B

Appendix B Data Validation

DATA VALIDATION REPORT_December 2010

URS Project number:	42213719	**Data verified by:**	Bek Aagaard	Date: 23/4/2013
Client:	Darwin Waterfront Corporation			
Site:	Waterfront Precinct	Signed:	Bekke Aagaard	
URS Project Manager:	Jacques van Rensberg			
		Validation by:	Tim Smith	Date: 2/5/2013
Matrix type:	Groundwater			
No Primary samples:	10			
Laboratory:	ALS Labmark	Signed:		
Lab reference:	ES1026649 E051579	**Project Manager:**		Date:
		Signed:		

Data quality objectives

Field data comparison	No apparent anomalies were observed between laboratory results and field observations.
Frequency of field QC	Field QC samples were collected to project specifications.
Frequency of laboratory QC	The laboratory reported a sufficient frequency of QC to assess whether the results have been reported to an acceptable accuracy and precision, with the exception of the following: • Laboratory duplicates were not reported for Total Petroleum Hydrocarbons (TPH) C10-C36. The precision of TPH is considered acceptable based on the data quality assessment of intra- and inter-laboratory duplicates. • The inter-laboratory duplicate was not analysed for total anions and cations. The precision of this data is considered acceptable based on the data quality assessment of intra-laboratory field duplicates for total anions and cations.
Tests requested/reported	Samples were analysed and reported as requested on the COC.
Limits of reporting	LORs were sufficiently low to enable assessment against adopted guideline criteria with the following limitations: • The protocol LOR exceeded ANZECC 2000 Aquatic Ecosystems (Marine 95%) for Chromium, Copper and Lead for samples MW10, MW106, MW111, MW113, MW115 and MW122. • The protocol LOR exceeded ANZECC 2000 Aquatic Ecosystems (Irrigation - Long Term Use)for Iron for samples MW115 and MW122. The limits of reporting exceeded the guideline trigger levels for chromium copper and lead. As a result, potential exists for samples to contain concentrations of these analytes above the adopted investigation levels, but below detection limits. This lack of definitive data should be taken into consideration when interpreting analytical results below these metals.
Data transcription	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by URS.

Sample management

Chain of Custody	Chain of custody documents completed.
Handling and preservation	Samples were transported with ice bricks and were received at 16.8°C. Samples were received above the recommended temperature range; therefore, some losses through volatilisation may have occurred and sample concentrations for BTEXN and TPH $C_6 - C_9$ may be may be biased low. It should be noted that the groundwater temperature across the site throughout the year and at the time of sampling is generally >30°C. Samples are chilled in the field on ice and transported to the laboratory with appropriate cooling medium. Samples remain chilled while cooling medium is present however over the 24hr transit period to the laboratory cooling medium will melt and samples may warm. Due to the initial sample temperature and subsequent appropriate cooling of samples, losses due to volatilisation are considered to be limited.
Holding time compliance	Analysis holding times were exceeded by 7-10 days for alkalinity. Given samples were sealed and stored in temperature controlled conditions at the laboratory, reported total alkalinity is not expected to have been affected and will not affect overall interpretation of results.

Data precision

Field duplicate RPDs

RPDs exceeded control limits for the following sample analysis. (Sample with higher reported concentrations is in bold).

- **MW128_20/12/10** and QC01_20/12/10 for Sodium (57.1%).

Interlaboratory Replicate (Field triplicate) RPDs

RPDs exceeded control limits for the following sample analysis. (Sample with higher reported concentrations is in bold).

- MW128_20/12/10 and **QC02_20/12/2010** for Potassium (133.3%).
- MW128_20/12/10 and **QC02_20/12/2010** for Sodium (41.8%).

Laboratory duplicate RPDs

RPDs were within control limits.

Data accuracy

Laboratory control spike recovery

The following recoveries were outside control limits and should be considered during data interpretation:

Batch	Analyte	Recovery (%)	LCL (%)	UCL (%)	Comment
ES1026649	Potassium	84.9	89	109	Recovery less than the lower control limit

For LCS recoveries reported less than the lower control limit, the potential exists for reported concentrations to be biased low by up to 4% for potassium. Care should be taken with interpreting results for potassium close to the adopted guidelines. As there is no applicable guideline this is not considered to have an impact on validity of conclusions.

LCS recoveries were not reported for alkalinity. The accuracy of the data for these compound groups is considered acceptable based on the presence of other quality control data, such as method blanks, matrix LCS recoveries and surrogate recoveries (where applicable).

Matrix spike recovery

The following recoveries were outside control limits and may affect data interpretation:

Sample	Analyte	Recovery (%)	LCL (%)	UCL (%)	Comment
MW136_17/12/10	Sulphate as SO4	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
MW108_17/12/10	Chloride	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.

As the matrix spike issue was related to non-determination due to background levels being greater than the spike level, this is not considered to affect the interpretation of the accuracy of the results, due to the presence of other laboratory quality control data, including method blanks, LCS recoveries and matrix spikes for analytes analysed under the same analytical method (where applicable).

Matrix spike recoveries were not reported for calcium, magnesium, potassium, sodium, alkalinity and total dissolved solids. The accuracy of the data for these compound groups is considered acceptable based on the presence of other quality control data, such as surrogate recoveries (where applicable).

Surrogate spike recovery

The surrogate spike recoveries were within control limits.

Blank monitoring

Equipment rinsate blank

Concentrations of all analytes were reported below the LOR.

Field blank

Concentrations of all analytes were reported below the LOR.

Trip blank

Concentrations of all analytes were reported below the LOR.

Method blank

Concentrations of all analytes were reported below the LOR.

Chromatograms

N/A

Other observations

- EA015 TDS result has been confirmed by re-analysis for sample ID "MW115_17/12/10".
- ED093F: LCS recovery for Potassium falls outside ALS Dynamic Control Limit. However, it is within the acceptance criteria based on ALS DQO. No further action is required.
- EG020: LOR's for some samples have been raised due to matrix interference (High sample salinity)
- EP080: Level of Reporting raised for toluene due to ambient background levels in the laboratory.
- The entire bottle is required for PAH, phenol and semi-volatile TPH determinations. Additional sample bottles are required for laboratory reporting of duplicates and matrix spikes.

Site Name	Waterfront Precinct
Project No.	42213719
Project Manager	Tim Smith
Matrix	Water
Laboratory	ALS - Labmark
Batch File Number	ES10266449 - E051579

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
METALS ANALYSIS/ALS/EG020F	Arsenic	16	16	10	✓	×	2	2	2	2	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
	Cadmium	16	16	10	✓	×	2	2	2	2	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
	Chromium	16	16	10	✓	×	2	2	2	2	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
	Copper	16	16	10	✓	×	2	2	2	2	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
	Lead	16	16	10	✓	×	2	2	2	2	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
	Manganese	16	16	10	✓	✓	2	2	2	2	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
	Nickel	16	16	10	✓	×	2	2	2	2	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
	Vanadium	16	16	10	✓	×	2	2	2	2	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
	Zinc	16	16	10	✓	×	2	2	2	2	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
VOLATILES ANALYSIS/ALS/EP080	Benzene	17	17	10	✓	✓	2	2	2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	Ethylbenzene	17	17	10	✓	✓	2	2	2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	meta- & para-Xylene	17	17	10	✓	✓	2	2	2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	ortho-Xylene	17	17	10	✓	✓	2	2	2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	Toluene	17	17	10	✓	✓	2	2	2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP080/071	C6 - C9 Fraction	17	17	10	✓	✓	2	2	2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
SEMIVOLATILES ANALYSIS/ALS/EP080/071	C10 - C14 Fraction	16	16	10	✓	✓	2	2	2	2	0	0	1	1	1	1	1	1	2	0	1	1	1	1	✓	✓
	C15 - C28 Fraction	16	16	10	✓	✓	2	2	2	2	0	0	1	1	1	1	1	1	2	0	1	1	1	1	✓	✓
	C29 - C36 Fraction	16	16	10	✓	✓	2	2	2	2	0	0	1	1	1	1	1	1	2	0	1	1	1	1	✓	✓
METALS ANALYSIS/ALS/ED093F	Calcium	12	12	10	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	2	2	1	0	1	1	-	-
	Magnesium	12	12	10	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	2	2	1	0	1	1	-	-
	Potassium	12	12	10	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	2	2	1	0	1	1	-	-
	Sodium	12	12	10	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	2	2	1	0	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Sulfate as SO4 - Turbidimetric	11	11	10	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	2	2	1	1	1	1	-	-
METALS ANALYSIS/ALS/EG035F	Mercury	16	16	10	✓	✓	2	2	2	2	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Bicarbonate Alkalinity as CaCO3	12	12	10	×	✓	0	0	0	0	0	0	1	0	1	1	1	1	2	2	1	0	1	0	-	-
	Carbonate Alkalinity as CaCO3	12	12	10	×	✓	0	0	0	0	0	0	1	0	1	1	1	1	2	2	1	0	1	0	-	-
	Hydroxide Alkalinity as CaCO3	12	12	10	×	✓	0	0	0	0	0	0	1	0	1	1	1	1	2	2	1	0	1	0	-	-
	Total Alkalinity as CaCO3	11	11	10	×	✓	0	0	0	0	0	0	1	0	1	1	1	1	2	2	1	0	1	1	-	-
WET CHEMISTRY AND PREPARATION/ALS/E	Total Dissolved Solids @180°C	12	12	10	✓	✓	0	0	0	0	0	0	1	3	1	1	1	1	2	6	1	0	1	3	-	-
INSTRUMENT LABORATORY (NON-METALL	Chloride	12	12	10	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	2	2	1	1	1	2	-	-
INSTRUMENT LABORATORY (NON-METALL	Total Anions	11	11	10	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	2	2	1	0	1	1	-	-
	Total Cations	11	11	10	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	2	2	1	0	1	1	-	-

NOTES:

(a) ✓ holding times are within project guideline limits.
× holding times exceed project guideline limits.

(b) ✓ Limits of reporting (LORs) comply with project specifications.
× LORs do not comply with project specifications.

NA Not Applicable

Groundwater Analytical Results - Field Blanks
December 2010

Location	QAQC	QAQC	QAQC	QAQC	QAQC
Sample ID	QCB01_17/12/10	QCC01_17/12/10	QCA01_20/12/10	QCB02_20/12/10	QCC02_20/12/10
Date Sampled	17/12/2010	17/12/2010	20/12/2010	20/12/2010	20/12/2010
Sample Type	Field Blank	Rinsate Blank	Trip Blank	Field Blank	Rinsate Blank
Area	QAQC	QAQC	QAQC	QAQC	QAQC

Analyte	LOR	Units	ANZECC 2000 - Marine Water - 95%	ANZECC 2000 - Irrigation - LTU					
Total Petroleum Hydrocarbons									
C6-C9 fraction	20	µg/L			<20	<20	<20	<20	<20
C10-C14 fraction	50	µg/L			<50	<50	-	<50	<50
C15-C28 fraction	100	µg/L			<100	<100	-	<100	<100
C29-C36 Fraction	50	µg/L			<50	<50	-	<50	<50
Sum of TPH C10 - C36	50	µg/L			<50	<50	-	<50	<50
C10-C36 fraction		µg/L			<200	<200	-	<200	<200
C6-C36 fraction		µg/L			<220	<220	-	<220	<220
BTEX Compounds									
Benzene	1	µg/L	700		<1	<1	<1	<1	<1
Toluene	2	µg/L			<5	<5	<5	<5	<5
Ethylbenzene	2	µg/L			<2	<2	<2	<2	<2
m&p-Xylene	2	µg/L			<2	<2	<2	<2	<2
o-Xylene	2	µg/L			<2	<2	<2	<2	<2
Total Xylenes		µg/L			<4	<4	<4	<4	<4
Total BTEX		µg/L			<12	<12	<12	<12	<12
Metals (Dissolved)									
Arsenic	0.001	mg/L		0.1	<0.001	<0.001	-	<0.001	<0.001
Cadmium	0.0001	mg/L	0.0055	0.01	<0.0001	<0.0001	-	<0.0001	<0.0001
Chromium	0.001	mg/L	0.0044	0.1	<0.001	<0.001	-	<0.001	<0.001
Copper	0.001	mg/L	0.0013	0.2	<0.001	<0.001	-	<0.001	<0.001
Lead	0.001	mg/L	0.0044	2	<0.001	<0.001	-	<0.001	<0.001
Manganese	0.001	mg/L		0.2	<0.001	<0.001	-	<0.001	<0.001
Mercury	0.0001	mg/L	0.0004	0.002	<0.0001	<0.0001	-	<0.0001	<0.0001
Nickel	0.001	mg/L	0.07	0.2	<0.001	<0.001	-	<0.001	<0.001
Vanadium	0.01	mg/L	0.1	0.1	<0.01	<0.01	-	<0.01	<0.01
Zinc	0.005	mg/L	0.015	2	<0.005	<0.005	-	<0.005	<0.005

Legend:

Exceeds the ANZECC/ARMCANZ, 2000, Trigger values for marine water ecosystems - Level of protection 95% species

Exceeds the ANZECC/ARMCANZ, 2000, Irrig

- Not analysed / not calculated

* LOR Exceeds Guideline Trigger Value

10^6 check

22/04/2013 BA

Table ???
Groundwater Analytical Results - Analysis Results
Waterfront

Location	MW108	MW115	MW116	MW121	MW125	MW127	MW128	MW128	MW128	MW134
Sample ID	MW108_17/12/10	MW115_17/12/10	MW116_17/12/10	MW12?_17/12/10	MW125_20/12/10	MW127_20/12/10	MW128_20/12/10	QC01_20/15/10	202_20/12/10_20/12/20	MW134_20/12/10
Date Sampled	17/12/2010	17/12/2010	17/12/2010	17/12/2010	20/12/2010	20/12/2010	20/12/2010	20/12/2010	20/12/2010	20/12/2010
Sample Type	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Split Duplicate	Split Triplicate	Primary Sample
Area	-	-	-	-	-	-	-	-	-	-

Analyte	LOR	Units	ANZECC 2000 - Marine Water - 95%	ANZECC 2000 - Irrigation - LTU									
Physico-Chemical Parameters													
Total Dissolved Solids	1	mg/L			2230	30600	1290	764	444	394	136	150	145	994
Total Petroleum Hydrocarbons														
C6-C9 fraction	20	µg/L			<20	<20	<20	<20	<20	<20	<20	<20	<50	<20
C10-C14 fraction	50	µg/L			<50	<50	<50	<50	<50	<50	<50	<50	80	<50
C15-C28 fraction	100	µg/L			280	<100	<100	<100	<100	260	120	160	<200	330
C29-C36 Fraction	50	µg/L			<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Sum of TPH C10 - C36	50	µg/L			280	<50	<50	<50	<50	260	120	160	80	330
C10-C36 fraction		µg/L			<380	<200	<200	<200	<200	<360	<220	<250	<330	<430
C6-C36 fraction		µg/L			<400	<220	<220	<220	<220	<380	<240	<280	<380	<450
BTEX Compounds														
Benzene	1	µg/L	700		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	2	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	<1	<5
Ethylbenzene	2	µg/L			<2	<2	<2	<2	<2	<2	<2	<2	<1	<2
m&p-Xylene	2	µg/L			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-Xylene	2	µg/L			<2	<2	<2	<2	<2	<2	<2	<2	<1	<2
Total Xylenes		µg/L			<4	<4	<4	<4	<4	<4	<4	<4	<3	<4
Total BTEX		µg/L			<12	<12	<12	<12	<12	<12	<12	<12	<6	<12
Metals (Dissolved)														
Arsenic	0.001	mg/L		0.1	0.002	0.021	<0.001	<0.001	<0.001	0.003	0.002	0.002	0.001	0.001
Cadmium	0.0001	mg/L	0.0055	0.01	<0.0001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	0.001	mg/L	0.0044	0.1	<0.001	<0.01*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.005	<0.001
Copper	0.001	mg/L	0.0013	0.2	<0.001	0.022	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Lead	0.001	mg/L	0.0044	2	<0.001	<0.01*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	0.001	mg/L		0.2	0.467	3.3	0.15	0.007	0.753	0.612	0.141	0.138	0.159	0.186
Mercury	0.0001	mg/L	0.0004	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.001	mg/L	0.07	0.2	<0.001	0.063	0.005	0.005	0.003	0.007	0.006	0.006	0.007	0.002
Vanadium	0.01	mg/L	0.1	0.1	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.005	<0.01
Zinc	0.005	mg/L	0.015	2	0.009	0.065	0.035	0.011	0.009	0.007	0.007	0.006	<0.01	0.013
Major Ions														
Calcium	1	mg/L			37	120	64	41	13	41	29	29	32.7	17
Chloride	1	mg/L			1140	17800	406	306	62	83	22	18	24	344
Magnesium	1	mg/L			64	892	28	22	13	14	4	4	4.8	6
Potassium	1	mg/L			32	368	4	5	8	1	<1	<1	5	12
Sodium	1	mg/L			770	10100	308	202	142	59	18	10	27.5	364
Total Anions	0.01	meq/l			39.1	528	18	12.1	8.29	5.98	2.75	2.39	-	16.3
Total Cations	0.01	meq/l			41.4	527	19	12.8	8.08	5.8	2.59	2.18	-	17.5
Ionic Balance	0.01	%			2.9	0.11	2.75	2.66	1.34	1.51	-	-	-	3.59
Bicarbonate	1.00E-32				-	-	-	-	-	-	-	-	105	-
Hydroxide	1.00E-32				-	-	-	-	-	-	-	-	<5	-
Sulfate as SO4 - Turbidimetric	1	mg/L			3	399	244	82	21	<1	<1	<1	-	60
Alkalinity														
Hydroxide Alkalinity as CaCO3	1	mg/L			<1	<1	<1	<1	<1	<1	<1	<1	-	<1
Carbonate Alkalinity as CaCO3	1	mg/L			<1	<1	<1	<1	<1	<1	<1	<1	-	<1
Total Alkalinity	1	mg/L			342	792	70	89	320	182	106	95	-	267
Bicarbonate Alkalinity as CaCO3	1	mg/L			342	792	70	89	320	182	106	95	-	267
Physical Properties														
Carbonate	1.00E-32				-	-	-	-	-	-	-	-	<5	-

DATA VALIDATION REPORT_February 2011

URS Project number:	42213719	**Data verified by:**	Bek Aagaard	Date:	24/4/2013
Client:	Darwin Waterfront Corporation				
Site:	Waterfront Precinct	Signed:	Bekke Aagaard		
URS Project Manager:	Jacques van Rensberg				
		Validation by:	Tim Smith	Date:	2/5/2013
Matrix type:	Groundwater				
No Primary samples:	24				
Laboratory:	ALS Labmark	Signed:			
Lab reference:	ES1103572, ES1103571, ES1102970, 291299 and 290561	**Project Manager:**		Date:	
		Signed:			

Data quality objectives

Field data comparison	No apparent anomalies were observed between laboratory results and field observations.
Frequency of field QC	Field QA/QC was collected to project specifications (required number of field duplicates and triplicates collected in lab batches ES1103572 and ES1102970).
Frequency of laboratory QC	The laboratory reported a sufficient frequency of QC to assess whether the results have been reported to an acceptable accuracy and precision, with the exception of the following: • Matrix spikes (MS) were reported on anonymous samples for several analytes. Where MS were conducted on anonymous samples, the reported MS recovery may not be considered representative of the URS field sample. • Method blanks were not reported for alkalinity and total anions and cations in all batches. The accuracy of these analytes is considered acceptable based on the presence of surrogate recoveries for all batches and LCS recoveries for batch ES1102970. • Laboratory duplicates were reported less than the required frequency for: Total anions and cations in batch ES1102970; PAHs and Total Petroleum Hydrocarbons (TPH) in batch ES1103571; and PAHs, trihalomethanes, oxygenated compounds, Monocyclic Aromatic Compounds (MAH), carbon disulphide, halogenated aliphatic compounds, total dissolved solids, alkalinity, total anions and cations, sulphur as S, sulphite as SO_3^{2-} in batch ES1103572. The precision of these analytes is considered acceptable based on the data quality assessment of intra- and inter-laboratory duplicates.
Tests requested/reported	Samples were analysed and reported as requested on the COC.
Limits of reporting	LORs were sufficiently low to enable assessment against adopted guideline criteria with the following limitations: • Protocol LOR for anthracene (1 µg/L) above the adopted ILs (0.4 µg/L) • Protocol LOR for benzo(a)pyrene (0.5 µg/L) above the adopted ILs (0.2 µg/L) The limits of reporting were above the adopted investigation levels for anthracene and benzo(a)pyrene. As a result, potential exists for samples to contain concentrations of these analytes above the adopted investigation levels, but below detection limits. This lack of definitive data should be taken into consideration when interpreting analytical results below LOR for these PAHs. • The protocol LOR exceeded ANZECC 2000 Aquatic Ecosystems (Marine 95%) for Chromium, Copper and Lead for samples MW09, MW10, MW113 and MW115. • The protocol LOR exceeded ANZECC 2000 Aquatic Ecosystems (Irrigation - Long Term Use) for Zinc. The limits of reporting exceeded the guideline trigger levels for chromium copper and lead. As a result, potential exists for samples to contain concentrations of these analytes above the adopted investigation levels, but below detection limits. This lack of definitive data should be taken into consideration when interpreting analytical results below these metals.
Data transcription	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by URS.

Sample management

Chain of Custody	Chain of custody documents completed.

Handling and preservation	Samples for laboratory batch ES1102970 were received at 4.2°C, correctly preserved and chilled with ice. Samples for laboratory batches ES1103572 and ES1103571 were received between 23.9°C and 25.2°C. Samples were received above the recommended temperature range; therefore, some losses through volatilisation may have occurred and sample concentrations for BTEXN and TPH $C_6 - C_9$ may be may be biased low. It should be noted that the groundwater temperature across the site throughout the year and at the time of sampling is generally >30°C. Samples are chilled in the field on ice and transported to the laboratory with appropriate cooling medium. Samples remain chilled while cooling medium is present however over the 24hr transit period to the laboratory cooling medium will melt and samples may warm. Due to the initial sample temperature and subsequent appropriate cooling of samples, losses due to volatilisation are considered to be limited..
Holding time compliance	All samples were extracted and analysed within recommended holding times, with the exception of nitrate and sulphite holding times were exceeded during the 24 hour transit to the laboratory for all samples analysed in laboratory batches ES1103572 and ES1103571. These analytes are used as one of a number of indicators of natural attenuation and as such will not affect the overall interpretation of results.
Data precision	
Field duplicate RPDs	RPDs exceeded control limits for the following sample analysis. (Sample with higher reported concentrations is in bold). • **MW118_18/2/11** and QC05_18/02/11 for Ferrous Iron (181.3%). • **MW118_18/2/11** and QC05_18/02/11 for Ferric Iron (183.3%). • **MW134_10/02/11** and QC03_10/02/11 for Manganese (34.2%). Ferric iron and ferrous iron are used as one of a number of indicators, as relative concentrations of these analytes remains clear for interpretative purposes, this apparent lack of precision is not considered to affect the interpretation of results. However, the apparent lack of precision for manganese should be taken into consideration when evaluating individual results, particularly where concentrations are reported close to the adopted investigation level.
Interlaboratory Replicate (Field triplicate) RPDs	RPDs exceeded control limits for the following sample analysis. (Sample with higher reported concentrations is in bold). • **MW108_9/02/11** and QC02_09/02/11 for Methane (47.8%). • **MW108_9/02/11** and QC02_09/02/11 for Potassium (38.8%). • **MW108_9/02/11** and QC02_09/02/11 for Ferrous Iron (68.6%). • MW118_18/2/11 and **QC06_18/02/11** for Potassium (30.8%). • MW134_10/02/11 and **QC04_10/02/11** for Calcium (66.7%). • MW134_10/02/11 and **QC04_10/02/11** for Sulphur as S (47.1%). Methane, ferrous iron, potassium, calcium and sulphur (as S) are used as indicator species, as relative concentrations of these analytes remains clear for interpretative purposes, this apparent lack of precision is not considered to affect the interpretation of results.
Laboratory duplicate RPDs	All laboratory duplicate RPDs were within control limits.
Data accuracy	
Laboratory control spike recovery	Laboratory control spike recoveries outside the laboratory control limits were reported for at least one dissolved metal analyte and/or PAH in one or more batches, listed below.

Batch	Analyte	Recovery (%)	LCL (%)	UCL (%)	Comment
ES1102970 ES1103571	Vanadium (dissolved)	87	91	109	Recovery less than lower control limit
ES1102970 ES1103571	Vanadium (dissolved)	79.8	91	109	Recovery less than lower control limit
ES1102970 ES1103571	Mercury (dissolved)	119	86	116	Recovery greater than upper control limit
ES1102970 ES1103571	Fluorene (dissolved)	62.7	63.9	115	Recovery less than lower control limit
ES1103572	Cadmium (dissolved)	109	89	107	Recovery greater than upper control limit
ES1103572	Chromium (dissolved)	114	91	111	Recovery greater than upper control limit
ES1103572	Lead (dissolved)	111	90	110	Recovery greater than upper control limit
ES1103572	Manganese (dissolved)	116	87	113	Recovery greater than upper control limit
ES1103572	Vanadium (dissolved)	85.5	91	109	Recovery less than lower control limit

For LCS recoveries reported greater than the upper control limit, the potential exists for reported concentrations to be biased high. Care should be taken with interpreting results for analytes close to

the adopted guidelines.

For LCS recoveries reported less than the lower control limit, the potential exists for reported concentrations to be biased low. Care should be taken with interpreting results for analytes close to the adopted guidelines.

LCS recoveries were not reported for total anions and cations from all batches, and alkalinity in batch ES1103571. The accuracy of the data for these compound groups is considered acceptable based on the presence of other quality control data, such as method blanks, matrix LCS recoveries and surrogate recoveries (where applicable).

Matrix spike recovery

The following recoveries were outside control limits and may affect data interpretation:

Sample	Analyte	Recovery (%)	LCL (%)	UCL (%)	Comment
MW116_9/02/11	Manganese	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
MW103_10/02/11	Sulphate as SO4	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
MW113_14/02/11	Sulphate as SO4	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
MW113_14/02/11	Chloride	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
MW113_14/02/11	Ferrous Iron	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.

As the matrix spike issue was related to non-determination due to background levels being greater than the spike level, this is not considered to affect the interpretation of the accuracy of the results, due to the presence of other laboratory quality control data, including method blanks, LCS recoveries and matrix spikes for analytes analysed under the same analytical method (where applicable).

Batch ES1102970

Matrix spike recoveries were not reported for calcium, magnesium, potassium, sodium, alkalinity, total dissolved solids, trihalomethanes, aliphatic chlorinated compounds, monocyclic aromatic, oxygenated compounds and carbon disulphide. The accuracy of the data for these compound groups is considered acceptable based on the presence of other quality control data, such as surrogate recoveries (where applicable).

Batch ES1103571

Matrix spike recoveries were not reported for PAHs, TPH C_{10}-C_{36}, calcium, magnesium, potassium, sodium, alkalinity, total dissolved solids, trihalomethanes, aliphatic halogenated compounds, monocyclic aromatic oxygenated compounds, chloride, total anions and cations, sulphur as S, sulphite as SO_3^{2-} and carbon disulphide. The accuracy of the data for these compound groups is considered acceptable based on the presence of other quality control data, such as surrogate recoveries (where applicable).

Batch ES1103571

Matrix spike recoveries were not reported for PAHs, TPH C_{10}-C_{36}, calcium, magnesium, potassium, sodium, alkalinity, total dissolved solids, trihalomethanes, aliphatic halogenated compounds, monocyclic aromatic and oxygenated compounds, total anions and cations, sulphur as S, sulphite as SO_3^{2-} and carbon disulphide. The accuracy of the data for these compound groups is considered acceptable based on the presence of other quality control data, such as surrogate recoveries (where applicable).

Surrogate spike recovery

A surrogate recovery of 78.9 % was reported for volatile TPH/BTEX compounds surrogate for sample QCC03_14/02/11 in laboratory batch ES1103571. Therefore the reported concentrations of volatile TPH/BTEX compounds may be biased low by approximately one third. As concentrations of these compounds were not detected above the laboratory LOR this is not expected to affect interpretation of results.

Blank monitoring

Equipment rinsate blank — Concentrations of all analytes were reported below the LOR.

Field blank — Concentrations of all analytes were reported below the LOR.

Trip blank — Concentrations of all analytes were reported below the LOR.

Method blank — Concentrations of all analytes were reported below the LOR.

Other observations	**Batch ES1102970** • EG020: LCS recovery for Vanadium falls outside ALS Dynamic Control Limit. However, it is within the acceptance criteria based on ALS DQO. No further action is required. • EG020: Samples ES1102970 #007 was diluted and rerun due to matrix interference and LOR's have been raised accordingly. (High sample salinity) • lEG035F: LCS recovery for Mercury falls outside ALS Dynamic Control Limit. However, it is within the acceptance criteria based on ALS DQO. No further action is required • EP074/EP080: Level of Reporting was raised for toluene due to ambient background levels in the laboratory. • The entire bottle is required for PAH, phenol and semi-volatile TPH determinations. Additional sample bottles are required for laboratory reporting of duplicates. **Batch ES1103571** • ED041G: LOR raised for SO4 analysis on sample ID: L5 due to sample matrix • EG020: LCS recoveries for some elements fall outside ALS Dynamic Control Limit. However, they are within the acceptance criteria based on ALS DQO. No further action is required. • EG020: Some samples were diluted and rerun due to matrix interference and LOR's have been raised accordingly. (High sample salinity) • EP074: Level of Reporting was raised for toluene due to ambient background levels in the laboratory. **Batch ES1103571** • EG020: LCS recoveries for some elements fall outside ALS Dynamic Control Limit. However, they are within the acceptance criteria based on ALS DQO. No further action is required. • EG020A-T: An unpreserved aliquot from the natural bottle was used for analysis. • EP074: Level of Reporting was raised for toluene due to ambient background levels in the laboratory.

