as N by Discrete Analyser	EK058G	WATER	APHA 21st ed., 4500 NO3-F. Nitrate is reduced to nitrite by way of a cadmium reduction column followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colorimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	APHA 21st ed., 4500 NO3-F. Combined oxidised Nitrogen (NO2+NO3) is determined by Cadmium Reduction and direct colorimetry by Discrete Analyser. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	APHA 21st ed., 4500 P-B&F This procedure involves sulphuric acid digestion of a 100mL sample to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using Discrete Analyser. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)



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Analytical Methods	Method	Matrix	Method Descriptions
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	APHA 21st ed., 4500 P-F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid - phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Ionic Balance by PCT DA Turbidimetric and ICPAES	EN055 - TS	WATER	APHA 21st Ed. 1030F. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Dissolved Organic Carbon	EP002	WATER	APHA 21st ed., 5310 B. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Oil and Grease	EP020	WATER	APHA 21st ed., 5520 B Oil & grease is a gravimetric procedure to determine the amount of oil & grease residue in an aqueous sample. The sample is serially extracted three times n-hexane. The resultant extracts are combined, dehydrated and concentrated prior to gravimetric determination. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Biochemical Oxygen Demand (BOD)	EP030	WATER	APHA 21st ed., 5210 B The 5-Day BOD test provides an empirical measure of the oxygen consumption capacity of a given water. A portion of the sample is diluted into oxygenated, nutrient rich water, and a seed added to begin biological decay. The initial dissolved oxygen content is measured, then the bottle is sealed and incubated for five days. The remaining dissolved oxygen is measured, and from the difference, the demand for oxygen, by biological decay, is determined. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TPH - Semivolatile Fraction	EP071	WATER	USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TPH Volatiles/BTEX	EP080	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	APHA 21st ed., 4500 Norg - D; APHA 21st ed., 4500 P - H. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Separatory Funnel Extraction of Liquids	ORG14	WATER	USEPA SW 846 - 3510B 500 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2). ALS default excludes sediment which may be resident in the container.



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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-QW/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

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

Regular Sample Surrogates

Sub-Matrix: WATER							
Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted EP080S: TPH(V)/BTEX Surrogates	ES0818896-006	BP-03; 5.5	Toluene-D8	2037-26-5	112 %	88-110 %	Recovery greater than upper data quality objective
	ES0818896-010	BP-05; 6.0	Toluene-D8	2037-26-5	115 %	88-110 %	Recovery greater than upper data quality objective
	ES0818896-014	BP-07; 4.0	Toluene-D8	2037-26-5	84.7 %	88-110 %	Recovery less than lower data quality objective
	EP080S: TPH(V)/BTEX Surrogates	ES0818896-014	BP-07; 4.0	4-Bromofluorobenzene	460-00-4	83.2 %	86-115 %

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.

CHAIN OF CUSTODY DOCUMENTATION

CLIENT: C.M. JEWELL & ASSOCIATES PTY LTD
 ADDRESS/OFFICE: 1/13 KALWINA ROAD, BULLABURRA, NSW, 2784
 PROJECT MANAGER (PM): CRAIG VICENCAR (CRAIG)
 PROJECT ID: 31418
 SITE: KWARREE BACK PIT
 P.O. No.: 54/100/100
 RESULTS REQUIRED (Date): ASAP
 QUOTE NO.: 54/100/100

SAMPLER: CRAIG VICENCAR / DAVE ECKSTEIN
 MOBILE: 0428 619 804
 PHONE: (02) 4757 3257
 EMAIL REPORT TO: CRAIG VICENCAR
 EMAIL INVOICE TO: (if different to report)

ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn

Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn



Australian Laboratory Services Pty Ltd

Subcon / Forward Lab / Split WO
 Lab / Analyte: ES0819015
 Organised By / Date: ES
 Relinquished By / Date: ES
 Cannote / Cont: ES
 WO No: ES
 Attach By PO / Internal Sheet: ES

Environmental Division
 Sydney
 Work Order
ES0819015



Telephone : + 61-2-8784 8555

RECEIVED BY

Name: CRAIG VICENCAR Date: 24/12/08
 Of: C.M. Jewell & Associates Pty Ltd Time: 11:10 a-
 Name: Name: Name:
 Of: Of: Of:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved;
 V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
 Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bad for Acid Sulphate Soils; B = Unpreserved Bag.

