Appendix 3 - Chain-of-Custody Forms and Sample Receipt Notices

1. Chain-of-Custody (COC) forms
2. Sample Receipt Notices (SRNs)

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

CLIENT:	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)	☐ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE:			Custody Seal Intact? Yes No N/A
PROJECT:	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:		COC: 1 2 3 4 5 6 7	Temperature on Receipt °C
PROJECT MANAGER:	CONTACT PH:	OF:	
SAMPLER:	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):		
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):			

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

Environmental Division
Sydney
Work Order Reference
ES2230841
Telephone : +61-2-8784 8555

ALS USE: LAB ID	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W): SAMPLE ID	DATE / TIME	MATRIX	CONTAINER INFORMATION: TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	ANALYSIS REQUIRED Where Metals are required	Additional Information: Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
65	AUS MUR VC S11-2 0.5			250 + 150	29/8	Extra Samples Received + Put on Hold	
66	AUS MUR S4 1.0			2 x 250	28/8		
67	AUS MUR GS S3			250 + 150	30/8		
68	AUS_MUR_GS_S8-11A			250 + 150	30/8		
69	AUS MUR VC S8.3B 1.0			250	28/8		
70	AUS MUR VC - S11-1 1.0			250	29/8		
71	AUS MUR VC - S1 - 0.5			250	28/8		
72	AUS MUR - S1A - 0.5			150	28/8		
73	AUS MUR - VC - S2B 0.5			250 + 150	28/8		
74	AUS MUR S4 0.5			2x250 + Ru60 + bag	28/8		
75	AUS MUR VC S8.1 0.5			250 + Ru60	28/8		
76	AUS MUR VC S3 1.0 BS			250 + 150	28/8		
				TOTAL			

Extra 9

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

ALS Environmental

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE:		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT:	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER:	CONTACT PH:	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER:	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):				
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):					

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS									Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
77	AUS MUR VC S3.0-3.5-BS			250	28/8									
78	AUS MUR VC S8.2 1.0			250	28/8									
79	AUS MUR VC S2.3 1.0			250 + 150	28/8									
80	AUS MUR GS S12-2			150	29/8									
81	AUS MUR VC S11-1 1.0			250, RG60, bag	29/8									
82	AUS MUR VC S8.2-1.0			150	28/8									
(83)	AUS MUR VC S3.05-BS			2x250H150+RG60	28/8									
84	AUS MUR GS S7.1			150 + RG60	30/8									
85	AUS MUR VC S8.3B 1.0			150	28/8									
86	AUS MUR VC S8-3B-0.5			250 + 150	29/8									
87	AUS MUR VC S1-1.0			250x2+RG60+bag	28/8									
88	AUS MUR VC S11-2 0.5			250 +150 +RG60+bag	29/8									
				TOTAL										

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

ALS Environmental

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE:		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT:	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER:	CONTACT PH:	OF: 1 2 3 4 5 6 7	Other comment:
SAMPLER:	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):		
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):			

RELINQUISHED BY:	RECEIVED BY:
DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS									Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
89	AUS MUR VC 52-1.0			2x250+bag+RG60	2	8								
90	AUS MUR AS 53-1			bag	3	8								
(91)	AUS MUR VC 53-0.5 BS			bag	2	8								
92	AUS MUR AS 58-16			250x2+RG60+bag	3	8								
(94) 93	AUS MUR AS -511-1			2x250+bag+RG60	2	9	8							
94	AUS MUR AS 53-1			RG60	3	0	8							
95	AUS MUR VC 58.33-0.15			2x250	2	8								
96	AUS MUR VC 59-1.0			2x250+1x150+RG60	2	9	8							
97	AUS MUR VC 511-1 0.5			3x250+RG60+150+bag	2	9	8							
98	AUS MUR VC 005A			2 bags	2	7	8							
99	AUS MUR VC-004D			1 bag	2	7	8							
100	AUS MUR VC-005	0.5-0.9m		1 bag	2	7	8							
				TOTAL										

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

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OFFICE:		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT:	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: C
PROJECT MANAGER:	CONTACT PH:	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER:	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY: / RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):			
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME:	DATE/TIME: / DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):				

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required)								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS									Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
101	AUS MUR-VC-006A	0.0-0.50m		2 bags		27/8								
102	AUS MUR VC 583B-0.5			bag		28/8								
103	AUS MUR VC 007	0.0-0.5m		bag		27/8								
104	AUS MUR S4-1.0			bag		28/8								
105	AUS MUR VC-004	0.50-0.90m		bag		27/8								
106	AUS MUR VC S8-1-0.5			2x250+150+bag		28/8								
107	AUS MUR VC-S10	0.5		250+150		29/8								
108	AUS MUR VC S10 1.0			250x2+RG60+bag		29/8								
109	AUS MUR S4-0.5			250+150		28/8								
110	AUS MUR S4 1.0			250+150		28/8								
111	AUS MUR VC S10 1.0			250+150		29/8								
112	AUS MUR VC S9 0.5			250+150		28/8								
				TOTAL										

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V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag

ALS Environmental

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle):	
OFFICE:	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A	
PROJECT:	ALS QUOTE NO.:	Free ice / frozen ice bricks present upon receipt? Yes No N/A	
ORDER NUMBER:	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C	
PROJECT MANAGER: CONTACT PH:	OF: 1 2 3 4 5 6 7	Other comment:	

SAMPLER:	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):				
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):					

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS									
113	AUS MUCK VC SII-1	1.0		250+150		29	3							Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
					TOTAL									

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

Environmental Division
Sydney
Work Order Reference
ES2230841

Telephone : + 61-2-8784 8555

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
OFFICE:	10 Kings Park Road, West Perth, 6005, WA		
PROJECT:	SUN Cable Murrumujuk	ALS QUOTE NO.:	
ORDER NUMBER:			COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 OF: 1 2 3 4 5 6
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	RELINQUISHED BY: Rick Phipps DATE/TIME: 30/8/22 16:00
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	RECEIVED BY: DATE/TIME: 30/08/22 8:30 a·m
Email Reports to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com		DATE/TIME: 31/08/22 2pm
Email Invoice to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com		DATE/TIME:

No N/A
No N/A
°C

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (if TPH >10-50mg/kg). PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Ch, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	AUS_MUR_VC_S1B_0.5	28/08/22 06:09	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S1B_1.0	28/08/22 06:09	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S2BS_0.5	28/08/22 08:30	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S2BS_1.0	28/08/22 08:30	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S3_0.5AS	28/08/22 10:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S3_1.0AS	28/08/22 10:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S3_1.0A	28/08/22 10:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S3_1.0B	28/08/22 10:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S4_0.5	28/08/22 10:37	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S4_1.0	28/08/22 10:37	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S5A_0.5	28/08/22 14:16	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S5A_1.0	28/08/22 14:16	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
				TOTAL:	72									

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V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

CHAIN OF CUSTODY

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CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)	
OFFICE:	10 Kings Park Road, West Perth, 6005, WA		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact?	Yes No N/A
PROJECT:	SUN Cable Murrumujuk	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle)	Free Ice / frozen ice bricks present upon receipt?	Yes No N/A
ORDER NUMBER:			COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt:	°C
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	OF: 1 2 3 4 5 6 7	Other comment:	
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 455	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY: / RECEIVED BY:
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	*Rick Phipps*		
Email Reports to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			DATE/TIME:	DATE/TIME:	DATE/TIME: / DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			30/8/22 16:00		

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (if TPH >10-50mg/kg). PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Ch, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	AUS_MUR_VC_S6_0.5	28/08/22 15:38	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S6_1.0	28/08/22 15:38	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S7_0.5	28/08/22 16:57	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S7_1.0	28/08/22 16:57	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S7_0.5B	28/08/2022 17:50	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S8_3_1.1	29/08/2022 22:50:00 PM	solid	AP, B, ST	7	x	x	x	x	See note	x	x		2 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S8_3_1.0	29/08/2022 22:50:00 PM	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S8_0.5	28/08/22 19:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S8_1_1.0	28/08/22 19:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S8_2_0.5	28/08/22 20:34	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S8_1.0	28/08/22 20:34	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
				TOTAL	67									

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:	Guardian Geomatics
OFFICE:	10 Kings Park Road, West Perth, 6005, WA
PROJECT:	SUN Cable Murrumujuk
ORDER NUMBER:	please contact Ben Hazrati
PROJECT MANAGER:	Ben Hazrati — CONTACT PH: 04 2828 6864
SAMPLER:	SEAS OFFSHORE — SAMPLER MOBILE: 0413 024 465
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):
Email Reports to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com
Email Invoice to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:	

TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)
☐ Standard TAT (List due date):
☐ Non Standard or urgent TAT (List due date):

ALS QUOTE NO.:

COC SEQUENCE NUMBER (Circle)
COC: 1 2 3 4 5 6 7
OF: 1 2 3 4 5 6 7

FOR LABORATORY USE ONLY (Circle)
Custody Seal Intact? Yes No N/A
Free ice / frozen ice bricks present upon receipt? Yes No N/A
Random Sample Temperature on Receipt: °C
Other comment:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Rick Phipps			
DATE/TIME: 4/8/22 16:00	DATE/TIME:	DATE/TIME:	DATE/TIME:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (If TPH >10-60mg/kg), PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Ch, Ni, Cd, Hg, As, Ar, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc
	AUS_MUR_VC_S11-3_0.5	29/08/22 07:42	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S11-3_1.0	29/08/22 07:42	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S12_0.5	29/08/22 09:19	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S12_1.0	29/08/22 09:19	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S13_0.5	29/08/22 10:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S13_1.0	29/08/22 10:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S13_1	29/08/22 15:42	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S12_2	29/08/22 16:27	solid	AP, B, ST	9	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S11_1	29/08/22 19:33	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S10_1	29/08/22 21:27	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S9-0.5	29/08/22 22:57	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S8-1B	30/08/22 01:25	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
					75									

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
OFFICE:	10 Kings Park Road, West Perth, 6005, WA		
PROJECT:	SUN Cable Murrumujuk	ALS QUOTE NO.:	
ORDER NUMBER:		COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7	
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			
Email Invoice to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:			

FOR LABORATORY USE ONLY (Circle)			
Custody Seal Intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comment:			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Rick Phipps			
DATE/TIME: 4/8/2216:00	DATE/TIME:	DATE/TIME:	DATE/TIME:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (If TPH >10-50mg/kg), PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Ch, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	AUS_MUR_GS_S8_02_0.5	28/08/22 20:31	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	US_MUR_GS_S8_02_1.0	28/08/22 20:31	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S8_03B_0.5	28/08/22 22:13	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S8_03B_1.0	28/08/22 22:13	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S9_0.5	28/08/22 23:34	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S9_1.0	28/08/22 23:34	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S10_0.5	29/08/22 01:47	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S10_1.0	29/08/22 01:47	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S11-1_0.5	29/08/22 02:48	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S11-1_1.0	29/08/22 02:48	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S11-2_0.5	29/08/22 03:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S11-2_1.0	29/08/22 03:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
					72									

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
OFFICE:	10 Kings Park Road, West Perth, 6005, WA		
PROJECT:	SUN Cable Mumumujuk	ALS QUOTE NO.:	
ORDER NUMBER:			
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			
Email Invoice to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			

COC SEQUENCE NUMBER (Circle)

COC:	1	2	3	4	5	6	7
OF:	1	2	3	4	5	6	7

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comment:			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Rick Phipps			
DATE/TIME: 4/8/22 16:00	DATE/TIME:	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (If TPH >10-50mg/kg), PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Ch, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	US_MUR_GS_S7-1	30/08/22 02:45	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S6-1A	30/08/22 04:16	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S6-1A	30/08/22 06:03	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S5-1	30/08/22 06:03	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S4-1	30/08/22 08:01	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S3-1	30/08/22 09:25	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S2-1	30/08/22 10:48	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_R2	28/08/22 1300	liq		1									1 x 500ml green
	AUS_MUR_R2	29/08/22 13:20	liq		1									1 x 500ml green
	AUS_MUR_LAB BLANKS-1	30/08/22 14:15		A(,P, B, ST	7									metals (no preservative), 1 x 150ml, 3 x 250ml
					51									

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
OFFICE:	10 Kings Park Road, West Perth, 6005, WA		
PROJECT:	SUN Cable Murrumujuk	ALS QUOTE NO.:	
ORDER NUMBER:			
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com		
Email Invoice to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com		
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:			

COC SEQUENCE NUMBER (Circle)

COC:	1	2	3	4	5	6	7
OF:	1	2	3	4	5	6	7

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comment:			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Rick Phipps			
DATE/TIME: 4/8/22 16:00	DATE/TIME:	DATE/TIME:	DATE/TIME:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (If TPH >10-50mg/kg), PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Cn, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	AUS_MUR_VC_S11-2_1.0	29/08/22 07:00	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S9_1.0	29/08/22	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
x	AUS_MUR_VC_S11-3_0.5	29/08/22 0700	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
x	AUS_MUR_VC_S10-0.5	29/08/22 02:30	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S11-3_0.5	29/08/22 08:16	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_GS_S7_1.0	30/08/22 02:50	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S11_1.0	28/08/22 03:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
	AUS_MUR_VC_S11-2_0.5	29/08/22 07:00	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
x														
					48									

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

Environmental Division Sydney

Work Order Reference

ES2230841

Telephone : + 61-2-8784 8555

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date):
OFFICE:	10 Kings Park Road, West Perth, 6005, WA		☐ Non Standard or urgent TAT (List due date):
PROJECT:	SUN Cable Murrumujuk	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6
ORDER NUMBER:			OF: 1 2 3 4 5 6
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	RELINQUISHED BY: Rick Phipps
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	DATE/TIME: 30/8/22 16:00
Email Reports to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com		RECEIVED BY: DATE/TIME: 30/08/22 8.30 a.m
Email Invoice to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com		DATE/TIME: 31/08/22 2pm

	No	N/A
	No	N/A
°C		

DATE/TIME: 01.09.22 1.30pm

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (if TPH >10-50mg/kg). PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Cr, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	AUS_MUR_VC_S1B_0.5	28/08/22 06:09	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
2	AUS_MUR_VC_S1B_1.0	28/08/22 06:09	solid	AP, B, ST No bag	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
3	AUS_MUR_VC_S2BS_0.5	28/08/22 08:30	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR (4)	AUS_MUR_VC_S2BS_1.0	28/08/22 08:30	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
5	AUS_MUR_VC_S3_0.5AS	28/08/22 10:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
6	AUS_MUR_VC_S3_1.0AS	28/08/22 10:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR (7)	AUS_MUR_VC_S3_1.0A	28/08/22 10:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
8	AUS_MUR_VC_S3_1.0B	28/08/22 10:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR (9)	AUS_MUR_VC_S4_0.5	28/08/22 10:37	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR (10)	AUS_MUR_VC_S4_1.0	28/08/22 10:37	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
11	AUS_MUR_VC_S5A_0.5	28/08/22 14:16	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
12	AUS_MUR_VC_S5A_1.0	28/08/22 14:16	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
				TOTAL	72									

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

NR : Not Received by ALS.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ Sydney ☐ Newcastle ☐ Brisbane ☐ Townsville ☐ Melbourne ☐ Adelaide ☐ Perth ☐ Launceston

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)	☐ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
OFFICE:	10 Kings Park Road, West Perth, 6005, WA		
PROJECT:	SUN Cable Murrumujuk	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7
ORDER NUMBER:			
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			
Email Invoice to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			

FOR LABORATORY USE ONLY (Circle)
- Custody Seal Intact? Yes No N/A
- Free ice / frozen ice bricks present upon receipt? Yes No N/A
- Random Sample Temperature on Receipt: °C
- Other comment:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Rick Phipps	Tim		
DATE/TIME: 30/8/22 16:00	DATE/TIME: 01.09.22 1.30pm	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (If TPH >10-50mg/kg). PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Ch, Ni, Cd, Hg, As, An, Al, Fe)	600ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc
13	AUS_MUR_VC_S6_0.5	28/08/22 15:38	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
14	AUS_MUR_VC_S6_1.0	28/08/22 15:38	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
15	AUS_MUR_VC_S7_0.5	28/08/22 16:57	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
16	AUS_MUR_VC_S7_1.0	28/08/22 16:57	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR (17)	AUS_MUR_VC_S7_0.5B	28/08/2022 17:50	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR (18)	AUS_MUR_VC_S8_3_1.1	29/08/2022 22:50:00 PM	solid	AP, B, ST	7	x	x	x	x	See note	x	x		2 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
19	AUS_MUR_VC_S8_3_1.0	29/08/2022 22:50:00 PM	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR (20)	AUS_MUR_VC_S8_0.5	28/08/22 19:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
21	AUS_MUR_VC_S8_1_1.0	28/08/22 19:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
22	AUS_MUR_VC_S8_2_0.5	28/08/22 20:34	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR (23)	AUS_MUR_VC_S8_1.0	28/08/22 20:34	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
				TOTAL	67									

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ Sydney ☐ Brisbane ☐ Melbourne ☐ Perth
☐ Newcastle ☐ Townsville ☐ Adelaide ☐ Launceston

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS: (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
OFFICE:	10 Kings Park Road, West Perth, 6005, WA		
PROJECT:	SUN Cable Murrumujuk	ALS QUOTE NO.:	
ORDER NUMBER:		COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7	
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			
Email Invoice to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:			

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comment:			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Rick Phipps	Kim		
DATE/TIME: 4/8/2216 00	DATE/TIME: 01.09.22 1.30pm	DATE/TIME:	DATE/TIME:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ( )	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (if TPH >10-50mg/kg). PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Cr, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
NR 24	AUS_MUR_GS_S8_02_0.5	28/08/22 20:31	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
25	US_MUR_GS_S8_02_1.0	28/08/22 20:31	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR 26	AUS_MUR_GS_S8_03B_0.5	28/08/22 22:13	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR 27	AUS_MUR_GS_S8_03B_1.0	28/08/22 22:13	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
28	AUS_MUR_GS_S9_0.5	28/08/22 23:34	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
29	AUS_MUR_GS_S9_1.0	28/08/22 23:34	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
30	AUS_MUR_GS_S10_0.5	29/08/22 01:47	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR 31	AUS_MUR_GS_S10_1.0	29/08/22 01:47	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR 32	AUS_MUR_GS_S11-1_0.5	29/08/22 02:48	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR 33	AUS_MUR_GS_S11-1_1.0	29/08/22 02:48	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR 34	AUS_MUR_GS_S11-2_0.5	29/08/22 03:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR 35	AUS_MUR_GS_S11-2_1.0	29/08/22 03:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
				TOTAL	72									

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ Sydney ☐ Brisbane ☐ Melbourne ☐ Perth
☐ Newcastle ☐ Townsville ☐ Adelaide ☐ Launceston

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
OFFICE:	10 Kings Park Road, West Perth, 6005, WA	ALS QUOTE NO.:	
PROJECT:	SUN Cable Murrumujuk	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7	FOR LABORATORY USE ONLY (Circle) Custody Seal Intact? Yes No N/A; Free ice / frozen ice bricks present upon receipt? Yes No N/A; Random Sample Temperature on Receipt: °C; Other comment:
ORDER NUMBER:	please contact Ben Hazrati		
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			
Email Invoice to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Rick Phipps	Kim		
DATE/TIME: 4/8/22 16:00	DATE/TIME: 01.09.22 1.30 pm	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (if TPH >10-50mg/kg), PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Cr, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc
36	AUS_MUR_VC_S11-3_0.5	29/08/22 07:42	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
37	AUS_MUR_VC_S11-3_1.0	29/08/22 07:42	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
38	AUS_MUR_VC_S12_0.5	29/08/22 09:19	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
39	AUS_MUR_VC_S12_1.0	29/08/22 09:19	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
40	AUS_MUR_VC_S13_0.5	29/08/22 10:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
41	AUS_MUR_VC_S13_1.0	29/08/22 10:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
42	AUS_MUR_GS_S13_1	29/08/22 15:42	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
43	AUS_MUR_GS_S12_2	29/08/22 16:27	solid	AP, B, ST	9	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
44 ✓	AUS_MUR_GS_S11_1	29/08/22 19:33	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
45	AUS_MUR_GS_S10_1	29/08/22 21:27	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
46	AUS_MUR_GS_S9-0.5	29/08/22 22:57	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
47	AUS_MUR_GS_S8-1B	30/08/22 01:25	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
				TOTAL	75									

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ Sydney ☐ Brisbane ☐ Melbourne ☐ Perth ☐ Newcastle ☐ Townsville ☐ Adelaide ☐ Launceston

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE:	10 Kings Park Road, West Perth, 6005, WA	(Standard TAT may be longer for some tests e.g.. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT:	SUN Cable Mumumujuk	ALS QUOTE NO.:	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:			COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	Random Sample Temperature on Receipt: °C
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	Other comment:
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			
Email invoice to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Rick Phipps	Kim		
DATE/TIME: 4/8/22 16:00	DATE/TIME: 01.05.22 1.30pm	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED Including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (if TPH >10-60mg/kg). PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Ch, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
48	US_MUR_GS_S7-1	30/08/22 02:45	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
49	AUS_MUR_GS_S6-1A	30/08/22 04:16	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
50	AUS_MUR_GS_S6-1A	30/08/22 06:03	solid	AP, B, ST No bag	6	(x)	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
51	AUS_MUR_GS_S5-1	30/08/22 06:03	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
52	AUS_MUR_GS_S4-1	30/08/22 08:01	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
53	AUS_MUR_GS_S3-1	30/08/22 09:25	solid	AP, B, ST No bag	6	(x)	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
54	AUS_MUR_GS_S2-1	30/08/22 10:48	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
55	AUS_MUR_R2	28/08/22 1300	liq		1									1 x 500ml green
56	AUS_MUR_R2	29/08/22 13:20	liq		1									1 x 500ml green
57	AUS_MUR_LAB BLANKS-1	30/08/22 14:15		AP, B, ST	7									metals (no preservative), 1 x 150ml, 3 x 250ml
				TOTAL	51									

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS: (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
OFFICE:	10 Kings Park Road, West Perth, 6005, WA		
PROJECT:	SUN Cable Murrumujuk	ALS QUOTE NO.:	
ORDER NUMBER:		COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7	
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com		
Email Invoice to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com		
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:			

FOR LABORATORY USE ONLY (Circle)			
Custody Seal Intact?	Yes	No	N/A
Free Ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comment:			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Rick Phipps	Kim		
DATE/TIME: 4/8/22 16:00	DATE/TIME: 01.09.22 1.30 pm	DATE/TIME:	DATE/TIME:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (If TPH >10-50mg/kg), PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Ch, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in Jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
58	AUS_MUR_VC_S11-2_1.0	29/08/22 07:00	solid	AP, B, ST NO bag	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
59	AUS_MUR_VC_S9_1.0	29/08/22	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
60	AUS_MUR_VC_S11-3_0.5	29/08/22 0700	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
61	AUS_MUR_VC_S10-0.5	29/08/22 02:30	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
62	AUS_MUR_VC_S11-3_0.5	29/08/22 08:16	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
63	AUS_MUR_GS_S7_1.0	30/08/22 02:50	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
64	AUS_MUR_VC_S11_1.0	28/08/22 03:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
65	AUS_MUR_VC_S11-2_0.5	29/08/22 07:00	solid	AP, B, ST NO bag	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
				TOTALS	48									

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

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

CLIENT:	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE:		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT:	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER:	CONTACT PH:	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER:	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):				
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):					

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS									Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
65	AUS MUR VC S11-2 0.5			250 + 150	29/8									
66	AUS MUR S4 1.0			2 x 250	28/8									
67	AUS MUR AS S3 1			250 + 150	30/8									
68	AUS MUR AS S8-11A			250 + 150	30/8									
69	AUS MUR VC S8.3B 1.0			250	28/8									
70	AUS MUR VC-S11-1 1.0			250	29/8									
71	AUS MUR VC-S1-0.5			250	28/8									
72	AUS MUR-S1A-0.5			150	28/8									
73	AUS MUR-VC-S2B 0.5			250 + 150	28/8									
74	AUS MUR S4 0.5			2 x 250 + R460 + bag	28/8									
75	AUS MUR VC S8.1 0.5			250 + R460	28/8									
76	AUS MUR VC S3 1.0 BS			250 + 150	28/8									
				TOTAL										

Extra 3 9

Extra Samples Received + Put on Hold

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

ALS Environmental

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:	TURNAROUND REQUIREMENTS: (Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):		FOR LABORATORY USE ONLY (Circle)
OFFICE:			Custody Seal Intact? Yes No N/A
PROJECT:	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER:	CONTACT PH:	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER:	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):				
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):					

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS									Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
77	AUS MUR VC 53.05 BS			250	2/18									
78	AUS MUR VC 58.2 1.0			250	2/18									
79	AUS MUR VC 52A 1.0			250 + 150	2/18									
80	AUS MUR GS S12 -2			150	2/18									
81	AUS MUR VC S11-1 1.0			250, RA60 bag	2/18									
82	AUS MUR VC S8.2-1.0			150	2/18									
83	AUS MUR VC S3.05-BS			2x250+150+RA60	2/18									
84	AUS MUR GS S7.1			150 + RA60	3/18									
85	AUS MUR VC S8.3B 1.0			150	2/18									
86	AUS MUR VC S8-3B -0.5			250 + 150	2/18									
87	AUS MUR VC S1-1.0			250x2+RA60+bag	2/18									
88	AUS MUR VC S11-2 0.5			250 + 150 + RA60 + bag	2/18									
				TOTAL										

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

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

CLIENT:	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE:		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT:	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER:	CONTACT PH:	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER:	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):				
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):					

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS									Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
89	AUS MUR VC 52-1.0			2×250+bag+RG60	2 8									
90	AUS MUR VC 53-1			bag	3 0 8									
(91)	AUS MUR VC 53-0.5 BS			bag	2 8 8									
92	AUS MUR VC 58-16			250×2+RG60+bag	3 0 8									
(94) ~~93~~	AUS MUR VC -51-1			2×250+bag+RG60	2 9 8									
94	AUS MUR VC 53-1			RG60	3 0 8									
95	AUS MUR VC 58.3B-0.5			2×250	2 8 8									
96	AUS MUR VC 59-1.0			1×250+1×150+RG60	2 9 8									
97	AUS MUR VC 511-1 0.5			3×250+RG60+150+bag	2 9 8									
98	AUS MUR VC 005A			2 bags	2 7 8									
99	AUS MUR VC-004D			1 bag	2 7 8									
100	AUS MUR VC-005	0.5-0.9m		1 bag	2 7 8									
				TOTAL										

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

ALS Environmental

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE:		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT:	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER:	CONTACT PH:	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER:	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):				
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):					

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS									Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
101	AUS MUR-VC-0004A	0.0-0.50m		2 bags		27/8								
102	AUS MUR VC S8 3B-0.5			bag		28/8								
103	AUS MUR VC 0007	0.0-0.5m		bag		27/8								
104	AUS MUR S4-1.0			bag		28/8								
105	AUS MUR VC-0034	0.50-0.0		bag		27/8								
106	AUS MUR VC S8_1_0.5			2x250+150+bag		28/8								
107	AUS MUR VC-S10	0.5		250+150		29/8								
108	AUS MUR VC S10 1.0			250x2+Rg60+bag		29/8								
109	AUS MUR S4-0.5			250+150		28/8								
110	AUS MUR S4 1.0			250+150		28/8								
111	AUS MUR VC S10 1.0			250+150		29/8								
112	AUS MUR VC S9 0.5			250+150		28/8								
				TOTAL										

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

ALS Environmental

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE:		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT:	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER:	CONTACT PH:	OF: 1 2 3 4 5 6 7	Other comment:
SAMPLER:	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):		
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):		RELINQUISHED BY:	RECEIVED BY:
		DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL CONTAINERS									
113	Aus mus VC 311-1	1.0		250+150		29	8							

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

Subcon // Forward Lab / Split WO

Lab / Analysis: Newcastle, Brisbane

Organised By / Date:

Relinquished By / Date:

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ Sydney 277 Woodpark Rd Smithfield NSW 2164 Ph 02 8784 8555 E samples.sydney@alsenviro.com

☐ Brisbane 32 Shand St Stafford QLD 4053 E samples.brisbane@alsenviro.com

☐ Melbourne 2-4 Westall Rd Springvale Ph 03 8549 9600 E samples.melbourne@alsenviro.com

☐ Newcastle 5 Rosegum Rd Warabrook NSW 2304 Ph 02 4968 9433 E samples.newcastle@alsenviro.com

☐ Townsville 14-15 Desma Ct Bohle QLD 4818 E samples.townsville@alsenviro.com

☐ Adelaide 21 Burma Rd Pooraka SA Ph 08 8359 0890 E adelaide@alsenviro.com

Environmental Division
Sydney
Work Order Reference
ES2231582

Telephone - 61-2-8784 8555

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS: Standard ☐ ☑ Standard TAT (List due date):	
OFFICE:	10 Kings Park Road, West Perth, 6005, WA	(Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)	☐ Non Standard or urgent TAT (List due date):
PROJECT:	SUN Cable Murrumujuk	ALS QUOTE NO.: Attached By PO / Internal Sheet	COC SEQUENCE NO: COC: 1 2 3 / OF: 1 2 3
ORDER NUMBER:			
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	RELINQUISHED BY: Rick Phipps
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	DATE/TIME: 01/09/22 15:00
Email Reports to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com		RECEIVED BY:
Email Invoice to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com		DATE/TIME: 2/09 8:30 am
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:			LAB OF ORIGIN: DARWIN

(Circle)
Yes No N/A
Yes No N/A
°C

RECEIVED BY:
DATE/TIME: 05/09 2PM

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (if TPH >10-60mg/kg). PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Cr, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in Jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	AUS_MUR_GS_S1_1.0	30/08/22 17:07	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
2	AUS_MUR_VC_S34_0.5	30/08/22 19:59	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
3	AUS_MUR_VC_S34_1.0	30/08/22 19:59	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
4	AUS_MUR_VC_S33_0.5	30/08/22 21:08	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
5	AUS_MUR_VC_S33_1.0	30/08/22 21:09	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR 6	AUS_MUR_VC_S32_1A_0.5	30/08/22 22:48	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR 7	AUS_MUR_VC_S32_1A_1.0	30/08/22 22:48	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
8	AUS_MUR_VC_S32_1B_0.5	31/08/22 02:13	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative). Note: **Samples mislabled 01/09/22 instead of 31/08/22**
9	AUS_MUR_VC_S32_1B_1.0	31/08/22 02:13	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative). Note: **Samples mislabled 01/09/22 instead of 31/08/22**
Extra 10	AUS_MUR_VC_S32_2B_1.0													
Extra 11	AUS_MUR_VC_S32_2B_0.5													
					TOTAL: 54									

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

Subcon / Forward Lab / Split WO_____

Lab / Analysis: EN, EB

Organised By / Date:

Relinquished By / Date:

Connote / Co

WO No:

Attached By PO / Internal Sheet:

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ Sydney: 277 Woodpark Rd, Smithfield NSW 2164 Ph 02 8784 8555 E samples.sydney@alsenviro.com

☐ Newcastle: 5 Rosegum Rd, Warabrook NSW 2304 Ph 02 4796 0600 E newcastle.environmental@alsenviro.com

☐ Brisbane: 32 Shand St, Stafford QLD 4053 Ph 07 3243 7222 E samples.brisbane@alsenviro.com

☐ Townsville: 14-15 Desma Ct, Bohle QLD 4818 Ph 07 4796 0600 E townsville.environmental@alsenviro.com

Environmental Division Sydney

Work Order Reference

ES2231583

Perth: 10 Hod Way, Malaga WA 6090 Ph 08 9209 7655 E samples.perth@alsenviro.com

Launceston: 27 Wellington St, Launceston TAS 7250 Ph 03 6331 2548 E launceston@alsenviro.com

Telephone : + 61-2-8784 8555

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due dat ☐ Non Standard or urgent TA
OFFICE:	10 Kings Park Road, West Perth, 6005, WA		
PROJECT:	SUN Cable Murrumujuk	ALS QUOTE NO.:	
ORDER NUMBER:			
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			
Email Invoice to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			

FOR LABORATORY USE ONLY (Circle)			
Custody Seal Intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comment:			

RELINQUISHED BY:	RELINQUISHED BY:	RECEIVED BY: Sandra
Rick Phipps		
DATE/TIME: 01/09/22 15:00	DATE/TIME:	DATE/TIME: 06/09/2022 8:00am

DATE/TIME: LAB OF ORIGIN: DARWIN

02/09 8:30am 05/09 2pm

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED Including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (If TPH >10-50mg/kg). PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Ch, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	AUS_MUR_VC_S32_3_0.5	31/08/22 03:25	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative). Note: Samples mislabled 01/09/22 instead of 31/08/22
2	AUS_MUR_VC_S32_3_1.0	31/08/22 03:25	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative). Note: Samples mislabled 01/09/22 instead of 31/08/22
3	AUS_MUR_VC_S31_1_0.5	31/08/22 05:40	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative). Note: Samples mislabled 01/09/22 instead of 31/08/22
4	AUS_MUR_VC_S31_1_1.0	31/08/22 05:40	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative). Note: Samples mislabled 01/09/22 instead of 31/08/22
5	AUS_MUR_VC_S31_2_0.5	31/08/22 06:30	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative). Note: Samples mislabled 01/09/22 instead of 31/08/22
6	AUS_MUR_VC_S31_2_1.0	31/08/22 06:30	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative). Note: Samples mislabled 01/09/22 instead of 31/08/22
				TOTAL	36									

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

Subcon / Forward Lab / Split WO

Lab / Analysis: Newcastle, Brisbane

Organised By / Date:

Relinquished By / Date:

Courier / Courier:

WO No:

Attached By PO / Internal Order:

LAB OF ORIGIN: DARWIN

CHAIN OF CUSTODY

ALS Laboratory: please tick →

Environmental Division Sydney

Work Order Reference

ES2231584

Telephone - 61-2-8784 8555

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS: ☐ Standard TAT (List due date):	
OFFICE:	10 Kings Park Road, West Perth, 6005, WA	(Standard TAT may be longer for some tests e.g. Ultra-Trace Organics) ☐ Non Standard or urgent TAT (List due date):	
PROJECT:	SUN Cable Murrumujuk	ALS QUOTE NO.:	
ORDER NUMBER:			
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			
Email Invoice to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			

COC SEQUENCE

COC:	1	2	3
OF:	1	2	3

RELINQUISHED BY: Rick Phipps

DATE/TIME: 01/09/22 15:00

RECEIVED BY:

DATE/TIME: 02/09 8:30 am

RECEIVED BY:

DATE/TIME: 05/09/22 2pm

RECEIVED BY: Sandra

DATE/TIME: 06/09/2022 8:00 Am

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (If TPH >fd-60mg/kg). PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Ch, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	AUS_MUR_VC_S31_3A_0.5AS	31/08/22 07:55	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative). Note: Samples mislabled 01/09/22 instead of 31/08/22
2	AUS_MUR_VC_S31_3A_1.0AS	31/08/22 07:55	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative). Note: Samples mislabled 01/09/22 instead of 31/08/22
3	AUS_MUR_VC_S31_3A_0.5BS	31/08/22 07:55	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative). Note: Samples mislabled 01/09/22 instead of 31/08/22
4	AUS_MUR_VC_S31_3A_1.0BS	31/08/22 07:55	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative). Note: Samples mislabled 01/09/22 instead of 31/08/22
5	AUS_MUR_VC_S30B_0.5	31/08/22 10:03	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative). Note: Samples mislabled 01/09/22 instead of 31/08/22
6	AUS_MUR_VC_S30B_1.0	31/08/22 10:03	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative). Note: Samples mislabled 01/09/22 instead of 31/08/22
				TOTAL	36									

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

Environmental Division
Sydney
Work Order Reference
ES2231585

Telephone: + 61-2-8784 8555

1619

LAB OF ORIGIN: DARWIN

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ Sydney: 277 Woodpark Rd, Smithfield NSW 2176 Ph: 02 8784 8555 E samples.sydney@alsenviro.com
☐ Newcastle: 5 Rosegum Rd, Warabrook NSW 2304 Ph: 02 4968 9433 E samples.newcastle@alsenviro.com
☐ Brisbane: 32 Shand St, Stafford QLD 4053 Ph: 07 3243 7222 E samples.brisbane@alsenviro.com
☐ Townsville: 14-15 Desma Ct, Bohle QLD 4818 Ph: 07 4796 0600 E townsville.environmental@alsenviro.com

CLIENT:	Guardian Geomatics
OFFICE:	10 Kings Park Road, West Perth, 6005, WA
PROJECT:	SUN Cable Murrumujuk
ORDER NUMBER:	
PROJECT MANAGER:	Ben Hazrati — CONTACT PH: 04 2828 6864
SAMPLER:	SEAS OFFSHORE — SAMPLER MOBILE: 0413 024 465
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):
Email Reports to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com
Email Invoice to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com

TURNAROUND REQUIREMENTS: (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)
☐ Standard TAT (List due date):
☐ Non Standard or urgent TAT (List due date):

ALS QUOTE NO.:

COC SEQUENCE — COC: 1 2 3 — OF: 1 2 3

RELINQUISHED BY:	RECEIVED BY:		RECEIVED BY:
Rick Phipps	[signature]	[signature]	Sandra
DATE/TIME: 01/09/22 15:00	DATE/TIME: 02/09 8:30 am	DATE/TIME: 05/09 2pm	DATE/TIME: 06/09/2022 8:00

Custody seal intact? Yes No N/A
Free ice / frozen ice bricks present upon receipt? Yes No N/A
Temperature on receipt: °C

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (if TPH >10-50mg/kg). PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Cr, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions or samples requiring specific QC analysis etc.
1	AUS_MUR_VC_S29_0.5	31/08/22 10:58	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative). Note: Samples mislabled 01/09/22 instead of 31/08/22
2	AUS_MUR_VC_S29_1.0	31/08/22 10:58	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative). Note: Samples mislabled 01/09/22 instead of 31/08/22
3	AUS_MUR_VC_S28_0.5	31/08/22 11:40	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
4	AUS_MUR_VC_S28_1.0	31/08/22 11:40	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
5	AUS_MUR_VC_S27_0.5	31/08/22 12:33	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
6	AUS_MUR_VC_S27_1.0	31/08/22 12:33	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
7	AUS_MUR_VC_S26B_0.5	31/08/22 14:29	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
8	AUS_MUR_VC_S26B_1.0	31/08/22 14:29	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
9	AUS_MUR_VC_S25_0.5	31/08/22 15:31	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
10	AUS_MUR_VC_S25_1.0	31/08/22 15:31	solid	AP, B, ST	6	x	x	x	x	See note	x	x		2 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
				TOTAL	60									

Subcon / Forward Lab / Split WO: Brisbane
Lab / Analysis: AJ2/Cont
Organised By / Date:
Relinquished By / Date:
Connote / Courier:
WO No:
Attached By PO / Internal Sheet:

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

Subcon / Forward Lab / Split WO
Lab / Analysis: Newcastle, Brisbane
Organised By / Date:
Relinquished By / Date:
Connote / Courier:
WO No:
Attached By PO / Internal Sheet:

LAB OF ORIGIN: DARWIN

Environmental Division
Sydney
Work Order Reference
ES2231586

Telephone + 61-2-8784 8555

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)	☐ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
OFFICE:	10 Kings Park Road, West Perth, 6005, WA		
PROJECT:	SUN Cable Murrumujuk	ALS QUOTE NO.:	COC SEQUENCE NU COC: 1 2 3 OF: 1 2 3
ORDER NUMBER:			
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			
Email Invoice to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			

RELINQUISHED BY:	RECEIVED BY:		RECEIVED BY:
Rick Phipps	[signature]		
DATE/TIME: 01/09/22 15:00	DATE/TIME: 02/09 8.30 a.m	DATE/TIME: 05/09 2pm	DATE/TIME:

(Circle) Yes No N/A; Yes No N/A; °C

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (if TPH >10-50mg/kg). PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Cb, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in Jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	AUS_MUR_VC_S24_0.5	31/08/22 16:14	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
2	AUS_MUR_VC_S24_1.0	31/08/22 16:14	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
3	AUS_MUR_LABBLANK	01/09/22 12:55		lab blank	6									
4	AUS_MUR_VC_S23_0.5A	31/08/22 17:16	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
5	AUS_MUR_VC_S23_1.0A	31/08/22 17:16	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
6	AUS_MUR_VC_S23_0.5B	31/08/22 17:16	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
7	AUS_MUR_VC_S23_1.0B	31/08/22 17:16	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
8	AUS_MUR_VC_S22_0.5A	31/08/22 19:22	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
9	AUS_MUR_VC_S22_1.0A	31/08/22 19:22	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
10	AUS_MUR_VC_S22_0.5B	31/08/22 19:22	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
11	AUS_MUR_VC_S22_1.0B	31/08/22 19:22	solid	AP, B, ST	6	x	x	x	x	See note	x	x		2 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
				TOTAL	66									Page 5 of 7

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

Subcon / Forward Lab / Split WO

Lab / Analysis: EN, EB

Organised by / Date:

Relinquished By / Date:

LAB OF ORIGIN: DARWIN

Environmental Division
Sydney
Work Order Reference
ES2231587

CHAIN OF CUSTODY

ALS Laboratory: please tick →

Connote / Courier:

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS: ☐ Standard TAT (List due date):	
OFFICE:	10 Kings Park Road, West Perth, 6005, WA	WO No: (Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	
PROJECT:	SUN Cable Murrumuluk	Attached By: ALS QUOTE NO:	COC SEQUENCE NUM
ORDER NUMBER:			COC: 1 2 3 4
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	OF: 1 2 3 4
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 455	RELINQUISHED BY: Rick Phipps
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	DATE/TIME: 01/09/22 15:00
Email Reports to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			RECEIVED BY:
Email Invoice to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			DATE/TIME: 02/09 8:30 9:m

Telephone : +61-2-8784 8555

(Circle)		
Yes	No	N/A
Yes	No	N/A
°C		

RECEIVED BY:

DATE/TIME: 05/09 2pm

DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ( )	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (if TPH >10-50mg/kg). PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Cr, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	AUS_MUR_VC_S21_0.5	31/08/22 20:34	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
2	AUS_MUR_VC_S21_1.0	31/08/22 20:34	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
3	AUS_MUR_RIN-3	31/08/22 12:40	LIQUID	AP, B, ST	1	x	x	x	x	See note	x	x		1 x 500ml
NR 4	AUS_MUR_VC_S20B_0.5	31/08/22 22:22	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
NR 5	AUS_MUR_VC_S20B_1.0	31/08/22 22:22	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
6	AUS_MUR_VC_S19_0.5	31/08/22 23:25	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
7	AUS_MUR_VC_S19_1.0	31/08/22 19:22	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
8	AUS_MUR_VC_S18_1_0.5	01/09/22 00:51	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
9	AUS_MUR_VC_S18_1_1.0	01/09/22 00:51	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
10	AUS_MUR_VC_S18_2A_0.5	01/09/22 02:25	solid	AP, B, ST	6	x	x	x	x	See note	x	x		2 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
11	AUS_MUR_VC_S18_2A_1.0	01/09/22 02:25	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
ERR 12	AUS_MUR_VC_S20A_0.5													
12	AUS_MUR_VC_S20A_1.0													
				TOTAL	61									

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

Subcon / Forward Lab / Split WO

Lab / Analysis: New Castle, Brisbane

Organised By / Date:

Relinquished By / Date:

Connote / Courier:

WO No:

Attached By P&T Internal Sheet:

LAB OF ORIGIN:

Environmental Division Sydney

Work Order Reference

ES2231588

Telephone : + 61-2-8784 8555

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	
OFFICE:	10 Kings Park Road, West Perth, 6005, WA		
PROJECT:	SUN Cable Murrumujuk	ALS QUOTE NO.:	COC SEQUENCE NO: COC: 1 2 3 OF: 1 2 3
ORDER NUMBER:			
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	RELINQUISHED BY: Rick Phipps
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	DATE/TIME: 01/09/22 15:00
Email Reports to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			
Email Invoice to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			

RECEIVED BY:

DATE/TIME: 02/09 8.30am

RECEIVED BY:

DATE/TIME: 05/09 2pm

(Circle) Yes No N/A

Yes No N/A

°C

RECEIVED BY: Sandra

DATE/TIME: 06/09/2022 8:00

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (If TPH >10-50mg/kg). PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Cr, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	AUS_MUR_VC_S18_3_0.5	01/09/22 03:35	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
2	AUS_MUR_VC_S18_3_1.0	01/09/22 03:35	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
3	AUS_MUR_VC_S17A_0.5	01/09/22 05:02	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
4	AUS_MUR_VC_S17A_1.0	01/09/22 05:02	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
5	AUS_MUR_VC_S16_0.5	01/09/22 05:51	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
6	AUS_MUR_VC_S16_1.0	01/09/22 05:51	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
7	AUS_MUR_VC_S15_0.5	01/09/22 06:45	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
8	AUS_MUR_VC_S15_1.0	01/09/22 06:45	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
9	AUS_MUR_VC_S14_0.5	01/09/22 07:40	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
10	AUS_MUR_VC_S14_1.0	01/09/22 07:40	solid	AP, B, ST	6	x	x	x	x	See note	x	x		2 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
				TOTAL	60									

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:		TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)			
OFFICE:			☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact?	Yes	No	N/A
PROJECT:	PROJECT NO.:	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
ORDER NUMBER:	PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:	COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt:		°C	
PROJECT MANAGER:	CONTACT PH:		OF: 1 2 3 4 5 6 7	Other comment:			

SAMPLER:	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY: Sandra
COC Emailed to ALS? (YES / NO)	EDD FORMAT (or default):				
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME: 06/09/2022 8:00Am
Email Invoice to (will default to PM if no other addresses are listed):					

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL BOTTLES	coc to follow								Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	AUS_MUR_GB_A1_4	2/09/2022 20:15	s		6									
2	AUS_MUR_GB_A2_4	2/09/2022 20:15	s		6									
3	AUS_MUR_GB_A3_4	2/09/2022 20:15	s		6									
4	AUS_MUR_GB_A4_4	2/09/2022 20:15	s		6									
5	AUS_MUR_GB_A2_5	2/09/2022 20:15	s		6									
6	AUS_MUR_GB_A2_6	2/09/2022 20:15	s		6									
7	AUS_MUR_GB_B1_4	3/09/2022 2:33	s		6									
8	AUS_MUR_GB_B2_4_AS	3/09/2022 2:33	s		6									
9	AUS_MUR_GB_B2_4_BS	3/09/2022 2:33	s		6									
10	AUS_MUR_GB_B3_4	3/09/2022 2:33	s		6									
11	AUS_MUR_GB_B4_4	3/09/2022 2:33	s		6									
				TOTAL										

Environmental Division
Sydney
Work Order Reference
ES2231627

Telephone : +61-2-8784 8555

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ ADELAIDE 21 Burma Road Pooraka SA 5095 [illegible]
☐ BRISBANE [illegible]
☐ GLADSTONE [illegible]
☐ MACKAY [illegible]
☐ MELBOURNE [illegible]
☐ MUDGEE [illegible]
☐ NEWCASTLE [illegible]
☐ NOWRA [illegible]
☐ PERTH [illegible]
☐ SYDNEY [illegible]
☐ TOWNSVILLE [illegible]
☐ WOLLONGONG [illegible]

CLIENT:
OFFICE:
PROJECT: PROJECT NO.:
ORDER NUMBER: PURCHASE ORDER NO.:
PROJECT MANAGER: CONTACT PH:
SAMPLER: SAMPLER MOBILE:
COC Emailed to ALS? (YES / NO) EDD FORMAT (or default):
Email Reports to (will default to PM if no other addresses are listed):
Email Invoice to (will default to PM if no other addresses are listed):

TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)
☐ Standard TAT (List due date):
☐ Non Standard or urgent TAT (List due date):
ALS QUOTE NO.:
COUNTRY OF ORIGIN:

COC SEQUENCE NUMBER (Circle)
COC: 1 2 3 4 5 6 7
OF: 1 2 3 4 5 6 7

FOR LABORATORY USE ONLY (Circle)
Custody Seal Intact? Yes No N/A
Free ice / frozen ice bricks present upon receipt? Yes No N/A
Random Sample Temperature on Receipt: °C
Other comment:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required)								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	coc to follow								Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
12	AUS_MUR_GB_C1_4	3/09/2022 9:13	s		6									
13	AUS_MUR_GB_C2_4	3/09/2022 9:13	s		6									
14	AUS_MUR_GB_C2_5A	3/09/2022 9:13	s		6									
15	AUS_MUR_GB_C2_6	3/09/2022 9:13	s		6									
16	AUS_MUR_GB_C3_4	3/09/2022 9:13	s		6									
17	AUS_MUR_GB_C4_4	3/09/2022 9:13	s		6									
18	AUS_MUR_GS_S14_4	1/09/2022 20:11	s		6									
19	AUS_MUR_GS_S21_4	1/09/2022 20:11	s		6									
~~20~~	~~AUS_MUR_GS_S14_4~~	~~1/09/2022 20:11~~	~~s~~		~~6~~									
21	AUS_MUR_GS_S30_4	1/09/2022 20:11	s		6									
22	AUS_MUR_GS_S31_4	1/09/2022 20:11	s		6									
23	AUS_MUR_GS_S32_4	1/09/2022 20:11	S		6									
				TOTAL										

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:	**TURNAROUND REQUIREMENTS :** (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date):
OFFICE:		☐ Non Standard or urgent TAT (List due date):
PROJECT: PROJECT NO.:	**ALS QUOTE NO.:**	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7
ORDER NUMBER: PURCHASE ORDER NO.:	**COUNTRY OF ORIGIN:**	
PROJECT MANAGER: CONTACT PH:		

FOR LABORATORY USE ONLY (Circle)

Custody Seal intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comment:			

SAMPLER: SAMPLER MOBILE:	**RELINQUISHED BY:**	**RECEIVED BY:**	**RELINQUISHED BY:**	**RECEIVED BY:**
COC Emailed to ALS? (YES / NO) EDD FORMAT (or default):				
Email Reports to (will default to PM if no other addresses are listed):	DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):				

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL BOTTLES	coc to follow								Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc
24	AUS_MUR_GS_S34_4	1/09/2022 20:11	s		6									
25	AUS_MUR_GB_D1_4A	3/09/2022 15:20	s		6									
26	AUS_MUR_GB_D2_4_AS	3/09/2022 15:20	s		6									
27	AUS_MUR_GB_D2_4_BS	3/09/2022 15:20	s		6									
28	AUS_MUR_GB_D3_4	3/09/2022 15:20	s		6									
29	AUS_MUR_GB_D4_4	3/09/2022 15:20	s		6									
30	AUS_MUR_RIN_4	2/09/2022 21:15	w		1									
31	AUS_MUR_RIN_5	3/09/2022 19:39	w		1									
32	AUS_MUR_RIN_6	3/09/2022 20:50	w		1									
33	AUS_MUR_6B_0.5	2/09/2022 5:44	s		1									
34	AUS_MUR_6B_1.0	2/09/2022 5:44	s		1									
				TOTAL										

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

- ADELAIDE 2-1 Burma Road Pooraka SA 5095
- BRISBANE 2 Byth Street Stafford QLD 4053
- GLADSTONE 46 Callemondah Drive Clinton QLD 4680
- MACKAY [illegible]
- MELBOURNE 2-4 Westall Road Springvale VIC 3171
- MUDGEE 1/29 Sydney Road Mudgee NSW 2850
- NEWCASTLE 5/585 Maitland Road Mayfield West NSW 2304
- NOWRA 4/13 Geary Place North Nowra NSW 2541
- PERTH 26 Rigali Way Wangara WA 6065
- SYDNEY 277-289 Woodpark Road Smithfield NSW 2164
- TOWNSVILLE 13 Carlton Street Kirwan QLD 4817
- WOLLONGONG 1/19-21 Ralph Black Drive, Nth Wollongong NSW 2500

CLIENT:		TURNAROUND REQUIREMENTS :	☐ Standard TAT (List due date):
OFFICE:		(Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)	☐ Non Standard or urgent TAT (List due date):
PROJECT:	PROJECT NO.:	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle)
ORDER NUMBER:	PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:	COC: 1 2 3 4 5 6 7
PROJECT MANAGER:	CONTACT PH:		OF: 1 2 3 4 5 6 7

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comment:			

SAMPLER:	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
COC Emailed to ALS? (YES / NO)	EDD FORMAT (or default):				
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):					

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required)								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	coc to follow								Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc
35	AUS_MUR_VC_7B_0.5	2/09/2022 6:45	s		1									
36	AUS_MUR_VC_7B_1.0	2/09/2022 6:45	s		1									
37	AUS_MUR_VC8_C_0.5	02/09/2022 09:50	s		1									
38	AUS_MUR_VC8_C_1.0	02/09/2022 09:50	s		1									
39	AUS_MUR_VC_001A_0.5	1/09/2022 16:10	s		1									
40	AUS_MUR_VC_001A_1.0	1/09/2022 16:10	s		1									
41	AUS_MUR_VC_002_0.5	1/09/2022 16:35	s		1									
42	AUS_MUR_VC_002_1.0	1/09/2022 16:35	s		1									
43	AUS_MUR_Lab Blank_3	03/09/2022 21:00		Empty	4									
				TOTAL										

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

UPDATED COC

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ Sydney: 277 Woodpark Rd, Smithfield NSW 2176 Ph 02 8784 8555 E samples.sydney@alsenviro.com
☐ Newcastle: 5 Rosegum Rd, Warabrook NSW 2304 Ph 02 4968 9433 E samples.newcastle@alsenviro.com
☐ Brisbane: 32 Shand St, Stafford QLD 4053 Ph 07 3243 7222 E samples.brisbane@alsenviro.com
☐ Townsville: 14-15 Desma Ct, Bohle QLD 4818 Ph 07 4796 0600 E townsville.environmental@alsenviro.com
☐ Melbourne: 2-4 Westall Rd, Springvale VIC 3171 Ph 03 8549 9600 E samples.melbourne@alsenviro.com
☐ Adelaide: 2-1 Burma Rd, Pooraka SA 5095 Ph 08 8359 0890 E adelaide@alsenviro.com
☐ Perth: 10 Hod Way, Malaga WA 6090 Ph 08 9209 7655 E samples.perth@alsenviro.com
☐ Launceston: 27 Wellington St, Launceston TAS 7250 Ph 03 6331 2158 E launceston@alsenviro.com

CLIENT:	Guardian Geomatics
OFFICE:	10 Kings Park Road, West Perth, 6005, WA
PROJECT:	SUN Cable Murrumujuk
ORDER NUMBER:	
PROJECT MANAGER:	Ben Hazrati — CONTACT PH: 04 2828 6864
SAMPLER:	SEAS OFFSHORE — SAMPLER MOBILE: 0413 024 465
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):
Email Reports to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com
Email Invoice to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com

TURNAROUND REQUIREMENTS: (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)
☐ Standard TAT (List due date):
☐ Non Standard or urgent TAT (List due date):

ALS QUOTE NO.:

COC SEQUENCE NUMBER (Circle)
COC: (1) 2 3 4 5 6 7
OF: 1 2 3 4 5 6 7

FOR LABORATORY USE ONLY (Circle)
Custody Seal Intact? Yes No N/A
Free ice / frozen ice bricks present upon receipt? Yes No N/A
Random Sample Temperature on Receipt: °C
Other comment:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Rick Phipps			Helen
DATE/TIME: 05/09/22 12:00	DATE/TIME:	DATE/TIME:	DATE/TIME: 15/9 9am

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

Subcontract / Forward Lab: Analysis: Newcastle - PSD; Brisbane - TOC
Organised By / Date:
Relinquished By / Date:
Connote / Courier:
WO No: ES2231627
Attach By PO / Internal Sheet:

Environmental Division
Sydney
Work Order Reference
ES2231627

Telephone: +61-2-8784 8555

ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).