Site Name	Waterfront Precinct
Project No.	42213719
Project Manager	Tim Smith
Matrix	Water
Laboratory	ALS / Labmark
Batch File Number	ES1102970 / 290561

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
METALS ANALYSIS/ALS/EG020F	Arsenic	21	21	13	✓	✓	2	2	2	2	0	0	1	2	1	2	1	2	2	4	1	2	1	2	-	-
	Cadmium	21	21	13	✓	✓	2	2	2	2	0	0	1	2	1	2	1	2	2	4	1	2	1	2	-	-
	Chromium	21	21	13	✓	×	2	2	2	2	0	0	1	2	1	2	1	2	2	4	1	2	1	2	-	-
	Copper	21	21	13	✓	×	2	2	2	2	0	0	1	2	1	2	1	2	2	4	1	2	1	2	-	-
	Lead	21	21	13	✓	×	2	2	2	2	0	0	1	2	1	2	1	2	2	4	1	2	1	2	-	-
	Manganese	21	21	13	✓	✓	2	2	2	2	0	0	1	2	1	2	1	2	2	4	1	2	1	2	-	-
	Nickel	21	21	13	✓	✓	2	2	2	2	0	0	1	2	1	2	1	0	2	4	1	2	1	2	-	-
	Vanadium	21	21	13	✓	✓	2	2	2	2	0	0	1	2	1	2	1	2	2	4	1	2	1	2	-	-
	Zinc	21	21	13	✓	×	2	2	0	0	0	0	1	2	1	2	1	2	2	4	1	2	1	2	-	-
VOLATILES ANALYSIS/ALS/EP080	Benzene	21	21	13	✓	✓	4	4	4	4	0	0	1	1	1	4	1	2	2	2	1	1	1	1	✓	✓
	Ethylbenzene	21	21	13	✓	✓	4	4	4	4	0	0	1	1	1	4	1	2	2	2	1	1	1	1	✓	✓
	meta- & para-Xylene	21	21	13	✓	✓	4	4	4	4	0	0	1	1	1	4	1	2	2	2	1	1	1	1	✓	✓
	ortho-Xylene	21	21	13	✓	✓	4	4	4	4	0	0	1	1	1	4	1	2	2	2	1	1	1	1	✓	✓
	Toluene	21	21	13	✓	✓	4	4	4	4	0	0	1	1	1	4	1	2	2	2	1	1	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP080/071	C6 - C9 Fraction	29	29	13	✓	✓	2	2	2	2	2	2	1	2	2	2	2	2	3	4	2	2	1	2	✓	✓
SEMIVOLATILES ANALYSIS/ALS/EP080/071	C10 - C14 Fraction	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	1	1	1	✓	✓
	C15 - C28 Fraction	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	1	1	1	✓	✓
	C29 - C36 Fraction	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	1	1	1	✓	✓
METALS ANALYSIS/ALS/ED093F	Calcium	17	17	13	✓	✓	0	0	0	0	0	0	1	1	1	2	1	2	2	2	1	0	1	1	-	-
	Magnesium	17	17	13	✓	✓	0	0	0	0	0	0	1	1	1	2	1	2	2	2	1	0	1	1	-	-
	Potassium	17	17	13	✓	✓	0	0	0	0	0	0	1	1	1	2	1	2	2	2	1	0	1	1	-	-
	Sodium	17	17	13	✓	✓	0	0	0	0	0	0	1	1	1	2	1	2	2	2	1	0	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Sulfate as SO4 - Turbidimetric	17	17	13	✓	✓	0	0	0	0	0	0	1	1	1	2	1	2	2	2	1	1	1	1	-	-
METALS ANALYSIS/ALS/EG035F	Mercury	21	21	13	✓	✓	2	2	2	2	0	0	1	2	1	2	1	2	2	4	1	2	1	2	-	-
INSTRUMENT LABORATORY (NON-METALL	Bicarbonate Alkalinity as CaCO3	15	15	13	✓	✓	0	0	0	0	0	0	1	0	1	2	1	0	2	4	1	0	1	0	-	-
	Carbonate Alkalinity as CaCO3	15	15	13	✓	✓	0	0	0	0	0	0	1	0	1	2	1	0	2	4	1	0	1	0	-	-
	Hydroxide Alkalinity as CaCO3	15	15	13	✓	✓	0	0	0	0	0	0	1	0	1	2	1	0	2	4	1	0	1	0	-	-
	Total Alkalinity as CaCO3	15	15	13	✓	✓	0	0	0	0	0	0	1	0	1	2	1	0	2	4	1	0	1	2	-	-
WET CHEMISTRY AND PREPARATION/ALS/E	Total Dissolved Solids @180°C	17	17	13	✓	✓	0	0	0	0	0	0	1	4	1	2	1	2	2	8	1	0	1	4	-	-
INSTRUMENT LABORATORY (NON-METALL	Chloride	17	17	13	✓	✓	0	0	0	0	0	0	1	1	1	2	1	2	2	2	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Total Anions	15	15	13	✓	✓	0	0	0	0	0	0	1	0	1	2	1	0	2	0	1	0	1	0	-	-
	Total Cations	15	15	13	✓	✓	0	0	0	0	0	0	1	0	1	2	1	0	2	0	1	0	1	0	-	-
SEMIVOLATILES ANALYSIS/ALS/EP075(SIM)	Acenaphthene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	1	1	1	✓	✓
	Acenaphthylene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	0	1	1	✓	✓
	Anthracene	21	21	13	✓	×	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	0	1	1	✓	✓
	Benz(a)anthracene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	0	1	1	✓	✓
	Benzo(a)pyrene	21	21	13	✓	×	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	0	1	1	✓	✓
	Benzo(b)fluoranthene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	0	1	1	✓	✓
	Benzo(g,h,i)perylene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	0	1	1	✓	✓
	Benzo(k)fluoranthene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	1	1	0	1	1	✓	✓
	Chrysene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	0	1	1	✓	✓
	Dibenz(a,h)anthracene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	0	1	1	✓	✓
	Fluoranthene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	0	1	1	✓	✓
	Fluorene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	0	1	1	✓	✓
	Indeno(1,2,3-cd)pyrene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	0	1	1	✓	✓
	Naphthalene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	0	1	1	✓	✓
	Phenanthrene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	0	1	1	✓	✓
	Pyrene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	1	1	1	1	1	✓	✓
INSTRUMENT LABORATORY (NON-METALL	Total Organic Carbon	17	17	13	✓	✓	0	0	0	0	0	0	1	2	1	2	1	2	2	4	1	2	1	2	-	-
INSTRUMENT LABORATORY (NON-METALL	Nitrite as N	17	17	13	✓	✓	0	0	0	0	0	0	1	1	1	2	1	2	2	2	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Nitrite + Nitrate as N	15	15	13	✓	✓	0	0	0	0	0	0	1	3	1	2	1	2	2	6	1	3	1	3	-	-
SEMIVOLATILES ANALYSIS/ALS/EP433	Methane	17	17	13	✓	✓	0	0	0	0	0	0	1	1	1	2	1	2	2	2	1	1	1	1	-	-
WET CHEMISTRY AND PREPARATION/ALS/E	Sulfide as S2-	17	17	13	✓	✓	0	0	0	0	0	0	1	2	1	2	1	2	2	4	1	2	1	2	-	-
WET CHEMISTRY AND PREPARATION/ALS/E	Sulfide as SO3 2-	17	17	13	✓	✓	0	0	0	0	0	0	1	1	1	2	1	2	2	2	1	0	1	1	-	-
METALS ANALYSIS/ALS/ED040T	Sulfur as S	17	17	13	✓	✓	0	0	0	0	0	0	1	1	1	2	1	2	2	2	1	0	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Ferrous Iron	17	17	13	✓	✓	0	0	0	0	0	0	1	1	1	2	1	2	2	2	1	1	1	1	-	-
VOLATILES ANALYSIS/ALS/EP074G	Bromodichloromethane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	Bromoform	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	Chloroform	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	Dibromochloromethane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓

Site Name	Waterfront Precinct
Project No.	42213719
Project Manager	Tim Smith
Matrix	Water
Laboratory	ALS / Labmark
Batch File Number	ES1102970 / 290561

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
VOLATILES ANALYSIS/ALS/EP074E	1,1,1,2-Tetrachloroethane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	1,1,1-Trichloroethane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	1,1,2,2-Tetrachloroethane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	1,1,2-Trichloroethane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	1,1-Dichloroethane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	1,1-Dichloroethene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	1	1	1	✓	✓
	1,1-Dichloropropylene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	1,2,3-Trichloropropane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	1,2-Dibromo-3-chloropropane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	1,2-Dichloroethane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	1,3-Dichloropropane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	Bromomethane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	Carbon Tetrachloride	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	Chloroethane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	Chloromethane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	cis-1,2-Dichloroethene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	cis-1,4-Dichloro-2-butene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	Dibromomethane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	Dichlorodifluoromethane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	Hexachlorobutadiene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	Iodomethane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	Pentachloroethane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	Tetrachloroethene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	trans-1,2-Dichloroethene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	trans-1,4-Dichloro-2-butene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	Trichloroethene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	1	1	1	✓	✓
	Trichlorofluoromethane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	Vinyl chloride	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074D	1,2-Dibromoethane (EDB)	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	1,2-Dichloropropane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	2,2-Dichloropropane	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	cis-1,3-Dichloropropylene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	trans-1,3-Dichloropropylene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074F	1,2,3-Trichlorobenzene	19	19	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	1,2,4-Trichlorobenzene	19	19	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	1,2-Dichlorobenzene	19	19	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	1,3-Dichlorobenzene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	1,4-Dichlorobenzene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	2-Chlorotoluene	19	19	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	4-Chlorotoluene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	Bromobenzene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	Chlorobenzene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	1	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074A	1,2,4-Trimethylbenzene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	1,3,5-Trimethylbenzene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	Isopropylbenzene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	n-Butylbenzene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	n-Propylbenzene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	p-Isopropyltoluene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	sec-Butylbenzene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	Styrene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	tert-Butylbenzene	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074B	2-Butanone (MEK)	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	2-Hexanone (MBK)	19	19	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
	4-Methyl-2-pentanone (MIBK)	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓
	Vinyl Acetate	19	19	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	0	2	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074C	Carbon disulfide	21	21	13	✓	✓	2	2	2	2	0	0	1	1	1	2	1	2	2	2	1	0	1	1	✓	✓

NOTES:

(a) ✓ holding times are within project guideline limits.
× holding times exceed project guideline limits.

(b) ✓ Limits of reporting (LORs) comply with project specifications.
× LORs do not comply with project specifications.

NA Not Applicable

Site Name	Waterfront Precinct
Project No.	42213719
Project Manager	Tim Smith
Matrix	Water
Laboratory	ALS
Batch File Number	ES1103571

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
METALS ANALYSIS/ALS/EG020F	Arsenic	9	9	7	✓	✓	1	1	1	1	0	0	1	2	0	0	0	0	1	4	1	2	1	2	-	-
	Cadmium	9	9	7	✓	✓	1	1	1	1	0	0	1	2	0	0	0	0	1	4	1	2	1	2	-	-
	Chromium	9	9	7	✓	×	1	1	1	1	0	0	1	2	0	0	0	0	1	4	1	2	1	2	-	-
	Copper	9	9	7	✓	×	1	1	1	1	0	0	1	2	0	0	0	0	1	4	1	2	1	2	-	-
	Lead	9	9	7	✓	×	1	1	1	1	0	0	1	2	0	0	0	0	1	4	1	2	1	2	-	-
	Manganese	9	9	7	✓	✓	1	1	1	1	0	0	1	2	0	0	0	0	1	4	1	2	1	2	-	-
	Nickel	9	9	7	✓	✓	1	1	1	1	0	0	1	2	0	0	0	0	1	4	1	2	1	2	-	-
	Vanadium	7	7	7	✓	✓	1	1	1	1	0	0	1	2	0	0	0	0	1	4	1	2	1	2	-	-
	Zinc	9	9	7	✓	×	1	1	1	1	0	0	1	2	0	0	0	0	1	4	1	2	1	2	-	-
VOLATILES ANALYSIS/ALS/EP080/071	C6 - C9 Fraction	10	10	7	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	2	1	1	1	1	✓	✓
SEMIVOLATILES ANALYSIS/ALS/EP075(SIM)B	Acenaphthene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Acenaphthylene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Anthracene	9	9	7	✓	×	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Benz(a)anthracene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Benzo(a)pyrene	9	9	7	✓	×	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Benzo(b)fluoranthene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Benzo(g,h,i)perylene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Benzo(k)fluoranthene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Chrysene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Dibenz(a,h)anthracene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Fluoranthene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Fluorene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Indeno(1,2,3-cd)pyrene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Naphthalene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Phenanthrene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Pyrene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
SEMIVOLATILES ANALYSIS/ALS/EP080/071	C10 - C14 Fraction	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	C10 - C36 Fraction (sum)	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	C15 - C28 Fraction	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	C29 - C36 Fraction	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
METALS ANALYSIS/ALS/ED093F	Calcium	7	7	7	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	0	1	1	-	-
	Magnesium	7	7	7	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	0	1	1	-	-
	Potassium	7	7	7	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	0	1	1	-	-
	Sodium	7	7	7	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	0	1	1	-	-
INSTRUMENT LABORATORY (NON-METALLI	Nitrite as N	7	7	7	×	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	1	1	1	-	-
METALS ANALYSIS/ALS/EG053FG-MS	Ferric Iron	7	7	7	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	0	1	1	-	-
INSTRUMENT LABORATORY (NON-METALLI	Nitrite + Nitrate as N	7	7	7	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALLI	Sulfate as SO4 - Turbidimetric	7	7	7	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	1	1	1	-	-
VOLATILES ANALYSIS/ALS/EP074G	Bromodichloromethane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Bromoform	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Chloroform	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Dibromochloromethane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074B	2-Butanone (MEK)	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	2-Hexanone (MBK)	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	4-Methyl-2-pentanone (MIBK)	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Vinyl Acetate	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074A	1,2,4-Trimethylbenzene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	1,3,5-Trimethylbenzene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Isopropylbenzene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	n-Butylbenzene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	n-Propylbenzene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	p-Isopropyltoluene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	sec-Butylbenzene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Styrene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	tert-Butylbenzene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓

Site Name	Waterfront Precinct
Project No.	42213719
Project Manager	Tim Smith
Matrix	Water
Laboratory	ALS
Batch File Number	ES1103571

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
VOLATILES ANALYSIS/ALS/EP074E	1,1,1,2-Tetrachloroethane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	1,1,1-Trichloroethane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	1,1,2,2-Tetrachloroethane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	1,1,2-Trichloroethane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	1,1-Dichloroethane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	1,1-Dichloroethene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	1	1	1	✓	✓
	1,1-Dichloropropylene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	1,2,3-Trichloropropane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	1,2-Dibromo-3-chloropropane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	1,2-Dichloroethane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	1,3-Dichloropropane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Bromomethane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Carbon Tetrachloride	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Chloroethane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Chloromethane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	cis-1,2-Dichloroethene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	cis-1,4-Dichloro-2-butene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Dibromomethane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Dichlorodifluoromethane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Hexachlorobutadiene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Iodomethane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Pentachloroethane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Tetrachloroethene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	trans-1,2-Dichloroethene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	trans-1,4-Dichloro-2-butene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Trichloroethene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	1	1	1	✓	✓
	Trichlorofluoromethane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Vinyl chloride	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074F	1,2,3-Trichlorobenzene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	1,2,4-Trichlorobenzene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	1,2-Dichlorobenzene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	1,3-Dichlorobenzene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	1,4-Dichlorobenzene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	2-Chlorotoluene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	4-Chlorotoluene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Bromobenzene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Chlorobenzene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	1	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074C	Carbon disulfide	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074D	1,2-Dibromoethane (EDB)	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	1,2-Dichloropropane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	2,2-Dichloropropane	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	cis-1,3-Dichloropropylene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	trans-1,3-Dichloropropylene	9	9	7	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
INSTRUMENT LABORATORY (NON-METALL	Total Organic Carbon	7	7	7	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	1	1	1	-	-
SEMIVOLATILES ANALYSIS/ALS/EP033	Methane	7	7	7	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Ferrous Iron	7	7	7	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	1	1	1	-	-
METALS ANALYSIS/ALS/EG035F	Mercury	7	7	5	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	2	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Bicarbonate Alkalinity as CaCO3	7	7	7	✓	✓	0	0	0	0	0	0	1	0	0	0	0	0	1	2	1	0	1	0	-	-
	Carbonate Alkalinity as CaCO3	7	7	7	✓	✓	0	0	0	0	0	0	1	0	0	0	0	0	1	2	1	0	1	0	-	-
	Hydroxide Alkalinity as CaCO3	7	7	7	✓	✓	0	0	0	0	0	0	1	0	0	0	0	0	1	2	1	0	1	0	-	-
	Total Alkalinity as CaCO3	7	7	7	✓	✓	0	0	0	0	0	0	1	0	0	0	0	0	1	2	1	0	1	0	-	-
WET CHEMISTRY AND PREPARATION/ALS/E	Sulfide as S2-	7	7	7	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Chloride	7	7	7	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Total Anions	7	7	7	✓	✓	0	0	0	0	0	0	1	0	0	0	0	0	1	2	1	0	1	0	-	-
	Total Cations	7	7	7	✓	✓	0	0	0	0	0	0	1	0	0	0	0	0	1	2	1	0	1	0	-	-
METALS ANALYSIS/ALS/ED040F	Sulfur as S	7	7	7	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	0	1	1	-	-
WET CHEMISTRY AND PREPARATION/ALS/E	Total Dissolved Solids @180°C	7	7	7	✓	✓	0	0	0	0	0	0	1	2	0	0	0	0	1	4	1	0	1	2	-	-
WET CHEMISTRY AND PREPARATION/ALS/E	Sulfite as SO3 2-	7	7	7	×	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	0	1	1	-	-

NOTES:

(a) ✓ holding times are within project guideline limits.
× holding times exceed project guideline limits.

(b) ✓ Limits of reporting (LORs) comply with project specifications.
× LORs do not comply with project specifications.

NA Not Applicable

Site Name	Waterfront Precinct
Project No.	42213719
Project Manager	Tim Smith
Matrix	Water
Laboratory	ALS / SGS
Batch File Number	ES1103572 / 291299

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
METALS ANALYSIS/ALS/EG020F	Arsenic	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Cadmium	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Chromium	8	8	4	✓	×	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Copper	8	8	4	✓	×	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Lead	8	8	4	✓	×	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Manganese	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Nickel	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Vanadium	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Zinc	8	8	4	✓	×	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
VOLATILES ANALYSIS/ALS/EP080/071	C6 - C9 Fraction	9	9	4	✓	✓	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
SEMIVOLATILES ANALYSIS/ALS/EP075(SIM)B	Acenaphthene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Acenaphthylene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Anthracene	8	8	4	✓	×	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Benz(a)anthracene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Benzo(a)pyrene	8	8	4	✓	×	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Benzo(b)fluoranthene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Benzo(g,h,i)perylene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Benzo(k)fluoranthene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Chrysene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Dibenz(a,h)anthracene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Fluoranthene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Fluorene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Indeno(1,2,3,cd)pyrene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Naphthalene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Phenanthrene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Pyrene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
SEMIVOLATILES ANALYSIS/ALS/EP080/071	C10 - C14 Fraction	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	C10 - C36 Fraction (sum)	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	C15 - C28 Fraction	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	C29 - C36 Fraction	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
METALS ANALYSIS/ALS/ED093F	Calcium	6	6	4	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
	Magnesium	6	6	4	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
	Potassium	6	6	4	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
	Sodium	6	6	4	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Nitrite as N	6	6	4	×	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Nitrite + Nitrate as N	6	6	4	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Sulfate as SO4 - Turbidimetric	6	6	4	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	1	1	1	-	-
VOLATILES ANALYSIS/ALS/EP074G	Bromodichloromethane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Bromoform	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Chloroform	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Dibromochloromethane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074B	2-Butanone (MEK)	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	2-Hexanone (MBK)	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	4-Methyl-2-pentanone (MIBK)	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Vinyl Acetate	7	7	6	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074A	1,2,4-Trimethylbenzene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,3,5-Trimethylbenzene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Isopropylbenzene	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	n-Butylbenzene	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	n-Propylbenzene	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	p-Isopropyltoluene	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	sec-Butylbenzene	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	Styrene	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	tert-Butylbenzene	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓

Site Name	Waterfront Precinct
Project No.	42213719
Project Manager	Tim Smith
Matrix	Water
Laboratory	ALS / SGS
Batch File Number	ES1103572 / 291299

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
VOLATILES ANALYSIS/ALS/EP074E	1,1,1,2-Tetrachloroethane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,1,1-Trichloroethane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,1,2,2-Tetrachloroethane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,1,2-Trichloroethane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,1-Dichloroethane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,1-Dichloroethene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	1,1-Dichloropropylene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	1,2,3-Trichloropropane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,2-Dibromo-3-chloropropane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	1,2-Dichloroethane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,3-Dichloropropane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Bromomethane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Carbon Tetrachloride	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Chloroethane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Chloromethane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	cis-1,2-Dichloroethene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	cis-1,4-Dichloro-2-butene	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	Dibromomethane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Dichlorodifluoromethane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Hexachlorobutadiene	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	Iodomethane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Pentachloroethane	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	Tetrachloroethene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	trans-1,2-Dichloroethene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	trans-1,4-Dichloro-2-butene	7	7	5	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	Trichloroethene	8	8	5	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	Trichlorofluoromethane	8	8	5	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Vinyl chloride	8	8	6	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074F	1,2,3-Trichlorobenzene	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	1,2,4-Trichlorobenzene	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	1,2-Dichlorobenzene	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,3-Dichlorobenzene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,4-Dichlorobenzene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	2-Chlorotoluene	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	4-Chlorotoluene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Bromobenzene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Chlorobenzene	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074C	Carbon disulfide	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074D	1,2-Dibromoethane (EDB)	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	1,2-Dichloropropane	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	2,2-Dichloropropane	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	cis-1,3-Dichloropropylene	7	7	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	trans-1,3-Dichloropropylene	7	7	5	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
INSTRUMENT LABORATORY (NON-METALL	Total Organic Carbon	6	6	4	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
WET CHEMISTRY AND PREPARATION/ALS/E	Total Dissolved Solids @ 180°C	5	5	4	✓	✓	0	0	0	0	0	0	1	2	1	1	1	0	1	4	1	0	1	2	-	-
SEMIVOLATILES ANALYSIS/ALS/EP003	Methane	6	6	4	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
METALS ANALYSIS/ALS/ED040F	Sulfur as S	6	6	4	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Ferrous Iron	6	6	4	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
METALS ANALYSIS/ALS/EG035F	Mercury	8	8	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Bicarbonate Alkalinity as CaCO3	6	6	4	✓	✓	0	0	0	0	0	0	1	0	1	1	1	1	1	2	1	0	1	0	-	-
	Carbonate Alkalinity as CaCO3	6	6	4	✓	✓	0	0	0	0	0	0	1	0	1	1	1	1	1	2	1	0	1	0	-	-
	Hydroxide Alkalinity as CaCO3	6	6	4	✓	✓	0	0	0	0	0	0	1	0	1	1	1	1	1	2	1	0	1	0	-	-
	Total Alkalinity as CaCO3	5	5	4	✓	✓	0	0	0	0	0	0	1	0	1	1	1	1	1	2	1	0	1	1	-	-
WET CHEMISTRY AND PREPARATION/ALS/E	Sulfide as S2-	6	6	4	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Chloride	6	6	4	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALL	Total Anions	5	5	4	✓	✓	0	0	0	0	0	0	1	0	1	1	1	1	1	0	1	0	1	0	-	-
	Total Cations	5	5	4	✓	✓	0	0	0	0	0	0	1	0	1	1	1	1	1	0	1	0	1	0	-	-
WET CHEMISTRY AND PREPARATION/ALS/E	Sulfite as SO3 2-	6	6	4	×	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-

NOTES:

(a) ✓ holding times are within project guideline limits.
× holding times exceed project guideline limits.

(b) ✓ Limits of reporting (LORs) comply with project specifications.
× LORs do not comply with project specifications.

NA Not Applicable

Groundwater Analytical Results - Field Blanks
February 2011

Sample ID				QCA01_09/02/11	QCB01_09/02/11	QCC01_09/02/11	QCA02_09/02/11	QCB02_09/02/11	QCC02_09/02/11	QCA03_14/02/11	QCB03_14/02/11	QCC03_14/02/11	QCA04_18/02/11	QCB04_18/02/11	QCC04_18/02/11
Date Sampled				9/02/2011	9/02/2011	9/02/2011	10/02/2011	10/02/2011	10/02/2011	14/02/2011	14/02/2011	14/02/2011	18/02/2011	18/02/2011	18/02/2011
Sample Type				Trip Blank	Field Blank	Rinsate Blank	Trip Blank	Field Blank	Rinsate Blank	Trip Blank	Field Blank	Rinsate Blank	Trip Blank	Field Blank	Rinsate Blank
Analyte	**LOR**	**Units**	**ANZECC 2000 - Marine Water - 95%**	**ANZECC 2000 - Irrigation - LTU**											
Total Petroleum Hydrocarbons															
C6-C9 fraction	20	µg/L			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
C10-C14 fraction	0.05	mg/L			-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05
C15-C28 fraction	0.1	mg/L			-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1
C29-C36 Fraction	0.1	mg/L			-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05
Sum of TPH C10 - C36	50	µg/L			-	<50	<50	-	<50	<50	-	<50	<50	-	<50	<50
BTEX Compounds															
Benzene	0.001	mg/L	0.7		-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Toluene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
Ethylbenzene	0.001	mg/L			-	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002
m&p-Xylene	2	µg/L			-	<2	<2	-	<2	<2	-	<2	<2	-	<2	<2
o-Xylene	0.001	mg/L			-	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002
Metals (Dissolved)															
Arsenic	0.001	mg/L		0.1	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Cadmium	0.0001	mg/L	0.0055	0.01	-	<0.0001	<0.0001	-	<0.0001	<0.0001	-	<0.0001	<0.0001	-	<0.0001	<0.0001
Chromium	0.001	mg/L	0.0044	0.1	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Copper	0.001	mg/L	0.0013	0.2	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Iron	0.05	mg/L		0.2	-	-	-	-	-	-	-	-	-	-	-	-
Lead	0.001	mg/L	0.0044	2	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Manganese	0.001	mg/L		0.2	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Mercury	0.0001	mg/L	0.0004	0.002	-	<0.0001	<0.0001	-	<0.0001	<0.0001	-	<0.0001	<0.0001	-	<0.0001	<0.0001
Nickel	0.001	mg/L	0.07	0.2	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Vanadium	0.005	mg/L	0.1	0.1	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01
Zinc	0.005	mg/L	0.015	2	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
Polynuclear Aromatic Hydrocarbons															
Naphthalene	0.001	mg/L	0.07		-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Acenaphthylene	0.001	mg/L			-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Acenaphthene	0.001	mg/L			-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Fluorene	0.001	mg/L			-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Phenanthrene	0.001	mg/L			-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Anthracene	0.001	mg/L			-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Fluoranthene	0.001	mg/L			-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Pyrene	0.001	mg/L			-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Benz(a)anthracene	0.001	mg/L			-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Chrysene	0.001	mg/L			-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Benzo(b)fluoranthene	1	µg/L			-	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1
Benzo(k)fluoranthene	1	µg/L			-	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1
Benzo(a)pyrene	0.001	mg/L			-	<0.0005	<0.0005	-	<0.0005	<0.0005	-	<0.0005	<0.0005	-	<0.0005	<0.0005
Indeno(1,2,3-cd)pyrene	0.001	mg/L			-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Dibenz(a,h)anthracene	0.001	mg/L			-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Benzo(g,h,i)perylene	0.001	mg/L			-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001
Benzo(b)fluoranthene & Benzo(k)fluoranthene	0.002	mg/L			-	-	-	-	-	-	-	-	-	-	-	-
Chlorinated Aromatic Compounds															
1,2,3-Trichlorobenzene	5	µg/L			-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
1,2,4-Trichlorobenzene	5	µg/L	80		-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
1,2,4-Trimethylbenzene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
1,2-dichlorobenzene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
1,3-Dichlorobenzene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
1,4-Dichlorobenzene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
2-Chlorotoluene	5	µg/L			-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
4-Chlorotoluene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
Bromobenzene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
Chlorobenzene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005

Groundwater Analytical Results - Field Blanks
February 2011

Sample ID					QCA01_09/02/11	QCB01_09/02/11	QCC01_09/02/11	QCA02_09/02/11	QCB02_09/02/11	QCC02_09/02/11	QCA03_14/02/11	QCB03_14/02/11	QCC03_14/02/11	QCA04_18/02/11	QCB04_18/02/11	QCC04_18/02/11
Date Sampled					9/02/2011	9/02/2011	9/02/2011	10/02/2011	10/02/2011	10/02/2011	14/02/2011	14/02/2011	14/02/2011	18/02/2011	18/02/2011	18/02/2011
Sample Type					Trip Blank	Field Blank	Rinsate Blank	Trip Blank	Field Blank	Rinsate Blank	Trip Blank	Field Blank	Rinsate Blank	Trip Blank	Field Blank	Rinsate Blank
Analyte	**LOR**	**Units**	**ANZECC 2000 - Marine Water - 95%**	**ANZECC 2000 - Irrigation - LTU**												
Chlorinated Aliphatic Compounds																
1,1,1,2-Tetrachloroethane	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
1,1,1-Trichloroethane	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
1,1,2,2-Tetrachloroethane	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
1,1,2-Trichloroethane	0.001	mg/L	1.9		-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
1,1-Dichloroethane	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
1,1-Dichloroethene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
1,1-Dichloropropylene	5	µg/L			-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
1,2,3-Trichloropropane	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
1,2-Dibromo-3-chloropropane	5	µg/L			-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
1,2-Dichloroethane	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
1,3-Dichloropropane	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
Allyl chloride	0.001	mg/L			-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	0.001	mg/L			-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05
Carbon tetrachloride	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
Chloroethane	0.001	mg/L			-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05
Chloromethane	0.001	mg/L			-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05
cis-1,2-Dichloroethene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
cis-1,4-Dichloro-2-butene	5	µg/L			-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
Dibromomethane	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
Dichlorodifluoromethane	0.001	mg/L			-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05
Dichloromethane	0.001	mg/L			-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	5	µg/L			-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
Iodomethane	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
Pentachloroethane	5	µg/L			-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
Tetrachloroethene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
trans-1,2-Dichloroethene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
trans-1,4-Dichloro-2-butene	5	µg/L			-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
Trichloroethene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
Trichlorofluoromethane	0.001	mg/L			-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05
Vinyl chloride	0.001	mg/L			-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05
Fumigants																
1,2-Dibromoethane	0.001	mg/L			-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromomethane	5	µg/L			-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
1,2-Dichloropropane	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
2,2-Dichloropropane	5	µg/L			-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
cis-1,3-dichloropropene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
trans-1,3-dichloropropene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
Trihalomethanes																
Bromochloromethane	0.001	mg/L			-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
Bromoform	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
Chloroform	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
Dibromochloromethane	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
Monocyclic Aromatic Hydrocarbons																
Styrene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
Isopropylbenzene	5	µg/L			-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
n-Butylbenzene	5	µg/L			-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
n-Propylbenzene	5	µg/L			-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
p-Isopropyltoluene	5	µg/L			-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
sec-Butylbenzene	5	µg/L			-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
tert-Butylbenzene	5	µg/L			-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5
1,3,5-Trimethylbenzene	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005
Isopropyl benzene (Cumene)	0.001	mg/L			-	-	-	-	-	-	-	-	-	-	-	-
Oxygenated Compounds																
2-Propanone (Acetone)	0.001	mg/L			-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-pentanone	0.001	mg/L			-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05
Vinyl Acetate	50	µg/L			-	<50	<50	-	<50	<50	-	<50	<50	-	<50	<50
2-Butanone (MEK)	0.001	mg/L			-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05
2-Hexanone (MBK)	50	µg/L			-	<50	<50	-	<50	<50	-	<50	<50	-	<50	<50
Sulfonated Compounds																
Carbon disulfide	0.001	mg/L			-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005

Legend:

Exceeds the ANZECC/ARMCANZ, 2000, Trigger values for marine water ecosystems - Level of protection 95% species

Exceeds the ANZECC/ARMCANZ, 2000, Irrig

- Not analysed / not calculated

* LOR Exceeds Guideline Trigger Value

10% check (3 samples)