AUSTRALIAN LABORATORY SERVICES P/L

CHAIN OF CUSTODY DOCUMENTATION

CLIENT: C. M. JEWELL ASSOCIATES Pty Ltd
 ADDRESS / OFFICE: 1/13 KENNEDY ROAD, BULLAHNA, NSW, 2784
 PROJECT MANAGER (PM): Chris Wicentime
 PROJECT ID: J1418
 SITE: Kennedy Bank Pt P.O. No.: 54/100/06
 RESULTS REQUIRED (Date): QUOTE NO.: 57/100/06

SAMPLER: Chris Wicentime / Dore Enderby
 MOBILE: 0428 619 804
 PHONE: (02) 4789 3281
 EMAIL REPORT TO: Chris Wicentime
 EMAIL INVOICE TO: (if different to report)

ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)

ALS ID	SAMPLE ID	MATRIX	DATE	TIME	CONTAINER INFORMATION	Total bottles	SUITES										Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.
							Metals	TOC	TAH: C ₁₀ -C ₂₆	PAH	OC						
13	BP: 0-5	Soil	24-12-06	x	250 ml Soil Jar	1	✓	✓	✓	✓	✓						
14	BP: 0-15	Soil	24-12-06	x	250 ml Soil Jar	1	✓	✓	✓	✓	✓						
15	BP: 50-1	Soil	24-12-06	x	250 ml Soil Jar	1	✓	✓	✓	✓	✓						
16	BP: 50-2	Soil	24-12-06	x	250 ml Soil Jar	1	✓	✓	✓	✓	✓						

RELINQUISHED BY: Name: Chris Wicentime Date: Dec 2006
 Of: C. M. Jewell & Associates Pty Ltd
 Name: _____ Date: _____
 Of: _____

RECEIVED BY: Name: Southern Date: 24/12/06
 Of: W. J. J.
 Name: _____ Date: _____
 Of: _____

METHOD OF SHIPMENT: _____
 Cont Note No: _____
 Transport Co: _____

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.



Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)
Comprehensive Report

Work Order : **ES0819015**

Client : **C M JEWELL & ASSOC PTY LTD**
Contact : **MR CRAIG WICENCIAK**
Address : **P O BOX 10**
WENTWORTH FALLS NSW,
AUSTRALIA 2782

Laboratory : **Environmental Division Sydney**
Contact : **Charlie Pierce**
Address : **277-289 Woodpark Road Smithfield**
NSW Australia 2164

E-mail : **craig@cm-jewell.com.au**
Telephone : **+61 47593251**
Facsimile : **+61 02 47593257**

E-mail : **charlie.pierce@alsenviro.com**
Telephone : **+61-2-8784 8555**
Facsimile : **+61-2-8784 8500**

Project : **J141B**
Order number : **SY/100/08**
C-O-C number : **---**
Site : **KIRRAWEE BRICK PIT**
Sampler : **CW DE**

Page : **1 of 2**
Quote number : **ES2008CMJEWE0115 (SY/100/08)**
QC Level : **NEPM 1999 Schedule B(3) and ALS**
QCS3 requirement

Dates

Date Samples Received : **24-DEC-2008**
Client Requested Due Date : **05-JAN-2009**

Issue Date : **24-DEC-2008 15:38**
Scheduled Reporting Date : **05-JAN-2009**

Delivery Details

Mode of Delivery : **Carrier**
No. of coolers/boxes : **1 HARD**
Security Seal : **Intact.**