LAB ID (ALS USE ONLY)	SAMPLE ID	DATE / TIME	MATRIX: Solid(S) Water(W)	CONTAINER INFORMATION	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (If TPH >10-50mg/kg). PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Cr, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Additional Information (Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.)
39	AUS_MUR_VC_001_0.5	01/09/22 16:10	solid	-	1	x								1 x PSD,
40	AUS_MUR_VC_001_1.0	01/09/22 16:10	solid	B	1	x								1 x PSD
41	AUS_MUR_VC_002_0.5	01/09/22 16:35	solid	B	1	x								1 x PSD
42	AUS_MUR_VC_002_1.0	01/09/22 16:35	solid	B	1	x								1 x PSD
18	AUS_MUR_GS_S14-4	01/09/22 20:11	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
19	AUS_MUR_GS_S21-4	01/09/22 21:52	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
20	AUS_MUR_GS_S30-4 21	01/09/22 23:44	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
21	AUS_MUR_GS_S31-4 22	02/09/22 00:56	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
33	AUS_MUR_VC_6_B_0.5	02/09/22 05:44	solid	B	1	x								1 x PSD
34	AUS_MUR_VC_6_B_1.0	02/09/22 05:44	solid	B	1	x								1 x PSD
35	AUS_MUR_VC_7_B_0.5	02/09/22 06:45	solid	B	1	x								1 x PSD
				TOTAL	31									

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

Sydney 277 Woodpark Rd Smithfield NSW 2164 Ph 02 8784 8555 E samples.sydney@alsenviro.com
Brisbane 32 Shand St Stafford QLD 4053 Ph 07 3243 7222 E samples.brisbane@alsenviro.com
Melbourne 4 Westall Rd Springvale VIC 3171 Ph 03 8549 9600 E samples.melbourne@alsenviro.com
Perth 10 Hod Way Malaga WA 6090 Ph 08 9209 7655 E samples.perth@alsenviro.com
Newcastle 5 Rosegum Rd Warabrook NSW 2304 Ph 02 4968 9433 E samples.newcastle@alsenviro.com
Townsville 14-15 Desma Ct Bohle QLD 4818 Ph 07 4796 0600 E [illegible]
Adelaide 21 Burma Rd Pooraka SA 5095 Ph 08 8359 0890 E samples.adelaide@alsenviro.com
Launceston 27 Wellington St Launceston TAS 7250 Ph 03 6331 2168 E launceston@alsenviro.com

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE:	10 Kings Park Road, West Perth, 6005, WA	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT:	SUN Cable Murrumujuk	ALS QUOTE NO.:	Free ice / frozen ice packs present upon receipt? Yes No N/A
ORDER NUMBER:		COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER:	Ben Hazrati CONTACT PH: 04 2828 6864	OF: 1 2 3 4 5 6 7	Other Comment:
SAMPLER:	SEAS OFFSHORE SAMPLER MOBILE: 0413 024 465	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):	*Rick Phipps*	
Email Reports to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com		DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com		05/09/22 12:00	

UPDATED COC

RELINQUISHED BY:	RECEIVED BY:
	Helen
DATE/TIME:	DATE/TIME:
	15/9 9am

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required)								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ( )	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (if TPH >10-50mg/Kg), PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Ch, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
36	AUS_MUR_VC_7_B_1.0	02/09/22 06:45	solid	B	1	x								1 x PSD
23	AUS_MUR_GS_S34-4A	02/09/22 08:20	solid	B	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
37	AUS_MUR_VC_8_C_0.5	02/09/22 09:50	solid	B	1	x								1 x PSD
38	AUS_MUR_VC_8_C_1.0	02/09/22 09:50	solid	B	1	x								1 x PSD
24	AUS_MUR_GS_S34-4	02/09/22 10:56	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
1	AUS_MUR_GB_A1-4	02/09/22 20:08	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
2	AUS_MUR_GB_A2-4	02/09/22 21:29	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
30	AUS_MUR_RIN-4	02/09/22 21:15	liquid	AP, B, ST	1		x	x	x	See note	x	x		1 x 500ml
5	AUS_MUR_GB_A2-5	02/09/22 21:53	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
6	AUS_MUR_GB_A2-6	02/09/22 22:05	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
3	AUS_MUR_GB_A3-4	02/09/22 23:24	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
				TOTAL	46									

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

Sydney 277 Woodpark Rd, Smithfield NSW 2164 Ph 02 8784 8555 E samples.sydney@alsenviro.com
Brisbane 32 Shand St, Stafford QLD 4053 Ph 07 3243 7222 E samples.brisbane@alsenviro.com
Melbourne 24 Windall Rd, Springvale VIC 3171 Ph 03 8549 9600 E samples.melbourne@alsenviro.com
Perth 10 Hod Way, Malaga WA 6090 Ph 08 9209 7655 E samples.perth@alsenviro.com
Newcastle 5 Rosegum Rd, Warabrook NSW 2304 Ph 02 4958 9630 E samples.newcastle@alsenviro.com
Townsville 14-15 Desma Ct, Bohle QLD 4818 Ph 07 4796 0600 E samples.townsville@alsenviro.com
Adelaide 21 Burma Rd, Pooraka SA 5095 Ph 08 8359 0890 E adelaide@alsenviro.com
Launceston 27 Wellington St, Launceston TAS 7250 Ph 03 6334 2183 E launceston@alsenviro.com

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE:	10 Kings Park Road, West Perth, 6005, WA	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT:	SUN Cable Murrumujuk	ALS QUOTE NO.:	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:		COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt °C
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	Other comment: UPDATED COC
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	RELINQUISHED BY: Rick Phipps
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	DATE/TIME: 05/09/22 12:00
Email Reports to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			RECEIVED BY:
Email Invoice to (will default to PM if no other addresses are listed): ben.hazrati@guardiangeomatics.com			DATE/TIME:
			RELINQUISHED BY:
			DATE/TIME:
			RECEIVED BY: Helen
			DATE/TIME: 15/9 9am

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED Including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required)								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (if TPH >10-50mg/kg), PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Ch, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc
4	AUS_MUR_GB-A4-4	03/09/22 00:45	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
7	AUS_MUR_GB-B1-4	03/09/22 02:33	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
8	AUS_MUR_GB-B2-4-AS	03/09/22 03:40	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
9	AUS_MUR_GB-B2-4-BS	03/09/22 03:40	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
10	AUS_MUR_GB-B3-4	03/09/22 05:25	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
11	AUS_MUR_GB-B4-4	03/09/22 06:20	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
12	AUS_MUR_GB-C1-4	03/09/22 09:13	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
13	AUS_MUR_GB-C2-4	03/09/22 09:52	liquid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
14	AUS_MUR_GB-C2-5	03/09/22 10:02	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
15	AUS_MUR_GB-C2-6	03/09/22 10:12	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
16	AUS_MUR_GB_C3-4	03/09/22 11:50	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
				TOTAL	66									

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

Sydney 277 Woodpark Rd, Smithfield NSW 2164 Ph 02 8784 8555 E samples.sydney@alsenviro.com
Brisbane 32 Shand St, Stafford QLD 4053 Ph 07 3243 7222 E samples.brisbane@alsenviro.com
Melbourne 24 Westall Rd, Springvale VIC 3171 Ph 03 8549 9600 E samples.melbourne@alsenviro.com
Perth 10 Hod Way, Malaga WA 6090 Ph 08 9209 7655 E samples.perth@alsenviro.com
Newcastle 5 Rosegum Rd, Warabrook NSW 2304 Ph 02 4968 9433 E samples.newcastle@alsenviro.com
Townsville 14-15 Desma Ct, Bohle QLD 4818 Ph 07 4796 0600 E townsville.environmental@alsenviro.com
Adelaide 21 Burma Rd, Pooraka SA 5095 Ph 08 8359 0890 E adelaide@alsenviro.com
Launceston 27 Wellington St, Launceston TAS 7250 Ph 03 6331 2548 E launceston@alsenviro.com

CLIENT:	Guardian Geomatics	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
OFFICE:	10 Kings Park Road, West Perth, 6005, WA		
PROJECT:	SUN Cable Murrumujuk	ALS QUOTE NO.:	
ORDER NUMBER:			
PROJECT MANAGER:	Ben Hazrati	CONTACT PH: 04 2828 6864	
SAMPLER:	SEAS OFFSHORE	SAMPLER MOBILE: 0413 024 465	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com		
Email Invoice to (will default to PM if no other addresses are listed):	ben.hazrati@guardiangeomatics.com		

COC SEQUENCE NUMBER (Circle)

COC:	1	2	3	(4)	5	6	7
OF:	1	2	3	4	5	6	7

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt		°C	
Other comments?			

UPDATED COC

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Rick Phipps			Helen
DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME:
05/09/22 12:00			15/9 9am

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL BOTTLES	PSD	Moisture (Dry weight basis)	FROZEN: TOC ()	TPH (benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))	FROZEN: PAH (if TPH >10-50mg/Kg), PAH bottle labelled & frozen	Metals (Cu, Pb, Zn, Ch, Ni, Cd, Hg, As, An, Al, Fe)	500ml Leftovers in jars		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
17	AUS_MUR_GB_C4-4A	03/09/22 12:50	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
25	AUS_MUR_GB-D1-4A	03/09/22 15:15	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
26	AUS_MUR_GB-D2-4-AS	03/09/22 15:51	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
27	AUS_MUR_GB-D2-4-BS	03/09/22 15:51	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
28	AUS_MUR_GB-D3-4	03/09/22 17:13	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
29	AUS_MUR_GB-D4-4	03/09/22 19:39	solid	AP, B, ST	6	x	x	x	x	See note	x	x		1 x PSD, 3 x 250ml, 1 x 150ml, 1 x metals (no preservative).
31	AUS_MUR_RIN-5	03/09/22 19:39	liquid	AP, B, ST	1		x	x	x	See note	x	x		1 x 500ml
32	AUS_MUR_RIN-6	03/09/22 20:50	liquid	AP, B, ST	1		x	x	x	See note	x	x		1 x 500ml
43	AUS_MUR_LABBLANK-3	03/09/22 21:00	solid	AP, B, ST	4									2 x 250ml, 1 x 150ml, 1 x metals (no preservative).
				TOTAL:	42									

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

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2230841**

Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: ben.hazrati@guardiangeomatics.com	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SUN Cable Murrumujuk	Page	: 1 of 6
Order number	: ----	Quote number	: ES2022GUAGEO0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: SEAS OFFSHORE		

Dates

Date Samples Received	: 01-Sep-2022 14:00	Issue Date	: 06-Sep-2022
Client Requested Due Date	: 13-Sep-2022	Scheduled Reporting Date	: **13-Sep-2022**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 7	Temperature	: 13.1' C
Receipt Detail	:	No. of samples received / analysed	: 113 / 62

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

ES2230841-024	: [28-Aug-2022]	: AUS_MUR_GS_S8_02_0.5
ES2230841-026	: [28-Aug-2022]	: AUS_MUR_GS_S8_03B_0.5
ES2230841-027	: [28-Aug-2022]	: AUS_MUR_GS_S8_03B_1.0
ES2230841-032	: [29-Aug-2022]	: AUS_MUR_GS_S11-1_0.5
ES2230841-033	: [29-Aug-2022]	: AUS_MUR_GS_S11-1_1.0
ES2230841-034	: [29-Aug-2022]	: AUS_MUR_GS_S11-2_0.5
ES2230841-035	: [29-Aug-2022]	: AUS_MUR_GS_S11-2_1.0
ES2230841-036	: [29-Aug-2022]	: AUS_MUR_VC_S11-3_0.5
ES2230841-037	: [29-Aug-2022]	: AUS_MUR_VC_S11-3_1.0
ES2230841-057	: [30-Aug-2022]	: AUS_MUR_LAB BLANKS-1
ES2230841-058	: [29-Aug-2022]	: AUS_MUR_VC_S11-2_1.0
ES2230841-060	: [29-Aug-2022]	: AUS_MUR_VC_S11-3_0.5
ES2230841-062	: [29-Aug-2022]	: AUS_MUR_VC_S11-3_0.5
ES2230841-065	: [29-Aug-2022]	: AUS_MUR_VC_S11-2_0.5
ES2230841-069	: [29-Aug-2022]	: AUS_MUR_VC_S8_3B_1.0
ES2230841-070	: [29-Aug-2022]	: AUS_MUR_VC_S11_1_1.0
ES2230841-076	: [29-Aug-2022]	: AUS_MUR_VC_S3 1.0 B5
ES2230841-077	: [29-Aug-2022]	: AUS_MUR_VC_S3_0.5_BS
ES2230841-078	: [29-Aug-2022]	: AUS_MUR_VC_ 58.2 1.0
ES2230841-081	: [29-Aug-2022]	: AUS_MUR_VC_ S11_11.0
ES2230841-082	: [29-Aug-2022]	: AUS_MUR_VC_ S8.2_1.0
ES2230841-083	: [29-Aug-2022]	: AUS_MUR_VC_ 53_0.5_B5
ES2230841-085	: [29-Aug-2022]	: AUS_MUR_VC_ S8.3B1.0
ES2230841-086	: [29-Aug-2022]	: AUS_MUR_VC_ S8_3B_0.5
ES2230841-088	: [29-Aug-2022]	: AUS_MUR_VC_ S11_2 0.5
ES2230841-091	: [29-Aug-2022]	: AUS_MUR_VC_ 53_0.5 B5
ES2230841-095	: [29-Aug-2022]	: AUS_MUR_VC_ S8.3B_0.5
ES2230841-097	: [29-Aug-2022]	: AUS_MUR_VC_ S11_1 0.5
ES2230841-101	: [29-Aug-2022]	: AUS_MUR_VC_ 006A 0.0_0.50
ES2230841-102	: [29-Aug-2022]	: AUS_MUR_VC_ S8.3B_0.5
ES2230841-103	: [29-Aug-2022]	: AUS_MUR_VC_ 007 0.0_0.5
ES2230841-105	: [29-Aug-2022]	: AUS_MUR_VC_0034 0.50_0.90
ES2230841-106	: [29-Aug-2022]	: AUS_MUR_VC_ 58_1_0.5
ES2230841-113	: [29-Aug-2022]	: AUS_MUR_VC_ S11_1 1.0

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG005-SD Total Iron and Aluminium in Sediments by	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP003 Total Organic Carbon (TOC) in Soil	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2230841-001	28-Aug-2022 00:00	AUS_MUR_VC_S1B_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-002	28-Aug-2022 00:00	AUS_MUR_VC_S1B_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-003	28-Aug-2022 00:00	AUS_MUR_VC_S2BS_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-004	28-Aug-2022 00:00	AUS_MUR_VC_S2BS_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-005	28-Aug-2022 00:00	AUS_MUR_VC_S3_0.5AS	✓	✓	✓	✓	✓	✓	✓

			SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG005-SD Total Iron and Aluminium in Sediments by	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP003 Total Organic Carbon (TOC) in Soil	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2230841-006	28-Aug-2022 00:00	AUS_MUR_VC_S3_1.0AS	✓	✓	✓	✓	✓	✓	✓
ES2230841-007	28-Aug-2022 00:00	AUS_MUR_VC_S3_1.0A	✓	✓	✓	✓	✓	✓	✓
ES2230841-008	28-Aug-2022 00:00	AUS_MUR_VC_S3_1.0B	✓	✓	✓	✓	✓	✓	✓
ES2230841-009	28-Aug-2022 00:00	AUS_MUR_VC_S4_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-010	28-Aug-2022 00:00	AUS_MUR_VC_S4_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-011	28-Aug-2022 00:00	AUS_MUR_VC_S5A_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-012	28-Aug-2022 00:00	AUS_MUR_VC_S5A_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-013	28-Aug-2022 00:00	AUS_MUR_VC_S6_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-014	28-Aug-2022 00:00	AUS_MUR_VC_S6_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-015	28-Aug-2022 00:00	AUS_MUR_VC_S7_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-016	28-Aug-2022 00:00	AUS_MUR_VC_S7_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-017	28-Aug-2022 00:00	AUS_MUR_VC_S7_0.5B	✓	✓	✓	✓	✓	✓	✓
ES2230841-018	29-Aug-2022 00:00	AUS_MUR_VC_S8_3_1.1	✓	✓	✓	✓	✓	✓	✓
ES2230841-019	29-Aug-2022 00:00	AUS_MUR_VC_S8_3_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-020	28-Aug-2022 00:00	AUS_MUR_VC_S8_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-021	28-Aug-2022 00:00	AUS_MUR_VC_S8_1_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-022	28-Aug-2022 00:00	AUS_MUR_VC_S8_2_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-023	28-Aug-2022 00:00	AUS_MUR_VC_S8_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-024	28-Aug-2022 00:00	AUS_MUR_GS_S8_02_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-025	28-Aug-2022 00:00	US_MUR_GS_S8_02_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-026	28-Aug-2022 00:00	AUS_MUR_GS_S8_03B_0.	✓	✓	✓	✓	✓	✓	✓
ES2230841-027	28-Aug-2022 00:00	AUS_MUR_GS_S8_03B_1.	✓	✓	✓	✓	✓	✓	✓
ES2230841-028	28-Aug-2022 00:00	AUS_MUR_GS_S9_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-029	28-Aug-2022 00:00	AUS_MUR_GS_S9_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-030	29-Aug-2022 00:00	AUS_MUR_GS_S10_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-031	29-Aug-2022 00:00	AUS_MUR_GS_S10_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-032	29-Aug-2022 00:00	AUS_MUR_GS_S11-1_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-033	29-Aug-2022 00:00	AUS_MUR_GS_S11-1_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-034	29-Aug-2022 00:00	AUS_MUR_GS_S11-2_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-035	29-Aug-2022 00:00	AUS_MUR_GS_S11-2_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-036	29-Aug-2022 00:00	AUS_MUR_VC_S11-3_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-037	29-Aug-2022 00:00	AUS_MUR_VC_S11-3_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-038	29-Aug-2022 00:00	AUS_MUR_VC_S12_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-039	29-Aug-2022 00:00	AUS_MUR_VC_S12_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-040	29-Aug-2022 00:00	AUS_MUR_VC_S13_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-041	29-Aug-2022 00:00	AUS_MUR_VC_S13_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-042	29-Aug-2022 00:00	AUS_MUR_GS_S13_1	✓	✓	✓	✓	✓	✓	✓
ES2230841-043	29-Aug-2022 00:00	AUS_MUR_GS_S12_2	✓	✓	✓	✓	✓	✓	✓
ES2230841-044	29-Aug-2022 00:00	AUS_MUR_GS_S11_1	✓	✓	✓	✓	✓	✓	✓
ES2230841-045	29-Aug-2022 00:00	AUS_MUR_GS_S10_1	✓	✓	✓	✓	✓	✓	✓
ES2230841-046	29-Aug-2022 00:00	AUS_MUR_GS_S9-0.5	✓	✓	✓	✓	✓	✓	✓

			SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG005-SD Total Iron and Aluminium in Sediments by	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP003 Total Organic Carbon (TOC) in Soil	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2230841-047	30-Aug-2022 00:00	AUS_MUR_GS_S8-1B	✓	✓	✓	✓	✓	✓	✓
ES2230841-048	30-Aug-2022 00:00	US_MUR_GS_S7-1	✓	✓	✓	✓	✓	✓	✓
ES2230841-049	30-Aug-2022 00:00	AUS_MUR_GS_S6-1A	✓	✓	✓	✓	✓	✓	✓
ES2230841-050	30-Aug-2022 00:00	AUS_MUR_GS_S6-1A	✓	✓	✓	✓	✓	✓	✓
ES2230841-051	30-Aug-2022 00:00	AUS_MUR_GS_S5-1	✓	✓	✓	✓	✓	✓	✓
ES2230841-052	30-Aug-2022 00:00	AUS_MUR_GS_S4-1	✓	✓	✓	✓	✓	✓	✓
ES2230841-053	30-Aug-2022 00:00	AUS_MUR_GS_S3-1	✓	✓	✓	✓	✓	✓	✓
ES2230841-054	30-Aug-2022 00:00	AUS_MUR_GS_S2-1	✓	✓	✓	✓	✓	✓	✓
ES2230841-058	29-Aug-2022 00:00	AUS_MUR_VC_S11-2_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-059	29-Aug-2022 00:00	AUS_MUR_VC_S9_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-060	29-Aug-2022 00:00	AUS_MUR_VC_S11-3_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-061	29-Aug-2022 00:00	AUS_MUR_VC_S10-0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-062	29-Aug-2022 00:00	AUS_MUR_VC_S11-3_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-063	30-Aug-2022 00:00	AUS_MUR_GS_S7_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-064	28-Aug-2022 00:00	AUS_MUR_VC_S11_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-065	29-Aug-2022 00:00	AUS_MUR_VC_S11-2_0.5	✓	✓	✓	✓	✓	✓	✓

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	(On Hold) SOIL No analysis requested
ES2230841-066	29-Aug-2022 00:00	AUS_MUR__S4_1.0	✓
ES2230841-067	29-Aug-2022 00:00	AUS_MUR_GS_S3_1	✓
ES2230841-068	29-Aug-2022 00:00	AUS_MUR_GS_S8_11A	✓
ES2230841-069	29-Aug-2022 00:00	AUS_MUR_VC_S8_3B_1.0	✓
ES2230841-070	29-Aug-2022 00:00	AUS_MUR_VC_S11_1_1.0	✓
ES2230841-071	29-Aug-2022 00:00	AUS_MUR_VC_S1_0.5	✓
ES2230841-072	29-Aug-2022 00:00	AUS_MUR_S1A_0.5	✓
ES2230841-073	29-Aug-2022 00:00	AUS_MUR_VC_S2B_0.5	✓
ES2230841-074	29-Aug-2022 00:00	AUS_MUR_S4_0.5	✓
ES2230841-075	29-Aug-2022 00:00	AUS_MUR_VC_S8.1 0.5	✓
ES2230841-076	29-Aug-2022 00:00	AUS_MUR_VC_S3 1.0 B5	✓
ES2230841-077	29-Aug-2022 00:00	AUS_MUR_VC_S3_0.5_BS	✓
ES2230841-078	29-Aug-2022 00:00	AUS_MUR_VC_ 58.2 1.0	✓
ES2230841-079	29-Aug-2022 00:00	AUS_MUR_VC_ 52B 1.0	✓

			(On Hold) SOIL No analysis requested
ES2230841-080	29-Aug-2022 00:00	AUS_MUR_GS_ S12_2	✓
ES2230841-081	29-Aug-2022 00:00	AUS_MUR_VC_ S11_11.0	✓
ES2230841-082	29-Aug-2022 00:00	AUS_MUR_VC_ S8.2_1.0	✓
ES2230841-083	29-Aug-2022 00:00	AUS_MUR_VC_ 53_0.5_B5	✓
ES2230841-084	29-Aug-2022 00:00	AUS_MUR_GS_57.1	✓
ES2230841-085	29-Aug-2022 00:00	AUS_MUR_VC_ S8.3B1.0	✓
ES2230841-086	29-Aug-2022 00:00	AUS_MUR_VC_ S8_3B_0.5	✓
ES2230841-087	29-Aug-2022 00:00	AUS_MUR_VC_ S1_1.0	✓
ES2230841-088	29-Aug-2022 00:00	AUS_MUR_VC_ S11_2 0.5	✓
ES2230841-089	29-Aug-2022 00:00	AUS_MUR_VC_ 52_1.0	✓
ES2230841-090	29-Aug-2022 00:00	AUS_MUR_GS_ S3_1	✓
ES2230841-091	29-Aug-2022 00:00	AUS_MUR_VC_ 53_0.5 B5	✓
ES2230841-092	29-Aug-2022 00:00	AUS_MUR_GS_ S8_16	✓
ES2230841-093	29-Aug-2022 00:00	AUS_MUR_GS_S11_1	✓
ES2230841-094	29-Aug-2022 00:00	AUS_MUR_GS_ 53.1	✓
ES2230841-095	29-Aug-2022 00:00	AUS_MUR_VC_ S8.3B_0.5	✓
ES2230841-096	29-Aug-2022 00:00	AUS_MUR_VC_ S9_1.0	✓
ES2230841-097	29-Aug-2022 00:00	AUS_MUR_VC_ S11_1 0.5	✓
ES2230841-098	29-Aug-2022 00:00	AUS_MUR_VC_ 005A	✓
ES2230841-099	29-Aug-2022 00:00	AUS_MUR_VC_004D	✓
ES2230841-100	29-Aug-2022 00:00	AUS_MUR_VC_ 0.5_0.9	✓
ES2230841-101	29-Aug-2022 00:00	AUS_MUR_VC_ 006A 0.0..	✓
ES2230841-102	29-Aug-2022 00:00	AUS_MUR_VC_ S8.3B_0.5	✓
ES2230841-103	29-Aug-2022 00:00	AUS_MUR_VC_ 007 0.0_...	✓
ES2230841-104	29-Aug-2022 00:00	AUS_MUR_VC_ S4_1.0	✓
ES2230841-105	29-Aug-2022 00:00	AUS_MUR_VC_0034 0.50..	✓
ES2230841-106	29-Aug-2022 00:00	AUS_MUR_VC_ 58_1_0.5	✓
ES2230841-107	29-Aug-2022 00:00	AUS_MUR_VC_ S10_0.5	✓
ES2230841-108	29-Aug-2022 00:00	AUS_MUR_VC_ S10 1.0	✓
ES2230841-109	29-Aug-2022 00:00	AUS_MUR_VC_ S4_0.5	✓
ES2230841-110	29-Aug-2022 00:00	AUS_MUR_VC_ S4 1.0	✓
ES2230841-111	29-Aug-2022 00:00	AUS_MUR_VC_ S10 1.0	✓
ES2230841-112	29-Aug-2022 00:00	AUS_MUR_VC_ S9 0.5	✓
ES2230841-113	29-Aug-2022 00:00	AUS_MUR_VC_ S11_1 1.0	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) WATER No analysis requested
ES2230841-055	28-Aug-2022 00:00	AUS_MUR_R2	✓
ES2230841-056	29-Aug-2022 00:00	AUS_MUR_R2	✓
ES2230841-057	30-Aug-2022 00:00	AUS_MUR_LAB BLANKS-1	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

BEN HAZRATI

- *AU Certificate of Analysis - NATA (COA)	Email	ben.hazrati@guardiangeomatics.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ben.hazrati@guardiangeomatics.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Tax Invoice (INV)	Email	ben.hazrati@guardiangeomatics.com
- Chain of Custody (CoC) (COC)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ESDAT (ESDAT)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - XTab (XTAB)	Email	ben.hazrati@guardiangeomatics.com

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2230841**

Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: ben.hazrati@guardiangeomatics.com	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SUN Cable Murrumujuk	Page	: 1 of 6
Order number	: ----	Quote number	: ES2022GUAGEO0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: SEAS OFFSHORE		

Dates

Date Samples Received	: 01-Sep-2022 14:00	Issue Date	: 06-Sep-2022
Client Requested Due Date	: 13-Sep-2022	Scheduled Reporting Date	: **13-Sep-2022**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 7	Temperature	: 13.1' C
Receipt Detail	:	No. of samples received / analysed	: 88 / 39
		No. of samples NOT collected	23

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Extra samples received.Please see attched coc for more information**
- **PSA bags have not been received for Samples 2,50,53 & 58**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Sample AUS_MUR_VC_S2BS_1.0 was not received due to the following reason: Not received by ALS
- Sample AUS_MUR_VC_S3_1.0A was not received due to the following reason: Not Received by ALS
- Sample AUS_MUR_VC_S4_0.5 was not received due to the following reason: not received by ALS
- Sample AUS_MUR_VC_S4_1.0 was not received due to the following reason: not received by ALS
- Sample AUS_MUR_VC_S7_0.5B was not received due to the following reason: not received by ALS
- Sample AUS_MUR_VC_S8_3_1.1 was not received due to the following reason: not received by ALS
- Sample AUS_MUR_VC_S8_0.5 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_VC_S8_1.0 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S8_02_0.5 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S8_03B_0.5 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S8_03B_1.0 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S11-1_0.5 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S11-1_1.0 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S11-2_0.5 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S11-2_1.0 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S10_1 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S9-0.5 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S8-1B was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_VC_S11-3_0.5 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_VC_S10-0.5 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S7_1.0 was not received due to the following reason: not received bt ALS

- Sample AUS_MUR_VC_S11_1.0 was not received due to the following reason: not received bt ALS
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

ES2230841-036	: [29-Aug-2022]	: AUS_MUR_VC_S11-3_0.5
ES2230841-037	: [29-Aug-2022]	: AUS_MUR_VC_S11-3_1.0
ES2230841-057	: [30-Aug-2022]	: AUS_MUR_LAB BLANKS-1
ES2230841-058	: [29-Aug-2022]	: AUS_MUR_VC_S11-2_1.0
ES2230841-065	: [29-Aug-2022]	: AUS_MUR_VC_S11-2_0.5
ES2230841-069	: [29-Aug-2022]	: AUS_MUR_VC_S8_3B_1.0
ES2230841-070	: [29-Aug-2022]	: AUS_MUR_VC_S11_1_1.0
ES2230841-076	: [29-Aug-2022]	: AUS_MUR_VC_S3 1.0 B5
ES2230841-077	: [29-Aug-2022]	: AUS_MUR_VC_S3_0.5_BS
ES2230841-078	: [29-Aug-2022]	: AUS_MUR_VC_ S8.2 1.0
ES2230841-081	: [29-Aug-2022]	: AUS_MUR_VC_ S11_11.0
ES2230841-082	: [29-Aug-2022]	: AUS_MUR_VC_ S8.2_1.0
ES2230841-083	: [29-Aug-2022]	: AUS_MUR_VC_ S3_0.5_B5
ES2230841-085	: [29-Aug-2022]	: AUS_MUR_VC_ S8.3B1.0
ES2230841-086	: [29-Aug-2022]	: AUS_MUR_VC_ S8_3B_0.5
ES2230841-088	: [29-Aug-2022]	: AUS_MUR_VC_ S11_2 0.5
ES2230841-091	: [29-Aug-2022]	: AUS_MUR_VC_ S3_0.5 B5
ES2230841-095	: [29-Aug-2022]	: AUS_MUR_VC_ S8.3B_0.5
ES2230841-097	: [29-Aug-2022]	: AUS_MUR_VC_ S11_1 0.5
ES2230841-101	: [29-Aug-2022]	: AUS_MUR_VC_ 006A 0.0_0.50
ES2230841-102	: [29-Aug-2022]	: AUS_MUR_VC_ S8.3B_0.5
ES2230841-103	: [29-Aug-2022]	: AUS_MUR_VC_ 007 0.0_0.5
ES2230841-105	: [29-Aug-2022]	: AUS_MUR_VC_0034 0.50_0.90
ES2230841-106	: [29-Aug-2022]	: AUS_MUR_VC_ S8_1_0.5
ES2230841-113	: [29-Aug-2022]	: AUS_MUR_VC_ S11_1 1.0

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG005-SD Total Iron and Aluminium in Sediments by	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP003 Total Organic Carbon (TOC) in Soil	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2230841-001	28-Aug-2022 00:00	AUS_MUR_VC_S1B_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-002	28-Aug-2022 00:00	AUS_MUR_VC_S1B_1.0	✓		✓	✓	✓	✓	✓
ES2230841-003	28-Aug-2022 00:00	AUS_MUR_VC_S2BS_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-005	28-Aug-2022 00:00	AUS_MUR_VC_S3_0.5AS	✓	✓	✓	✓	✓	✓	✓
ES2230841-006	28-Aug-2022 00:00	AUS_MUR_VC_S3_1.0AS	✓	✓	✓	✓	✓	✓	✓
ES2230841-008	28-Aug-2022 00:00	AUS_MUR_VC_S3_1.0B	✓	✓	✓	✓	✓	✓	✓
ES2230841-011	28-Aug-2022 00:00	AUS_MUR_VC_S5A_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-012	28-Aug-2022 00:00	AUS_MUR_VC_S5A_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-013	28-Aug-2022 00:00	AUS_MUR_VC_S6_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-014	28-Aug-2022 00:00	AUS_MUR_VC_S6_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-015	28-Aug-2022 00:00	AUS_MUR_VC_S7_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-016	28-Aug-2022 00:00	AUS_MUR_VC_S7_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-019	29-Aug-2022 00:00	AUS_MUR_VC_S8_3_1.0	✓	✓	✓	✓	✓	✓	✓

			SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG005-SD Total Iron and Aluminium in Sediments by	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP003 Total Organic Carbon (TOC) in Soil	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2230841-021	28-Aug-2022 00:00	AUS_MUR_VC_S8_1_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-022	28-Aug-2022 00:00	AUS_MUR_VC_S8_2_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-025	28-Aug-2022 00:00	US_MUR_GS_S8_02_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-028	28-Aug-2022 00:00	AUS_MUR_GS_S9_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-029	28-Aug-2022 00:00	AUS_MUR_GS_S9_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-030	29-Aug-2022 00:00	AUS_MUR_GS_S10_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-031	29-Aug-2022 00:00	AUS_MUR_GS_S10_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-036	29-Aug-2022 00:00	AUS_MUR_VC_S11-3_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-037	29-Aug-2022 00:00	AUS_MUR_VC_S11-3_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-038	29-Aug-2022 00:00	AUS_MUR_VC_S12_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-039	29-Aug-2022 00:00	AUS_MUR_VC_S12_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-040	29-Aug-2022 00:00	AUS_MUR_VC_S13_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-041	29-Aug-2022 00:00	AUS_MUR_VC_S13_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-042	29-Aug-2022 00:00	AUS_MUR_GS_S13_1	✓	✓	✓	✓	✓	✓	✓
ES2230841-043	29-Aug-2022 00:00	AUS_MUR_GS_S12_2	✓	✓	✓	✓	✓	✓	✓
ES2230841-044	29-Aug-2022 00:00	AUS_MUR_GS_S11_1	✓	✓	✓	✓	✓	✓	✓
ES2230841-048	30-Aug-2022 00:00	US_MUR_GS_S7-1	✓	✓	✓	✓	✓	✓	✓
ES2230841-049	30-Aug-2022 00:00	AUS_MUR_GS_S6-1A	✓	✓	✓	✓	✓	✓	✓
ES2230841-050	30-Aug-2022 00:00	AUS_MUR_GS_S6-1A	✓		✓	✓	✓	✓	✓
ES2230841-051	30-Aug-2022 00:00	AUS_MUR_GS_S5-1	✓	✓	✓	✓	✓	✓	✓
ES2230841-052	30-Aug-2022 00:00	AUS_MUR_GS_S4-1	✓	✓	✓	✓	✓	✓	✓
ES2230841-053	30-Aug-2022 00:00	AUS_MUR_GS_S3-1	✓		✓	✓	✓	✓	✓
ES2230841-054	30-Aug-2022 00:00	AUS_MUR_GS_S2-1	✓	✓	✓	✓	✓	✓	✓
ES2230841-058	29-Aug-2022 00:00	AUS_MUR_VC_S11-2_1.0	✓		✓	✓	✓	✓	✓
ES2230841-059	29-Aug-2022 00:00	AUS_MUR_VC_S9_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-065	29-Aug-2022 00:00	AUS_MUR_VC_S11-2_0.5	✓		✓	✓	✓	✓	✓

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	(On Hold) SOIL No analysis requested
ES2230841-066	29-Aug-2022 00:00	AUS_MUR__S4_1.0	✓
ES2230841-067	29-Aug-2022 00:00	AUS_MUR_GS_S3_1	✓
ES2230841-068	29-Aug-2022 00:00	AUS_MUR_GS_S8_11A	✓
ES2230841-069	29-Aug-2022 00:00	AUS_MUR_VC_S8_3B_1.0	✓

			(On Hold) SOIL No analysis requested
ES2230841-070	29-Aug-2022 00:00	AUS_MUR_VC_S11_1_1.0	✓
ES2230841-071	29-Aug-2022 00:00	AUS_MUR_VC_S1_0.5	✓
ES2230841-072	29-Aug-2022 00:00	AUS_MUR_S1A_0.5	✓
ES2230841-073	29-Aug-2022 00:00	AUS_MUR_VC_S2B_0.5	✓
ES2230841-074	29-Aug-2022 00:00	AUS_MUR_S4_0.5	✓
ES2230841-075	29-Aug-2022 00:00	AUS_MUR_VC_S8.1 0.5	✓
ES2230841-076	29-Aug-2022 00:00	AUS_MUR_VC_S3 1.0 B5	✓
ES2230841-077	29-Aug-2022 00:00	AUS_MUR_VC_S3_0.5_BS	✓
ES2230841-078	29-Aug-2022 00:00	AUS_MUR_VC_ S8.2 1.0	✓
ES2230841-079	29-Aug-2022 00:00	AUS_MUR_VC_ S2B 1.0	✓
ES2230841-080	29-Aug-2022 00:00	AUS_MUR_GS_ S12_2	✓
ES2230841-081	29-Aug-2022 00:00	AUS_MUR_VC_ S11_11.0	✓
ES2230841-082	29-Aug-2022 00:00	AUS_MUR_VC_ S8.2_1.0	✓
ES2230841-083	29-Aug-2022 00:00	AUS_MUR_VC_ S3_0.5_B5	✓
ES2230841-084	29-Aug-2022 00:00	AUS_MUR_GS_S7.1	✓
ES2230841-085	29-Aug-2022 00:00	AUS_MUR_VC_ S8.3B1.0	✓
ES2230841-086	29-Aug-2022 00:00	AUS_MUR_VC_ S8_3B_0.5	✓
ES2230841-087	29-Aug-2022 00:00	AUS_MUR_VC_ S1_1.0	✓
ES2230841-088	29-Aug-2022 00:00	AUS_MUR_VC_ S11_2 0.5	✓
ES2230841-089	29-Aug-2022 00:00	AUS_MUR_VC_ S2_1.0	✓
ES2230841-090	29-Aug-2022 00:00	AUS_MUR_GS_ S3_1	✓
ES2230841-091	29-Aug-2022 00:00	AUS_MUR_VC_ S3_0.5 B5	✓
ES2230841-092	29-Aug-2022 00:00	AUS_MUR_GS_ S8_16	✓
ES2230841-094	29-Aug-2022 00:00	AUS_MUR_GS_ S3.1	✓
ES2230841-095	29-Aug-2022 00:00	AUS_MUR_VC_ S8.3B_0.5	✓
ES2230841-096	29-Aug-2022 00:00	AUS_MUR_VC_ S9_1.0	✓
ES2230841-097	29-Aug-2022 00:00	AUS_MUR_VC_ S11_1 0.5	✓
ES2230841-098	29-Aug-2022 00:00	AUS_MUR_VC_ 005A	✓
ES2230841-099	29-Aug-2022 00:00	AUS_MUR_VC_004D	✓
ES2230841-100	29-Aug-2022 00:00	AUS_MUR_VC_ 0.5_0.9	✓
ES2230841-101	29-Aug-2022 00:00	AUS_MUR_VC_ 006A 0.0..	✓
ES2230841-102	29-Aug-2022 00:00	AUS_MUR_VC_ S8.3B_0.5	✓
ES2230841-103	29-Aug-2022 00:00	AUS_MUR_VC_ 007 0.0_...	✓
ES2230841-104	29-Aug-2022 00:00	AUS_MUR_VC_ S4_1.0	✓
ES2230841-105	29-Aug-2022 00:00	AUS_MUR_VC_0034 0.50..	✓
ES2230841-106	29-Aug-2022 00:00	AUS_MUR_VC_ S8_1_0.5	✓
ES2230841-107	29-Aug-2022 00:00	AUS_MUR_VC_ S10_0.5	✓
ES2230841-108	29-Aug-2022 00:00	AUS_MUR_VC_ S10 1.0	✓
ES2230841-110	29-Aug-2022 00:00	AUS_MUR_VC_ S4 1.0	✓
ES2230841-111	29-Aug-2022 00:00	AUS_MUR_VC_ S10 1.0	✓
ES2230841-112	29-Aug-2022 00:00	AUS_MUR_VC_ S9 0.5	✓

			(On Hold) SOIL No analysis requested
ES2230841-113	29-Aug-2022 00:00	AUS_MUR_VC_ S11_1 1.0	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	(On Hold) WATER No analysis requested
ES2230841-055	28-Aug-2022 00:00	AUS_MUR_R2	✓
ES2230841-056	29-Aug-2022 00:00	AUS_MUR_R2	✓
ES2230841-057	30-Aug-2022 00:00	AUS_MUR_LAB BLANKS-1	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

BEN HAZRATI

- *AU Certificate of Analysis - NATA (COA)	Email	ben.hazrati@guardiangeomatics.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ben.hazrati@guardiangeomatics.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Tax Invoice (INV)	Email	ben.hazrati@guardiangeomatics.com
- Chain of Custody (CoC) (COC)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ESDAT (ESDAT)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - XTab (XTAB)	Email	ben.hazrati@guardiangeomatics.com

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2230841**

Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: ben.hazrati@guardiangeomatics.com	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SUN Cable Murrumujuk	Page	: 1 of 6
Order number	: ----	Quote number	: ES2022GUAGEO0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: SEAS OFFSHORE		

Dates

Date Samples Received	: 01-Sep-2022 14:00	Issue Date	: 08-Sep-2022
Client Requested Due Date	: 13-Sep-2022	Scheduled Reporting Date	: **13-Sep-2022**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 7	Temperature	: 13.1' C
Receipt Detail	:	No. of samples received / analysed	: 88 / 39
		No. of samples NOT collected	23

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Extra samples received.Please see attched coc for more information**
- **PSA bags have not been received for Samples 2,50 & 53**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Sample AUS_MUR_VC_S2BS_1.0 was not received due to the following reason: Not received by ALS
- Sample AUS_MUR_VC_S3_1.0A was not received due to the following reason: Not Received by ALS
- Sample AUS_MUR_VC_S4_0.5 was not received due to the following reason: not received by ALS
- Sample AUS_MUR_VC_S4_1.0 was not received due to the following reason: not received by ALS
- Sample AUS_MUR_VC_S7_0.5B was not received due to the following reason: not received by ALS
- Sample AUS_MUR_VC_S8_3_1.1 was not received due to the following reason: not received by ALS
- Sample AUS_MUR_VC_S8_0.5 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_VC_S8_1.0 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S8_02_0.5 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S8_03B_0.5 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S8_03B_1.0 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S11-1_0.5 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S11-1_1.0 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S11-2_0.5 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S11-2_1.0 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S10_1 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S9-0.5 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S8-1B was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_VC_S11-3_0.5 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_VC_S10-0.5 was not received due to the following reason: not received bt ALS
- Sample AUS_MUR_GS_S7_1.0 was not received due to the following reason: not received bt ALS

- Sample AUS_MUR_VC_S11_1.0 was not received due to the following reason: not received bt ALS
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

ES2230841-036	: [29-Aug-2022]	: AUS_MUR_VC_S11-3_0.5
ES2230841-037	: [29-Aug-2022]	: AUS_MUR_VC_S11-3_1.0
ES2230841-057	: [30-Aug-2022]	: AUS_MUR_LAB BLANKS-1
ES2230841-058	: [29-Aug-2022]	: AUS_MUR_VC_S11-2_1.0
ES2230841-065	: [29-Aug-2022]	: AUS_MUR_VC_S11-2_0.5
ES2230841-069	: [29-Aug-2022]	: AUS_MUR_VC_S8_3B_1.0
ES2230841-070	: [29-Aug-2022]	: AUS_MUR_VC_S11_1_1.0
ES2230841-076	: [29-Aug-2022]	: AUS_MUR_VC_S3 1.0 B5
ES2230841-077	: [29-Aug-2022]	: AUS_MUR_VC_S3_0.5_BS
ES2230841-078	: [29-Aug-2022]	: AUS_MUR_VC_ S8.2 1.0
ES2230841-081	: [29-Aug-2022]	: AUS_MUR_VC_ S11_11.0
ES2230841-082	: [29-Aug-2022]	: AUS_MUR_VC_ S8.2_1.0
ES2230841-083	: [29-Aug-2022]	: AUS_MUR_VC_ S3_0.5_B5
ES2230841-085	: [29-Aug-2022]	: AUS_MUR_VC_ S8.3B1.0
ES2230841-086	: [29-Aug-2022]	: AUS_MUR_VC_ S8_3B_0.5
ES2230841-088	: [29-Aug-2022]	: AUS_MUR_VC_ S11_2 0.5
ES2230841-091	: [29-Aug-2022]	: AUS_MUR_VC_ S3_0.5 B5
ES2230841-095	: [29-Aug-2022]	: AUS_MUR_VC_ S8.3B_0.5
ES2230841-097	: [29-Aug-2022]	: AUS_MUR_VC_ S11_1 0.5
ES2230841-101	: [29-Aug-2022]	: AUS_MUR_VC_ 006A 0.0_0.50
ES2230841-102	: [29-Aug-2022]	: AUS_MUR_VC_ S8.3B_0.5
ES2230841-103	: [29-Aug-2022]	: AUS_MUR_VC_ 007 0.0_0.5
ES2230841-105	: [29-Aug-2022]	: AUS_MUR_VC_0034 0.50_0.90
ES2230841-106	: [29-Aug-2022]	: AUS_MUR_VC_ S8_1_0.5
ES2230841-113	: [29-Aug-2022]	: AUS_MUR_VC_ S11_1 1.0

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG005-SD Total Iron and Aluminium in Sediments by	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP003 Total Organic Carbon (TOC) in Soil	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2230841-001	28-Aug-2022 00:00	AUS_MUR_VC_S1B_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-002	28-Aug-2022 00:00	AUS_MUR_VC_S1B_1.0	✓		✓	✓	✓	✓	✓
ES2230841-003	28-Aug-2022 00:00	AUS_MUR_VC_S2BS_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-005	28-Aug-2022 00:00	AUS_MUR_VC_S3_0.5AS	✓	✓	✓	✓	✓	✓	✓
ES2230841-006	28-Aug-2022 00:00	AUS_MUR_VC_S3_1.0AS	✓	✓	✓	✓	✓	✓	✓
ES2230841-008	28-Aug-2022 00:00	AUS_MUR_VC_S3_1.0B	✓	✓	✓	✓	✓	✓	✓
ES2230841-011	28-Aug-2022 00:00	AUS_MUR_VC_S5A_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-012	28-Aug-2022 00:00	AUS_MUR_VC_S5A_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-013	28-Aug-2022 00:00	AUS_MUR_VC_S6_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-014	28-Aug-2022 00:00	AUS_MUR_VC_S6_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-015	28-Aug-2022 00:00	AUS_MUR_VC_S7_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-016	28-Aug-2022 00:00	AUS_MUR_VC_S7_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-019	29-Aug-2022 00:00	AUS_MUR_VC_S8_3_1.0	✓	✓	✓	✓	✓	✓	✓

			SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG005-SD Total Iron and Aluminium in Sediments by	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP003 Total Organic Carbon (TOC) in Soil	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2230841-021	28-Aug-2022 00:00	AUS_MUR_VC_S8_1_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-022	28-Aug-2022 00:00	AUS_MUR_VC_S8_2_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-025	28-Aug-2022 00:00	US_MUR_GS_S8_02_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-028	28-Aug-2022 00:00	AUS_MUR_GS_S9_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-029	28-Aug-2022 00:00	AUS_MUR_GS_S9_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-030	29-Aug-2022 00:00	AUS_MUR_GS_S10_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-031	29-Aug-2022 00:00	AUS_MUR_GS_S10_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-036	29-Aug-2022 00:00	AUS_MUR_VC_S11-3_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-037	29-Aug-2022 00:00	AUS_MUR_VC_S11-3_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-038	29-Aug-2022 00:00	AUS_MUR_VC_S12_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-039	29-Aug-2022 00:00	AUS_MUR_VC_S12_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-040	29-Aug-2022 00:00	AUS_MUR_VC_S13_0.5	✓	✓	✓	✓	✓	✓	✓
ES2230841-041	29-Aug-2022 00:00	AUS_MUR_VC_S13_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-042	29-Aug-2022 00:00	AUS_MUR_GS_S13_1	✓	✓	✓	✓	✓	✓	✓
ES2230841-043	29-Aug-2022 00:00	AUS_MUR_GS_S12_2	✓	✓	✓	✓	✓	✓	✓
ES2230841-044	29-Aug-2022 00:00	AUS_MUR_GS_S11_1	✓	✓	✓	✓	✓	✓	✓
ES2230841-048	30-Aug-2022 00:00	US_MUR_GS_S7-1	✓	✓	✓	✓	✓	✓	✓
ES2230841-049	30-Aug-2022 00:00	AUS_MUR_GS_S6-1A	✓	✓	✓	✓	✓	✓	✓
ES2230841-050	30-Aug-2022 00:00	AUS_MUR_GS_S6-1A	✓		✓	✓	✓	✓	✓
ES2230841-051	30-Aug-2022 00:00	AUS_MUR_GS_S5-1	✓	✓	✓	✓	✓	✓	✓
ES2230841-052	30-Aug-2022 00:00	AUS_MUR_GS_S4-1	✓	✓	✓	✓	✓	✓	✓
ES2230841-053	30-Aug-2022 00:00	AUS_MUR_GS_S3-1	✓		✓	✓	✓	✓	✓
ES2230841-054	30-Aug-2022 00:00	AUS_MUR_GS_S2-1	✓	✓	✓	✓	✓	✓	✓
ES2230841-058	29-Aug-2022 00:00	AUS_MUR_VC_S11-2_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-059	29-Aug-2022 00:00	AUS_MUR_VC_S9_1.0	✓	✓	✓	✓	✓	✓	✓
ES2230841-065	29-Aug-2022 00:00	AUS_MUR_VC_S11-2_0.5	✓		✓	✓	✓	✓	✓

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	(On Hold) SOIL No analysis requested
ES2230841-066	29-Aug-2022 00:00	AUS_MUR__S4_1.0	✓
ES2230841-067	29-Aug-2022 00:00	AUS_MUR_GS_S3_1	✓
ES2230841-068	29-Aug-2022 00:00	AUS_MUR_GS_S8_11A	✓
ES2230841-069	29-Aug-2022 00:00	AUS_MUR_VC_S8_3B_1.0	✓