24/4/2013 BA

2M samples

Table ???
Groundwater Analytical Results - Analysis Results
Waterfront

Location																				
Sample ID	MW108_9/02/11	MW115_9/02/11	MW116_9/02/11	MW121_9/02/11	MW128_9/02/11	MW135_9/02/11	MW139_9/02/11	QC01_09/02/11	QC02_09/02/11	QCA01_09/02/11	QCB01_09/02/11	QCC01_09/02/11	MW101_10/02/11	MW102_10/02/11	MW103_10/02/11	MW125_10/02/11	MW127_10/02/11	MW134_10/02/11	QC03_10/02/11	
Date Sampled	9/02/2011	9/02/2011	9/02/2011	9/02/2011	9/02/2011	9/02/2011	9/02/2011	9/02/2011	9/02/2011	9/02/2011	9/02/2011	9/02/2011	10/02/2011	10/02/2011	10/02/2011	10/02/2011	10/02/2011	10/02/2011	10/02/2011	
Sample Type	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Primary Sample ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Area	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Analyte	LOR	Units	ANZECC 2000 - Marine Water 95%	ANZECC 2000 - Irrigation - LTV																	
Tetrachloroethene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trans-1,2-Dichloroethene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trans-1,4-Dichloro-2-butene	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Trichlorofluoromethane	0.001	mg/L			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.001	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl chloride	0.001	mg/L			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.001	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fumigants																					
1,2-Dibromoethane	0.001	mg/L			-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
1,2-Dibromomethane	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,2-Dichloropropane	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
cis-1,3-dichloropropene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trans-1,3-dichloropropene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Trihalomethanes																					
Bromochloromethane	0.001	mg/L			-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bromoform	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroform	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Dibromochloromethane	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Major Ions																					
Calcium	0.5	mg/L			42	123	74	44	32	118	30	41	39	-	-	-	135	307	56	6	11	11	11
Chloride	1	mg/L			1030	17200	549	248	39	179	287	1070	960	-	-	-	2550	3260	90	62	81	485	451
Magnesium	0.5	mg/L			60	960	33	20	4	34	13	59	56	-	-	-	183	243	12	7	5	8	8
Potassium	0.5	mg/L			40	371	15	13	6	18	12	40	27	-	-	-	36	97	11	20	14	27	27
Sodium	0.5	mg/L			720	9960	402	192	29	144	203	714	670	-	-	-	1500	2070	75	159	147	455	445
Total Anions	0.01	meq/l			35.8	611	22.4	11.4	3.29	14.8	11.1	37	-	-	-	-	88.2	128	7.33	10	7.71	21.7	21.3
Total Cations	0.01	meq/l			39.4	628	24.3	12.5	3.38	15.4	11.7	39	-	-	-	-	1.76	3.75	1.83	3.96	1.02	3.44	4.92
Ionic Balance	0.01	%			4.8	1.64	4	4.56	1.42	1.94	2.93	2.63	-	-	-	-	578	1170	39	26	2	62	63
Sulfate as SO4 - Turbidimetric	1	mg/L			33	433	264	121	2	188	12	31	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulfide as S2-	0.1	mg/L			0.3	2.4	<0.1	<0.1	<0.1	0.4	<0.1	0.2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2
Sulfite as SO3 2-	2	mg/L			<2	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	228	474	15	10	1	26	26
Sulfur as S	1	mg/L			13	188	101	45	<1	71	5	12	-	-	-	-	-	-	-	-	-	-	-
Sulphide as S	0.1	mg/L			-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-
Ferrous/Ferric Iron																					
Ferrous Iron	0.5	mg/L			-	-	-	-	-	-	-	-	0.7	-	-	-	-	-	-	-	-	-	-
Ferric Iron	0.5	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Monocyclic Aromatic Hydrocarbons																					
Styrene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Isopropylbenzene	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
n-Butylbenzene	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
n-Propylbenzene	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
p-Isopropyltoluene	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
sec-Butylbenzene	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
tert-Butylbenzene	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,3,5-Trimethylbenzene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Isopropylbenzene (Cumene)	0.001	mg/L			-	-	-	-	-	-	-	-	0.002	-	-	-	-	-	-	-	-	-	-
Oxygenated Compounds																					
2-Propanone (Acetone)	0.001	mg/L			-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-pentanone	0.001	mg/L			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.001	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Acetate	50	µg/L			<50	<50	<50	<50	<50	<50	<50	<50	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50
2-Butanone (MEK)	0.001	mg/L			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.001	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-Hexanone (MBK)	50	µg/L			<50	<50	<50	<50	<50	<50	<50	<50	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50
Sulfonated Compounds																					
Carbon disulfide	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Miscellaneous Compounds																					
Methane	0.005	mg/L			-	-	-	-	-	-	-	-	3.6	-	-	-	-	-	-	-	-	-	-
Sulfur as S	1	mg/L			-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-	-
Sulphide as S	0.1	mg/L			-	-	-	-	-	-	-	-	1.3	-	-	-	-	-	-	-	-	-	-
Alkalinity																					
Hydroxide Alkalinity as CaCO3	1	mg/L			<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	<1	<1	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	5	mg/L			<1	<1	<1	<1	<1	<1	<1	<1	290	-	-	-	<1	<1	<1	<1	<1	<1	<1
Total Alkalinity	1	mg/L			304	762	74	97	107	293	138	307	-	-	-	-	58	102	166	347	261	264	262
Bicarbonate Alkalinity as CaCO3	1	mg/L			304	762	74	97	107	293	138	307	-	-	-	-	58	102	166	347	261	264	262
Natural Attenuation Parameters																					
Ferrous Iron	0.5	mg/L			1.43	0.78	16.2	<0.05	9.08	0.48	2.11	1.51	-	-	-	-	1.24	<0.05	0.07	0.16	2.16	0.5	0.54
Ferric Iron	0.5	mg/L			0.18	<0.05	<0.05	0.06	<0.05	0.23	<0.05	<0.05	-	-	-	-	0.1	<0.05	0.15	0.06	0.22	0.4	0.09
Methane	0.005	mg/L			5.7	5.61	0.026	0.028	2.44	0.022	0.589	6.15	-	-	-	-	<0.01	<0.01	<0.01	0.051	0.323	0.097	0.093
Nitrate and Nitrite (as N)	0.01	mg/L			0.01	<0.01	<0.01	1.6	0.01	0.24	0.01	0.02	-	-	-	-	0.05	1.03	0.02	0.06	0.1	0.02	0.01
Nitrate as N	0.02	mg/L			0.01	<0.01	<0.01	1.5	0.01	0.24	0.01	0.02	<0.01	-	-	-	0.05	1.03	0.02	0.06	0.1	0.02	0.01
Nitrite as N	0.01	mg/L			<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Organic Carbon	1	mg/L			5	8	5	10	<1	6	13	7	-	-	-	-	6	3	5	8	8	8	10
Miscellaneous																					
Bicarbonate Alkalinity as CaCO3	1	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Recoverable Hydrocarbons																					
TRH C10-36 (Total)	0.2	mg/L			-	-	-	-	-	-	-	-	0.6	-	-	-	-	-	-	-	-	-	-
TRH C6-C9 Fraction by GC	0.02	mg/L			-	-	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-	-

Table ???
Groundwater Analytical Results - Analysis Results
Waterfront

Location																					
Sample ID			MW108_8/02/11	MW115_8/02/11	MW116_8/02/11	MW121_8/02/11	MW128_8/02/11	MW135_8/02/11	MW138_8/02/11	QC01_08/02/11	QC02_08/02/11	QCA01_08/02/11	QCB01_08/02/11	QCC01_08/02/11	MW101_10/02/11	MW102_10/02/11	MW103_10/02/11	MW125_10/02/11	MW127_10/02/11	MW134_10/02/11	QC03_10/02/11
Date Sampled			8/02/2011	8/02/2011	8/02/2011	8/02/2011	8/02/2011	8/02/2011	8/02/2011	8/02/2011	8/02/2011	9/02/2011	9/02/2011	9/02/2011	10/02/2011	10/02/2011	10/02/2011	10/02/2011	10/02/2011	10/02/2011	10/02/2011
Sample Type			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Primary Sample ID			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Area			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Analyte	LOR	Units	ANZECC 2000 - Marine Water - 95%	ANZECC 2000 - Irrigation - LTU																	
Physico-Chemical Parameters																					
Total Dissolved Solids	5	mg/L			2020	34200	1370	644	144	852	612	2050	2300	-	-	-	4950	7310	376	436	406	1160	1070
Total Petroleum Hydrocarbons																					
C6-C9 fraction	20	µg/L			<20	<20	<20	<20	<20	<20	<20	<20	-	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
C10-C14 fraction	0.05	mg/L			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C15-C28 fraction	0.1	mg/L			0.31	<0.1	<0.1	<0.1	0.14	<0.1	<0.1	0.38	0.5	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.25	0.47	0.47
C29-C36 Fraction	0.1	mg/L			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sum of TPH C10 - C36	50	µg/L			310	<50	<50	<50	140	<50	<50	360	-	-	<50	<50	<50	<50	<50	<50	250	470	470
BTEX Compounds																					
Benzene	0.001	mg/L	0.7		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Ethylbenzene	0.001	mg/L			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
m&p-Xylene	2	µg/L			<2	<2	<2	<2	<2	<2	<2	<2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-Xylene	0.001	mg/L			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Total Xylenes	0.003	mg/L			-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-
Total BTEX	0.01	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total m+p-Xylenes	0.002	mg/L			-	-	-	-	-	-	-	-	<0.002	-	-	-	-	-	-	-	-	-	-
Metals (Dissolved)																					
Arsenic	0.001	mg/L		0.1	<0.001	<0.005	<0.001	<0.001	0.001	0.001	0.002	0.001	-	-	<0.001	<0.001	0.001	<0.001	0.002	0.001	0.002	0.002	0.002
Cadmium	0.0001	mg/L	0.0055	0.01	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	0.0072	<0.0001	<0.0001	-	-	<0.0001	<0.0001	0.0014	0.0087	0.0007	<0.0001	0.0002	<0.0001	<0.0001
Chromium	0.001	mg/L	0.0044	0.1	<0.001	<0.005*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	0.001	mg/L	0.0013	0.2	<0.001	<0.02*	<0.001	0.002	<0.001	0.002	<0.001	<0.001	-	-	<0.001	<0.001	0.001	0.018	0.005	0.001	<0.001	<0.001	<0.001
Iron	0.05	mg/L		0.2	-	-	-	-	-	-	-	-	0.18	-	-	-	-	-	-	-	-	-	-
Lead	0.001	mg/L	0.0044	2	<0.001	<0.005*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	0.001	mg/L		0.2	0.71	0.413	9.58	0.519	0.166	0.767	0.634	0.613	-	-	<0.001	<0.001	7.22	0.103	0.788	0.495	0.491	0.144	0.102
Mercury	0.0001	mg/L	0.0004	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.001	mg/L	0.07	0.2	<0.001	<0.005	0.006	0.004	0.008	0.001	0.001	<0.001	-	-	<0.001	<0.001	0.054	0.012	0.003	0.002	0.004	0.002	0.001
Vanadium	0.005	mg/L	0.1	0.1	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.005	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	0.005	mg/L	0.015	2	<0.005	0.026	0.035	0.03	<0.005	0.019	0.006	<0.005	-	-	<0.005	<0.005	0.11	0.017	0.043	0.019	0.005	0.005	0.051
Arsenic (filtered)	0.001	mg/L			-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
Cadmium (filtered)	0.0002	mg/L			-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-
Chromium (filtered)	0.001	mg/L			-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
Copper (filtered)	0.001	mg/L			-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
Lead (filtered)	0.001	mg/L			-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
Manganese (filtered)	0.005	mg/L			-	-	-	-	-	-	-	-	0.61	-	-	-	-	-	-	-	-	-	-
Nickel (filtered)	0.001	mg/L			-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
Zinc (filtered)	0.001	mg/L			-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
Polynuclear Aromatic Hydrocarbons																					
Naphthalene	0.001	mg/L	0.07		0.0037	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0038	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0014
Acenaphthylene	0.001	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Acenaphthene	0.001	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluorene	0.001	mg/L			<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Phenanthrene	0.001	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Anthracene	0.001	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoranthene	0.001	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Pyrene	0.001	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Benz(a)anthracene	0.001	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chrysene	0.001	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(b)fluoranthene	1	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(k)fluoranthene	1	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(a)pyrene	0.001	mg/L			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Indeno(1,2,3-cd)pyrene	0.001	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dibenz(a,h)anthracene	0.001	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene	0.001	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(b)fluoranthene & Benzo(k)fluoranthene	0.002	mg/L			-	-	-	-	-	-	-	-	<0.002	-	-	-	-	-	-	-	-	-	-
Chlorinated Aromatic Compounds																					
1,2,3-Trichlorobenzene	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2,4-Trichlorobenzene	5	µg/L	80		<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,2-Dichlorobenzene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,3-Dichlorobenzene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,4-Dichlorobenzene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Chlorotoluene	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-Chlorotoluene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bromobenzene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlorobenzene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlorinated Aliphatic Compounds																					
1,1,1,2-Tetrachloroethane	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,1-Trichloroethane	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2,2-Tetrachloroethane	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2-Trichloroethane	0.001	mg/L	1.9		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloropropylene	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,2-Dibromo-3-chloropropane	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,3-Dichloropropane	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Allyl chloride	0.001	mg/L			-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
Bromomethane	0.001	mg/L			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.001	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon tetrachloride	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroethane	0.001	mg/L			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.001	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chloromethane	0.001	mg/L			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.001	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethene	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis-1,4-Dichloro-2-butene	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dibromomethane	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Dichlorodifluoromethane	0.001	mg/L			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.001	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloromethane	0.001	mg/L			-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
Iodomethane	0.001	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Pentachloroethane	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5

DATA VALIDATION REPORT_June 2011

URS Project number:	42213719	**Data verified by:**	Bek Aagaard	Date: 24/04/2013
Client:	Darwin Waterfront Corporation			
Site:	Waterfront Precinct	Signed:	Bek Aagaard	
URS Project Manager:	Jacques van Rensberg			
		Validation by:	Tim Smith	Date: 3/5/2013
Matrix type:	Groundwater			
No Primary samples:	10			
Laboratory:	ALS; Labmark	Signed:		
Lab reference:	ES1113641 304025	**Project Manager:**		Date:
		Signed:		

Data quality objectives

Field data comparison	No apparent anomalies were observed between laboratory results and field observations.
Frequency of field QC	Field QC samples were collected to project specifications.
Frequency of laboratory QC	The laboratory reported a sufficient frequency of QC to assess whether the results have been reported to an acceptable accuracy and precision, with the exception of the following: • Matrix spikes (MS) were reported on anonymous samples for all analytes. Where MS were conducted on anonymous samples, the reported MS recovery may not be considered representative of the URS field sample. • Laboratory duplicate were not reported for Total Petroleum Hydrocarbons (TPH)/Total Recoverable Hydrocarbons (TRH). The precision of TPH and TRH has been considered acceptable based on the presence intra- and inter-laboratory duplicates were available and acceptable. • The inter-laboratory duplicate was not analysed for TRH, calcium, magnesium, potassium, sodium and alkalinity. The precision of this data can be assessed as acceptable based on the presence of intra-laboratory field duplicates for all analytes and laboratory duplicates except for TRH.
Tests requested/reported	Samples were analysed and reported as requested on the COC.
Limits of reporting	LORs were sufficiently low to enable assessment against adopted guideline criteria with the following limitations: • Protocol LOR for anthracene (1 µg/L) above the adopted ILs (0.4 µg/L) • Protocol LOR for benzo(a)pyrene (0.5 µg/L) above the adopted ILs (0.2 µg/L) The limits of reporting were above the adopted investigation levels for anthracene and benzo(a)pyrene. As a result, potential exists for samples to contain concentrations of these analytes above the adopted investigation levels, but below detection limits. This lack of definitive data should be taken into consideration when interpreting analytical results below LOR for these PAHs. • Protocol LOR exceeds the guideline trigger value for chromium (0.0044 mg/L) • Protocol LOR exceeds the guideline trigger value for copper (0.0013 mg/L) • Protocol LOR exceeds the guideline trigger value for lead (0.0044 mg/L) The limits of reporting exceeded the guideline trigger levels for chromium copper and lead. As a result, potential exists for samples to contain concentrations of these analytes above the adopted investigation levels, but below detection limits. This lack of definitive data should be taken into consideration when interpreting analytical results below these metals.
Data transcription	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by URS.

Sample management

Chain of Custody	Chain of custody documents completed.
Handling and preservation	Samples were correctly preserved, chilled with ice and received at the laboratory at 7.6°C. Samples from batch ES1113641 were received above the recommended temperature range; therefore, some losses through volatilisation may have occurred and sample concentrations for BTEXN and TPH $C_6 - C_9$ may be may be biased low.

	It should be noted that the groundwater temperature across the site throughout the year and at the time of sampling is generally >30°C. Samples are chilled in the field on ice and transported to the laboratory with appropriate cooling medium. Samples remain chilled while cooling medium is present however over the 24hr transit period to the laboratory cooling medium will melt and samples may warm. Due to the initial sample temperature and subsequent appropriate cooling of samples, losses due to volatilisation are considered to be limited.
Holding time compliance	Samples were extracted and analysed within recommended holding times.
Data precision	
Field duplicate RPDs	RPDs were within control limits.
Interlaboratory Replicate (Field triplicate) RPDs	RPDs were within control limits.
Laboratory duplicate RPDs	RPDs were within control limits.
Data accuracy	
Laboratory control spike recovery	The following recoveries were outside control limits and may affect data interpretation:

Batch	Analyte	Recovery (%)	LCL (%)	UCL (%)	Comment
ES1113641	Mercury	126	86	116	Recovery greater than upper control limit
ES1113641	Mercury	119	86	116	Recovery greater than upper control limit

For LCS recoveries reported greater than the upper control limit, the potential exists for reported concentrations to be biased high by up to 10% for mercury. Care should be taken with interpreting results for mercury close to the adopted guidelines. As results for mercury were reported below LOR, this potential for over-reporting is not considered to affect the interpretation of the results.

Matrix spike recovery

The following recoveries were outside control limits and may affect data interpretation:

Sample	Analyte	Recovery (%)	LCL (%)	UCL (%)	Comment
MW116_27/06/11	Manganese	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.

As the matrix spike issue was related to non-determination due to background levels being greater than the spike level, this is not considered to affect the interpretation of the accuracy of the results, due to the presence of other laboratory quality control data, including method blanks, LCS recoveries and matrix spikes for analytes analysed under the same analytical method (where applicable).

Matrix spike recoveries were not reported for TPH C10-C36, calcium, magnesium, potassium, sodium, total dissolved solids and alkalinity. The accuracy of the data for these compound groups is considered acceptable based on the presence of other quality control data, such as method blanks, LCS recoveries and surrogate recoveries (where applicable).

Surrogate spike recovery	The surrogate spike recoveries were within control limits.
Blank monitoring	
Equipment rinsate blank	Concentrations of all analytes were reported below the LOR.
Field blank	Concentrations of all analytes were reported below the LOR.
Trip blank	Concentrations of all analytes were reported below the LOR.
Method blank	Concentrations of all analytes were reported below the LOR.
Chromatograms	N/A
Other observations	• EG020: MW115_23/06/11 was diluted and reanalysed due to matrix interference(s) caused by high salinity. LORs have been raised accordingly. • EP080: Level of reporting raised for toluene due to ambient background levels in the laboratory. • LCS recovery for Mercury falls outside ALS Dynamic Control Limit. However, it is within the acceptance criteria based on ALS DQO. No further action is required. • The entire bottle is required for PAH, phenol and semi-volatile TPH determinations. Additional sample bottles are required for laboratory reporting of duplicates and matrix spikes.

Site Name	Waterfront Precinct
Project No.	42213719
Project Manager	Tim Smith
Matrix	Water
Laboratory	ALS / Labmark
Batch File Number	ES11113641 / 304025

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
METALS ANALYSIS/ALS/EG020F	Arsenic	14	14	10	✓	✓	1	1	1	1	0	0	1	2	1	1	1	1	2	4	1	2	1	2	-	-
	Cadmium	14	14	10	✓	✓	1	1	1	1	0	0	1	2	1	1	1	1	2	4	1	2	1	2	-	-
	Chromium	14	14	10	✓	×	1	1	1	1	0	0	1	2	1	1	1	1	2	4	1	2	1	2	-	-
	Copper	14	14	10	✓	×	1	1	1	1	0	0	1	2	1	1	1	1	2	4	1	2	1	2	-	-
	Lead	14	14	10	✓	×	1	1	1	1	0	0	1	2	1	1	1	1	2	4	1	2	1	2	-	-
	Manganese	14	14	10	✓	✓	1	1	1	1	0	0	1	2	1	1	1	1	2	4	1	2	1	2	-	-
	Nickel	14	14	10	✓	✓	1	1	1	1	0	0	1	2	1	1	1	1	2	4	1	2	1	2	-	-
	Vanadium	14	14	10	✓	✓	1	1	1	1	0	0	1	2	1	1	1	1	2	4	1	2	1	2	-	-
	Zinc	14	14	10	✓	✓	1	1	1	1	0	0	1	2	1	1	1	1	2	4	1	2	1	2	-	-
VOLATILES ANALYSIS/ALS/EP080	Benzene	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	Ethylbenzene	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	meta- & para-Xylene	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	Naphthalene	14	14	8	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	ortho-Xylene	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	Toluene	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP080/071	C6 - C10 Fraction	15	15	10	✓	✓	1	1	1	1	1	1	1	1	1	1	1	0	2	2	1	1	1	1	✓	✓
	C6 - C9 Fraction	15	15	10	✓	✓	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
SEMIVOLATILES ANALYSIS/ALS/EP075(SIM)B	Acenaphthene	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	✓	✓
	Acenaphthylene	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	✓	✓
	Anthracene	2	2	0	✓	×	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	✓	✓
	Benz(a)anthracene	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	✓	✓
	Benzo(a)pyrene	2	2	0	✓	×	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	✓	✓
	Benzo(b)fluoranthene	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	✓	✓
	Benzo(g,h,i)perylene	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	✓	✓
	Benzo(k)fluoranthene	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	✓	✓
	Chrysene	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	✓	✓
	Dibenz(a,h)anthracene	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	✓	✓
	Fluoranthene	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	✓	✓
	Fluorene	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	✓	✓
	Indeno(1,2,3-cd)pyrene	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	✓	✓
	Naphthalene	2	2	0	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	0	0	1	1	1	1	✓	✓
	Phenanthrene	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	✓	✓
	Pyrene	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	✓	✓
SEMIVOLATILES ANALYSIS/ALS/EP080/071	>C10 - C16 Fraction	13	13	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	2	0	1	0	1	1	✓	✓
	>C16 - C34 Fraction	13	13	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	2	0	1	0	1	1	✓	✓
	>C34 - C40 Fraction	13	13	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	2	0	1	0	1	1	✓	✓
	C10 - C14 Fraction	13	13	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
	C15 - C28 Fraction	13	13	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
	C29 - C36 Fraction	13	13	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
METALS ANALYSIS/ALS/ED093F	Calcium	12	12	10	✓	✓	0	0	0	0	0	0	1	2	1	1	1	0	2	4	1	0	1	2	-	-
	Magnesium	12	12	10	✓	✓	0	0	0	0	0	0	1	2	1	1	1	0	2	4	1	0	1	2	-	-
	Potassium	12	12	10	✓	✓	0	0	0	0	0	0	1	2	1	1	1	0	2	4	1	0	1	2	-	-
	Sodium	12	12	10	✓	✓	0	0	0	0	0	0	1	2	1	1	1	0	2	4	1	0	1	2	-	-
INSTRUMENT LABORATORY (NON-METALLIC	Chloride	12	12	10	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	2	4	1	2	1	2	-	-
WET CHEMISTRY AND PREPARATION/ALS/E	Total Dissolved Solids @180°C	12	12	10	✓	✓	0	0	0	0	0	0	1	3	1	1	1	1	2	8	1	0	1	3	-	-
METALS ANALYSIS/ALS/EG035F	Mercury	14	14	10	✓	✓	1	1	1	1	0	0	1	2	1	1	1	1	2	4	1	2	1	2	-	-
INSTRUMENT LABORATORY (NON-METALLIC	Bicarbonate Alkalinity as CaCO3	11	11	10	✓	✓	0	0	0	0	0	0	0	0	1	1	1	0	2	4	1	0	0	0	-	-
	Carbonate Alkalinity as CaCO3	11	11	10	✓	✓	0	0	0	0	0	0	0	0	1	1	1	0	2	4	1	0	0	0	-	-
	Hydroxide Alkalinity as CaCO3	11	11	10	✓	✓	0	0	0	0	0	0	0	0	1	1	1	0	2	4	1	0	0	0	-	-
	Total Alkalinity as CaCO3	11	11	10	✓	✓	0	0	0	0	0	0	1	2	1	1	1	0	2	4	1	0	1	2	-	-

NOTES:

(a) ✓ holding times are within project guideline limits.
× holding times exceed project guideline limits.

(b) ✓ Limits of reporting (LORs) comply with project specifications.
× LORs do not comply with project specifications.

NA Not Applicable

Groundwater Analytical Results - Field Blanks
June 2011

Sample ID				QCA01_27/06/11	QCB01_27/06/11	QCC01_27/06/11
Date Sampled				27/06/2011	27/06/2011	27/06/2011
Sample Type				Trip Blank	Field Blank	Rinsate Blank
Analyte	**LOR**	**Units**	**ANZECC 2000 - Marine Water - 95%**	**ANZECC 2000 - Irrigation - LTU**		
Total Petroleum Hydrocarbons						
C6-C9 fraction	20	µg/L			<20	<20	<20
C10-C14 fraction	50	µg/L			-	<50	<50
C15-C28 fraction	100	µg/L			-	<100	<100
C29-C36 fraction	50	µg/L			-	<50	<50
C10 - C36 Fraction (sum)	50	µg/L			-	<50	<50
BTEX Compounds						
Benzene	1	µg/L	700		-	<1	<1
Toluene	2	µg/L			-	<5	<5
Ethylbenzene	2	µg/L			-	<2	<2
m&p-Xylene	2	µg/L			-	<2	<2
o-Xylene	2	µg/L			-	<2	<2
Total Xylenes	2	µg/L			-	<2	<2
Sum of BTEX	1	µg/L			-	<1	<1
Metals (Dissolved)						
Calcium	0.1	mg/L			-	-	-
Potassium	1	mg/L			-	-	-
Sodium	0.1	mg/L			-	-	-
Arsenic	0.001	mg/L		0.1	-	<0.001	<0.001
Cadmium	0.0001	mg/L	0.0055	0.01	-	<0.0001	<0.0001
Chromium	0.001	mg/L	0.0044	0.1	-	<0.001	<0.001
Copper	0.001	mg/L	0.0013	0.2	-	<0.001	<0.001
Lead	0.001	mg/L	0.0044	2	-	<0.001	<0.001
Magnesium	1	mg/L			-	-	-
Manganese	0.001	mg/L		0.2	-	<0.001	<0.001
Mercury	0.0001	mg/L	0.0004	0.002	-	<0.0001	<0.0001
Nickel	0.001	mg/L	0.07	0.2	-	<0.001	<0.001
Vanadium	0.01	mg/L	0.1	0.1	-	<0.01	<0.01
Zinc	0.005	mg/L	0.015	2	-	<0.005	<0.005
Polynuclear Aromatic Hydrocarbons						
Naphthalene	5	µg/L	70		-	<1	<1
Acenaphthylene	1	µg/L			-	<1	<1
Acenaphthene	1	µg/L			-	<1	<1
Fluorene	1	µg/L			-	<1	<1
Phenanthrene	1	µg/L			-	<1	<1
Anthracene	1	µg/L			-	<1	<1
Fluoranthene	1	µg/L			-	<1	<1
Pyrene	1	µg/L			-	<1	<1
Benz(a)anthracene	1	µg/L			-	<1	<1
Chrysene	1	µg/L			-	<1	<1
Benzo(b)fluoranthene	1	µg/L			-	<1	<1
Benzo(k)fluoranthene	1	µg/L			-	<1	<1
Benzo(a)pyrene	0.5	µg/L			-	<0.5	<0.5
Indeno(1,2,3-cd)pyrene	1	µg/L			-	<1	<1
Dibenz(a,h)anthracene	1	µg/L			-	<1	<1
Benzo(g,h,i)perylene	1	µg/L			-	<1	<1
Sum of polycyclic aromatic hydrocarbons	0.5	µg/L			-	<1	<0.9
Total Recoverable Hydrocarbons						
>C10 - C16 Fraction	100	µg/L			-	<100	<100
>C10 - C40 Fraction (sum)	100	µg/L			-	<100	<100
>C16 - C34 Fraction	100	µg/L			-	<100	<100
>C34 - C40 Fraction	100	µg/L			-	<100	<100
C6 - C10 Fraction	20	µg/L			<20	<20	<20
C6 - C10 Fraction minus BTEX (F1)	20	µg/L			-	<20	<20

Legend:
Exceeds the ANZECC/ARMCANZ, 2000, Trigger values for marine water ecosystems - Level of protection 95% species
Exceeds the ANZECC/ARMCANZ, 2000, Irriga
- Not analysed / not calculated
* LOR Exceeds Guideline Trigger Value