Temperature : **3.6°C**
No. of samples received : **16**
No. of samples analysed : **16**

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample(s) have been received within recommended holding times.**
- **This batch is split into ES0819019 for TOC.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Nanthini Coilparampil
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exist.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Matrix: SOIL

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EG035T (solids) Total Mercury by FIMS	SOIL - EK067G (Solids) Total Phosphorus as P by Discrete Analyser	SOIL - EP068A (solids) Organochlorine Pesticides by GCMS	SOIL - EP071-(SV) TPH(SV) Standard Limits of Reporting	SOIL - EP075 SIM PAH only SIM - PAH only
ES0819015-001	[24-DEC-2008]	BP:01:0.05	✓	✓	✓	✓	✓	✓	✓
ES0819015-002	[24-DEC-2008]	BP:01:0.15	✓	✓	✓	✓	✓	✓	✓
ES0819015-003	[24-DEC-2008]	BP:02:0.05	✓	✓	✓	✓	✓	✓	✓
ES0819015-004	[24-DEC-2008]	BP:02:0.15	✓	✓	✓	✓	✓	✓	✓
ES0819015-005	[24-DEC-2008]	BP:03:0.05	✓	✓	✓	✓	✓	✓	✓
ES0819015-006	[24-DEC-2008]	BP:03:0.15	✓	✓	✓	✓	✓	✓	✓
ES0819015-007	[24-DEC-2008]	BP:04:0.05	✓	✓	✓	✓	✓	✓	✓
ES0819015-008	[24-DEC-2008]	BP:04:0.15	✓	✓	✓	✓	✓	✓	✓
ES0819015-009	[24-DEC-2008]	BP:05:0.05	✓	✓	✓	✓	✓	✓	✓
ES0819015-010	[24-DEC-2008]	BP:05:0.15	✓	✓	✓	✓	✓	✓	✓
ES0819015-011	[24-DEC-2008]	BP:06:0.05	✓	✓	✓	✓	✓	✓	✓
ES0819015-012	[24-DEC-2008]	BP:06:0.15	✓	✓	✓	✓	✓	✓	✓
ES0819015-013	[24-DEC-2008]	BP:07:0.05	✓	✓	✓	✓	✓	✓	✓
ES0819015-014	[24-DEC-2008]	BP:07:0.15	✓	✓	✓	✓	✓	✓	✓
ES0819015-015	[24-DEC-2008]	BP:SD1	✓	✓	✓	✓	✓	✓	✓
ES0819015-016	[24-DEC-2008]	BP:SD2	✓	✓	✓	✓	✓	✓	✓

Requested Deliverables

MR CRAIG WICENCIAK

- *AU Certificate of Analysis - NATA
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA
- A4 - AU Sample Receipt Notification - Environmental
- A4 - AU Tax Invoice
- Default - Chain of Custody
- EDI Format - ENMRG (ENMRG)

Email	craig@cm-jewell.com.au
Email	craig@cm-jewell.com.au
Email	craig@cm-jewell.com.au
Email	craig@cm-jewell.com.au
Print	MR CRAIG WICENCIAK
Email	craig@cm-jewell.com.au
Email	craig@cm-jewell.com.au

CHAIN OF CUSTODY DOCUMENTATION

CLIENT: C.M. JEWELL & ASSOCIATES PTY LTD
 ADDRESS / OFFICE: 1/13 KALINDRA ROAD, BULLABURRA, NSW 2784
 PROJECT MANAGER (PM): CRAIG VICENONAK (CMAA)
 PROJECT ID: J141B
 SITE: KARAMEE BRICK PIR
 P.O. No.: 54/100/06
 RESULTS REQUIRED (Date): ASAP
 QUOTE NO.: 54/100/06

ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)