			(On Hold) SOIL No analysis requested
ES2230841-070	29-Aug-2022 00:00	AUS_MUR_VC_S11_1_1.0	✓
ES2230841-071	29-Aug-2022 00:00	AUS_MUR_VC_S1_0.5	✓
ES2230841-072	29-Aug-2022 00:00	AUS_MUR_S1A_0.5	✓
ES2230841-073	29-Aug-2022 00:00	AUS_MUR_VC_S2B_0.5	✓
ES2230841-074	29-Aug-2022 00:00	AUS_MUR_S4_0.5	✓
ES2230841-075	29-Aug-2022 00:00	AUS_MUR_VC_S8.1 0.5	✓
ES2230841-076	29-Aug-2022 00:00	AUS_MUR_VC_S3 1.0 B5	✓
ES2230841-077	29-Aug-2022 00:00	AUS_MUR_VC_S3_0.5_BS	✓
ES2230841-078	29-Aug-2022 00:00	AUS_MUR_VC_ S8.2 1.0	✓
ES2230841-079	29-Aug-2022 00:00	AUS_MUR_VC_ S2B 1.0	✓
ES2230841-080	29-Aug-2022 00:00	AUS_MUR_GS_ S12_2	✓
ES2230841-081	29-Aug-2022 00:00	AUS_MUR_VC_ S11_11.0	✓
ES2230841-082	29-Aug-2022 00:00	AUS_MUR_VC_ S8.2_1.0	✓
ES2230841-083	29-Aug-2022 00:00	AUS_MUR_VC_ S3_0.5_B5	✓
ES2230841-084	29-Aug-2022 00:00	AUS_MUR_GS_S7.1	✓
ES2230841-085	29-Aug-2022 00:00	AUS_MUR_VC_ S8.3B1.0	✓
ES2230841-086	29-Aug-2022 00:00	AUS_MUR_VC_ S8_3B_0.5	✓
ES2230841-087	29-Aug-2022 00:00	AUS_MUR_VC_ S1_1.0	✓
ES2230841-088	29-Aug-2022 00:00	AUS_MUR_VC_ S11_2 0.5	✓
ES2230841-089	29-Aug-2022 00:00	AUS_MUR_VC_ S2_1.0	✓
ES2230841-090	29-Aug-2022 00:00	AUS_MUR_GS_ S3_1	✓
ES2230841-091	29-Aug-2022 00:00	AUS_MUR_VC_ S3_0.5 B5	✓
ES2230841-092	29-Aug-2022 00:00	AUS_MUR_GS_ S8_16	✓
ES2230841-094	29-Aug-2022 00:00	AUS_MUR_GS_ S3.1	✓
ES2230841-095	29-Aug-2022 00:00	AUS_MUR_VC_ S8.3B_0.5	✓
ES2230841-096	29-Aug-2022 00:00	AUS_MUR_VC_ S9_1.0	✓
ES2230841-097	29-Aug-2022 00:00	AUS_MUR_VC_ S11_1 0.5	✓
ES2230841-098	29-Aug-2022 00:00	AUS_MUR_VC_ 005A	✓
ES2230841-099	29-Aug-2022 00:00	AUS_MUR_VC_004D	✓
ES2230841-100	29-Aug-2022 00:00	AUS_MUR_VC_ 0.5_0.9	✓
ES2230841-101	29-Aug-2022 00:00	AUS_MUR_VC_ 006A 0.0..	✓
ES2230841-102	29-Aug-2022 00:00	AUS_MUR_VC_ S8.3B_0.5	✓
ES2230841-103	29-Aug-2022 00:00	AUS_MUR_VC_ 007 0.0_...	✓
ES2230841-104	29-Aug-2022 00:00	AUS_MUR_VC_ S4_1.0	✓
ES2230841-105	29-Aug-2022 00:00	AUS_MUR_VC_0034 0.50..	✓
ES2230841-106	29-Aug-2022 00:00	AUS_MUR_VC_ S8_1_0.5	✓
ES2230841-107	29-Aug-2022 00:00	AUS_MUR_VC_ S10_0.5	✓
ES2230841-108	29-Aug-2022 00:00	AUS_MUR_VC_ S10 1.0	✓
ES2230841-110	29-Aug-2022 00:00	AUS_MUR_VC_ S4 1.0	✓
ES2230841-111	29-Aug-2022 00:00	AUS_MUR_VC_ S10 1.0	✓
ES2230841-112	29-Aug-2022 00:00	AUS_MUR_VC_ S9 0.5	✓

			(On Hold) SOIL No analysis requested
ES2230841-113	29-Aug-2022 00:00	AUS_MUR_VC_ S11_1 1.0	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	(On Hold) WATER No analysis requested
ES2230841-055	28-Aug-2022 00:00	AUS_MUR_R2	✓
ES2230841-056	29-Aug-2022 00:00	AUS_MUR_R2	✓
ES2230841-057	30-Aug-2022 00:00	AUS_MUR_LAB BLANKS-1	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

BEN HAZRATI

- *AU Certificate of Analysis - NATA (COA)	Email	ben.hazrati@guardiangeomatics.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ben.hazrati@guardiangeomatics.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Tax Invoice (INV)	Email	ben.hazrati@guardiangeomatics.com
- Chain of Custody (CoC) (COC)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ESDAT (ESDAT)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - XTab (XTAB)	Email	ben.hazrati@guardiangeomatics.com

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2231582**

Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: ben.hazrati@guardiangeomatics.com	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SUN Cable Murrumujuk	Page	: 1 of 3
Order number	: ----	Quote number	: ES2022GUAGEO0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: SEAS OFFSHORE		

Dates

Date Samples Received	: 06-Sep-2022 08:00	Issue Date	: 06-Sep-2022
Client Requested Due Date	: 16-Sep-2022	Scheduled Reporting Date	: **16-Sep-2022**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 14	Temperature	: 6.6'C SYD - Ice present
Receipt Detail	:	No. of samples received / analysed	: 9 / 7
		No. of samples NOT collected	2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples #10&11 were received extra. No analysis added**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Sample AUS_MUR_VC_S32_1B_0.5 was not received due to the following reason: NOT RECEIVED
- Sample AUS_MUR_VC_S32_1B_1.0 was not received due to the following reason: NOT RECEIVED
- **EA150H analysis will be conducted by ALS Newcastle & EP003 analysis will be conducted by ALS Brisbane.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

ES2231582-006 : 30-Aug-2022 22:48 : AUS_MUR_VC_S32_1A_0.5
ES2231582-007 : 30-Aug-2022 22:48 : AUS_MUR_VC_S32_1A_1.0
ES2231582-010 : 30-Aug-2022 17:07 : AUS_MUR_VC_S32_2B_1.0 - Extra
ES2231582-011 : 30-Aug-2022 17:07 : AUS_MUR_VC_S32_2B_0.5 - Extra

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG005-SD Total Iron and Aluminium in Sediments by	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP080 BTEXN	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2231582-001	30-Aug-2022 17:07	AUS_MUR_GS_S1_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231582-002	30-Aug-2022 19:59	AUS_MUR_VC_S34_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231582-003	30-Aug-2022 19:59	AUS_MUR_VC_S34_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231582-004	30-Aug-2022 21:08	AUS_MUR_VC_S33_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231582-005	30-Aug-2022 21:08	AUS_MUR_VC_S33_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231582-006	30-Aug-2022 22:48	AUS_MUR_VC_S32_1A_0.	✓	✓	✓	✓	✓	✓	✓
ES2231582-007	30-Aug-2022 22:48	AUS_MUR_VC_S32_1A_1.	✓	✓	✓	✓	✓	✓	✓

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EP003 Total Organic Carbon (TOC) in Soil
ES2231582-001	30-Aug-2022 17:07	AUS_MUR_GS_S1_1.0		✓
ES2231582-002	30-Aug-2022 19:59	AUS_MUR_VC_S34_0.5		✓
ES2231582-003	30-Aug-2022 19:59	AUS_MUR_VC_S34_1.0		✓
ES2231582-004	30-Aug-2022 21:08	AUS_MUR_VC_S33_0.5		✓
ES2231582-005	30-Aug-2022 21:08	AUS_MUR_VC_S33_1.0		✓
ES2231582-006	30-Aug-2022 22:48	AUS_MUR_VC_S32_1A_0.		✓
ES2231582-007	30-Aug-2022 22:48	AUS_MUR_VC_S32_1A_1.		✓
ES2231582-010	30-Aug-2022 17:07	AUS_MUR_VC_S32_2B_1.	✓	
ES2231582-011	30-Aug-2022 17:07	AUS_MUR_VC_S32_2B_0.	✓	

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

BEN HAZRATI

- *AU Certificate of Analysis - NATA (COA)	Email	ben.hazrati@guardiangeomatics.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ben.hazrati@guardiangeomatics.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Tax Invoice (INV)	Email	ben.hazrati@guardiangeomatics.com
- Chain of Custody (CoC) (COC)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ENMRG (ENMRG)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ESDAT (ESDAT)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - XTab (XTAB)	Email	ben.hazrati@guardiangeomatics.com

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2231583**

Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: ben.hazrati@guardiangeomatics.com	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SUN Cable Murrumujuk	Page	: 1 of 3
Order number	: ----	Quote number	: ES2022GUAGEO0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: SEAS OFFSHORE		

Dates

Date Samples Received	: 06-Sep-2022 08:00	Issue Date	: 06-Sep-2022
Client Requested Due Date	: 16-Sep-2022	Scheduled Reporting Date	: **16-Sep-2022**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 14	Temperature	: 6.6'C SYD - Ice present
Receipt Detail	:	No. of samples received / analysed	: 6 / 6

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **EA150H analysis will be conducted by ALS Newcastle & EP003 analysis will be conducted by ALS Brisbane.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

ES2231583-001	: 31-Aug-2022 03:25	: AUS_MUR_VC_S32_3_0.5
ES2231583-002	: 31-Aug-2022 03:25	: AUS_MUR_VC_S32_3_1.0
ES2231583-003	: 31-Aug-2022 05:40	: AUS_MUR_VC_S31_1_0.5
ES2231583-004	: 31-Aug-2022 05:40	: AUS_MUR_VC_S31_1_1.0
ES2231583-005	: 31-Aug-2022 06:30	: AUS_MUR_VC_S31_2_0.5
ES2231583-006	: 31-Aug-2022 06:30	: AUS_MUR_VC_S31_2_1.0

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG005-SD Total Iron and Aluminium in Sediments by	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP080 BTEXN	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2231583-001	31-Aug-2022 03:25	AUS_MUR_VC_S32_3_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231583-002	31-Aug-2022 03:25	AUS_MUR_VC_S32_3_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231583-003	31-Aug-2022 05:40	AUS_MUR_VC_S31_1_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231583-004	31-Aug-2022 05:40	AUS_MUR_VC_S31_1_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231583-005	31-Aug-2022 06:30	AUS_MUR_VC_S31_2_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231583-006	31-Aug-2022 06:30	AUS_MUR_VC_S31_2_1.0	✓	✓	✓	✓	✓	✓	✓

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EP003 Total Organic Carbon (TOC) in Soil
ES2231583-001	31-Aug-2022 03:25	AUS_MUR_VC_S32_3_0.5	✓
ES2231583-002	31-Aug-2022 03:25	AUS_MUR_VC_S32_3_1.0	✓
ES2231583-003	31-Aug-2022 05:40	AUS_MUR_VC_S31_1_0.5	✓
ES2231583-004	31-Aug-2022 05:40	AUS_MUR_VC_S31_1_1.0	✓
ES2231583-005	31-Aug-2022 06:30	AUS_MUR_VC_S31_2_0.5	✓
ES2231583-006	31-Aug-2022 06:30	AUS_MUR_VC_S31_2_1.0	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

BEN HAZRATI

- *AU Certificate of Analysis - NATA (COA)	Email	ben.hazrati@guardiangeomatics.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ben.hazrati@guardiangeomatics.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Tax Invoice (INV)	Email	ben.hazrati@guardiangeomatics.com
- Chain of Custody (CoC) (COC)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ESDAT (ESDAT)	Email	ben.hazrati@guardiangeomatics.com

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2231584**

Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: ben.hazrati@guardiangeomatics.com	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SUN Cable Murrumujuk	Page	: 1 of 3
Order number	: ----	Quote number	: ES2022GUAGEO0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: SEAS OFFSHORE		

Dates

Date Samples Received	: 06-Sep-2022 08:00	Issue Date	: 06-Sep-2022
Client Requested Due Date	: 16-Sep-2022	Scheduled Reporting Date	: **16-Sep-2022**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 14	Temperature	: 6.6'C SYD - Ice present
Receipt Detail	:	No. of samples received / analysed	: 6 / 6

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **EA150H analysis will be conducted by ALS Newcastle & EP003 analysis will be conducted by ALS Brisbane.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

ES2231584-001	: [31-Aug-2022]	: AUS_MUR_VC_S31_3A_0.5AS
ES2231584-002	: [31-Aug-2022]	: AUS_MUR_VC_S31_3A_1.0AS
ES2231584-003	: [31-Aug-2022]	: AUS_MUR_VC_S31_3A_0.5BS
ES2231584-004	: [31-Aug-2022]	: AUS_MUR_VC_S31_3A_1.0BS

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG005-SD Total Iron and Aluminium in Sediments by	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP080 BTEXN	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2231584-001	31-Aug-2022 00:00	AUS_MUR_VC_S31_3A_0.	✓	✓	✓	✓	✓	✓	✓
ES2231584-002	31-Aug-2022 00:00	AUS_MUR_VC_S31_3A_1.	✓	✓	✓	✓	✓	✓	✓
ES2231584-003	31-Aug-2022 00:00	AUS_MUR_VC_S31_3A_0.	✓	✓	✓	✓	✓	✓	✓
ES2231584-004	31-Aug-2022 00:00	AUS_MUR_VC_S31_3A_1.	✓	✓	✓	✓	✓	✓	✓
ES2231584-005	31-Aug-2022 00:00	AUS_MUR_VC_S30B_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231584-006	31-Aug-2022 00:00	AUS_MUR_VC_S30B_1.0	✓	✓	✓	✓	✓	✓	✓

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOIL - EP003 Total Organic Carbon (TOC) in Soil
ES2231584-001	31-Aug-2022 00:00	AUS_MUR_VC_S31_3A_0.	✓
ES2231584-002	31-Aug-2022 00:00	AUS_MUR_VC_S31_3A_1.	✓
ES2231584-003	31-Aug-2022 00:00	AUS_MUR_VC_S31_3A_0.	✓
ES2231584-004	31-Aug-2022 00:00	AUS_MUR_VC_S31_3A_1.	✓
ES2231584-005	31-Aug-2022 00:00	AUS_MUR_VC_S30B_0.5	✓
ES2231584-006	31-Aug-2022 00:00	AUS_MUR_VC_S30B_1.0	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

BEN HAZRATI

- *AU Certificate of Analysis - NATA (COA)	Email	ben.hazrati@guardiangeomatics.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ben.hazrati@guardiangeomatics.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Tax Invoice (INV)	Email	ben.hazrati@guardiangeomatics.com
- Chain of Custody (CoC) (COC)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ENMRG (ENMRG)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ESDAT (ESDAT)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - XTab (XTAB)	Email	ben.hazrati@guardiangeomatics.com

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2231585**

Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: ben.hazrati@guardiangeomatics.com	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SUN Cable Murrumujuk	Page	: 1 of 3
Order number	: ----	Quote number	: ES2022GUAGEO0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: SEAS OFFSHORE		

Dates

Date Samples Received	: 06-Sep-2022 08:00	Issue Date	: 06-Sep-2022
Client Requested Due Date	: 16-Sep-2022	Scheduled Reporting Date	: **16-Sep-2022**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 14	Temperature	: 6.6'C SYD - Ice present
Receipt Detail	:	No. of samples received / analysed	: 10 / 10

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **EA150H analysis will be conducted by ALS Newcastle & EP003 analysis will be conducted by ALS Brisbane.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP003 Total Organic Carbon (TOC) in Soil	SOIL - EP080 BTEXN	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2231585-001	31-Aug-2022 10:58	AUS_MUR_VC_S29_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231585-002	31-Aug-2022 10:58	AUS_MUR_VC_S29_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231585-003	31-Aug-2022 11:40	AUS_MUR_VC_S28_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231585-004	31-Aug-2022 11:40	AUS_MUR_VC_S28_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231585-005	31-Aug-2022 12:33	AUS_MUR_VC_S27_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231585-006	31-Aug-2022 12:33	AUS_MUR_VC_S27_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231585-007	31-Aug-2022 14:29	AUS_MUR_VC_S26B_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231585-008	31-Aug-2022 14:29	AUS_MUR_VC_S26B_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231585-009	31-Aug-2022 15:31	AUS_MUR_VC_S25_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231585-010	31-Aug-2022 15:31	AUS_MUR_VC_S25_1.0	✓	✓	✓	✓	✓	✓	✓

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EG005-SD Total Iron and Aluminium in Sediments by
ES2231585-001	31-Aug-2022 10:58	AUS_MUR_VC_S29_0.5	✓
ES2231585-002	31-Aug-2022 10:58	AUS_MUR_VC_S29_1.0	✓
ES2231585-003	31-Aug-2022 11:40	AUS_MUR_VC_S28_0.5	✓
ES2231585-004	31-Aug-2022 11:40	AUS_MUR_VC_S28_1.0	✓
ES2231585-005	31-Aug-2022 12:33	AUS_MUR_VC_S27_0.5	✓
ES2231585-006	31-Aug-2022 12:33	AUS_MUR_VC_S27_1.0	✓
ES2231585-007	31-Aug-2022 14:29	AUS_MUR_VC_S26B_0.5	✓
ES2231585-008	31-Aug-2022 14:29	AUS_MUR_VC_S26B_1.0	✓
ES2231585-009	31-Aug-2022 15:31	AUS_MUR_VC_S25_0.5	✓
ES2231585-010	31-Aug-2022 15:31	AUS_MUR_VC_S25_1.0	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

BEN HAZRATI

- *AU Certificate of Analysis - NATA (COA)	Email	ben.hazrati@guardiangeomatics.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ben.hazrati@guardiangeomatics.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Tax Invoice (INV)	Email	ben.hazrati@guardiangeomatics.com
- Chain of Custody (CoC) (COC)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ENMRG (ENMRG)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ESDAT (ESDAT)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - XTab (XTAB)	Email	ben.hazrati@guardiangeomatics.com

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2231586**

Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: ben.hazrati@guardiangeomatics.com	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SUN Cable Murrumujuk	Page	: 1 of 3
Order number	: ----	Quote number	: ES2022GUAGEO0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: SEAS OFFSHORE		

Dates

Date Samples Received	: 06-Sep-2022 08:00	Issue Date	: 06-Sep-2022
Client Requested Due Date	: 16-Sep-2022	Scheduled Reporting Date	: **16-Sep-2022**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 14	Temperature	: 6.6'C SYD - Ice present
Receipt Detail	:	No. of samples received / analysed	: 11 / 11

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **EA150H analysis will be conducted by ALS Newcastle & EP003 analysis will be conducted by ALS Brisbane.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP003 Total Organic Carbon (TOC) in Soil	SOIL - EP080 BTEXN	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2231586-001	31-Aug-2022 16:14	AUS_MUR_VC_S24_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231586-002	31-Aug-2022 16:14	AUS_MUR_VC_S24_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231586-003	01-Sep-2022 12:55	AUS_MUR_LABBLANK	✓	✓	✓	✓	✓	✓	✓
ES2231586-004	31-Aug-2022 17:16	AUS_MUR_VC_S23_0.5A	✓	✓	✓	✓	✓	✓	✓
ES2231586-005	31-Aug-2022 17:16	AUS_MUR_VC_S23_1.0A	✓	✓	✓	✓	✓	✓	✓
ES2231586-006	31-Aug-2022 17:16	AUS_MUR_VC_S23_0.5B	✓	✓	✓	✓	✓	✓	✓
ES2231586-007	31-Aug-2022 17:16	AUS_MUR_VC_S23_1.0B	✓	✓	✓	✓	✓	✓	✓
ES2231586-008	31-Aug-2022 19:22	AUS_MUR_VC_S22_0.5A	✓	✓	✓	✓	✓	✓	✓
ES2231586-009	31-Aug-2022 19:22	AUS_MUR_VC_S22_1.0A	✓	✓	✓	✓	✓	✓	✓
ES2231586-010	31-Aug-2022 19:22	AUS_MUR_VC_S22_0.5B	✓	✓	✓	✓	✓	✓	✓
ES2231586-011	31-Aug-2022 19:22	AUS_MUR_VC_S22_1.0B	✓	✓	✓	✓	✓	✓	✓

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EG005-SD Total Iron and Aluminium in Sediments by
ES2231586-001	31-Aug-2022 16:14	AUS_MUR_VC_S24_0.5	✓
ES2231586-002	31-Aug-2022 16:14	AUS_MUR_VC_S24_1.0	✓
ES2231586-003	01-Sep-2022 12:55	AUS_MUR_LABBLANK	✓
ES2231586-004	31-Aug-2022 17:16	AUS_MUR_VC_S23_0.5A	✓
ES2231586-005	31-Aug-2022 17:16	AUS_MUR_VC_S23_1.0A	✓
ES2231586-006	31-Aug-2022 17:16	AUS_MUR_VC_S23_0.5B	✓
ES2231586-007	31-Aug-2022 17:16	AUS_MUR_VC_S23_1.0B	✓
ES2231586-008	31-Aug-2022 19:22	AUS_MUR_VC_S22_0.5A	✓
ES2231586-009	31-Aug-2022 19:22	AUS_MUR_VC_S22_1.0A	✓
ES2231586-010	31-Aug-2022 19:22	AUS_MUR_VC_S22_0.5B	✓
ES2231586-011	31-Aug-2022 19:22	AUS_MUR_VC_S22_1.0B	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

BEN HAZRATI

- *AU Certificate of Analysis - NATA (COA)	Email	ben.hazrati@guardiangeomatics.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ben.hazrati@guardiangeomatics.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Tax Invoice (INV)	Email	ben.hazrati@guardiangeomatics.com
- Chain of Custody (CoC) (COC)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ENMRG (ENMRG)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ESDAT (ESDAT)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - XTab (XTAB)	Email	ben.hazrati@guardiangeomatics.com

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2231586**

Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: ben.hazrati@guardiangeomatics.com	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SUN Cable Murrumujuk	Page	: 1 of 3
Order number	: ----	Quote number	: ES2022GUAGEO0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: SEAS OFFSHORE		

Dates

Date Samples Received	: 06-Sep-2022 08:00	Issue Date	: 08-Sep-2022
Client Requested Due Date	: 16-Sep-2022	Scheduled Reporting Date	: **16-Sep-2022**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 14	Temperature	: 6.6'C SYD - Ice present
Receipt Detail	:	No. of samples received / analysed	: 11 / 10

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- This is an updated SRN for this work order. Analysis canot be conducted on sample #3 since jars were received empty for this sample.
- **Samples #3 received empty. Analysis canot be conducted.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **EA150H analysis will be conducted by ALS Newcastle & EP003 analysis will be conducted by ALS Brisbane.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP003 Total Organic Carbon (TOC) in Soil	SOIL - EP080 BTEXN	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2231586-001	31-Aug-2022 16:14	AUS_MUR_VC_S24_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231586-002	31-Aug-2022 16:14	AUS_MUR_VC_S24_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231586-004	31-Aug-2022 17:16	AUS_MUR_VC_S23_0.5A	✓	✓	✓	✓	✓	✓	✓
ES2231586-005	31-Aug-2022 17:16	AUS_MUR_VC_S23_1.0A	✓	✓	✓	✓	✓	✓	✓
ES2231586-006	31-Aug-2022 17:16	AUS_MUR_VC_S23_0.5B	✓	✓	✓	✓	✓	✓	✓
ES2231586-007	31-Aug-2022 17:16	AUS_MUR_VC_S23_1.0B	✓	✓	✓	✓	✓	✓	✓
ES2231586-008	31-Aug-2022 19:22	AUS_MUR_VC_S22_0.5A	✓	✓	✓	✓	✓	✓	✓
ES2231586-009	31-Aug-2022 19:22	AUS_MUR_VC_S22_1.0A	✓	✓	✓	✓	✓	✓	✓
ES2231586-010	31-Aug-2022 19:22	AUS_MUR_VC_S22_0.5B	✓	✓	✓	✓	✓	✓	✓
ES2231586-011	31-Aug-2022 19:22	AUS_MUR_VC_S22_1.0B	✓	✓	✓	✓	✓	✓	✓

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EG005-SD Total Iron and Aluminium in Sediments by
ES2231586-001	31-Aug-2022 16:14	AUS_MUR_VC_S24_0.5	✓
ES2231586-002	31-Aug-2022 16:14	AUS_MUR_VC_S24_1.0	✓
ES2231586-004	31-Aug-2022 17:16	AUS_MUR_VC_S23_0.5A	✓
ES2231586-005	31-Aug-2022 17:16	AUS_MUR_VC_S23_1.0A	✓
ES2231586-006	31-Aug-2022 17:16	AUS_MUR_VC_S23_0.5B	✓
ES2231586-007	31-Aug-2022 17:16	AUS_MUR_VC_S23_1.0B	✓
ES2231586-008	31-Aug-2022 19:22	AUS_MUR_VC_S22_0.5A	✓
ES2231586-009	31-Aug-2022 19:22	AUS_MUR_VC_S22_1.0A	✓
ES2231586-010	31-Aug-2022 19:22	AUS_MUR_VC_S22_0.5B	✓
ES2231586-011	31-Aug-2022 19:22	AUS_MUR_VC_S22_1.0B	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

BEN HAZRATI

- *AU Certificate of Analysis - NATA (COA)	Email	ben.hazrati@guardiangeomatics.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ben.hazrati@guardiangeomatics.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Tax Invoice (INV)	Email	ben.hazrati@guardiangeomatics.com
- Chain of Custody (CoC) (COC)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ENMRG (ENMRG)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ESDAT (ESDAT)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - XTab (XTAB)	Email	ben.hazrati@guardiangeomatics.com

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2231587**

Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: ben.hazrati@guardiangeomatics.com	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SUN Cable Murrumujuk	Page	: 1 of 4
Order number	: ----	Quote number	: ES2022GUAGEO0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: SEAS OFFSHORE		

Dates

Date Samples Received	: 06-Sep-2022 08:00	Issue Date	: 06-Sep-2022
Client Requested Due Date	: 16-Sep-2022	Scheduled Reporting Date	: **16-Sep-2022**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 14	Temperature	: 6.6'C SYD - Ice present
Receipt Detail	:	No. of samples received / analysed	: 11 / 9
		No. of samples NOT collected	2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Sample AUS_MUR_VC_S20B_0.5 was not received due to the following reason: Not received
- Sample AUS_MUR_VC_S20B_1.0 was not received due to the following reason: Not received
- **EA150H analysis will be conducted by ALS Newcastle & EP003 analysis will be conducted by ALS Brisbane.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

Method Sample ID	Sample Container Received	Preferred Sample Container for Analysis
Total Mercury by FIMS - Low Level : EG035T-LL		
AUS_MUR_RIN-3	- Clear Plastic Bottle - Natural	- Clear HDPE (U-T ORC) - UHP Nitric Acid; Unfiltered
Total Metals by ICP-MS - Suite A : EG020A-T		
AUS_MUR_RIN-3	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Unfiltered
Total Metals in Saline Water Suite A by ORC-ICPMS : EG093A-T		
AUS_MUR_RIN-3	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Unfiltered

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

ES2231587-008 : 01-Sep-2022 23:25 : AUS_MUR_VC_S18_1_0.5
ES2231587-009 : 01-Sep-2022 11:31 : AUS_MUR_VC_S18_1_1.0
ES2231587-010 : 01-Sep-2022 00:51 : AUS_MUR_VC_S18_2A_0.5
ES2231587-011 : 01-Sep-2022 00:51 : AUS_MUR_VC_S18_2A_1.0
ES2231587-012 : 31-Aug-2022 02:25 : AUS_MUR_VC_S20A_0.5 - Extra
ES2231587-013 : 31-Aug-2022 02:25 : AUS_MUR_VC_S20A_1.0 - Extra

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP003 Total Organic Carbon (TOC) in Soil	SOIL - EP080 BTEXN	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2231587-001	31-Aug-2022 20:34	AUS_MUR_VC_S21_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231587-002	31-Aug-2022 00:34	AUS_MUR_VC_S21_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231587-006	31-Aug-2022 22:22	AUS_MUR_VC_S19_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231587-007	31-Aug-2022 23:25	AUS_MUR_VC_S19_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231587-008	01-Sep-2022 23:25	AUS_MUR_VC_S18_1_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231587-009	01-Sep-2022 11:31	AUS_MUR_VC_S18_1_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231587-010	01-Sep-2022 00:51	AUS_MUR_VC_S18_2A_0.	✓	✓	✓	✓	✓	✓	✓
ES2231587-011	01-Sep-2022 00:51	AUS_MUR_VC_S18_2A_1.	✓	✓	✓	✓	✓	✓	✓

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	(On Hold) SOIL No analysis requested	SOIL - EG005-SD Total Iron and Aluminium in Sediments by
ES2231587-001	31-Aug-2022 20:34	AUS_MUR_VC_S21_0.5		✓
ES2231587-002	31-Aug-2022 00:34	AUS_MUR_VC_S21_1.0		✓
ES2231587-006	31-Aug-2022 22:22	AUS_MUR_VC_S19_0.5		✓
ES2231587-007	31-Aug-2022 23:25	AUS_MUR_VC_S19_1.0		✓
ES2231587-008	01-Sep-2022 23:25	AUS_MUR_VC_S18_1_0.5		✓
ES2231587-009	01-Sep-2022 11:31	AUS_MUR_VC_S18_1_1.0		✓
ES2231587-010	01-Sep-2022 00:51	AUS_MUR_VC_S18_2A_0.		✓
ES2231587-011	01-Sep-2022 00:51	AUS_MUR_VC_S18_2A_1.		✓
ES2231587-012	31-Aug-2022 02:25	AUS_MUR_VC_S20A_0.5 .	✓	
ES2231587-013	31-Aug-2022 02:25	AUS_MUR_VC_S20A_1.0 .	✓	

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EG020T Total Metals by ICP/MS (including digestion)	WATER - EG035T-LL Total Mercury - Low Level	WATER - EG093-T Total Metals by ORC - Ultra Trace in Saline	WATER - EP005 Total Organic Carbon (TOC)
ES2231587-003	31-Aug-2022 12:40	AUS_MUR_RIN-3	✓	✓	✓	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method **Client Sample ID(s)**	**Container**	**Due for extraction**	**Due for analysis**	**Samples Received**		**Instructions Received**	
				Date	**Evaluation**	**Date**	**Evaluation**
EP005: Total Organic Carbon							
AUS_MUR_RIN-3	Clear Plastic Bottle - Natural	----	01-Sep-2022	06-Sep-2022	×	----	----

Requested Deliverables

BEN HAZRATI

- *AU Certificate of Analysis - NATA (COA)	Email	ben.hazrati@guardiangeomatics.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ben.hazrati@guardiangeomatics.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Tax Invoice (INV)	Email	ben.hazrati@guardiangeomatics.com
- Chain of Custody (CoC) (COC)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ENMRG (ENMRG)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ESDAT (ESDAT)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - XTab (XTAB)	Email	ben.hazrati@guardiangeomatics.com

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2231587**

Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: ben.hazrati@guardiangeomatics.com	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SUN Cable Murrumujuk	Page	: 1 of 4
Order number	: ----	Quote number	: ES2022GUAGEO0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: SEAS OFFSHORE		

Dates

Date Samples Received	: 06-Sep-2022 08:00	Issue Date	: 07-Sep-2022
Client Requested Due Date	: 16-Sep-2022	Scheduled Reporting Date	: **16-Sep-2022**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 14	Temperature	: 6.6'C SYD - Ice present
Receipt Detail	:	No. of samples received / analysed	: 11 / 9
		No. of samples NOT collected	2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Sample AUS_MUR_VC_S20B_0.5 was not received due to the following reason: Not received
- Sample AUS_MUR_VC_S20B_1.0 was not received due to the following reason: Not received
- **EA150H analysis will be conducted by ALS Newcastle & EP003 analysis will be conducted by ALS Brisbane.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

Method Sample ID	Sample Container Received	Preferred Sample Container for Analysis
Total Mercury by FIMS - Low Level : EG035T-LL		
AUS_MUR_RIN-3	- Clear Plastic Bottle - Natural	- Clear HDPE (U-T ORC) - UHP Nitric Acid; Unfiltered
Total Metals by ICP-MS - Suite A : EG020A-T		
AUS_MUR_RIN-3	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Unfiltered
Total Metals in Saline Water Suite A by ORC-ICPMS : EG093A-T		
AUS_MUR_RIN-3	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Unfiltered

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

ES2231587-008	: 01-Sep-2022 23:25	: AUS_MUR_VC_S18_1_0.5
ES2231587-009	: 01-Sep-2022 11:31	: AUS_MUR_VC_S18_1_1.0
ES2231587-010	: 01-Sep-2022 00:51	: AUS_MUR_VC_S18_2A_0.5
ES2231587-011	: 01-Sep-2022 00:51	: AUS_MUR_VC_S18_2A_1.0
ES2231587-012	: 31-Aug-2022 02:25	: AUS_MUR_VC_S20A_0.5 - Extra
ES2231587-013	: 31-Aug-2022 02:25	: AUS_MUR_VC_S20A_1.0 - Extra

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP003 Total Organic Carbon (TOC) in Soil	SOIL - EP080 BTEXN	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2231587-001	31-Aug-2022 20:34	AUS_MUR_VC_S21_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231587-002	31-Aug-2022 00:34	AUS_MUR_VC_S21_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231587-006	31-Aug-2022 22:22	AUS_MUR_VC_S19_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231587-007	31-Aug-2022 23:25	AUS_MUR_VC_S19_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231587-008	01-Sep-2022 23:25	AUS_MUR_VC_S18_1_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231587-009	01-Sep-2022 11:31	AUS_MUR_VC_S18_1_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231587-010	01-Sep-2022 00:51	AUS_MUR_VC_S18_2A_0.	✓	✓	✓	✓	✓	✓	✓
ES2231587-011	01-Sep-2022 00:51	AUS_MUR_VC_S18_2A_1.	✓	✓	✓	✓	✓	✓	✓

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EG005-SD Total Iron and Aluminium in Sediments by
ES2231587-001	31-Aug-2022 20:34	AUS_MUR_VC_S21_0.5		✓
ES2231587-002	31-Aug-2022 00:34	AUS_MUR_VC_S21_1.0		✓
ES2231587-006	31-Aug-2022 22:22	AUS_MUR_VC_S19_0.5		✓
ES2231587-007	31-Aug-2022 23:25	AUS_MUR_VC_S19_1.0		✓
ES2231587-008	01-Sep-2022 23:25	AUS_MUR_VC_S18_1_0.5		✓
ES2231587-009	01-Sep-2022 11:31	AUS_MUR_VC_S18_1_1.0		✓
ES2231587-010	01-Sep-2022 00:51	AUS_MUR_VC_S18_2A_0.		✓
ES2231587-011	01-Sep-2022 00:51	AUS_MUR_VC_S18_2A_1.		✓
ES2231587-012	31-Aug-2022 02:25	AUS_MUR_VC_S20A_0.5 .	✓	
ES2231587-013	31-Aug-2022 02:25	AUS_MUR_VC_S20A_1.0 .	✓	

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA154 Particle Sizing by Laser Diffraction	WATER - EG020T Total Metals by ICP/MS (including digestion)	WATER - EG035T-LL Total Mercury - Low Level	WATER - EG093-T Total Metals by ORC - Ultra Trace in Saline	WATER - EP005 Total Organic Carbon (TOC)
ES2231587-003	31-Aug-2022 12:40	AUS_MUR_RIN-3	✓	✓	✓	✓	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received Date	Samples Received Evaluation	Instructions Received Date	Instructions Received Evaluation
EP005: Total Organic Carbon							
AUS_MUR_RIN-3	Clear Plastic Bottle - Natural	----	01-Sep-2022	06-Sep-2022	×	----	----

Requested Deliverables

BEN HAZRATI

- *AU Certificate of Analysis - NATA (COA)	Email	ben.hazrati@guardiangeomatics.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ben.hazrati@guardiangeomatics.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Tax Invoice (INV)	Email	ben.hazrati@guardiangeomatics.com
- Chain of Custody (CoC) (COC)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ENMRG (ENMRG)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ESDAT (ESDAT)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - XTab (XTAB)	Email	ben.hazrati@guardiangeomatics.com

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2231588**

Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: ben.hazrati@guardiangeomatics.com	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SUN Cable Murrumujuk	Page	: 1 of 2
Order number	: ----	Quote number	: ES2022GUAGEO0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: SEAS OFFSHORE		

Dates

Date Samples Received	: 06-Sep-2022 08:00	Issue Date	: 06-Sep-2022
Client Requested Due Date	: 16-Sep-2022	Scheduled Reporting Date	: **16-Sep-2022**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 14	Temperature	: 6.6'C SYD - Ice present
Receipt Detail	:	No. of samples received / analysed	: 10 / 10

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **EA150H analysis will be conducted by ALS Newcastle & EP003 analysis will be conducted by ALS Brisbane.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

ES2231588-001 : 01-Sep-2022 03:25 : AUS_MUR_VC_S18_3_0.5
ES2231588-002 : 01-Sep-2022 03:35 : AUS_MUR_VC_S18_3_1.0

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP003 Total Organic Carbon (TOC) in Soil	SOIL - EP080 BTEXN	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2231588-001	01-Sep-2022 03:25	AUS_MUR_VC_S18_3_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231588-002	01-Sep-2022 03:35	AUS_MUR_VC_S18_3_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231588-003	01-Sep-2022 05:02	AUS_MUR_VC_S17A_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231588-004	01-Sep-2022 05:02	AUS_MUR_VC_S17A_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231588-005	01-Sep-2022 05:51	AUS_MUR_VC_S16_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231588-006	01-Sep-2022 05:51	AUS_MUR_VC_S16_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231588-007	01-Sep-2022 06:45	AUS_MUR_VC_S15_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231588-008	01-Sep-2022 06:45	AUS_MUR_VC_S15_1.0	✓	✓	✓	✓	✓	✓	✓
ES2231588-009	01-Sep-2022 07:40	AUS_MUR_VC_S14_0.5	✓	✓	✓	✓	✓	✓	✓
ES2231588-010	01-Sep-2022 07:40	AUS_MUR_VC_S14_1.0	✓	✓	✓	✓	✓	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

BEN HAZRATI

- *AU Certificate of Analysis - NATA (COA)	Email	ben.hazrati@guardiangeomatics.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ben.hazrati@guardiangeomatics.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Tax Invoice (INV)	Email	ben.hazrati@guardiangeomatics.com
- Chain of Custody (CoC) (COC)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ENMRG (ENMRG)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ESDAT (ESDAT)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - XTab (XTAB)	Email	ben.hazrati@guardiangeomatics.com

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2231627**

Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: ben.hazrati@guardiangeomatics.com	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SUN Cable Murrumujuk	Page	: 1 of 4
Order number	: ----	Quote number	: ES2022GUAGEO0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: SEAS OFFSHORE		

Dates

Date Samples Received	: 06-Sep-2022 07:30	Issue Date	: 15-Sep-2022
Client Requested Due Date	: 28-Sep-2022	Scheduled Reporting Date	: **23-Sep-2022**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 6	Temperature	: 3.3' C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 42 / 41

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Sample #43 received empty.**
- **Unable to conduct TPH/BTEX for water samples 30, 31 and 32 due to bottles were not received.**
- **Unable to conduct Particle Size for sample #22 due to bag was not supplied.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **The final report will be completed by the scheduled reporting date listed in this SRN. A Preliminary report will be available on 23/09/2022 with the exception of TOC analysis**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **Particle Size analysis will be conducted by ALS Newcastle.**
- **TOC analysis will be conducted by ALS Brisbane.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

Method Sample ID	Sample Container Received	Preferred Sample Container for Analysis
Total Mercury by FIMS : EG035T		
AUS_MUR_RIN_4	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Unfiltered
AUS_MUR_RIN_5	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Unfiltered
AUS_MUR_RIN_6	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Unfiltered
Total Metals by ICP-MS - Suite A : EG020A-T		
AUS_MUR_RIN_4	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Unfiltered
AUS_MUR_RIN_5	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Unfiltered
AUS_MUR_RIN_6	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Unfiltered

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

ES2231627-043 : 03-Sep-2022 20:30 : AUS_MUR_Lab Blank_3 - Empty

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG005-SD Total Iron and Aluminium in Sediments by	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP003 Total Organic Carbon (TOC) in Soil	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2231627-001	02-Sep-2022 19:45	AUS_MUR_GB_A1_4	✓	✓	✓	✓	✓	✓	✓
ES2231627-002	02-Sep-2022 19:45	AUS_MUR_GB_A2_4	✓	✓	✓	✓	✓	✓	✓
ES2231627-003	02-Sep-2022 19:45	AUS_MUR_GB_A3_4	✓	✓	✓	✓	✓	✓	✓
ES2231627-004	02-Sep-2022 19:45	AUS_MUR_GB_A4_4	✓	✓	✓	✓	✓	✓	✓
ES2231627-005	02-Sep-2022 19:45	AUS_MUR_GB_A2_5	✓	✓	✓	✓	✓	✓	✓
ES2231627-006	02-Sep-2022 19:45	AUS_MUR_GB_A2_6	✓	✓	✓	✓	✓	✓	✓
ES2231627-007	03-Sep-2022 02:03	AUS_MUR_GB_B1_4	✓	✓	✓	✓	✓	✓	✓
ES2231627-008	03-Sep-2022 02:03	AUS_MUR_GB_B2_4_AS	✓	✓	✓	✓	✓	✓	✓
ES2231627-009	03-Sep-2022 02:03	AUS_MUR_GB_B2_4_BS	✓	✓	✓	✓	✓	✓	✓
ES2231627-010	03-Sep-2022 02:03	AUS_MUR_GB_B3_4	✓	✓	✓	✓	✓	✓	✓
ES2231627-011	03-Sep-2022 02:03	AUS_MUR_GB_B4_4	✓	✓	✓	✓	✓	✓	✓
ES2231627-012	03-Sep-2022 08:43	AUS_MUR_GB_C1_4	✓	✓	✓	✓	✓	✓	✓
ES2231627-013	03-Sep-2022 08:43	AUS_MUR_GB_C2_4	✓	✓	✓	✓	✓	✓	✓
ES2231627-014	03-Sep-2022 08:43	AUS_MUR_GB_C2_5A	✓	✓	✓	✓	✓	✓	✓
ES2231627-015	03-Sep-2022 08:43	AUS_MUR_GB_C2_6	✓	✓	✓	✓	✓	✓	✓
ES2231627-016	03-Sep-2022 08:43	AUS_MUR_GB_C3_4	✓	✓	✓	✓	✓	✓	✓
ES2231627-017	03-Sep-2022 08:43	AUS_MUR_GB_C4_4A	✓	✓	✓	✓	✓	✓	✓
ES2231627-018	01-Sep-2022 19:41	AUS_MUR_GS_S14_4	✓	✓	✓	✓	✓	✓	✓
ES2231627-019	01-Sep-2022 19:41	AUS_MUR_GS_S21_4	✓	✓	✓	✓	✓	✓	✓
ES2231627-021	01-Sep-2022 19:41	AUS_MUR_GS_S30_4	✓	✓	✓	✓	✓	✓	✓
ES2231627-022	01-Sep-2022 19:41	AUS_MUR_GS_S31_4	✓		✓	✓	✓	✓	✓
ES2231627-023	01-Sep-2022 19:41	AUS_MUR_GS_S32_4	✓	✓	✓	✓	✓	✓	✓

			SOIL - EA055-103 Moisture Content	SOIL - EA150H Particle Size Analysis by Hydrometer: AS1289	SOIL - EG005-SD Total Iron and Aluminium in Sediments by	SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG)	SOIL - EG035-SD Mercury in Sediments by FIMS (NODG-required	SOIL - EP003 Total Organic Carbon (TOC) in Soil	SOIL - TPH-SD Low Level TRH/BTEXN for Sediments
ES2231627-024	01-Sep-2022 19:41	AUS_MUR_GS_S34_4	✓	✓	✓	✓	✓	✓	✓
ES2231627-025	03-Sep-2022 14:50	AUS_MUR_GB_D1_4A	✓	✓	✓	✓	✓	✓	✓
ES2231627-026	03-Sep-2022 14:50	AUS_MUR_GB_D2_4_AS	✓	✓	✓	✓	✓	✓	✓
ES2231627-027	03-Sep-2022 14:50	AUS_MUR_GB_D2_4_BS	✓	✓	✓	✓	✓	✓	✓
ES2231627-028	03-Sep-2022 14:50	AUS_MUR_GB_D3_4	✓	✓	✓	✓	✓	✓	✓
ES2231627-029	03-Sep-2022 14:50	AUS_MUR_GB_D4_4	✓	✓	✓	✓	✓	✓	✓
ES2231627-033	03-Sep-2022 05:14	AUS_MUR_VC_6B_0.5		✓					
ES2231627-034	03-Sep-2022 05:14	AUS_MUR_VC_6B_1.0		✓					
ES2231627-035	02-Sep-2022 06:15	AUS_MUR_VC_7B_0.5		✓					
ES2231627-036	02-Sep-2022 06:15	AUS_MUR_VC_7B_1.0		✓					
ES2231627-037	02-Sep-2022 09:20	AUS_MUR_VC8_C_0.5		✓					
ES2231627-038	02-Sep-2022 09:20	AUS_MUR_VC8_C_1.0		✓					
ES2231627-039	01-Sep-2022 15:40	AUS_MUR_VC_001A_0.5		✓					
ES2231627-040	01-Sep-2022 15:40	AUS_MUR_VC_001A_1.0		✓					
ES2231627-041	01-Sep-2022 16:05	AUS_MUR_VC_002_0.5		✓					
ES2231627-042	01-Sep-2022 16:05	AUS_MUR_VC_002_1.0		✓					

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	(On Hold) SOIL No analysis requested
ES2231627-043	03-Sep-2022 20:30	AUS_MUR_Lab Blank_3 ...	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EG020T Total Metals by ICP/MS (including digestion)	WATER - EP005 Total Organic Carbon (TOC)	WATER - W-02T 8 metals (Total)
ES2231627-030	02-Sep-2022 20:45	AUS_MUR_RIN_4	✓	✓	✓
ES2231627-031	03-Sep-2022 19:09	AUS_MUR_RIN_5	✓	✓	✓
ES2231627-032	03-Sep-2022 20:20	AUS_MUR_RIN_6	✓	✓	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EP005: Total Organic Carbon							
AUS_MUR_RIN_4	Clear Plastic Bottle - Natural	----	03-Sep-2022	06-Sep-2022	✘	15-Sep-2022	✘
AUS_MUR_RIN_5	Clear Plastic Bottle - Natural	----	04-Sep-2022	06-Sep-2022	✘	15-Sep-2022	✘
AUS_MUR_RIN_6	Clear Plastic Bottle - Natural	----	04-Sep-2022	06-Sep-2022	✘	15-Sep-2022	✘

Requested Deliverables

BEN HAZRATI

- *AU Certificate of Analysis - NATA (COA)	Email	ben.hazrati@guardiangeomatics.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ben.hazrati@guardiangeomatics.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ben.hazrati@guardiangeomatics.com
- A4 - AU Tax Invoice (INV)	Email	ben.hazrati@guardiangeomatics.com
- Chain of Custody (CoC) (COC)	Email	ben.hazrati@guardiangeomatics.com
- EDI Format - ESDAT (ESDAT)	Email	ben.hazrati@guardiangeomatics.com

Appendix 4 - Laboratory Certificates

1. Certificates of Analysis (COA)
2. Quality Control Reports (QC)
3. Quality Control Compliance Assessments (QCI)

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2230841**	Page	: 1 of 19
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 01-Sep-2022 14:00
Order number	: ----	Date Analysis Commenced	: 07-Sep-2022
C-O-C number	: ----	Issue Date	: 23-Sep-2022 14:04
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 111		
No. of samples analysed	: 39		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

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

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA150H: Soil Particle Density required for Hydrometer analysis according to AS 1289.3.5.1 2006 was not requested by the client. Typical sediment SPD values used for calculations and consequently NATA endorsement does not apply to hydrometer results.
- EP080-SD: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EG005T: Poor precision was obtained for Aluminium on sample ES2230841 # 036. Confirmed by re-digestion and reanalysis.