Table ???
Groundwater Analytical Results - Analysis Results
Waterfront

10% check

18/4/2013 BA

Location															
Sample ID	MW125_22/06/11	MW115_23/06/11	MW127_23/05/11	MW128_23/06/11	MW134_23/06/11	MW135_23/06/11	MW136_23/06/11	MW108_27/06/11	MW118_27/06/11	MW121_27/06/11	QC01_27/06/11	QC02_27/06/11	QCA01_27/06/11	QCB01_27/06/11	QCC01_27/06/11
Date Sampled	22/06/2011	23/06/2011	23/06/2011	23/06/2011	23/06/2011	23/06/2011	23/06/2011	27/06/2011	27/06/2011	27/06/2011	27/06/2011	27/06/2011	27/06/2011	27/06/2011	27/06/2011
Sample Type	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Primary Sample ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Area	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Analyte	LOR	Units	ANZECC 2000 - Marine Water 95%	ANZECC 2000 - Irrigation - LTV															
Physico-Chemical Parameters																			
Total Dissolved Solids	1	mg/L			650	35300	588 ✓		244	1830	1140	4490	2420	1620	1110	1560	1600	-	-	-
Total Petroleum Hydrocarbons																			
C6-C9 fraction	20	µg/L			<20	<20	<20		<20	<20	<20	<20	<20	<20	<20	<20	-	<20	<20	<20
C10-C14 fraction	50	µg/L			<50	<50	<50		<50	<50	<50	<50	60	<50	<50	<50	<50	-	<50	<50
C15-C28 fraction	100	µg/L			<100	<100	320		220	380	120	180	1020	<100	<100	<100	<100	-	<100	<100
C29-C36 fraction	50	µg/L			<50	<50	<50		<50	<50	<50	<50	<50	<50	<50	<50	<100	-	<50	<50
C10 - C36 Fraction (sum)	50	µg/L			<50	<50	320		220	380	120	180	1080	<50	<50	<50	-	-	<50	<50
BTEX Compounds																			
Benzene	1	µg/L	700		<1	<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1
Toluene	2	µg/L			<5	<5	<5		<5	<5	<5	<5	<5	<5	<5	<5	<1	-	<5	<5
Ethylbenzene	2	µg/L			<2	<2	<2		<2	<2	<2	<2	<2	<2	<2	<2	<1	-	<2	<2
m&p-Xylene	2	µg/L			<2	<2	<2		<2	<2	<2	<2	<2	<2	<2	<2	-	-	<2	<2
o-Xylene	2	µg/L			<2	<2	<2		<2	<2	<2	<2	<2	<2	<2	<2	<1	-	<2	<2
Total Xylenes	2	µg/L			<2	<2	<2		<2	<2	<2	<2	<2	<2	<2	<2	<3	-	<2	<2
Sum of BTEX	1	µg/L			<1	<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	-	-	<1	<1
Total BTEX	0.01	mg/L			-	-	-		-	-	-	-	-	-	-	-	<0.01	-	-	-
Total m+p-Xylenes	0.002	mg/L			-	-	-		-	-	-	-	-	-	-	-	<0.002	-	-	-
Metals (Dissolved)																			
Calcium	0.1	mg/L			-	-	-		-	-	-	-	-	-	-	-	81	-	-	-
Potassium	1	mg/L			-	-	-		-	-	-	-	-	-	-	-	16	-	-	-
Sodium	0.1	mg/L			-	-	-		-	-	-	-	-	-	-	-	<0.1	-	-	-
Arsenic	0.001	mg/L		0.1	0.001	<0.01	0.002 ✓		<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001
Cadmium	0.0001	mg/L	0.0055	0.01	<0.0001	<0.001	<0.0001 ✓		<0.0001	0.0002	0.0075	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	-	-	<0.0001	<0.0001
Chromium	0.001	mg/L	0.0044	0.1	<0.001	<0.01*	<0.001 ✓		<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001
Copper	0.001	mg/L	0.0013	0.2	<0.001	<0.02*	<0.001 ✓		<0.001	<0.001	0.002	<0.001	<0.001	<0.001	0.001	<0.001	-	-	<0.001	<0.001
Lead	0.001	mg/L	0.0044	2	<0.001	<0.01*	<0.001 ✓		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001
Magnesium	1	mg/L			-	-	- ✓		-	-	-	-	-	-	-	-	38	-	-	-
Manganese	0.001	mg/L		0.2	0.533	0.941	0.259 ✓		0.15	0.11	1.03	2.5	0.449	11.1	0.483	11.4	-	-	<0.001	<0.001
Mercury	0.0001	mg/L	0.0004	0.002	<0.0001	<0.0001	<0.0001 ✓		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001
Nickel	0.001	mg/L	0.07	0.2	0.002	<0.01	0.004 ✓		0.013	0.002	<0.001	0.001	<0.001	0.006	0.004	0.005	-	-	<0.001	<0.001
Vanadium	0.01	mg/L	0.1	0.1	<0.01	<0.1	<0.01 ✓		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.005	-	<0.01	<0.01
Zinc	0.005	mg/L	0.015	2	<0.005	0.119	0.005 ✓		0.011	0.007	1.11	0.005	0.007	0.012	0.009	0.041	-	-	<0.005	<0.005
Arsenic (filtered)	0.001	mg/L			-	-	-		-	-	-	-	-	-	-	-	0.001	-	-	-
Cadmium (filtered)	0.0001	mg/L			-	-	-		-	-	-	-	-	-	-	-	<0.0001	-	-	-
Chromium (filtered)	0.001	mg/L			-	-	-		-	-	-	-	-	-	-	-	<0.01	-	-	-
Copper (filtered)	0.001	mg/L			-	-	-		-	-	-	-	-	-	-	-	0.001	-	-	-
Lead (filtered)	0.001	mg/L			-	-	-		-	-	-	-	-	-	-	-	<0.001	-	-	-
Manganese (filtered)	0.001	mg/L			-	-	-		-	-	-	-	-	-	-	-	14	-	-	-
Nickel (filtered)	0.001	mg/L			-	-	-		-	-	-	-	-	-	-	-	0.007	-	-	-
Zinc (filtered)	0.005	mg/L			-	-	-		-	-	-	-	-	-	-	-	0.031	-	-	-
Polynuclear Aromatic Hydrocarbons																			
Naphthalene	5	µg/L	70		<5	<5	<5		<5	<5	<5	<5	<5	<5	<5	<5	-	-	<1	<1
Acenaphthylene	1	µg/L			-	-	-		-	-	-	-	-	-	-	-	-	-	<1	<1
Acenaphthene	1	µg/L			-	-	-		-	-	-	-	-	-	-	-	-	-	<1	<1
Fluorene	1	µg/L			-	-	-		-	-	-	-	-	-	-	-	-	-	<1	<1
Phenanthrene	1	µg/L			-	-	-		-	-	-	-	-	-	-	-	-	-	<1	<1
Anthracene	1	µg/L			-	-	-		-	-	-	-	-	-	-	-	-	-	<1	<1
Fluoranthene	1	µg/L			-	-	-		-	-	-	-	-	-	-	-	-	-	<1	<1
Pyrene	1	µg/L			-	-	-		-	-	-	-	-	-	-	-	-	-	<1	<1
Benz(a)anthracene	1	µg/L			-	-	-		-	-	-	-	-	-	-	-	-	-	<1	<1
Chrysene	1	µg/L			-	-	-		-	-	-	-	-	-	-	-	-	-	<1	<1
Benzo(b)fluoranthene	1	µg/L			-	-	-		-	-	-	-	-	-	-	-	-	-	<1	<1
Benzo(k)fluoranthene	1	µg/L			-	-	-		-	-	-	-	-	-	-	-	-	-	<0.5	<0.5
Benzo(a)pyrene	0.5	µg/L			-	-	-		-	-	-	-	-	-	-	-	-	-	<1	<1
Indeno(1,2,3-cd)pyrene	1	µg/L			-	-	-		-	-	-	-	-	-	-	-	-	-	<1	<1
Dibenz(a,h)anthracene	1	µg/L			-	-	-		-	-	-	-	-	-	-	-	-	-	<1	<1
Benzo(g,h,i)perylene	1	µg/L			-	-	-		-	-	-	-	-	-	-	-	-	-	<1	<0.9
Sum of polycyclic aromatic hydrocarbons	0.5	µg/L			-	-	-		-	-	-	-	-	-	-	-	-	-	<1	<0.9
Major Ions																			
Calcium	0.1	mg/L			5	300	3 ✓		29	15	159	124	43	80	44	81	-	-	-	-
Chloride	1	mg/L			74	14700	63 ✓		38	715	198	1920	1260	625	450	620	650	-	-	-
Magnesium	1	mg/L			6	1200	2 ✓		4	17	44	61	72	35	38	35	-	-	-	-
Potassium	1	mg/L			19	399	11 ✓		4	34	20	54	39	13	17	13	-	-	-	-
Sodium	0.1	mg/L			222	11600	193 ✓		26	655	161	1410	795	404	270	405	-	-	-	-
Alkalinity																			
Hydroxide Alkalinity as CaCO3	1	mg/L			<1	<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-
Carbonate Alkalinity as CaCO3	1	mg/L			<1	<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-
Total Alkalinity	1	mg/L			356	522	300		91	259	370	311	352	79	124	75	100	-	-	-
Bicarbonate Alkalinity as CaCO3	1	mg/L			356	522	300		91	259	370	311	352	79	124	75	-	-	-	-
Total Recoverable Hydrocarbons																			
>C10 - C16 Fraction	100	µg/L			<100	<100	<100		<100	<100	<100	<100	180	<100	<100	<100	-	-	<100	<100
>C10 - C40 Fraction (sum)	100	µg/L			<100	<100	220		160	260	130	140	850	<100	<100	<100	-	-	<100	<100
>C16 - C34 Fraction	100	µg/L			<100	<100	200		160	260	130	140	670	<100	<100	<100	-	-	<100	<100
>C34 - C40 Fraction	100	µg/L			<100	<100	<100		<100	<100	<100	<100	<100	<100	<100	<100	-	-	<100	<100
C6 - C10 Fraction	20	µg/L			<20	<20	<20		<20	<20	<20	<20	<20	<20	<20	<20	-	<20	<20	<20
C6 - C10 Fraction minus BTEX (F1)	20	µg/L			<20	<20	<20		<20	<20	<20	<20	<20	<20	<20	<20	-	-	<20	<20
TRH C10-S6 (Total)	0.2	mg/L			-	-	-		-	-	-	-	-	-	-	-	<0.1	-	-	-
TRH C6-C9 Fraction by GC	0.02	mg/L			-	-	-		-	-	-	-	-	-	-	-	<0.02	-	-	-

Legend:

DATA VALIDATION REPORT_September 2011

URS Project number:	42213719	**Data verified by:**	Bek Aagaard	Date: 24/04/2013
Client:	Darwin Waterfront Corporation			
Site:	Waterfront Precinct	Signed:	Rebekka Aagaard	
URS Project Manager:	Jacques van Rensberg			
		Validation by:	Tim Smith	Date: 3/5/2013
Matrix type:	Groundwater			
No Primary samples:	22			
Laboratory:	ALS; SGS	Signed:		
Lab reference:	ES1121061, EM1110994, EM1111058, SE89800, SW102312 and SW102311	**Project Manager:**		Date:
		Signed:		

Data quality objectives

Field data comparison	No apparent anomalies were observed between laboratory results and field observations.
Frequency of field QC	Field QC samples were collected to project specifications.
Frequency of laboratory QC	The laboratory reported a sufficient frequency of QC to assess whether the results have been reported to an acceptable accuracy and precision, with the exception of the following: • Matrix spikes (MS) were reported on anonymous samples for several analytes. Where MS were conducted on anonymous samples, the reported MS recovery may not be considered representative of the URS field sample. • Laboratory duplicate were not reported for ferric iron, total anions and cations in all batches, PAHs and Total Petroleum Hydrocarbons (TPH)/Total Recoverable Hydrocarbons (TRH) in batches EM1110994 and EM1111058 and trihalomethanes in batch EM1111058. The precision of these analytes have been considered acceptable based on the presence intra- and inter-laboratory duplicates were available and acceptable. • The inter-laboratory duplicate was reported less than the required frequency for analysed for pentachloroethene, total anions and cations and alkalinity. The precision of this data can be assessed as acceptable based on the presence of intra-laboratory field duplicates for all analytes and laboratory duplicates.
Tests requested/reported	Samples were analysed and reported as requested on the COC.
Limits of reporting	LORs were sufficiently low to enable assessment against adopted guideline criteria with the following limitations: • Protocol LOR for anthracene (1 µg/L) above the adopted ILs (0.4 µg/L) • Protocol LOR for benzo(a)pyrene (0.5 µg/L) above the adopted ILs (0.2 µg/L) The limits of reporting were above the adopted investigation levels for anthracene and benzo(a)pyrene. As a result, potential exists for samples to contain concentrations of these analytes above the adopted investigation levels, but below detection limits. This lack of definitive data should be taken into consideration when interpreting analytical results below LOR for these PAHs. • Protocol LOR exceeds the guideline trigger value for chromium (0.0044 mg/L) • Protocol LOR exceeds the guideline trigger value for copper (0.0013 mg/L) • Protocol LOR exceeds the guideline trigger value for lead (0.0044 mg/L) • Protocol LOR exceeds the guideline trigger value for zinc (0.015 mg/L) The limits of reporting exceeded the guideline trigger levels for chromium, copper, lead and zinc. As a result, potential exists for samples to contain concentrations of these analytes above the adopted investigation levels, but below detection limits. This lack of definitive data should be taken into consideration when interpreting analytical results below these metals.
Data transcription	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by URS.

Sample management

Chain of Custody	Chain of custody documents completed.
Handling and preservation	Samples were correctly preserved, chilled with ice and received at the laboratory at 3.0°C, 1.0-4.5°C and 4.5-6.0°C for batches ES1121061, EM1110994 and EM1111058, respectively.

Holding time compliance	Samples were extracted and analysed within recommended holding times.

Data precision

Field duplicate RPDs

RPDs exceeded control limits for the following sample analysis. (Sample with higher reported concentrations is in bold).

- **MW119_27/09/11** and QC01_27/09/11 for Ionic Balance (56.8%).
- **MW116_28/09/11** and QC05_28/09/11 for Bicarbonate Alkalinity (36.9%).
- **MW116_28/09/11** and QC05_28/09/11 for Ionic Balance (30.1%).
- **MW108_29/09/11** and QC09_29/09/11 for Ionic Balance (152.2%).
- **MW108_29/09/11** and QC09_29/09/11 for Methane (42%).
- **MW108_29/09/11** and QC09_29/09/11 for Methane (42%).

Inter-laboratory Replicate (Field triplicate) RPDs

RPDs were within control limits.

Laboratory duplicate RPDs

RPDs were within control limits.

Data accuracy

Laboratory control spike recovery

The following recoveries were outside control limits and may affect data interpretation:

Batch	Analyte	Recovery (%)	LCL (%)	UCL (%)	Comment
ES1121061	Arsenic	115	88	110	Recovery greater than upper control limit
ES1121061	Cadmium	111	89	107	Recovery greater than upper control limit
ES1121061	Manganese	118	87	113	Recovery greater than upper control limit
ES1121061	Nickel	116	89	109	Recovery greater than upper control limit
ES1121061	Vanadium	89.0	91	109	Recovery less than lower control limit
ES1121061	Acenaphthylene	62.7	63.6	114	Recovery less than lower control limit
ES1121061	Fluorene	62.3	63.9	115	Recovery less than lower control limit
EM1110994	Bromobenzene	72.9	75	119	Recovery less than lower control limit
EM1110994	1.4-Dichlorobenzene	73.1	74	120	Recovery less than lower control limit
EM1110994	1.2-Dichlorobenzene	73.5	73.5	118	Recovery less than lower control limit

For LCS recoveries reported greater than the upper control limit, the potential exists for reported concentrations to be biased high. Care should be taken with interpreting results for analytes close to the adopted guidelines.

For LCS recoveries reported less than the lower control limit, the potential exists for reported concentrations to be biased low. Care should be taken with interpreting results for analytes close to the adopted guidelines.

LCS recoveries were not reported for total anions and cations in all batches, and ferric iron in batches EM1110998 and EM1111058. The accuracy of the data for these compound groups is considered acceptable based on the presence of other quality control data, such as method blanks, matrix spike recoveries and surrogate recoveries (where applicable).

Matrix spike recovery

The following recoveries were outside control limits and may affect data interpretation:

Sample	Analyte	Recovery (%)	LCL (%)	UCL (%)	Comment
MW124_27/09/11	Sulphate as SO4 - Turbidimetric	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
MW124_27/09/11	Chloride	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
MW117_27/09/11	Manganese	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
MW124_27/09/11	Ferrous Iron	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
Batch EM1110994 Anonymous	Sulphate as SO4 - Turbidimetric	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.

MW136_28/09/11	Manganese	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
MW116_28/09/11	Ferrous Iron	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
MW136_28/09/11	Methane	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
Batch EM1111058 Anonymous	Sulphate as SO4 - Turbidimetric	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
Batch EM1111058 Anonymous	Ferrous Iron	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.

As the matrix spike issue was related to non-determination due to background levels being greater than the spike level, this is not considered to affect the interpretation of the accuracy of the results, due to the presence of other laboratory quality control data, including method blanks, LCS recoveries and matrix spikes for analytes analysed under the same analytical method (where applicable).

All Batches

Matrix spike recoveries were not reported for calcium, magnesium, potassium, sodium, trihalomethanes, oxygenated compounds, monocyclic aromatic compounds, carbon disulphide, halogenated aliphatics, sulphite, sulphur, total dissolved solids, total anions and cations and alkalinity. The accuracy of the data for these compound groups is considered acceptable based on the presence of other quality control data, such as method blanks, LCS recoveries and surrogate recoveries (where applicable).

EM1110998

Matrix spike recoveries were not reported for PAHs, sulphide, TPH C_{10}-C_{36} and TRH C_{10}-C_{40}. The accuracy of the data for these compound groups is considered acceptable based on the presence of other quality control data, such as method blanks, LCS recoveries and surrogate recoveries (where applicable).

Surrogate spike recovery

The surrogate spike recoveries were within control limits.

Blank monitoring

Equipment rinsate blank

Concentrations of all analytes were reported below the LOR, except for QC07_28/09/2011, which reported a chromium concentration equal to the LOR. Chromium was detected in two primary samples during this sampling round on the previous day of sampling (MW123_27/09/2011 and MW124_27/09/2011), given that chromium was not detected in any other primary or QC samples this is not considered to be indicative of potential for cross contamination and is not considered to affect interpretation of analytical results.

Field blank

Concentrations of all analytes were reported below the LOR.

Trip blank

Concentrations of all analytes were reported below the LOR.

Method blank

Concentrations of all analytes were reported below the LOR.

Chromatograms

N/A

Other observations

Batch ES1121061

- EG020-F: LCS recovery for some elements fall outside ALS dynamic control limit, however they are within the acceptance criteria based on ALS DQO. No further action is required.
- EP080: Level of reporting raised for toluene due to ambient background levels in the laboratory.

Batch EM1110998

- EG020F : Chromium result for EM1110994 #9 has been confirmed by re-preparation and re-analysis.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulphate; and major cations - calcium, magnesium, potassium and sodium.
- Methane analysis conducted by ALS Sydney, NATA accreditation no. 825, site no 10911.

Batch EM1111058

- Ionic Balance out of acceptable limits for sample EM1111058 #6 & #7 due to analytes not quantified in this report.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulphate; and major cations - calcium, magnesium, potassium and sodium.
- Methane conducted by ALS Sydney, NATA accreditation no. 825, site no 10911

Site Name	Waterfront Precinct
Project No.	42213719
Project Manager	Tim Smith
Matrix	Water
Laboratory	ALS / SGS
Batch File Number	ES1121061 / SE89800

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
METALS ANALYSIS/ALS/ED020F	Arsenic	10	10	6	✓	✓	1	1	1	1	1	0	1	2	1	1	1	1	1	2	1	2	1	2	-	-
	Cadmium	10	10	6	✓	✓	1	1	1	1	1	0	1	2	1	1	1	1	1	2	1	2	1	2	-	-
	Chromium	10	10	6	✓	x	1	1	1	1	1	0	1	2	1	1	1	1	1	2	1	2	1	2	-	-
	Copper	10	10	6	✓	x	1	1	1	1	1	0	1	2	1	1	1	1	1	2	1	2	1	2	-	-
	Lead	10	10	6	✓	x	1	1	1	1	1	0	1	2	1	1	1	1	1	2	1	2	1	2	-	-
	Manganese	10	10	6	✓	✓	1	1	1	1	1	0	1	2	1	1	1	1	1	2	1	2	1	2	-	-
	Nickel	10	10	6	✓	✓	1	1	1	1	1	0	1	2	1	1	1	1	1	2	1	2	1	2	-	-
	Vanadium	10	10	6	✓	✓	1	1	1	1	1	0	1	2	1	1	1	1	1	2	1	2	1	2	-	-
	Zinc	10	10	6	✓	x	1	1	1	1	1	0	1	2	1	1	1	1	1	2	1	2	1	2	-	-
VOLATILES ANALYSIS/ALS/EP080	Benzene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	Ethylbenzene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	meta- & para-Xylene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	Naphthalene	10	10	3	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	ortho-Xylene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	Toluene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP080/071	C6 - C10 Fraction	11	11	6	✓	✓	1	1	1	1	1	2	1	2	1	1	0	0	2	2	1	2	1	2	✓	✓
	C6 - C9 Fraction	12	12	6	✓	✓	1	1	1	1	1	2	1	2	1	1	1	1	2	2	1	2	1	2	✓	✓
SEMIVOLATILES ANALYSIS/ALS/EP075(SIM)B	Acenaphthene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	Acenaphthylene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Anthracene	10	10	6	✓	x	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Benz(a)anthracene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Benzo(a)pyrene	10	10	6	✓	x	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Benzo(b)fluoranthene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Benzo(g,h,i)perylene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Benzo(k)fluoranthene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Chrysene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Dibenz(a,h)anthracene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Fluoranthene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Fluorene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Indeno(1,2,3,cd)pyrene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Naphthalene	10	10	3	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	Phenanthrene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Pyrene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
SEMIVOLATILES ANALYSIS/ALS/EP080/071	>C10 - C16 Fraction	9	9	6	✓	✓	1	1	1	1	1	0	1	1	1	1	0	0	1	2	1	1	1	1	-	-
	>C16 - C34 Fraction	9	9	6	✓	✓	1	1	1	1	1	0	1	1	1	1	0	0	1	2	1	1	1	1	-	-
	>C34 - C40 Fraction	9	9	6	✓	✓	1	1	1	1	1	0	1	1	1	1	0	0	1	2	1	1	1	1	-	-
	C10 - C14 Fraction	10	10	6	✓	✓	1	1	1	1	1	0	0	0	1	1	1	1	0	0	1	1	1	0	-	-
	C15 - C28 Fraction	10	10	6	✓	✓	1	1	1	1	1	0	0	0	1	1	1	1	0	0	1	1	1	0	-	-
	C29 - C36 Fraction	10	10	6	✓	✓	1	1	1	1	1	0	0	0	1	1	1	1	0	0	1	1	1	0	-	-
METALS ANALYSIS/ALS/ED093F	Calcium	8	8	6	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
	Magnesium	8	8	6	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
	Potassium	8	8	6	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
	Sodium	8	8	6	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/EK057G	Nitrite as N	8	8	6	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
METALS ANALYSIS/ALS/ED053FG-MS	Ferric Iron	8	8	6	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/EK059G	Nitrite + Nitrate as N	8	8	6	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/ED041G	Sulfate as SO4 - Turbidimetric	8	8	6	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
VOLATILES ANALYSIS/ALS/EP074G	Bromodichloromethane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Bromoform	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Chloroform	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Dibromochloromethane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074B	2-Butanone (MEK)	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	2-Hexanone (MBK)	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	4-Methyl-2-pentanone (MIBK)	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Vinyl Acetate	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074A	1,2,4-Trimethylbenzene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,3,5-Trimethylbenzene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Isopropylbenzene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	n-Butylbenzene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	n-Propylbenzene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	p-Isopropyltoluene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	sec-Butylbenzene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Styrene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	tert-Butylbenzene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓

Site Name	Waterfront Precinct
Project No.	42213719
Project Manager	Tim Smith
Matrix	Water
Laboratory	ALS / SGS
Batch File Number	ES1121061 / SE89800

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
VOLATILES ANALYSIS/ALS/EP074E	1,1,1,2-Tetrachloroethane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,1,1-Trichloroethane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,1,2,2-Tetrachloroethane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,1,2-Trichloroethane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,1-Dichloroethane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,1-Dichloroethene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	1,1-Dichloropropylene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,2,3-Trichloropropane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,2-Dibromo-3-chloropropane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,2-Dichloroethane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,3-Dichloropropane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Bromomethane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Carbon Tetrachloride	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Chloroethane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Chloromethane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	cis-1,2-Dichloroethene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	cis-1,4-Dichloro-2-butene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Dibromomethane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Dichlorodifluoromethane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Hexachlorobutadiene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Iodomethane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	Pentachloroethane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	Tetrachloroethene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	trans-1,2-Dichloroethene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	trans-1,4-Dichloro-2-butene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Trichloroethene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	Trichlorofluoromethane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Vinyl chloride	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074F	1,2,3-Trichlorobenzene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,2,4-Trichlorobenzene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,2-Dichlorobenzene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,3-Dichlorobenzene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,4-Dichlorobenzene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	2-Chlorotoluene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	4-Chlorotoluene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Bromobenzene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Chlorobenzene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074C	Carbon disulfide	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074D	1,2-Dibromoethane (EDB)	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,2-Dichloropropane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	2,2-Dichloropropane	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	cis-1,3-Dichloropropylene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	trans-1,3-Dichloropropylene	10	10	6	✓	✓	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
WET CHEMISTRY AND PREPARATION/ALS/EK066	Sulfite as SO3 2-	8	8	6	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/EN055	Total Anions	7	7	6	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	0	1	0	1	0	-	-
	Total Cations	7	7	6	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	0	1	0	1	0	-	-
SEMIVOLATILES ANALYSIS/ALS/EP033	Methane	8	8	6	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
METALS ANALYSIS/ALS/ED040F	Sulfur as S	8	8	6	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	1	1	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/EG051G	Ferrous Iron	8	8	6	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	-	-
METALS ANALYSIS/ALS/EG035F	Mercury	10	10	6	✓	✓	1	1	1	1	1	0	1	2	1	1	1	1	1	4	1	2	1	2	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/ED045G	Chloride	8	8	6	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/ED037P	Bicarbonate Alkalinity as CaCO3	7	7	6	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	2	1	0	1	0	-	-
	Carbonate Alkalinity as CaCO3	7	7	6	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	2	1	0	1	0	-	-
	Hydroxide Alkalinity as CaCO3	7	7	6	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	2	1	0	1	0	-	-
	Total Alkalinity as CaCO3	7	7	6	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
WET CHEMISTRY AND PREPARATION/ALS/EK088M	Sulfide as S2-	8	8	6	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	3	1	2	1	2	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/EP005	Total Organic Carbon	8	8	6	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	2	1	2	-	-
WET CHEMISTRY AND PREPARATION/ALS/EA015	Total Dissolved Solids @180°C	8	8	6	✓	✓	0	0	0	0	0	0	1	3	1	1	1	1	1	6	1	0	1	3	-	-

NOTES:

(a) ✓ holding times are within project guideline limits.
× holding times exceed project guideline limits.

(b) ✓ Limits of reporting (LORs) comply with project specifications.
× LORs do not comply with project specifications.

NA Not Applicable

Site Name	Waterfront Precinct
Project No.	42213719
Project Manager	Tim Smith
Matrix	Water
Laboratory	ALS / SGS
Batch File Number	EM1110994 / SE102312

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
METALS ANALYSIS/ALS/EG020F	Arsenic	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
	Cadmium	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
	Chromium	13	13	9	✓	x	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
	Copper	13	13	9	✓	x	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
	Lead	13	13	9	✓	x	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
	Manganese	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
	Nickel	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
	Vanadium	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
	Zinc	13	13	9	✓	x	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
VOLATILES ANALYSIS/ALS/EP080	Benzene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	Ethylbenzene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	meta- & para-Xylene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Naphthalene	13	13	6	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	ortho-Xylene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Toluene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP080/071	C6 - C10 Fraction	14	14	9	✓	✓	1	1	1	1	2	2	1	1	1	1	1	0	2	2	1	1	1	1	✓	✓
	C6 - C9 Fraction	15	15	9	✓	✓	1	1	1	1	2	2	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
METALS ANALYSIS/ALS/ED093F	Calcium	11	11	9	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
	Magnesium	11	11	9	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
	Potassium	11	11	9	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
	Sodium	11	11	9	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
VOLATILES ANALYSIS/ALS/EP074G	Bromodichloromethane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Bromoform	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Chloroform	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Dibromochloromethane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074B	2-Butanone (MEK)	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	2-Hexanone (MBK)	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	4-Methyl-2-pentanone (MIBK)	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Vinyl Acetate	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074A	1,2,4-Trimethylbenzene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	1,3,5-Trimethylbenzene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Isopropylbenzene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	n-Butylbenzene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	n-Propylbenzene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	p-Isopropyltoluene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	sec-Butylbenzene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Styrene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	tert-Butylbenzene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074E	1,1,1,2-Tetrachloroethane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	1,1,1-Trichloroethane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	1,1,2,2-Tetrachloroethane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	1,1,2-Trichloroethane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	1,1-Dichloroethane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	1,1-Dichloroethene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	1,1-Dichloropropylene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	1,2,3-Trichloropropane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	1,2-Dibromo-3-chloropropane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	1,2-Dichloroethane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	1,3-Dichloropropane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Bromomethane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Carbon Tetrachloride	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Chloroethane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Chloromethane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	cis-1,2-Dichloroethene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	cis-1,4-Dichloro-2-butene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Dibromomethane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Dichlorodifluoromethane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Hexachlorobutadiene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Iodomethane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Pentachloroethane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	2	2	1	0	1	1	✓	✓
	Tetrachloroethene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	trans-1,2-Dichloroethene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	trans-1,4-Dichloro-2-butene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Trichloroethene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	Trichlorofluoromethane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Vinyl chloride	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓

Site Name	Waterfront Precinct
Project No.	42213719
Project Manager	Tim Smith
Matrix	Water
Laboratory	ALS / SGS
Batch File Number	EM1110994 / *SE102312*

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
VOLATILES ANALYSIS/ALS/EP074F	1,2,3-Trichlorobenzene	12	12	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	1,2,4-Trichlorobenzene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	1,2-Dichlorobenzene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	1,3-Dichlorobenzene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	1,4-Dichlorobenzene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	2-Chlorotoluene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	4-Chlorotoluene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Bromobenzene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Chlorobenzene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074C	Carbon disulfide	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074D	1,2-Dibromoethane (EDB)	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	1,2-Dichloropropane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	2,2-Dichloropropane	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	cis-1,3-Dichloropropylene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	trans-1,3-Dichloropropylene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
NUTRIENTS ANALYSIS/ALS/ED045G	Chloride	11	11	9	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
SEMIVOLS ANALYSIS/ALS/EP075(SIM)B	Acenaphthene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
	Acenaphthylene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
	Anthracene	13	13	9	✓	×	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
	Benz(a)anthracene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
	Benzo(a)pyrene	13	13	9	✓	×	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
	Benzo(b)fluoranthene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
	Benzo(g,h,i)perylene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
	Benzo(k)fluoranthene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
	Chrysene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
	Dibenz(a,h)anthracene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
	Fluoranthene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
	Fluorene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
	Indeno(1,2,3-cd)pyrene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
	Naphthalene	13	13	6	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	0	1	1	✓	✓
	Phenanthrene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
	Pyrene	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	✓	✓
METALS ANALYSIS/ALS/EG035F	Mercury	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	1	-	-
SEMIVOLATILES ANALYSIS/ALS/EP033	Methane	11	11	9	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
METALS PREPARATION/ALS/EK085M	Sulfide as S2-	11	11	9	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
METALS PREPARATION/ALS/EK086	Sulfite as SO3 2-	11	11	9	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
NUTRIENTS ANALYSIS/ALS/EG050FG-MS	Ferric Iron	11	11	9	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
NUTRIENTS ANALYSIS/ALS/EG051G	Ferrous Iron	11	11	9	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
METALS ANALYSIS/ALS/ED040F	Sulfur as S	11	11	9	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
PHYSICAL CHEMISTRY ANALYSIS/ALS/EN055	Total Anions	10	10	9	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	0	1	0	1	0	-	-
	Total Cations	10	10	9	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	0	1	0	1	0	-	-
PHYSICAL CHEMISTRY ANALYSIS/ALS/EP095	Total Organic Carbon	11	11	9	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	2	1	2	-	-
PHYSICAL CHEMISTRY ANALYSIS/ALS/EA010	Total Dissolved Solids @180°C	11	11	9	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
NUTRIENTS ANALYSIS/ALS/ED041G	Sulfate as SO4 - Turbidimetric	11	11	9	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
NUTRIENTS ANALYSIS/ALS/EK059G	Nitrite + Nitrate as N	11	11	9	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
NUTRIENTS ANALYSIS/ALS/EK057G	Nitrite as N	11	11	9	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
PHYSICAL CHEMISTRY ANALYSIS/ALS/ED067P	Bicarbonate Alkalinity as CaCO3	10	10	9	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	4	1	0	1	0	-	-
	Carbonate Alkalinity as CaCO3	10	10	9	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	4	1	0	1	0	-	-
	Hydroxide Alkalinity as CaCO3	10	10	9	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	4	1	0	1	0	-	-
	Total Alkalinity as CaCO3	10	10	9	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	0	1	2	-	-
SEMIVOLS ANALYSIS/ALS/EP080/071	>C10 - C16 Fraction	12	12	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	2	0	1	0	1	1	-	-
	>C16 - C34 Fraction	12	12	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	2	0	1	0	1	1	-	-
	>C34 - C40 Fraction	12	12	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	2	0	1	0	1	1	-	-
	C10 - C14 Fraction	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	-	-
	C15 - C28 Fraction	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	-	-
	C29 - C36 Fraction	13	13	9	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	2	0	1	0	1	1	-	-

NOTES:

(a) ✓ holding times are within project guideline limits.
× holding times exceed project guideline limits.

(b) ✓ Limits of reporting (LORs) comply with project specifications.
× LORs do not comply with project specifications.