FOR LABORATORY USE ONLY		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL									
COOLING SEAL (circle appropriate)		Metals: As, Cd, Cr, Cu, Hg, Mn, Pb, Ni, Zn									
INFECTED											
SAMPLE TEMPERATURE											
CHILLED											
SAMPLE INFORMATION (Index: S = Soil, W = Water)		CONTAINER INFORMATION					Total bottles				
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code						
1	BP-01; 0-05	Sediment	24-12-08	x	250ml Soil Jar	1					
2	BP-01; 0-15	Sediment	24-12-08	x	250 ml Soil Jar	1					
3	BP-02; 0-05	Sediment	24-12-08	x	250 ml Soil Jar	1					
4	BP-02; 0-15	Sediment	24-12-08	x	250 ml Soil Jar	1					
5	BP-03; 0-05	Sediment	24-12-08	x	250 ml Soil Jar	1					
6	BP-03; 0-15	Sediment	24-12-08	x	250 ml Soil Jar	1					
7	BP-04; 0-05	Sediment	24-12-08	x	250 ml Soil Jar	1					
8	BP-04; 0-15	Sediment	24-12-08	x	250 ml Soil Jar	1					
9	BP-05; 0-05	Sediment	24-12-08	x	250 ml Soil Jar	1					
10	BP-05; 0-15	Sediment	24-12-08	x	250 ml Soil Jar	1					
11	BP-06; 0-05	Sediment	24-12-08	x	250 ml Soil Jar	1					
12	BP-06; 0-15	Sediment	24-12-08	x	250 ml Soil Jar	1					

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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RECEIVED BY: **SOB Dep**
 Name: **SOB Dep** Date: **24/12/08**
 Of: **AS** Time: **11:10 am**
 Name: Time:
 Name: Time:

RELINQUISHED BY:
 Name: **CRAIG VICENONAK** Date: **24 Dec 2008**
 Of: **C.M. Jewell & Associates Pty Ltd** Time:
 Name: Time:
 Name: Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = VOA Vial HCl Preserved; VS = VOA Vial Sulfuric Preserved; SG = Sulfuric Preserved Amber Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.

AUSTRALIAN LABORATORY SERVICES P/L

Telephone : + 61-2-8784 8555



ES0819019

Environmental Division
 Sydney
 Work Order

CHAIN OF CUSTODY DOCUMENTATION

CLIENT: C.M. Jensen & Associates Pty Ltd
 ADDRESS / OFFICE: 1/13 Karamulla Road, Karamulla, NSW 2188
 PROJECT MANAGER (PM): Craig Wicentek
 PROJECT ID: J1418
 SITE: Karamulla Bank PM
 P.O. No.: 541124/06
 QUOTE NO.: 51/06/06

J1418 Chain - Or - Custom N53

SAMPLER: Craig Wicentek / Dave Ebertson

MOBILE: 0428 619 804

PHONE: (02) 4759 3251

EMAIL REPORT TO: Craig Wicentek

EMAIL INVOICE TO: (if different to report)

ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)

FOR LABORATORY USE ONLY:
 COOLER SEAL (circle appropriate): ☒ Intact ☐ Broken
 SAMPLE TEMPERATURE: 36
 CHILLED: ☐ Yes ☒ No

SAMPLE INFORMATION (note: S = Soil, W = Water)			CONTAINER INFORMATION		
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code
13	BP-07, 0-05	Soil	24-12-08	✓	250 ml Soil Jar
14	BP-07, 0-15	Soil	24-12-08	✓	250 ml Soil Jar
15	BP-07, 0-30	Soil	24-12-08	✓	250 ml Soil Jar
16	BP-07, 0-45	Soil	24-12-08	✓	250 ml Soil Jar

RELINQUISHED BY: Name: Craig Wicentek Date: 24/12/08
 Of: C.M. Jensen & Associates Pty Ltd Time: 11:00
 Name: Time: 11:00
 Name: Time: 11:00

RECEIVED BY: Name: Dave Ebertson Date: 24/12/08
 Con' Note No: 1100
 Name: Time: 11:00
 Name: Time: 11:00

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected".
 Extra volume for QC or trace LORs etc.