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S1B_0.5	AUS_MUR_VC_S1B_1.0	AUS_MUR_VC_S2BS_0.5	AUS_MUR_VC_S3_0.5 AS	AUS_MUR_VC_S3_1.0 AS
				Sampling date / time	28-Aug-2022 06:39	28-Aug-2022 06:39	28-Aug-2022 09:00	28-Aug-2022 10:42	28-Aug-2022 10:42
Compound	CAS Number	LOR	Unit		ES2230841-001	ES2230841-002	ES2230841-003	ES2230841-005	ES2230841-006
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		24.3	31.7	26.6	34.1	33.5
EA150: Particle Sizing									
+75µm	----	1	%		97	----	85	97	96
+150µm	----	1	%		96	----	79	95	95
+300µm	----	1	%		93	----	67	92	93
+425µm	----	1	%		83	----	57	86	88
+600µm	----	1	%		58	----	42	70	73
+1180µm	----	1	%		19	----	19	33	32
+2.36mm	----	1	%		2	----	6	5	5
+4.75mm	----	1	%		<1	----	2	<1	<1
+9.5mm	----	1	%		<1	----	<1	<1	<1
+19.0mm	----	1	%		<1	----	<1	<1	<1
+37.5mm	----	1	%		<1	----	<1	<1	<1
+75.0mm	----	1	%		<1	----	<1	<1	<1
EA150: Soil Classification based on Particle Size									
Clay (<2 µm)	----	1	%		3	----	13	3	3
Silt (2-60 µm)	----	1	%		<1	----	<1	<1	<1
Sand (0.06-2.00 mm)	----	1	%		90	----	77	84	84
Gravel (>2mm)	----	1	%		7	----	10	13	13
Cobbles (>6cm)	----	1	%		<1	----	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		2250	2220	4880	2110	3050
Iron	7439-89-6	50	mg/kg		10700	11400	13400	11000	15500
EG020-SD: Total Metals in Sediments by ICPMS									
Antimony	7440-36-0	0.50	mg/kg		<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg		17.0	17.5	14.2	18.8	25.5
Cadmium	7440-43-9	0.1	mg/kg		<0.1	<0.1	0.1	<0.1	0.2
Chromium	7440-47-3	1.0	mg/kg		7.7	8.0	13.5	7.3	9.9
Copper	7440-50-8	1.0	mg/kg		<1.0	<1.0	1.4	<1.0	<1.0
Lead	7439-92-1	1.0	mg/kg		3.9	4.2	4.4	3.8	4.9
Nickel	7440-02-0	1.0	mg/kg		3.9	4.0	5.6	3.5	5.0
Zinc	7440-66-6	1.0	mg/kg		2.4	3.0	5.6	2.2	3.1
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S1B_0.5	AUS_MUR_VC_S1B_1.0	AUS_MUR_VC_S2BS_0.5	AUS_MUR_VC_S3_0.5 AS	AUS_MUR_VC_S3_1.0 AS
				Sampling date / time	28-Aug-2022 06:39	28-Aug-2022 06:39	28-Aug-2022 09:00	28-Aug-2022 10:42	28-Aug-2022 10:42
Compound	CAS Number	LOR	Unit		ES2230841-001	ES2230841-002	ES2230841-003	ES2230841-005	ES2230841-006
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.10**	**0.16**	**0.14**	**0.07**	**0.08**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**118**	**112**	**90.9**	**97.2**	**115**
Toluene-D8	2037-26-5	0.2	%		**106**	**103**	**88.0**	**94.7**	**106**
4-Bromofluorobenzene	460-00-4	0.2	%		**103**	**99.0**	**93.4**	**98.8**	**104**

Analytical Results

Sub-Matrix: **SOLID** (Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	AUS_MUR_VC_S3_1.0 B	AUS_MUR_VC_S5A_0.5	AUS_MUR_VC_S5A_1.0	AUS_MUR_VC_S6_0.5	AUS_MUR_VC_S6_1.0
				Sampling date / time	28-Aug-2022 10:42	28-Aug-2022 14:46	28-Aug-2022 14:46	28-Aug-2022 16:08	28-Aug-2022 16:08
					ES2230841-008	ES2230841-011	ES2230841-012	ES2230841-013	ES2230841-014
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		28.5	37.7	32.2	37.1	27.1
EA150: Particle Sizing									
+75µm	----	1	%		95	98	97	96	91
+150µm	----	1	%		93	97	96	95	87
+300µm	----	1	%		90	95	93	88	73
+425µm	----	1	%		85	86	82	75	59
+600µm	----	1	%		68	63	62	57	44
+1180µm	----	1	%		29	22	25	23	23
+2.36mm	----	1	%		4	2	4	3	6
+4.75mm	----	1	%		<1	<1	<1	<1	<1
+9.5mm	----	1	%		<1	<1	<1	<1	<1
+19.0mm	----	1	%		<1	<1	<1	<1	<1
+37.5mm	----	1	%		<1	<1	<1	<1	<1
+75.0mm	----	1	%		<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size									
Clay (<2 µm)	----	1	%		5	2	2	4	8
Silt (2-60 µm)	----	1	%		<1	<1	<1	<1	<1
Sand (0.06-2.00 mm)	----	1	%		83	90	87	87	80
Gravel (>2mm)	----	1	%		12	8	11	9	12
Cobbles (>6cm)	----	1	%		<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		2660	1810	2160	1640	2890
Iron	7439-89-6	50	mg/kg		12200	7740	12200	7300	12100
EG020-SD: Total Metals in Sediments by ICPMS									
Antimony	7440-36-0	0.50	mg/kg		<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg		20.6	16.6	26.0	17.0	20.8
Cadmium	7440-43-9	0.1	mg/kg		0.1	<0.1	0.1	<0.1	0.1
Chromium	7440-47-3	1.0	mg/kg		9.0	7.1	7.5	5.9	9.5
Copper	7440-50-8	1.0	mg/kg		<1.0	<1.0	<1.0	<1.0	<1.0
Lead	7439-92-1	1.0	mg/kg		4.0	3.9	4.5	2.9	4.5
Nickel	7440-02-0	1.0	mg/kg		4.2	3.3	3.9	2.8	4.2
Zinc	7440-66-6	1.0	mg/kg		2.8	2.3	2.2	1.7	2.9
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S3_1.0 B	AUS_MUR_VC_S5A_0.5	AUS_MUR_VC_S5A_1.0	AUS_MUR_VC_S6_0.5	AUS_MUR_VC_S6_1.0
				Sampling date / time	28-Aug-2022 10:42	28-Aug-2022 14:46	28-Aug-2022 14:46	28-Aug-2022 16:08	28-Aug-2022 16:08
Compound	CAS Number	LOR	Unit		ES2230841-008	ES2230841-011	ES2230841-012	ES2230841-013	ES2230841-014
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.12**	**0.11**	**0.09**	**0.11**	**0.10**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**110**	**101**	**86.6**	**109**	**106**
Toluene-D8	2037-26-5	0.2	%		**99.8**	**96.0**	**79.3**	**103**	**106**
4-Bromofluorobenzene	460-00-4	0.2	%		**100**	**99.8**	**88.3**	**105**	**105**

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_VC_S7_0.5	AUS_MUR_VC_S7_1.0	AUS_MUR_VC_S8_3_1.0	AUS_MUR_VC_S8_1_1.0	AUS_MUR_VC_S8_2_0.5
			Sampling date / time	28-Aug-2022 17:27	28-Aug-2022 17:27	29-Aug-2022 23:20	28-Aug-2022 19:42	28-Aug-2022 21:04
Compound	CAS Number	LOR	Unit	ES2230841-015	ES2230841-016	ES2230841-019	ES2230841-021	ES2230841-022
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	31.7	31.4	25.6	26.2	30.5
EA150: Particle Sizing								
+75µm	----	1	%	93	83	95	94	98
+150µm	----	1	%	90	76	94	91	98
+300µm	----	1	%	80	54	90	80	95
+425µm	----	1	%	69	42	84	72	90
+600µm	----	1	%	56	32	74	59	74
+1180µm	----	1	%	35	19	44	35	37
+2.36mm	----	1	%	11	4	10	8	5
+4.75mm	----	1	%	<1	<1	<1	<1	<1
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	6	12	5	5	2
Silt (2-60 µm)	----	1	%	<1	5	<1	<1	<1
Sand (0.06-2.00 mm)	----	1	%	76	74	74	79	83
Gravel (>2mm)	----	1	%	18	9	21	16	15
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	3000	4760	3820	2940	2050
Iron	7439-89-6	50	mg/kg	12600	11400	17600	11900	8550
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	23.6	12.4	29.2	19.0	18.7
Cadmium	7440-43-9	0.1	mg/kg	0.1	0.1	0.1	0.1	0.1
Chromium	7440-47-3	1.0	mg/kg	9.4	12.8	17.1	8.9	8.3
Copper	7440-50-8	1.0	mg/kg	<1.0	1.4	<1.0	<1.0	<1.0
Lead	7439-92-1	1.0	mg/kg	4.0	4.1	4.4	4.0	3.8
Nickel	7440-02-0	1.0	mg/kg	4.0	5.1	4.5	3.6	3.2
Zinc	7440-66-6	1.0	mg/kg	3.0	5.6	3.3	3.0	2.0
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: **SOLID** (Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	AUS_MUR_VC_S7_0.5	AUS_MUR_VC_S7_1.0	AUS_MUR_VC_S8_3_1.0	AUS_MUR_VC_S8_1_1.0	AUS_MUR_VC_S8_2_0.5
				Sampling date / time	28-Aug-2022 17:27	28-Aug-2022 17:27	29-Aug-2022 23:20	28-Aug-2022 19:42	28-Aug-2022 21:04
					ES2230841-015	ES2230841-016	ES2230841-019	ES2230841-021	ES2230841-022
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.14**	**0.14**	**0.33**	**0.10**	**0.09**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**117**	**112**	**111**	**78.1**	**80.9**
Toluene-D8	2037-26-5	0.2	%		**105**	**109**	**102**	**75.2**	**78.0**
4-Bromofluorobenzene	460-00-4	0.2	%		**104**	**108**	**102**	**83.7**	**91.8**

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	US_MUR_GS_S8_02_1.0	AUS_MUR_GS_S9_0.5	AUS_MUR_GS_S9_1.0	AUS_MUR_GS_S10_0.5	AUS_MUR_GS_S10_1.0
			Sampling date / time	28-Aug-2022 21:01	28-Aug-2022 12:04	28-Aug-2022 12:04	29-Aug-2022 02:17	29-Aug-2022 02:17
Compound	CAS Number	LOR	Unit	ES2230841-025	ES2230841-028	ES2230841-029	ES2230841-030	ES2230841-031
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	28.9	31.1	36.6	36.2	33.1
EA150: Particle Sizing								
+75µm	----	1	%	96	84	78	93	82
+150µm	----	1	%	95	79	68	91	74
+300µm	----	1	%	92	55	31	76	44
+425µm	----	1	%	88	44	21	60	32
+600µm	----	1	%	75	34	15	45	24
+1180µm	----	1	%	42	19	9	22	13
+2.36mm	----	1	%	6	5	3	5	3
+4.75mm	----	1	%	<1	<1	<1	<1	<1
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	4	10	17	4	13
Silt (2-60 µm)	----	1	%	<1	5	4	3	5
Sand (0.06-2.00 mm)	----	1	%	79	76	75	83	76
Gravel (>2mm)	----	1	%	17	9	4	10	6
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	2200	4370	5090	4710	6110
Iron	7439-89-6	50	mg/kg	9300	10800	11200	14100	16300
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	21.0	12.6	10.6	23.2	21.9
Cadmium	7440-43-9	0.1	mg/kg	0.1	0.1	<0.1	0.1	0.1
Chromium	7440-47-3	1.0	mg/kg	8.0	12.3	14.1	13.0	17.0
Copper	7440-50-8	1.0	mg/kg	<1.0	1.3	1.5	1.2	1.8
Lead	7439-92-1	1.0	mg/kg	3.6	4.2	4.1	4.6	5.6
Nickel	7440-02-0	1.0	mg/kg	2.9	4.8	5.3	5.1	6.4
Zinc	7440-66-6	1.0	mg/kg	2.0	4.8	5.7	4.8	6.8
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	US_MUR_GS_S8_02_1.0	AUS_MUR_GS_S9_0.5	AUS_MUR_GS_S9_1.0	AUS_MUR_GS_S10_0.5	AUS_MUR_GS_S10_1.0
				Sampling date / time	28-Aug-2022 21:01	28-Aug-2022 12:04	28-Aug-2022 12:04	29-Aug-2022 02:17	29-Aug-2022 02:17
Compound	CAS Number	LOR	Unit		ES2230841-025	ES2230841-028	ES2230841-029	ES2230841-030	ES2230841-031
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.07**	**0.20**	**0.24**	**0.14**	**0.21**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**105**	**93.3**	**76.0**	**90.4**	**108**
Toluene-D8	2037-26-5	0.2	%		**99.8**	**85.8**	**75.0**	**86.5**	**106**
4-Bromofluorobenzene	460-00-4	0.2	%		**104**	**92.6**	**82.0**	**91.1**	**113**

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_VC_S11-3_0.5	AUS_MUR_VC_S11-3_1.0	AUS_MUR_VC_S12_0.5	AUS_MUR_VC_S12_1.0	AUS_MUR_VC_S13_0.5
			Sampling date / time	29-Aug-2022 08:12	29-Aug-2022 08:12	29-Aug-2022 09:49	29-Aug-2022 09:49	29-Aug-2022 10:42
Compound	CAS Number	LOR	Unit	ES2230841-036	ES2230841-037	ES2230841-038	ES2230841-039	ES2230841-040
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	24.7	28.5	26.1	30.8	35.3
EA150: Particle Sizing								
+75µm	----	1	%	95	80	95	79	91
+150µm	----	1	%	93	75	93	70	88
+300µm	----	1	%	78	63	81	45	72
+425µm	----	1	%	64	58	69	36	60
+600µm	----	1	%	51	52	56	30	50
+1180µm	----	1	%	28	41	31	20	29
+2.36mm	----	1	%	8	30	9	10	9
+4.75mm	----	1	%	1	24	2	3	<1
+9.5mm	----	1	%	<1	21	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	4	9	5	10	9
Silt (2-60 µm)	----	1	%	1	10	<1	12	<1
Sand (0.06-2.00 mm)	----	1	%	81	48	79	65	76
Gravel (>2mm)	----	1	%	14	33	16	13	15
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	2110	6300	3880	7160	3190
Iron	7439-89-6	50	mg/kg	18400	10400	13700	15800	11800
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	41.1	10.3	26.4	16.2	24.8
Cadmium	7440-43-9	0.1	mg/kg	0.1	0.1	0.1	0.1	0.1
Chromium	7440-47-3	1.0	mg/kg	8.2	14.6	11.7	18.3	10.0
Copper	7440-50-8	1.0	mg/kg	<1.0	1.8	1.0	2.2	<1.0
Lead	7439-92-1	1.0	mg/kg	4.2	3.6	5.0	5.3	4.4
Nickel	7440-02-0	1.0	mg/kg	3.2	5.5	4.6	7.4	4.3
Zinc	7440-66-6	1.0	mg/kg	2.2	6.0	3.7	7.4	3.2
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S11-3_0.5	AUS_MUR_VC_S11-3_1.0	AUS_MUR_VC_S12_0.5	AUS_MUR_VC_S12_1.0	AUS_MUR_VC_S13_0.5
				Sampling date / time	29-Aug-2022 08:12	29-Aug-2022 08:12	29-Aug-2022 09:49	29-Aug-2022 09:49	29-Aug-2022 10:42
Compound	CAS Number	LOR	Unit		ES2230841-036	ES2230841-037	ES2230841-038	ES2230841-039	ES2230841-040
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.10**	**0.12**	**0.15**	**0.16**	**0.16**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**106**	**101**	**101**	**102**	**100.0**
Toluene-D8	2037-26-5	0.2	%		**109**	**109**	**108**	**109**	**106**
4-Bromofluorobenzene	460-00-4	0.2	%		**102**	**105**	**103**	**105**	**101**

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_VC_S13_1.0	AUS_MUR_GS_S13_1	AUS_MUR_GS_S12_2	AUS_MUR_GS_S11_1	US_MUR_GS_S7-1
			Sampling date / time	29-Aug-2022 10:42	29-Aug-2022 16:12	29-Aug-2022 16:57	29-Aug-2022 20:03	30-Aug-2022 03:15
Compound	CAS Number	LOR	Unit	ES2230841-041	ES2230841-042	ES2230841-043	ES2230841-044	ES2230841-048
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	32.4	35.4	25.5	35.0	21.4
EA150: Particle Sizing								
+75µm	----	1	%	78	83	82	86	97
+150µm	----	1	%	68	75	75	80	95
+300µm	----	1	%	43	47	49	54	92
+425µm	----	1	%	36	37	38	42	87
+600µm	----	1	%	29	29	30	33	77
+1180µm	----	1	%	20	17	18	18	54
+2.36mm	----	1	%	10	6	5	4	14
+4.75mm	----	1	%	3	<1	<1	<1	1
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	15	12	12	12	3
Silt (2-60 µm)	----	1	%	7	5	5	1	<1
Sand (0.06-2.00 mm)	----	1	%	65	74	74	78	71
Gravel (>2mm)	----	1	%	13	9	9	9	26
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	6490	5520	5590	5900	2040
Iron	7439-89-6	50	mg/kg	12200	11800	15200	10800	7740
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	11.3	14.3	21.5	10.7	15.4
Cadmium	7440-43-9	0.1	mg/kg	0.1	0.1	0.1	<0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg	16.5	14.7	15.8	15.3	7.2
Copper	7440-50-8	1.0	mg/kg	2.0	1.6	1.6	1.7	<1.0
Lead	7439-92-1	1.0	mg/kg	4.2	4.4	4.9	4.3	3.4
Nickel	7440-02-0	1.0	mg/kg	6.2	5.7	6.1	5.8	2.9
Zinc	7440-66-6	1.0	mg/kg	6.7	5.9	6.1	6.4	2.0
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_VC_S13_1.0	AUS_MUR_GS_S13_1	AUS_MUR_GS_S12_2	AUS_MUR_GS_S11_1	US_MUR_GS_S7-1
			Sampling date / time	29-Aug-2022 10:42	29-Aug-2022 16:12	29-Aug-2022 16:57	29-Aug-2022 20:03	30-Aug-2022 03:15
Compound	CAS Number	LOR	Unit	ES2230841-041	ES2230841-042	ES2230841-043	ES2230841-044	ES2230841-048
				Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	**0.16**	**0.23**	**0.26**	**0.24**	**0.10**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
>C10 - C16 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg	<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg	<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg	<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg	<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**107**	**102**	**103**	**103**	**95.7**
Toluene-D8	2037-26-5	0.2	%	**120**	**109**	**110**	**114**	**98.4**
4-Bromofluorobenzene	460-00-4	0.2	%	**116**	**103**	**106**	**110**	**97.9**

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_GS_S6-1A	AUS_MUR_GS_S6-1A	AUS_MUR_GS_S5-1	AUS_MUR_GS_S4-1	AUS_MUR_GS_S3-1
				Sampling date / time	30-Aug-2022 04:46	30-Aug-2022 06:33	30-Aug-2022 06:33	30-Aug-2022 08:31	30-Aug-2022 09:55
Compound	CAS Number	LOR	Unit		ES2230841-049	ES2230841-050	ES2230841-051	ES2230841-052	ES2230841-053
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		33.3	35.5	31.6	32.9	37.8
EA150: Particle Sizing									
+75µm	----	1	%		97	----	98	90	----
+150µm	----	1	%		96	----	97	86	----
+300µm	----	1	%		89	----	94	76	----
+425µm	----	1	%		76	----	84	66	----
+600µm	----	1	%		60	----	64	54	----
+1180µm	----	1	%		31	----	28	27	----
+2.36mm	----	1	%		7	----	4	6	----
+4.75mm	----	1	%		<1	----	<1	<1	----
+9.5mm	----	1	%		<1	----	<1	<1	----
+19.0mm	----	1	%		<1	----	<1	<1	----
+37.5mm	----	1	%		<1	----	<1	<1	----
+75.0mm	----	1	%		<1	----	<1	<1	----
EA150: Soil Classification based on Particle Size									
Clay (<2 µm)	----	1	%		3	----	2	9	----
Silt (2-60 µm)	----	1	%		<1	----	<1	<1	----
Sand (0.06-2.00 mm)	----	1	%		83	----	87	78	----
Gravel (>2mm)	----	1	%		14	----	11	13	----
Cobbles (>6cm)	----	1	%		<1	----	<1	<1	----
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		3200	3120	2100	4230	1360
Iron	7439-89-6	50	mg/kg		17500	11500	10100	11000	5240
EG020-SD: Total Metals in Sediments by ICPMS									
Antimony	7440-36-0	0.50	mg/kg		<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg		29.6	20.2	23.4	12.2	9.94
Cadmium	7440-43-9	0.1	mg/kg		0.1	0.1	0.1	<0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg		9.8	9.5	8.1	11.2	4.8
Copper	7440-50-8	1.0	mg/kg		<1.0	<1.0	<1.0	1.1	<1.0
Lead	7439-92-1	1.0	mg/kg		4.9	4.3	3.6	3.8	2.2
Nickel	7440-02-0	1.0	mg/kg		5.1	4.2	3.4	4.7	2.2
Zinc	7440-66-6	1.0	mg/kg		3.8	3.5	2.0	4.8	1.5
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_GS_S6-1A	AUS_MUR_GS_S6-1A	AUS_MUR_GS_S5-1	AUS_MUR_GS_S4-1	AUS_MUR_GS_S3-1
			Sampling date / time	30-Aug-2022 04:46	30-Aug-2022 06:33	30-Aug-2022 06:33	30-Aug-2022 08:31	30-Aug-2022 09:55
Compound	CAS Number	LOR	Unit	ES2230841-049	ES2230841-050	ES2230841-051	ES2230841-052	ES2230841-053
				Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	**0.21**	**0.11**	**0.06**	**0.17**	**0.10**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
>C10 - C16 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg	<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg	<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg	<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg	<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**98.7**	**96.3**	**91.8**	**101**	**101**
Toluene-D8	2037-26-5	0.2	%	**103**	**98.8**	**97.9**	**113**	**102**
4-Bromofluorobenzene	460-00-4	0.2	%	**100**	**94.8**	**93.4**	**102**	**97.0**

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_GS_S2-1	AUS_MUR_VC_S11-2_1.0	AUS_MUR_VC_S9_1.0	AUS_MUR_VC_S11-2_0.5	----
			Sampling date / time	30-Aug-2022 11:18	29-Aug-2022 07:30	29-Aug-2022 00:00	29-Aug-2022 07:30	----
Compound	CAS Number	LOR	Unit	ES2230841-054	ES2230841-058	ES2230841-059	ES2230841-065	--------
				Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	33.8	33.0	21.8	28.6	----
EA150: Particle Sizing								
+75µm	----	1	%	99	82	93	----	----
+150µm	----	1	%	98	74	90	----	----
+300µm	----	1	%	91	52	79	----	----
+425µm	----	1	%	70	43	70	----	----
+600µm	----	1	%	40	34	58	----	----
+1180µm	----	1	%	10	20	36	----	----
+2.36mm	----	1	%	2	7	13	----	----
+4.75mm	----	1	%	<1	<1	3	----	----
+9.5mm	----	1	%	<1	<1	<1	----	----
+19.0mm	----	1	%	<1	<1	<1	----	----
+37.5mm	----	1	%	<1	<1	<1	----	----
+75.0mm	----	1	%	<1	<1	<1	----	----
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	1	12	5	----	----
Silt (2-60 µm)	----	1	%	<1	4	3	----	----
Sand (0.06-2.00 mm)	----	1	%	95	73	72	----	----
Gravel (>2mm)	----	1	%	4	11	20	----	----
Cobbles (>6cm)	----	1	%	<1	<1	<1	----	----
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	2460	5330	3480	3160	----
Iron	7439-89-6	50	mg/kg	12700	11200	14400	14200	----
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	----
Arsenic	7440-38-2	1.00	mg/kg	17.5	11.0	19.6	27.1	----
Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.1	0.1	0.1	----
Chromium	7440-47-3	1.0	mg/kg	8.6	14.2	11.0	10.8	----
Copper	7440-50-8	1.0	mg/kg	<1.0	1.6	<1.0	<1.0	----
Lead	7439-92-1	1.0	mg/kg	4.5	4.4	4.5	5.2	----
Nickel	7440-02-0	1.0	mg/kg	4.3	5.6	4.6	4.6	----
Zinc	7440-66-6	1.0	mg/kg	2.6	5.7	3.5	3.9	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	----

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_GS_S2-1	AUS_MUR_VC_S11-2_1.0	AUS_MUR_VC_S9_1.0	AUS_MUR_VC_S11-2_0.5	----
				Sampling date / time	30-Aug-2022 11:18	29-Aug-2022 07:30	29-Aug-2022 00:00	29-Aug-2022 07:30	----
Compound	CAS Number	LOR	Unit		ES2230841-054	ES2230841-058	ES2230841-059	ES2230841-065	--------
					Result	Result	Result	Result	----
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.15**	**0.16**	**0.14**	**0.11**	**----**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	**----**
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	**----**
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	**----**
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	**----**
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	**----**
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	**----**
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	**----**
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	**----**
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	**----**
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	<3	**----**
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	**----**
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	**----**
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	**----**
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	**----**
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	**----**
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	**----**
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	**----**
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	**----**
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	**----**
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	**----**
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**95.1**	**103**	**105**	**106**	**----**
Toluene-D8	2037-26-5	0.2	%		**103**	**110**	**115**	**114**	**----**
4-Bromofluorobenzene	460-00-4	0.2	%		**97.2**	**105**	**108**	**109**	**----**

Surrogate Control Limits

Sub-Matrix: **SOLID**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080-SD: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	67	137
Toluene-D8	2037-26-5	74	134
4-Bromofluorobenzene	460-00-4	73	137

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EP003: Total Organic Carbon (TOC) in Soil

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Soil Classification based on Particle Size

(SOIL) EA150: Particle Sizing

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2231582**	Page	: 1 of 7
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022 08:00
Order number	: ----	Date Analysis Commenced	: 09-Sep-2022
C-O-C number	: ----	Issue Date	: 23-Sep-2022 14:01
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 11		
No. of samples analysed	: 7		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

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

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA150H: Soil Particle Density required for Hydrometer analysis according to AS 1289.3.5.1 2006 was not requested by the client. Typical sediment SPD values used for calculations and consequently NATA endorsement does not apply to hydrometer results.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP080-SD: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_GS_S1_1.0	AUS_MUR_VC_S34_0.5	AUS_MUR_VC_S34_1.0	AUS_MUR_VC_S33_0.5	AUS_MUR_VC_S33_1.0
			Sampling date / time	30-Aug-2022 17:07	30-Aug-2022 19:59	30-Aug-2022 19:59	30-Aug-2022 21:08	30-Aug-2022 21:08
Compound	CAS Number	LOR	Unit	ES2231582-001	ES2231582-002	ES2231582-003	ES2231582-004	ES2231582-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	33.9	25.1	39.5	31.7	33.2
EA150: Particle Sizing								
+75µm	----	1	%	97	99	69	98	72
+150µm	----	1	%	95	99	64	96	64
+300µm	----	1	%	89	98	51	92	46
+425µm	----	1	%	73	95	42	79	38
+600µm	----	1	%	48	80	35	59	31
+1180µm	----	1	%	18	34	26	30	23
+2.36mm	----	1	%	4	5	18	9	16
+4.75mm	----	1	%	<1	<1	8	1	9
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	3	1	11	2	19
Silt (2-60 µm)	----	1	%	<1	<1	20	<1	9
Sand (0.06-2.00 mm)	----	1	%	89	85	48	83	54
Gravel (>2mm)	----	1	%	8	14	21	15	18
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	2450	3900	6910	3360	9360
Iron	7439-89-6	50	mg/kg	13700	16800	12400	16400	16500
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	13.4	36.0	11.5	32.6	14.1
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	0.1	0.1
Chromium	7440-47-3	1.0	mg/kg	7.4	11.0	15.0	9.9	20.3
Copper	7440-50-8	1.0	mg/kg	<1.0	<1.0	1.9	<1.0	2.5
Lead	7439-92-1	1.0	mg/kg	3.4	4.6	4.0	5.5	5.3
Nickel	7440-02-0	1.0	mg/kg	3.4	4.2	5.0	4.7	7.1
Zinc	7440-66-6	1.0	mg/kg	2.7	3.2	6.7	3.4	9.3
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_GS_S1_1.0	AUS_MUR_VC_S34_0.5	AUS_MUR_VC_S34_1.0	AUS_MUR_VC_S33_0.5	AUS_MUR_VC_S33_1.0
				Sampling date / time	30-Aug-2022 17:07	30-Aug-2022 19:59	30-Aug-2022 19:59	30-Aug-2022 21:08	30-Aug-2022 21:08
Compound	CAS Number	LOR	Unit		ES2231582-001	ES2231582-002	ES2231582-003	ES2231582-004	ES2231582-005
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.07**	**0.20**	**0.10**	**0.10**	**0.18**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**93.8**	**107**	**125**	**95.6**	**87.1**
Toluene-D8	2037-26-5	0.2	%		**78.4**	**100**	**127**	**79.4**	**88.2**
4-Bromofluorobenzene	460-00-4	0.2	%		**91.1**	**117**	**128**	**98.1**	**90.4**

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_VC_S32_1A_0.5	AUS_MUR_VC_S32_1A_1.0	----	----	----
			Sampling date / time	30-Aug-2022 22:48	30-Aug-2022 22:48	----	----	----
Compound	CAS Number	LOR	Unit	ES2231582-006	ES2231582-007	--------	--------	--------
				Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	35.6	34.2	----	----	----
EA150: Particle Sizing								
+75µm	----	1	%	93	95	----	----	----
+150µm	----	1	%	91	93	----	----	----
+300µm	----	1	%	87	89	----	----	----
+425µm	----	1	%	76	80	----	----	----
+600µm	----	1	%	59	65	----	----	----
+1180µm	----	1	%	23	32	----	----	----
+2.36mm	----	1	%	3	6	----	----	----
+4.75mm	----	1	%	<1	<1	----	----	----
+9.5mm	----	1	%	<1	<1	----	----	----
+19.0mm	----	1	%	<1	<1	----	----	----
+37.5mm	----	1	%	<1	<1	----	----	----
+75.0mm	----	1	%	<1	<1	----	----	----
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	5	5	----	----	----
Silt (2-60 µm)	----	1	%	2	<1	----	----	----
Sand (0.06-2.00 mm)	----	1	%	84	81	----	----	----
Gravel (>2mm)	----	1	%	9	14	----	----	----
Cobbles (>6cm)	----	1	%	<1	<1	----	----	----
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	2300	7100	----	----	----
Iron	7439-89-6	50	mg/kg	6630	17300	----	----	----
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	----	----	----
Arsenic	7440-38-2	1.00	mg/kg	13.5	30.4	----	----	----
Cadmium	7440-43-9	0.1	mg/kg	0.1	0.1	----	----	----
Chromium	7440-47-3	1.0	mg/kg	6.6	14.6	----	----	----
Copper	7440-50-8	1.0	mg/kg	<1.0	1.9	----	----	----
Lead	7439-92-1	1.0	mg/kg	3.2	5.1	----	----	----
Nickel	7440-02-0	1.0	mg/kg	3.2	6.5	----	----	----
Zinc	7440-66-6	1.0	mg/kg	2.5	7.1	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	----	----	----

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S32_1A_0.5	AUS_MUR_VC_S32_1A_1.0	----	----	----
				Sampling date / time	30-Aug-2022 22:48	30-Aug-2022 22:48	----	----	----
Compound	CAS Number	LOR	Unit		ES2231582-006	ES2231582-007	--------	--------	--------
					Result	Result	----	----	----
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.08**	**0.11**	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	----	----	----
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	----	----	----
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	----	----	----
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	----	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	----	----	----
C10 - C14 Fraction	----	3	mg/kg		<3	<3	----	----	----
C15 - C28 Fraction	----	3	mg/kg		<3	<3	----	----	----
C29 - C36 Fraction	----	5	mg/kg		<5	<5	----	----	----
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	----	----	----
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	----	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	----	----	----
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	----	----
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	----	----	----
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	----	----	----
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	----	----	----
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	----	----	----
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	----	----	----
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	----	----	----
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**126**	**126**	----	----	----
Toluene-D8	2037-26-5	0.2	%		**94.6**	**106**	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**122**	**137**	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOLID**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080-SD: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	67	137
Toluene-D8	2037-26-5	74	134
4-Bromofluorobenzene	460-00-4	73	137

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EP003: Total Organic Carbon (TOC) in Soil

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Soil Classification based on Particle Size

(SOIL) EA150: Particle Sizing

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2231583**	Page	: 1 of 7
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022 08:00
Order number	: ----	Date Analysis Commenced	: 09-Sep-2022
C-O-C number	: ----	Issue Date	: 23-Sep-2022 14:03
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 6		
No. of samples analysed	: 6		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

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

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA150H: Soil Particle Density required for Hydrometer analysis according to AS 1289.3.5.1 2006 was not requested by the client. Typical sediment SPD values used for calculations and consequently NATA endorsement does not apply to hydrometer results.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP080-SD: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_VC_S32_3_0.5	AUS_MUR_VC_S32_3_1.0	AUS_MUR_VC_S31_1_0.5	AUS_MUR_VC_S31_1_1.0	AUS_MUR_VC_S31_2_0.5
			Sampling date / time	31-Aug-2022 03:25	31-Aug-2022 03:25	31-Aug-2022 05:40	31-Aug-2022 05:40	31-Aug-2022 06:30
Compound	CAS Number	LOR	Unit	ES2231583-001	ES2231583-002	ES2231583-003	ES2231583-004	ES2231583-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	29.1	34.2	31.7	29.4	36.0
EA150: Particle Sizing								
+75µm	----	1	%	97	95	98	95	95
+150µm	----	1	%	97	92	96	89	89
+300µm	----	1	%	94	85	93	79	80
+425µm	----	1	%	82	69	84	68	71
+600µm	----	1	%	52	46	56	49	51
+1180µm	----	1	%	11	13	15	25	20
+2.36mm	----	1	%	1	2	4	5	4
+4.75mm	----	1	%	<1	<1	2	<1	<1
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	3	3	2	4	4
Silt (2-60 µm)	----	1	%	<1	1	<1	1	1
Sand (0.06-2.00 mm)	----	1	%	93	91	91	84	87
Gravel (>2mm)	----	1	%	4	5	7	11	8
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	2340	2760	2160	2160	1830
Iron	7439-89-6	50	mg/kg	9780	7760	15900	11500	9460
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	23.1	14.0	57.5	38.2	36.0
Cadmium	7440-43-9	0.1	mg/kg	0.1	0.1	0.1	0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg	7.5	7.8	6.9	6.4	5.2
Copper	7440-50-8	1.0	mg/kg	<1.0	1.1	<1.0	<1.0	<1.0
Lead	7439-92-1	1.0	mg/kg	4.6	4.0	6.0	4.7	4.0
Nickel	7440-02-0	1.0	mg/kg	4.3	3.7	4.2	3.6	3.1
Zinc	7440-66-6	1.0	mg/kg	2.5	3.2	2.8	3.0	2.3
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S32_3_0.5	AUS_MUR_VC_S32_3_1.0	AUS_MUR_VC_S31_1_0.5	AUS_MUR_VC_S31_1_1.0	AUS_MUR_VC_S31_2_0.5
				Sampling date / time	31-Aug-2022 03:25	31-Aug-2022 03:25	31-Aug-2022 05:40	31-Aug-2022 05:40	31-Aug-2022 06:30
Compound	CAS Number	LOR	Unit		ES2231583-001	ES2231583-002	ES2231583-003	ES2231583-004	ES2231583-005
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		0.06	0.08	0.08	0.08	0.08
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ C10 - C36 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		126	124	116	103	132
Toluene-D8	2037-26-5	0.2	%		103	110	102	88.9	115
4-Bromofluorobenzene	460-00-4	0.2	%		122	127	121	99.6	112

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_VC_S31_2_1.0	----	----	----	----
			Sampling date / time	31-Aug-2022 06:30	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2231583-006	--------	--------	--------	--------
				Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**34.8**	----	----	----	----
EA150: Particle Sizing								
+75µm	----	1	%	**91**	----	----	----	----
+150µm	----	1	%	**82**	----	----	----	----
+300µm	----	1	%	**68**	----	----	----	----
+425µm	----	1	%	**58**	----	----	----	----
+600µm	----	1	%	**42**	----	----	----	----
+1180µm	----	1	%	**18**	----	----	----	----
+2.36mm	----	1	%	**6**	----	----	----	----
+4.75mm	----	1	%	<1	----	----	----	----
+9.5mm	----	1	%	<1	----	----	----	----
+19.0mm	----	1	%	<1	----	----	----	----
+37.5mm	----	1	%	<1	----	----	----	----
+75.0mm	----	1	%	<1	----	----	----	----
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	**6**	----	----	----	----
Silt (2-60 µm)	----	1	%	**1**	----	----	----	----
Sand (0.06-2.00 mm)	----	1	%	**84**	----	----	----	----
Gravel (>2mm)	----	1	%	**9**	----	----	----	----
Cobbles (>6cm)	----	1	%	<1	----	----	----	----
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	**3150**	----	----	----	----
Iron	7439-89-6	50	mg/kg	**18400**	----	----	----	----
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	----	----	----	----
Arsenic	7440-38-2	1.00	mg/kg	**50.6**	----	----	----	----
Cadmium	7440-43-9	0.1	mg/kg	**0.1**	----	----	----	----
Chromium	7440-47-3	1.0	mg/kg	**7.1**	----	----	----	----
Copper	7440-50-8	1.0	mg/kg	<1.0	----	----	----	----
Lead	7439-92-1	1.0	mg/kg	**5.7**	----	----	----	----
Nickel	7440-02-0	1.0	mg/kg	**3.9**	----	----	----	----
Zinc	7440-66-6	1.0	mg/kg	**3.2**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	----	----	----	----

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S31_2_1.0	----	----	----	----
				Sampling date / time	31-Aug-2022 06:30	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2231583-006	--------	--------	--------	--------
					Result	----	----	----	----
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.09**	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	----	----	----	----
>C16 - C34 Fraction	----	3	mg/kg		<3	----	----	----	----
>C34 - C40 Fraction	----	5	mg/kg		<5	----	----	----	----
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	----	----	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	----	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	----	----	----	----
C10 - C14 Fraction	----	3	mg/kg		<3	----	----	----	----
C15 - C28 Fraction	----	3	mg/kg		<3	----	----	----	----
C29 - C36 Fraction	----	5	mg/kg		<5	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	----	----	----	----
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	----	----	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	----	----	----	----
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.2	mg/kg		<0.2	----	----	----	----
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	----	----	----	----
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	----	----	----	----
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	----	----	----	----
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	----	----	----	----
Naphthalene	91-20-3	0.2	mg/kg		<0.2	----	----	----	----
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**122**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		**120**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**116**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOLID**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080-SD: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	67	137
Toluene-D8	2037-26-5	74	134
4-Bromofluorobenzene	460-00-4	73	137

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EP003: Total Organic Carbon (TOC) in Soil

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Particle Sizing

(SOIL) EA150: Soil Classification based on Particle Size

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2231584**	Page	: 1 of 7
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022 08:00
Order number	: ----	Date Analysis Commenced	: 09-Sep-2022
C-O-C number	: ----	Issue Date	: 23-Sep-2022 14:02
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 6		
No. of samples analysed	: 6		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA150H: Soil Particle Density required for Hydrometer analysis according to AS 1289.3.5.1 2006 was not requested by the client. Typical sediment SPD values used for calculations and consequently NATA endorsement does not apply to hydrometer results.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP080-SD: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.

Analytical Results

Sub-Matrix: **SOLID**
(Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	AUS_MUR_VC_S31_3A_0.5AS	AUS_MUR_VC_S31_3A_1.0AS	AUS_MUR_VC_S31_3A_0.5BS	AUS_MUR_VC_S31_3A_1.0BS	AUS_MUR_VC_S30B_0.5
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
					ES2231584-001	ES2231584-002	ES2231584-003	ES2231584-004	ES2231584-005
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		**37.5**	**33.8**	**38.4**	**36.3**	**32.8**
EA150: Particle Sizing									
+75µm	----	1	%		**96**	**92**	**95**	**93**	**97**
+150µm	----	1	%		**90**	**81**	**90**	**84**	**95**
+300µm	----	1	%		**80**	**58**	**80**	**67**	**83**
+425µm	----	1	%		**72**	**48**	**73**	**58**	**62**
+600µm	----	1	%		**54**	**34**	**57**	**43**	**39**
+1180µm	----	1	%		**23**	**15**	**24**	**21**	**9**
+2.36mm	----	1	%		**3**	**5**	**5**	**6**	**1**
+4.75mm	----	1	%		<1	<1	<1	**2**	<1
+9.5mm	----	1	%		<1	<1	<1	<1	<1
+19.0mm	----	1	%		<1	<1	<1	<1	<1
+37.5mm	----	1	%		<1	<1	<1	<1	<1
+75.0mm	----	1	%		<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size									
Clay (<2 µm)	----	1	%		**4**	**7**	**5**	**6**	**3**
Silt (2-60 µm)	----	1	%		<1	<1	<1	<1	<1
Sand (0.06-2.00 mm)	----	1	%		**87**	**85**	**84**	**83**	**93**
Gravel (>2mm)	----	1	%		**9**	**8**	**11**	**11**	**4**
Cobbles (>6cm)	----	1	%		<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		**3320**	**2270**	**2760**	**2640**	**1920**
Iron	7439-89-6	50	mg/kg		**7950**	**9400**	**7450**	**10400**	**11500**
EG020-SD: Total Metals in Sediments by ICPMS									
Antimony	7440-36-0	0.50	mg/kg		<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg		**19.4**	**25.4**	**21.1**	**30.9**	**48.9**
Cadmium	7440-43-9	0.1	mg/kg		<0.1	<0.1	**0.1**	**0.1**	**0.1**
Chromium	7440-47-3	1.0	mg/kg		**7.5**	**6.2**	**6.2**	**6.5**	**6.2**
Copper	7440-50-8	1.0	mg/kg		**1.1**	<1.0	<1.0	<1.0	<1.0
Lead	7439-92-1	1.0	mg/kg		**3.7**	**4.1**	**3.8**	**4.6**	**5.3**
Nickel	7440-02-0	1.0	mg/kg		**3.3**	**3.2**	**3.0**	**3.4**	**3.1**
Zinc	7440-66-6	1.0	mg/kg		**4.3**	**3.2**	**3.3**	**3.5**	**2.5**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S31_3A_0.5AS	AUS_MUR_VC_S31_3A_1.0AS	AUS_MUR_VC_S31_3A_0.5BS	AUS_MUR_VC_S31_3A_1.0BS	AUS_MUR_VC_S30B_0.5
				Sampling date / time	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00	31-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		ES2231584-001	ES2231584-002	ES2231584-003	ES2231584-004	ES2231584-005
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.07**	**0.09**	**0.08**	**0.04**	**0.06**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**110**	**114**	**131**	**103**	**128**
Toluene-D8	2037-26-5	0.2	%		**106**	**109**	**127**	**88.1**	**99.5**
4-Bromofluorobenzene	460-00-4	0.2	%		**121**	**126**	**126**	**90.5**	**131**

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_VC_S30B_ 1.0	----	----	----	----
			Sampling date / time	31-Aug-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2231584-006	--------	--------	--------	--------
				Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**33.7**	----	----	----	----
EA150: Particle Sizing								
+75µm	----	1	%	**97**	----	----	----	----
+150µm	----	1	%	**93**	----	----	----	----
+300µm	----	1	%	**71**	----	----	----	----
+425µm	----	1	%	**49**	----	----	----	----
+600µm	----	1	%	**28**	----	----	----	----
+1180µm	----	1	%	**7**	----	----	----	----
+2.36mm	----	1	%	<1	----	----	----	----
+4.75mm	----	1	%	<1	----	----	----	----
+9.5mm	----	1	%	<1	----	----	----	----
+19.0mm	----	1	%	<1	----	----	----	----
+37.5mm	----	1	%	<1	----	----	----	----
+75.0mm	----	1	%	<1	----	----	----	----
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	**3**	----	----	----	----
Silt (2-60 µm)	----	1	%	<1	----	----	----	----
Sand (0.06-2.00 mm)	----	1	%	**94**	----	----	----	----
Gravel (>2mm)	----	1	%	**3**	----	----	----	----
Cobbles (>6cm)	----	1	%	<1	----	----	----	----
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	**2240**	----	----	----	----
Iron	7439-89-6	50	mg/kg	**11400**	----	----	----	----
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	----	----	----	----
Arsenic	7440-38-2	1.00	mg/kg	**43.5**	----	----	----	----
Cadmium	7440-43-9	0.1	mg/kg	**0.1**	----	----	----	----
Chromium	7440-47-3	1.0	mg/kg	**7.2**	----	----	----	----
Copper	7440-50-8	1.0	mg/kg	<1.0	----	----	----	----
Lead	7439-92-1	1.0	mg/kg	**5.6**	----	----	----	----
Nickel	7440-02-0	1.0	mg/kg	**3.2**	----	----	----	----
Zinc	7440-66-6	1.0	mg/kg	**3.2**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	----	----	----	----

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S30B_1.0	----	----	----	----
				Sampling date / time	31-Aug-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2231584-006	--------	--------	--------	--------
					Result	----	----	----	----
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.06**	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	----	----	----	----
>C16 - C34 Fraction	----	3	mg/kg		<3	----	----	----	----
>C34 - C40 Fraction	----	5	mg/kg		<5	----	----	----	----
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	----	----	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	----	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	----	----	----	----
C10 - C14 Fraction	----	3	mg/kg		<3	----	----	----	----
C15 - C28 Fraction	----	3	mg/kg		<3	----	----	----	----
C29 - C36 Fraction	----	5	mg/kg		<5	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	----	----	----	----
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	----	----	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	----	----	----	----
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.2	mg/kg		<0.2	----	----	----	----
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	----	----	----	----
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	----	----	----	----
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	----	----	----	----
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	----	----	----	----
Naphthalene	91-20-3	0.2	mg/kg		<0.2	----	----	----	----
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**115**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		**107**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**122**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOLID**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080-SD: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	67	137
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(SOIL) EA150: Soil Classification based on Particle Size

(SOIL) EA150: Particle Sizing

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2231585**	Page	: 1 of 7
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022 08:00
Order number	: ----	Date Analysis Commenced	: 09-Sep-2022
C-O-C number	: ----	Issue Date	: 23-Sep-2022 14:03
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 10		
No. of samples analysed	: 10		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

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

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA150H: Soil Particle Density required for Hydrometer analysis according to AS 1289.3.5.1 2006 was not requested by the client. Typical sediment SPD values used for calculations and consequently NATA endorsement does not apply to hydrometer results.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP080-SD: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_VC_S29_0.5	AUS_MUR_VC_S29_1.0	AUS_MUR_VC_S28_0.5	AUS_MUR_VC_S28_1.0	AUS_MUR_VC_S27_0.5
			Sampling date / time	31-Aug-2022 10:58	31-Aug-2022 10:58	31-Aug-2022 11:40	31-Aug-2022 11:40	31-Aug-2022 12:33
Compound	CAS Number	LOR	Unit	ES2231585-001	ES2231585-002	ES2231585-003	ES2231585-004	ES2231585-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	29.0	31.1	27.2	32.6	26.2
EA150: Particle Sizing								
+75µm	----	1	%	96	93	90	47	91
+150µm	----	1	%	92	86	71	29	86
+300µm	----	1	%	67	45	35	10	62
+425µm	----	1	%	44	27	24	7	40
+600µm	----	1	%	25	18	17	6	27
+1180µm	----	1	%	7	9	10	4	13
+2.36mm	----	1	%	<1	4	6	2	4
+4.75mm	----	1	%	<1	1	3	2	2
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	4	7	8	40	9
Silt (2-60 µm)	----	1	%	<1	<1	2	13	<1
Sand (0.06-2.00 mm)	----	1	%	93	88	83	44	84
Gravel (>2mm)	----	1	%	3	5	7	3	7
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	2340	2930	3800	15600	2980
Iron	7439-89-6	50	mg/kg	9830	10900	11000	21300	11000
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	32.6	27.2	20.8	11.3	32.0
Cadmium	7440-43-9	0.1	mg/kg	0.1	<0.1	0.1	<0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg	7.0	7.9	9.6	28.2	7.3
Copper	7440-50-8	1.0	mg/kg	<1.0	<1.0	1.2	3.6	<1.0
Lead	7439-92-1	1.0	mg/kg	4.9	4.6	4.4	11.6	4.8
Nickel	7440-02-0	1.0	mg/kg	3.2	3.2	3.9	6.8	3.4
Zinc	7440-66-6	1.0	mg/kg	3.1	3.7	5.1	8.2	3.6
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S29_0.5	AUS_MUR_VC_S29_1.0	AUS_MUR_VC_S28_0.5	AUS_MUR_VC_S28_1.0	AUS_MUR_VC_S27_0.5
				Sampling date / time	31-Aug-2022 10:58	31-Aug-2022 10:58	31-Aug-2022 11:40	31-Aug-2022 11:40	31-Aug-2022 12:33
Compound	CAS Number	LOR	Unit		ES2231585-001	ES2231585-002	ES2231585-003	ES2231585-004	ES2231585-005
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.12**	**0.11**	**0.15**	**0.28**	**0.12**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**138**	**87.2**	**90.7**	**77.6**	**105**
Toluene-D8	2037-26-5	0.2	%		**130**	**86.6**	**90.8**	**77.6**	**110**
4-Bromofluorobenzene	460-00-4	0.2	%		**131**	**98.0**	**102**	**83.9**	**120**

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_VC_S27_1.0	AUS_MUR_VC_S26B_0.5	AUS_MUR_VC_S26B_1.0	AUS_MUR_VC_S25_0.5	AUS_MUR_VC_S25_1.0
			Sampling date / time	31-Aug-2022 12:33	31-Aug-2022 14:29	31-Aug-2022 14:29	31-Aug-2022 15:31	31-Aug-2022 15:31
Compound	CAS Number	LOR	Unit	ES2231585-006	ES2231585-007	ES2231585-008	ES2231585-009	ES2231585-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	37.0	26.7	40.6	27.5	29.2
EA150: Particle Sizing								
+75µm	----	1	%	87	95	24	97	89
+150µm	----	1	%	69	91	13	95	77
+300µm	----	1	%	41	66	6	75	42
+425µm	----	1	%	32	47	4	53	26
+600µm	----	1	%	24	34	3	34	18
+1180µm	----	1	%	14	19	2	11	9
+2.36mm	----	1	%	5	10	<1	2	3
+4.75mm	----	1	%	<1	7	<1	<1	<1
+9.5mm	----	1	%	<1	6	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	10	5	51	3	11
Silt (2-60 µm)	----	1	%	3	<1	17	<1	<1
Sand (0.06-2.00 mm)	----	1	%	79	82	31	92	84
Gravel (>2mm)	----	1	%	8	13	1	5	5
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	4860	2280	16300	2300	5390
Iron	7439-89-6	50	mg/kg	9470	9780	28100	9860	13900
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	14.3	33.2	16.5	31.3	29.8
Cadmium	7440-43-9	0.1	mg/kg	0.1	0.1	<0.1	<0.1	0.1
Chromium	7440-47-3	1.0	mg/kg	10.5	6.7	28.4	6.7	12.0
Copper	7440-50-8	1.0	mg/kg	1.4	<1.0	4.9	<1.0	1.4
Lead	7439-92-1	1.0	mg/kg	4.1	4.6	10.1	4.5	5.6
Nickel	7440-02-0	1.0	mg/kg	4.0	3.0	8.9	2.8	4.7
Zinc	7440-66-6	1.0	mg/kg	5.7	3.5	13.5	3.4	5.9
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S27_1.0	AUS_MUR_VC_S26B_0.5	AUS_MUR_VC_S26B_1.0	AUS_MUR_VC_S25_0.5	AUS_MUR_VC_S25_1.0
				Sampling date / time	31-Aug-2022 12:33	31-Aug-2022 14:29	31-Aug-2022 14:29	31-Aug-2022 15:31	31-Aug-2022 15:31
Compound	CAS Number	LOR	Unit		ES2231585-006	ES2231585-007	ES2231585-008	ES2231585-009	ES2231585-010
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.13**	**0.12**	**0.23**	**0.12**	**0.11**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**103**	**115**	**89.9**	**87.1**	**101**
Toluene-D8	2037-26-5	0.2	%		**105**	**114**	**96.1**	**88.3**	**102**
4-Bromofluorobenzene	460-00-4	0.2	%		**113**	**122**	**110**	**95.9**	**110**

Surrogate Control Limits

Sub-Matrix: **SOLID**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080-SD: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	67	137
Toluene-D8	2037-26-5	74	134
4-Bromofluorobenzene	460-00-4	73	137

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EP003: Total Organic Carbon (TOC) in Soil

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Soil Classification based on Particle Size

(SOIL) EA150: Particle Sizing

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2231586**	Page	: 1 of 7
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022 08:00
Order number	: ----	Date Analysis Commenced	: 09-Sep-2022
C-O-C number	: ----	Issue Date	: 29-Sep-2022 13:24
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 11		
No. of samples analysed	: 10		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

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

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA150H: Soil Particle Density required for Hydrometer analysis according to AS 1289.3.5.1 2006 was not requested by the client. Typical sediment SPD values used for calculations and consequently NATA endorsement does not apply to hydrometer results.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP080-SD: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_VC_S24_0.5	AUS_MUR_VC_S24_1.0	AUS_MUR_VC_S23_0.5A	AUS_MUR_VC_S23_1.0A	AUS_MUR_VC_S23_0.5B
			Sampling date / time	31-Aug-2022 16:14	31-Aug-2022 16:14	31-Aug-2022 17:16	31-Aug-2022 17:16	31-Aug-2022 17:16
Compound	CAS Number	LOR	Unit	ES2231586-001	ES2231586-002	ES2231586-004	ES2231586-005	ES2231586-006
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	34.9	32.4	31.3	42.2	32.0
EA150: Particle Sizing								
+75µm	----	1	%	94	68	78	7	78
+150µm	----	1	%	88	44	56	3	53
+300µm	----	1	%	47	22	28	1	26
+425µm	----	1	%	26	15	18	<1	18
+600µm	----	1	%	17	12	13	<1	14
+1180µm	----	1	%	9	8	8	<1	10
+2.36mm	----	1	%	4	5	5	<1	6
+4.75mm	----	1	%	2	3	1	<1	3
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	6	20	14	68	14
Silt (2-60 µm)	----	1	%	<1	10	7	23	7
Sand (0.06-2.00 mm)	----	1	%	88	64	73	9	72
Gravel (>2mm)	----	1	%	6	6	6	<1	7
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	2760	8450	5640	20200	7830
Iron	7439-89-6	50	mg/kg	12100	15400	13900	28000	15300
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	34.7	17.1	25.8	9.49	15.3
Cadmium	7440-43-9	0.1	mg/kg	0.1	0.1	0.1	<0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg	7.8	16.9	11.9	34.6	15.4
Copper	7440-50-8	1.0	mg/kg	<1.0	2.2	1.6	5.9	2.1
Lead	7439-92-1	1.0	mg/kg	5.0	5.4	5.1	13.2	5.0
Nickel	7440-02-0	1.0	mg/kg	3.4	6.1	4.4	8.9	5.6
Zinc	7440-66-6	1.0	mg/kg	3.8	9.1	6.4	12.6	8.8
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S24_0.5	AUS_MUR_VC_S24_1.0	AUS_MUR_VC_S23_0.5A	AUS_MUR_VC_S23_1.0A	AUS_MUR_VC_S23_0.5B
				Sampling date / time	31-Aug-2022 16:14	31-Aug-2022 16:14	31-Aug-2022 17:16	31-Aug-2022 17:16	31-Aug-2022 17:16
Compound	CAS Number	LOR	Unit		ES2231586-001	ES2231586-002	ES2231586-004	ES2231586-005	ES2231586-006
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.12**	**0.19**	**0.14**	**0.43**	**0.16**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**78.7**	**90.3**	**87.7**	**75.3**	**117**
Toluene-D8	2037-26-5	0.2	%		**75.4**	**101**	**88.2**	**77.8**	**113**
4-Bromofluorobenzene	460-00-4	0.2	%		**84.6**	**111**	**99.1**	**95.6**	**124**

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_VC_S23_1.0B	AUS_MUR_VC_S22_0.5A	AUS_MUR_VC_S22_1.0A	AUS_MUR_VC_S22_0.5B	AUS_MUR_VC_S22_1.0B
			Sampling date / time	31-Aug-2022 17:16	31-Aug-2022 19:22	31-Aug-2022 19:22	31-Aug-2022 19:22	31-Aug-2022 19:22
Compound	CAS Number	LOR	Unit	ES2231586-007	ES2231586-008	ES2231586-009	ES2231586-010	ES2231586-011
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	48.5	35.4	32.7	33.7	29.7
EA150: Particle Sizing								
+75µm	----	1	%	7	64	26	63	24
+150µm	----	1	%	3	36	14	33	14
+300µm	----	1	%	1	17	8	15	8
+425µm	----	1	%	<1	12	7	12	7
+600µm	----	1	%	<1	9	6	9	6
+1180µm	----	1	%	<1	5	5	5	6
+2.36mm	----	1	%	<1	2	4	2	5
+4.75mm	----	1	%	<1	<1	2	<1	4
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	67	24	43	25	50
Silt (2-60 µm)	----	1	%	21	10	29	11	23
Sand (0.06-2.00 mm)	----	1	%	12	63	24	61	22
Gravel (>2mm)	----	1	%	<1	3	4	3	5
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	23100	9330	13500	11600	16300
Iron	7439-89-6	50	mg/kg	30600	16000	22200	20000	43500
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	11.0	11.8	11.3	13.0	9.63
Cadmium	7440-43-9	0.1	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg	38.6	17.6	23.5	20.9	28.0
Copper	7440-50-8	1.0	mg/kg	6.6	2.5	3.3	2.9	4.5
Lead	7439-92-1	1.0	mg/kg	12.3	5.4	8.0	6.2	18.0
Nickel	7440-02-0	1.0	mg/kg	11.6	6.0	6.4	7.0	7.8
Zinc	7440-66-6	1.0	mg/kg	17.9	9.6	7.4	10.3	5.8
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S23_1.0B	AUS_MUR_VC_S22_0.5A	AUS_MUR_VC_S22_1.0A	AUS_MUR_VC_S22_0.5B	AUS_MUR_VC_S22_1.0B
				Sampling date / time	31-Aug-2022 17:16	31-Aug-2022 19:22	31-Aug-2022 19:22	31-Aug-2022 19:22	31-Aug-2022 19:22
Compound	CAS Number	LOR	Unit		ES2231586-007	ES2231586-008	ES2231586-009	ES2231586-010	ES2231586-011
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.44**	**0.20**	**0.24**	**0.21**	**0.24**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**73.5**	**99.9**	**80.2**	**89.2**	**80.9**
Toluene-D8	2037-26-5	0.2	%		**80.1**	**104**	**81.8**	**81.2**	**86.3**
4-Bromofluorobenzene	460-00-4	0.2	%		**86.7**	**117**	**91.4**	**83.3**	**93.0**

Surrogate Control Limits

Sub-Matrix: **SOLID**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080-SD: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	67	137
Toluene-D8	2037-26-5	74	134
4-Bromofluorobenzene	460-00-4	73	137

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EP003: Total Organic Carbon (TOC) in Soil

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Soil Classification based on Particle Size

(SOIL) EA150: Particle Sizing

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2231587**	Page	: 1 of 8
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022 08:00
Order number	: ----	Date Analysis Commenced	: 07-Sep-2022
C-O-C number	: ----	Issue Date	: 23-Sep-2022 13:58
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 13		
No. of samples analysed	: 9		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

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

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA150H: Soil Particle Density required for Hydrometer analysis according to AS 1289.3.5.1 2006 was not requested by the client. Typical sediment SPD values used for calculations and consequently NATA endorsement does not apply to hydrometer results.
- EA154: ALS does not hold NATA accreditation for Laser Particle Sizing.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP080-SD: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP080-SD: Surrogate recovery bias low due to sample matrix interferences, confirmed by re-extraction and re-analysis.
- EG093: Samples containing high levels of sulfate may precipitate barium under the acidic conditions of this method and may therefore bias results low.