NA Not Applicable

Site Name	Waterfront Precinct
Project No.	42213719
Project Manager	Tim Smith
Matrix	Water
Laboratory	ALS / SGS
Batch File Number	EM1111058 / SE102311

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
METALS ANALYSIS/ALS/ED020F	Arsenic	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Cadmium	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Chromium	11	11	7	✓	x	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Copper	11	11	7	✓	x	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Lead	11	11	7	✓	x	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Manganese	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Nickel	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Vanadium	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Zinc	11	11	7	✓	x	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
VOLATILES ANALYSIS/ALS/EP080	Benzene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	Ethylbenzene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	meta- & para-Xylene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Naphthalene	11	11	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	ortho-Xylene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Toluene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP080/071	C6 - C10 Fraction	12	12	7	✓	✓	1	1	1	1	2	2	1	1	1	1	0	0	2	2	1	1	1	1	✓	✓
	C6 - C9 Fraction	13	13	7	✓	✓	1	1	1	1	2	2	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
METALS ANALYSIS/ALS/ED009F	Calcium	9	9	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
	Magnesium	9	9	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
	Potassium	9	9	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
	Sodium	9	9	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
VOLATILES ANALYSIS/ALS/EP074G	Bromodichloromethane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Bromoform	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Chloroform	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Dibromochloromethane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074B	2-Butanone (MEK)	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	2-Hexanone (MBK)	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	4-Methyl-2-pentanone (MIBK)	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Vinyl Acetate	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074A	1.2.4-Trimethylbenzene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1.3.5-Trimethylbenzene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Isopropylbenzene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	n-Butylbenzene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	n-Propylbenzene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	p-Isopropyltoluene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	sec-Butylbenzene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Styrene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	tert-Butylbenzene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074E	1.1.1.2-Tetrachloroethane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1.1.1-Trichloroethane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1.1.2.2-Tetrachloroethane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1.1.2-Trichloroethane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1.1-Dichloroethane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1.1-Dichloroethene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	1.1-Dichloropropylene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1.2.3-Trichloropropane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1.2-Dibromo-3-chloropropane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1.2-Dichloroethane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1.3-Dichloropropane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Bromomethane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Carbon Tetrachloride	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Chloroethane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Chloromethane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	cis-1.2-Dichloroethene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	cis-1.4-Dichloro-2-butene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Dibromomethane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Dichlorodifluoromethane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Hexachlorobutadiene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Iodomethane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Pentachloroethane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	2	1	0	1	1	✓	✓
	Tetrachloroethene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	trans-1.2-Dichloroethene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	trans-1.4-Dichloro-2-butene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Trichloroethene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	Trichlorofluoromethane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Vinyl chloride	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓

Site Name	Waterfront Precinct
Project No.	42213719
Project Manager	Tim Smith
Matrix	Water
Laboratory	ALS / SGS
Batch File Number	EM1111058 / *SE102311*

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
VOLATILES ANALYSIS/ALS/EP074F	1,2,3-Trichlorobenzene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,2,4-Trichlorobenzene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,2-Dichlorobenzene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,3-Dichlorobenzene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,4-Dichlorobenzene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	2-Chlorotoluene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	4-Chlorotoluene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Bromobenzene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	Chlorobenzene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074C	Carbon disulfide	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074D	1,2-Dibromoethane (EDB)	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	1,2-Dichloropropane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	2,2-Dichloropropane	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	cis-1,3-Dichloropropylene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
	trans-1,3-Dichloropropylene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
NUTRIENTS ANALYSIS/ALS/ED045G	Chloride	9	9	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
NUTRIENTS ANALYSIS/ALS/EK059G	Nitrite + Nitrate as N	9	9	7	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	2	1	2	-	-
NUTRIENTS ANALYSIS/ALS/EK057G	Nitrite as N	9	9	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
PHYSICAL CHEMISTRY ANALYSIS/ALS/ED007P	Bicarbonate Alkalinity as CaCO3	8	8	7	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	4	1	0	1	0	-	-
	Carbonate Alkalinity as CaCO3	8	8	7	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	4	1	0	1	0	-	-
	Hydroxide Alkalinity as CaCO3	8	8	7	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	4	1	0	1	0	-	-
	Total Alkalinity as CaCO3	9	9	7	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	0	1	2	-	-
SEMIVOLS ANALYSIS/ALS/EP080/071	>C10 - C16 Fraction	10	10	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	0	1	0	1	1	-	-
	>C16 - C34 Fraction	10	10	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	0	1	0	1	1	-	-
	>C34 - C40 Fraction	10	10	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	0	1	0	1	0	1	1	-	-
	C10 - C14 Fraction	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	-	-
	C15 - C28 Fraction	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	-	-
	C29 - C36 Fraction	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	-	-
SEMIVOLS ANALYSIS/ALS/EP075(SIM)B	Acenaphthene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Acenaphthylene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Anthracene	11	11	7	✓	×	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Benz(a)anthracene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Benzo(a)pyrene	11	11	7	✓	×	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Benzo(b)fluoranthene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Benzo(g,h,i)perylene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Benzo(k)fluoranthene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Chrysene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Dibenz(a,h)anthracene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Fluoranthene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Fluorene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Indeno(1,2,3-cd)pyrene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Naphthalene	11	11	4	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	2	✓	✓
	Phenanthrene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Pyrene	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
SEMIVOLATILES ANALYSIS/ALS/EP003	Methane	8	8	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	1	1	1	-	-
METALS PREPARATION/ALS/EK985M	Sulfide as S2-	9	9	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
METALS PREPARATION/ALS/EK986	Sulfite as SO3 2-	9	9	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	1	1	-	-
NUTRIENTS ANALYSIS/ALS/EG052FG-MS	Ferric Iron	9	9	7	✓	✓	0	0	0	0	0	0	1	0	1	1	1	1	1	0	1	0	1	0	-	-
NUTRIENTS ANALYSIS/ALS/EG051G	Ferrous Iron	9	9	7	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	2	1	2	-	-
METALS ANALYSIS/ALS/ED040F	Sulfur as S	9	9	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
PHYSICAL CHEMISTRY ANALYSIS/ALS/EN055	Total Anions	8	8	7	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	0	1	0	1	0	-	-
	Total Cations	8	8	7	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	0	1	0	1	0	-	-
PHYSICAL CHEMISTRY ANALYSIS/ALS/EP005	Total Organic Carbon	9	9	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
PHYSICAL CHEMISTRY ANALYSIS/ALS/EA015	Total Dissolved Solids @180°C	9	9	7	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	0	1	2	-	-
METALS ANALYSIS/ALS/EG035F	Mercury	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
NUTRIENTS ANALYSIS/ALS/ED041G	Sulfate as SO4 - Turbidimetric	9	9	7	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	2	1	2	-	-

NOTES:

(a) ✓ holding times are within project guideline limits.
× holding times exceed project guideline limits.

(b) ✓ Limits of reporting (LORs) comply with project specifications.
× LORs do not comply with project specifications.

NA Not Applicable

Groundwater Analytical Results - Field Blanks
September 2011

Sample ID					QC03	QC04	TRIP BLANK 1	TRIP BLANK 2	QC07	QC08	TRIP BLANK 3	TRIP BLANK 4	QC11 29/9/11	QC12 29/9/11	TRIPBLANK 5	TRIPBLANK 6
Date Sampled					27/09/2011	27/09/2011	27/09/2011	27/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	29/09/2011	29/09/2011	29/09/2011	29/09/2011
Sample Type					Rinsate Blank	Field Blank	Trip Blank	Trip Blank	Rinsate Blank	Field Blank	Trip Blank	Trip Blank	Rinsate Blank	Field Blank	Trip Blank	Trip Blank
Analyte	**LOR**	**Units**	**ANZECC 2000 - Marine Water - 95%**	**ANZECC 2000 - Irrigation - LTU**												
Total Petroleum Hydrocarbons																
C6-C9 fraction	20	µg/L			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
C10-C14 fraction	50	µg/L			<50	<50	-	-	<50	<50	-	-	<50	<50	-	-
C15-C28 fraction	100	µg/L			<100	<100	-	-	<100	<100	-	-	<100	<100	-	-
C29-C36 fraction	50	µg/L			<50	<50	-	-	<50	<50	-	-	<50	<50	-	-
C10 - C36 Fraction (sum)	50	µg/L			<50	<50	-	-	<50	<50	-	-	<50	<50	-	-
BTEX Compounds																
Benzene	1	µg/L	700		<1	<1	-	-	<1	<1	-	-	<1	<1	-	-
Toluene	2	µg/L			<5	<5	-	-	<2	<2	-	-	<2	<2	-	-
Ethylbenzene	2	µg/L			<2	<2	-	-	<2	<2	-	-	<2	<2	-	-
m&p-Xylene	2	µg/L			<2	<2	-	-	<2	<2	-	-	<2	<2	-	-
o-Xylene	2	µg/L			<2	<2	-	-	<2	<2	-	-	<2	<2	-	-
Total Xylenes	2	µg/L			<2	<2	-	-	<2	<2	-	-	<2	<2	-	-
Sum of BTEX	1	µg/L			<1	<1	-	-	<1	<1	-	-	<1	<1	-	-
Metals (Dissolved)																
Arsenic	0.001	mg/L		0.1	<0.001	<0.001	-	-	<0.001	<0.001	-	-	<0.001	<0.001	-	-
Cadmium	0.0001	mg/L	0.0055	0.01	<0.0001	<0.0001	-	-	<0.0001	<0.0001	-	-	<0.0001	<0.0001	-	-
Chromium	0.001	mg/L	0.0044	0.1	<0.001	<0.001	-	-	**0.001**	<0.001	-	-	<0.001	<0.001	-	-
Copper	0.001	mg/L	0.0013	200	<0.001	<0.001	-	-	<0.001	<0.001	-	-	<0.001	<0.001	-	-
Lead	0.001	mg/L	0.0044	2000	<0.001	<0.001	-	-	<0.001	<0.001	-	-	<0.001	<0.001	-	-
Manganese	0.001	mg/L		200	<0.001	<0.001	-	-	<0.001	<0.001	-	-	<0.001	<0.001	-	-
Mercury	0.0001	mg/L	0.0004	0.002	<0.0001	<0.0001	-	-	<0.0001	<0.0001	-	-	<0.0001	<0.0001	-	-
Nickel	0.001	mg/L	0.07	0.2	<0.001	<0.001	-	-	<0.001	<0.001	-	-	<0.001	<0.001	-	-
Vanadium	0.01	mg/L	0.1	0.1	<0.01	<0.01	-	-	<0.01	<0.01	-	-	<0.01	<0.01	-	-
Zinc	0.005	mg/L	0.015	2000	<0.005	<0.005	-	-	<0.005	<0.005	-	-	<0.005	<0.005	-	-
Polynuclear Aromatic Hydrocarbons																
Naphthalene	1	µg/L	70		<5	<1	-	-	<1	<1	-	-	<1	<1	-	-
Acenaphthylene	1	µg/L			<1	<1	-	-	<1	<1	-	-	<1	<1	-	-
Acenaphthene	1	µg/L			<1	<1	-	-	<1	<1	-	-	<1	<1	-	-
Fluorene	1	µg/L			<1	<1	-	-	<1	<1	-	-	<1	<1	-	-
Phenanthrene	1	µg/L			<1	<1	-	-	<1	<1	-	-	<1	<1	-	-
Anthracene	1	µg/L			<1	<1	-	-	<1	<1	-	-	<1	<1	-	-
Fluoranthene	1	µg/L			<1	<1	-	-	<1	<1	-	-	<1	<1	-	-
Pyrene	1	µg/L			<1	<1	-	-	<1	<1	-	-	<1	<1	-	-
Benz(a)anthracene	1	µg/L			<1	<1	-	-	<1	<1	-	-	<1	<1	-	-
Chrysene	1	µg/L			<1	<1	-	-	<1	<1	-	-	<1	<1	-	-
Benzo(b)fluoranthene	1	µg/L			<1	<1	-	-	<1	<1	-	-	<1	<1	-	-
Benzo(k)fluoranthene	1	µg/L			<1	<1	-	-	<1	<1	-	-	<1	<1	-	-
Benzo(a)pyrene	0.5	µg/L			<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	<0.5	-	-
Indeno(1,2,3-cd)pyrene	1	µg/L			<1	<1	-	-	<1	<1	-	-	<1	<1	-	-
Dibenz(a,h)anthracene	1	µg/L			<1	<1	-	-	<1	<1	-	-	<1	<1	-	-
Benzo(g,h,i)perylene	1	µg/L			<1	<1	-	-	<1	<1	-	-	<1	<1	-	-
Sum of polycyclic aromatic hydrocarbons	0.5	µg/L			<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5	<0.5	-	-
Chlorinated Aromatic Compounds																
1,2,3-Trichlorobenzene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,2,4-Trichlorobenzene	5	µg/L	80		<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,2,4-Trimethylbenzene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,2-Dichlorobenzene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,3-Dichlorobenzene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,4-Dichlorobenzene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
2-Chlorotoluene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
4-Chlorotoluene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Bromobenzene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Chlorobenzene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,1,1,2-Tetrachloroethane	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,1,1-Trichloroethane	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,1,2,2-Tetrachloroethane	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,1,2-Trichloroethane	5	µg/L	1900		<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,1-Dichloroethane	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,1-Dichloroethene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,1-Dichloropropylene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,2,3-Trichloropropane	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,2-Dibromo-3-chloropropane	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,2-Dichloroethane	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,3-Dichloropropane	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Bromomethane	50	µg/L			<50	<50	-	-	<50	<50	-	-	<50	<50	-	-
Carbon Tetrachloride	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Chloroethane	50	µg/L			<50	<50	-	-	<50	<50	-	-	<50	<50	-	-
Chloromethane	50	µg/L			<50	<50	-	-	<50	<50	-	-	<50	<50	-	-
cis-1,2-Dichloroethene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
cis-1,4-Dichloro-2-butene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Dibromomethane	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Dichlorodifluoromethane	50	µg/L			<50	<50	-	-	<50	<50	-	-	<50	<50	-	-
Hexachlorobutadiene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Iodomethane	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Pentachloroethane	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Tetrachloroethene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
trans-1,2-Dichloroethene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
trans-1,4-Dichloro-2-butene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Trichloroethene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Trichlorofluoromethane	50	µg/L			<50	<50	-	-	<50	<50	-	-	<50	<50	-	-
Vinyl chloride	50	µg/L			<50	<50	-	-	<50	<50	-	-	<50	<50	-	-

Groundwater Analytical Results - Field Blanks
|September 2011

Sample ID					QC03	QC04	TRIP BLANK 1	TRIP BLANK 2	QC07	QC08	TRIP BLANK 3	TRIP BLANK 4	QC11 29/9/11	QC12 29/9/11	TRIPBLANK 5	TRIPBLANK 6
Date Sampled					27/09/2011	27/09/2011	27/09/2011	27/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	29/09/2011	29/09/2011	29/09/2011	29/09/2011
Sample Type					Rinsate Blank	Field Blank	Trip Blank	Trip Blank	Rinsate Blank	Field Blank	Trip Blank	Trip Blank	Rinsate Blank	Field Blank	Trip Blank	Trip Blank
Analyte	**LOR**	**Units**	**ANZECC 2000 - Marine Water - 95%**	**ANZECC 2000 - Irrigation - LTU**												
Fumigants																
1,2-Dibromomethane	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,2-Dichloropropane	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
2,2-Dichloropropane	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
cis-1,3-dichloropropene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
trans-1,3-dichloropropene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Trihalomethanes																
Bromodichloromethane	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Bromoform	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Bromomethane	10	µg/l			-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Dibromochloromethane	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Monocyclic Aromatic Hydrocarbons																
Styrene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Isopropylbenzene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
n-Butylbenzene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
n-Propylbenzene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
p-Isopropyltoluene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
sec-Butylbenzene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
tert-Butylbenzene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
1,3,5-Trimethylbenzene	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Oxygenated Compounds																
4-Methyl-2-pentanone	50	µg/L			<50	<50	-	-	<50	<50	-	-	<50	<50	-	-
Vinyl Acetate	50	µg/L			<50	<50	-	-	<50	<50	-	-	<50	<50	-	-
2-Butanone (MEK)	50	µg/L			<50	<50	-	-	<50	<50	-	-	<50	<50	-	-
2-Hexanone (MBK)	50	µg/L			<50	<50	-	-	<50	<50	-	-	<50	<50	-	-
Sulfonated Compounds																
Carbon disulfide	5	µg/L			<5	<5	-	-	<5	<5	-	-	<5	<5	-	-
Naphthalene																
Naphthalene	5	µg/L	70		-	-	-	-	<5	<5	-	-	<5	<5	-	-
Total Recoverable Hydrocarbons																
>C10 - C16 Fraction	100	µg/L			<100	<100	-	-	<100	<100	-	-	<100	<100	-	-
>C10 - C40 Fraction (sum)	100	µg/L			<100	<100	-	-	<100	<100	-	-	<100	<100	-	-
>C16 - C34 Fraction	100	µg/L			<100	<100	-	-	<100	<100	-	-	<100	<100	-	-
>C34 - C40 Fraction	100	µg/L			<100	<100	-	-	<100	<100	-	-	<100	<100	-	-
C6 - C10 Fraction	20	µg/L			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
C6 - C10 Fraction minus BTEX (F1)	20	µg/L			<20	<20	-	-	<20	<20	-	-	<20	<20	-	-

10% check (3 samples)

24/4/2013 BA

22 samples

Table ???
Groundwater Analytical Results - Analysis Results
Waterfront

Location	MW10	MW101	MW102	MW103	MW103	MW108	MW108	MW113	MW114	MW115	MW116	MW116	MW116	MW117	MW118	MW119	MW119	MW119	MW121
Sample ID	MW10	MW101	MW102	MW103	MW103	QC3_23/9/11	QC10 (ME107569-1)	MW113	MW114	MW115	MW116	QC05	QC06 (ME107570-1)	MW117	MW118	MW119	QC01	QC02	MW121
Date Sampled	27/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	29/09/2011	29/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	27/09/2011	27/09/2011	27/09/2011	27/09/2011	27/09/2011	28/09/2011
Sample Type	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Duplicate Sample	Triplicate Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Duplicate Sample	Triplicate Sample	Primary Sample	Primary Sample	Primary Sample	Duplicate Sample	Triplicate Sample	Primary Sample
Primary Sample ID	MW10	MW101	MW102	MW103	MW103	MW108	MW108	MW113	MW114	MW115	MW116	MW116	MW116	MW117	MW118	MW119	MW119	MW119	MW121
Area	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Analyte	LOR	Units	ANZECC 2000 - Marine Water 95%	ANZECC 2000 - Irrigation - LTV																		
Physico-Chemical Parameters																						
Chloride	0.05	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	210	-	
Nitrate as N	0.005	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.17	-	
Nitrite as N	0.005	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	-	
Sulphate	0.1	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110	-	
Sulphide	0.5	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	
Sulphite as S	2	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	-	
Sulphur	0.1	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	-	
Methane	0.005	ppm			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.007	-	
Total Dissolved Solids	5	mg/L			32700	-	-	-	-	2100	-	-	-	-	1280	330	364	742	766	710	-	
Total Organic Carbon	0.5	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	-	
Total Petroleum Hydrocarbons																						
C6-C9 fraction	20	µg/L			<20	<20	<20	<20	<20	<20	-	<20	<20	<20	<20	<20	<20	<20	<20	<40	<20	
C10-C14 fraction	50	µg/L			<50	<50	<50	<50	<50	<50	-	510	<50	<50	<50	60	<50	<50	<50	<100	<50	
C15-C28 fraction	100	µg/L			<100	<100	<100	<100	1010	630	-	3040	<100	140	<100	<100	<100	<100	<100	<200	100	
C29-C36 fraction	50	µg/L			<50	<50	<50	60	50	<50	-	120	<50	<50	<50	190	<50	<50	<50	<200	<50	
C10 - C36 Fraction (sum)	50	µg/L			<50	<50	<50	60	1060	630	-	3670	<50	140	<50	250	<50	<50	<50	-	100	
BTEX Compounds																						
Benzene	1	µg/L	700		<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	
Toluene	2	µg/L			<5	<2	<2	<2	<2	<2	-	<2	<2	<2	<5	<5	<5	<5	<5	<0.5	<2	
Ethylbenzene	2	µg/L			<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<2	<0.5	<2	
m&p-Xylene	2	µg/L			<2	<2	<2	<2	<2	<2	-	2	<2	<2	<2	<2	<2	<2	<2	<1	<2	
o-Xylene	2	µg/L			<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<2	<0.5	<2	
Total Xylenes	2	µg/L			<2	<2	<2	<2	<2	<2	-	2	<2	<2	<2	<2	<2	<2	<2	<1.5	<2	
Sum of BTEX	1	µg/L			<1	<1	<1	<1	<1	<1	-	2	<1	<1	<1	<1	<1	<1	<1	-	<1	
Metals (Dissolved)																						
Ferric Iron	0.02	mg/L			-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	3.1	-	
Ferrous Iron by DA	0.02	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.15	-	
Iron (Total)	0.02	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.2	-	
Arsenic	0.001	mg/L		0.1	<0.01	<0.001	<0.001	<0.001	0.002	0.002	<0.001	<0.001	<0.001	0.022	<0.001	0.001	<0.001	0.004	0.008	<0.001	<0.001	<0.001
Cadmium	0.0001	mg/L	0.0055	0.01	<0.0001	0.0026	0.0192	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	0.0003	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	0.001	mg/L	0.0044	0.1	<0.01*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	0.001	mg/L	0.0013	200	<0.02*	0.002	0.022	0.003	<0.001	<0.001	<0.001	0.004	0.002	0.005	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001
Lead	0.001	mg/L	0.0044	2000	<0.01*	<0.001	0.007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	0.001	mg/L		200	0.976	2.03	0.184	1.65	1.455	0.484	0.47	3.17	13.6	1.59	11.8	11.5	12	1.36	6.63	0.17	0.164	1.34
Mercury	0.0001	mg/L	0.0004	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.001	mg/L	0.07	0.2	<0.01	0.027	0.016	0.004	0.001	0.001	0.001	0.003	0.008	0.005	0.005	0.005	0.005	0.012	0.01	0.001	0.001	0.007
Vanadium	0.01	mg/L	0.1	0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	0.005	mg/L	0.015	2000	<0.05*	0.055	0.878	<0.005	0.032	0.037	0.003	<0.005	<0.005	0.009	0.053	0.026	0.025	0.021	0.008	0.027	0.014	0.009
Ferrous Iron	0.05	mg/L			-	<0.05	0.3	<0.05	3.8	3.74	3.6	0.05	12.9	<0.05	21.7	21.6	22	-	-	-	-	0.66
Polynuclear Aromatic Hydrocarbons																						
Benzo(a)anthracene	0.1	µg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	
Benzo(ghi)perylene	0.1	µg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	
Dibenz(a,h)anthracene	0.1	µg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	
Naphthalene	1	µg/L	70		<5	<1	<1	<1	1.9	1.6	2.2	<1	<1	<1	<1	<1	<0.5	<5	<5	<5	<5	<1
Acenaphthylene	1	µg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1
Acenaphthene	1	µg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1
Fluorene	1	µg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1
Phenanthrene	1	µg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1
Anthracene	1	µg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1
Fluoranthene	1	µg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1
Pyrene	1	µg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1
Benz(a)anthracene	1	µg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1
Chrysene	1	µg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1
Benzo(b)fluoranthene	1	µg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1
Benzo(k)fluoranthene	1	µg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1
Benzo(b&k)fluoranthene	0.2	µg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2	-	
Benzo(a)pyrene	0.5	µg/L			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5
Indeno(1,2,3-cd)pyrene	1	µg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1
Dibenz(a,h)anthracene	1	µg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1
Benzo(g,h,i)perylene	1	µg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1
Sum of polycyclic aromatic hydrocarbons	0.5	µg/L			<0.5	<0.5	<0.5	<0.5	1.9	1.6	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5
Total PAH	1.8	µg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	-	
Chlorinated Aromatic Compounds																						
1,2,3-Trichlorobenzene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5
1,2,4-Trichlorobenzene	5	µg/L	80		<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5
2-Chlorotoluene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5
4-Chlorotoluene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5
Bromobenzene	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5
Chlorobenzene	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5
Chloroethane	5	µg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	-	
Chlorinated Aliphatic Compounds																						
1,2,3-trichlorobenzene	0.5	µg/L			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	-	-
1,2,4-trichlorobenzene	0.5	µg/L	80		-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	-	-
1,2,4-trimethylbenzene	0.5	µg/L			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	<0.5	-
1,2-Dibromomethane	0.5	µg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-
1,2-dichlorobenzene	0.5	µg/L			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	<0.5	-
1,3,5-trimethylbenzene	0.5	µg/L			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	<0.5	-
1,3-dichlorobenzene	0.5	µg/L			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	-	-
1,4-dichlorobenzene	0.3	µg/L			-	-	-	-	-	-	<0.3	-	-	-	-	-	<0.3	-	-	-	-	-
2-chlorotoluene	0.5	µg/L			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	-	-
2-hexanone (MBK)	5	µg/L			-	-	-	-	-	-	<5	-	-	-	-	-	<5	-	-	-	-	-
2-nitropropane	100	µg/L			-	-	-	-	-	-	<100	-	-	-	-	-	<100	-	-	-	-	-
4-chlorotoluene	0.5	µg/L			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	-	-
Carbon disulfide	0.5	µg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-
cis-1,3-dichloropropene	0.5	µg/L			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	-	-
1,1,1,2-Tetrachloroethane	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5

Table ???
Groundwater Analytical Results - Analysis Results
Waterfront

Location	MW10	MW101	MW102	MW103	MW108	MW109	MW108	MW113	MW114	MW115	MW116	MW116	MW116	MW117	MW118	MW119	MW119	MW119	MW121
Sample ID	MW10	MW101	MW102	MW103	MW108	QC9_28/9/11	QC10 (ME107569-1)	MW113	MW114	MW115	MW116	QC05	QC06 (ME107570-1)	MW117	MW118	MW119	QC01	QC02	MW121
Date Sampled	27/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	27/09/2011	27/09/2011	27/09/2011	27/09/2011	27/09/2011	28/09/2011
Sample Type	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Duplicate Sample	Triplicate Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Duplicate Sample	Triplicate Sample	Primary Sample	Primary Sample	Primary Sample	Duplicate Sample	Triplicate Sample	Primary Sample
Primary Sample ID	MW10	MW101	MW102	MW103	MW108	MW109	MW108	MW113	MW114	MW115	MW116	MW116	MW116	MW117	MW118	MW119	MW119	MW119	MW121
Area	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Analyte	LOR	Units	ANZECC 2000 - Marine Water 95%	ANZECC 2000 - Irrigation - LTU																		
1,1,1-Trichloroethane	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
1,1,2,2-Tetrachloroethane	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
1,1,2-Trichloroethane	5	µg/L	1900		<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
1,1-Dichloroethane	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
1,1-Dichloroethene	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
1,1-Dichloropropylene	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
1,2,3-Trichloropropane	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
1,2-Dibromo-3-chloropropane	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
1,2-Dichloroethane	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
1,2-Dichloropropane	0.5	µg/l			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-
1,3-Dichloropropane	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<0.5	<5
2,2-Dichloropropane	0.5	µg/l			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-
Bromomethane	50	µg/L			<50	<50	<50	<50	<50	<50	<10	<50	<50	<50	<50	<50	<10	<50	<50	<50	<50	-	<50
Carbon Tetrachloride	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
Chloroethane	50	µg/L			<50	<50	<50	<50	<50	<50	<5	<50	<50	<50	<50	<50	<5	<50	<50	<50	<50	-	<50
Chloromethane	50	µg/L			<50	<50	<50	<50	<50	<50	<5	<50	<50	<50	<50	<50	<5	<50	<50	<50	<50	<5	<50
cis-1,2-Dichloroethene	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
cis-1,4-Dichloro-2-butene	5	µg/L			<5	<5	<5	<5	<5	<5	<1	<5	<5	<5	<5	<5	<1	<5	<5	<5	<5	<1	<5
Dibromomethane	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
Dichlorodifluoromethane	50	µg/L			<50	<50	<50	<50	<50	<50	<5	<50	<50	<50	<50	<50	<5	<50	<50	<50	<50	<5	<50
Hexachlorobutadiene	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<1	<5
Iodomethane	5	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Pentachloroethane	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	-	<5
Tetrachloroethene	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
trans-1,2-Dichloroethene	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
trans-1,3-dichloropropene	0.5	µg/l			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	-	-	-
trans-1,4-Dichloro-2-butene	5	µg/L			<5	<5	<5	<5	<5	<5	<1	<5	<5	<5	<5	<5	<1	<5	<5	<5	<5	<1	<5
Trichloroethene	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
Trichlorofluoromethane	50	µg/L			<50	<50	<50	<50	<50	<50	<1	<50	<50	<50	<50	<50	<1	<50	<50	<50	<50	<1	<50
Vinyl acetate	10	µg/l			-	-	-	-	-	-	<10	-	-	-	-	-	<10	-	-	-	-	<10	-
Vinyl chloride	50	µg/L			<50	<50	<50	<50	<50	<50	<0.3	<50	<50	<50	<50	<50	<0.3	<50	<50	<50	<50	<0.3	<50
Fumigants																							
1,3-dichloropropane	0.5	µg/l			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	-	-	-
1,2-Dibromomethane	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	-	<5
1,2-Dichloropropane	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	-	<5
2,2-Dichloropropane	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	-	<5
cis-1,3-dichloropropene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<0.5	<5
trans-1,3-dichloropropene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<0.5	<5
Trihalomethanes																							
Dichloromethane	5	µg/l			-	-	-	-	-	-	<5	-	-	-	-	-	<5	-	-	-	-	-	-
Bromochloromethane	0.5	µg/l			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	-	<0.5	-
Bromodichloromethane	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
Bromoform	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
Bromomethane	10	µg/l			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-
Chloroform	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
Dibromochloromethane	5	µg/L			<5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<5	<0.5	<5	<5	<5	<5	<0.5	<5
Major Ions																							
Calcium	1	mg/L			412	80	567	122	45	40	44	408	188	400	60	80	83	8	65	11	10	12	78
Chloride	1	mg/L			17300	-	-	-	-	-	-	-	-	-	-	-	-	132	38	225	226	-	-
Magnesium	1	mg/L			1130	117	573	62	74	71	64	1010	329	1290	38	38	34	11	23	15	14	15	43
Potassium	1	mg/L			415	26	138	36	39	38	38	288	51	439	13	14	14	15	9	22	22	24	19
Sodium	1	mg/L			10500	968	4400	675	758	732	649	6810	1900	12500	355	388	340	84	34	257	262	249	291
Total Anions	0.01	meq/l			538	52.9	217	43	41.4	40.8	-	440	128	600	24.7	24.7	-	5.39	6.83	13.2	13.4	-	21.5
Total Cations	0.01	meq/l			581	59.4	270	41.5	42.4	41	-	485	129	681	24.1	24.2	-	5.34	6.85	13.6	13.6	-	20.4
Ionic Balance	0.01	%			3.83	3.22	4.5	1.79	1.18	0.18	-	4.91	2.15	6.34	1.3	0.56	-	0.46	0.1	1.04	0.59	-	2.62
Sulfate as SO4 - Turbidimetric	1	mg/L			2140	-	-	-	-	-	-	-	-	-	-	-	-	33	7	93	92	-	-
Sulfide as S2-	0.1	mg/L			<0.1	-	-	-	-	-	-	-	-	-	-	-	-	0.1	<0.1	<0.1	<0.1	-	-
Sulfite as SO3 2-	2	mg/L			<2	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2	<2	<2	-	-
Sulfur as S	1	mg/L			699	-	-	-	-	-	-	-	-	-	-	-	-	13	3	37	36	-	-
Ferrous/Ferric Ion																							
Ferric Iron	0.05	mg/L			-	<0.05	<0.05	0.32	<0.05	<0.05	-	7.36	<0.05	1.78	<0.05	<0.05	-	-	-	-	-	-	<0.05
Monocyclic Aromatic Hydrocarbons																							
Styrene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	-	<5
Isopropylbenzene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	-	<5
n-Butylbenzene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	-	<5
n-Propylbenzene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	-	<5
p-Isopropyltoluene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	-	<5
sec-Butylbenzene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	-	<5
tert-Butylbenzene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	-	<5
1,3,5-Trimethylbenzene	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	-	<5
Oxygenated Compounds																							
4-Methyl-2-pentanone	50	µg/L			<50	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50
Vinyl Acetate	50	µg/L			<50	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50
2-Butanone (MEK)	50	µg/L			<50	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50
2-Hexanone (MBK)	50	µg/L			<50	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50
Sulfonated Compounds																							
Carbon disulfide	5	µg/L			<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	-	<5
Naphthalene																							
Naphthalene	5	µg/L	70		-	<5	<5	<5	<5	<5	-	6	<5	<5	<5	<5	-	-	-	-	-	<0.5	<5
Miscellaneous Compounds																							
Chloride	1	mg/L			-	1610	7620	1170	1210	1190	1300	14200	4130	19300	631	643	580	-	-	-	-	-	549
Methane	0.005	ppm			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite as N	0.005	mg/L			-	-	-	-	-	-	0.008	-	-	-	-	-	0.005	-	-	-	-	-	-
Sulfide as S2-	0.1	mg/L			-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	<0.1
Sulfite as SO3 2-	2	mg/L			-	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	<2	-	-	-	-	-	-	<2
Sulfur as S	1	mg/L			-	127	579	64	2	1	-	663	138	778	92	90	-	-	-	-	-	-	41
Sulphate	0.1	mg/L			-	-	-	-	-	-	7.5	-	-	-	-	-	290	-	-	-	-	-	-
Sulphide	0.5	mg/L			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	-	-	-
Sulphite as SO3-	2	mg/L			-	-	-	-	-	-	<2	-	-	-	-	-	<2	-	-	-	-	-	-
Sulphur as S	0.1	mg/L			-	-	-	-	-	-	1.6	-	-	-	-	-	97	-	-	-	-	-	-
Total Dissolved Solids	5	mg/L			-	3480	13000	2600	2430	2400	-	26200	6780	34500	1480	1460	-	-	-	-	-	-	1150