AUSTRALIAN LABORATORY SERVICES P/L



Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)
Comprehensive Report

Work Order : **ES0819019**

Client : **C M JEWELL & ASSOC PTY LTD**
Contact : **MR CRAIG WICENCIAK**
Address : **P O BOX 10**
WENTWORTH FALLS NSW,
AUSTRALIA 2782

Laboratory : **Environmental Division Sydney**
Contact : **Charlie Pierce**
Address : **277-289 Woodpark Road Smithfield**
NSW Australia 2164

E-mail : **craig@cm-jewell.com.au**
Telephone : **+61 47593251**
Facsimile : **+61 02 47593257**

E-mail : **charlie.pierce@alsenviro.com**
Telephone : **+61-2-8784 8555**
Facsimile : **+61-2-8784 8500**

Project : **J141B**
Order number : **SY/100/08**
C-O-C number : **---**
Site : **KIRRAWEE BRICK PIT**
Sampler : **CW, DE**

Page : **1 of 2**
Quote number : **ES2008CMJEWE0115 (SY/100/08)**
QC Level : **NEPM 1999 Schedule B(3) and ALS**
QCS3 requirement

Dates

Date Samples Received : **24-DEC-2008**
Client Requested Due Date : **05-JAN-2009**

Issue Date : **31-DEC-2008 10:03**
Scheduled Reporting Date : **05-JAN-2009**

Delivery Details

Mode of Delivery : **Carrier**
No. of coolers/boxes : **1 HARD**
Security Seal : **Intact.**

Temperature : **3.6°C**
No. of samples received : **16**
No. of samples analysed : **16**

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Requested Deliverables
- Samples received in appropriately pretreated and preserved containers.
- TOC analysis to be conducted by ALS Brisbane.
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample(s) have been received within recommended holding times.**
- **This batch is split from ES0819015 for TOC.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Nanthini Coilparampli
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exist.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Matrix: SOIL

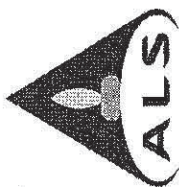
Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EP005 (solids) Total Organic Carbon (TOC) soils
ES0819019-001	[24-DEC-2008]	BP:01:0.05	✓
ES0819019-002	[24-DEC-2008]	BP:01:0.15	✓
ES0819019-003	[24-DEC-2008]	BP:02:0.05	✓
ES0819019-004	[24-DEC-2008]	BP:02:0.15	✓
ES0819019-005	[24-DEC-2008]	BP:03:0.05	✓
ES0819019-006	[24-DEC-2008]	BP:03:0.15	✓
ES0819019-007	[24-DEC-2008]	BP:04:0.05	✓
ES0819019-008	[24-DEC-2008]	BP:04:0.15	✓
ES0819019-009	[24-DEC-2008]	BP:05:0.05	✓
ES0819019-010	[24-DEC-2008]	BP:05:0.15	✓
ES0819019-011	[24-DEC-2008]	BP:06:0.05	✓
ES0819019-012	[24-DEC-2008]	BP:06:0.15	✓
ES0819019-013	[24-DEC-2008]	BP:07:0.05	✓
ES0819019-014	[24-DEC-2008]	BP:07:0.15	✓
ES0819019-015	[24-DEC-2008]	BP:SD1	✓
ES0819019-016	[24-DEC-2008]	BP:SD2	✓

Requested Deliverables

MR CRAIG WICENCIAK

- *AU Certificate of Analysis - NATA
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA
- A4 - AU Sample Receipt Notification - Environmental
- A4 - AU Tax Invoice
- Default - Chain of Custody
- EDI Format - ENMRG (ENMRG)