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S21_0.5	AUS_MUR_VC_S21_1.0	AUS_MUR_VC_S19_0.5	AUS_MUR_VC_S19_1.0	AUS_MUR_VC_S18_1_0.5
				Sampling date / time	31-Aug-2022 20:34	31-Aug-2022 00:34	31-Aug-2022 22:22	31-Aug-2022 23:25	01-Sep-2022 23:25
Compound	CAS Number	LOR	Unit		ES2231587-001	ES2231587-002	ES2231587-006	ES2231587-007	ES2231587-008
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		40.7	35.6	32.9	37.4	36.2
EA150: Particle Sizing									
+75µm	----	1	%		54	11	75	48	61
+150µm	----	1	%		24	5	47	24	26
+300µm	----	1	%		14	2	25	13	10
+425µm	----	1	%		12	1	19	11	8
+600µm	----	1	%		11	<1	16	9	7
+1180µm	----	1	%		8	<1	10	6	4
+2.36mm	----	1	%		5	<1	6	3	2
+4.75mm	----	1	%		4	<1	2	<1	1
+9.5mm	----	1	%		<1	<1	<1	<1	<1
+19.0mm	----	1	%		<1	<1	<1	<1	<1
+37.5mm	----	1	%		<1	<1	<1	<1	<1
+75.0mm	----	1	%		<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size									
Clay (<2 µm)	----	1	%		28	58	17	35	26
Silt (2-60 µm)	----	1	%		17	26	8	17	12
Sand (0.06-2.00 mm)	----	1	%		49	16	68	44	59
Gravel (>2mm)	----	1	%		6	<1	7	4	3
Cobbles (>6cm)	----	1	%		<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		10000	14500	1980	15400	12500
Iron	7439-89-6	50	mg/kg		19100	21400	8810	25000	20300
EG020-SD: Total Metals in Sediments by ICPMS									
Antimony	7440-36-0	0.50	mg/kg		<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg		13.5	9.07	24.6	13.2	11.5
Cadmium	7440-43-9	0.1	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg		20.1	24.9	5.6	26.8	22.4
Copper	7440-50-8	1.0	mg/kg		2.9	3.8	<1.0	3.9	3.2
Lead	7439-92-1	1.0	mg/kg		6.3	9.1	4.0	7.5	6.2
Nickel	7440-02-0	1.0	mg/kg		7.1	7.2	2.5	8.3	7.5
Zinc	7440-66-6	1.0	mg/kg		11.6	10.9	3.6	12.9	12.1
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S21_0.5	AUS_MUR_VC_S21_1.0	AUS_MUR_VC_S19_0.5	AUS_MUR_VC_S19_1.0	AUS_MUR_VC_S18_1_0.5
				Sampling date / time	31-Aug-2022 20:34	31-Aug-2022 00:34	31-Aug-2022 22:22	31-Aug-2022 23:25	01-Sep-2022 23:25
Compound	CAS Number	LOR	Unit		ES2231587-001	ES2231587-002	ES2231587-006	ES2231587-007	ES2231587-008
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.20**	**0.33**	**0.13**	**0.22**	**0.19**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**33.4**	**47.1**	**16.8**	**93.1**	**68.1**
Toluene-D8	2037-26-5	0.2	%		**29.2**	**41.8**	**16.2**	**83.4**	**61.5**
4-Bromofluorobenzene	460-00-4	0.2	%		**31.2**	**43.2**	**16.8**	**95.3**	**69.1**

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_VC_S18_1_1.0	AUS_MUR_VC_S18_2A_0.5	AUS_MUR_VC_S18_2A_1.0	----	----
			Sampling date / time	01-Sep-2022 11:31	01-Sep-2022 00:51	01-Sep-2022 00:51	----	----
Compound	CAS Number	LOR	Unit	ES2231587-009	ES2231587-010	ES2231587-011	--------	--------
				Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	44.4	39.9	40.4	----	----
EA150: Particle Sizing								
+75µm	----	1	%	34	57	6	----	----
+150µm	----	1	%	21	27	4	----	----
+300µm	----	1	%	16	11	2	----	----
+425µm	----	1	%	16	8	2	----	----
+600µm	----	1	%	15	7	2	----	----
+1180µm	----	1	%	14	4	1	----	----
+2.36mm	----	1	%	13	1	1	----	----
+4.75mm	----	1	%	11	<1	<1	----	----
+9.5mm	----	1	%	10	<1	<1	----	----
+19.0mm	----	1	%	<1	<1	<1	----	----
+37.5mm	----	1	%	<1	<1	<1	----	----
+75.0mm	----	1	%	<1	<1	<1	----	----
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	44	27	69	----	----
Silt (2-60 µm)	----	1	%	22	16	21	----	----
Sand (0.06-2.00 mm)	----	1	%	21	55	9	----	----
Gravel (>2mm)	----	1	%	13	2	1	----	----
Cobbles (>6cm)	----	1	%	<1	<1	<1	----	----
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	24900	11400	20700	----	----
Iron	7439-89-6	50	mg/kg	37100	19200	32900	----	----
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	----	----
Arsenic	7440-38-2	1.00	mg/kg	19.1	9.82	9.58	----	----
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
Chromium	7440-47-3	1.0	mg/kg	39.6	21.6	37.1	----	----
Copper	7440-50-8	1.0	mg/kg	7.4	3.2	6.8	----	----
Lead	7439-92-1	1.0	mg/kg	12.8	6.1	18.2	----	----
Nickel	7440-02-0	1.0	mg/kg	13.6	7.4	10.0	----	----
Zinc	7440-66-6	1.0	mg/kg	19.9	11.6	11.0	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S18_1_1.0	AUS_MUR_VC_S18_2A_0.5	AUS_MUR_VC_S18_2A_1.0	----	----
				Sampling date / time	01-Sep-2022 11:31	01-Sep-2022 00:51	01-Sep-2022 00:51	----	----
Compound	CAS Number	LOR	Unit		ES2231587-009	ES2231587-010	ES2231587-011	--------	--------
					Result	Result	Result	----	----
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.81**	**0.23**	**0.44**	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	----	----
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	----	----
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	----	----
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	----	----
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	----	----
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	----	----
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	----	----
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	----	----
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	----	----
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**88.3**	**65.6**	**54.5**	----	----
Toluene-D8	2037-26-5	0.2	%		**81.4**	**56.0**	**46.7**	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**88.6**	**70.3**	**51.2**	----	----

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)				Sample ID	**AUS_MUR_RIN-3**	**----**	**----**	**----**	**----**
				Sampling date / time	31-Aug-2022 12:40	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*		**ES2231587-003**	**--------**	**--------**	**--------**	**--------**
					Result	----	----	----	----
EA150: Particle Sizing									
ø +75µm	----	1	%		**See Attached**	**----**	**----**	**----**	**----**
EP005: Total Organic Carbon (TOC)									
Total Organic Carbon	----	1	mg/L		**5**	**----**	**----**	**----**	**----**

Surrogate Control Limits

Sub-Matrix: **SOLID**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080-SD: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	67	137
Toluene-D8	2037-26-5	74	134
4-Bromofluorobenzene	460-00-4	73	137

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EP003: Total Organic Carbon (TOC) in Soil

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Particle Sizing

(SOIL) EA150: Soil Classification based on Particle Size

(WATER) EA150: Particle Sizing

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2231588**	Page	: 1 of 7
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022 08:00
Order number	: ----	Date Analysis Commenced	: 09-Sep-2022
C-O-C number	: ----	Issue Date	: 23-Sep-2022 13:59
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 10		
No. of samples analysed	: 10		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

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

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA150H: Soil Particle Density required for Hydrometer analysis according to AS 1289.3.5.1 2006 was not requested by the client. Typical sediment SPD values used for calculations and consequently NATA endorsement does not apply to hydrometer results.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP080-SD: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP080-SD: Surrogate recovery bias low due to sample matrix interferences, confirmed by re-extraction and re-analysis.

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)			Sample ID	AUS_MUR_VC_S18_3_0.5	AUS_MUR_VC_S18_3_1.0	AUS_MUR_VC_S17A_0.5	AUS_MUR_VC_S17A_1.0	AUS_MUR_VC_S16_0.5
			Sampling date / time	01-Sep-2022 03:25	01-Sep-2022 03:35	01-Sep-2022 05:02	01-Sep-2022 05:02	01-Sep-2022 05:51
Compound	CAS Number	LOR	Unit	ES2231588-001	ES2231588-002	ES2231588-003	ES2231588-004	ES2231588-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	35.9	46.4	24.5	31.5	35.1
EA150: Particle Sizing								
+75µm	----	1	%	53	4	95	93	71
+150µm	----	1	%	23	2	89	87	36
+300µm	----	1	%	9	1	66	60	16
+425µm	----	1	%	7	<1	53	45	12
+600µm	----	1	%	5	<1	41	34	9
+1180µm	----	1	%	2	<1	23	16	4
+2.36mm	----	1	%	<1	<1	6	4	1
+4.75mm	----	1	%	<1	<1	<1	1	<1
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	33	75	2	5	17
Silt (2-60 µm)	----	1	%	13	17	3	3	12
Sand (0.06-2.00 mm)	----	1	%	53	8	84	84	69
Gravel (>2mm)	----	1	%	1	<1	11	8	2
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	11700	25200	2350	2720	8350
Iron	7439-89-6	50	mg/kg	17500	50900	10200	11200	14900
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	11.0	26.0	32.8	35.2	19.0
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg	21.9	40.5	6.1	6.8	15.8
Copper	7440-50-8	1.0	mg/kg	3.1	6.7	<1.0	<1.0	2.2
Lead	7439-92-1	1.0	mg/kg	6.2	14.6	4.3	4.6	5.3
Nickel	7440-02-0	1.0	mg/kg	7.0	12.0	2.8	3.0	5.6
Zinc	7440-66-6	1.0	mg/kg	11.7	18.9	3.1	3.4	8.6
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S18_3_0.5	AUS_MUR_VC_S18_3_1.0	AUS_MUR_VC_S17A_0.5	AUS_MUR_VC_S17A_1.0	AUS_MUR_VC_S16_0.5
				Sampling date / time	01-Sep-2022 03:25	01-Sep-2022 03:35	01-Sep-2022 05:02	01-Sep-2022 05:02	01-Sep-2022 05:51
Compound	CAS Number	LOR	Unit		ES2231588-001	ES2231588-002	ES2231588-003	ES2231588-004	ES2231588-005
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.27**	**0.64**	**0.12**	**0.13**	**0.20**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**90.2**	**63.5**	**108**	**106**	**101**
Toluene-D8	2037-26-5	0.2	%		**81.3**	**54.9**	**95.5**	**95.3**	**88.3**
4-Bromofluorobenzene	460-00-4	0.2	%		**88.9**	**63.7**	**102**	**106**	**96.5**

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S16_1.0	AUS_MUR_VC_S15_0.5	AUS_MUR_VC_S15_1.0	AUS_MUR_VC_S14_0.5	AUS_MUR_VC_S14_1.0
				Sampling date / time	01-Sep-2022 05:51	01-Sep-2022 06:45	01-Sep-2022 06:45	01-Sep-2022 07:40	01-Sep-2022 07:40
Compound	CAS Number	LOR	Unit		ES2231588-006	ES2231588-007	ES2231588-008	ES2231588-009	ES2231588-010
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		35.5	29.6	31.8	32.7	35.2
EA150: Particle Sizing									
+75µm	----	1	%		54	86	86	83	68
+150µm	----	1	%		23	61	66	62	17
+300µm	----	1	%		10	28	30	30	3
+425µm	----	1	%		8	21	23	24	2
+600µm	----	1	%		6	17	19	19	1
+1180µm	----	1	%		4	10	10	11	<1
+2.36mm	----	1	%		1	2	2	3	<1
+4.75mm	----	1	%		<1	<1	<1	<1	<1
+9.5mm	----	1	%		<1	<1	<1	<1	<1
+19.0mm	----	1	%		<1	<1	<1	<1	<1
+37.5mm	----	1	%		<1	<1	<1	<1	<1
+75.0mm	----	1	%		<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size									
Clay (<2 µm)	----	1	%		30	7	8	10	19
Silt (2-60 µm)	----	1	%		15	7	7	8	12
Sand (0.06-2.00 mm)	----	1	%		53	81	81	76	68
Gravel (>2mm)	----	1	%		2	5	4	6	1
Cobbles (>6cm)	----	1	%		<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		14400	2650	4140	4890	10500
Iron	7439-89-6	50	mg/kg		21100	10300	13400	12700	17100
EG020-SD: Total Metals in Sediments by ICPMS									
Antimony	7440-36-0	0.50	mg/kg		<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg		14.1	27.2	27.2	24.4	13.5
Cadmium	7440-43-9	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg		25.7	6.8	11.1	10.9	19.8
Copper	7440-50-8	1.0	mg/kg		3.3	<1.0	1.3	1.4	2.8
Lead	7439-92-1	1.0	mg/kg		7.3	4.2	5.2	5.0	6.0
Nickel	7440-02-0	1.0	mg/kg		7.8	3.0	4.4	4.2	6.6
Zinc	7440-66-6	1.0	mg/kg		11.5	4.4	6.3	5.9	11.1
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOLID (Matrix: SOIL)				Sample ID	AUS_MUR_VC_S16_1.0	AUS_MUR_VC_S15_0.5	AUS_MUR_VC_S15_1.0	AUS_MUR_VC_S14_0.5	AUS_MUR_VC_S14_1.0
				Sampling date / time	01-Sep-2022 05:51	01-Sep-2022 06:45	01-Sep-2022 06:45	01-Sep-2022 07:40	01-Sep-2022 07:40
Compound	CAS Number	LOR	Unit		ES2231588-006	ES2231588-007	ES2231588-008	ES2231588-009	ES2231588-010
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.21**	**0.14**	**0.13**	**0.13**	**0.20**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**81.6**	**113**	**93.8**	**105**	**60.7**
Toluene-D8	2037-26-5	0.2	%		**70.8**	**103**	**79.2**	**96.0**	**50.0**
4-Bromofluorobenzene	460-00-4	0.2	%		**81.7**	**112**	**90.7**	**102**	**70.9**

Surrogate Control Limits

Sub-Matrix: **SOLID**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080-SD: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	67	137
Toluene-D8	2037-26-5	74	134
4-Bromofluorobenzene	460-00-4	73	137

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EP003: Total Organic Carbon (TOC) in Soil

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Soil Classification based on Particle Size

(SOIL) EA150: Particle Sizing

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2231627**	Page	: 1 of 18
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022 07:30
Order number	: ----	Date Analysis Commenced	: 15-Sep-2022
C-O-C number	: ----	Issue Date	: 29-Sep-2022 12:52
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 42		
No. of samples analysed	: 41		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

Signatories	*Position*	*Accreditation Category*
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General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

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

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA150H: Soil Particle Density required for Hydrometer analysis according to AS 1289.3.5.1 2006 was not requested by the client. Typical sediment SPD values used for calculations and consequently NATA endorsement does not apply to hydrometer results.
- EP080-SD: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EG020A-T: Positive results for samples ES2231627-030, 031, 032 have been confirmed by re-digestion and re-analysis.
- EP080-SD: Surrogate recovery bias low due to sample matrix interferences, confirmed by re-extraction and re-analysis.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	AUS_MUR_GB_A1_4	AUS_MUR_GB_A2_4	AUS_MUR_GB_A3_4	AUS_MUR_GB_A4_4	AUS_MUR_GB_A2_5
			Sampling date / time	02-Sep-2022 19:45	02-Sep-2022 19:45	02-Sep-2022 19:45	02-Sep-2022 19:45	02-Sep-2022 19:45
Compound	CAS Number	LOR	Unit	ES2231627-001	ES2231627-002	ES2231627-003	ES2231627-004	ES2231627-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	26.9	42.1	31.9	30.5	38.0
EA150: Particle Sizing								
+75µm	----	1	%	89	82	78	89	81
+150µm	----	1	%	85	72	66	84	71
+300µm	----	1	%	57	27	24	42	28
+425µm	----	1	%	38	14	12	32	19
+600µm	----	1	%	26	10	8	28	15
+1180µm	----	1	%	19	7	5	22	12
+2.36mm	----	1	%	14	3	2	14	8
+4.75mm	----	1	%	<1	<1	<1	<1	<1
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	7	8	11	7	11
Silt (2-60 µm)	----	1	%	3	9	9	4	5
Sand (0.06-2.00 mm)	----	1	%	74	79	77	73	75
Gravel (>2mm)	----	1	%	16	4	3	16	9
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	3830	6380	5670	5060	6570
Iron	7439-89-6	50	mg/kg	8150	8760	8890	13000	9930
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	12.5	5.63	6.87	16.0	6.55
Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.3	0.2	<0.1	0.1
Chromium	7440-47-3	1.0	mg/kg	11.3	15.8	14.6	13.2	16.7
Copper	7440-50-8	1.0	mg/kg	1.4	2.4	2.0	1.6	2.3
Lead	7439-92-1	1.0	mg/kg	3.8	4.2	4.0	4.6	4.6
Nickel	7440-02-0	1.0	mg/kg	4.3	6.2	5.5	5.4	6.4
Zinc	7440-66-6	1.0	mg/kg	4.4	8.0	6.9	5.8	7.8
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	AUS_MUR_GB_A1_4	AUS_MUR_GB_A2_4	AUS_MUR_GB_A3_4	AUS_MUR_GB_A4_4	AUS_MUR_GB_A2_5
			Sampling date / time	02-Sep-2022 19:45	02-Sep-2022 19:45	02-Sep-2022 19:45	02-Sep-2022 19:45	02-Sep-2022 19:45
Compound	CAS Number	LOR	Unit	ES2231627-001	ES2231627-002	ES2231627-003	ES2231627-004	ES2231627-005
				Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	**0.22**	**0.36**	**0.32**	**0.23**	**0.26**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
>C10 - C16 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg	**5**	**6**	**5**	**6**	**6**
>C34 - C40 Fraction	----	5	mg/kg	<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg	**5**	**6**	**5**	**6**	**6**
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg	<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg	<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg	<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**42.4**	**67.5**	**82.9**	**90.1**	**74.0**
Toluene-D8	2037-26-5	0.2	%	**37.1**	**65.2**	**83.3**	**92.1**	**76.7**
4-Bromofluorobenzene	460-00-4	0.2	%	**43.2**	**71.6**	**84.5**	**93.8**	**84.3**

Analytical Results

Sub-Matrix: **SOIL**
(Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	AUS_MUR_GB_A2_6	AUS_MUR_GB_B1_4	AUS_MUR_GB_B2_4_AS	AUS_MUR_GB_B2_4_BS	AUS_MUR_GB_B3_4
				Sampling date / time	02-Sep-2022 19:45	03-Sep-2022 02:03	03-Sep-2022 02:03	03-Sep-2022 02:03	03-Sep-2022 02:03
					ES2231627-006	ES2231627-007	ES2231627-008	ES2231627-009	ES2231627-010
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		**35.1**	**38.1**	**40.2**	**31.9**	**39.6**
EA150: Particle Sizing									
+75µm	----	1	%		**86**	**74**	**78**	**79**	**76**
+150µm	----	1	%		**78**	**48**	**66**	**67**	**57**
+300µm	----	1	%		**39**	**14**	**45**	**50**	**22**
+425µm	----	1	%		**26**	**10**	**40**	**46**	**17**
+600µm	----	1	%		**22**	**7**	**35**	**41**	**15**
+1180µm	----	1	%		**17**	**4**	**28**	**33**	**12**
+2.36mm	----	1	%		**10**	**1**	**18**	**23**	**6**
+4.75mm	----	1	%		<1	<1	**6**	**8**	<1
+9.5mm	----	1	%		<1	<1	<1	<1	<1
+19.0mm	----	1	%		<1	<1	<1	<1	<1
+37.5mm	----	1	%		<1	<1	<1	<1	<1
+75.0mm	----	1	%		<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size									
Clay (<2 µm)	----	1	%		**9**	**11**	**11**	**12**	**11**
Silt (2-60 µm)	----	1	%		**5**	**12**	**9**	**7**	**12**
Sand (0.06-2.00 mm)	----	1	%		**74**	**75**	**59**	**55**	**69**
Gravel (>2mm)	----	1	%		**12**	**2**	**21**	**26**	**8**
Cobbles (>6cm)	----	1	%		<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		**5250**	**6650**	**7380**	**6820**	**6040**
Iron	7439-89-6	50	mg/kg		**9600**	**8730**	**14600**	**15400**	**10400**
EG020-SD: Total Metals in Sediments by ICPMS									
Antimony	7440-36-0	0.50	mg/kg		<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg		**7.86**	**4.05**	**9.43**	**12.5**	**7.03**
Cadmium	7440-43-9	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg		**13.6**	**16.3**	**17.5**	**15.9**	**14.9**
Copper	7440-50-8	1.0	mg/kg		**1.7**	**2.3**	**2.4**	**2.2**	**2.1**
Lead	7439-92-1	1.0	mg/kg		**4.5**	**4.1**	**4.7**	**4.7**	**4.4**
Nickel	7440-02-0	1.0	mg/kg		**5.4**	**6.1**	**7.0**	**6.6**	**6.2**
Zinc	7440-66-6	1.0	mg/kg		**6.0**	**7.9**	**8.6**	**7.8**	**7.3**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	AUS_MUR_GB_A2_6	AUS_MUR_GB_B1_4	AUS_MUR_GB_B2_4_AS	AUS_MUR_GB_B2_4_BS	AUS_MUR_GB_B3_4
				Sampling date / time	02-Sep-2022 19:45	03-Sep-2022 02:03	03-Sep-2022 02:03	03-Sep-2022 02:03	03-Sep-2022 02:03
Compound	CAS Number	LOR	Unit		ES2231627-006	ES2231627-007	ES2231627-008	ES2231627-009	ES2231627-010
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		0.25	0.32	0.26	0.28	0.30
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		5	6	7	6	6
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		5	6	7	6	6
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ C10 - C36 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		92.2	77.6	72.9	86.0	80.0
Toluene-D8	2037-26-5	0.2	%		92.0	77.0	72.2	91.0	76.8
4-Bromofluorobenzene	460-00-4	0.2	%		91.8	77.2	76.0	90.6	78.4

Analytical Results

Sub-Matrix: SOIL
(Matrix: SOIL)

Compound	CAS Number	LOR	Unit	Sample ID	AUS_MUR_GB_B4_4	AUS_MUR_GB_C1_4	AUS_MUR_GB_C2_4	AUS_MUR_GB_C2_5A	AUS_MUR_GB_C2_6
				Sampling date / time	03-Sep-2022 02:03	03-Sep-2022 08:43	03-Sep-2022 08:43	03-Sep-2022 08:43	03-Sep-2022 08:43
					ES2231627-011	ES2231627-012	ES2231627-013	ES2231627-014	ES2231627-015
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		40.7	36.2	38.2	42.7	33.9
EA150: Particle Sizing									
+75µm	----	1	%		75	80	82	80	82
+150µm	----	1	%		56	68	70	68	68
+300µm	----	1	%		22	45	50	49	49
+425µm	----	1	%		16	34	40	40	39
+600µm	----	1	%		12	26	30	31	29
+1180µm	----	1	%		7	16	18	19	17
+2.36mm	----	1	%		3	8	8	10	6
+4.75mm	----	1	%		<1	<1	<1	3	<1
+9.5mm	----	1	%		<1	<1	<1	<1	<1
+19.0mm	----	1	%		<1	<1	<1	<1	<1
+37.5mm	----	1	%		<1	<1	<1	<1	<1
+75.0mm	----	1	%		<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size									
Clay (<2 µm)	----	1	%		11	11	12	14	13
Silt (2-60 µm)	----	1	%		11	6	3	5	3
Sand (0.06-2.00 mm)	----	1	%		74	72	74	68	74
Gravel (>2mm)	----	1	%		4	11	11	13	10
Cobbles (>6cm)	----	1	%		<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		7580	5880	6360	9260	5720
Iron	7439-89-6	50	mg/kg		10600	18600	15900	22800	12800
EG020-SD: Total Metals in Sediments by ICPMS									
Antimony	7440-36-0	0.50	mg/kg		<0.50	<0.50	0.90	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg		4.57	24.3	17.4	20.0	12.8
Cadmium	7440-43-9	0.1	mg/kg		0.1	0.1	<0.1	0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg		18.2	14.8	14.8	21.4	13.7
Copper	7440-50-8	1.0	mg/kg		2.7	2.0	2.0	2.9	1.8
Lead	7439-92-1	1.0	mg/kg		4.6	5.9	5.5	6.9	4.9
Nickel	7440-02-0	1.0	mg/kg		6.7	5.8	5.6	8.1	5.0
Zinc	7440-66-6	1.0	mg/kg		8.9	6.9	7.0	10.2	6.4
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	AUS_MUR_GB_B4_4	AUS_MUR_GB_C1_4	AUS_MUR_GB_C2_4	AUS_MUR_GB_C2_5A	AUS_MUR_GB_C2_6
				Sampling date / time	03-Sep-2022 02:03	03-Sep-2022 08:43	03-Sep-2022 08:43	03-Sep-2022 08:43	03-Sep-2022 08:43
Compound	CAS Number	LOR	Unit		ES2231627-011	ES2231627-012	ES2231627-013	ES2231627-014	ES2231627-015
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.31**	**0.25**	**0.25**	**0.28**	**0.25**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		**7**	**8**	<3	**6**	**7**
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		**7**	**8**	<3	**6**	**7**
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	**6**	<3	<3	**5**
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	**6**	<3	<3	**5**
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**99.6**	**92.1**	**78.9**	**80.1**	**75.3**
Toluene-D8	2037-26-5	0.2	%		**98.7**	**88.2**	**75.6**	**82.1**	**76.7**
4-Bromofluorobenzene	460-00-4	0.2	%		**101**	**89.0**	**77.9**	**82.2**	**78.6**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	AUS_MUR_GB_C3_4	AUS_MUR_GB_C4_4A	AUS_MUR_GS_S14_4	AUS_MUR_GS_S21_4	AUS_MUR_GS_S30_4
			Sampling date / time	03-Sep-2022 08:43	03-Sep-2022 08:43	01-Sep-2022 19:41	01-Sep-2022 19:41	01-Sep-2022 19:41
Compound	CAS Number	LOR	Unit	ES2231627-016	ES2231627-017	ES2231627-018	ES2231627-019	ES2231627-021
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	39.4	35.5	34.0	36.7	36.4
EA150: Particle Sizing								
+75µm	----	1	%	86	87	88	78	98
+150µm	----	1	%	78	78	71	53	96
+300µm	----	1	%	58	58	25	17	74
+425µm	----	1	%	47	48	19	11	44
+600µm	----	1	%	37	37	15	8	24
+1180µm	----	1	%	23	24	8	5	5
+2.36mm	----	1	%	12	15	3	2	<1
+4.75mm	----	1	%	<1	4	<1	<1	<1
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	9	6	6	9	2
Silt (2-60 µm)	----	1	%	3	5	5	7	<1
Sand (0.06-2.00 mm)	----	1	%	73	71	85	81	96
Gravel (>2mm)	----	1	%	15	18	4	3	2
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	5420	5660	4120	5530	2080
Iron	7439-89-6	50	mg/kg	13500	20700	11100	12700	11700
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	16.3	29.8	16.8	17.9	44.3
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Chromium	7440-47-3	1.0	mg/kg	13.0	14.2	11.3	14.1	7.5
Copper	7440-50-8	1.0	mg/kg	1.8	1.8	1.9	2.1	1.0
Lead	7439-92-1	1.0	mg/kg	5.3	6.4	5.0	5.5	6.2
Nickel	7440-02-0	1.0	mg/kg	5.0	5.6	4.3	4.9	3.8
Zinc	7440-66-6	1.0	mg/kg	5.9	6.3	7.1	8.0	3.4
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	AUS_MUR_GB_C3_4	AUS_MUR_GB_C4_4A	AUS_MUR_GS_S14_4	AUS_MUR_GS_S21_4	AUS_MUR_GS_S30_4
			Sampling date / time	03-Sep-2022 08:43	03-Sep-2022 08:43	01-Sep-2022 19:41	01-Sep-2022 19:41	01-Sep-2022 19:41
Compound	CAS Number	LOR	Unit	ES2231627-016	ES2231627-017	ES2231627-018	ES2231627-019	ES2231627-021
				Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	**0.19**	**0.25**	**0.22**	**0.24**	**0.10**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
>C10 - C16 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg	**6**	**10**	<3	**6**	<3
>C34 - C40 Fraction	----	5	mg/kg	<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg	**6**	**10**	<3	**6**	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg	<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg	**4**	**8**	<3	**4**	<3
C29 - C36 Fraction	----	5	mg/kg	<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg	**4**	**8**	<3	**4**	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**78.5**	**80.3**	**89.9**	**90.7**	**89.4**
Toluene-D8	2037-26-5	0.2	%	**74.2**	**78.9**	**78.2**	**83.8**	**78.1**
4-Bromofluorobenzene	460-00-4	0.2	%	**78.2**	**82.6**	**84.0**	**89.2**	**83.2**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	AUS_MUR_GS_S31_4	AUS_MUR_GS_S32_4	AUS_MUR_GS_S34_4	AUS_MUR_GB_D1_4A	AUS_MUR_GB_D2_4_AS
			Sampling date / time	01-Sep-2022 19:41	01-Sep-2022 19:41	01-Sep-2022 19:41	03-Sep-2022 14:50	03-Sep-2022 14:50
Compound	CAS Number	LOR	Unit	ES2231627-022	ES2231627-023	ES2231627-024	ES2231627-025	ES2231627-026
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	36.1	38.7	23.7	34.9	38.3
EA150: Particle Sizing								
+75µm	----	1	%	----	98	98	98	96
+150µm	----	1	%	----	98	98	96	86
+300µm	----	1	%	----	96	92	90	28
+425µm	----	1	%	----	89	76	81	13
+600µm	----	1	%	----	70	60	52	8
+1180µm	----	1	%	----	25	44	17	3
+2.36mm	----	1	%	----	4	22	5	<1
+4.75mm	----	1	%	----	<1	<1	<1	<1
+9.5mm	----	1	%	----	<1	<1	<1	<1
+19.0mm	----	1	%	----	<1	<1	<1	<1
+37.5mm	----	1	%	----	<1	<1	<1	<1
+75.0mm	----	1	%	----	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	----	2	2	2	4
Silt (2-60 µm)	----	1	%	----	<1	<1	<1	<1
Sand (0.06-2.00 mm)	----	1	%	----	87	69	89	94
Gravel (>2mm)	----	1	%	----	11	29	9	2
Cobbles (>6cm)	----	1	%	----	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	2230	2300	2310	2440	2660
Iron	7439-89-6	50	mg/kg	12900	10800	15200	16600	6900
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	7440-38-2	1.00	mg/kg	42.6	24.1	33.1	47.8	15.7
Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.1	<0.1	<0.1	0.1
Chromium	7440-47-3	1.0	mg/kg	6.7	7.7	9.5	7.5	7.9
Copper	7440-50-8	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	1.3
Lead	7439-92-1	1.0	mg/kg	5.6	4.9	4.8	6.2	4.3
Nickel	7440-02-0	1.0	mg/kg	4.0	4.2	3.5	4.3	3.0
Zinc	7440-66-6	1.0	mg/kg	3.0	2.6	2.2	3.2	3.9
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	AUS_MUR_GS_S31_4	AUS_MUR_GS_S32_4	AUS_MUR_GS_S34_4	AUS_MUR_GB_D1_4A	AUS_MUR_GB_D2_4_AS
				Sampling date / time	01-Sep-2022 19:41	01-Sep-2022 19:41	01-Sep-2022 19:41	03-Sep-2022 14:50	03-Sep-2022 14:50
Compound	CAS Number	LOR	Unit		ES2231627-022	ES2231627-023	ES2231627-024	ES2231627-025	ES2231627-026
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.11**	**0.10**	**0.07**	**0.13**	**0.16**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	<5	<5
^ **C10 - C36 Fraction (sum)**	----	3	mg/kg		<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**92.5**	**92.0**	**96.6**	**79.4**	**52.3**
Toluene-D8	2037-26-5	0.2	%		**77.6**	**76.9**	**83.3**	**76.8**	**42.1**
4-Bromofluorobenzene	460-00-4	0.2	%		**83.1**	**81.0**	**89.4**	**82.9**	**48.2**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	AUS_MUR_GB_D2_4_BS	AUS_MUR_GB_D3_4	AUS_MUR_GB_D4_4	AUS_MUR_VC_6B_0.5	AUS_MUR_VC_6B_1.0
			Sampling date / time	03-Sep-2022 14:50	03-Sep-2022 14:50	03-Sep-2022 14:50	03-Sep-2022 05:14	03-Sep-2022 05:14
Compound	CAS Number	LOR	Unit	ES2231627-027	ES2231627-028	ES2231627-029	ES2231627-033	ES2231627-034
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	40.1	43.2	38.5	----	----
EA150: Particle Sizing								
+75µm	----	1	%	96	91	97	58	56
+150µm	----	1	%	85	82	95	39	47
+300µm	----	1	%	27	38	90	25	33
+425µm	----	1	%	13	24	86	20	28
+600µm	----	1	%	7	19	71	16	23
+1180µm	----	1	%	3	13	29	10	15
+2.36mm	----	1	%	<1	7	5	4	9
+4.75mm	----	1	%	<1	<1	<1	<1	5
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	4	7	2	18	23
Silt (2-60 µm)	----	1	%	<1	1	<1	21	17
Sand (0.06-2.00 mm)	----	1	%	94	83	85	55	49
Gravel (>2mm)	----	1	%	2	9	13	6	11
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	2670	5200	1910	----	----
Iron	7439-89-6	50	mg/kg	8020	17800	8670	----	----
EG020-SD: Total Metals in Sediments by ICPMS								
Antimony	7440-36-0	0.50	mg/kg	0.95	0.51	<0.50	----	----
Arsenic	7440-38-2	1.00	mg/kg	18.5	29.4	21.3	----	----
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
Chromium	7440-47-3	1.0	mg/kg	8.2	18.6	5.4	----	----
Copper	7440-50-8	1.0	mg/kg	1.4	2.0	<1.0	----	----
Lead	7439-92-1	1.0	mg/kg	4.9	7.6	4.0	----	----
Nickel	7440-02-0	1.0	mg/kg	3.4	5.6	2.8	----	----
Zinc	7440-66-6	1.0	mg/kg	4.3	7.1	2.3	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	AUS_MUR_GB_D2_4_BS	AUS_MUR_GB_D3_4	AUS_MUR_GB_D4_4	AUS_MUR_VC_6B_0.5	AUS_MUR_VC_6B_1.0
				Sampling date / time	03-Sep-2022 14:50	03-Sep-2022 14:50	03-Sep-2022 14:50	03-Sep-2022 05:14	03-Sep-2022 05:14
Compound	CAS Number	LOR	Unit		ES2231627-027	ES2231627-028	ES2231627-029	ES2231627-033	ES2231627-034
					Result	Result	Result	Result	Result
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		**0.18**	**0.19**	**0.13**	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	<3	----	----
>C16 - C34 Fraction	----	3	mg/kg		<3	<3	<3	----	----
>C34 - C40 Fraction	----	5	mg/kg		<5	<5	<5	----	----
>C10 - C40 Fraction (sum)	----	3	mg/kg		<3	<3	<3	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		<3	<3	<3	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	----	----
C10 - C14 Fraction	----	3	mg/kg		<3	<3	<3	----	----
C15 - C28 Fraction	----	3	mg/kg		<3	<3	<3	----	----
C29 - C36 Fraction	----	5	mg/kg		<5	<5	<5	----	----
^ C10 - C36 Fraction (sum)	----	3	mg/kg		<3	<3	<3	----	----
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg		<3	<3	<3	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg		<3.0	<3.0	<3.0	----	----
EP080-SD: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Ethylbenzene	100-41-4	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
ortho-Xylene	95-47-6	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Naphthalene	91-20-3	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
EP080-SD: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**85.2**	**39.0**	**70.1**	----	----
Toluene-D8	2037-26-5	0.2	%		**82.6**	**32.2**	**65.2**	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**85.9**	**36.8**	**72.2**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	AUS_MUR_VC_7B_0.5	AUS_MUR_VC_7B_1.0	AUS_MUR_VC8_C_0.5	AUS_MUR_VC8_C_1.0	AUS_MUR_VC_001A_0.5
			Sampling date / time	02-Sep-2022 06:15	02-Sep-2022 06:15	02-Sep-2022 09:20	02-Sep-2022 09:20	01-Sep-2022 15:40
Compound	CAS Number	LOR	Unit	ES2231627-035	ES2231627-036	ES2231627-037	ES2231627-038	ES2231627-039
				Result	Result	Result	Result	Result
EA150: Particle Sizing								
+75µm	----	1	%	74	33	84	65	9
+150µm	----	1	%	65	27	80	63	6
+300µm	----	1	%	44	20	64	60	4
+425µm	----	1	%	37	17	51	59	3
+600µm	----	1	%	31	15	46	58	2
+1180µm	----	1	%	24	11	40	54	<1
+2.36mm	----	1	%	19	9	34	49	<1
+4.75mm	----	1	%	15	6	23	37	<1
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	13	35	9	14	49
Silt (2-60 µm)	----	1	%	14	25	7	19	40
Sand (0.06-2.00 mm)	----	1	%	52	31	48	17	11
Gravel (>2mm)	----	1	%	21	9	36	50	<1
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	AUS_MUR_VC_001A_1.0	AUS_MUR_VC_002_0.5	AUS_MUR_VC_002_1.0	----	----
			Sampling date / time	01-Sep-2022 15:40	01-Sep-2022 16:05	01-Sep-2022 16:05	----	----
Compound	CAS Number	LOR	Unit	ES2231627-040	ES2231627-041	ES2231627-042	--------	--------
				Result	Result	Result	----	----
EA150: Particle Sizing								
+75µm	----	1	%	<1	17	5	----	----
+150µm	----	1	%	<1	14	2	----	----
+300µm	----	1	%	<1	10	2	----	----
+425µm	----	1	%	<1	7	1	----	----
+600µm	----	1	%	<1	5	<1	----	----
+1180µm	----	1	%	<1	3	<1	----	----
+2.36mm	----	1	%	<1	2	<1	----	----
+4.75mm	----	1	%	<1	<1	<1	----	----
+9.5mm	----	1	%	<1	<1	<1	----	----
+19.0mm	----	1	%	<1	<1	<1	----	----
+37.5mm	----	1	%	<1	<1	<1	----	----
+75.0mm	----	1	%	<1	<1	<1	----	----
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	59	46	51	----	----
Silt (2-60 µm)	----	1	%	36	31	38	----	----
Sand (0.06-2.00 mm)	----	1	%	5	21	11	----	----
Gravel (>2mm)	----	1	%	<1	2	<1	----	----
Cobbles (>6cm)	----	1	%	<1	<1	<1	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	AUS_MUR_RIN_4	AUS_MUR_RIN_5	AUS_MUR_RIN_6	----	----
			Sampling date / time	02-Sep-2022 20:45	03-Sep-2022 19:09	03-Sep-2022 20:20	----	----
Compound	CAS Number	LOR	Unit	ES2231627-030	ES2231627-031	ES2231627-032	--------	--------
				Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.50**	**0.19**	**0.45**	----	----
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	<0.005	----	----
Iron	7439-89-6	0.05	mg/L	**0.36**	**0.12**	**0.09**	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**34**	**2**	**2**	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080-SD: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	67	137
Toluene-D8	2037-26-5	74	134
4-Bromofluorobenzene	460-00-4	73	137

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EP003: Total Organic Carbon (TOC) in Soil

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Particle Sizing

(SOIL) EA150: Soil Classification based on Particle Size

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2230841**	Page	: 1 of 9
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 01-Sep-2022
Order number	: ----	Date Analysis Commenced	: 07-Sep-2022
C-O-C number	: ----	Issue Date	: 23-Sep-2022
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 111		
No. of samples analysed	: 39		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QC Lot: 4570518)									
ES2230841-001	AUS_MUR_VC_S1B_0.5	EG005-SD: Aluminium	7429-90-5	50	mg/kg	2250	2110	6.5	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	10700	10200	4.3	0% - 20%
ES2230841-015	AUS_MUR_VC_S7_0.5	EG005-SD: Aluminium	7429-90-5	50	mg/kg	3000	3080	2.8	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	12600	13900	9.7	0% - 20%
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QC Lot: 4570521)									
ES2230841-036	AUS_MUR_VC_S11-3_0.5	EG005-SD: Aluminium	7429-90-5	50	mg/kg	2110	# 2800	27.8	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	18400	15600	15.9	0% - 20%
ES2230841-049	AUS_MUR_GS_S6-1A	EG005-SD: Aluminium	7429-90-5	50	mg/kg	3200	3140	1.7	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	17500	16000	8.6	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 4570517)									
ES2230841-001	AUS_MUR_VC_S1B_0.5	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
ES2230841-015	AUS_MUR_VC_S7_0.5	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 4570520)									
ES2230841-036	AUS_MUR_VC_S11-3_0.5	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
ES2230841-049	AUS_MUR_GS_S6-1A	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4570523)									
ES2230841-003	AUS_MUR_VC_S2BS_0.5	EA055: Moisture Content	----	0.1	%	26.6	27.9	4.6	0% - 20%
ES2230841-021	AUS_MUR_VC_S8_1_1.0	EA055: Moisture Content	----	0.1	%	26.2	25.6	2.6	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4570524)									
ES2230841-038	AUS_MUR_VC_S12_0.5	EA055: Moisture Content	----	0.1	%	26.1	25.4	2.7	0% - 20%
ES2230841-052	AUS_MUR_GS_S4-1	EA055: Moisture Content	----	0.1	%	32.9	34.0	3.2	0% - 20%
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4570516)									
ES2230841-001	AUS_MUR_VC_S1B_0.5	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4570516) - continued									
ES2230841-001	AUS_MUR_VC_S1B_0.5	EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	17.0	17.0	0.3	0% - 50%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	7.7	7.5	2.1	No Limit
		EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	<1.0	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	3.9	4.0	3.6	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	3.9	3.8	0.0	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	2.4	2.5	0.0	No Limit
ES2230841-015	AUS_MUR_VC_S7_0.5	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	0.1	0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	23.6	25.6	8.3	0% - 20%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	9.4	9.4	0.0	No Limit
		EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	<1.0	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	4.0	3.8	4.4	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	4.0	3.7	8.9	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	3.0	2.9	0.0	No Limit
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4570519)									
ES2230841-036	AUS_MUR_VC_S11-3_0.5	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	0.1	<0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	41.1	35.5	14.5	0% - 20%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	8.2	9.3	11.8	No Limit
		EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	<1.0	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	4.2	4.6	10.3	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	3.2	4.3	28.6	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	2.2	2.8	25.3	No Limit
ES2230841-049	AUS_MUR_GS_S6-1A	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	0.1	0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	29.6	29.6	0.3	0% - 20%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	9.8	9.8	0.0	No Limit
		EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	<1.0	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	4.9	4.9	0.0	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	5.1	4.4	13.7	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	3.8	3.4	11.6	No Limit
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 4570073)									
EB2225334-011	Anonymous	EP003: Total Organic Carbon	----	0.02	%	0.19	0.16	20.5	No Limit
ES2230841-013	AUS_MUR_VC_S6_0.5	EP003: Total Organic Carbon	----	0.02	%	0.11	0.13	12.1	No Limit
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 4570074)									
ES2230841-031	AUS_MUR_GS_S10_1.0	EP003: Total Organic Carbon	----	0.02	%	0.21	0.20	0.0	0% - 50%
ES2230841-048	US_MUR_GS_S7-1	EP003: Total Organic Carbon	----	0.02	%	0.10	0.10	0.0	No Limit
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 4578464)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 4578464) - continued									
ES2230841-019	AUS_MUR_VC_S8_3_1.0	EP003: Total Organic Carbon	----	0.02	%	0.33	0.32	3.7	0% - 50%
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4564818)									
ES2230841-001	AUS_MUR_VC_S1B_0.5	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
ES2230841-015	AUS_MUR_VC_S7_0.5	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4564840)									
ES2230841-036	AUS_MUR_VC_S11-3_0.5	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
ES2230841-049	AUS_MUR_GS_S6-1A	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4565056)									
ES2230841-001	AUS_MUR_VC_S1B_0.5	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2230841-015	AUS_MUR_VC_S7_0.5	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4565059)									
ES2230841-036	AUS_MUR_VC_S11-3_0.5	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2230841-049	AUS_MUR_GS_S6-1A	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 4565056)									
ES2230841-001	AUS_MUR_VC_S1B_0.5	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2230841-015	AUS_MUR_VC_S7_0.5	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 4565059)									
ES2230841-036	AUS_MUR_VC_S11-3_0.5	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 4565059) - continued									
ES2230841-049	AUS_MUR_GS_S6-1A	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD: BTEXN (QC Lot: 4564818)									
ES2230841-001	AUS_MUR_VC_S1B_0.5	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2230841-015	AUS_MUR_VC_S7_0.5	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP080-SD: BTEXN (QC Lot: 4564840)									
ES2230841-036	AUS_MUR_VC_S11-3_0.5	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2230841-049	AUS_MUR_GS_S6-1A	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QCLot: 4570518)								
EG005-SD: Aluminium	7429-90-5	50	mg/kg	<50	15910 mg/kg	91.7	88.2	136
EG005-SD: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	90.6	70.0	109
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QCLot: 4570521)								
EG005-SD: Aluminium	7429-90-5	50	mg/kg	<50	15910 mg/kg	96.1	88.2	136
EG005-SD: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	95.4	70.0	109
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4570517)								
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.087 mg/kg	83.3	72.0	116
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4570520)								
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.087 mg/kg	83.9	72.0	116
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4570516)								
EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	1.54 mg/kg	83.2	70.0	130
EG020-SD: Arsenic	7440-38-2	1	mg/kg	<1.00	110 mg/kg	93.2	80.0	139
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.8 mg/kg	96.9	83.0	127
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	20.3 mg/kg	92.7	73.0	130
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	49 mg/kg	105	76.0	130
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	57.4 mg/kg	109	74.0	130
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	14.7 mg/kg	94.3	83.0	130
EG020-SD: Zinc	7440-66-6	1	mg/kg	<1.0	125.8 mg/kg	95.2	82.0	137
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4570519)								
EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	1.54 mg/kg	89.2	70.0	130
EG020-SD: Arsenic	7440-38-2	1	mg/kg	<1.00	110 mg/kg	99.5	80.0	139
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.8 mg/kg	99.0	83.0	127
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	20.3 mg/kg	98.1	73.0	130
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	49 mg/kg	110	76.0	130
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	57.4 mg/kg	114	74.0	130
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	14.7 mg/kg	98.7	83.0	130
EG020-SD: Zinc	7440-66-6	1	mg/kg	<1.0	125.8 mg/kg	100	82.0	137
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 4570073)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.55 %	104	80.0	120
				<0.02	27.5 %	98.0	80.0	120
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 4570074)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.55 %	101	80.0	120
				<0.02	27.5 %	98.7	80.0	120

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 4578464)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.56 %	104	80.0	120
				<0.02	27.8 %	99.5	80.0	120
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4564818)								
EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	6.2 mg/kg	87.9	61.0	133
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4564840)								
EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	6.2 mg/kg	92.8	61.0	133
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565056)								
EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	5 mg/kg	95.3	78.0	118
EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	7.5 mg/kg	92.6	84.0	118
EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	5 mg/kg	94.0	73.0	119
EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565059)								
EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	5 mg/kg	106	78.0	118
EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	7.5 mg/kg	112	84.0	118
EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	5 mg/kg	104	73.0	119
EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 4565056)								
EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	6.25 mg/kg	93.0	70.0	130
EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	8.75 mg/kg	93.6	74.0	138
EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	3.75 mg/kg	92.0	63.0	131
EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 4565059)								
EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	6.25 mg/kg	103	70.0	130
EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	8.75 mg/kg	100	74.0	138
EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	3.75 mg/kg	99.6	63.0	131
EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD: BTEXN (QCLot: 4564818)								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	0.2 mg/kg	101	66.0	122
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	0.2 mg/kg	109	70.0	130
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.2 mg/kg	100.0	66.0	126
EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	0.4 mg/kg	103	59.0	129
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.2 mg/kg	102	66.0	126
EP080-SD: BTEXN (QCLot: 4564840)								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	0.2 mg/kg	104	66.0	122
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	0.2 mg/kg	109	70.0	130
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.2 mg/kg	109	66.0	126

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080-SD: BTEXN (QCLot: 4564840) - continued								
EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	0.4 mg/kg	102	59.0	129
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.2 mg/kg	109	66.0	126

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4570517)							
ES2230841-002	AUS_MUR_VC_S1B_1.0	EG035T-LL: Mercury	7439-97-6	0.05 mg/kg	104	70.0	130
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4570520)							
ES2230841-037	AUS_MUR_VC_S11-3_1.0	EG035T-LL: Mercury	7439-97-6	0.05 mg/kg	105	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4570516)							
ES2230841-002	AUS_MUR_VC_S1B_1.0	EG020-SD: Arsenic	7440-38-2	50 mg/kg	106	70.0	130
		EG020-SD: Cadmium	7440-43-9	50 mg/kg	95.9	70.0	130
		EG020-SD: Chromium	7440-47-3	50 mg/kg	117	70.0	130
		EG020-SD: Copper	7440-50-8	250 mg/kg	106	70.0	130
		EG020-SD: Lead	7439-92-1	250 mg/kg	105	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	97.8	70.0	130
		EG020-SD: Zinc	7440-66-6	250 mg/kg	90.8	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4570519)							
ES2230841-037	AUS_MUR_VC_S11-3_1.0	EG020-SD: Arsenic	7440-38-2	50 mg/kg	107	70.0	130
		EG020-SD: Cadmium	7440-43-9	50 mg/kg	94.3	70.0	130
		EG020-SD: Chromium	7440-47-3	50 mg/kg	115	70.0	130
		EG020-SD: Copper	7440-50-8	250 mg/kg	102	70.0	130
		EG020-SD: Lead	7439-92-1	250 mg/kg	107	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	96.0	70.0	130
		EG020-SD: Zinc	7440-66-6	250 mg/kg	87.9	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4564818)							
ES2230841-001	AUS_MUR_VC_S1B_0.5	EP080-SD: C6 - C9 Fraction	----	6.5 mg/kg	112	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4564840)							
ES2230841-036	AUS_MUR_VC_S11-3_0.5	EP080-SD: C6 - C9 Fraction	----	6.5 mg/kg	119	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565056)							
ES2230841-001	AUS_MUR_VC_S1B_0.5	EP071-SD: C10 - C14 Fraction	----	14 mg/kg	97.7	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565056) - continued							
ES2230841-001	AUS_MUR_VC_S1B_0.5	EP071-SD: C15 - C28 Fraction	----	59 mg/kg	101	70.0	130
		EP071-SD: C29 - C36 Fraction	----	42 mg/kg	129	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565059)							
ES2230841-036	AUS_MUR_VC_S11-3_0.5	EP071-SD: C10 - C14 Fraction	----	14 mg/kg	94.8	70.0	130
		EP071-SD: C15 - C28 Fraction	----	59 mg/kg	101	70.0	130
		EP071-SD: C29 - C36 Fraction	----	42 mg/kg	116	70.0	130
EP080-SD: BTEXN (QCLot: 4564818)							
ES2230841-001	AUS_MUR_VC_S1B_0.5	EP080-SD: Benzene	71-43-2	0.5 mg/kg	111	70.0	130
		EP080-SD: Toluene	108-88-3	0.5 mg/kg	103	70.0	130
		EP080-SD: Ethylbenzene	100-41-4	0.5 mg/kg	108	70.0	130
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.5 mg/kg	109	70.0	130
		EP080-SD: ortho-Xylene	95-47-6	0.5 mg/kg	108	70.0	130
EP080-SD: BTEXN (QCLot: 4564840)							
ES2230841-036	AUS_MUR_VC_S11-3_0.5	EP080-SD: Benzene	71-43-2	0.5 mg/kg	113	70.0	130
		EP080-SD: Toluene	108-88-3	0.5 mg/kg	109	70.0	130
		EP080-SD: Ethylbenzene	100-41-4	0.5 mg/kg	111	70.0	130
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.5 mg/kg	108	70.0	130
		EP080-SD: ortho-Xylene	95-47-6	0.5 mg/kg	110	70.0	130