Table ???
Groundwater Analytical Results - Analysis Results
Waterfront

Location	MW10	MW101	MW102	MW103	MW108	MW108	MW108	MW113	MW114	MW115	MW116	MW116	MW116	MW117	MW118	MW119	MW119	MW119	MW121
Sample ID	MW10	MW101	MW102	MW103	MW108	QC9_29/9/11	QC19 (ME107569-1)	MW113	MW114	MW115	MW116	QC05	QC06 (ME107570-1)	MW117	MW118	MW119	QC01	QC02	MW121
Date Sampled	27/09/2011	28/09/2011	28/09/2011	28/09/2011	29/09/2011	29/09/2011	29/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011	27/09/2011	27/09/2011	27/09/2011	27/09/2011	29/09/2011	29/09/2011
Sample Type	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Duplicate Sample	Triplicate Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Duplicate Sample	Triplicate Sample	Primary Sample	Primary Sample	Primary Sample	Duplicate Sample	Triplicate Sample	Primary Sample
Primary Sample ID	MW10	MW101	MW102	MW103	MW108	MW108	MW108	MW113	MW114	MW115	MW116	MW116	MW116	MW117	MW118	MW119	MW119	MW119	MW121
Area	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Analyte	LOR	Units	ANZECC 2000 - Marine Water 95%	ANZECC 2000 - Irrigation - LTU																		
Total Organic Carbon	1	mg/L			-	3	4	5	6	5	6.7	5	4	5	5	4	3.7	-	-	-	-	-	7
Alkalinity																						
Hydroxide Alkalinity as CaCO3	1	mg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	-	<1	-	<1	<1	<1	-	<1
Alkalinity as CaCO3	2	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	270	-
Carbonate Alkalinity as CaCO3	1	mg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	-	<1	-	<1	<1	<1	-	<1
Total Alkalinity	1	mg/L			264	38	137	174	358	362	-	233	71	391	105	73	-	49	281	248	258	-	173
Bicarbonate Alkalinity as CaCO3	1	mg/L			264	38	137	174	358	362	-	233	71	391	105	73	-	49	281	248	258	-	173
Natural Attenuation Parameters																						
Ferrous Iron	0.05	mg/L			6.66	-	-	-	-	-	-	-	-	-	-	-	-	1.63	19.5	0.1	0.12	-	-
Ferric Iron	0.05	mg/L			0.89	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-
Methane	10	µg/L			39	<10	<10	72	9390	6130	-	55	27	7150	30	31	-	117	798	<10	<10	-	72
Nitrate and Nitrite (as N)	0.01	mg/L			<0.01	0.62	0.22	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	-	<0.01
Nitrate as N	0.01	mg/L			<0.01	0.58	0.22	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	-	<0.01
Nitrite as N	0.01	mg/L			<0.01	0.04	<0.01	0.01	<0.01	<0.01	-	0.03	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	-	<0.01
Sulfate as SO4 - Turbidimetric	1	mg/L			-	321	1410	312	3	<1	-	1560	373	2280	930	243	-	-	-	-	-	-	136
Total Organic Carbon	1	mg/L			8	-	-	-	-	-	-	-	-	-	-	-	-	8	21	2	3	-	-
Unknown																						
1,2-Dichloroethane-d4		%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	114	-
2-Butanone (MEK)	10	µg/l			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-
2-Hexanone (MBK)	5	µg/l			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	-
2-Nitropropane	100	µg/l			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-
4-Methyl-2-pentanone	5	µg/l			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	-
Acetone (2-propanone)	10	µg/l			-	-	-	-	-	-	<10	-	-	-	-	-	<10	-	-	-	-	<10	-
Acrylonitrile	0.5	µg/l			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	-	<0.5	-
Allyl chloride	0.5	µg/l			-	-	-	-	-	-	<2	-	-	-	-	-	<2	-	-	-	-	<0.5	-
Carbon disulfide	0.5	µg/l			-	-	-	-	-	-	<2	-	-	-	-	-	<2	-	-	-	-	-	-
Cumene	0.5	µg/l			-	-	-	-	-	-	1.1	-	-	-	-	-	-	-	-	-	-	<0.5	-
Dibromofluoromethane		%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	109	-
Isopropylbenzene (Cumene)	0.5	µg/l			-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-	-
MEK	10	µg/l			-	-	-	-	-	-	<10	-	-	-	-	-	<10	-	-	-	-	-	-
Methyl t-butyl ether	2	µg/l			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	-
Methylene chloride (Dichloromethane)	5	µg/l			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	-
MIBK	5	µg/l			-	-	-	-	-	-	<5	-	-	-	-	-	<5	-	-	-	-	-	-
n-butylbenzene	0.5	µg/l			-	-	-	-	-	-	<0.5	-	-	-	1	-	<0.5	-	-	-	-	<0.5	-
Nitrobenzene-d5		%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-
n-propylbenzene	0.5	µg/l			-	-	-	-	-	-	0.6	-	-	-	-	-	<0.5	-	-	-	-	<0.5	-
p-Isopropyltoluene	0.5	µg/l			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	-	<0.5	-
p-Terphenyl-d14		%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	-
sec-butylbenzene	0.5	µg/l			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	-	<0.5	-
Styrene	0.5	µg/l			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	-	<0.5	-
tert-butylbenzene	0.5	µg/l			-	-	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	-	-	-	<0.5	-
Miscellaneous																						
Nitrate Nitrogen, NO3-N	0.005	mg/L			-	-	-	-	-	-	<0.005	-	-	-	-	-	<0.005	-	-	-	-	-	-
1-Methylnaphthalene	1.00E-32				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-
2-Fluorobiphenyl	1.00E-32				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71	-
2-Methylnaphthalene	1.00E-32				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-
Total Recoverable Hydrocarbons																						
>C10 - C16 Fraction	100	µg/L			<100	<100	<100	<100	190	130	-	1200	<100	<100	<100	<100	-	<100	260	<100	<100	-	<100
>C10 - C40 Fraction (sum)	100	µg/L			<100	<100	130	<100	1050	640	-	3550	<100	150	<100	<100	-	260	2150	<100	<100	-	120
>C16 - C34 Fraction	100	µg/L			<100	<100	130	<100	860	510	-	2350	<100	150	<100	<100	-	260	2190	<100	<100	-	120
>C34 - C40 Fraction	100	µg/L			<100	<100	<100	<100	<100	<100	-	<100	<100	<100	<100	<100	-	<100	<100	<100	<100	-	<100
C6 - C10 Fraction	20	µg/L			<20	<20	<20	<20	<20	<20	-	<20	<20	<20	<20	<20	-	<20	<20	<20	<20	-	<20
C6 - C10 Fraction minus BTEX (F1)	20	µg/L			<20	<20	<20	<20	<20	<20	-	<20	<20	<20	<20	<20	-	<20	<20	<20	<20	-	<20

DATA VALIDATION REPORT_December 2011

URS Project number:	42213719	**Data verified by:**	Bek Aagaard	Date: 28/04/2013
Client:	Darwin Waterfront Corporation			
Site:	Waterfront Precinct	Signed:	Bekke Aagaard	
URS Project Manager:	Jacques van Rensberg			
		Validation by:	Tim Smith	Date: 2/5/2013
Matrix type:	Groundwater			
No Primary samples:	10			
Laboratory:	ALS; SGS	Signed:		
Lab reference:	EP1108921 PE063730	**Project Manager:**		Date:
		Signed:		

Data quality objectives

Field data comparison	No apparent anomalies were observed between laboratory results and field observations.
Frequency of field QC	Field QC samples were collected to project specifications.
Frequency of laboratory QC	The laboratory reported a sufficient frequency of QC to assess whether the results have been reported to an acceptable accuracy and precision, with the exception of the following: • Matrix spikes (MS) were reported on anonymous samples for dissolved metals. As MS was conducted on anonymous samples, the reported MS recovery may not be considered representative of the URS field sample. • Laboratory duplicate were not reported for total anions and cations and Total Petroleum Hydrocarbons (TPH)/Total Recoverable Hydrocarbons (TRH). The precision is considered acceptable based on the data quality assessment of intra- and inter-laboratory duplicates for TPH and TRH, and inter-laboratory for total anions and cations. • The inter-laboratory duplicate was not analysed total anions and cations. The precision of this data is considered acceptable based on the data quality assessment of intra-laboratory field duplicates.
Tests requested/reported	Samples were analysed and reported as requested on the COC.
Limits of reporting	LORs were sufficiently low to enable assessment against adopted guideline criteria.
Data transcription	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by URS.

Sample management

Chain of Custody	Chain of custody documents completed.
Handling and preservation	Samples were correctly preserved, chilled with ice and received at the laboratory at 12.4°C. While the recommended temperature for water samples on receipt is 4°C (± 2°C) batch EP1108921 recorded on receipt above the recommended temperature; therefore, some losses through volatilisation may have occurred and sample concentrations for BTEXN and TPH $C_6 - C_9$ may be may be biased low. It should be noted that the groundwater temperature across the site throughout the year and at the time of sampling is generally >30°C. Samples are chilled in the field on ice and transported to the laboratory with appropriate cooling medium. Samples remain chilled while cooling medium is present however over the 24hr transit period to the laboratory cooling medium will melt and samples may warm. Due to the initial sample temperature and subsequent appropriate cooling of samples, losses due to volatilisation are considered to be limited.
Holding time compliance	All samples were extracted and analysed within recommended holding times, with the following exceptions: Calcium, magnesium, potassium and sodium analysis was exceeded by 2 days. These analytes are used as one of a number of indicators of natural attenuation and sea water intrusion and as such will not affect the overall interpretation of results.

Data precision

Field duplicate RPDs	RPDs were within control limits.

Interlaboratory Replicate (Field triplicate) RPDs	RPDs exceeded control limits for the following sample analysis. (Sample with higher reported concentrations is in bold). • MW136_13/12/12 and **QC02_13/12/12** for Total Alkalinity (63%).
Laboratory duplicate RPDs	RPDs were within control limits.
Data accuracy	
Laboratory control spike recovery	The laboratory control spike recoveries were within control limits. Laboratory control spike recoveries were not reported for total anions and cations. The accuracy of the data for total anions and cations is considered acceptable based on the presence of surrogate recoveries.
Matrix spike recovery	The following recoveries were outside control limits and may affect data interpretation:

Sample	Analyte	Recovery (%)	LCL (%)	UCL (%)	Comment
MW138_13/12/11	Chloride	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.

	As the matrix spike issue was related to non-determination due to background levels being greater than the spike level, this is not considered to affect the interpretation of the accuracy of the results, due to the presence of other laboratory quality control data, including method blanks, LCS recoveries and matrix spikes for analytes analysed under the same analytical method (where applicable). Matrix spike recoveries were not reported for TPH C_{10}-C_{36}, total anions and cations, calcium, magnesium, potassium, sodium, total dissolved solids and alkalinity. The accuracy of the data for these compound groups is considered acceptable based on the presence of other quality control data, such as method blanks, LCS recoveries and surrogate recoveries (where applicable).
Surrogate spike recovery	The surrogate spike recoveries were within control limits.
Blank monitoring	
Equipment rinsate blank	Concentrations were not detected above the LOR for all analytes tested, with the following exceptions: Concentrations of cadmium (0.0002 mg/L), lead (0.001 mg/L), manganese (0.001 mg/L) and zinc (0.006 mg/L) were detected above the LOR in the rinsate sample (collected on 14th of December 2011 (QCC01_14/12/12). It should be noted that dedicated well sampling equipment was used at each location. The manganese concentration detected in the rinsate blank was well below manganese reported in primary samples and is not considered to affect interpretation of analytical results. Concentrations of cadmium, lead and zinc were not detected in the field blank; potential for cross-contamination to have occurred between the five locations sampled on the 14th of December 2011 is not considered likely. Rinsate water used may have been from a glass bottle and may have contained trace metals impurities. Analytical results from rinsate blank analysis are close to laboratory LOR and are not considered to affect primary results or interpretation of analytical data.
Field blank	Manganese (0.002 mg/L) was detected above the LOR in the field blank sample (collected on 14th of December 2011 (QCB01_14/12/12). Rinsate water used may have been from a glass bottle and may have contained trace metals impurities. Analytical results from field blank analysis are close to laboratory LOR and are not considered to affect primary results or interpretation of analytical data.
Trip blank	Concentrations of all analytes were reported below the LOR.
Method blank	Concentrations of all analytes were reported below the LOR.
Chromatograms	N/A
Other observations	None reported

Site Name	Waterfront Precinct
Project No.	42213719
Project Manager	Tim Smith
Matrix	Water
Laboratory	ALS/SGS
Batch File Number	EP110821/PE063730

Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
						Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
Arsenic	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
Cadmium	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
Chromium	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
Copper	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
Lead	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
Manganese	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
Nickel	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
Vanadium	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
Zinc	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
Mercury	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
Calcium	11	11	8	×	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	2	1	0	1	2	-	-
Magnesium	11	11	8	×	✓	0	0	1	0	0	0	1	2	1	1	1	1	1	2	1	0	1	2	-	-
Potassium	11	11	8	×	✓	0	0	1	0	0	0	1	2	1	1	1	1	1	2	1	0	1	2	-	-
Sodium	11	11	8	×	✓	0	0	1	0	0	0	1	2	1	1	1	1	1	2	1	0	1	2	-	-
Total Anions	10	10	8	✓	✓	0	0	1	0	0	0	1	0	1	1	1	0	1	0	1	0	1	0	-	-
Total Cations	10	10	8	✓	✓	0	0	1	0	0	0	1	0	1	1	1	0	1	0	1	0	1	0	-	-
Bicarbonate Alkalinity as CaCO3	11	11	8	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
Carbonate Alkalinity as CaCO3	11	11	8	✓	✓	0	0	1	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
Hydroxide Alkalinity as CaCO3	11	11	8	✓	✓	0	0	1	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
Total Alkalinity as CaCO3	11	11	8	✓	✓	0	0	1	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
>C10 - C16 Fraction	13	13	10	✓	✓	1	1	1	1	0	0	1	2	1	1	0	0	1	0	1	0	1	2	-	-
>C16 - C34 Fraction	13	13	10	✓	✓	1	1	1	1	0	0	1	2	1	1	0	0	1	0	1	0	1	2	-	-
>C34 - C40 Fraction	13	13	10	✓	✓	1	1	1	1	0	0	1	2	1	1	0	0	1	0	1	0	1	2	-	-
C10 - C14 Fraction	14	14	10	✓	✓	1	1	1	1	0	0	1	2	1	1	1	1	1	0	1	0	1	2	-	-
C15 - C28 Fraction	14	14	10	✓	✓	1	1	1	1	0	0	1	2	1	1	1	1	1	0	1	0	1	2	-	-
C29 - C36 Fraction	14	14	10	✓	✓	1	1	1	1	0	0	1	2	1	1	1	1	1	0	1	0	1	2	-	-
Chloride	11	11	8	✓	✓	0	0	1	0	0	0	1	2	1	1	1	1	1	2	1	2	1	2	-	-
C6 - C10 Fraction	15	15	10	✓	✓	1	1	1	1	2	2	1	1	1	1	0	0	1	2	1	1	1	1	✓	✓
C6 - C9 Fraction	16	16	10	✓	✓	1	1	1	1	2	2	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
Benzene	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
Ethylbenzene	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
meta- & para-Xylene	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
Naphthalene	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
ortho-Xylene	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	0	1	1	✓	✓
Toluene	14	14	10	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
Sulfate as SO4 - Turbidimetric	10	10	8	✓	✓	0	0	0	0	0	0	1	2	1	1	0	0	1	3	1	2	1	2	-	-
Total Dissolved Solids @180°C	11	11	8	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-

NOTES:

(a) ✓ - holding times are within project guideline limits.
× - holding times exceed project guideline limits.

(b) ✓ - Limits of reporting (LORs) comply with project specifications.
× - LORs do not comply with project specifications.

NA - Not Applicable

Groundwater Analytical Results - Field Blanks
December 2011

Sample ID	QCA01	QCA02	QCB01	QCC01
Date Sampled	13/12/2011	14/12/2011	14/12/2011	14/12/2011
Sample Type	Trip Blank	Trip Blank	Field Blank	Rinsate Blank

Analyte	LOR	Units	ANZECC 2000 - Marine Water - 95%	ANZECC 2000 - Irrigation - LTU				
Total Petroleum Hydrocarbons								
C6-C9 fraction	20	µg/L			<20	<20	<20	<20
C10-C14 fraction	50	µg/L			-	-	<50	<50
C15-C28 fraction	100	µg/L			-	-	<100	<100
C29-C36 fraction	50	µg/L			-	-	<50	<50
C10 - C36 Fraction (sum)	50	µg/L			-	-	<50	<50
BTEX Compounds								
Benzene	1	µg/L	700		-	-	<1	<1
Toluene	2	µg/L			-	-	<2	<2
Ethylbenzene	2	µg/L			-	-	<2	<2
m&p-Xylene	2	µg/L			-	-	<2	<2
o-Xylene	2	µg/L			-	-	<2	<2
Total Xylenes	2	µg/L			-	-	<2	<2
Sum of BTEX	1	µg/L			-	-	<1	<1
Naphthalene	5	µg/L	70		-	-	<5	<5
Metals (Dissolved)								
Arsenic	0.001	mg/L		0.1	-	-	<0.001	<0.001
Cadmium	0.0001	mg/L	0.0055	0.01	-	-	<0.0001	**0.0002**
Chromium	0.001	mg/L	0.0044	0.1	-	-	<0.001	<0.001
Copper	0.001	mg/L	0.0013	0.2	-	-	<0.001	<0.001
Lead	0.001	mg/L	0.0044	2	-	-	<0.001	**0.001**
Manganese	0.001	mg/L		0.2	-	-	**0.002**	**0.001**
Mercury	0.0001	mg/L	0.0004	0.002	-	-	-	-
Nickel	0.001	mg/L	0.07	0.2	-	-	<0.001	<0.001
Vanadium	0.01	mg/L	0.1	0.1	-	-	<0.01	<0.01
Zinc	0.005	mg/L	0.015	2	-	-	<0.005	**0.006**
Major Ions								
Calcium	1	mg/L			-	-	-	<1
Magnesium	1	mg/L			-	-	-	<1
Potassium	1	mg/L			-	-	-	<1
Sodium	1	mg/L			-	-	-	<1
Sulfate as SO4 - Turbidimetric	1	mg/L			-	-	-	<1
Miscellaneous Compounds								
Chloride	1	mg/L			-	-	-	<1
Ionic Balance	0.01	%			-	-	-	<0.01
Total Anions	0.01	meq/l			-	-	-	<0.01
Total Cations	0.01	meq/l			-	-	-	<0.01
Total Dissolved Solids	5	mg/L			-	-	-	<5
Alkalinity								
Hydroxide Alkalinity as CaCO3	1	mg/L			-	-	-	<1
Carbonate Alkalinity as CaCO3	1	mg/L			-	-	-	<1
Total Alkalinity	1	mg/L			-	-	-	<1
Bicarbonate Alkalinity as CaCO3	1	mg/L			-	-	-	<1
Total Recoverable Hydrocarbons								
>C10 - C16 Fraction	100	µg/L			-	-	<100	<100
>C10 - C40 Fraction (sum)	100	µg/L			-	-	<100	<100
>C16 - C34 Fraction	100	µg/L			-	-	<100	<100
>C34 - C40 Fraction	100	µg/L			-	-	<100	<100
C6 - C10 Fraction	20	µg/L			<20	<20	<20	<20
C6 - C10 Fraction minus BTEX (F1)	20	µg/L			-	-	<20	<20

Legend:

Exceeds the ANZECC/ARMCANZ, 2000, Trigger values for marine water ecosystems - Level of protection 95% species

Exceeds the ANZECC/ARMCANZ, 2000, Irriga

- Not analysed / not calculated

* LOR Exceeds Guideline Trigger Value

10% check

1/5/2013 BA

Table ???
Groundwater Analytical Results - Analysis Results
Waterfront

Location	MW108	MW115	MW116	MW121	MW125	MW127	MW128	MW134	MW135	MW136	MW136	MW136
Sample ID	MW108	MW115	MW116	MW121	MW125	MW127	MW128	MW134	MW135	MW136	QC01	QC02
Date Sampled	14/12/2011	13/12/2011	13/12/2011	14/12/2011	13/12/2011	13/12/2011	14/12/2011	14/12/2011	14/12/2011	13/12/2011	13/12/2011	13/12/2011
Sample Type	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Duplicate Sample	Triplicate Sample
Primary Sample ID	MW108	MW115	MW116	MW121	MW125	MW127	MW128	MW134	MW135	MW136	MW136	MW136
Area	-	-	-	-	-	-	-	-	-	-	-	-

Analyte	LOR	Units	ANZECC 2000 - Marine Water - 95%	ANZECC 2000 - Irrigation - LTU												
Total Petroleum Hydrocarbons																
C6-C9 fraction	20	µg/L			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	-
C10-C14 fraction	50	µg/L			130	<50	<50	<50	<50	90	50	50	<50	<50	<50	-
C15-C28 fraction	100	µg/L			1480	230	<100	<100	<100	890	150	830	<100	480	690	-
C29-C36 fraction	50	µg/L			300	70	<50	<50	<50	150	<50	160	<50	160	260	-
C10 - C36 Fraction (sum)	50	µg/L			1910	300	<50	<50	<50	1130	200	1040	<50	640	950	-
BTEX Compounds																
Benzene	1	µg/L	700		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5
Toluene	2	µg/L			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.5
Ethylbenzene	2	µg/L			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.5
m&p-Xylene	2	µg/L			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<1
o-Xylene	2	µg/L			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.5
Total Xylenes	2	µg/L			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-
Sum of BTEX	1	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-
Naphthalene	5	µg/L	70		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-
Metals (Dissolved)																
Arsenic	0.001	mg/L		0.1	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.002	<0.001	<0.001	<0.001	<0.001
Cadmium	0.0001	mg/L	0.0055	0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.008	<0.0001	<0.0001	<0.0001
Chromium	0.001	mg/L	0.044	0.1	0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	0.001	0.002	0.002	<0.001
Copper	0.001	mg/L	0.0013	0.2	<0.001	0.006	0.001	<0.001	<0.001	<0.001	<0.001	0.002	0.002	<0.001	<0.001	<0.001
Lead	0.001	mg/L	0.0044	2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	0.001	mg/L		0.2	0.389	0.557	6.24	1.35	1.53	0.674	0.196	0.715	1.6	4.31	4.36	4.6
Mercury	0.0001	mg/L	0.0004	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.001	mg/L	0.07	0.2	<0.001	0.008	0.006	0.008	0.004	0.005	0.028	0.002	0.002	0.002	0.002	0.002
Vanadium	0.01	mg/L	0.1	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.001
Zinc	0.005	mg/L	0.015	2	0.006	0.01	0.031	0.009	0.007	0.012	0.01	<0.005	0.083	<0.005	<0.005	0.002
Major Ions																
Calcium	1	mg/L			50	154	46	72	29	45	-	-	156	70	70	70
Magnesium	1	mg/L			92	1010	20	81	29	20	-	-	49	52	53	52
Potassium	1	mg/L			49	415	13	36	26	17	-	-	26	32	34	37
Sodium	1	mg/L			992	10000	200	455	214	214	-	-	271	812	837	800
Sulfate as SO4 - Turbidimetric	1	mg/L			4	633	136	94	16	4	-	-	200	63	69	-
Miscellaneous Compounds																
Carbonate Alkalinity as CO3	1	mg/L			-	-	-	-	-	-	-	-	-	-	-	<1
Chloride	1	mg/L			1490	17700	326	794	248	344	-	-	432	1170	1190	1300
Ionic Balance	0.01	%			4.63	0.81	1.66	2.78	1.91	2.05	-	-	0.93	1.89	2.38	-
Total Anions	0.01	meq/l			49.6	528	13.4	29.3	13.3	14.2	-	-	23.8	42.3	43	-
Total Cations	0.01	meq/l			54.5	536	13	31	13.8	13.6	-	-	24.3	43.9	45.1	-
Total Dissolved Solids	5	mg/L			2970	32600	828	1680	717	793	-	-	1480	2610	2550	2460
Alkalinity																
Hydroxide Alkalinity as CaCO3	1	mg/L			<1	<1	<1	<1	<1	<1	-	-	<1	<1	<1	-
Carbonate Alkalinity as CaCO3	1	mg/L			<1	<1	<1	<1	<1	<1	-	-	<1	<1	<1	-
Total Alkalinity	1	mg/L			376	757	69	247	298	221	-	-	374	398	401	760
Bicarbonate Alkalinity as CaCO3	1	mg/L			376	757	69	247	298	221	-	-	374	398	401	-
Total Recoverable Hydrocarbons																
>C10 - C16 Fraction	100	µg/L			520	<100	<100	<100	<100	240	<100	250	<100	<100	110	-
>C10 - C40 Fraction (sum)	100	µg/L			2130	470	<100	<100	<100	1490	150	1070	<100	960	1530	-
>C16 - C34 Fraction	100	µg/L			1440	320	<100	<100	<100	1020	150	820	<100	700	1060	-
>C34 - C40 Fraction	100	µg/L			170	150	<100	<100	<100	230	<100	<100	<100	260	360	-
C6 - C10 Fraction	20	µg/L			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	-
C6 - C10 Fraction minus BTEX (F1)	20	µg/L			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	-
TRH C10-C14	50	µg/l			-	-	-	-	-	-	-	-	-	-	-	140
TRH C15-C28	200	µg/l			-	-	-	-	-	-	-	-	-	-	-	480
TRH C29-C36	200	µg/l			-	-	-	-	-	-	-	-	-	-	-	<200
TRH C6-C9	40	µg/l			-	-	-	-	-	-	-	-	-	-	-	<40

DATA VALIDATION REPORT_March 2012

URS Project number:	42213719	**Data verified by:**	Bek Aagaard	Date: 26/04/2013
Client:	Darwin Waterfront Corporation			
Site:	Waterfront Precinct	Signed:	Rebekka Aagaard	
URS Project Manager:	Jacques Van Rensberg			
		Validation by:	Tim Smith	Date: 3/5/2013
Matrix type:	Groundwater			
No Primary samples:	23			
Laboratory:	ALS; SGS	Signed:		
Lab reference:	ES1205485 & SE106212; EP1201888; ES1205892 & SE106317	**Project Manager:** Signed:		Date:

Data quality objectives

Field data comparison

No apparent anomalies were observed between laboratory results and field observations.

Frequency of field QC

Field QC samples were collected to project specifications, except for no trip blank, field blank and rinsate blank was not taken for batch ES1205892; hence the potential for cross-contamination has not been assessed for that batch, this is not considered to affect data quality for interpretive purposes. Potential data considerations are discussed below.

Frequency of laboratory QC

The laboratory reported a sufficient frequency of QC to assess whether the results have been reported to an acceptable accuracy and precision, with the exception of the following:

- Matrix spikes (MS) were reported on anonymous samples for all analytes. Where MS were conducted on anonymous samples, the reported MS recovery may not be considered representative of the URS field sample.

Batch ES1205485

- Laboratory duplicate were not reported for total anions and cations and ferric iron. The precision of these analytes have been considered acceptable based on the presence intra-laboratory duplicates were available and acceptable.
- The inter-laboratory duplicate was not analysed for total anions and cations. The precision of this data can be assessed as acceptable based on the presence of intra-laboratory field duplicates for these analytes.

Batch EP1201888

- Laboratory duplicate were not reported for total anions and cations, TPH/Total Recoverable Hydrocarbons (TRH), PAHs and ferric iron. The precision of these analytes been considered acceptable based on the presence intra- and inter-laboratory duplicates were available and acceptable from other batches within the complete data set.

Batch ES1205892

- Laboratory duplicate were not reported for total anions and cations, TPH/TRH, PAHs and ferric iron. The precision of these analytes have been considered acceptable based on the presence intra- and inter-laboratory duplicates were available and acceptable (where applicable).
- The inter-laboratory duplicate was not analysed for total anions and cations, volatiles and ferric iron. The precision of this data can be assessed as acceptable based on the presence of intra-laboratory field duplicates for these analytes.

Tests requested/reported

Samples were analysed and reported as requested on the COC.

Limits of reporting

LORs were sufficiently low to enable assessment against adopted guideline criteria with the following limitations:

- Protocol LOR for anthracene (1 µg/L) above the adopted ILs (0.4 µg/L)
- Protocol LOR for benzo(a)pyrene (0.5 µg/L) above the adopted ILs (0.2 µg/L)

The limits of reporting were above the adopted investigation levels for anthracene and benzo(a)pyrene. As a result, potential exists for samples to contain concentrations of these analytes above the adopted investigation levels, but below detection limits. This lack of definitive data should be taken into consideration when interpreting analytical results below LOR for these PAHs.

- Protocol LOR exceeds the guideline trigger value for chromium (0.0044 mg/L)
- Protocol LOR exceeds the guideline trigger value for copper (0.0013 mg/L)
- Protocol LOR exceeds the guideline trigger value for lead (0.0044 mg/L)
- Protocol LOR exceeds the guideline trigger value for zinc (0.015 mg/L)

The limits of reporting exceeded the guideline trigger levels for chromium copper, lead and zinc. As a

	result, potential exists for samples to contain concentrations of these analytes above the adopted investigation levels, but below detection limits. This lack of definitive data should be taken into consideration when interpreting analytical results below these metals.
Data transcription	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by URS.
Sample management	
Chain of Custody	Chain of custody documents completed.
Handling and preservation	Samples were correctly preserved, chilled with ice and received at the laboratory at 4.1°C, 10.0°C and 9.1°C for batches ES1205485, EP1201888 and ES1205892, respectively. Samples from batches EP1201888 and ES1205892 were received above the recommended temperature range; therefore, some losses through volatilisation may have occurred and sample concentrations for BTEXN and TPH $C_6 - C_9$ may be may be biased low. It should be noted that the groundwater temperature across the site throughout the year and at the time of sampling is generally >30°C. Samples are chilled in the field on ice and transported to the laboratory with appropriate cooling medium. Samples remain chilled while cooling medium is present however over the 24hr transit period to the laboratory cooling medium will melt and samples may warm. Due to the initial sample temperature and subsequent appropriate cooling of samples, losses due to volatilisation are considered to be limited.
Holding time compliance	All samples were extracted and analysed within recommended holding times, with the following exceptions: **Batch ES1205485** Ferrous iron analysis was exceeded by 2 days, nitrite as N by 1 day, sulphide as S^{2-} by 7 days and sulphite as SO_3^{2-} by 3 days. These analytes are used as indicators of natural attenuation and as such will not affect the overall interpretation of results. **Batch EP1201888** PAHs extraction was exceed by 1 day, TPH by 1 day and TRH by 1 day. Total dissolved solids analysis was exceeded by 4 days and sulphite as SO_3^{2-} by 3 days,. These analytes are used as indicators of natural attenuation and as such will not affect the overall interpretation of results. **Batch ES1205892** Sulphide as S^{2-} analysis was exceeded by 2 days. This analyte is used as one of a number of indicators of natural attenuation and as such will not affect the overall interpretation of results.
Data precision	
Field duplicate RPDs	RPDs exceeded control limits for the following sample analysis. (Sample with higher reported concentrations is in bold). • **MW103_12/03/12** and QC03_12/03/12 for Copper (32%). • **MW103_12/03/12** and QC03_12/03/12 for Manganese (49%). • **MW103_12/03/12** and QC03_12/03/12 for Zinc (31%). For most samples, reported concentrations were either well above or below the adopted ILs; however, the apparent lack of precision should be taken into consideration when evaluating individual results, particularly where concentrations are reported close to the adopted investigation level.
Inter-laboratory Replicate (Field triplicate) RPDs	RPDs exceeded control limits for the following sample analysis. (Samples with higher reported concentrations is in bold). • MW128_07/03/12 and **QC02_07/03/12** for Total Alkalinity (31%). • MW128_07/03/12 and **QC02_07/03/12** for Sodium (67%). • **MW103_12/03/12** and QC04_12/03/12 for Total Alkalinity (179%). • **MW103_12/03/12** and QC04_12/03/12 for Sodium (59%). • **MW103_12/03/12** and QC04_12/03/12 for Manganese (179%). • **MW103_12/03/12** and QC04_12/03/12 for Zinc (39%). For most samples, reported concentrations were either well above or below the adopted ILs; however, the apparent lack of precision should be taken into consideration when evaluating individual results, particularly where concentrations are reported close to the adopted investigation level.
Laboratory duplicate RPDs	RPDs were within control limits.

Data accuracy

Laboratory control spike recovery

The following recoveries were outside control limits and may affect data interpretation:

Batch	Analyte	Recovery (%)	LCL (%)	UCL (%)	Comment
ES1205485	Chromium	80.8	91	111	Recovery less than lower control limit
ES1205485	Copper	80.8	87	111	Recovery less than lower control limit
ES1205485	Lead	77.9	90	110	Recovery less than lower control limit
ES1205485	Manganese	80.4	87	113	Recovery less than lower control limit
ES1205485	Nickel	82.2	89	109	Recovery less than lower control limit
ES1205485	Vanadium	73.6	91	109	Recovery less than lower control limit
ES1205485	Zinc	82.7	85	116	Recovery less than lower control limit
ES1205485	Mercury	81.6	86	116	Recovery less than lower control limit
ES1205892	Chromium	90.3	91	111	Recovery less than lower control limit
ES1205892	Vanadium	88.9	91	109	Recovery less than lower control limit

For LCS recoveries reported less than the lower control limit, the potential exists for reported concentrations to be biased low. Care should be taken with interpreting results for these analytes close to the adopted guidelines.