Email	craig@cm-jewell.com.au
Email	craig@cm-jewell.com.au
Email	craig@cm-jewell.com.au
Email	craig@cm-jewell.com.au
Print	MR CRAIG WICENCIAK
Email	craig@cm-jewell.com.au
Email	craig@cm-jewell.com.au



Environmental Division

QUALITY CONTROL REPORT

Work Order	: ES0818838	Page	: 1 of 12
Client	: C M JEWELL & ASSOC PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR CRAIG WICENCIAK	Contact	: Charlie Pierce
Address	: P O BOX 10 WENTWORTH FALLS NSW, AUSTRALIA 2782	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: craig@cm-jewell.com.au	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 47593251	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 47593257	Facsimile	: +61-2-8784 8500
Project	: J1418	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: KIRRAWEE BRICK PIT	Date Samples Received	: 19-DEC-2008
C-O-C number	: —	Issue Date	: 05-JAN-2009
Sampler	: DVE/CBW	No. of samples received	: 6
Order number	: —	No. of samples analysed	: 6
Quote number	: SY/100/08		

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

This document is issued in accordance with NATA accreditation requirements.

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
Edwandy Fadjjar	Senior Organic Chemist	Inorganics
Sarah Millington	Senior Inorganic Chemist	Organics
		Inorganics

Environmental Division Sydney
Part of the **ALS Laboratory Group**

277-289 Woodpark Road Smithfield NSW Australia 2164
Tel. +61-2-8784 8555 Fax +61-2-8784 8500 www.alsglobal.com

A Campbell Brothers Limited Company

WORLD RECOGNISED
ACCREDITATION



Page : 2 of 12
Work Order : ES0818838
Client : CM JEWELL & ASSOC PTY LTD
Project : J1418

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 = Chemistry Abstract Services number

LOR = Limit of reporting

RPD = Relative Percentage Difference

= Indicates failed QC



Page : 3 of 12
Work Order : ES0818838
Client : C M JEWELL & ASSOC PTY LTD
Project : J1418

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%.

Sub-Matrix: WATER									
Laboratory sample ID	Client sample ID	Method/Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
ED037P: Alkalinity by PC Titrator (QC Lot: 852600)									
ES0818867-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Total Alkalinity as CaCO3	—	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
ES0818867-001	Anonymous	ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Total Alkalinity as CaCO3	—	1	mg/L	<1	<1	0.0	No Limit
		ED041: Sulfate (Turbidimetric) as SO4 2- (QC Lot: 852609)							
		ED041: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2	2	0.0	No Limit
ES0818820-016	Anonymous	ED041: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	518	531	2.5	0% - 20%
ED045G: Chloride Discrete analyser (QC Lot: 850010)									
ES0818838-001	GW:1	ED045G: Chloride	16887-00-6	1	mg/L	324	320	1.1	0% - 20%
ES0818843-004	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	23	25	7.2	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 852102)									
ES0818838-004	GW:D	ED093F: Calcium	7440-70-2	1	mg/L	17	16	0.0	0% - 50%
		ED093F: Magnesium	7439-95-4	1	mg/L	21	21	0.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	353	355	0.6	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	3	3	0.0	No Limit
		EG020F: Dissolved Metals by ICP-MS (QC Lot: 851138)							
ES0818837-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.033	0.033	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.009	0.008	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.29	0.29	0.0	No Limit
		EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit



Page : 4 of 12
Work Order : ES0818838
Client : C M JEWELL & ASSOC PTY LTD
Project : J1418