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2231582**	Page	: 1 of 6
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022
Order number	: ----	Date Analysis Commenced	: 09-Sep-2022
C-O-C number	: ----	Issue Date	: 23-Sep-2022
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 11		
No. of samples analysed	: 7		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QC Lot: 4579768)									
ES2231582-001	AUS_MUR_GS_S1_1.0	EG005-SD: Aluminium	7429-90-5	50	mg/kg	2450	2730	10.5	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	13700	12400	9.7	0% - 20%
ES2231583-004	Anonymous	EG005-SD: Aluminium	7429-90-5	50	mg/kg	2160	2230	2.9	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	11500	11200	2.8	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 4579767)									
ES2231582-001	AUS_MUR_GS_S1_1.0	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
ES2231583-004	Anonymous	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4579771)									
ES2231527-050	Anonymous	EA055: Moisture Content	----	0.1	%	18.7	18.7	0.0	0% - 50%
ES2231583-003	Anonymous	EA055: Moisture Content	----	0.1	%	31.7	31.7	0.0	0% - 20%
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4579769)									
ES2231582-001	AUS_MUR_GS_S1_1.0	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	13.4	17.7	27.9	0% - 50%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	7.4	9.0	18.8	No Limit
		EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	<1.0	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	3.4	4.1	19.1	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	3.4	3.9	14.9	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	2.7	2.8	4.3	No Limit
ES2231583-004	Anonymous	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	0.1	0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	38.2	36.9	3.5	0% - 20%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	6.4	6.1	4.5	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4579769) - continued									
ES2231583-004	Anonymous	EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	<1.0	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	4.7	4.5	4.8	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	3.6	3.4	4.8	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	3.0	2.9	4.7	No Limit
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 4578394)									
ES2231582-001	AUS_MUR_GS_S1_1.0	EP003: Total Organic Carbon	----	0.02	%	0.07	0.09	17.5	No Limit
ES2231583-004	Anonymous	EP003: Total Organic Carbon	----	0.02	%	0.08	0.06	18.3	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4565066)									
ES2231582-001	AUS_MUR_GS_S1_1.0	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231583-004	Anonymous	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4574845)									
ES2231582-001	AUS_MUR_GS_S1_1.0	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
ES2231583-004	Anonymous	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 4565066)									
ES2231582-001	AUS_MUR_GS_S1_1.0	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231583-004	Anonymous	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD: BTEXN (QC Lot: 4574845)									
ES2231582-001	AUS_MUR_GS_S1_1.0	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2231583-004	Anonymous	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080-SD: BTEXN (QC Lot: 4574845) - continued									
ES2231583-004	Anonymous	EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QCLot: 4579768)								
EG005-SD: Aluminium	7429-90-5	50	mg/kg	<50	15910 mg/kg	116	88.2	136
EG005-SD: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	107	70.0	109
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4579767)								
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.087 mg/kg	106	72.0	116
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4579769)								
EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	1.54 mg/kg	108	70.0	130
EG020-SD: Arsenic	7440-38-2	1	mg/kg	<1.00	110 mg/kg	102	80.0	139
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.8 mg/kg	99.1	83.0	127
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	20.3 mg/kg	104	73.0	130
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	49 mg/kg	99.4	76.0	130
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	57.4 mg/kg	122	74.0	130
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	14.7 mg/kg	102	83.0	130
EG020-SD: Zinc	7440-66-6	1	mg/kg	<1.0	125.8 mg/kg	104	82.0	137
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 4578394)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.55 %	98.5	80.0	120
				<0.02	27.5 %	94.6	80.0	120
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565066)								
EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	5 mg/kg	88.9	78.0	118
EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	7.5 mg/kg	105	84.0	118
EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	5 mg/kg	98.8	73.0	119
EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4574845)								
EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	6.2 mg/kg	85.2	61.0	133
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 4565066)								
EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	6.25 mg/kg	98.3	70.0	130
EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	8.75 mg/kg	99.1	74.0	138
EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	3.75 mg/kg	97.2	63.0	131
EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD: BTEXN (QCLot: 4574845)								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	0.2 mg/kg	94.6	66.0	122
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	0.2 mg/kg	88.3	70.0	130
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.2 mg/kg	95.3	66.0	126

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080-SD: BTEXN (QCLot: 4574845) - continued								
EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	0.4 mg/kg	95.4	59.0	129
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.2 mg/kg	96.2	66.0	126

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4579767)							
ES2231582-002	AUS_MUR_VC_S34_0.5	EG035T-LL: Mercury	7439-97-6	0.05 mg/kg	100	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4579769)							
ES2231582-002	AUS_MUR_VC_S34_0.5	EG020-SD: Arsenic	7440-38-2	50 mg/kg	86.2	70.0	130
		EG020-SD: Cadmium	7440-43-9	50 mg/kg	87.0	70.0	130
		EG020-SD: Chromium	7440-47-3	50 mg/kg	92.8	70.0	130
		EG020-SD: Copper	7440-50-8	250 mg/kg	96.6	70.0	130
		EG020-SD: Lead	7439-92-1	250 mg/kg	101	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	89.2	70.0	130
		EG020-SD: Zinc	7440-66-6	250 mg/kg	86.1	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565066)							
ES2231582-001	AUS_MUR_GS_S1_1.0	EP071-SD: C10 - C14 Fraction	----	14 mg/kg	83.8	70.0	130
		EP071-SD: C15 - C28 Fraction	----	59 mg/kg	84.1	70.0	130
		EP071-SD: C29 - C36 Fraction	----	42 mg/kg	122	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4574845)							
ES2231582-001	AUS_MUR_GS_S1_1.0	EP080-SD: C6 - C9 Fraction	----	6.5 mg/kg	86.5	70.0	130
EP080-SD: BTEXN (QCLot: 4574845)							
ES2231582-001	AUS_MUR_GS_S1_1.0	EP080-SD: Benzene	71-43-2	0.5 mg/kg	80.8	70.0	130
		EP080-SD: Toluene	108-88-3	0.5 mg/kg	78.3	70.0	130
		EP080-SD: Ethylbenzene	100-41-4	0.5 mg/kg	83.3	70.0	130
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.5 mg/kg	81.6	70.0	130
		EP080-SD: ortho-Xylene	95-47-6	0.5 mg/kg	84.3	70.0	130

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2231583**	Page	: 1 of 6
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022
Order number	: ----	Date Analysis Commenced	: 09-Sep-2022
C-O-C number	: ----	Issue Date	: 23-Sep-2022
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 6		
No. of samples analysed	: 6		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QC Lot: 4579768)									
ES2231582-001	Anonymous	EG005-SD: Aluminium	7429-90-5	50	mg/kg	2450	2730	10.5	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	13700	12400	9.7	0% - 20%
ES2231583-004	AUS_MUR_VC_S31_1_1.0	EG005-SD: Aluminium	7429-90-5	50	mg/kg	2160	2230	2.9	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	11500	11200	2.8	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 4579767)									
ES2231582-001	Anonymous	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
ES2231583-004	AUS_MUR_VC_S31_1_1.0	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4579771)									
ES2231527-050	Anonymous	EA055: Moisture Content	----	0.1	%	18.7	18.7	0.0	0% - 50%
ES2231583-003	AUS_MUR_VC_S31_1_0.5	EA055: Moisture Content	----	0.1	%	31.7	31.7	0.0	0% - 20%
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4579769)									
ES2231582-001	Anonymous	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	13.4	17.7	27.9	0% - 50%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	7.4	9.0	18.8	No Limit
		EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	<1.0	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	3.4	4.1	19.1	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	3.4	3.9	14.9	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	2.7	2.8	4.3	No Limit
ES2231583-004	AUS_MUR_VC_S31_1_1.0	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	0.1	0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	38.2	36.9	3.5	0% - 20%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	6.4	6.1	4.5	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4579769) - continued									
ES2231583-004	AUS_MUR_VC_S31_1_1.0	EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	<1.0	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	4.7	4.5	4.8	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	3.6	3.4	4.8	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	3.0	2.9	4.7	No Limit
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 4578394)									
ES2231582-001	Anonymous	EP003: Total Organic Carbon	----	0.02	%	0.07	0.09	17.5	No Limit
ES2231583-004	AUS_MUR_VC_S31_1_1.0	EP003: Total Organic Carbon	----	0.02	%	0.08	0.06	18.3	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4565066)									
ES2231582-001	Anonymous	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231583-004	AUS_MUR_VC_S31_1_1.0	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4574845)									
ES2231582-001	Anonymous	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
ES2231583-004	AUS_MUR_VC_S31_1_1.0	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 4565066)									
ES2231582-001	Anonymous	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231583-004	AUS_MUR_VC_S31_1_1.0	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD: BTEXN (QC Lot: 4574845)									
ES2231582-001	Anonymous	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2231583-004	AUS_MUR_VC_S31_1_1.0	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080-SD: BTEXN (QC Lot: 4574845) - continued									
ES2231583-004	AUS_MUR_VC_S31_1_1.0	EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QCLot: 4579768)								
EG005-SD: Aluminium	7429-90-5	50	mg/kg	<50	15910 mg/kg	116	88.2	136
EG005-SD: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	107	70.0	109
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4579767)								
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.087 mg/kg	106	72.0	116
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4579769)								
EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	1.54 mg/kg	108	70.0	130
EG020-SD: Arsenic	7440-38-2	1	mg/kg	<1.00	110 mg/kg	102	80.0	139
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.8 mg/kg	99.1	83.0	127
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	20.3 mg/kg	104	73.0	130
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	49 mg/kg	99.4	76.0	130
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	57.4 mg/kg	122	74.0	130
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	14.7 mg/kg	102	83.0	130
EG020-SD: Zinc	7440-66-6	1	mg/kg	<1.0	125.8 mg/kg	104	82.0	137
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 4578394)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.55 %	98.5	80.0	120
				<0.02	27.5 %	94.6	80.0	120
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565066)								
EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	5 mg/kg	88.9	78.0	118
EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	7.5 mg/kg	105	84.0	118
EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	5 mg/kg	98.8	73.0	119
EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4574845)								
EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	6.2 mg/kg	85.2	61.0	133
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 4565066)								
EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	6.25 mg/kg	98.3	70.0	130
EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	8.75 mg/kg	99.1	74.0	138
EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	3.75 mg/kg	97.2	63.0	131
EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD: BTEXN (QCLot: 4574845)								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	0.2 mg/kg	94.6	66.0	122
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	0.2 mg/kg	88.3	70.0	130
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.2 mg/kg	95.3	66.0	126

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	LCS: Spike Recovery (%)	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080-SD: BTEXN (QCLot: 4574845) - continued								
EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	0.4 mg/kg	95.4	59.0	129
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.2 mg/kg	96.2	66.0	126

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4579767)							
ES2231582-002	Anonymous	EG035T-LL: Mercury	7439-97-6	0.05 mg/kg	100	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4579769)							
ES2231582-002	Anonymous	EG020-SD: Arsenic	7440-38-2	50 mg/kg	86.2	70.0	130
		EG020-SD: Cadmium	7440-43-9	50 mg/kg	87.0	70.0	130
		EG020-SD: Chromium	7440-47-3	50 mg/kg	92.8	70.0	130
		EG020-SD: Copper	7440-50-8	250 mg/kg	96.6	70.0	130
		EG020-SD: Lead	7439-92-1	250 mg/kg	101	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	89.2	70.0	130
		EG020-SD: Zinc	7440-66-6	250 mg/kg	86.1	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565066)							
ES2231582-001	Anonymous	EP071-SD: C10 - C14 Fraction	----	14 mg/kg	83.8	70.0	130
		EP071-SD: C15 - C28 Fraction	----	59 mg/kg	84.1	70.0	130
		EP071-SD: C29 - C36 Fraction	----	42 mg/kg	122	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4574845)							
ES2231582-001	Anonymous	EP080-SD: C6 - C9 Fraction	----	6.5 mg/kg	86.5	70.0	130
EP080-SD: BTEXN (QCLot: 4574845)							
ES2231582-001	Anonymous	EP080-SD: Benzene	71-43-2	0.5 mg/kg	80.8	70.0	130
		EP080-SD: Toluene	108-88-3	0.5 mg/kg	78.3	70.0	130
		EP080-SD: Ethylbenzene	100-41-4	0.5 mg/kg	83.3	70.0	130
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.5 mg/kg	81.6	70.0	130
		EP080-SD: ortho-Xylene	95-47-6	0.5 mg/kg	84.3	70.0	130

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2231584**	Page	: 1 of 6
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022
Order number	: ----	Date Analysis Commenced	: 09-Sep-2022
C-O-C number	: ----	Issue Date	: 23-Sep-2022
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 6		
No. of samples analysed	: 6		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QC Lot: 4579785)									
ES2231584-001	AUS_MUR_VC_S31_3A_0.5AS	EG005-SD: Aluminium	7429-90-5	50	mg/kg	3320	3590	8.0	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	7950	8920	11.5	0% - 20%
ES2231585-005	Anonymous	EG005-SD: Aluminium	7429-90-5	50	mg/kg	2980	2640	12.2	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	11000	10000	10.0	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 4579784)									
ES2231584-001	AUS_MUR_VC_S31_3A_0.5AS	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
ES2231585-005	Anonymous	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4579796)									
ES2231584-003	AUS_MUR_VC_S31_3A_0.5BS	EA055: Moisture Content	----	0.1	%	38.4	39.8	3.6	0% - 20%
ES2231585-009	Anonymous	EA055: Moisture Content	----	0.1	%	27.5	28.4	3.4	0% - 20%
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4579786)									
ES2231584-001	AUS_MUR_VC_S31_3A_0.5AS	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	19.4	21.8	11.4	0% - 20%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	7.5	8.6	13.5	No Limit
		EG020-SD: Copper	7440-50-8	1	mg/kg	1.1	1.2	12.1	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	3.7	4.2	14.4	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	3.3	3.5	6.9	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	4.3	4.6	5.9	No Limit
ES2231585-005	Anonymous	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4579786) - continued									
ES2231585-005	Anonymous	EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	32.0	34.4	7.3	0% - 20%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	7.3	6.7	7.6	No Limit
		EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	<1.0	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	4.8	4.7	0.0	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	3.4	3.2	7.0	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	3.6	2.9	20.5	No Limit
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 4578394)									
ES2231582-001	Anonymous	EP003: Total Organic Carbon	----	0.02	%	0.07	0.09	17.5	No Limit
ES2231583-004	Anonymous	EP003: Total Organic Carbon	----	0.02	%	0.08	0.06	18.3	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4565066)									
ES2231582-001	Anonymous	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231583-004	Anonymous	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4574845)									
ES2231582-001	Anonymous	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
ES2231583-004	Anonymous	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 4565066)									
ES2231582-001	Anonymous	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231583-004	Anonymous	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD: BTEXN (QC Lot: 4574845)									
ES2231582-001	Anonymous	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2231583-004	Anonymous	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080-SD: BTEXN (QC Lot: 4574845) - continued									
ES2231583-004	Anonymous	EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QCLot: 4579785)								
EG005-SD: Aluminium	7429-90-5	50	mg/kg	<50	15910 mg/kg	108	88.2	136
EG005-SD: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	109	70.0	109
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4579784)								
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.087 mg/kg	89.1	72.0	116
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4579786)								
EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	1.54 mg/kg	100	70.0	130
EG020-SD: Arsenic	7440-38-2	1	mg/kg	<1.00	110 mg/kg	102	80.0	139
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.8 mg/kg	98.4	83.0	127
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	20.3 mg/kg	96.2	73.0	130
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	49 mg/kg	98.6	76.0	130
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	57.4 mg/kg	122	74.0	130
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	14.7 mg/kg	94.5	83.0	130
EG020-SD: Zinc	7440-66-6	1	mg/kg	<1.0	125.8 mg/kg	101	82.0	137
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 4578394)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.55 %	98.5	80.0	120
				<0.02	27.5 %	94.6	80.0	120
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565066)								
EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	5 mg/kg	88.9	78.0	118
EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	7.5 mg/kg	105	84.0	118
EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	5 mg/kg	98.8	73.0	119
EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4574845)								
EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	6.2 mg/kg	85.2	61.0	133
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 4565066)								
EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	6.25 mg/kg	98.3	70.0	130
EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	8.75 mg/kg	99.1	74.0	138
EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	3.75 mg/kg	97.2	63.0	131
EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD: BTEXN (QCLot: 4574845)								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	0.2 mg/kg	94.6	66.0	122
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	0.2 mg/kg	88.3	70.0	130
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.2 mg/kg	95.3	66.0	126

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080-SD: BTEXN (QCLot: 4574845) - continued								
EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	0.4 mg/kg	95.4	59.0	129
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.2 mg/kg	96.2	66.0	126

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4579784)							
ES2231584-001	AUS_MUR_VC_S31_3A_0.5AS	EG035T-LL: Mercury	7439-97-6	0.05 mg/kg	104	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4579786)							
ES2231584-001	AUS_MUR_VC_S31_3A_0.5AS	EG020-SD: Arsenic	7440-38-2	50 mg/kg	93.8	70.0	130
		EG020-SD: Cadmium	7440-43-9	50 mg/kg	87.5	70.0	130
		EG020-SD: Chromium	7440-47-3	50 mg/kg	87.4	70.0	130
		EG020-SD: Copper	7440-50-8	250 mg/kg	94.2	70.0	130
		EG020-SD: Lead	7439-92-1	250 mg/kg	97.4	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	86.4	70.0	130
		EG020-SD: Zinc	7440-66-6	250 mg/kg	84.6	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565066)							
ES2231582-001	Anonymous	EP071-SD: C10 - C14 Fraction	----	14 mg/kg	83.8	70.0	130
		EP071-SD: C15 - C28 Fraction	----	59 mg/kg	84.1	70.0	130
		EP071-SD: C29 - C36 Fraction	----	42 mg/kg	122	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4574845)							
ES2231582-001	Anonymous	EP080-SD: C6 - C9 Fraction	----	6.5 mg/kg	86.5	70.0	130
EP080-SD: BTEXN (QCLot: 4574845)							
ES2231582-001	Anonymous	EP080-SD: Benzene	71-43-2	0.5 mg/kg	80.8	70.0	130
		EP080-SD: Toluene	108-88-3	0.5 mg/kg	78.3	70.0	130
		EP080-SD: Ethylbenzene	100-41-4	0.5 mg/kg	83.3	70.0	130
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.5 mg/kg	81.6	70.0	130
		EP080-SD: ortho-Xylene	95-47-6	0.5 mg/kg	84.3	70.0	130

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2231585**	Page	: 1 of 7
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022
Order number	: ----	Date Analysis Commenced	: 09-Sep-2022
C-O-C number	: ----	Issue Date	: 23-Sep-2022
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 10		
No. of samples analysed	: 10		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QC Lot: 4579785)									
ES2231584-001	Anonymous	EG005-SD: Aluminium	7429-90-5	50	mg/kg	3320	3590	8.0	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	7950	8920	11.5	0% - 20%
ES2231585-005	AUS_MUR_VC_S27_0.5	EG005-SD: Aluminium	7429-90-5	50	mg/kg	2980	2640	12.2	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	11000	10000	10.0	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 4579784)									
ES2231584-001	Anonymous	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
ES2231585-005	AUS_MUR_VC_S27_0.5	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4577631)									
ES2231586-002	Anonymous	EA055: Moisture Content	----	0.1	%	32.4	33.9	4.4	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4579796)									
ES2231584-003	Anonymous	EA055: Moisture Content	----	0.1	%	38.4	39.8	3.6	0% - 20%
ES2231585-009	AUS_MUR_VC_S25_0.5	EA055: Moisture Content	----	0.1	%	27.5	28.4	3.4	0% - 20%
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4579786)									
ES2231584-001	Anonymous	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	19.4	21.8	11.4	0% - 20%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	7.5	8.6	13.5	No Limit
		EG020-SD: Copper	7440-50-8	1	mg/kg	1.1	1.2	12.1	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	3.7	4.2	14.4	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	3.3	3.5	6.9	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	4.3	4.6	5.9	No Limit
ES2231585-005	AUS_MUR_VC_S27_0.5	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4579786) - continued									
ES2231585-005	AUS_MUR_VC_S27_0.5	EG020-SD: Arsenic	7440-38-2	1	mg/kg	32.0	34.4	7.3	0% - 20%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	7.3	6.7	7.6	No Limit
		EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	<1.0	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	4.8	4.7	0.0	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	3.4	3.2	7.0	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	3.6	2.9	20.5	No Limit
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 4578397)									
ES2231585-001	AUS_MUR_VC_S29_0.5	EP003: Total Organic Carbon	----	0.02	%	0.12	0.13	10.9	No Limit
ES2231586-001	Anonymous	EP003: Total Organic Carbon	----	0.02	%	0.12	0.11	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4565067)									
ES2231585-001	AUS_MUR_VC_S29_0.5	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231586-001	Anonymous	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4574845)									
ES2231582-001	Anonymous	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
ES2231583-004	Anonymous	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4575794)									
ES2231585-002	AUS_MUR_VC_S29_1.0	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
ES2231586-002	Anonymous	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 4565067)									
ES2231585-001	AUS_MUR_VC_S29_0.5	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231586-001	Anonymous	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD: BTEXN (QC Lot: 4574845)									
ES2231582-001	Anonymous	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080-SD: BTEXN (QC Lot: 4574845) - continued									
ES2231582-001	Anonymous	EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2231583-004	Anonymous	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP080-SD: BTEXN (QC Lot: 4575794)									
ES2231585-002	AUS_MUR_VC_S29_1.0	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2231586-002	Anonymous	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QCLot: 4579785)								
EG005-SD: Aluminium	7429-90-5	50	mg/kg	<50	15910 mg/kg	108	88.2	136
EG005-SD: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	109	70.0	109
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4579784)								
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.087 mg/kg	89.1	72.0	116
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4579786)								
EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	1.54 mg/kg	100	70.0	130
EG020-SD: Arsenic	7440-38-2	1	mg/kg	<1.00	110 mg/kg	102	80.0	139
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.8 mg/kg	98.4	83.0	127
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	20.3 mg/kg	96.2	73.0	130
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	49 mg/kg	98.6	76.0	130
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	57.4 mg/kg	122	74.0	130
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	14.7 mg/kg	94.5	83.0	130
EG020-SD: Zinc	7440-66-6	1	mg/kg	<1.0	125.8 mg/kg	101	82.0	137
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 4578397)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.55 %	103	80.0	120
				<0.02	27.5 %	97.6	80.0	120
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565067)								
EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	5 mg/kg	99.0	78.0	118
EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	7.5 mg/kg	105	84.0	118
EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	5 mg/kg	98.6	73.0	119
EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4574845)								
EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	6.2 mg/kg	85.2	61.0	133
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4575794)								
EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	6.2 mg/kg	90.1	61.0	133
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 4565067)								
EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	6.25 mg/kg	103	70.0	130
EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	8.75 mg/kg	98.7	74.0	138
EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	3.75 mg/kg	96.9	63.0	131
EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD: BTEXN (QCLot: 4574845)								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	0.2 mg/kg	94.6	66.0	122
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	0.2 mg/kg	88.3	70.0	130

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080-SD: BTEXN (QCLot: 4574845) - continued								
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.2 mg/kg	95.3	66.0	126
EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	0.4 mg/kg	95.4	59.0	129
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.2 mg/kg	96.2	66.0	126
EP080-SD: BTEXN (QCLot: 4575794)								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	0.2 mg/kg	105	66.0	122
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	0.2 mg/kg	107	70.0	130
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.2 mg/kg	108	66.0	126
EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	0.4 mg/kg	101	59.0	129
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.2 mg/kg	104	66.0	126

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4579784)							
ES2231584-001	Anonymous	EG035T-LL: Mercury	7439-97-6	0.05 mg/kg	104	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4579786)							
ES2231584-001	Anonymous	EG020-SD: Arsenic	7440-38-2	50 mg/kg	93.8	70.0	130
		EG020-SD: Cadmium	7440-43-9	50 mg/kg	87.5	70.0	130
		EG020-SD: Chromium	7440-47-3	50 mg/kg	87.4	70.0	130
		EG020-SD: Copper	7440-50-8	250 mg/kg	94.2	70.0	130
		EG020-SD: Lead	7439-92-1	250 mg/kg	97.4	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	86.4	70.0	130
		EG020-SD: Zinc	7440-66-6	250 mg/kg	84.6	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565067)							
ES2231585-001	AUS_MUR_VC_S29_0.5	EP071-SD: C10 - C14 Fraction	----	14 mg/kg	81.3	70.0	130
		EP071-SD: C15 - C28 Fraction	----	59 mg/kg	99.8	70.0	130
		EP071-SD: C29 - C36 Fraction	----	42 mg/kg	122	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4574845)							
ES2231582-001	Anonymous	EP080-SD: C6 - C9 Fraction	----	6.5 mg/kg	86.5	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4575794)							
ES2231585-002	AUS_MUR_VC_S29_1.0	EP080-SD: C6 - C9 Fraction	----	6.5 mg/kg	109	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080-SD: BTEXN (QCLot: 4574845)							
ES2231582-001	Anonymous	EP080-SD: Benzene	71-43-2	0.5 mg/kg	80.8	70.0	130
		EP080-SD: Toluene	108-88-3	0.5 mg/kg	78.3	70.0	130
		EP080-SD: Ethylbenzene	100-41-4	0.5 mg/kg	83.3	70.0	130
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.5 mg/kg	81.6	70.0	130
		EP080-SD: ortho-Xylene	95-47-6	0.5 mg/kg	84.3	70.0	130
EP080-SD: BTEXN (QCLot: 4575794)							
ES2231585-002	AUS_MUR_VC_S29_1.0	EP080-SD: Benzene	71-43-2	0.5 mg/kg	87.0	70.0	130
		EP080-SD: Toluene	108-88-3	0.5 mg/kg	94.7	70.0	130
		EP080-SD: Ethylbenzene	100-41-4	0.5 mg/kg	102	70.0	130
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.5 mg/kg	97.8	70.0	130
		EP080-SD: ortho-Xylene	95-47-6	0.5 mg/kg	102	70.0	130

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2231586**	Page	: 1 of 8
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022
Order number	: ----	Date Analysis Commenced	: 09-Sep-2022
C-O-C number	: ----	Issue Date	: 29-Sep-2022
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 11		
No. of samples analysed	: 10		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QC Lot: 4579785)									
ES2231584-001	Anonymous	EG005-SD: Aluminium	7429-90-5	50	mg/kg	3320	3590	8.0	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	7950	8920	11.5	0% - 20%
ES2231585-005	Anonymous	EG005-SD: Aluminium	7429-90-5	50	mg/kg	2980	2640	12.2	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	11000	10000	10.0	0% - 20%
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QC Lot: 4579789)									
ES2231586-005	AUS_MUR_VC_S23_1.0A	EG005-SD: Aluminium	7429-90-5	50	mg/kg	20200	17500	13.9	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	28000	25700	8.6	0% - 20%
ES2231587-007	Anonymous	EG005-SD: Aluminium	7429-90-5	50	mg/kg	15400	14800	4.5	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	25000	24800	0.9	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 4579784)									
ES2231584-001	Anonymous	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
ES2231585-005	Anonymous	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 4579788)									
ES2231586-005	AUS_MUR_VC_S23_1.0A	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
ES2231587-007	Anonymous	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4577631)									
ES2231586-002	AUS_MUR_VC_S24_1.0	EA055: Moisture Content	----	0.1	%	32.4	33.9	4.4	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4579796)									
ES2231584-003	Anonymous	EA055: Moisture Content	----	0.1	%	38.4	39.8	3.6	0% - 20%
ES2231585-009	Anonymous	EA055: Moisture Content	----	0.1	%	27.5	28.4	3.4	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4579797)									
ES2231586-009	AUS_MUR_VC_S22_1.0A	EA055: Moisture Content	----	0.1	%	32.7	33.3	1.8	0% - 20%
ES2232258-003	Anonymous	EA055: Moisture Content	----	0.1	%	13.1	12.7	2.9	0% - 50%

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4579786)									
ES2231584-001	Anonymous	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	19.4	21.8	11.4	0% - 20%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	7.5	8.6	13.5	No Limit
		EG020-SD: Copper	7440-50-8	1	mg/kg	1.1	1.2	12.1	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	3.7	4.2	14.4	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	3.3	3.5	6.9	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	4.3	4.6	5.9	No Limit
ES2231585-005	Anonymous	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	32.0	34.4	7.3	0% - 20%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	7.3	6.7	7.6	No Limit
		EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	<1.0	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	4.8	4.7	0.0	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	3.4	3.2	7.0	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	3.6	2.9	20.5	No Limit
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4579787)									
ES2231586-005	AUS_MUR_VC_S23_1.0A	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	9.49	11.0	14.9	0% - 50%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	34.6	31.3	10.1	0% - 20%
		EG020-SD: Copper	7440-50-8	1	mg/kg	5.9	6.0	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	13.2	13.2	0.0	0% - 50%
		EG020-SD: Nickel	7440-02-0	1	mg/kg	8.9	9.4	4.5	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	12.6	13.6	7.0	0% - 50%
ES2231587-007	Anonymous	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	13.2	13.8	4.4	0% - 50%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	26.8	25.7	4.3	0% - 20%
		EG020-SD: Copper	7440-50-8	1	mg/kg	3.9	3.8	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	7.5	7.4	0.0	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	8.3	7.9	4.5	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	12.9	12.1	6.2	0% - 50%
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 4578397)									
ES2231585-001	Anonymous	EP003: Total Organic Carbon	----	0.02	%	0.12	0.13	10.9	No Limit
ES2231586-001	AUS_MUR_VC_S24_0.5	EP003: Total Organic Carbon	----	0.02	%	0.12	0.11	0.0	No Limit
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 4578398)									
ES2231586-011	AUS_MUR_VC_S22_1.0B	EP003: Total Organic Carbon	----	0.02	%	0.24	0.26	4.6	0% - 50%
ES2231588-010	Anonymous	EP003: Total Organic Carbon	----	0.02	%	0.20	0.19	6.5	0% - 50%

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4565067)									
ES2231585-001	Anonymous	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231586-001	AUS_MUR_VC_S24_0.5	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4565070)									
ES2231587-001	Anonymous	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231588-003	Anonymous	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4575794)									
ES2231585-002	Anonymous	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
ES2231586-002	AUS_MUR_VC_S24_1.0	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 4565067)									
ES2231585-001	Anonymous	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231586-001	AUS_MUR_VC_S24_0.5	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 4565070)									
ES2231587-001	Anonymous	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231588-003	Anonymous	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD: BTEXN (QC Lot: 4575794)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080-SD: BTEXN (QC Lot: 4575794) - continued									
ES2231585-002	Anonymous	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2231586-002	AUS_MUR_VC_S24_1.0	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QCLot: 4579785)								
EG005-SD: Aluminium	7429-90-5	50	mg/kg	<50	15910 mg/kg	108	88.2	136
EG005-SD: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	109	70.0	109
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QCLot: 4579789)								
EG005-SD: Aluminium	7429-90-5	50	mg/kg	<50	15910 mg/kg	105	88.2	136
EG005-SD: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	107	70.0	109
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4579784)								
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.087 mg/kg	89.1	72.0	116
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4579788)								
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.087 mg/kg	89.1	72.0	116
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4579786)								
EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	1.54 mg/kg	100	70.0	130
EG020-SD: Arsenic	7440-38-2	1	mg/kg	<1.00	110 mg/kg	102	80.0	139
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.8 mg/kg	98.4	83.0	127
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	20.3 mg/kg	96.2	73.0	130
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	49 mg/kg	98.6	76.0	130
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	57.4 mg/kg	122	74.0	130
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	14.7 mg/kg	94.5	83.0	130
EG020-SD: Zinc	7440-66-6	1	mg/kg	<1.0	125.8 mg/kg	101	82.0	137
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4579787)								
EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	1.54 mg/kg	101	70.0	130
EG020-SD: Arsenic	7440-38-2	1	mg/kg	<1.00	110 mg/kg	96.3	80.0	139
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.8 mg/kg	85.1	83.0	127
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	20.3 mg/kg	89.4	73.0	130
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	49 mg/kg	90.6	76.0	130
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	57.4 mg/kg	107	74.0	130
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	14.7 mg/kg	87.3	83.0	130
EG020-SD: Zinc	7440-66-6	1	mg/kg	<1.0	125.8 mg/kg	91.7	82.0	137
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 4578397)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.55 %	103	80.0	120
				<0.02	27.5 %	97.6	80.0	120
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 4578398)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.55 %	102	80.0	120
				<0.02	27.5 %	99.8	80.0	120

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565067)								
EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	5 mg/kg	99.0	78.0	118
EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	7.5 mg/kg	105	84.0	118
EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	5 mg/kg	98.6	73.0	119
EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565070)								
EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	5 mg/kg	92.0	78.0	118
EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	7.5 mg/kg	98.5	84.0	118
EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	5 mg/kg	96.7	73.0	119
EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4575794)								
EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	6.2 mg/kg	90.1	61.0	133
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 4565067)								
EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	6.25 mg/kg	103	70.0	130
EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	8.75 mg/kg	98.7	74.0	138
EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	3.75 mg/kg	96.9	63.0	131
EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 4565070)								
EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	6.25 mg/kg	96.6	70.0	130
EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	8.75 mg/kg	93.4	74.0	138
EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	3.75 mg/kg	99.1	63.0	131
EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD: BTEXN (QCLot: 4575794)								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	0.2 mg/kg	105	66.0	122
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	0.2 mg/kg	107	70.0	130
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.2 mg/kg	108	66.0	126
EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	0.4 mg/kg	101	59.0	129
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.2 mg/kg	104	66.0	126

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4579784)							
ES2231584-001	Anonymous	EG035T-LL: Mercury	7439-97-6	0.05 mg/kg	104	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4579788)							
ES2231586-005	AUS_MUR_VC_S23_1.0A	EG035T-LL: Mercury	7439-97-6	0.05 mg/kg	104	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4579786)							
ES2231584-001	Anonymous	EG020-SD: Arsenic	7440-38-2	50 mg/kg	93.8	70.0	130
		EG020-SD: Cadmium	7440-43-9	50 mg/kg	87.5	70.0	130
		EG020-SD: Chromium	7440-47-3	50 mg/kg	87.4	70.0	130
		EG020-SD: Copper	7440-50-8	250 mg/kg	94.2	70.0	130
		EG020-SD: Lead	7439-92-1	250 mg/kg	97.4	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	86.4	70.0	130
		EG020-SD: Zinc	7440-66-6	250 mg/kg	84.6	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4579787)							
ES2231586-005	AUS_MUR_VC_S23_1.0A	EG020-SD: Arsenic	7440-38-2	50 mg/kg	82.2	70.0	130
		EG020-SD: Cadmium	7440-43-9	50 mg/kg	87.2	70.0	130
		EG020-SD: Chromium	7440-47-3	50 mg/kg	82.4	70.0	130
		EG020-SD: Copper	7440-50-8	250 mg/kg	93.2	70.0	130
		EG020-SD: Lead	7439-92-1	250 mg/kg	95.4	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	86.4	70.0	130
		EG020-SD: Zinc	7440-66-6	250 mg/kg	86.8	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565067)							
ES2231585-001	Anonymous	EP071-SD: C10 - C14 Fraction	----	14 mg/kg	81.3	70.0	130
		EP071-SD: C15 - C28 Fraction	----	59 mg/kg	99.8	70.0	130
		EP071-SD: C29 - C36 Fraction	----	42 mg/kg	122	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565070)							
ES2231587-001	Anonymous	EP071-SD: C10 - C14 Fraction	----	14 mg/kg	76.2	70.0	130
		EP071-SD: C15 - C28 Fraction	----	59 mg/kg	83.6	70.0	130
		EP071-SD: C29 - C36 Fraction	----	42 mg/kg	98.7	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4575794)							
ES2231585-002	Anonymous	EP080-SD: C6 - C9 Fraction	----	6.5 mg/kg	109	70.0	130
EP080-SD: BTEXN (QCLot: 4575794)							
ES2231585-002	Anonymous	EP080-SD: Benzene	71-43-2	0.5 mg/kg	87.0	70.0	130
		EP080-SD: Toluene	108-88-3	0.5 mg/kg	94.7	70.0	130
		EP080-SD: Ethylbenzene	100-41-4	0.5 mg/kg	102	70.0	130
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.5 mg/kg	97.8	70.0	130
		EP080-SD: ortho-Xylene	95-47-6	0.5 mg/kg	102	70.0	130

QUALITY CONTROL REPORT

Work Order	: **ES2231587**	Page	: 1 of 7
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022
Order number	: ----	Date Analysis Commenced	: 07-Sep-2022
C-O-C number	: ----	Issue Date	: 23-Sep-2022
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 13		
No. of samples analysed	: 9		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QC Lot: 4579789)									
ES2231586-005	Anonymous	EG005-SD: Aluminium	7429-90-5	50	mg/kg	20200	17500	13.9	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	28000	25700	8.6	0% - 20%
ES2231587-007	AUS_MUR_VC_S19_1.0	EG005-SD: Aluminium	7429-90-5	50	mg/kg	15400	14800	4.5	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	25000	24800	0.9	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 4579788)									
ES2231586-005	Anonymous	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
ES2231587-007	AUS_MUR_VC_S19_1.0	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4577631)									
ES2231586-002	Anonymous	EA055: Moisture Content	----	0.1	%	32.4	33.9	4.4	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4579797)									
ES2231586-009	Anonymous	EA055: Moisture Content	----	0.1	%	32.7	33.3	1.8	0% - 20%
ES2232258-003	Anonymous	EA055: Moisture Content	----	0.1	%	13.1	12.7	2.9	0% - 50%
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4579787)									
ES2231586-005	Anonymous	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	9.49	11.0	14.9	0% - 50%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	34.6	31.3	10.1	0% - 20%
		EG020-SD: Copper	7440-50-8	1	mg/kg	5.9	6.0	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	13.2	13.2	0.0	0% - 50%
		EG020-SD: Nickel	7440-02-0	1	mg/kg	8.9	9.4	4.5	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	12.6	13.6	7.0	0% - 50%
ES2231587-007	AUS_MUR_VC_S19_1.0	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4579787) - continued									
ES2231587-007	AUS_MUR_VC_S19_1.0	EG020-SD: Arsenic	7440-38-2	1	mg/kg	13.2	13.8	4.4	0% - 50%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	26.8	25.7	4.3	0% - 20%
		EG020-SD: Copper	7440-50-8	1	mg/kg	3.9	3.8	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	7.5	7.4	0.0	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	8.3	7.9	4.5	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	12.9	12.1	6.2	0% - 50%
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 4578394)									
ES2231582-001	Anonymous	EP003: Total Organic Carbon	----	0.02	%	0.07	0.09	17.5	No Limit
ES2231583-004	Anonymous	EP003: Total Organic Carbon	----	0.02	%	0.08	0.06	18.3	No Limit
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 4578395)									
ES2231587-002	AUS_MUR_VC_S21_1.0	EP003: Total Organic Carbon	----	0.02	%	0.33	0.31	4.4	0% - 50%
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4565066)									
ES2231582-001	Anonymous	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231583-004	Anonymous	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4565070)									
ES2231587-001	AUS_MUR_VC_S21_0.5	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231588-003	Anonymous	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4575804)									
ES2231587-001	AUS_MUR_VC_S21_0.5	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
ES2231588-003	Anonymous	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 4565066)									
ES2231582-001	Anonymous	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231583-004	Anonymous	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 4565066) - continued									
ES2231583-004	Anonymous	EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 4565070)									
ES2231587-001	AUS_MUR_VC_S21_0.5	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231588-003	Anonymous	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD: BTEXN (QC Lot: 4575804)									
ES2231587-001	AUS_MUR_VC_S21_0.5	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2231588-003	Anonymous	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP005: Total Organic Carbon (TOC) (QC Lot: 4564204)									
ES2231587-003	AUS_MUR_RIN-3	EP005: Total Organic Carbon	----	1	mg/L	5	2	105	No Limit
ES2231815-010	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	8	8	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QCLot: 4579789)								
EG005-SD: Aluminium	7429-90-5	50	mg/kg	<50	15910 mg/kg	105	88.2	136
EG005-SD: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	107	70.0	109
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4579788)								
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.087 mg/kg	89.1	72.0	116
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4579787)								
EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	1.54 mg/kg	101	70.0	130
EG020-SD: Arsenic	7440-38-2	1	mg/kg	<1.00	110 mg/kg	96.3	80.0	139
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.8 mg/kg	85.1	83.0	127
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	20.3 mg/kg	89.4	73.0	130
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	49 mg/kg	90.6	76.0	130
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	57.4 mg/kg	107	74.0	130
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	14.7 mg/kg	87.3	83.0	130
EG020-SD: Zinc	7440-66-6	1	mg/kg	<1.0	125.8 mg/kg	91.7	82.0	137
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 4578394)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.55 %	98.5	80.0	120
				<0.02	27.5 %	94.6	80.0	120
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 4578395)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.55 %	102	80.0	120
				<0.02	27.5 %	91.3	80.0	120
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565066)								
EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	5 mg/kg	88.9	78.0	118
EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	7.5 mg/kg	105	84.0	118
EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	5 mg/kg	98.8	73.0	119
EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565070)								
EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	5 mg/kg	92.0	78.0	118
EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	7.5 mg/kg	98.5	84.0	118
EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	5 mg/kg	96.7	73.0	119
EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4575804)								
EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	6.2 mg/kg	80.8	61.0	133
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 4565066)								
EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	6.25 mg/kg	98.3	70.0	130

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 4565066) - continued								
EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	8.75 mg/kg	99.1	74.0	138
EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	3.75 mg/kg	97.2	63.0	131
EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 4565070)								
EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	6.25 mg/kg	96.6	70.0	130
EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	8.75 mg/kg	93.4	74.0	138
EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	3.75 mg/kg	99.1	63.0	131
EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD: BTEXN (QCLot: 4575804)								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	0.2 mg/kg	93.5	66.0	122
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	0.2 mg/kg	99.1	70.0	130
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.2 mg/kg	104	66.0	126
EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	0.4 mg/kg	106	59.0	129
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.2 mg/kg	105	66.0	126

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP005: Total Organic Carbon (TOC) (QCLot: 4564204)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	108	72.0	120

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4579788)							
ES2231586-005	Anonymous	EG035T-LL: Mercury	7439-97-6	0.05 mg/kg	104	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4579787)							
ES2231586-005	Anonymous	EG020-SD: Arsenic	7440-38-2	50 mg/kg	82.2	70.0	130
		EG020-SD: Cadmium	7440-43-9	50 mg/kg	87.2	70.0	130
		EG020-SD: Chromium	7440-47-3	50 mg/kg	82.4	70.0	130
		EG020-SD: Copper	7440-50-8	250 mg/kg	93.2	70.0	130
		EG020-SD: Lead	7439-92-1	250 mg/kg	95.4	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	86.4	70.0	130
		EG020-SD: Zinc	7440-66-6	250 mg/kg	86.8	70.0	130

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565066)							
ES2231582-001	Anonymous	EP071-SD: C10 - C14 Fraction	----	14 mg/kg	83.8	70.0	130
		EP071-SD: C15 - C28 Fraction	----	59 mg/kg	84.1	70.0	130
		EP071-SD: C29 - C36 Fraction	----	42 mg/kg	122	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565070)							
ES2231587-001	AUS_MUR_VC_S21_0.5	EP071-SD: C10 - C14 Fraction	----	14 mg/kg	76.2	70.0	130
		EP071-SD: C15 - C28 Fraction	----	59 mg/kg	83.6	70.0	130
		EP071-SD: C29 - C36 Fraction	----	42 mg/kg	98.7	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4575804)							
ES2231587-001	AUS_MUR_VC_S21_0.5	EP080-SD: C6 - C9 Fraction	----	6.5 mg/kg	129	70.0	130
EP080-SD: BTEXN (QCLot: 4575804)							
ES2231587-001	AUS_MUR_VC_S21_0.5	EP080-SD: Benzene	71-43-2	0.5 mg/kg	122	70.0	130
		EP080-SD: Toluene	108-88-3	0.5 mg/kg	118	70.0	130
		EP080-SD: Ethylbenzene	100-41-4	0.5 mg/kg	119	70.0	130
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.5 mg/kg	118	70.0	130
		EP080-SD: ortho-Xylene	95-47-6	0.5 mg/kg	122	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP005: Total Organic Carbon (TOC) (QCLot: 4564204)							
ES2231741-001	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	106	70.0	130

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2231588**	Page	: 1 of 5
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022
Order number	: ----	Date Analysis Commenced	: 09-Sep-2022
C-O-C number	: ----	Issue Date	: 23-Sep-2022
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 10		
No. of samples analysed	: 10		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QC Lot: 4579848)									
ES2231588-001	AUS_MUR_VC_S18_3_0.5	EG005-SD: Aluminium	7429-90-5	50	mg/kg	11700	12700	7.9	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	17500	18500	5.8	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 4579846)									
ES2231588-001	AUS_MUR_VC_S18_3_0.5	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4577631)									
ES2231586-002	Anonymous	EA055: Moisture Content	----	0.1	%	32.4	33.9	4.4	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4579854)									
ES2231588-004	AUS_MUR_VC_S17A_1.0	EA055: Moisture Content	----	0.1	%	31.5	28.6	9.7	0% - 20%
ES2232172-005	Anonymous	EA055: Moisture Content	----	0.1	%	2.7	2.2	16.4	No Limit
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4579847)									
ES2231588-001	AUS_MUR_VC_S18_3_0.5	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	11.0	13.1	17.4	0% - 50%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	21.9	23.7	8.0	0% - 20%
		EG020-SD: Copper	7440-50-8	1	mg/kg	3.1	3.3	6.2	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	6.2	6.6	4.9	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	7.0	7.6	7.2	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	11.7	12.3	5.1	0% - 50%
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 4578398)									
ES2231586-011	Anonymous	EP003: Total Organic Carbon	----	0.02	%	0.24	0.26	4.6	0% - 50%
ES2231588-010	AUS_MUR_VC_S14_1.0	EP003: Total Organic Carbon	----	0.02	%	0.20	0.19	6.5	0% - 50%
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4565070)									
ES2231587-001	Anonymous	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4565070) - continued									
ES2231587-001	Anonymous	EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231588-003	AUS_MUR_VC_S17A_0.5	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4575804)									
ES2231587-001	Anonymous	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
ES2231588-003	AUS_MUR_VC_S17A_0.5	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 4565070)									
ES2231587-001	Anonymous	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231588-003	AUS_MUR_VC_S17A_0.5	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD: BTEXN (QC Lot: 4575804)									
ES2231587-001	Anonymous	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2231588-003	AUS_MUR_VC_S17A_0.5	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QCLot: 4579848)								
EG005-SD: Aluminium	7429-90-5	50	mg/kg	<50	15910 mg/kg	102	88.2	136
EG005-SD: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	97.4	70.0	109
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4579846)								
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.087 mg/kg	100	72.0	116
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4579847)								
EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	1.54 mg/kg	108	70.0	130
EG020-SD: Arsenic	7440-38-2	1	mg/kg	<1.00	110 mg/kg	95.4	80.0	139
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.8 mg/kg	97.2	83.0	127
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	20.3 mg/kg	95.8	73.0	130
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	49 mg/kg	91.6	76.0	130
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	57.4 mg/kg	110	74.0	130
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	14.7 mg/kg	93.7	83.0	130
EG020-SD: Zinc	7440-66-6	1	mg/kg	<1.0	125.8 mg/kg	98.1	82.0	137
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 4578398)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.55 %	102	80.0	120
				<0.02	27.5 %	99.8	80.0	120
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565070)								
EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	5 mg/kg	92.0	78.0	118
EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	7.5 mg/kg	98.5	84.0	118
EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	5 mg/kg	96.7	73.0	119
EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4575804)								
EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	6.2 mg/kg	80.8	61.0	133
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 4565070)								
EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	6.25 mg/kg	96.6	70.0	130
EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	8.75 mg/kg	93.4	74.0	138
EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	3.75 mg/kg	99.1	63.0	131
EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD: BTEXN (QCLot: 4575804)								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	0.2 mg/kg	93.5	66.0	122
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	0.2 mg/kg	99.1	70.0	130
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.2 mg/kg	104	66.0	126

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080-SD: BTEXN (QCLot: 4575804) - continued								
EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	0.4 mg/kg	106	59.0	129
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.2 mg/kg	105	66.0	126

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4579846)							
ES2231588-001	AUS_MUR_VC_S18_3_0.5	EG035T-LL: Mercury	7439-97-6	0.05 mg/kg	99.6	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4579847)							
ES2231588-001	AUS_MUR_VC_S18_3_0.5	EG020-SD: Arsenic	7440-38-2	50 mg/kg	95.3	70.0	130
		EG020-SD: Cadmium	7440-43-9	50 mg/kg	86.7	70.0	130
		EG020-SD: Chromium	7440-47-3	50 mg/kg	93.3	70.0	130
		EG020-SD: Copper	7440-50-8	250 mg/kg	96.0	70.0	130
		EG020-SD: Lead	7439-92-1	250 mg/kg	99.1	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	88.7	70.0	130
		EG020-SD: Zinc	7440-66-6	250 mg/kg	85.8	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4565070)							
ES2231587-001	Anonymous	EP071-SD: C10 - C14 Fraction	----	14 mg/kg	76.2	70.0	130
		EP071-SD: C15 - C28 Fraction	----	59 mg/kg	83.6	70.0	130
		EP071-SD: C29 - C36 Fraction	----	42 mg/kg	98.7	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4575804)							
ES2231587-001	Anonymous	EP080-SD: C6 - C9 Fraction	----	6.5 mg/kg	129	70.0	130
EP080-SD: BTEXN (QCLot: 4575804)							
ES2231587-001	Anonymous	EP080-SD: Benzene	71-43-2	0.5 mg/kg	122	70.0	130
		EP080-SD: Toluene	108-88-3	0.5 mg/kg	118	70.0	130
		EP080-SD: Ethylbenzene	100-41-4	0.5 mg/kg	119	70.0	130
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.5 mg/kg	118	70.0	130
		EP080-SD: ortho-Xylene	95-47-6	0.5 mg/kg	122	70.0	130

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2231627**	Page	: 1 of 11
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Contact	: Customer Services ES
Address	: 10 Kings Park Road West Perth 6005	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022
Order number	: ----	Date Analysis Commenced	: 15-Sep-2022
C-O-C number	: ----	Issue Date	: 29-Sep-2022
Sampler	: SEAS OFFSHORE		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 42		
No. of samples analysed	: 41		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Inorganics, Smithfield, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QC Lot: 4590981)									
ES2231627-001	AUS_MUR_GB_A1_4	EG005-SD: Aluminium	7429-90-5	50	mg/kg	3830	3560	7.3	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	8150	8210	0.7	0% - 20%
ES2231627-011	AUS_MUR_GB_B4_4	EG005-SD: Aluminium	7429-90-5	50	mg/kg	7580	7060	7.2	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	10600	10900	2.0	0% - 20%
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QC Lot: 4590984)									
ES2231627-022	AUS_MUR_GS_S31_4	EG005-SD: Aluminium	7429-90-5	50	mg/kg	2230	2200	1.4	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	12900	14300	10.4	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 4590982)									
ES2231627-001	AUS_MUR_GB_A1_4	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
ES2231627-011	AUS_MUR_GB_B4_4	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 4590985)									
ES2231627-022	AUS_MUR_GS_S31_4	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4585189)									
ES2233149-001	Anonymous	EA055: Moisture Content	----	0.1	%	10.2	10.8	5.8	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4585198)									
EP2211606-003	Anonymous	EA055: Moisture Content	----	0.1	%	8.8	8.9	0.0	0% - 20%
ES2231627-007	AUS_MUR_GB_B1_4	EA055: Moisture Content	----	0.1	%	38.1	38.9	2.1	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4585199)									
ES2231627-017	AUS_MUR_GB_C4_4A	EA055: Moisture Content	----	0.1	%	35.5	35.2	1.1	0% - 20%
ES2231956-043	Anonymous	EA055: Moisture Content	----	0.1	%	48.5	49.2	1.4	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4590989)									
ES2231627-022	AUS_MUR_GS_S31_4	EA055: Moisture Content	----	0.1	%	36.1	34.1	5.7	0% - 20%
ES2232719-007	Anonymous	EA055: Moisture Content	----	0.1	%	5.2	4.5	14.7	0% - 20%