LCS recoveries were not reported for total anions and cations and ferric for all batches. And alkalinity for batches ES1205485 and ES125892. The accuracy of the data for these compound groups is considered acceptable based on the presence of other quality control data, such as method blanks, LCS recoveries and surrogate recoveries (where applicable).

Matrix spike recovery

The following recoveries were outside control limits and may affect data interpretation:

Sample	Analyte	Recovery (%)	LCL (%)	UCL (%)	Comment
Anonymous	Sulphate as SO4 - Turbidimetric	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
MW118_6/3/12	Manganese	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
Anonymous	Ferrous Iron	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
MW135_7/3/12	Manganese	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
MW102_8/3/12	Sulphate as SO4 - Turbidimetric	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.
MW102_8/3/12	Chloride	Not determined	-	-	MS recovery not determined, background level greater than or equal to 4x spike level.

As the matrix spike issue was related to non-determination due to background levels being greater than the spike level, this is not considered to affect the interpretation of the accuracy of the results, due to the presence of other laboratory quality control data, including method blanks, LCS recoveries and matrix spikes for analytes analysed under the same analytical method (where applicable).

Batch ES1205485

Matrix spike recoveries were not reported for alkalinity, total anions and cations, calcium, magnesium, potassium, sodium, total dissolved solids, ferric iron, sulphur as S, sulphite as SO_3^{2-}, trihalogenated methanes, oxygenated compounds, monocyclic aromatic hydrocarbons (MAHs) and halogenated aliphatics. The accuracy of the data for these compound groups is considered acceptable based on the presence of other quality control data, such as method blanks, LCS recoveries and surrogate recoveries (where applicable).

Batch EP1201888

Matrix spike recoveries were not reported for TPH C_9-C_{36}/TRH C_{10}-C_{40}, PAHs, alkalinity, total anions and cations, calcium, magnesium, potassium, sodium, total dissolved solids, ferric iron, sulphur as S, sulphide as S^{2-} sulphite as SO_3^{2-}, carbon disulphide, fumigants, trihalogenated methanes and oxygenated compounds. The accuracy of the data for these compound groups is considered acceptable based on the presence of other quality control data, such as method blanks, LCS recoveries and surrogate recoveries (where applicable).

	Batch ES1205892 Matrix spike recoveries were not reported for TPH C_9-C_{36}/TRH C_{10}-C_{40}, PAHs, alkalinity, total anions and cations, calcium, magnesium, potassium, sodium, total dissolved solids, ferric iron, sulphur as S, sulphite as SO_3^{2-}, trihalogenated methanes, fumigants, oxygenated compounds, monocyclic aromatic hydrocarbons (MAHs) and halogenated aliphatics. The accuracy of the data for these compound groups is considered acceptable based on the presence of other quality control data, such as method blanks, LCS recoveries and surrogate recoveries (where applicable).
Surrogate spike recovery	The surrogate spike recoveries were within control limits.
Blank monitoring	
Equipment rinsate blank	Concentrations were not detected above the LOR for all analytes tested, with the following exceptions: Concentrations of chromium (0.051 mg/L), manganese (0.006 mg/L), and nickel (0.025 mg/L) were detected above the LOR in the rinsate sample (collected on 8th of March 2012 (QCC01_80312) in batch EP1201888. Concentrations of chromium, manganese and nickel were not detected in the field blank; hence, potential exists for cross-contamination to have occurred between the eight locations sampled on the 8th of March 2012. Rinsate blanks were not collected for batch ES1205892 12th March 2012. Given that rinsate blanks were collected for all other sampling days, analytical results except those listed above were <LOR and dedicated sampling equipment was used at each location this is not considered to affect interpretation of analytical results. It should be noted that dedicated well sampling equipment and disposable gloves were used at each location. This is not considered to affect interpretation of analytical results
Field blank	Concentrations of all analytes were reported below the LOR, with the following exceptions: Field blanks were not collected for batch ES1205892 12th March 2012. Given that field blanks were collected for all other sampling days, analytical results were <LOR and dedicated sampling equipment was used at each location this is not considered to affect the interpretation of results.
Trip blank	Concentrations of all analytes were reported below the LOR, with the following exceptions: As no volatile or semi-volatile COPCs were reported above LOR in primary samples from batch ES1205892 12th March 2012, it is not considered that cross contamination during sample transport is likely.
Method blank	Concentrations of all analytes were reported below the LOR.
Chromatograms	N/A
Other observations	**Batch ES1205485** • EG020: LCS recoveries for some elements fall outside ALS Dynamic Control Limit. However, they are within the acceptance criteria based on ALS DQO. No further action is required. • EG020: Samples were diluted and rerun due to matrix interference and LOR's have been raised accordingly. (High sample salinity). • EG035T: LCS recovery for Mercury falls outside ALS Dynamic Control Limit. However, it is within the acceptance criteria based on ALS DQO. No further action is required. • EK085: Sulphide ,:sample IDs "MW118" and "MW117" invalidated due to insufficient sample. • EP080: Level of reporting raised for toluene due to ambient background levels in the laboratory. **Batch ES1205892** • EP080: Level of reporting raised for toluene due to ambient background levels in the laboratory.

Site Name:Waterfront Precinct
Project No. 42213719
Project Manager:Tim Smith
Matrix: Groundwater
Laboratory: ALS Environmental & SGS
Batch File Number: ES1205485 & SE106312

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
METALS ANALYSIS/ALS/EG020F	Arsenic	11	11	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Cadmium	11	11	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Chromium	11	11	7	✓	×	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Copper	11	11	7	✓	×	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Lead	11	11	7	✓	×	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Manganese	11	11	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Nickel	11	11	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Vanadium	11	11	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	Zinc	11	11	7	✓	×	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
VOLATILES ANALYSIS/ALS/EP080	Benzene	12	12	7	✓	✓	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	Ethylbenzene	12	12	7	✓	✓	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	meta- & para-Xylene	12	12	7	✓	✓	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	Naphthalene	12	12	7	✓	✓	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	ortho-Xylene	12	12	7	✓	✓	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
	Toluene	12	12	7	✓	✓	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP080/071	C6 - C10 Fraction	12	12	7	✓	✓	1	1	1	1	1	1	1	1	1	1	0	0	2	2	1	1	1	1	✓	✓
	C6 - C9 Fraction	12	12	7	✓	✓	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	✓	✓
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/ED037P	Bicarbonate Alkalinity as CaCO3	9	9	7	✓	✓	0	0	0	0	0	0	1	0	1	1	1	1	1	4	1	0	1	0	-	-
	Carbonate Alkalinity as CaCO3	9	9	7	✓	✓	0	0	0	0	0	0	1	0	1	1	1	1	1	4	1	0	1	0	-	-
	Hydroxide Alkalinity as CaCO3	9	9	7	✓	✓	0	0	0	0	0	0	1	0	1	1	1	1	1	4	1	0	1	0	-	-
	Total Alkalinity as CaCO3	9	9	7	✓	✓	0	0	0	0	0	0	1	0	1	1	1	1	1	4	1	0	1	0	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/ED041G	Sulfate as SO4 - Turbidimetric	9	9	7	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	2	1	2	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/EK059G	Nitrite + Nitrate as N	9	9	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/EK057G	Nitrite as N	9	9	7	×	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	2	1	2	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/ED045G	Chloride	9	9	7	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	2	1	2	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/EN055	Total Anions	8	8	7	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	0	1	0	1	0	-	-
	Total Cations	8	8	7	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	0	1	0	1	0	-	-
WET CHEMISTRY AND PREPARATION/ALS/EA015	Total Dissolved Solids @180°C	8	8	7	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	0	1	2	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/EG051G	Ferrous Iron	9	9	7	×	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
METALS ANALYSIS/ALS/EG053FG-MS	Ferric Iron	9	9	7	✓	✓	0	0	0	0	0	0	1	0	1	1	1	1	1	0	1	0	1	0	-	-
SEMIVOLATILES ANALYSIS/ALS/EP033	Methane	9	9	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
METALS ANALYSIS/ALS/ED040F	Sulfur as S	9	9	7	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	3	1	0	1	2	-	-
SEMIVOLATILES ANALYSIS/ALS/EP075(SIM)B	Acenaphthene	4	4	2	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	1	1	1	✓	✓
	Acenaphthylene	4	4	2	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Anthracene	4	4	2	✓	×	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Benz(a)anthracene	4	4	2	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Benzo(a)pyrene	4	4	2	✓	×	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Benzo(b)fluoranthene	4	4	2	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Benzo(g,h,i)perylene	4	4	2	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Benzo(k)fluoranthene	4	4	2	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Chrysene	4	4	2	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Fluoranthene	4	4	2	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Fluorene	4	4	2	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Indeno(1,2,3-cd)pyrene	4	4	2	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Naphthalene	4	4	2	✓	✓	2	2	2	2	1	1	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Phenanthrene	4	4	2	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	1	✓	✓
	Pyrene	4	4	2	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	2	1	1	1	1	✓	✓

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
VOLATILES ANALYSIS/ALS/EP074E	1,1,1,2-Tetrachloroethane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,1,1-Trichloroethane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,1,2,2-Tetrachloroethane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,1,2-Trichloroethane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,1-Dichloroethane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,1-Dichloroethene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	✓	✓
	1,1-Dichloropropylene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,2,3-Trichloropropane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,2-Dibromo-3-chloropropane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,2-Dichloroethane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,3-Dichloropropane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Bromomethane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Carbon Tetrachloride	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Chloroethane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Chloromethane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	cis-1,2-Dichloroethene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	cis-1,4-Dichloro-2-butene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Dibromomethane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Dichlorodifluoromethane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Hexachlorobutadiene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Iodomethane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Pentachloroethane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Tetrachloroethene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	trans-1,2-Dichloroethene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	trans-1,4-Dichloro-2-butene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Trichloroethene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	✓	✓
	Trichlorofluoromethane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Vinyl chloride	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074C	Carbon disulfide	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074G	Bromodichloromethane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Bromoform	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Chloroform	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Dibromochloromethane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074B	2-Butanone (MEK)	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	2-Hexanone (MBK)	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	4-Methyl-2-pentanone (MIBK)	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Vinyl Acetate	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074F	1,2,3-Trichlorobenzene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,2,4-Trichlorobenzene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,2-Dichlorobenzene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,3-Dichlorobenzene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,4-Dichlorobenzene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	2-Chlorotoluene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	4-Chlorotoluene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Bromobenzene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Chlorobenzene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP074A	1,2,4-Trimethylbenzene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,3,5-Trimethylbenzene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Isopropylbenzene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	n-Butylbenzene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	n-Propylbenzene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	p-Isopropyltoluene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	sec-Butylbenzene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Styrene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	tert-Butylbenzene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
VOLATILES ANALYSIS/ALS/EP074D	1,2-Dibromoethane (EDB)	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,2-Dichloropropane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	2,2-Dichloropropane	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	cis-1,3-Dichloropropylene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	trans-1,3-Dichloropropylene	5	5	2	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
SEMIVOLATILES ANALYSIS/ALS/EP080/071	>C10 - C16 Fraction	10	10	7	✓	✓	1	1	1	1	0	0	1	1	1	1	0	0	1	2	1	1	1	1	-	-
	>C16 - C34 Fraction	10	10	7	✓	✓	1	1	1	1	0	0	1	1	1	1	0	0	1	2	1	1	1	1	-	-
	>C34 - C40 Fraction	10	10	7	✓	✓	1	1	1	1	0	0	1	1	1	1	0	0	1	2	1	1	1	1	-	-
	C10 - C14 Fraction	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	C15 - C28 Fraction	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
	C29 - C36 Fraction	11	11	7	✓	✓	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
METALS ANALYSIS/ALS/EG035F	Mercury	9	9	7	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	-	-
WET CHEMISTRY AND PREPARATION/ALS/EK086	Sulfite as SO3 2-	9	9	7	×	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	1	1	-	-
WET CHEMISTRY AND PREPARATION/ALS/EK085M	Sulfide as S2-	7	7	5	×	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
METALS ANALYSIS/ALS/ED093F	Calcium	9	9	7	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	0	1	2	-	-
	Magnesium	9	9	7	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	0	1	2	-	-
	Potassium	9	9	7	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	0	1	2	-	-
	Sodium	9	9	7	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	0	1	2	-	-

NOTES:

(a) ✓ - holding times are within project guideline limits.

× - holding times exceed project guideline limits.

(b) ✓ - Limits of reporting (LORs) comply with project specifications.

× - LORs do not comply with project specifications.

NA - Not Applicable

Site Name: waterfront Precinct
Project No. 42213719
Project Manager:Tim Smith
Matrix: Groundwater
Laboratory: ALS Environmental
Batch File Number: EP1201888

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
METALS ANALYSIS/ALS/EG020F	Arsenic	10	10	8	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
	Cadmium	10	10	8	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
	Chromium	10	10	8	✓	×	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
	Copper	10	10	8	✓	×	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
	Lead	10	10	8	✓	×	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
	Manganese	10	10	8	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
	Nickel	10	10	8	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
	Vanadium	10	10	8	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
	Zinc	10	10	9	✓	×	1	1	0	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
SEMIVOLATILES ANALYSIS/ALS/EP033	Methane	10	10	10	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	1	1	1	-	-
METALS ANALYSIS/ALS/ED040F	Sulfur as S	10	10	10	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	-	-
METALS ANALYSIS/ALS/EG035F	Mercury	10	10	8	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
WET CHEMISTRY AND PREPARATION/ALS/EK086	Sulfite as SO3 2-	10	10	10	×	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	0	1	1	-	-
METALS ANALYSIS/ALS/ED093F	Calcium	10	10	10	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	-	-
	Magnesium	10	10	10	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	-	-
	Potassium	10	10	10	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	-	-
	Sodium	10	10	10	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	-	-
NON-METALS INSTRUMENTS/ALS/ED045G	Chloride	10	10	10	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
PHYSICAL CHEMISTRY/ALS/EA015	Total Dissolved Solids @180°C	10	10	10	×	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	0	1	1	-	-
NON-METALS INSTRUMENTS/ALS/ED041G	Sulfate as SO4 - Turbidimetric	10	10	10	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	1	1	1	-	-
NON-METALS INSTRUMENTS/ALS/EN055	Total Anions	10	10	10	✓	✓	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	1	0	-	-
	Total Cations	10	10	10	✓	✓	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	1	0	-	-
SEMIVOLATILES/ALS/EP080/071	>C10 - C16 Fraction	12	12	10	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	2	0	1	0	1	1	-	-
	>C16 - C34 Fraction	12	12	10	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	2	0	1	0	1	1	-	-
	>C34 - C40 Fraction	12	12	10	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	2	0	1	0	1	1	-	-
	C10 - C14 Fraction	12	12	10	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	2	0	1	0	1	1	-	-
	C15 - C28 Fraction	12	12	10	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	2	0	1	0	1	1	-	-
	C29 - C36 Fraction	12	12	10	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	2	0	1	0	1	1	-	-
NON-METALS INSTRUMENTS/ALS/ED037P	Bicarbonate Alkalinity as CaCO3	10	10	10	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	0	1	1	-	-
	Carbonate Alkalinity as CaCO3	10	10	10	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	0	1	1	-	-
	Hydroxide Alkalinity as CaCO3	10	10	10	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	0	1	1	-	-
	Total Alkalinity as CaCO3	10	10	10	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	0	1	1	-	-
VOLATILES/ALS/EP080	Benzene	12	12	10	✓	✓	1	1	1	1	0	0	1	2	0	0	0	0	2	2	1	1	1	2	✓	✓
	Ethylbenzene	12	12	10	✓	✓	1	1	1	1	0	0	1	2	0	0	0	0	2	2	1	0	1	2	✓	✓
	meta- & para-Xylene	12	12	10	✓	✓	1	1	1	1	0	0	1	2	0	0	0	0	2	2	1	0	1	2	✓	✓
	Naphthalene	12	12	8	✓	✓	1	1	1	1	0	0	1	2	0	0	0	0	2	2	1	0	1	2	✓	✓
	ortho-Xylene	12	12	10	✓	✓	1	1	1	1	0	0	1	2	0	0	0	0	2	2	1	0	1	2	✓	✓
	Toluene	12	12	10	✓	✓	1	1	1	1	0	0	1	2	0	0	0	0	2	2	1	1	1	2	✓	✓
VOLATILES/ALS/EP080/071	C6 - C10 Fraction	13	13	10	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	2	2	1	1	1	1	✓	✓
	C6 - C9 Fraction	13	13	10	✓	✓	1	1	1	1	1	1	1	1	0	0	0	0	2	2	1	1	1	1	✓	✓
SEMIVOLATILES/ALS/EP075(SIM)B	Acenaphthene	8	8	6	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Anthracene	8	8	6	×	×	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Benz(a)anthracene	8	8	6	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Benzo(a)pyrene	8	8	6	×	×	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Benzo(b)fluoranthene	8	8	6	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Benzo(g,h,i)perylene	8	8	6	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Benzo(k)fluoranthene	8	8	6	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Chrysene	8	8	6	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Dibenz(a,h)anthracene	8	8	6	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Fluoranthene	8	8	6	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Fluorene	8	8	6	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Indeno(1,2,3-cd)pyrene	8	8	6	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Naphthalene	8	8	4	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Phenanthrene	8	8	6	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓
	Pyrene	8	8	6	×	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	✓	✓

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
VOLATILES/ALS/EP074C	Carbon disulfide	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
VOLATILES/ALS/EP074E	1,1,1,2-Tetrachloroethane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,1,1-Trichloroethane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,1,2,2-Tetrachloroethane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,1,2-Trichloroethane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,1-Dichloroethane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,1-Dichloroethene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	✓	✓
	1,1-Dichloropropylene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,2,3-Trichloropropane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,2-Dibromo-3-chloropropane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,2-Dichloroethane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,3-Dichloropropane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Bromomethane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Carbon Tetrachloride	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Chloroethane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Chloromethane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	cis-1,2-Dichloroethene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	cis-1,4-Dichloro-2-butene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Dibromomethane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Dichlorodifluoromethane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Hexachlorobutadiene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Iodomethane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Pentachloroethane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Tetrachloroethene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	trans-1,2-Dichloroethene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	trans-1,4-Dichloro-2-butene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Trichloroethene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	✓	✓
	Trichlorofluoromethane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Vinyl chloride	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
VOLATILES/ALS/EP074D	1,2-Dibromoethane (EDB)	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,2-Dichloropropane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	2,2-Dichloropropane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	cis-1,3-Dichloropropylene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	trans-1,3-Dichloropropylene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
VOLATILES/ALS/EP074G	Bromodichloromethane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Bromoform	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Chloroform	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Dibromochloromethane	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
VOLATILES/ALS/EP074A	1,2,4-Trimethylbenzene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,3,5-Trimethylbenzene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Isopropylbenzene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	n-Butylbenzene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	n-Propylbenzene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	p-Isopropyltoluene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	sec-Butylbenzene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Styrene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	tert-Butylbenzene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
VOLATILES/ALS/EP074B	2-Butanone (MEK)	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	2-Hexanone (MBK)	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	4-Methyl-2-pentanone (MIBK)	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Vinyl Acetate	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
VOLATILES/ALS/EP074F	1,2,3-Trichlorobenzene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,2,4-Trichlorobenzene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,2-Dichlorobenzene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,3-Dichlorobenzene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	1,4-Dichlorobenzene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	2-Chlorotoluene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	4-Chlorotoluene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Bromobenzene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	1	✓	✓
	Chlorobenzene	6	6	6	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	✓	✓
NON-METALS INSTRUMENTS/ALS/EK085MI	Sulfide as S2-	10	10	10	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	0	1	1	-	-
NON-METALS INSTRUMENTS/ALS/EG051G	Ferrous Iron	10	10	10	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	1	1	1	-	-
NON-METALS INSTRUMENTS/ALS/EG053FG-MS	Ferric Iron	10	10	10	✓	✓	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	1	0	-	-
NON-METALS INSTRUMENTS/ALS/EK057G	Nitrite as N	10	10	10	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
NON-METALS INSTRUMENTS/ALS/EK059G	Nitrite + Nitrate as N	10	10	10	✓	✓	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
METALS ANALYSIS/ALS/EG035T	Mercury	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
METALS ANALYSIS/ALS/EG020T	Arsenic	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
	Cadmium	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
	Chromium	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
	Copper	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
	Lead	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
	Manganese	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
	Nickel	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
	Vanadium	2	2	0	✓	✓	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-
	Zinc	2	2	1	✓	✓	1	1	0	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	-	-

NOTES:

(a) ✓ - holding times are within project guideline limits.

× - holding times exceed project guideline limits.

(b) ✓ - Limits of reporting (LORs) comply with project specifi

× - LORs do not comply with project specifications.

NA - Not Applicable

Site Name:Waterfront Precinct
Project No. 42213719
Project Manager: Tim Smith
Matrix: Groundwater
Laboratory: ALS Environmental & SGS
Batch File Number: ES1205892 & SE106317

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/ED045G	Chloride	7	7	5	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
METALS ANALYSIS/ALS/ED093F	Calcium	7	7	5	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
	Magnesium	7	7	5	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
	Potassium	7	7	5	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
	Sodium	7	7	5	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/ED037P	Bicarbonate Alkalinity as CaCO3	7	7	5	✓	✓	0	0	0	0	0	0	1	0	1	1	1	1	1	2	1	0	1	0	-	-
	Carbonate Alkalinity as CaCO3	7	7	5	✓	✓	0	0	0	0	0	0	1	0	1	1	1	1	1	2	1	0	1	0	-	-
	Hydroxide Alkalinity as CaCO3	7	7	5	✓	✓	0	0	0	0	0	0	1	0	1	1	1	1	1	2	1	0	1	0	-	-
	Total Alkalinity as CaCO3	7	7	5	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/EN055	Total Anions	6	6	5	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	0	1	0	1	0	-	-
	Total Cations	6	6	5	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	0	1	0	1	0	-	-
WET CHEMISTRY AND PREPARATION/ALS/EK085N	Sulfide as S2-	7	7	5	×	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	2	1	2	-	-
WET CHEMISTRY AND PREPARATION/ALS/EK086	Sulfite as SO3 2-	6	6	4	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	0	1	1	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/EP005	Total Organic Carbon	6	6	5	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
SEMIVOLATILES ANALYSIS/ALS/EP033	Methane	7	7	5	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
SEMIVOLATILES ANALYSIS/ALS/EP080/071	>C10 - C16 Fraction	6	6	5	✓	✓	1	0	1	0	0	0	1	1	1	1	0	0	1	0	1	0	1	1	-	-
	>C16 - C34 Fraction	6	6	5	✓	✓	1	0	1	0	0	0	1	1	1	1	0	0	1	0	1	0	1	1	-	-
	>C34 - C40 Fraction	6	6	5	✓	✓	1	0	1	0	0	0	1	1	1	1	0	0	1	0	1	0	1	1	-	-
	C10 - C14 Fraction	7	7	5	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	-	-
	C15 - C28 Fraction	7	7	5	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	-	-
	C29 - C36 Fraction	7	7	5	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	-	-
VOLATILES ANALYSIS/ALS/EP080	Benzene	7	7	5	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	Ethylbenzene	7	7	5	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	meta- & para-Xylene	7	7	5	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	Naphthalene	7	7	5	✓	✓	1	0	1	0	0	0	1	1	1	2	1	1	1	2	1	1	1	1	✓	✓
	ortho-Xylene	7	7	5	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
	Toluene	7	7	5	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
VOLATILES ANALYSIS/ALS/EP080/071	C6 - C10 Fraction	6	6	5	✓	✓	1	0	1	0	1	0	1	1	1	1	0	0	1	2	1	1	1	1	✓	✓
	C6 - C9 Fraction	7	7	5	✓	✓	1	0	1	0	1	0	1	1	1	1	1	1	1	2	1	1	1	1	✓	✓
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/ED041G	Sulfate as SO4 - Turbidimetric	7	7	5	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
METALS ANALYSIS/ALS/EG020F	Arsenic	7	7	5	✓	✓	1	0	1	0	0	0	1	2	1	1	1	1	1	2	1	1	1	2	-	-
	Cadmium	7	7	5	✓	✓	1	0	1	0	0	0	1	2	1	1	1	1	1	2	1	1	1	2	-	-
	Chromium	7	7	5	✓	×	1	0	1	0	0	0	1	2	1	1	1	1	1	2	1	1	1	2	-	-
	Copper	7	7	5	✓	×	1	0	1	0	0	0	1	2	1	1	1	1	1	2	1	1	1	2	-	-
	Lead	7	7	5	✓	×	1	0	1	0	0	0	1	2	1	1	1	1	1	2	1	1	1	2	-	-
	Manganese	7	7	5	✓	✓	1	0	1	0	0	0	1	2	1	1	1	1	1	2	1	1	1	2	-	-
	Nickel	7	7	5	✓	✓	1	0	1	0	0	0	1	2	1	1	1	1	1	2	1	1	1	2	-	-
	Vanadium	7	7	5	✓	✓	1	0	1	0	0	0	1	2	1	1	1	1	1	2	1	1	1	2	-	-
	Zinc	7	7	5	✓	×	1	0	1	0	0	0	1	2	1	1	1	1	1	2	1	1	1	2	-	-
METALS ANALYSIS/ALS/EG035F	Mercury	7	7	5	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
SEMIVOLATILES ANALYSIS/ALS/EP075(SIM)B	Acenaphthene	4	4	3	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Acenaphthylene	4	4	3	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Anthracene	4	4	3	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Benz(a)anthracene	4	4	3	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Benz(a)anthracene	4	4	3	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Benzo(a)pyrene	4	4	3	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Benzo(g,h,i)perylene	4	4	3	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Benzo(k)fluoranthene	4	4	3	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Chrysene	4	4	3	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Dibenz[a,h]anthracene	4	4	3	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Fluoranthene	4	4	3	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Fluorene	4	4	3	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Indeno(1,2,3-cd)pyrene	4	4	3	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Naphthalene	4	4	3	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Phenanthrene	4	4	3	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
	Pyrene	4	4	3	✓	✓	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	✓	✓
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/EK057G	Nitrite as N	7	7	5	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/EK059G	Nitrite + Nitrate as N	7	7	5	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
INSTRUMENT LABORATORY (NON-METALLICS)/ALS/EG051G	Ferrous Iron	7	7	5	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	1	-	-
METALS ANALYSIS/ALS/ED040F	Sulfur as S	7	7	5	✓	✓	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	1	1	-	-
WET CHEMISTRY AND PREPARATION/ALS/EA015	Total Dissolved Solids @180°C	7	7	5	✓	✓	0	0	0	0	0	0	1	2	1	1	1	1	1	4	1	0	1	2	-	-

Analytical Method	Analytical Parameter	Number of Tests Requested	Number of Tests Reported	Number of Primary Samples	Holding Times (a)	Limits of Reporting (b)	Field Blank (1 per day)		Rinsate Blank (1 per day)		Trip Blank (1 per esky with VOCs)		Method Blank (1 per batch)		Intra-Laboratory Duplicate Sample (1 in 20)		Inter-Laboratory Duplicate Sample (1 in 20)		Lab Duplicate (1 in 10)		Matrix Spike (1 in 20)		LCS (1 per batch)		Surrogates (GC-MS organics)	
							Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Number Required	Number Reported	Reported	OK
VOLATILES ANALYSIS/ALS/EP074E	1,1,1,2-Tetrachloroethane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	1,1,1-Trichloroethane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	1,1,2,2-Tetrachloroethane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	1,1,2-Trichloroethane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	1,1-Dichloroethane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	1,1-Dichloroethene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	1	1	1	-	-
	1,1-Dichloropropylene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	1,2,3-Trichloropropane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	1,2-Dibromo-3-chloropropane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	1,2-Dichloroethane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	1,3-Dichloropropane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Bromomethane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Carbon Tetrachloride	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Chloroethane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Chloromethane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	cis-1,2-Dichloroethene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	cis-1,4-Dichloro-2-butene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Dibromomethane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Dichlorodifluoromethane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Hexachlorobutadiene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Iodomethane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Pentachloroethane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Tetrachloroethene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	trans-1,2-Dichloroethene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	trans-1,4-Dichloro-2-butene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Trichloroethene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	1	1	1	-	-
	Trichlorofluoromethane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Vinyl chloride	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
VOLATILES ANALYSIS/ALS/EP074G	Carbon disulfide	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
VOLATILES ANALYSIS/ALS/EP074G	Bromodichloromethane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Bromoform	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Chloroform	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Dibromochloromethane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
VOLATILES ANALYSIS/ALS/EP074D	1,2-Dibromoethane (EDB)	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	1,2-Dichloropropane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	2,2-Dichloropropane	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	cis-1,3-Dichloropropylene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	trans-1,3-Dichloropropylene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
VOLATILES ANALYSIS/ALS/EP074B	2-Butanone (MEK)	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	2-Hexanone (MBK)	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	4-Methyl-2-pentanone (MIBK)	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Vinyl Acetate	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
VOLATILES ANALYSIS/ALS/EP074F	1,2,3-Trichlorobenzene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	1,2,4-Trichlorobenzene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	1,2-Dichlorobenzene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	1,3-Dichlorobenzene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	1,4-Dichlorobenzene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	2-Chlorotoluene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	4-Chlorotoluene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Bromobenzene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Chlorobenzene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	1	1	1	-	-
VOLATILES ANALYSIS/ALS/EP074A	1,2,4-Trimethylbenzene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	1,3,5-Trimethylbenzene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Isopropylbenzene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	n-Butylbenzene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	n-Propylbenzene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	p-Isopropyltoluene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	sec-Butylbenzene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	Styrene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
	tert-Butylbenzene	4	4	3	✓	✓	0	0	0	0	0	0	1	1	1	1	1	0	1	2	1	0	1	1	-	-
METALS ANALYSIS/ALS/EG053FG-MS	Ferric Iron	7	7	5	✓	✓	0	0	0	0	0	0	1	0	1	1	1	0	1	0	1	0	1	0	-	-

NOTES:

(a) ✓ - holding times are within project guideline limits.
✗ - holding times exceed project guideline limits.

(b) ✓ - Limits of reporting (LORs) comply with project specifications.
✗ - LORs do not comply with project specifications.