Sub-Matrix: WATER		Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 851138) - continued									
ES0818924-002	Anonymous	EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-68-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 851274)									
ES0818809-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES0818896-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 850006)									
ES0818812-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.50	mg/L	9.54	9.71	1.8	0% - 50%
ES0818838-002	GW:2	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.23	0.23	0.0	0% - 20%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 850225)									
ES0818825-020	Anonymous	EK057G: Nitrite as N	—	0.01	mg/L	0.02	<0.01	0.0	No Limit
ES0818825-031	Anonymous	EK057G: Nitrite as N	—	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: NOX as N by Discrete Analyser (QC Lot: 850084)									
ES0818825-020	Anonymous	EK059G: Nitrite + Nitrate as N	—	0.01	mg/L	5.83	5.58	4.4	0% - 20%
ES0818825-031	Anonymous	EK059G: Nitrite + Nitrate as N	—	0.01	mg/L	0.01	0.01	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 850224)									
ES0818838-001	GW:1	EK071G: Reactive Phosphorus as P	—	0.01	mg/L	0.01	0.01	0.0	No Limit
EP002: Dissolved Organic Carbon (DOC) (QC Lot: 852578)									
ES0818777-011	Anonymous	EP002: Dissolved Organic Carbon	—	1	mg/L	3	3	0.0	No Limit
ES0818838-003	GW:3	EP002: Dissolved Organic Carbon	—	1	mg/L	3	3	0.0	No Limit
EP074D: Fumigants (QC Lot: 850557)									
ES0818883-005	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 850557)									
ES0818883-005	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit

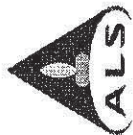


Page : 5 of 12
Work Order : ES0818838
Client : CM JEWELL & ASSOC PTY LTD
Project : J1418

Sub-Matrix: WATER		Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 850557) - continued		Anonymous	EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
ES0818883-005			EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
			EP074: Trichloroethane	79-01-6	5	µg/L	<5	<5	0.0	No Limit
			EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
			EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
			EP074: 1,1,2-Trichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
			EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
			EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
			EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
			EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
			EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
			EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
			EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
			EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
			EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
			EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
			EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
			EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
			EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
			EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit	
		EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit	
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit	
		EP074: cis-1,2-Dichloroethane	156-59-2	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit	
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit	
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,2,3-Trichloropropane	96-18-4	3	µg/L	<5	<5	0.0	No Limit	

ES0818861-006

Anonymous



Page : 6 of 12
Work Order : ES0818838
Client : C M JEWELL & ASSOC PTY LTD
Project : J1418

Sub-Matrix: WATER		Client sample ID		Method: Compound		Laboratory Duplicate (DUP) Report			
Laboratory sample ID		CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
EP074E: Halogenated Aliphatic Compounds (QC Lot: 850557) - continued									
ES0818861-006	Anonymous	EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
		EP074F: Halogenated Aromatic Compounds (QC Lot: 850557)							
ES0818863-005	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit		
EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit		
EP074: 1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit		
EP074G: Trihalomethanes (QC Lot: 850557)									
ES0818863-005	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
ES0818861-006	Anonymous	EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromochloromethane	75-25-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 850556)									
ES0818863-005	Anonymous	EP080: C6 - C9 Fraction	—	20	µg/L	<20	<20	0.0	No Limit



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Work Order : ES0818838
Client : C M JEWELL & ASSOC PTY LTD
Project : J1418

Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report		Recovery Limits (%)
Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
ES0818861-006		Anonymous	EP080: Total Petroleum Hydrocarbons (QC Lot: 850556) - continued	—	20	µg/L	<20	<20	0.0
EP080: BTEX (QC Lot: 850556)		Anonymous	EP080: C6 - C9 Fraction	—	20	µg/L	<20	<20	No Limit
ES0818883-005		Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	No Limit
			EP080: Toluene	108-88-3	2	µg/L	<5	<5	No Limit
			EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	No Limit
			EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	No Limit
				106-42-3					
			EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	No Limit
			EP080: Benzene	71-43-2	1	µg/L	<1	<1	No Limit
			EP080: Toluene	108-88-3	2	µg/L	<5	<5	No Limit
			EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	No Limit
			EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	No Limit
				106-42-3					
			EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	No Limit
ES0818861-006		Anonymous							