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4590980)									
ES2231627-001	AUS_MUR_GB_A1_4	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	12.5	13.4	7.2	0% - 50%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	11.3	11.2	0.0	0% - 50%
		EG020-SD: Copper	7440-50-8	1	mg/kg	1.4	1.4	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	3.8	4.2	8.2	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	4.3	4.3	0.0	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	4.4	4.3	3.6	No Limit
ES2231627-011	AUS_MUR_GB_B4_4	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	0.1	0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	4.57	6.27	31.5	No Limit
		EG020-SD: Chromium	7440-47-3	1	mg/kg	18.2	17.1	5.8	0% - 50%
		EG020-SD: Copper	7440-50-8	1	mg/kg	2.7	2.4	10.1	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	4.6	4.4	3.2	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	6.7	6.3	6.4	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	8.9	8.1	9.8	No Limit
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 4590983)									
ES2231627-022	AUS_MUR_GS_S31_4	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	42.6	49.3	14.7	0% - 20%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	6.7	7.3	9.1	No Limit
		EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	<1.0	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	5.6	6.2	9.5	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	4.0	4.2	4.4	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	3.0	3.1	0.0	No Limit
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 4595139)									
ES2231627-001	AUS_MUR_GB_A1_4	EP003: Total Organic Carbon	----	0.02	%	0.22	0.22	0.0	0% - 50%
ES2231627-011	AUS_MUR_GB_B4_4	EP003: Total Organic Carbon	----	0.02	%	0.31	0.33	6.6	0% - 50%
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 4595140)									
ES2231627-022	AUS_MUR_GS_S31_4	EP003: Total Organic Carbon	----	0.02	%	0.11	0.12	14.2	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4582979)									
ES2231627-018	AUS_MUR_GS_S14_4	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4583060)									
ES2231627-001	AUS_MUR_GB_A1_4	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231627-011	AUS_MUR_GB_B4_4	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4583060) - continued									
ES2231627-011	AUS_MUR_GB_B4_4	EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4583063)									
ES2231627-022	AUS_MUR_GS_S31_4	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4584501)									
ES2231627-001	AUS_MUR_GB_A1_4	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
ES2231627-011	AUS_MUR_GB_B4_4	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 4585549)									
ES2231627-028	AUS_MUR_GB_D3_4	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 4583060)									
ES2231627-001	AUS_MUR_GB_A1_4	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	5	6	24.2	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	5	6	18.2	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
ES2231627-011	AUS_MUR_GB_B4_4	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	7	7	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	7	7	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 4583063)									
ES2231627-022	AUS_MUR_GS_S31_4	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD: BTEXN (QC Lot: 4582979)									
ES2231627-018	AUS_MUR_GS_S14_4	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP080-SD: BTEXN (QC Lot: 4584501)									
ES2231627-001	AUS_MUR_GB_A1_4	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080-SD: BTEXN (QC Lot: 4584501) - continued									
ES2231627-001	AUS_MUR_GB_A1_4	EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2231627-011	AUS_MUR_GB_B4_4	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP080-SD: BTEXN (QC Lot: 4585549)									
ES2231627-028	AUS_MUR_GB_D3_4	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4589659)									
ES2231627-030	AUS_MUR_RIN_4	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.50	0.57	14.5	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.36	0.46	25.8	No Limit
ES2233375-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	1.06	1.06	0.0	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.031	0.031	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4587324)									
ES2231627-030	AUS_MUR_RIN_4	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2233084-002	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP005: Total Organic Carbon (TOC) (QC Lot: 4583813)									
ES2231627-030	AUS_MUR_RIN_4	EP005: Total Organic Carbon	----	1	mg/L	34	34	0.0	0% - 20%
ES2233000-004	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	6	6	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QCLot: 4590981)								
EG005-SD: Aluminium	7429-90-5	50	mg/kg	<50	15910 mg/kg	103	88.2	136
EG005-SD: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	98.8	70.0	109
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QCLot: 4590984)								
EG005-SD: Aluminium	7429-90-5	50	mg/kg	<50	15910 mg/kg	103	88.2	136
EG005-SD: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	100	70.0	109
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4590982)								
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.087 mg/kg	96.6	72.0	116
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4590985)								
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.087 mg/kg	93.7	72.0	116
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4590980)								
EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	1.54 mg/kg	115	70.0	130
EG020-SD: Arsenic	7440-38-2	1	mg/kg	<1.00	110 mg/kg	111	80.0	139
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.8 mg/kg	98.6	83.0	127
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	20.3 mg/kg	103	73.0	130
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	49 mg/kg	105	76.0	130
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	57.4 mg/kg	107	74.0	130
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	14.7 mg/kg	107	83.0	130
EG020-SD: Zinc	7440-66-6	1	mg/kg	<1.0	125.8 mg/kg	109	82.0	137
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4590983)								
EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	1.54 mg/kg	111	70.0	130
EG020-SD: Arsenic	7440-38-2	1	mg/kg	<1.00	110 mg/kg	97.9	80.0	139
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.8 mg/kg	86.0	83.0	127
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	20.3 mg/kg	107	73.0	130
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	49 mg/kg	103	76.0	130
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	57.4 mg/kg	102	74.0	130
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	14.7 mg/kg	101	83.0	130
EG020-SD: Zinc	7440-66-6	1	mg/kg	<1.0	125.8 mg/kg	105	82.0	137
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 4595139)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.55 %	101	80.0	120
				<0.02	27.5 %	100	80.0	120
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 4595140)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.55 %	99.8	80.0	120
				<0.02	27.5 %	101	80.0	120

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4582979)								
EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	6.2 mg/kg	63.6	61.0	133
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4583060)								
EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	5 mg/kg	91.6	78.0	118
EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	7.5 mg/kg	97.2	84.0	118
EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	5 mg/kg	94.8	73.0	119
EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4583063)								
EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	5 mg/kg	88.5	78.0	118
EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	7.5 mg/kg	97.0	84.0	118
EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	5 mg/kg	94.5	73.0	119
EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4584501)								
EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	6.2 mg/kg	71.1	61.0	133
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4585549)								
EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	6.2 mg/kg	65.0	61.0	133
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 4583060)								
EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	6.25 mg/kg	97.7	70.0	130
EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	8.75 mg/kg	95.4	74.0	138
EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	3.75 mg/kg	98.0	63.0	131
EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 4583063)								
EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	6.25 mg/kg	95.5	70.0	130
EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	8.75 mg/kg	95.4	74.0	138
EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	3.75 mg/kg	98.0	63.0	131
EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD: BTEXN (QCLot: 4582979)								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	0.2 mg/kg	85.2	66.0	122
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	0.2 mg/kg	83.6	70.0	130
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.2 mg/kg	85.2	66.0	126
EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	0.4 mg/kg	85.6	59.0	129
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.2 mg/kg	85.3	66.0	126
EP080-SD: BTEXN (QCLot: 4584501)								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	0.2 mg/kg	90.0	66.0	122
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	0.2 mg/kg	87.2	70.0	130
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.2 mg/kg	88.0	66.0	126
EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	0.4 mg/kg	85.6	59.0	129

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080-SD: BTEXN (QCLot: 4584501) - continued								
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.2 mg/kg	91.3	66.0	126
EP080-SD: BTEXN (QCLot: 4585549)								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	0.2 mg/kg	84.9	66.0	122
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	0.2 mg/kg	83.5	70.0	130
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.2 mg/kg	83.5	66.0	126
EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	0.4 mg/kg	88.7	59.0	129
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.2 mg/kg	88.0	66.0	126

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 4589659)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	111	82.0	120
EG020A-T: Antimony	7440-36-0	0.001	mg/L	<0.001	0.02 mg/L	104	70.0	130
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	91.8	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.5	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	89.5	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	91.4	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.1	85.0	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.0	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	94.2	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	91.7	85.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4587324)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	84.7	77.0	111
EP005: Total Organic Carbon (TOC) (QCLot: 4583813)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	107	72.0	120

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4590982)							
ES2231627-001	AUS_MUR_GB_A1_4	EG035T-LL: Mercury	7439-97-6	0.05 mg/kg	91.2	70.0	130
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4590985)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 4590985) - continued							
ES2231627-022	AUS_MUR_GS_S31_4	EG035T-LL: Mercury	7439-97-6	0.05 mg/kg	96.0	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4590980)							
ES2231627-001	AUS_MUR_GB_A1_4	EG020-SD: Arsenic	7440-38-2	50 mg/kg	96.5	70.0	130
		EG020-SD: Cadmium	7440-43-9	50 mg/kg	78.2	70.0	130
		EG020-SD: Chromium	7440-47-3	50 mg/kg	94.1	70.0	130
		EG020-SD: Copper	7440-50-8	250 mg/kg	94.0	70.0	130
		EG020-SD: Lead	7439-92-1	250 mg/kg	90.7	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	95.7	70.0	130
		EG020-SD: Zinc	7440-66-6	250 mg/kg	93.1	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 4590983)							
ES2231627-022	AUS_MUR_GS_S31_4	EG020-SD: Arsenic	7440-38-2	50 mg/kg	83.4	70.0	130
		EG020-SD: Cadmium	7440-43-9	50 mg/kg	78.1	70.0	130
		EG020-SD: Chromium	7440-47-3	50 mg/kg	95.2	70.0	130
		EG020-SD: Copper	7440-50-8	250 mg/kg	91.5	70.0	130
		EG020-SD: Lead	7439-92-1	250 mg/kg	89.8	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	93.2	70.0	130
		EG020-SD: Zinc	7440-66-6	250 mg/kg	90.3	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4582979)							
ES2231627-018	AUS_MUR_GS_S14_4	EP080-SD: C6 - C9 Fraction	----	6.5 mg/kg	73.7	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4583060)							
ES2231627-001	AUS_MUR_GB_A1_4	EP071-SD: C10 - C14 Fraction	----	14 mg/kg	91.8	70.0	130
		EP071-SD: C15 - C28 Fraction	----	59 mg/kg	89.9	70.0	130
		EP071-SD: C29 - C36 Fraction	----	42 mg/kg	117	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4583063)							
ES2231627-022	AUS_MUR_GS_S31_4	EP071-SD: C10 - C14 Fraction	----	14 mg/kg	97.3	70.0	130
		EP071-SD: C15 - C28 Fraction	----	59 mg/kg	92.7	70.0	130
		EP071-SD: C29 - C36 Fraction	----	42 mg/kg	118	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4584501)							
ES2231627-001	AUS_MUR_GB_A1_4	EP080-SD: C6 - C9 Fraction	----	6.5 mg/kg	75.8	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 4585549)							
ES2231627-028	AUS_MUR_GB_D3_4	EP080-SD: C6 - C9 Fraction	----	6.5 mg/kg	70.5	70.0	130
EP080-SD: BTEXN (QCLot: 4582979)							
ES2231627-018	AUS_MUR_GS_S14_4	EP080-SD: Benzene	71-43-2	0.5 mg/kg	77.1	70.0	130
		EP080-SD: Toluene	108-88-3	0.5 mg/kg	77.3	70.0	130
		EP080-SD: Ethylbenzene	100-41-4	0.5 mg/kg	78.1	70.0	130

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP080-SD: BTEXN (QCLot: 4582979) - continued							
ES2231627-018	AUS_MUR_GS_S14_4	EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.5 mg/kg	77.5	70.0	130
		EP080-SD: ortho-Xylene	95-47-6	0.5 mg/kg	78.8	70.0	130
EP080-SD: BTEXN (QCLot: 4584501)							
ES2231627-001	AUS_MUR_GB_A1_4	EP080-SD: Benzene	71-43-2	0.5 mg/kg	92.3	70.0	130
		EP080-SD: Toluene	108-88-3	0.5 mg/kg	80.3	70.0	130
		EP080-SD: Ethylbenzene	100-41-4	0.5 mg/kg	80.9	70.0	130
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.5 mg/kg	78.8	70.0	130
		EP080-SD: ortho-Xylene	95-47-6	0.5 mg/kg	81.8	70.0	130
EP080-SD: BTEXN (QCLot: 4585549)							
ES2231627-028	AUS_MUR_GB_D3_4	EP080-SD: Benzene	71-43-2	0.5 mg/kg	82.2	70.0	130
		EP080-SD: Toluene	108-88-3	0.5 mg/kg	75.6	70.0	130
		EP080-SD: Ethylbenzene	100-41-4	0.5 mg/kg	78.2	70.0	130
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.5 mg/kg	76.0	70.0	130
		EP080-SD: ortho-Xylene	95-47-6	0.5 mg/kg	80.2	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EG020T: Total Metals by ICP-MS (QCLot: 4589659)							
ES2231627-031	AUS_MUR_RIN_5	EG020A-T: Arsenic	7440-38-2	1 mg/L	89.7	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	94.3	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	103	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	90.5	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	89.7	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	90.4	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	89.4	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4587324)							
ES2231627-031	AUS_MUR_RIN_5	EG035T: Mercury	7439-97-6	0.01 mg/L	83.7	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 4583813)							
ES2231627-031	AUS_MUR_RIN_5	EP005: Total Organic Carbon	----	100 mg/L	128	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2230841**	Page	: 1 of 14
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 01-Sep-2022
Site	: ----	Issue Date	: 23-Sep-2022
Sampler	: SEAS OFFSHORE	No. of samples received	: 111
Order number	: ----	No. of samples analysed	: 39

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Duplicate outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005(ED093)-SD: Total Metals in Sediments by ICP-A	ES2230841--036	AUS_MUR_VC_S11-3_0.5	**Aluminium**	7429-90-5	27.8 %	0% - 20%	**RPD exceeds LOR based limits**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

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

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

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

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
AUS_MUR_VC_S1B_0.5,	AUS_MUR_VC_S1B_1.0,	**28-Aug-2022**	**----**	----	----	**09-Sep-2022**	11-Sep-2022	✓
AUS_MUR_VC_S2BS_0.5,	AUS_MUR_VC_S3_0.5AS,							
AUS_MUR_VC_S3_1.0AS,	AUS_MUR_VC_S3_1.0B,							
AUS_MUR_VC_S5A_0.5,	AUS_MUR_VC_S5A_1.0,							
AUS_MUR_VC_S6_0.5,	AUS_MUR_VC_S6_1.0,							
AUS_MUR_VC_S7_0.5,	AUS_MUR_VC_S7_1.0,							
AUS_MUR_VC_S8_1_1.0,	AUS_MUR_VC_S8_2_0.5,							
US_MUR_GS_S8_02_1.0,	AUS_MUR_GS_S9_0.5,							
AUS_MUR_GS_S9_1.0								
Soil Glass Jar - Unpreserved (EA055)								
AUS_MUR_VC_S8_3_1.0,	AUS_MUR_GS_S10_0.5,	**29-Aug-2022**	**----**	----	----	**09-Sep-2022**	12-Sep-2022	✓
AUS_MUR_GS_S10_1.0,	AUS_MUR_VC_S11-3_0.5,							
AUS_MUR_VC_S11-3_1.0,	AUS_MUR_VC_S12_0.5,							
AUS_MUR_VC_S12_1.0,	AUS_MUR_VC_S13_0.5,							
AUS_MUR_VC_S13_1.0,	AUS_MUR_GS_S13_1,							
AUS_MUR_GS_S12_2,	AUS_MUR_GS_S11_1,							
AUS_MUR_VC_S11-2_1.0,	AUS_MUR_VC_S9_1.0,							
AUS_MUR_VC_S11-2_0.5								
Soil Glass Jar - Unpreserved (EA055)								
US_MUR_GS_S7-1,	AUS_MUR_GS_S6-1A,	**30-Aug-2022**	**----**	----	----	**09-Sep-2022**	13-Sep-2022	✓
AUS_MUR_GS_S6-1A,	AUS_MUR_GS_S5-1,							
AUS_MUR_GS_S4-1,	AUS_MUR_GS_S3-1,							
AUS_MUR_GS_S2-1								

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA150: Particle Sizing							
Snap Lock Bag (EA150H)							
AUS_MUR_VC_S11-2_1.0	**29-Aug-2022**	**----**	----	----	**12-Sep-2022**	25-Feb-2023	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)							
AUS_MUR_VC_S1B_0.5, AUS_MUR_VC_S2BS_0.5, AUS_MUR_VC_S3_0.5AS, AUS_MUR_VC_S3_1.0AS, AUS_MUR_VC_S3_1.0B, AUS_MUR_VC_S5A_0.5, AUS_MUR_VC_S5A_1.0, AUS_MUR_VC_S6_0.5, AUS_MUR_VC_S6_1.0, AUS_MUR_VC_S7_0.5, AUS_MUR_VC_S7_1.0, AUS_MUR_VC_S8_1_1.0, AUS_MUR_VC_S8_2_0.5, US_MUR_GS_S8_02_1.0, AUS_MUR_GS_S9_0.5, AUS_MUR_GS_S9_1.0	**28-Aug-2022**	**----**	----	----	**12-Sep-2022**	24-Feb-2023	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)							
AUS_MUR_VC_S8_3_1.0, AUS_MUR_GS_S10_0.5, AUS_MUR_GS_S10_1.0, AUS_MUR_VC_S11-3_0.5, AUS_MUR_VC_S11-3_1.0, AUS_MUR_VC_S12_0.5, AUS_MUR_VC_S12_1.0, AUS_MUR_VC_S13_0.5, AUS_MUR_VC_S13_1.0, AUS_MUR_GS_S13_1, AUS_MUR_GS_S12_2, AUS_MUR_GS_S11_1, AUS_MUR_VC_S9_1.0	**29-Aug-2022**	**----**	----	----	**12-Sep-2022**	25-Feb-2023	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)							
US_MUR_GS_S7-1, AUS_MUR_GS_S6-1A, AUS_MUR_GS_S5-1, AUS_MUR_GS_S4-1, AUS_MUR_GS_S2-1	**30-Aug-2022**	**----**	----	----	**12-Sep-2022**	26-Feb-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA150: Soil Classification based on Particle Size							
Snap Lock Bag (EA150H)							
AUS_MUR_VC_S11-2_1.0	**29-Aug-2022**	**----**	----	----	**12-Sep-2022**	25-Feb-2023	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)							
AUS_MUR_VC_S1B_0.5, AUS_MUR_VC_S2BS_0.5, AUS_MUR_VC_S3_0.5AS, AUS_MUR_VC_S3_1.0AS, AUS_MUR_VC_S3_1.0B, AUS_MUR_VC_S5A_0.5, AUS_MUR_VC_S5A_1.0, AUS_MUR_VC_S6_0.5, AUS_MUR_VC_S6_1.0, AUS_MUR_VC_S7_0.5, AUS_MUR_VC_S7_1.0, AUS_MUR_VC_S8_1_1.0, AUS_MUR_VC_S8_2_0.5, US_MUR_GS_S8_02_1.0, AUS_MUR_GS_S9_0.5, AUS_MUR_GS_S9_1.0	**28-Aug-2022**	**----**	----	----	**12-Sep-2022**	24-Feb-2023	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)							
AUS_MUR_VC_S8_3_1.0, AUS_MUR_GS_S10_0.5, AUS_MUR_GS_S10_1.0, AUS_MUR_VC_S11-3_0.5, AUS_MUR_VC_S11-3_1.0, AUS_MUR_VC_S12_0.5, AUS_MUR_VC_S12_1.0, AUS_MUR_VC_S13_0.5, AUS_MUR_VC_S13_1.0, AUS_MUR_GS_S13_1, AUS_MUR_GS_S12_2, AUS_MUR_GS_S11_1, AUS_MUR_VC_S9_1.0	**29-Aug-2022**	**----**	----	----	**12-Sep-2022**	25-Feb-2023	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)							
US_MUR_GS_S7-1, AUS_MUR_GS_S6-1A, AUS_MUR_GS_S5-1, AUS_MUR_GS_S4-1, AUS_MUR_GS_S2-1	**30-Aug-2022**	**----**	----	----	**12-Sep-2022**	26-Feb-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES							
Soil Glass Jar - Unpreserved (EG005-SD)							
AUS_MUR_VC_S1B_0.5, AUS_MUR_VC_S1B_1.0, AUS_MUR_VC_S2BS_0.5, AUS_MUR_VC_S3_0.5AS, AUS_MUR_VC_S3_1.0AS, AUS_MUR_VC_S3_1.0B, AUS_MUR_VC_S5A_0.5, AUS_MUR_VC_S5A_1.0, AUS_MUR_VC_S6_0.5, AUS_MUR_VC_S6_1.0, AUS_MUR_VC_S7_0.5, AUS_MUR_VC_S7_1.0, AUS_MUR_VC_S8_1_1.0, AUS_MUR_VC_S8_2_0.5, US_MUR_GS_S8_02_1.0, AUS_MUR_GS_S9_0.5, AUS_MUR_GS_S9_1.0	**28-Aug-2022**	**09-Sep-2022**	24-Feb-2023	✓	**12-Sep-2022**	24-Feb-2023	✓
Soil Glass Jar - Unpreserved (EG005-SD)							
AUS_MUR_VC_S8_3_1.0, AUS_MUR_GS_S10_0.5, AUS_MUR_GS_S10_1.0, AUS_MUR_VC_S11-3_0.5, AUS_MUR_VC_S11-3_1.0, AUS_MUR_VC_S12_0.5, AUS_MUR_VC_S12_1.0, AUS_MUR_VC_S13_0.5, AUS_MUR_VC_S13_1.0, AUS_MUR_GS_S13_1, AUS_MUR_GS_S12_2, AUS_MUR_GS_S11_1, AUS_MUR_VC_S11-2_1.0, AUS_MUR_VC_S9_1.0, AUS_MUR_VC_S11-2_0.5	**29-Aug-2022**	**09-Sep-2022**	25-Feb-2023	✓	**12-Sep-2022**	25-Feb-2023	✓
Soil Glass Jar - Unpreserved (EG005-SD)							
US_MUR_GS_S7-1, AUS_MUR_GS_S6-1A, AUS_MUR_GS_S6-1A, AUS_MUR_GS_S5-1, AUS_MUR_GS_S4-1, AUS_MUR_GS_S3-1, AUS_MUR_GS_S2-1	**30-Aug-2022**	**09-Sep-2022**	26-Feb-2023	✓	**12-Sep-2022**	26-Feb-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020-SD: Total Metals in Sediments by ICPMS								
Soil Glass Jar - Unpreserved (EG020-SD)								
AUS_MUR_VC_S1B_0.5,	AUS_MUR_VC_S1B_1.0,	**28-Aug-2022**	**09-Sep-2022**	24-Feb-2023	✓	**12-Sep-2022**	24-Feb-2023	✓
AUS_MUR_VC_S2BS_0.5,	AUS_MUR_VC_S3_0.5AS,							
AUS_MUR_VC_S3_1.0AS,	AUS_MUR_VC_S3_1.0B,							
AUS_MUR_VC_S5A_0.5,	AUS_MUR_VC_S5A_1.0,							
AUS_MUR_VC_S6_0.5,	AUS_MUR_VC_S6_1.0,							
AUS_MUR_VC_S7_0.5,	AUS_MUR_VC_S7_1.0,							
AUS_MUR_VC_S8_1_1.0,	AUS_MUR_VC_S8_2_0.5,							
US_MUR_GS_S8_02_1.0,	AUS_MUR_GS_S9_0.5,							
AUS_MUR_GS_S9_1.0								
Soil Glass Jar - Unpreserved (EG020-SD)								
AUS_MUR_VC_S8_3_1.0,	AUS_MUR_GS_S10_0.5,	**29-Aug-2022**	**09-Sep-2022**	25-Feb-2023	✓	**12-Sep-2022**	25-Feb-2023	✓
AUS_MUR_GS_S10_1.0,	AUS_MUR_VC_S11-3_0.5,							
AUS_MUR_VC_S11-3_1.0,	AUS_MUR_VC_S12_0.5,							
AUS_MUR_VC_S12_1.0,	AUS_MUR_VC_S13_0.5,							
AUS_MUR_VC_S13_1.0,	AUS_MUR_GS_S13_1,							
AUS_MUR_GS_S12_2,	AUS_MUR_GS_S11_1,							
AUS_MUR_VC_S11-2_1.0,	AUS_MUR_VC_S9_1.0,							
AUS_MUR_VC_S11-2_0.5								
Soil Glass Jar - Unpreserved (EG020-SD)								
US_MUR_GS_S7-1,	AUS_MUR_GS_S6-1A,	**30-Aug-2022**	**09-Sep-2022**	26-Feb-2023	✓	**12-Sep-2022**	26-Feb-2023	✓
AUS_MUR_GS_S6-1A,	AUS_MUR_GS_S5-1,							
AUS_MUR_GS_S4-1,	AUS_MUR_GS_S3-1,							
AUS_MUR_GS_S2-1								

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T-LL)							
AUS_MUR_VC_S1B_0.5, AUS_MUR_VC_S1B_1.0, AUS_MUR_VC_S2BS_0.5, AUS_MUR_VC_S3_0.5AS, AUS_MUR_VC_S3_1.0AS, AUS_MUR_VC_S3_1.0B, AUS_MUR_VC_S5A_0.5, AUS_MUR_VC_S5A_1.0, AUS_MUR_VC_S6_0.5, AUS_MUR_VC_S6_1.0, AUS_MUR_VC_S7_0.5, AUS_MUR_VC_S7_1.0, AUS_MUR_VC_S8_1_1.0, AUS_MUR_VC_S8_2_0.5, US_MUR_GS_S8_02_1.0, AUS_MUR_GS_S9_0.5, AUS_MUR_GS_S9_1.0	**28-Aug-2022**	**09-Sep-2022**	25-Sep-2022	✓	**12-Sep-2022**	25-Sep-2022	✓
Soil Glass Jar - Unpreserved (EG035T-LL)							
AUS_MUR_VC_S8_3_1.0, AUS_MUR_GS_S10_0.5, AUS_MUR_GS_S10_1.0, AUS_MUR_VC_S11-3_0.5, AUS_MUR_VC_S11-3_1.0, AUS_MUR_VC_S12_0.5, AUS_MUR_VC_S12_1.0, AUS_MUR_VC_S13_0.5, AUS_MUR_VC_S13_1.0, AUS_MUR_GS_S13_1, AUS_MUR_GS_S12_2, AUS_MUR_GS_S11_1, AUS_MUR_VC_S11-2_1.0, AUS_MUR_VC_S9_1.0, AUS_MUR_VC_S11-2_0.5	**29-Aug-2022**	**09-Sep-2022**	26-Sep-2022	✓	**12-Sep-2022**	26-Sep-2022	✓
Soil Glass Jar - Unpreserved (EG035T-LL)							
US_MUR_GS_S7-1, AUS_MUR_GS_S6-1A, AUS_MUR_GS_S6-1A, AUS_MUR_GS_S5-1, AUS_MUR_GS_S4-1, AUS_MUR_GS_S3-1, AUS_MUR_GS_S2-1	**30-Aug-2022**	**09-Sep-2022**	27-Sep-2022	✓	**12-Sep-2022**	27-Sep-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP003: Total Organic Carbon (TOC) in Soil							
Pulp Bag (EP003)							
AUS_MUR_VC_S1B_0.5, AUS_MUR_VC_S1B_1.0, AUS_MUR_VC_S2BS_0.5, AUS_MUR_VC_S3_0.5AS, AUS_MUR_VC_S3_1.0AS, AUS_MUR_VC_S3_1.0B, AUS_MUR_VC_S5A_0.5, AUS_MUR_VC_S5A_1.0, AUS_MUR_VC_S6_0.5, AUS_MUR_VC_S6_1.0, AUS_MUR_VC_S7_0.5, AUS_MUR_VC_S7_1.0, AUS_MUR_VC_S8_1_1.0, AUS_MUR_VC_S8_2_0.5, US_MUR_GS_S8_02_1.0, AUS_MUR_GS_S9_0.5, AUS_MUR_GS_S9_1.0	**28-Aug-2022**	**09-Sep-2022**	25-Sep-2022	✓	**09-Sep-2022**	25-Sep-2022	✓
Pulp Bag (EP003)							
AUS_MUR_GS_S10_0.5, AUS_MUR_GS_S10_1.0, AUS_MUR_VC_S11-3_0.5, AUS_MUR_VC_S11-3_1.0, AUS_MUR_VC_S12_0.5, AUS_MUR_VC_S12_1.0, AUS_MUR_VC_S13_0.5, AUS_MUR_VC_S13_1.0, AUS_MUR_GS_S13_1, AUS_MUR_GS_S12_2, AUS_MUR_GS_S11_1, AUS_MUR_VC_S11-2_1.0, AUS_MUR_VC_S9_1.0, AUS_MUR_VC_S11-2_0.5	**29-Aug-2022**	**09-Sep-2022**	26-Sep-2022	✓	**09-Sep-2022**	26-Sep-2022	✓
Pulp Bag (EP003)							
AUS_MUR_VC_S8_3_1.0	**29-Aug-2022**	**14-Sep-2022**	26-Sep-2022	✓	**14-Sep-2022**	26-Sep-2022	✓
Pulp Bag (EP003)							
US_MUR_GS_S7-1, AUS_MUR_GS_S6-1A, AUS_MUR_GS_S6-1A, AUS_MUR_GS_S5-1, AUS_MUR_GS_S4-1, AUS_MUR_GS_S3-1, AUS_MUR_GS_S2-1	**30-Aug-2022**	**09-Sep-2022**	27-Sep-2022	✓	**09-Sep-2022**	27-Sep-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP071-SD)							
AUS_MUR_VC_S1B_0.5, AUS_MUR_VC_S1B_1.0, AUS_MUR_VC_S2BS_0.5, AUS_MUR_VC_S3_0.5AS, AUS_MUR_VC_S3_1.0AS, AUS_MUR_VC_S3_1.0B, AUS_MUR_VC_S5A_0.5, AUS_MUR_VC_S5A_1.0, AUS_MUR_VC_S6_0.5, AUS_MUR_VC_S6_1.0, AUS_MUR_VC_S7_0.5, AUS_MUR_VC_S7_1.0, AUS_MUR_VC_S8_1_1.0, AUS_MUR_VC_S8_2_0.5, US_MUR_GS_S8_02_1.0, AUS_MUR_GS_S9_0.5, AUS_MUR_GS_S9_1.0	**28-Aug-2022**	**10-Sep-2022**	11-Sep-2022	✓	**10-Sep-2022**	20-Oct-2022	✓
Soil Glass Jar - Unpreserved (EP071-SD)							
AUS_MUR_VC_S8_3_1.0, AUS_MUR_GS_S10_0.5, AUS_MUR_GS_S10_1.0, AUS_MUR_VC_S11-3_0.5, AUS_MUR_VC_S11-3_1.0, AUS_MUR_VC_S12_0.5, AUS_MUR_VC_S12_1.0, AUS_MUR_VC_S13_0.5, AUS_MUR_VC_S13_1.0, AUS_MUR_GS_S13_1, AUS_MUR_GS_S12_2, AUS_MUR_GS_S11_1, AUS_MUR_VC_S11-2_1.0, AUS_MUR_VC_S9_1.0	**29-Aug-2022**	**10-Sep-2022**	12-Sep-2022	✓	**10-Sep-2022**	20-Oct-2022	✓
Soil Glass Jar - Unpreserved (EP071-SD)							
AUS_MUR_VC_S11-2_0.5	**29-Aug-2022**	**10-Sep-2022**	12-Sep-2022	✓	**13-Sep-2022**	20-Oct-2022	✓
Soil Glass Jar - Unpreserved (EP071-SD)							
US_MUR_GS_S7-1, AUS_MUR_GS_S6-1A, AUS_MUR_GS_S6-1A, AUS_MUR_GS_S5-1, AUS_MUR_GS_S4-1, AUS_MUR_GS_S3-1, AUS_MUR_GS_S2-1	**30-Aug-2022**	**10-Sep-2022**	13-Sep-2022	✓	**10-Sep-2022**	20-Oct-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S1B_0.5,	AUS_MUR_VC_S1B_1.0,	**28-Aug-2022**	**07-Sep-2022**	11-Sep-2022	✓	**09-Sep-2022**	11-Sep-2022	✓
AUS_MUR_VC_S2BS_0.5,	AUS_MUR_VC_S3_0.5AS,							
AUS_MUR_VC_S3_1.0AS,	AUS_MUR_VC_S3_1.0B,							
AUS_MUR_VC_S5A_0.5,	AUS_MUR_VC_S5A_1.0,							
AUS_MUR_VC_S6_0.5,	AUS_MUR_VC_S6_1.0,							
AUS_MUR_VC_S7_0.5,	AUS_MUR_VC_S7_1.0,							
AUS_MUR_VC_S8_1_1.0,	AUS_MUR_VC_S8_2_0.5,							
US_MUR_GS_S8_02_1.0,	AUS_MUR_GS_S9_0.5,							
AUS_MUR_GS_S9_1.0								
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S1B_0.5,	AUS_MUR_VC_S1B_1.0,	**28-Aug-2022**	**10-Sep-2022**	11-Sep-2022	✓	**10-Sep-2022**	20-Oct-2022	✓
AUS_MUR_VC_S2BS_0.5,	AUS_MUR_VC_S3_0.5AS,							
AUS_MUR_VC_S3_1.0AS,	AUS_MUR_VC_S3_1.0B,							
AUS_MUR_VC_S5A_0.5,	AUS_MUR_VC_S5A_1.0,							
AUS_MUR_VC_S6_0.5,	AUS_MUR_VC_S6_1.0,							
AUS_MUR_VC_S7_0.5,	AUS_MUR_VC_S7_1.0,							
AUS_MUR_VC_S8_1_1.0,	AUS_MUR_VC_S8_2_0.5,							
US_MUR_GS_S8_02_1.0,	AUS_MUR_GS_S9_0.5,							
AUS_MUR_GS_S9_1.0								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S8_3_1.0,	AUS_MUR_GS_S10_0.5,	**29-Aug-2022**	**07-Sep-2022**	12-Sep-2022	✓	**09-Sep-2022**	12-Sep-2022	✓
AUS_MUR_GS_S10_1.0,	AUS_MUR_VC_S11-3_0.5,							
AUS_MUR_VC_S11-3_1.0,	AUS_MUR_VC_S12_0.5,							
AUS_MUR_VC_S12_1.0,	AUS_MUR_VC_S13_0.5,							
AUS_MUR_VC_S13_1.0,	AUS_MUR_GS_S13_1,							
AUS_MUR_GS_S12_2,	AUS_MUR_GS_S11_1,							
AUS_MUR_VC_S11-2_1.0,	AUS_MUR_VC_S9_1.0,							
AUS_MUR_VC_S11-2_0.5								
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S8_3_1.0,	AUS_MUR_GS_S10_0.5,	**29-Aug-2022**	**10-Sep-2022**	12-Sep-2022	✓	**10-Sep-2022**	20-Oct-2022	✓
AUS_MUR_GS_S10_1.0,	AUS_MUR_VC_S11-3_0.5,							
AUS_MUR_VC_S11-3_1.0,	AUS_MUR_VC_S12_0.5,							
AUS_MUR_VC_S12_1.0,	AUS_MUR_VC_S13_0.5,							
AUS_MUR_VC_S13_1.0,	AUS_MUR_GS_S13_1,							
AUS_MUR_GS_S12_2,	AUS_MUR_GS_S11_1,							
AUS_MUR_VC_S11-2_1.0,	AUS_MUR_VC_S9_1.0							
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S11-2_0.5		**29-Aug-2022**	**10-Sep-2022**	12-Sep-2022	✓	**13-Sep-2022**	20-Oct-2022	✓
Soil Glass Jar - Unpreserved (EP080-SD)								

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons - Continued								
US_MUR_GS_S7-1, AUS_MUR_GS_S6-1A, AUS_MUR_GS_S6-1A, AUS_MUR_GS_S5-1, AUS_MUR_GS_S4-1, AUS_MUR_GS_S3-1, AUS_MUR_GS_S2-1		**30-Aug-2022**	**07-Sep-2022**	13-Sep-2022	✓	**09-Sep-2022**	13-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP071-SD)								
US_MUR_GS_S7-1, AUS_MUR_GS_S6-1A, AUS_MUR_GS_S6-1A, AUS_MUR_GS_S5-1, AUS_MUR_GS_S4-1, AUS_MUR_GS_S3-1, AUS_MUR_GS_S2-1		**30-Aug-2022**	**10-Sep-2022**	13-Sep-2022	✓	**10-Sep-2022**	20-Oct-2022	✓
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S1B_0.5, AUS_MUR_VC_S1B_1.0, AUS_MUR_VC_S2BS_0.5, AUS_MUR_VC_S3_0.5AS, AUS_MUR_VC_S3_1.0AS, AUS_MUR_VC_S3_1.0B, AUS_MUR_VC_S5A_0.5, AUS_MUR_VC_S5A_1.0, AUS_MUR_VC_S6_0.5, AUS_MUR_VC_S6_1.0, AUS_MUR_VC_S7_0.5, AUS_MUR_VC_S7_1.0, AUS_MUR_VC_S8_1_1.0, AUS_MUR_VC_S8_2_0.5, US_MUR_GS_S8_02_1.0, AUS_MUR_GS_S9_0.5, AUS_MUR_GS_S9_1.0		**28-Aug-2022**	**07-Sep-2022**	11-Sep-2022	✓	**09-Sep-2022**	11-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S8_3_1.0, AUS_MUR_GS_S10_0.5, AUS_MUR_GS_S10_1.0, AUS_MUR_VC_S11-3_0.5, AUS_MUR_VC_S11-3_1.0, AUS_MUR_VC_S12_0.5, AUS_MUR_VC_S12_1.0, AUS_MUR_VC_S13_0.5, AUS_MUR_VC_S13_1.0, AUS_MUR_GS_S13_1, AUS_MUR_GS_S12_2, AUS_MUR_GS_S11_1, AUS_MUR_VC_S11-2_1.0, AUS_MUR_VC_S9_1.0, AUS_MUR_VC_S11-2_0.5		**29-Aug-2022**	**07-Sep-2022**	12-Sep-2022	✓	**09-Sep-2022**	12-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP080-SD)								
US_MUR_GS_S7-1, AUS_MUR_GS_S6-1A, AUS_MUR_GS_S6-1A, AUS_MUR_GS_S5-1, AUS_MUR_GS_S4-1, AUS_MUR_GS_S3-1, AUS_MUR_GS_S2-1		**30-Aug-2022**	**07-Sep-2022**	13-Sep-2022	✓	**09-Sep-2022**	13-Sep-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080-SD: BTEXN								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S1B_0.5,	AUS_MUR_VC_S1B_1.0,	**28-Aug-2022**	**07-Sep-2022**	11-Sep-2022	✓	**09-Sep-2022**	11-Sep-2022	✓
AUS_MUR_VC_S2BS_0.5,	AUS_MUR_VC_S3_0.5AS,							
AUS_MUR_VC_S3_1.0AS,	AUS_MUR_VC_S3_1.0B,							
AUS_MUR_VC_S5A_0.5,	AUS_MUR_VC_S5A_1.0,							
AUS_MUR_VC_S6_0.5,	AUS_MUR_VC_S6_1.0,							
AUS_MUR_VC_S7_0.5,	AUS_MUR_VC_S7_1.0,							
AUS_MUR_VC_S8_1_1.0,	AUS_MUR_VC_S8_2_0.5,							
US_MUR_GS_S8_02_1.0,	AUS_MUR_GS_S9_0.5,							
AUS_MUR_GS_S9_1.0								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S8_3_1.0,	AUS_MUR_GS_S10_0.5,	**29-Aug-2022**	**07-Sep-2022**	12-Sep-2022	✓	**09-Sep-2022**	12-Sep-2022	✓
AUS_MUR_GS_S10_1.0,	AUS_MUR_VC_S11-3_0.5,							
AUS_MUR_VC_S11-3_1.0,	AUS_MUR_VC_S12_0.5,							
AUS_MUR_VC_S12_1.0,	AUS_MUR_VC_S13_0.5,							
AUS_MUR_VC_S13_1.0,	AUS_MUR_GS_S13_1,							
AUS_MUR_GS_S12_2,	AUS_MUR_GS_S11_1,							
AUS_MUR_VC_S11-2_1.0,	AUS_MUR_VC_S9_1.0,							
AUS_MUR_VC_S11-2_0.5								
Soil Glass Jar - Unpreserved (EP080-SD)								
US_MUR_GS_S7-1,	AUS_MUR_GS_S6-1A,	**30-Aug-2022**	**07-Sep-2022**	13-Sep-2022	✓	**09-Sep-2022**	13-Sep-2022	✓
AUS_MUR_GS_S6-1A,	AUS_MUR_GS_S5-1,							
AUS_MUR_GS_S4-1,	AUS_MUR_GS_S3-1,							
AUS_MUR_GS_S2-1								

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Fe and Al in Sediments by ICPAES	EG005-SD	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	5	41	**12.20**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Fe and Al in Sediments by ICPAES	EG005-SD	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	6	41	**14.63**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Fe and Al in Sediments by ICPAES	EG005-SD	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	3	41	**7.32**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS (Low Level)	EG035T-LL	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3
Total Fe and Al in Sediments by ICPAES	EG005-SD	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3). LORs per NODG
Total Metals in Sediments by ICPMS	EG020-SD	SOIL	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. Analyte list and LORs per NODG.
Total Mercury by FIMS (Low Level)	EG035T-LL	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP003	SOIL	In house C-IR17. Dried and pulverised sample is reacted with acid to remove inorganic Carbonates, then combusted in a furnace in the presence of strong oxidants / catalysts. The evolved (Organic) Carbon (as CO2) is automatically measured by infra-red detector.
TPH - Semivolatile Fraction	EP071-SD	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX in Sediments	EP080-SD	SOIL	In house: Referenced to USEPA SW 846 - 8260 Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Dry and Pulverise (up to 100g)	GEO30	SOIL	#
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In house: Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2231582**	Page	: 1 of 6
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022
Site	: ----	Issue Date	: 23-Sep-2022
Sampler	: SEAS OFFSHORE	No. of samples received	: 11
Order number	: ----	No. of samples analysed	: 7

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA055: Moisture Content (Dried @ 105-110°C)						
Soil Glass Jar - Unpreserved						
AUS_MUR_GS_S1_1.0, AUS_MUR_VC_S34_0.5, AUS_MUR_VC_S34_1.0, AUS_MUR_VC_S33_0.5, AUS_MUR_VC_S33_1.0, AUS_MUR_VC_S32_1A_0.5, AUS_MUR_VC_S32_1A_1.0	----	----	----	14-Sep-2022	13-Sep-2022	**1**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

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

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

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

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
AUS_MUR_GS_S1_1.0, AUS_MUR_VC_S34_0.5, AUS_MUR_VC_S34_1.0, AUS_MUR_VC_S33_0.5, AUS_MUR_VC_S33_1.0, AUS_MUR_VC_S32_1A_0.5, AUS_MUR_VC_S32_1A_1.0	**30-Aug-2022**	**----**	----	----	**14-Sep-2022**	13-Sep-2022	×
EA150: Particle Sizing							
Soil Glass Jar - Unpreserved (EA150H)							
AUS_MUR_GS_S1_1.0, AUS_MUR_VC_S34_0.5, AUS_MUR_VC_S34_1.0, AUS_MUR_VC_S33_0.5, AUS_MUR_VC_S33_1.0, AUS_MUR_VC_S32_1A_0.5, AUS_MUR_VC_S32_1A_1.0	**30-Aug-2022**	**----**	----	----	**14-Sep-2022**	26-Feb-2023	✓
EA150: Soil Classification based on Particle Size							
Soil Glass Jar - Unpreserved (EA150H)							
AUS_MUR_GS_S1_1.0, AUS_MUR_VC_S34_0.5, AUS_MUR_VC_S34_1.0, AUS_MUR_VC_S33_0.5, AUS_MUR_VC_S33_1.0, AUS_MUR_VC_S32_1A_0.5, AUS_MUR_VC_S32_1A_1.0	**30-Aug-2022**	**----**	----	----	**14-Sep-2022**	26-Feb-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES							
Soil Glass Jar - Unpreserved (EG005-SD)							
AUS_MUR_GS_S1_1.0, AUS_MUR_VC_S34_0.5, AUS_MUR_VC_S34_1.0, AUS_MUR_VC_S33_0.5, AUS_MUR_VC_S33_1.0, AUS_MUR_VC_S32_1A_0.5, AUS_MUR_VC_S32_1A_1.0	**30-Aug-2022**	**14-Sep-2022**	26-Feb-2023	✓	**15-Sep-2022**	26-Feb-2023	✓
EG020-SD: Total Metals in Sediments by ICPMS							
Soil Glass Jar - Unpreserved (EG020-SD)							
AUS_MUR_GS_S1_1.0, AUS_MUR_VC_S34_0.5, AUS_MUR_VC_S34_1.0, AUS_MUR_VC_S33_0.5, AUS_MUR_VC_S33_1.0, AUS_MUR_VC_S32_1A_0.5, AUS_MUR_VC_S32_1A_1.0	**30-Aug-2022**	**14-Sep-2022**	26-Feb-2023	✓	**15-Sep-2022**	26-Feb-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T-LL)							
AUS_MUR_GS_S1_1.0, AUS_MUR_VC_S34_0.5, AUS_MUR_VC_S34_1.0, AUS_MUR_VC_S33_0.5, AUS_MUR_VC_S33_1.0, AUS_MUR_VC_S32_1A_0.5, AUS_MUR_VC_S32_1A_1.0	**30-Aug-2022**	**14-Sep-2022**	27-Sep-2022	✓	**16-Sep-2022**	27-Sep-2022	✓
EP003: Total Organic Carbon (TOC) in Soil							
Soil Glass Jar - Unpreserved (EP003)							
AUS_MUR_GS_S1_1.0, AUS_MUR_VC_S34_0.5, AUS_MUR_VC_S34_1.0, AUS_MUR_VC_S33_0.5, AUS_MUR_VC_S33_1.0, AUS_MUR_VC_S32_1A_0.5, AUS_MUR_VC_S32_1A_1.0	**30-Aug-2022**	**14-Sep-2022**	27-Sep-2022	✓	**14-Sep-2022**	27-Sep-2022	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP071-SD)							
AUS_MUR_GS_S1_1.0, AUS_MUR_VC_S34_0.5, AUS_MUR_VC_S34_1.0, AUS_MUR_VC_S33_0.5, AUS_MUR_VC_S33_1.0, AUS_MUR_VC_S32_1A_0.5, AUS_MUR_VC_S32_1A_1.0	**30-Aug-2022**	**09-Sep-2022**	13-Sep-2022	✓	**10-Sep-2022**	19-Oct-2022	✓
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071-SD)							
AUS_MUR_GS_S1_1.0, AUS_MUR_VC_S34_0.5, AUS_MUR_VC_S34_1.0, AUS_MUR_VC_S33_0.5, AUS_MUR_VC_S33_1.0, AUS_MUR_VC_S32_1A_0.5, AUS_MUR_VC_S32_1A_1.0	**30-Aug-2022**	**09-Sep-2022**	13-Sep-2022	✓	**10-Sep-2022**	19-Oct-2022	✓
Soil Glass Jar - Unpreserved (EP080-SD)							
AUS_MUR_GS_S1_1.0, AUS_MUR_VC_S34_0.5, AUS_MUR_VC_S34_1.0, AUS_MUR_VC_S33_0.5, AUS_MUR_VC_S33_1.0, AUS_MUR_VC_S32_1A_0.5, AUS_MUR_VC_S32_1A_1.0	**30-Aug-2022**	**12-Sep-2022**	13-Sep-2022	✓	**13-Sep-2022**	13-Sep-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080-SD)							
AUS_MUR_GS_S1_1.0, AUS_MUR_VC_S34_0.5, AUS_MUR_VC_S34_1.0, AUS_MUR_VC_S33_0.5, AUS_MUR_VC_S33_1.0, AUS_MUR_VC_S32_1A_0.5, AUS_MUR_VC_S32_1A_1.0	**30-Aug-2022**	**12-Sep-2022**	13-Sep-2022	✓	**13-Sep-2022**	13-Sep-2022	✓
EP080-SD: BTEXN							
Soil Glass Jar - Unpreserved (EP080-SD)							
AUS_MUR_GS_S1_1.0, AUS_MUR_VC_S34_0.5, AUS_MUR_VC_S34_1.0, AUS_MUR_VC_S33_0.5, AUS_MUR_VC_S33_1.0, AUS_MUR_VC_S32_1A_0.5, AUS_MUR_VC_S32_1A_1.0	**30-Aug-2022**	**12-Sep-2022**	13-Sep-2022	✓	**13-Sep-2022**	13-Sep-2022	✓

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Fe and Al in Sediments by ICPAES	EG005-SD	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Fe and Al in Sediments by ICPAES	EG005-SD	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
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TRH Volatiles/BTEX in Sediments	EP080-SD	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Fe and Al in Sediments by ICPAES	EG005-SD	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
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TRH Volatiles/BTEX in Sediments	EP080-SD	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS (Low Level)	EG035T-LL	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3
Total Fe and Al in Sediments by ICPAES	EG005-SD	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3). LORs per NODG
Total Metals in Sediments by ICPMS	EG020-SD	SOIL	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. Analyte list and LORs per NODG.
Total Mercury by FIMS (Low Level)	EG035T-LL	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP003	SOIL	In house C-IR17. Dried and pulverised sample is reacted with acid to remove inorganic Carbonates, then combusted in a furnace in the presence of strong oxidants / catalysts. The evolved (Organic) Carbon (as CO2) is automatically measured by infra-red detector.
TPH - Semivolatile Fraction	EP071-SD	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX in Sediments	EP080-SD	SOIL	In house: Referenced to USEPA SW 846 - 8260 Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Dry and Pulverise (up to 100g)	GEO30	SOIL	#
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In house: Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2231583**	Page	: 1 of 5
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022
Site	: ----	Issue Date	: 23-Sep-2022
Sampler	: SEAS OFFSHORE	No. of samples received	: 6
Order number	: ----	No. of samples analysed	: 6

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

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

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

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

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
AUS_MUR_VC_S32_3_0.5,	AUS_MUR_VC_S32_3_1.0,	**31-Aug-2022**	**----**	----	----	**14-Sep-2022**	14-Sep-2022	✓
AUS_MUR_VC_S31_1_0.5,	AUS_MUR_VC_S31_1_1.0,							
AUS_MUR_VC_S31_2_0.5,	AUS_MUR_VC_S31_2_1.0							
EA150: Particle Sizing								
Soil Glass Jar - Unpreserved (EA150H)								
AUS_MUR_VC_S32_3_0.5,	AUS_MUR_VC_S32_3_1.0,	**31-Aug-2022**	**----**	----	----	**14-Sep-2022**	27-Feb-2023	✓
AUS_MUR_VC_S31_1_0.5,	AUS_MUR_VC_S31_1_1.0,							
AUS_MUR_VC_S31_2_0.5,	AUS_MUR_VC_S31_2_1.0							
EA150: Soil Classification based on Particle Size								
Soil Glass Jar - Unpreserved (EA150H)								
AUS_MUR_VC_S32_3_0.5,	AUS_MUR_VC_S32_3_1.0,	**31-Aug-2022**	**----**	----	----	**14-Sep-2022**	27-Feb-2023	✓
AUS_MUR_VC_S31_1_0.5,	AUS_MUR_VC_S31_1_1.0,							
AUS_MUR_VC_S31_2_0.5,	AUS_MUR_VC_S31_2_1.0							
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Soil Glass Jar - Unpreserved (EG005-SD)								
AUS_MUR_VC_S32_3_0.5,	AUS_MUR_VC_S32_3_1.0,	**31-Aug-2022**	**14-Sep-2022**	27-Feb-2023	✓	**15-Sep-2022**	27-Feb-2023	✓
AUS_MUR_VC_S31_1_0.5,	AUS_MUR_VC_S31_1_1.0,							
AUS_MUR_VC_S31_2_0.5,	AUS_MUR_VC_S31_2_1.0							
EG020-SD: Total Metals in Sediments by ICPMS								
Soil Glass Jar - Unpreserved (EG020-SD)								
AUS_MUR_VC_S32_3_0.5,	AUS_MUR_VC_S32_3_1.0,	**31-Aug-2022**	**14-Sep-2022**	27-Feb-2023	✓	**15-Sep-2022**	27-Feb-2023	✓
AUS_MUR_VC_S31_1_0.5,	AUS_MUR_VC_S31_1_1.0,							
AUS_MUR_VC_S31_2_0.5,	AUS_MUR_VC_S31_2_1.0							
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T-LL)								
AUS_MUR_VC_S32_3_0.5,	AUS_MUR_VC_S32_3_1.0,	**31-Aug-2022**	**14-Sep-2022**	28-Sep-2022	✓	**16-Sep-2022**	28-Sep-2022	✓
AUS_MUR_VC_S31_1_0.5,	AUS_MUR_VC_S31_1_1.0,							
AUS_MUR_VC_S31_2_0.5,	AUS_MUR_VC_S31_2_1.0							

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP003: Total Organic Carbon (TOC) in Soil								
Soil Glass Jar - Unpreserved (EP003)								
AUS_MUR_VC_S32_3_0.5,	AUS_MUR_VC_S32_3_1.0,	**31-Aug-2022**	**14-Sep-2022**	28-Sep-2022	✓	**14-Sep-2022**	28-Sep-2022	✓
AUS_MUR_VC_S31_1_0.5,	AUS_MUR_VC_S31_1_1.0,							
AUS_MUR_VC_S31_2_0.5,	AUS_MUR_VC_S31_2_1.0							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S32_3_0.5,	AUS_MUR_VC_S32_3_1.0,	**31-Aug-2022**	**09-Sep-2022**	14-Sep-2022	✓	**10-Sep-2022**	19-Oct-2022	✓
AUS_MUR_VC_S31_1_0.5,	AUS_MUR_VC_S31_1_1.0,							
AUS_MUR_VC_S31_2_0.5,	AUS_MUR_VC_S31_2_1.0							
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S32_3_0.5,	AUS_MUR_VC_S32_3_1.0,	**31-Aug-2022**	**09-Sep-2022**	14-Sep-2022	✓	**10-Sep-2022**	19-Oct-2022	✓
AUS_MUR_VC_S31_1_0.5,	AUS_MUR_VC_S31_1_1.0,							
AUS_MUR_VC_S31_2_0.5,	AUS_MUR_VC_S31_2_1.0							
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S32_3_0.5,	AUS_MUR_VC_S32_3_1.0,	**31-Aug-2022**	**12-Sep-2022**	14-Sep-2022	✓	**13-Sep-2022**	14-Sep-2022	✓
AUS_MUR_VC_S31_1_0.5,	AUS_MUR_VC_S31_1_1.0,							
AUS_MUR_VC_S31_2_0.5,	AUS_MUR_VC_S31_2_1.0							
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S32_3_0.5,	AUS_MUR_VC_S32_3_1.0,	**31-Aug-2022**	**12-Sep-2022**	14-Sep-2022	✓	**13-Sep-2022**	14-Sep-2022	✓
AUS_MUR_VC_S31_1_0.5,	AUS_MUR_VC_S31_1_1.0,							
AUS_MUR_VC_S31_2_0.5,	AUS_MUR_VC_S31_2_1.0							
EP080-SD: BTEXN								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S32_3_0.5,	AUS_MUR_VC_S32_3_1.0,	**31-Aug-2022**	**12-Sep-2022**	14-Sep-2022	✓	**13-Sep-2022**	14-Sep-2022	✓
AUS_MUR_VC_S31_1_0.5,	AUS_MUR_VC_S31_1_1.0,							
AUS_MUR_VC_S31_2_0.5,	AUS_MUR_VC_S31_2_1.0							