NA - Not Applicable

Groundwater Analytical Results - Field Blanks
March 2012

Sample ID	QCA01	QCB01	QCC01	QCA01_080312	QCB01_080312	QCC01_080312
Date Sampled	7/03/2012	7/03/2012	7/03/2012	9/03/2012	9/03/2012	9/03/2012
Sample Type	Trip Blank	Field Blank	Rinsate Blank	Trip Blank	Field Blank	Rinsate Blank

Analyte	LOR	Units	ANZECC 2000 - Marine Water - 95%	ANZECC 2000 - Irrigation - LTU						
Total Petroleum Hydrocarbons										
C6-C9 fraction	20	µg/L			<20	<20	<20	<20	<20	<20
C10-C14 fraction	50	µg/L			-	<50	<50	-	<50	<50
C15-C28 fraction	100	µg/L			-	<100	<100	-	<100	<100
C29-C36 fraction	50	µg/L			-	<50	<50	-	<50	<50
C10 - C36 Fraction (sum)	50	µg/L			-	<50	<50	-	<50	<50
C10-C36 fraction		µg/L			-	<200	<200	-	<200	<200
C6-C36 fraction		µg/L			-	<220	<220	-	<220	<220
BTEX Compounds										
Benzene	1	µg/L	700		<1	<1	<1	-	<1	<1
Toluene	2	µg/L			<5	<5	<5	-	<2	<2
Ethylbenzene	2	µg/L			<2	<2	<2	-	<2	<2
m&p-Xylene	2	µg/L			<2	<2	<2	-	<2	<2
o-Xylene	2	µg/L			<2	<2	<2	-	<2	<2
Total Xylenes		µg/L			<4	<4	<4	-	<2	<4
Sum of BTEX	1	µg/L			<1	<1	<1	-	<1	<1
Total BTEX		µg/L			<12	<12	<12	-	<9	<9
Naphthalene	1	µg/L	70		-	-	-	-	<1	<1
Metals (Dissolved)										
Arsenic	0.001	mg/L		0.1	-	-	-	-	<0.001	<0.001
Cadmium	0.0001	mg/L	0.0055	0.01	-	-	-	-	<0.0001	<0.0001
Chromium	0.001	mg/L	0.0044	0.1	-	-	-	-	<0.001	**0.051**
Copper	0.001	mg/L	0.0013	0.2	-	-	-	-	<0.001	<0.001
Lead	0.001	mg/L	0.0044	2	-	-	-	-	<0.001	<0.001
Manganese	0.001	mg/L		0.2	-	-	-	-	<0.001	**0.006**
Nickel	0.001	mg/L	0.07	0.2	-	-	-	-	<0.001	**0.025**
Vanadium	0.01	mg/L	0.1	0.1	-	-	-	-	<0.01	<0.01
Zinc	0.005	mg/L	0.015	2	-	-	-	-	<0.005	<0.005

Groundwater Analytical Results - Field Blanks
March 2012

Sample ID	QCA01	QCB01	QCC01	QCA01_080312	QCB01_080312	QCC01_080312
Date Sampled	7/03/2012	7/03/2012	7/03/2012	9/03/2012	9/03/2012	9/03/2012
Sample Type	Trip Blank	Field Blank	Rinsate Blank	Trip Blank	Field Blank	Rinsate Blank

Analyte	LOR	Units	ANZECC 2000 - Marine Water - 95%	ANZECC 2000 - Irrigation - LTU						
Polynuclear Aromatic Hydrocarbons										
Naphthalene	7	µg/L	70		<5	<5	<5	-	-	-
Acenaphthylene	1	µg/L			-	<1	<1	-	<1	<1
Acenaphthene	1	µg/L			-	<1	<1	-	<1	<1
Fluorene	1	µg/L			-	<1	<1	-	<1	<1
Phenanthrene	1	µg/L			-	<1	<1	-	<1	<1
Anthracene	1	µg/L			-	<1	<1	-	<1	<1
Fluoranthene	1	µg/L			-	<1	<1	-	<1	<1
Pyrene	1	µg/L			-	<1	<1	-	<1	<1
Benz(a)anthracene	1	µg/L			-	<1	<1	-	<1	<1
Chrysene	1	µg/L			-	<1	<1	-	<1	<1
Benzo(b)fluoranthene	1	µg/L			-	<1	<1	-	<1	<1
Benzo(k)fluoranthene	1	µg/L			-	<1	<1	-	<1	<1
Benzo(a)pyrene	0.5	µg/L			-	<0.5	<0.5	-	<0.5	<0.5
Indeno(1,2,3-cd)pyrene	1	µg/L			-	<1	<1	-	<1	<1
Dibenz(a,h)anthracene	1	µg/L			-	<1	<1	-	<1	<1
Benzo(g,h,i)perylene	1	µg/L			-	<1	<1	-	<1	<1
Sum of polycyclic aromatic hydrocarbons	0.5	µg/L			-	<0.5	<0.5	-	<0.5	<0.5
Chlorinated Aromatic Compounds										
1,2,3-Trichlorobenzene	5	µg/L			<5	<5	<5	-	-	-
1,2,4-Trichlorobenzene	5	µg/L	80		<5	<5	<5	-	-	-
1,2,4-Trimethylbenzene	5	µg/L			<5	<5	<5	-	-	-
1,2-Dichlorobenzene	5	µg/L			<5	<5	<5	-	-	-
1,3-Dichlorobenzene	5	µg/L			<5	<5	<5	-	-	-
1,4-Dichlorobenzene	5	µg/L			<5	<5	<5	-	-	-
2-Chlorotoluene	5	µg/L			<5	<5	<5	-	-	-
4-Chlorotoluene	5	µg/L			<5	<5	<5	-	-	-
Bromobenzene	5	µg/L			<5	<5	<5	-	-	-
Chlorobenzene	5	µg/L			<5	<5	<5	-	-	-

Groundwater Analytical Results - Field Blanks
March 2012

Sample ID	QCA01	QCB01	QCC01	QCA01_080312	QCB01_080312	QCC01_080312
Date Sampled	7/03/2012	7/03/2012	7/03/2012	9/03/2012	9/03/2012	9/03/2012
Sample Type	Trip Blank	Field Blank	Rinsate Blank	Trip Blank	Field Blank	Rinsate Blank

Analyte	LOR	Units	ANZECC 2000 - Marine Water - 95%	ANZECC 2000 - Irrigation - LTU						
Chlorinated Aliphatic Compounds										
1,1,1,2-Tetrachloroethane	5	µg/L			<5	<5	<5	-	-	-
1,1,1-Trichloroethane	5	µg/L			<5	<5	<5	-	-	-
1,1,2,2-Tetrachloroethane	5	µg/L			<5	<5	<5	-	-	-
1,1,2-Trichloroethane	5	µg/L	1900		<5	<5	<5	-	-	-
1,1-Dichloroethane	5	µg/L			<5	<5	<5	-	-	-
1,1-Dichloroethene	5	µg/L			<5	<5	<5	-	-	-
1,1-Dichloropropylene	5	µg/L			<5	<5	<5	-	-	-
1,2,3-Trichloropropane	5	µg/L			<5	<5	<5	-	-	-
1,2-Dibromo-3-chloropropane	5	µg/L			<5	<5	<5	-	-	-
1,2-Dichloroethane	5	µg/L			<5	<5	<5	-	-	-
1,3-Dichloropropane	5	µg/L			<5	<5	<5	-	-	-
Bromomethane	50	µg/L			<50	<50	<50	-	-	-
Carbon Tetrachloride	5	µg/L			<5	<5	<5	-	-	-
Chloroethane	50	µg/L			<50	<50	<50	-	-	-
Chloromethane	50	µg/L			<50	<50	<50	-	-	-
cis-1,2-Dichloroethene	5	µg/L			<5	<5	<5	-	-	-
cis-1,4-Dichloro-2-butene	5	µg/L			<5	<5	<5	-	-	-
Dibromomethane	5	µg/L			<5	<5	<5	-	-	-
Dichlorodifluoromethane	50	µg/L			<50	<50	<50	-	-	-
Hexachlorobutadiene	5	µg/L			<5	<5	<5	-	-	-
Iodomethane	5	µg/L			<5	<5	<5	-	-	-
Pentachloroethane	5	µg/L			<5	<5	<5	-	-	-
Tetrachloroethene	5	µg/L			<5	<5	<5	-	-	-
trans-1,2-Dichloroethene	5	µg/L			<5	<5	<5	-	-	-
trans-1,4-Dichloro-2-butene	5	µg/L			<5	<5	<5	-	-	-
Trichloroethene	5	µg/L			<5	<5	<5	-	-	-
Trichlorofluoromethane	50	µg/L			<50	<50	<50	-	-	-
Vinyl chloride	50	µg/L			<50	<50	<50	-	-	-
Fumigants										
1,2-Dibromomethane	5	µg/L			<5	<5	<5	-	-	-
1,2-Dichloropropane	5	µg/L			<5	<5	<5	-	-	-
2,2-Dichloropropane	5	µg/L			<5	<5	<5	-	-	-
cis-1,3-dichloropropene	5	µg/L			<5	<5	<5	-	-	-
trans-1,3-dichloropropene	5	µg/L			<5	<5	<5	-	-	-
Trihalomethanes										
Bromodichloromethane	5	µg/L			<5	<5	<5	-	-	-
Bromoform	5	µg/L			<5	<5	<5	-	-	-
Chloroform	5	µg/L			<5	<5	<5	-	-	-
Dibromochloromethane	5	µg/L			<5	<5	<5	-	-	-

Groundwater Analytical Results - Field Blanks
March 2012

Sample ID	QCA01	QCB01	QCC01	QCA01_080312	QCB01_080312	QCC01_080312
Date Sampled	7/03/2012	7/03/2012	7/03/2012	9/03/2012	9/03/2012	9/03/2012
Sample Type	Trip Blank	Field Blank	Rinsate Blank	Trip Blank	Field Blank	Rinsate Blank

Analyte	LOR	Units	ANZECC 2000 - Marine Water - 95%	ANZECC 2000 - Irrigation - LTU						
Monocyclic Aromatic Hydrocarbons										
Styrene	5	µg/L			<5	<5	<5	-	-	-
Isopropylbenzene	5	µg/L			<5	<5	<5	-	-	-
n-Butylbenzene	5	µg/L			<5	<5	<5	-	-	-
n-Propylbenzene	5	µg/L			<5	<5	<5	-	-	-
p-Isopropyltoluene	5	µg/L			<5	<5	<5	-	-	-
sec-Butylbenzene	5	µg/L			<5	<5	<5	-	-	-
tert-Butylbenzene	5	µg/L			<5	<5	<5	-	-	-
1,3,5-Trimethylbenzene	5	µg/L			<5	<5	<5	-	-	-
Oxygenated Compounds										
4-Methyl-2-pentanone	50	µg/L			<50	<50	<50	-	-	-
Vinyl Acetate	50	µg/L			<50	<50	<50	-	-	-
2-Butanone (MEK)	50	µg/L			<50	<50	<50	-	-	-
2-Hexanone (MBK)	50	µg/L			<50	<50	<50	-	-	-
Sulfonated Compounds										
Carbon disulfide	5	µg/L			<5	<5	<5	-	-	-
Total Recoverable Hydrocarbons										
>C10 - C16 Fraction	100	µg/L			-	<100	<100	-	<100	<100
>C10 - C40 Fraction (sum)	100	µg/L			-	<100	<100	-	<100	<100
>C16 - C34 Fraction	100	µg/L			-	<100	<100	-	<100	<100
>C34 - C40 Fraction	100	µg/L			-	<100	<100	-	<100	<100
C6 - C10 Fraction	20	µg/L			<20	<20	<20	<20	<20	<20
C6 - C10 Fraction minus BTEX (F1)	20	µg/L			<20	<20	<20	-	<20	<20

Legend:

Exceeds the ANZECC/ARMCANZ, 2000, Trigger values for marine water ecosystems - Level of protection 95% species

Exceeds the ANZECC/ARMCANZ, 2000, Irrig

- Not analysed / not calculated

* LOR Exceeds Guideline Trigger Value

10°C check (3 samples)

1/6/2013 BA

Table ???
Groundwater Analytical Results - Analysis Results
Waterfront

Location	MW09	MW10	MW101	MW102	MW103	MW103	MW103	MW108	MW113	MW114	MW115	MW116	MW117	MW118	MW119	MW121	MW122
Sample ID	MW09	MW10	MW101	MW102	MW103	QAQC03	QAQC04	MW108	MW113	MW114	MW115	MW116	MW117	MW118	MW119	MW121	MW122
Date Sampled	6/03/2012	6/03/2012	9/03/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012	9/03/2012	12/03/2012	9/03/2012	9/03/2012	9/03/2012	7/03/2012	6/03/2012	7/03/2012	9/03/2012	7/03/2012
Sample Type	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	DupSeate Sample	TripScate Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample
Primary Sample ID	MW09	MW10	MW101	MW102	MW103	MW103	MW103	MW108	MW113	MW114	MW115	MW116	MW117	MW118	MW119	MW121	MW122

Analyte	LOR	Units	ANZECC 2000 - Marine Water - 95%	ANZECC 2000 - Irrigation - LTV																
Physico-Chemical Parameters																				
Ferric Iron	0.05	mg/L			-	-	<0.05	-	-	-	-	0.09	-	<0.05	0.15	18.1	-	-	-	0.13	-
Sulfide as S2-	0.1	mg/L			-	-	<0.1	-	-	-	-	<0.1	-	<0.1	<0.1	<0.1	-	-	-	<0.1	-
Sulfur as S	1	mg/L			-	-	78	-	-	-	-	<1	-	115	30	79	-	-	-	27	-
Total Dissolved Solids	10	mg/L			30400	25600	-	7060	192	196	241	-	2480	-	-	-	328	450	1210	-	29200
Total Petroleum Hydrocarbons																				
C6-C9 fraction	20	µg/L			<20	<20	<20	<20	<20	<20	-	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
C10-C14 fraction	50	µg/L			<50	<50	<50	<50	<50	<50	-	90	<50	<50	<50	<50	<50	60	<50	<50	<50
C15-C28 fraction	100	µg/L			<100	<100	<100	<100	<100	<100	-	1310	<100	<100	200	150	<100	760	<100	<100	<100
C29-C36 fraction	50	µg/L			<50	<50	<50	<50	<50	<50	-	140	<50	<50	<50	<50	<50	<50	<50	<50	<50
C10 - C36 Fraction (sum)	50	µg/L			<50	<50	<50	<50	<50	<50	-	1540	<50	<50	200	150	<50	820	<50	<50	<50
C10-C36 fraction		µg/L			<200	<200	<200	<200	<200	<200	-	1540	<200	<200	<300	<250	<200	<870	<200	<200	<200
C6-C36 fraction		µg/L			<220	<220	<220	<220	<220	<220	-	<1560	<220	<220	<320	<270	<220	<890	<220	<220	<220
BTEX Compounds																				
Benzene	1	µg/L	700		<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	2	µg/L			<5	<5	<2	<5	<5	<5	-	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5
Ethylbenzene	2	µg/L			<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
m&p-Xylene	2	µg/L			<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-Xylene	2	µg/L			<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Total Xylenes		µg/L			<4	<4	<4	<4	<4	<4	-	<4	<4	<4	<4	<2	<4	<4	<4	<4	<4
Sum of BTEX	1	µg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total BTEX		µg/L			<12	<12	<9	<12	<12	<12	-	<9	<12	<9	<9	<9	<12	<12	<12	<9	<12
Naphthalene	1	µg/L	70		-	-	<5	-	-	-	-	<5	-	<5	<5	<1	-	-	-	<1	-
Metals (Dissolved)																				
Ferric Iron	0.05	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	0.001	mg/L		0.1	<0.01	<0.01	0.003	<0.001	0.003	0.002	0.001	<0.001	<0.001	0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.01
Cadmium	0.0001	mg/L	0.0055	0.01	<0.001	<0.001	0.001	0.009	0.0054	0.0047	0.0055	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.001
Chromium	0.001	mg/L	0.0044	0.1	<0.01*	<0.01*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01*
Copper	0.001	mg/L	0.0013	0.2	<0.01*	<0.02*	0.005	0.011	0.003	0.05	0.052	<0.001	0.002	0.001	<0.001	<0.001	0.001	0.002	<0.001	0.002	<0.01*
Lead	0.001	mg/L	0.0044	2	<0.01	<0.01*	<0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01*
Manganese	0.001	mg/L		0.2	0.01	1.26	0.022	0.028	0.053	0.032	0.003	0.194	0.168	11.6	0.327	5.74	0.604	1.97	0.154	1.14	<0.01
Mercury	0.0001	mg/L	0.0004	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	0.001	mg/L	0.07	0.2	<0.01	<0.01	0.003	0.017	0.004	0.002	0.003	<0.001	0.002	0.007	0.002	0.003	0.006	0.007	0.001	0.006	<0.01
Vanadium	0.01	mg/L	0.1	0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
Zinc	0.005	mg/L	0.015	2	<0.05*	<0.05*	138	0.549	0.563	0.41	0.34	<0.005	0.033	0.007	0.006	0.019	0.006	0.012	<0.005	0.022	<0.05*
Ferrous Iron	0.05	mg/L			-	-	-	-	-	-	0.16	-	-	-	-	-	-	-	-	-	-
Metals (Total)																				
Total Iron	0.02	mg/L			-	-	-	-	-	-	0.16	-	-	-	-	-	-	-	-	-	-
Polynuclear Aromatic Hydrocarbons																				
Naphthalene	7	µg/L	70		<5	<1	-	<5	<7	<1	-	<5	-	-	-	<5	<5	<5	-	<5	
Acenaphthylene	1	µg/L			-	<1	-	-	<1	<1	-	-	-	-	<1	<1	-	<1	-	<1	-
Acenaphthene	1	µg/L			-	<1	-	-	<1	<1	-	-	-	-	<1	<1	-	<1	-	<1	-
Fluorene	1	µg/L			-	<1	-	-	<1	<1	-	-	-	-	<1	<1	-	<1	-	<1	-
Phenanthrene	1	µg/L			-	<1	-	-	<1	<1	-	-	-	-	<1	<1	-	<1	-	<1	-
Anthracene	1	µg/L			-	<1	-	-	<1	<1	-	-	-	-	<1	<1	-	<1	-	<1	-
Fluoranthene	1	µg/L			-	<1	-	-	<1	<1	-	-	-	-	<1	<1	-	<1	-	<1	-
Pyrene	1	µg/L			-	<1	-	-	<1	<1	-	-	-	-	<1	<1	-	<1	-	<1	-
Benz(a)anthracene	1	µg/L			-	<1	-	-	<1	<1	-	-	-	-	<1	<1	-	<1	-	<1	-
Chrysene	1	µg/L			-	<1	-	-	<1	<1	-	-	-	-	<1	<1	-	<1	-	<1	-
Benzo(b)fluoranthene	1	µg/L			-	<1	-	-	<1	<1	-	-	-	-	<1	<1	-	<1	-	<1	-
Benzo(k)fluoranthene	1	µg/L			-	<1	-	-	<1	<1	-	-	-	-	<1	<1	-	<1	-	<1	-
Benzo(a)pyrene	0.5	µg/L			-	<0.5	-	-	<1	<0.5	-	-	-	-	<0.5	<0.5	-	<0.5	-	<0.5	-
Indeno(1,2,3-cd)pyrene	1	µg/L			-	<1	-	-	<1	<1	-	-	-	-	<1	<1	-	<1	-	<1	-
Dibenz(a,h)anthracene	1	µg/L			-	<1	-	-	<1	<1	-	-	-	-	<1	<1	-	<1	-	<1	-
Benzo(g,h,i)perylene	1	µg/L			-	<1	-	-	<1	<1	-	-	-	-	<1	<1	-	<1	-	<1	-
Sum of polycyclic aromatic hydrocarbons	0.5	µg/L			-	<0.5	-	-	<0.5	<0.5	-	-	-	-	<0.5	<0.5	-	<0.5	-	<0.5	-
Chlorinated Aromatic Compounds																				
1,2,3-Trichlorobenzene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
1,2,4-Trichlorobenzene	5	µg/L	80		-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
1,2,4-Trimethylbenzene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
1,2-Dichlorobenzene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
1,3-Dichlorobenzene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
1,4-Dichlorobenzene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
2-Chlorotoluene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
4-Chlorotoluene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
Bromobenzene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
Chlorobenzene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
Chlorinated Aliphatic Compounds																				
1,1,1,2-Tetrachloroethane	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
1,1,1-Trichloroethane	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
1,1,2,2-Tetrachloroethane	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
1,1,2-Trichloroethane	5	µg/L	1900		-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
1,1-Dichloroethane	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
1,1-Dichloroethene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
1,1-Dichloropropylene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
1,2,3-Trichloropropane	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-

Table ???
Groundwater Analytical Results - Analysis Results
Waterfront

Location	MW09	MW10	MW101	MW102	MW103	MW103	MW103	MW108	MW113	MW114	MW115	MW116	MW117	MW118	MW119	MW121	MW122
Sample ID	MW09	MW10	MW101	MW102	MW103	OAQC03	OAQC04	MW108	MW113	MW114	MW115	MW116	MW117	MW118	MW119	MW121	MW122
Date Sampled	6/03/2012	6/03/2012	9/03/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012	9/03/2012	12/03/2012	9/03/2012	9/03/2012	9/03/2012	7/03/2012	6/03/2012	7/03/2012	9/03/2012	7/03/2012
Sample Type	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Duplicate Sample	Triplicate Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	PrimarySample	Primary Sample	Primary Sample
Primary Sample ID	MW09	MW10	MW101	MW102	MW103	MW103	MW103	MW108	MW113	MW114	MW115	MW116	MW117	MW118	MW119	MW121	MW122

Analyte	LOR	Units	ANZECC 2000 - Marine Water - 95%	ANZECC 2000 - Irrigation - LTU																	
1,2-Dibromo-3-chloropropane	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
1,2-Dichloroethane	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
1,3-Dichloropropane	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
Bromomethane	50	µg/L			-	<50	-	-	<50	<50	-	-	-	-	-	-	-	<50	-	-	-
Carbon Tetrachloride	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
Chloroethane	50	µg/L			-	<50	-	-	<50	<50	-	-	-	-	-	-	-	<50	-	-	-
Chloromethane	50	µg/L			-	<50	-	-	<50	<50	-	-	-	-	-	-	-	<50	-	-	-
cis-1,2-Dichloroethene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
cis-1,4-Dichloro-2-butene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
Dibromomethane	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
Dichlorodifluoromethane	50	µg/L			-	<50	-	-	<50	<50	-	-	-	-	-	-	-	<50	-	-	-
Hexachlorobutadiene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
Iodomethane	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
Pentachloroethane	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
Tetrachloroethene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
trans-1,2-Dichloroethene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
trans-1,4-Dichloro-2-butene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
Trichloroethene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	-	-	-	<5	-	-	-
Trichlorofluoromethane	50	µg/L			-	<50	-	-	<50	<50	-	-	-	-	-	-	-	<50	-	-	-
Vinyl chloride	50	µg/L			-	<50	-	-	<50	<50	-	-	-	-	-	-	-	<50	-	-	-
Fumigants																					
1,2-Dibromomethane	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
1,2-Dichloropropane	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
2,2-Dichloropropane	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
cis-1,3-dichloropropene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
trans-1,3-dichloropropene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
Trihalomethanes																					
Bromodichloromethane	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
Bromoform	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
Chloroform	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
Dibromochloromethane	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
Major Ions																					
Calcium	1	mg/L			371	309	69	201	32	33	37	50	80	179	80	112	5	53	12	56	359
Chloride	1	mg/L			16300	13700	-	3460	26	23	-	-	1240	-	-	-	143	36	530	-	16200
Magnesium	1	mg/L			1110	880	73	245	4	4	4.1	88	83	258	620	98	10	18	11	45	1070
Potassium	1	mg/L			358	305	16	82	11	11	9.6	56	31	47	324	52	15	8	11	24	355
Sodium	1	mg/L			9890	8340	450	1950	22	17	12	856	751	1310	6020	1180	90	51	519	267	9720
Total Anions	0.01	meq/l			513	429	-	114	3.07	2.93	-	-	41.5	-	-	-	5.44	6.62	21.4	-	510
Total Cations	0.01	meq/l			549	459	-	117	3.1	3	-	-	44.3	-	-	-	5.37	6.55	25.7	-	538
Ionic Balance	0.01	%			3.42	3.27	-	1.11	1.46	1.18	-	-	3.2	-	-	-	0.68	0.54	4.57	-	2.68
Sulfate as SO4 - Turbidimetric	1	mg/L			2410	1790	240	625	28	26	-	2	157	246	82	221	37	36	152	80	2430
Sulfide as S2-	0.1	mg/L			<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	-	-	-	-	-	-	<0.1	<0.1
Sulfite as SO3 2-	2	mg/L			<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sulfur as S	1	mg/L			833	615	-	231	8	8	-	-	56	-	-	-	9	10	49	-	787
Monocyclic Aromatic Hydrocarbons																					
Benzene	1	µg/L	700		-	-	-	-	-	-	-	-	-	-	<1	<1	-	-	-	<1	-
Toluene	2	µg/L			-	-	-	-	-	-	-	-	-	-	<2	<2	-	-	-	<2	-
Ethylbenzene	2	µg/L			-	-	-	-	-	-	-	-	-	-	<2	<2	-	-	-	<2	-
m&p-Xylene	2	µg/L			-	-	-	-	-	-	-	-	-	-	<2	<2	-	-	-	<2	-
o-Xylene	2	µg/L			-	-	-	-	-	-	-	-	-	-	<2	<2	-	-	-	<2	-
Styrene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
Isopropylbenzene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
n-Butylbenzene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
n-Propylbenzene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
p-Isopropyltoluene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
sec-Butylbenzene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
tert-Butylbenzene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
1,2,4-Trimethylbenzene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
1,3,5-Trimethylbenzene	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
Oxygenated Compounds																					
4-Methyl-2-pentanone	50	µg/L			-	<50	-	-	<50	<50	-	-	-	-	<50	<50	-	<50	-	<50	-
Vinyl Acetate	50	µg/L			-	<50	-	-	<50	<50	-	-	-	-	<50	<50	-	<50	-	<50	-
2-Butanone (MEK)	50	µg/L			-	<50	-	-	<50	<50	-	-	-	-	<50	<50	-	<50	-	<50	-
2-Hexanone (MBK)	50	µg/L			-	<50	-	-	<50	<50	-	-	-	-	<50	<50	-	<50	-	<50	-
Sulfonated Compounds																					
Carbon disulfide	5	µg/L			-	<5	-	-	<5	<5	-	-	-	-	<5	<5	-	<5	-	<5	-
Naphthalene																					
Naphthalene	7	µg/L	70		-	-	-	-	-	-	-	-	-	-	<7	<7	-	-	-	<7	-
Miscellaneous Compounds																					
Chloride	1	mg/L			-	-	932	-	-	-	27	1590	-	2690	12200	1950	-	-	-	571	-
Ionic Balance	0.01	%			-	-	4.2	-	-	-	-	4.7	-	0.24	5.47	2.83	-	-	-	5.08	-
Methane	0.005	mg/L			-	-	-	-	-	-	0.0059	-	-	-	-	-	-	-	-	-	-

Table ???
Groundwater Analytical Results - Analysis Results
Waterfront

Location	MW09	MW10	MW101	MW102	MW103	MW103	MW103	MW108	MW113	MW114	MW115	MW116	MW117	MW118	MW119	MW121	MW122
Sample ID	MW09	MW10	MW101	MW102	MW103	QAQC03	QAQC04	MW108	MW113	MW114	MW115	MW116	MW117	MW118	MW119	MW121	MW122
Date Sampled	6/03/2012	6/03/2012	9/03/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012	9/03/2012	12/03/2012	9/03/2012	9/03/2012	9/03/2012	7/03/2012	6/03/2012	7/03/2012	9/03/2012	7/03/2012
Sample Type	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Duplicate Sample	Triplicate Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample
Primary Sample ID	MW09	MW10	MW101	MW102	MW103	MW103	MW103	MW108	MW113	MW114	MW115	MW116	MW117	MW118	MW119	MW121	MW122

Analyte	LOR	Units	ANZECC 2000 - Marine Water - 95%	ANZECC 2000 - Irrigation - LTV																
Nitrate (as NO3)	0.02	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite as N	0.005	mg/L			-	-	-	-	-	-	0.005	-	-	-	-	-	-	-	-	-
Nitrite, NO2 as NO2	0.005	mg/L			-	-	-	-	-	-	0.019	-	-	-	-	-	-	-	-	-
Sulphate	0.1	mg/L			-	-	-	-	-	-	27	-	-	-	-	-	-	-	-	-
Sulphide	0.5	mg/L			-	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-
Sulphite as SO3-	2	mg/L			-	-	-	-	-	-	<2	-	-	-	-	-	-	-	-	-
Sulphur as S	0.1	mg/L			-	-	-	-	-	-	7.9	-	-	-	-	-	-	-	-	-
Total Anions	0.01	meq/l			-	-	32.5	-	-	-	-	53.2	-	88.3	383	62.6	-	-	-	20.7	-
Total Cations	0.01	meq/l			-	-	29.9	-	-	-	-	48.4	-	84.4	325	66.3	-	-	-	18.7	-
Total Dissolved Solids	10	mg/L			-	-	2060	-	-	-	-	3530	-	6390	20100	4280	-	-	-	1310	-
Total Oxidised Nitrogen, NOx-N	0.005	mg/L			-	-	-	-	-	-	5.4	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	0.2	mg/L			-	-	-	-	-	-	6.3	-	-	-	-	-	-	-	-	-	-
Alkalinity																				
Carbonate Alkalinity as CO3	5	mg/L			-	-	-	-	-	-	<5	-	-	-	-	-	-	-	-	-
Hydroxide Alkalinity as OH	5	mg/L			-	-	-	-	-	-	<5	-	-	-	-	-	-	-	-	-
Hydroxide Alkalinity as CaCO3	1	mg/L			<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	1	mg/L			<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	26	<1	<1
Total Alkalinity	1	mg/L			137	273	60	198	68	87	<5	414	164	106	842	152	32	243	238	148	105
Bicarbonate as HCO3	5	mg/L			-	-	-	-	-	-	<5	-	-	-	-	-	-	-	-	-	-
Bicarbonate Alkalinity as CaCO3	1	mg/L			137	273	60	198	68	87	-	414	164	106	842	152	32	243	212	148	105
Natural Attenuation Parameters																				
Ferrous Iron	0.05	mg/L			<0.05	9.15	<0.05	<0.05	<0.05	<0.05	-	0.15	<0.05	4.67	2.42	8.46	<0.05	<0.05	<0.05	0.42	<0.05
Ferric Iron	0.05	mg/L			<0.05	<0.05	-	<0.05	0.14	0.06	-	-	<0.05	-	-	-	<0.05	5.32	0.12	-	<0.05
Methane	10	µg/L			<10	57	<10	<10	20	<10	-	5770	51	<10	5830	46	20	872	45	13	<10
Nitrate and Nitrite (as N)	0.01	mg/L			0.02	<0.01	1.61	1.54	4.26	4.53	-	<0.01	2.28	<0.01	<0.01	0.01	0.49	<0.01	<0.01	0.13	0.13
Nitrate as N	0.01	mg/L			0.02	<0.01	1.61	1.54	4.26	4.53	-	<0.01	2.25	<0.01	<0.01	0.01	0.48	<0.01	<0.01	0.13	0.13
Nitrite as N	0.01	mg/L			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Organic Carbon	1	mg/L			-	-	-	2	4	4	-	-	2	-	-	-	-	-	-	-	-
Unknown																				
1,1,1,2-Tetrachloroethane	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
1,1,1-Trichloroethane	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
1,1,2,2-Tetrachloroethane	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
1,1,2-Trichloroethane	5	µg/L	1900		-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
1,1-Dichloroethane	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
1,1-Dichloroethene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
1,1-Dichloropropylene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
1,2,3-Trichlorobenzene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
1,2,3-Trichloropropane	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
1,2,4-Trichlorobenzene	5	µg/L	60		-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
1,2-Dibromo-3-chloropropane	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
1,2-Dichlorobenzene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
1,2-Dichloroethane	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
1,3-Dichlorobenzene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
1,3-Dichloropropane	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
1,4-Dichlorobenzene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
2-Chlorotoluene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
4-Chlorotoluene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
Bromobenzene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
Bromomethane	50	µg/L			-	-	-	-	-	-	-	-	-	-	<50	<50	-	-	-	<50	-
Carbon Tetrachloride	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
Chlorobenzene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
Chloroethane	50	µg/L			-	-	-	-	-	-	-	-	-	-	<50	<50	-	-	-	<50	-
Chloromethane	50	µg/L			-	-	-	-	-	-	-	-	-	-	<50	<50	-	-	-	<50	-
cis-1,2-Dichloroethene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
cis-1,4-Dichloro-2-butene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
Dibromomethane	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
Dichlorodifluoromethane	50	µg/L			-	-	-	-	-	-	-	-	-	-	<50	<50	-	-	-	<50	-
Hexachlorobutadiene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
Iodomethane	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
Pentachloroethane	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
Tetrachloroethene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
trans-1,2-Dichloroethene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
trans-1,4-Dichloro-2-butene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
Trichloroethene	5	µg/L			-	-	-	-	-	-	-	-	-	-	<5	<5	-	-	-	<5	-
Trichlorofluoromethane	50	µg/L			-	-	-	-	-	-	-	-	-	-	<50	<50	-	-	-	<50	-
Vinyl chloride	50	µg/L			-	-	-	-	-	-	-	-	-	-	<50	<50	-	-	-	<50	-
Miscellaneous																				
Nitrate Nitrogen, NO3-N	0.005	mg/L			-	-	-	-	-	-	5.4	-	-	-	-	-	-	-	-	-	-
Total Recoverable Hydrocarbons																				
>C10 - C16 Fraction	100	µg/L			<100	<100	<100	<100	<100	<100	-	210	<100	<100	<100	<100	<100	120	<100	<100	<100
>C10 - C40 Fraction (sum)	100	µg/L			<100	<100	<100	<100	<100	<100	-	1650	<100	<100	240	190	<100	590	<100	<100	<100
>C16 - C34 Fraction	100	µg/L			<100	<100	<100	<100	<100	<100	-	1440	<100	<100	240	190	<100	570	<100	<100	<100
>C34 - C40 Fraction	100	µg/L			<100	<100	<100	<100	<100	<100	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C6 - C10 Fraction	20	µg/L			<20	<20	<20	<20	<20	<20	-	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
C6 - C10 Fraction minus BTEX (F1)	20	µg/L			<20	<20	<20	<20	<20	<20	-	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20