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
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Moisture Content	EA055	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Fe and Al in Sediments by ICPAES	EG005-SD	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
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Total Fe and Al in Sediments by ICPAES	EG005-SD	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
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Total Metals in Sediments by ICPMS	EG020-SD	SOIL	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. Analyte list and LORs per NODG.
Total Mercury by FIMS (Low Level)	EG035T-LL	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP003	SOIL	In house C-IR17. Dried and pulverised sample is reacted with acid to remove inorganic Carbonates, then combusted in a furnace in the presence of strong oxidants / catalysts. The evolved (Organic) Carbon (as CO2) is automatically measured by infra-red detector.
TPH - Semivolatile Fraction	EP071-SD	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX in Sediments	EP080-SD	SOIL	In house: Referenced to USEPA SW 846 - 8260 Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Dry and Pulverise (up to 100g)	GEO30	SOIL	#
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In house: Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2231584**	Page	: 1 of 5
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022
Site	: ----	Issue Date	: 23-Sep-2022
Sampler	: SEAS OFFSHORE	No. of samples received	: 6
Order number	: ----	No. of samples analysed	: 6

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Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

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

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

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

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
AUS_MUR_VC_S31_3A_0.5AS,	AUS_MUR_VC_S31_3A_1.0AS,	**31-Aug-2022**	**----**	----	----	**14-Sep-2022**	14-Sep-2022	✓
AUS_MUR_VC_S31_3A_0.5BS,	AUS_MUR_VC_S31_3A_1.0BS,							
AUS_MUR_VC_S30B_0.5,	AUS_MUR_VC_S30B_1.0							
EA150: Particle Sizing								
Soil Glass Jar - Unpreserved (EA150H)								
AUS_MUR_VC_S31_3A_0.5AS,	AUS_MUR_VC_S31_3A_1.0AS,	**31-Aug-2022**	**----**	----	----	**14-Sep-2022**	27-Feb-2023	✓
AUS_MUR_VC_S31_3A_0.5BS,	AUS_MUR_VC_S31_3A_1.0BS,							
AUS_MUR_VC_S30B_0.5,	AUS_MUR_VC_S30B_1.0							
EA150: Soil Classification based on Particle Size								
Soil Glass Jar - Unpreserved (EA150H)								
AUS_MUR_VC_S31_3A_0.5AS,	AUS_MUR_VC_S31_3A_1.0AS,	**31-Aug-2022**	**----**	----	----	**14-Sep-2022**	27-Feb-2023	✓
AUS_MUR_VC_S31_3A_0.5BS,	AUS_MUR_VC_S31_3A_1.0BS,							
AUS_MUR_VC_S30B_0.5,	AUS_MUR_VC_S30B_1.0							
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Soil Glass Jar - Unpreserved (EG005-SD)								
AUS_MUR_VC_S31_3A_0.5AS,	AUS_MUR_VC_S31_3A_1.0AS,	**31-Aug-2022**	**14-Sep-2022**	27-Feb-2023	✓	**15-Sep-2022**	27-Feb-2023	✓
AUS_MUR_VC_S31_3A_0.5BS,	AUS_MUR_VC_S31_3A_1.0BS,							
AUS_MUR_VC_S30B_0.5,	AUS_MUR_VC_S30B_1.0							
EG020-SD: Total Metals in Sediments by ICPMS								
Soil Glass Jar - Unpreserved (EG020-SD)								
AUS_MUR_VC_S31_3A_0.5AS,	AUS_MUR_VC_S31_3A_1.0AS,	**31-Aug-2022**	**14-Sep-2022**	27-Feb-2023	✓	**15-Sep-2022**	27-Feb-2023	✓
AUS_MUR_VC_S31_3A_0.5BS,	AUS_MUR_VC_S31_3A_1.0BS,							
AUS_MUR_VC_S30B_0.5,	AUS_MUR_VC_S30B_1.0							
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T-LL)								
AUS_MUR_VC_S31_3A_0.5AS,	AUS_MUR_VC_S31_3A_1.0AS,	**31-Aug-2022**	**14-Sep-2022**	28-Sep-2022	✓	**16-Sep-2022**	28-Sep-2022	✓
AUS_MUR_VC_S31_3A_0.5BS,	AUS_MUR_VC_S31_3A_1.0BS,							
AUS_MUR_VC_S30B_0.5,	AUS_MUR_VC_S30B_1.0							

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP003: Total Organic Carbon (TOC) in Soil								
Soil Glass Jar - Unpreserved (EP003)								
AUS_MUR_VC_S31_3A_0.5AS,	AUS_MUR_VC_S31_3A_1.0AS,	**31-Aug-2022**	**14-Sep-2022**	28-Sep-2022	✓	**14-Sep-2022**	28-Sep-2022	✓
AUS_MUR_VC_S31_3A_0.5BS,	AUS_MUR_VC_S31_3A_1.0BS,							
AUS_MUR_VC_S30B_0.5,	AUS_MUR_VC_S30B_1.0							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S31_3A_0.5AS,	AUS_MUR_VC_S31_3A_1.0AS,	**31-Aug-2022**	**09-Sep-2022**	14-Sep-2022	✓	**10-Sep-2022**	19-Oct-2022	✓
AUS_MUR_VC_S31_3A_0.5BS,	AUS_MUR_VC_S31_3A_1.0BS,							
AUS_MUR_VC_S30B_0.5,	AUS_MUR_VC_S30B_1.0							
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S31_3A_0.5AS,	AUS_MUR_VC_S31_3A_1.0AS,	**31-Aug-2022**	**09-Sep-2022**	14-Sep-2022	✓	**10-Sep-2022**	19-Oct-2022	✓
AUS_MUR_VC_S31_3A_0.5BS,	AUS_MUR_VC_S31_3A_1.0BS,							
AUS_MUR_VC_S30B_0.5,	AUS_MUR_VC_S30B_1.0							
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S31_3A_0.5AS,	AUS_MUR_VC_S31_3A_1.0AS,	**31-Aug-2022**	**12-Sep-2022**	14-Sep-2022	✓	**13-Sep-2022**	14-Sep-2022	✓
AUS_MUR_VC_S31_3A_0.5BS,	AUS_MUR_VC_S31_3A_1.0BS,							
AUS_MUR_VC_S30B_0.5,	AUS_MUR_VC_S30B_1.0							
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S31_3A_0.5AS,	AUS_MUR_VC_S31_3A_1.0AS,	**31-Aug-2022**	**12-Sep-2022**	14-Sep-2022	✓	**13-Sep-2022**	14-Sep-2022	✓
AUS_MUR_VC_S31_3A_0.5BS,	AUS_MUR_VC_S31_3A_1.0BS,							
AUS_MUR_VC_S30B_0.5,	AUS_MUR_VC_S30B_1.0							
EP080-SD: BTEXN								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S31_3A_0.5AS,	AUS_MUR_VC_S31_3A_1.0AS,	**31-Aug-2022**	**12-Sep-2022**	14-Sep-2022	✓	**13-Sep-2022**	14-Sep-2022	✓
AUS_MUR_VC_S31_3A_0.5BS,	AUS_MUR_VC_S31_3A_1.0BS,							
AUS_MUR_VC_S30B_0.5,	AUS_MUR_VC_S30B_1.0							

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Fe and Al in Sediments by ICPAES	EG005-SD	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Fe and Al in Sediments by ICPAES	EG005-SD	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Fe and Al in Sediments by ICPAES	EG005-SD	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS (Low Level)	EG035T-LL	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3
Total Fe and Al in Sediments by ICPAES	EG005-SD	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3). LORs per NODG
Total Metals in Sediments by ICPMS	EG020-SD	SOIL	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. Analyte list and LORs per NODG.
Total Mercury by FIMS (Low Level)	EG035T-LL	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP003	SOIL	In house C-IR17. Dried and pulverised sample is reacted with acid to remove inorganic Carbonates, then combusted in a furnace in the presence of strong oxidants / catalysts. The evolved (Organic) Carbon (as CO2) is automatically measured by infra-red detector.
TPH - Semivolatile Fraction	EP071-SD	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX in Sediments	EP080-SD	SOIL	In house: Referenced to USEPA SW 846 - 8260 Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Dry and Pulverise (up to 100g)	GEO30	SOIL	#
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In house: Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2231585**	Page	: 1 of 6
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022
Site	: ----	Issue Date	: 23-Sep-2022
Sampler	: SEAS OFFSHORE	No. of samples received	: 10
Order number	: ----	No. of samples analysed	: 10

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Regular Sample Surrogates

Sub-Matrix: **SOLID**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP080-SD: TPH(V)/BTEX Surrogates	ES2231585-001	AUS_MUR_VC_S29_0.5	**1.2-Dichloroethane-D4**	17060-07-0	138 %	67.0-137 %	**Recovery greater than upper data quality objective**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

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

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

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

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
AUS_MUR_VC_S29_1.0		**31-Aug-2022**	**----**	----	----	**13-Sep-2022**	14-Sep-2022	✓
Soil Glass Jar - Unpreserved (EA055)								
AUS_MUR_VC_S29_0.5,	AUS_MUR_VC_S28_0.5,	**31-Aug-2022**	**----**	----	----	**14-Sep-2022**	14-Sep-2022	✓
AUS_MUR_VC_S28_1.0,	AUS_MUR_VC_S27_0.5,							
AUS_MUR_VC_S27_1.0,	AUS_MUR_VC_S26B_0.5,							
AUS_MUR_VC_S26B_1.0,	AUS_MUR_VC_S25_0.5,							
AUS_MUR_VC_S25_1.0								
EA150: Particle Sizing								
Soil Glass Jar - Unpreserved (EA150H)								
AUS_MUR_VC_S29_0.5,	AUS_MUR_VC_S29_1.0,	**31-Aug-2022**	**----**	----	----	**15-Sep-2022**	27-Feb-2023	✓
AUS_MUR_VC_S28_0.5,	AUS_MUR_VC_S28_1.0,							
AUS_MUR_VC_S27_0.5,	AUS_MUR_VC_S27_1.0,							
AUS_MUR_VC_S26B_0.5,	AUS_MUR_VC_S26B_1.0,							
AUS_MUR_VC_S25_0.5,	AUS_MUR_VC_S25_1.0							
EA150: Soil Classification based on Particle Size								
Soil Glass Jar - Unpreserved (EA150H)								
AUS_MUR_VC_S29_0.5,	AUS_MUR_VC_S29_1.0,	**31-Aug-2022**	**----**	----	----	**15-Sep-2022**	27-Feb-2023	✓
AUS_MUR_VC_S28_0.5,	AUS_MUR_VC_S28_1.0,							
AUS_MUR_VC_S27_0.5,	AUS_MUR_VC_S27_1.0,							
AUS_MUR_VC_S26B_0.5,	AUS_MUR_VC_S26B_1.0,							
AUS_MUR_VC_S25_0.5,	AUS_MUR_VC_S25_1.0							

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Soil Glass Jar - Unpreserved (EG005-SD)								
AUS_MUR_VC_S29_0.5,	AUS_MUR_VC_S29_1.0,	**31-Aug-2022**	**14-Sep-2022**	27-Feb-2023	✓	**15-Sep-2022**	27-Feb-2023	✓
AUS_MUR_VC_S28_0.5,	AUS_MUR_VC_S28_1.0,							
AUS_MUR_VC_S27_0.5,	AUS_MUR_VC_S27_1.0,							
AUS_MUR_VC_S26B_0.5,	AUS_MUR_VC_S26B_1.0,							
AUS_MUR_VC_S25_0.5,	AUS_MUR_VC_S25_1.0							
EG020-SD: Total Metals in Sediments by ICPMS								
Soil Glass Jar - Unpreserved (EG020-SD)								
AUS_MUR_VC_S29_0.5,	AUS_MUR_VC_S29_1.0,	**31-Aug-2022**	**14-Sep-2022**	27-Feb-2023	✓	**15-Sep-2022**	27-Feb-2023	✓
AUS_MUR_VC_S28_0.5,	AUS_MUR_VC_S28_1.0,							
AUS_MUR_VC_S27_0.5,	AUS_MUR_VC_S27_1.0,							
AUS_MUR_VC_S26B_0.5,	AUS_MUR_VC_S26B_1.0,							
AUS_MUR_VC_S25_0.5,	AUS_MUR_VC_S25_1.0							
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T-LL)								
AUS_MUR_VC_S29_0.5,	AUS_MUR_VC_S29_1.0,	**31-Aug-2022**	**14-Sep-2022**	28-Sep-2022	✓	**16-Sep-2022**	28-Sep-2022	✓
AUS_MUR_VC_S28_0.5,	AUS_MUR_VC_S28_1.0,							
AUS_MUR_VC_S27_0.5,	AUS_MUR_VC_S27_1.0,							
AUS_MUR_VC_S26B_0.5,	AUS_MUR_VC_S26B_1.0,							
AUS_MUR_VC_S25_0.5,	AUS_MUR_VC_S25_1.0							
EP003: Total Organic Carbon (TOC) in Soil								
Soil Glass Jar - Unpreserved (EP003)								
AUS_MUR_VC_S29_0.5,	AUS_MUR_VC_S29_1.0,	**31-Aug-2022**	**14-Sep-2022**	28-Sep-2022	✓	**14-Sep-2022**	28-Sep-2022	✓
AUS_MUR_VC_S28_0.5,	AUS_MUR_VC_S28_1.0,							
AUS_MUR_VC_S27_0.5,	AUS_MUR_VC_S27_1.0,							
AUS_MUR_VC_S26B_0.5,	AUS_MUR_VC_S26B_1.0,							
AUS_MUR_VC_S25_0.5,	AUS_MUR_VC_S25_1.0							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S29_0.5,	AUS_MUR_VC_S29_1.0,	**31-Aug-2022**	**09-Sep-2022**	14-Sep-2022	✓	**10-Sep-2022**	19-Oct-2022	✓
AUS_MUR_VC_S28_0.5,	AUS_MUR_VC_S28_1.0,							
AUS_MUR_VC_S27_0.5,	AUS_MUR_VC_S27_1.0,							
AUS_MUR_VC_S26B_0.5,	AUS_MUR_VC_S26B_1.0,							
AUS_MUR_VC_S25_0.5,	AUS_MUR_VC_S25_1.0							

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071-SD)							
AUS_MUR_VC_S29_0.5, AUS_MUR_VC_S29_1.0, AUS_MUR_VC_S28_0.5, AUS_MUR_VC_S28_1.0, AUS_MUR_VC_S27_0.5, AUS_MUR_VC_S27_1.0, AUS_MUR_VC_S26B_0.5, AUS_MUR_VC_S26B_1.0, AUS_MUR_VC_S25_0.5, AUS_MUR_VC_S25_1.0	**31-Aug-2022**	**09-Sep-2022**	14-Sep-2022	✓	**10-Sep-2022**	19-Oct-2022	✓
Soil Glass Jar - Unpreserved (EP080-SD)							
AUS_MUR_VC_S29_0.5	**31-Aug-2022**	**12-Sep-2022**	14-Sep-2022	✓	**13-Sep-2022**	14-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP080-SD)							
AUS_MUR_VC_S29_1.0, AUS_MUR_VC_S28_0.5, AUS_MUR_VC_S28_1.0, AUS_MUR_VC_S27_0.5, AUS_MUR_VC_S27_1.0, AUS_MUR_VC_S26B_0.5, AUS_MUR_VC_S26B_1.0, AUS_MUR_VC_S25_0.5, AUS_MUR_VC_S25_1.0	**31-Aug-2022**	**13-Sep-2022**	14-Sep-2022	✓	**14-Sep-2022**	14-Sep-2022	✓
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080-SD)							
AUS_MUR_VC_S29_0.5	**31-Aug-2022**	**12-Sep-2022**	14-Sep-2022	✓	**13-Sep-2022**	14-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP080-SD)							
AUS_MUR_VC_S29_1.0, AUS_MUR_VC_S28_0.5, AUS_MUR_VC_S28_1.0, AUS_MUR_VC_S27_0.5, AUS_MUR_VC_S27_1.0, AUS_MUR_VC_S26B_0.5, AUS_MUR_VC_S26B_1.0, AUS_MUR_VC_S25_0.5, AUS_MUR_VC_S25_1.0	**31-Aug-2022**	**13-Sep-2022**	14-Sep-2022	✓	**14-Sep-2022**	14-Sep-2022	✓
EP080-SD: BTEXN							
Soil Glass Jar - Unpreserved (EP080-SD)							
AUS_MUR_VC_S29_0.5	**31-Aug-2022**	**12-Sep-2022**	14-Sep-2022	✓	**13-Sep-2022**	14-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP080-SD)							
AUS_MUR_VC_S29_1.0, AUS_MUR_VC_S28_0.5, AUS_MUR_VC_S28_1.0, AUS_MUR_VC_S27_0.5, AUS_MUR_VC_S27_1.0, AUS_MUR_VC_S26B_0.5, AUS_MUR_VC_S26B_1.0, AUS_MUR_VC_S25_0.5, AUS_MUR_VC_S25_1.0	**31-Aug-2022**	**13-Sep-2022**	14-Sep-2022	✓	**14-Sep-2022**	14-Sep-2022	✓

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	3	25	**12.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Fe and Al in Sediments by ICPAES	EG005-SD	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Fe and Al in Sediments by ICPAES	EG005-SD	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Fe and Al in Sediments by ICPAES	EG005-SD	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS (Low Level)	EG035T-LL	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3
Total Fe and Al in Sediments by ICPAES	EG005-SD	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3). LORs per NODG
Total Metals in Sediments by ICPMS	EG020-SD	SOIL	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. Analyte list and LORs per NODG.
Total Mercury by FIMS (Low Level)	EG035T-LL	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP003	SOIL	In house C-IR17. Dried and pulverised sample is reacted with acid to remove inorganic Carbonates, then combusted in a furnace in the presence of strong oxidants / catalysts. The evolved (Organic) Carbon (as CO2) is automatically measured by infra-red detector.
TPH - Semivolatile Fraction	EP071-SD	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX in Sediments	EP080-SD	SOIL	In house: Referenced to USEPA SW 846 - 8260 Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Dry and Pulverise (up to 100g)	GEO30	SOIL	#
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In house: Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2231586**	Page	: 1 of 6
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022
Site	: ----	Issue Date	: 29-Sep-2022
Sampler	: SEAS OFFSHORE	No. of samples received	: 11
Order number	: ----	No. of samples analysed	: 10

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

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

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

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

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
AUS_MUR_VC_S24_1.0	**31-Aug-2022**	**----**	----	----	**13-Sep-2022**	14-Sep-2022	✓
Soil Glass Jar - Unpreserved (EA055)							
AUS_MUR_VC_S24_0.5, AUS_MUR_VC_S23_0.5A, AUS_MUR_VC_S23_1.0A, AUS_MUR_VC_S23_0.5B, AUS_MUR_VC_S23_1.0B, AUS_MUR_VC_S22_0.5A, AUS_MUR_VC_S22_1.0A, AUS_MUR_VC_S22_0.5B, AUS_MUR_VC_S22_1.0B	**31-Aug-2022**	**----**	----	----	**14-Sep-2022**	14-Sep-2022	✓
EA150: Particle Sizing							
Soil Glass Jar - Unpreserved (EA150H)							
AUS_MUR_VC_S24_0.5, AUS_MUR_VC_S24_1.0, AUS_MUR_VC_S23_0.5A, AUS_MUR_VC_S23_1.0A, AUS_MUR_VC_S23_0.5B, AUS_MUR_VC_S23_1.0B, AUS_MUR_VC_S22_0.5A, AUS_MUR_VC_S22_1.0A, AUS_MUR_VC_S22_0.5B, AUS_MUR_VC_S22_1.0B	**31-Aug-2022**	**----**	----	----	**15-Sep-2022**	27-Feb-2023	✓
EA150: Soil Classification based on Particle Size							
Soil Glass Jar - Unpreserved (EA150H)							
AUS_MUR_VC_S24_0.5, AUS_MUR_VC_S24_1.0, AUS_MUR_VC_S23_0.5A, AUS_MUR_VC_S23_1.0A, AUS_MUR_VC_S23_0.5B, AUS_MUR_VC_S23_1.0B, AUS_MUR_VC_S22_0.5A, AUS_MUR_VC_S22_1.0A, AUS_MUR_VC_S22_0.5B, AUS_MUR_VC_S22_1.0B	**31-Aug-2022**	**----**	----	----	**15-Sep-2022**	27-Feb-2023	✓
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES							
Soil Glass Jar - Unpreserved (EG005-SD)							
AUS_MUR_VC_S24_0.5, AUS_MUR_VC_S24_1.0, AUS_MUR_VC_S23_0.5A, AUS_MUR_VC_S23_1.0A, AUS_MUR_VC_S23_0.5B, AUS_MUR_VC_S23_1.0B, AUS_MUR_VC_S22_0.5A, AUS_MUR_VC_S22_1.0A, AUS_MUR_VC_S22_0.5B, AUS_MUR_VC_S22_1.0B	**31-Aug-2022**	**14-Sep-2022**	27-Feb-2023	✓	**15-Sep-2022**	27-Feb-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020-SD: Total Metals in Sediments by ICPMS								
Soil Glass Jar - Unpreserved (EG020-SD)								
AUS_MUR_VC_S24_0.5,	AUS_MUR_VC_S24_1.0,	**31-Aug-2022**	**14-Sep-2022**	27-Feb-2023	✓	**15-Sep-2022**	27-Feb-2023	✓
AUS_MUR_VC_S23_0.5A,	AUS_MUR_VC_S23_1.0A,							
AUS_MUR_VC_S23_0.5B,	AUS_MUR_VC_S23_1.0B,							
AUS_MUR_VC_S22_0.5A,	AUS_MUR_VC_S22_1.0A,							
AUS_MUR_VC_S22_0.5B,	AUS_MUR_VC_S22_1.0B							
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T-LL)								
AUS_MUR_VC_S24_0.5,	AUS_MUR_VC_S24_1.0,	**31-Aug-2022**	**14-Sep-2022**	28-Sep-2022	✓	**16-Sep-2022**	28-Sep-2022	✓
AUS_MUR_VC_S23_0.5A,	AUS_MUR_VC_S23_1.0A,							
AUS_MUR_VC_S23_0.5B,	AUS_MUR_VC_S23_1.0B,							
AUS_MUR_VC_S22_0.5A,	AUS_MUR_VC_S22_1.0A,							
AUS_MUR_VC_S22_0.5B,	AUS_MUR_VC_S22_1.0B							
EP003: Total Organic Carbon (TOC) in Soil								
Soil Glass Jar - Unpreserved (EP003)								
AUS_MUR_VC_S24_0.5,	AUS_MUR_VC_S24_1.0,	**31-Aug-2022**	**14-Sep-2022**	28-Sep-2022	✓	**14-Sep-2022**	28-Sep-2022	✓
AUS_MUR_VC_S23_0.5A,	AUS_MUR_VC_S23_1.0A,							
AUS_MUR_VC_S23_0.5B,	AUS_MUR_VC_S23_1.0B,							
AUS_MUR_VC_S22_0.5A,	AUS_MUR_VC_S22_1.0A,							
AUS_MUR_VC_S22_0.5B,	AUS_MUR_VC_S22_1.0B							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S24_0.5,	AUS_MUR_VC_S24_1.0,	**31-Aug-2022**	**09-Sep-2022**	14-Sep-2022	✓	**10-Sep-2022**	19-Oct-2022	✓
AUS_MUR_VC_S23_0.5A,	AUS_MUR_VC_S23_1.0A,							
AUS_MUR_VC_S23_0.5B,	AUS_MUR_VC_S23_1.0B,							
AUS_MUR_VC_S22_0.5A,	AUS_MUR_VC_S22_1.0A,							
AUS_MUR_VC_S22_0.5B								
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S22_1.0B		**31-Aug-2022**	**09-Sep-2022**	14-Sep-2022	✓	**14-Sep-2022**	19-Oct-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S24_0.5,	AUS_MUR_VC_S24_1.0,	**31-Aug-2022**	**09-Sep-2022**	14-Sep-2022	✓	**10-Sep-2022**	19-Oct-2022	✓
AUS_MUR_VC_S23_0.5A,	AUS_MUR_VC_S23_1.0A,							
AUS_MUR_VC_S23_0.5B,	AUS_MUR_VC_S23_1.0B,							
AUS_MUR_VC_S22_0.5A,	AUS_MUR_VC_S22_1.0A,							
AUS_MUR_VC_S22_0.5B								
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S22_1.0B		**31-Aug-2022**	**09-Sep-2022**	14-Sep-2022	✓	**14-Sep-2022**	19-Oct-2022	✓
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S24_0.5,	AUS_MUR_VC_S24_1.0,	**31-Aug-2022**	**13-Sep-2022**	14-Sep-2022	✓	**14-Sep-2022**	14-Sep-2022	✓
AUS_MUR_VC_S23_0.5A,	AUS_MUR_VC_S23_1.0A,							
AUS_MUR_VC_S23_0.5B,	AUS_MUR_VC_S23_1.0B,							
AUS_MUR_VC_S22_0.5A,	AUS_MUR_VC_S22_1.0A,							
AUS_MUR_VC_S22_0.5B,	AUS_MUR_VC_S22_1.0B							
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S24_0.5,	AUS_MUR_VC_S24_1.0,	**31-Aug-2022**	**13-Sep-2022**	14-Sep-2022	✓	**14-Sep-2022**	14-Sep-2022	✓
AUS_MUR_VC_S23_0.5A,	AUS_MUR_VC_S23_1.0A,							
AUS_MUR_VC_S23_0.5B,	AUS_MUR_VC_S23_1.0B,							
AUS_MUR_VC_S22_0.5A,	AUS_MUR_VC_S22_1.0A,							
AUS_MUR_VC_S22_0.5B,	AUS_MUR_VC_S22_1.0B							
EP080-SD: BTEXN								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S24_0.5,	AUS_MUR_VC_S24_1.0,	**31-Aug-2022**	**13-Sep-2022**	14-Sep-2022	✓	**14-Sep-2022**	14-Sep-2022	✓
AUS_MUR_VC_S23_0.5A,	AUS_MUR_VC_S23_1.0A,							
AUS_MUR_VC_S23_0.5B,	AUS_MUR_VC_S23_1.0B,							
AUS_MUR_VC_S22_0.5A,	AUS_MUR_VC_S22_1.0A,							
AUS_MUR_VC_S22_0.5B,	AUS_MUR_VC_S22_1.0B							

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	5	42	**11.90**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Fe and Al in Sediments by ICPAES	EG005-SD	4	34	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	4	34	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	4	34	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	4	30	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	4	37	**10.81**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Fe and Al in Sediments by ICPAES	EG005-SD	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	4	30	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Fe and Al in Sediments by ICPAES	EG005-SD	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS (Low Level)	EG035T-LL	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3
Total Fe and Al in Sediments by ICPAES	EG005-SD	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3). LORs per NODG
Total Metals in Sediments by ICPMS	EG020-SD	SOIL	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. Analyte list and LORs per NODG.
Total Mercury by FIMS (Low Level)	EG035T-LL	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP003	SOIL	In house C-IR17. Dried and pulverised sample is reacted with acid to remove inorganic Carbonates, then combusted in a furnace in the presence of strong oxidants / catalysts. The evolved (Organic) Carbon (as CO2) is automatically measured by infra-red detector.
TPH - Semivolatile Fraction	EP071-SD	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX in Sediments	EP080-SD	SOIL	In house: Referenced to USEPA SW 846 - 8260 Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Dry and Pulverise (up to 100g)	GEO30	SOIL	#
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In house: Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2231587**	Page	: 1 of 9
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022
Site	: ----	Issue Date	: 23-Sep-2022
Sampler	: SEAS OFFSHORE	No. of samples received	: 13
Order number	: ----	No. of samples analysed	: 9

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Regular Sample Surrogates

Sub-Matrix: **SOLID**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-001	AUS_MUR_VC_S21_0.5	**1.2-Dichloroethane-D4**	17060-07-0	33.4 %	67.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-002	AUS_MUR_VC_S21_1.0	**1.2-Dichloroethane-D4**	17060-07-0	47.1 %	67.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-006	AUS_MUR_VC_S19_0.5	**1.2-Dichloroethane-D4**	17060-07-0	16.8 %	67.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-010	AUS_MUR_VC_S18_2A_0.5	**1.2-Dichloroethane-D4**	17060-07-0	65.6 %	67.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-011	AUS_MUR_VC_S18_2A_1.0	**1.2-Dichloroethane-D4**	17060-07-0	54.5 %	67.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-001	AUS_MUR_VC_S21_0.5	**Toluene-D8**	2037-26-5	29.2 %	74.0-134 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-002	AUS_MUR_VC_S21_1.0	**Toluene-D8**	2037-26-5	41.8 %	74.0-134 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-006	AUS_MUR_VC_S19_0.5	**Toluene-D8**	2037-26-5	16.2 %	74.0-134 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-008	AUS_MUR_VC_S18_1_0.5	**Toluene-D8**	2037-26-5	61.5 %	74.0-134 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-010	AUS_MUR_VC_S18_2A_0.5	**Toluene-D8**	2037-26-5	56.0 %	74.0-134 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-011	AUS_MUR_VC_S18_2A_1.0	**Toluene-D8**	2037-26-5	46.7 %	74.0-134 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-001	AUS_MUR_VC_S21_0.5	**4-Bromofluorobenzene**	460-00-4	31.2 %	73.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-002	AUS_MUR_VC_S21_1.0	**4-Bromofluorobenzene**	460-00-4	43.2 %	73.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-006	AUS_MUR_VC_S19_0.5	**4-Bromofluorobenzene**	460-00-4	16.8 %	73.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-008	AUS_MUR_VC_S18_1_0.5	**4-Bromofluorobenzene**	460-00-4	69.1 %	73.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-010	AUS_MUR_VC_S18_2A_0.5	**4-Bromofluorobenzene**	460-00-4	70.3 %	73.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231587-011	AUS_MUR_VC_S18_2A_1.0	**4-Bromofluorobenzene**	460-00-4	51.2 %	73.0-137 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	*Extraction / Preparation*			*Analysis*		
Container / Client Sample ID(s)	*Date extracted*	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EP005: Total Organic Carbon (TOC)						
Clear Plastic Bottle - Natural						
AUS_MUR_RIN-3	----	----	----	07-Sep-2022	01-Sep-2022	**6**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

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

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

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

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
AUS_MUR_VC_S18_1_0.5, AUS_MUR_VC_S18_1_1.0, AUS_MUR_VC_S18_2A_0.5, AUS_MUR_VC_S18_2A_1.0	**01-Sep-2022**	**----**	----	----	**14-Sep-2022**	15-Sep-2022	✓
Soil Glass Jar - Unpreserved (EA055)							
AUS_MUR_VC_S21_0.5	**31-Aug-2022**	**----**	----	----	**13-Sep-2022**	14-Sep-2022	✓
Soil Glass Jar - Unpreserved (EA055)							
AUS_MUR_VC_S21_1.0, AUS_MUR_VC_S19_0.5, AUS_MUR_VC_S19_1.0	**31-Aug-2022**	**----**	----	----	**14-Sep-2022**	14-Sep-2022	✓
EA150: Particle Sizing							
Soil Glass Jar - Unpreserved (EA150H)							
AUS_MUR_VC_S18_1_0.5, AUS_MUR_VC_S18_1_1.0, AUS_MUR_VC_S18_2A_0.5, AUS_MUR_VC_S18_2A_1.0	**01-Sep-2022**	**----**	----	----	**15-Sep-2022**	28-Feb-2023	✓
Soil Glass Jar - Unpreserved (EA150H)							
AUS_MUR_VC_S21_0.5, AUS_MUR_VC_S21_1.0, AUS_MUR_VC_S19_0.5, AUS_MUR_VC_S19_1.0	**31-Aug-2022**	**----**	----	----	**15-Sep-2022**	28-Feb-2023	✓
EA150: Soil Classification based on Particle Size							
Soil Glass Jar - Unpreserved (EA150H)							
AUS_MUR_VC_S18_1_0.5, AUS_MUR_VC_S18_1_1.0, AUS_MUR_VC_S18_2A_0.5, AUS_MUR_VC_S18_2A_1.0	**01-Sep-2022**	**----**	----	----	**15-Sep-2022**	28-Feb-2023	✓
Soil Glass Jar - Unpreserved (EA150H)							
AUS_MUR_VC_S21_0.5, AUS_MUR_VC_S21_1.0, AUS_MUR_VC_S19_0.5, AUS_MUR_VC_S19_1.0	**31-Aug-2022**	**----**	----	----	**15-Sep-2022**	28-Feb-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Soil Glass Jar - Unpreserved (EG005-SD)								
AUS_MUR_VC_S18_1_0.5,	AUS_MUR_VC_S18_1_1.0,	**01-Sep-2022**	**14-Sep-2022**	28-Feb-2023	✓	**15-Sep-2022**	28-Feb-2023	✓
AUS_MUR_VC_S18_2A_0.5,	AUS_MUR_VC_S18_2A_1.0							
Soil Glass Jar - Unpreserved (EG005-SD)								
AUS_MUR_VC_S21_0.5,	AUS_MUR_VC_S21_1.0,	**31-Aug-2022**	**14-Sep-2022**	28-Feb-2023	✓	**15-Sep-2022**	28-Feb-2023	✓
AUS_MUR_VC_S19_0.5,	AUS_MUR_VC_S19_1.0							
EG020-SD: Total Metals in Sediments by ICPMS								
Soil Glass Jar - Unpreserved (EG020-SD)								
AUS_MUR_VC_S18_1_0.5,	AUS_MUR_VC_S18_1_1.0,	**01-Sep-2022**	**14-Sep-2022**	28-Feb-2023	✓	**15-Sep-2022**	28-Feb-2023	✓
AUS_MUR_VC_S18_2A_0.5,	AUS_MUR_VC_S18_2A_1.0							
Soil Glass Jar - Unpreserved (EG020-SD)								
AUS_MUR_VC_S21_0.5,	AUS_MUR_VC_S21_1.0,	**31-Aug-2022**	**14-Sep-2022**	28-Feb-2023	✓	**15-Sep-2022**	28-Feb-2023	✓
AUS_MUR_VC_S19_0.5,	AUS_MUR_VC_S19_1.0							
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T-LL)								
AUS_MUR_VC_S18_1_0.5,	AUS_MUR_VC_S18_1_1.0,	**01-Sep-2022**	**14-Sep-2022**	29-Sep-2022	✓	**16-Sep-2022**	29-Sep-2022	✓
AUS_MUR_VC_S18_2A_0.5,	AUS_MUR_VC_S18_2A_1.0							
Soil Glass Jar - Unpreserved (EG035T-LL)								
AUS_MUR_VC_S21_0.5,	AUS_MUR_VC_S21_1.0,	**31-Aug-2022**	**14-Sep-2022**	28-Sep-2022	✓	**16-Sep-2022**	28-Sep-2022	✓
AUS_MUR_VC_S19_0.5,	AUS_MUR_VC_S19_1.0							
EP003: Total Organic Carbon (TOC) in Soil								
Soil Glass Jar - Unpreserved (EP003)								
AUS_MUR_VC_S18_1_0.5,	AUS_MUR_VC_S18_1_1.0,	**01-Sep-2022**	**14-Sep-2022**	29-Sep-2022	✓	**14-Sep-2022**	29-Sep-2022	✓
AUS_MUR_VC_S18_2A_0.5,	AUS_MUR_VC_S18_2A_1.0							
Soil Glass Jar - Unpreserved (EP003)								
AUS_MUR_VC_S21_0.5,	AUS_MUR_VC_S21_1.0,	**31-Aug-2022**	**14-Sep-2022**	28-Sep-2022	✓	**14-Sep-2022**	28-Sep-2022	✓
AUS_MUR_VC_S19_0.5,	AUS_MUR_VC_S19_1.0							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S18_1_0.5,	AUS_MUR_VC_S18_1_1.0,	**01-Sep-2022**	**09-Sep-2022**	15-Sep-2022	✓	**14-Sep-2022**	19-Oct-2022	✓
AUS_MUR_VC_S18_2A_0.5,	AUS_MUR_VC_S18_2A_1.0							
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S21_1.0		**31-Aug-2022**	**09-Sep-2022**	14-Sep-2022	✓	**10-Sep-2022**	19-Oct-2022	✓
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S21_0.5,	AUS_MUR_VC_S19_0.5,	**31-Aug-2022**	**09-Sep-2022**	14-Sep-2022	✓	**14-Sep-2022**	19-Oct-2022	✓
AUS_MUR_VC_S19_1.0								

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S18_1_0.5,	AUS_MUR_VC_S18_1_1.0,	**01-Sep-2022**	**09-Sep-2022**	15-Sep-2022	✓	**14-Sep-2022**	19-Oct-2022	✓
AUS_MUR_VC_S18_2A_0.5,	AUS_MUR_VC_S18_2A_1.0							
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S18_1_0.5,	AUS_MUR_VC_S18_1_1.0,	**01-Sep-2022**	**13-Sep-2022**	15-Sep-2022	✓	**14-Sep-2022**	15-Sep-2022	✓
AUS_MUR_VC_S18_2A_0.5,	AUS_MUR_VC_S18_2A_1.0							
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S21_1.0		**31-Aug-2022**	**09-Sep-2022**	14-Sep-2022	✓	**10-Sep-2022**	19-Oct-2022	✓
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S21_0.5,	AUS_MUR_VC_S19_0.5,	**31-Aug-2022**	**09-Sep-2022**	14-Sep-2022	✓	**14-Sep-2022**	19-Oct-2022	✓
AUS_MUR_VC_S19_1.0								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S21_0.5,	AUS_MUR_VC_S21_1.0,	**31-Aug-2022**	**13-Sep-2022**	14-Sep-2022	✓	**14-Sep-2022**	14-Sep-2022	✓
AUS_MUR_VC_S19_0.5,	AUS_MUR_VC_S19_1.0							
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S18_1_0.5,	AUS_MUR_VC_S18_1_1.0,	**01-Sep-2022**	**13-Sep-2022**	15-Sep-2022	✓	**14-Sep-2022**	15-Sep-2022	✓
AUS_MUR_VC_S18_2A_0.5,	AUS_MUR_VC_S18_2A_1.0							
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S21_0.5,	AUS_MUR_VC_S21_1.0,	**31-Aug-2022**	**13-Sep-2022**	14-Sep-2022	✓	**14-Sep-2022**	14-Sep-2022	✓
AUS_MUR_VC_S19_0.5,	AUS_MUR_VC_S19_1.0							
EP080-SD: BTEXN								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S18_1_0.5,	AUS_MUR_VC_S18_1_1.0,	**01-Sep-2022**	**13-Sep-2022**	15-Sep-2022	✓	**14-Sep-2022**	15-Sep-2022	✓
AUS_MUR_VC_S18_2A_0.5,	AUS_MUR_VC_S18_2A_1.0							
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S21_0.5,	AUS_MUR_VC_S21_1.0,	**31-Aug-2022**	**13-Sep-2022**	14-Sep-2022	✓	**14-Sep-2022**	14-Sep-2022	✓
AUS_MUR_VC_S19_0.5,	AUS_MUR_VC_S19_1.0							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA150: Particle Sizing							
Clear Plastic Bottle - Natural (EA154)							
AUS_MUR_RIN-3	**31-Aug-2022**	**----**	----	----	**08-Sep-2022**	27-Feb-2023	✓
EP005: Total Organic Carbon (TOC)							
Clear Plastic Bottle - Natural (EP005)							
AUS_MUR_RIN-3	**31-Aug-2022**	**----**	----	----	**07-Sep-2022**	01-Sep-2022	×

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	3	23	13.04	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fe and Al in Sediments by ICPAES	EG005-SD	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	3	27	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	4	38	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Fe and Al in Sediments by ICPAES	EG005-SD	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	4	27	14.81	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	38	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Fe and Al in Sediments by ICPAES	EG005-SD	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	2	27	7.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	38	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS (Low Level)	EG035T-LL	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	38	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Total Organic Carbon	EP005	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Organic Carbon	EP005	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Organic Carbon	EP005	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS)							
Total Organic Carbon	EP005	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3
Total Fe and Al in Sediments by ICPAES	EG005-SD	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3). LORs per NODG
Total Metals in Sediments by ICPMS	EG020-SD	SOIL	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. Analyte list and LORs per NODG.
Total Mercury by FIMS (Low Level)	EG035T-LL	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP003	SOIL	In house C-IR17. Dried and pulverised sample is reacted with acid to remove inorganic Carbonates, then combusted in a furnace in the presence of strong oxidants / catalysts. The evolved (Organic) Carbon (as CO2) is automatically measured by infra-red detector.
TPH - Semivolatile Fraction	EP071-SD	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX in Sediments	EP080-SD	SOIL	In house: Referenced to USEPA SW 846 - 8260 Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.
Particle Sizing in Water by Laser Diffraction Analysis	* EA154	WATER	Particle Size Analysis of Particulates in Water by Laser Diffraction Analysis according to APHA Method 2560D
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Dry and Pulverise (up to 100g)	GEO30	SOIL	#
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.

Preparation Methods	Method	Matrix	Method Descriptions
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In house: Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals - ORC	EN25-ORC	WATER	In house: Referenced to USEPA SW846-3005. This is an Ultrapure Nitric acid digestion procedure used to prepare surface and ground water samples for analysis by ORC- ICPMS. This method is compliant with NEPM Schedule B(3)

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2231588**	Page	: 1 of 6
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022
Site	: ----	Issue Date	: 23-Sep-2022
Sampler	: SEAS OFFSHORE	No. of samples received	: 10
Order number	: ----	No. of samples analysed	: 10

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Regular Sample Surrogates

Sub-Matrix: **SOLID**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP080-SD: TPH(V)/BTEX Surrogates	ES2231588-002	AUS_MUR_VC_S18_3_1.0	**1.2-Dichloroethane-D4**	17060-07-0	63.5 %	67.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231588-010	AUS_MUR_VC_S14_1.0	**1.2-Dichloroethane-D4**	17060-07-0	60.7 %	67.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231588-002	AUS_MUR_VC_S18_3_1.0	**Toluene-D8**	2037-26-5	54.9 %	74.0-134 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231588-006	AUS_MUR_VC_S16_1.0	**Toluene-D8**	2037-26-5	70.8 %	74.0-134 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231588-010	AUS_MUR_VC_S14_1.0	**Toluene-D8**	2037-26-5	50.0 %	74.0-134 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231588-002	AUS_MUR_VC_S18_3_1.0	**4-Bromofluorobenzene**	460-00-4	63.7 %	73.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231588-010	AUS_MUR_VC_S14_1.0	**4-Bromofluorobenzene**	460-00-4	70.9 %	73.0-137 %	**Recovery less than lower data quality objective**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

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

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

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

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	Due for extraction	Evaluation	*Date analysed*	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
AUS_MUR_VC_S17A_0.5	**01-Sep-2022**	**----**	----	----	**13-Sep-2022**	15-Sep-2022	✓
Soil Glass Jar - Unpreserved (EA055)							
AUS_MUR_VC_S18_3_0.5, AUS_MUR_VC_S18_3_1.0, AUS_MUR_VC_S17A_1.0, AUS_MUR_VC_S16_0.5, AUS_MUR_VC_S16_1.0, AUS_MUR_VC_S15_0.5, AUS_MUR_VC_S15_1.0, AUS_MUR_VC_S14_0.5, AUS_MUR_VC_S14_1.0	**01-Sep-2022**	**----**	----	----	**14-Sep-2022**	15-Sep-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA150: Particle Sizing								
Soil Glass Jar - Unpreserved (EA150H)								
AUS_MUR_VC_S18_3_0.5,	AUS_MUR_VC_S18_3_1.0,	**01-Sep-2022**	**----**	----	----	**15-Sep-2022**	28-Feb-2023	✓
AUS_MUR_VC_S17A_0.5,	AUS_MUR_VC_S17A_1.0,							
AUS_MUR_VC_S16_0.5,	AUS_MUR_VC_S16_1.0,							
AUS_MUR_VC_S15_0.5,	AUS_MUR_VC_S15_1.0,							
AUS_MUR_VC_S14_0.5,	AUS_MUR_VC_S14_1.0							
EA150: Soil Classification based on Particle Size								
Soil Glass Jar - Unpreserved (EA150H)								
AUS_MUR_VC_S18_3_0.5,	AUS_MUR_VC_S18_3_1.0,	**01-Sep-2022**	**----**	----	----	**15-Sep-2022**	28-Feb-2023	✓
AUS_MUR_VC_S17A_0.5,	AUS_MUR_VC_S17A_1.0,							
AUS_MUR_VC_S16_0.5,	AUS_MUR_VC_S16_1.0,							
AUS_MUR_VC_S15_0.5,	AUS_MUR_VC_S15_1.0,							
AUS_MUR_VC_S14_0.5,	AUS_MUR_VC_S14_1.0							
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Soil Glass Jar - Unpreserved (EG005-SD)								
AUS_MUR_VC_S18_3_0.5,	AUS_MUR_VC_S18_3_1.0,	**01-Sep-2022**	**15-Sep-2022**	28-Feb-2023	✓	**15-Sep-2022**	28-Feb-2023	✓
AUS_MUR_VC_S17A_0.5,	AUS_MUR_VC_S17A_1.0,							
AUS_MUR_VC_S16_0.5,	AUS_MUR_VC_S16_1.0,							
AUS_MUR_VC_S15_0.5,	AUS_MUR_VC_S15_1.0,							
AUS_MUR_VC_S14_0.5,	AUS_MUR_VC_S14_1.0							
EG020-SD: Total Metals in Sediments by ICPMS								
Soil Glass Jar - Unpreserved (EG020-SD)								
AUS_MUR_VC_S18_3_0.5,	AUS_MUR_VC_S18_3_1.0,	**01-Sep-2022**	**15-Sep-2022**	28-Feb-2023	✓	**15-Sep-2022**	28-Feb-2023	✓
AUS_MUR_VC_S17A_0.5,	AUS_MUR_VC_S17A_1.0,							
AUS_MUR_VC_S16_0.5,	AUS_MUR_VC_S16_1.0,							
AUS_MUR_VC_S15_0.5,	AUS_MUR_VC_S15_1.0,							
AUS_MUR_VC_S14_0.5,	AUS_MUR_VC_S14_1.0							
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T-LL)								
AUS_MUR_VC_S18_3_0.5,	AUS_MUR_VC_S18_3_1.0,	**01-Sep-2022**	**15-Sep-2022**	29-Sep-2022	✓	**16-Sep-2022**	29-Sep-2022	✓
AUS_MUR_VC_S17A_0.5,	AUS_MUR_VC_S17A_1.0,							
AUS_MUR_VC_S16_0.5,	AUS_MUR_VC_S16_1.0,							
AUS_MUR_VC_S15_0.5,	AUS_MUR_VC_S15_1.0,							
AUS_MUR_VC_S14_0.5,	AUS_MUR_VC_S14_1.0							
EP003: Total Organic Carbon (TOC) in Soil								
Soil Glass Jar - Unpreserved (EP003)								
AUS_MUR_VC_S18_3_0.5,	AUS_MUR_VC_S18_3_1.0,	**01-Sep-2022**	**14-Sep-2022**	29-Sep-2022	✓	**14-Sep-2022**	29-Sep-2022	✓
AUS_MUR_VC_S17A_0.5,	AUS_MUR_VC_S17A_1.0,							
AUS_MUR_VC_S16_0.5,	AUS_MUR_VC_S16_1.0,							
AUS_MUR_VC_S15_0.5,	AUS_MUR_VC_S15_1.0,							
AUS_MUR_VC_S14_0.5,	AUS_MUR_VC_S14_1.0							

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S18_3_0.5,	AUS_MUR_VC_S18_3_1.0,	**01-Sep-2022**	**09-Sep-2022**	15-Sep-2022	✓	**14-Sep-2022**	19-Oct-2022	✓
AUS_MUR_VC_S17A_0.5,	AUS_MUR_VC_S17A_1.0,							
AUS_MUR_VC_S16_0.5,	AUS_MUR_VC_S16_1.0,							
AUS_MUR_VC_S15_0.5,	AUS_MUR_VC_S15_1.0,							
AUS_MUR_VC_S14_0.5,	AUS_MUR_VC_S14_1.0							
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_VC_S18_3_0.5,	AUS_MUR_VC_S18_3_1.0,	**01-Sep-2022**	**09-Sep-2022**	15-Sep-2022	✓	**14-Sep-2022**	19-Oct-2022	✓
AUS_MUR_VC_S17A_0.5,	AUS_MUR_VC_S17A_1.0,							
AUS_MUR_VC_S16_0.5,	AUS_MUR_VC_S16_1.0,							
AUS_MUR_VC_S15_0.5,	AUS_MUR_VC_S15_1.0,							
AUS_MUR_VC_S14_0.5,	AUS_MUR_VC_S14_1.0							
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S18_3_0.5,	AUS_MUR_VC_S18_3_1.0,	**01-Sep-2022**	**13-Sep-2022**	15-Sep-2022	✓	**14-Sep-2022**	15-Sep-2022	✓
AUS_MUR_VC_S17A_0.5,	AUS_MUR_VC_S17A_1.0,							
AUS_MUR_VC_S16_0.5,	AUS_MUR_VC_S16_1.0,							
AUS_MUR_VC_S15_0.5,	AUS_MUR_VC_S15_1.0,							
AUS_MUR_VC_S14_0.5,	AUS_MUR_VC_S14_1.0							
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S18_3_0.5,	AUS_MUR_VC_S18_3_1.0,	**01-Sep-2022**	**13-Sep-2022**	15-Sep-2022	✓	**14-Sep-2022**	15-Sep-2022	✓
AUS_MUR_VC_S17A_0.5,	AUS_MUR_VC_S17A_1.0,							
AUS_MUR_VC_S16_0.5,	AUS_MUR_VC_S16_1.0,							
AUS_MUR_VC_S15_0.5,	AUS_MUR_VC_S15_1.0,							
AUS_MUR_VC_S14_0.5,	AUS_MUR_VC_S14_1.0							
EP080-SD: BTEXN								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_VC_S18_3_0.5,	AUS_MUR_VC_S18_3_1.0,	**01-Sep-2022**	**13-Sep-2022**	15-Sep-2022	✓	**14-Sep-2022**	15-Sep-2022	✓
AUS_MUR_VC_S17A_0.5,	AUS_MUR_VC_S17A_1.0,							
AUS_MUR_VC_S16_0.5,	AUS_MUR_VC_S16_1.0,							
AUS_MUR_VC_S15_0.5,	AUS_MUR_VC_S15_1.0,							
AUS_MUR_VC_S14_0.5,	AUS_MUR_VC_S14_1.0							

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	3	26	**11.54**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Fe and Al in Sediments by ICPAES	EG005-SD	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Fe and Al in Sediments by ICPAES	EG005-SD	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Fe and Al in Sediments by ICPAES	EG005-SD	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS (Low Level)	EG035T-LL	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3
Total Fe and Al in Sediments by ICPAES	EG005-SD	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3). LORs per NODG
Total Metals in Sediments by ICPMS	EG020-SD	SOIL	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. Analyte list and LORs per NODG.
Total Mercury by FIMS (Low Level)	EG035T-LL	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP003	SOIL	In house C-IR17. Dried and pulverised sample is reacted with acid to remove inorganic Carbonates, then combusted in a furnace in the presence of strong oxidants / catalysts. The evolved (Organic) Carbon (as CO2) is automatically measured by infra-red detector.
TPH - Semivolatile Fraction	EP071-SD	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX in Sediments	EP080-SD	SOIL	In house: Referenced to USEPA SW 846 - 8260 Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Dry and Pulverise (up to 100g)	GEO30	SOIL	#
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In house: Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2231627**	Page	: 1 of 14
Client	: **Guardian Geomatics Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BEN HAZRATI	Telephone	: +61-2-8784 8555
Project	: SUN Cable Murrumujuk	Date Samples Received	: 06-Sep-2022
Site	: ----	Issue Date	: 29-Sep-2022
Sampler	: SEAS OFFSHORE	No. of samples received	: 42
Order number	: ----	No. of samples analysed	: 41

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Regular Sample Surrogates

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP080-SD: TPH(V)/BTEX Surrogates	ES2231627-001	AUS_MUR_GB_A1_4	**1.2-Dichloroethane-D4**	17060-07-0	42.4 %	67.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231627-028	AUS_MUR_GB_D3_4	**1.2-Dichloroethane-D4**	17060-07-0	39.0 %	67.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231627-026	AUS_MUR_GB_D2_4_AS	**1.2-Dichloroethane-D4**	17060-07-0	52.3 %	67.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231627-001	AUS_MUR_GB_A1_4	**Toluene-D8**	2037-26-5	37.1 %	74.0-134 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231627-028	AUS_MUR_GB_D3_4	**Toluene-D8**	2037-26-5	32.2 %	74.0-134 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231627-002	AUS_MUR_GB_A2_4	**Toluene-D8**	2037-26-5	65.2 %	74.0-134 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231627-029	AUS_MUR_GB_D4_4	**Toluene-D8**	2037-26-5	65.2 %	74.0-134 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231627-008	AUS_MUR_GB_B2_4_AS	**Toluene-D8**	2037-26-5	72.2 %	74.0-134 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231627-026	AUS_MUR_GB_D2_4_AS	**Toluene-D8**	2037-26-5	42.1 %	74.0-134 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231627-001	AUS_MUR_GB_A1_4	**4-Bromofluorobenzene**	460-00-4	43.2 %	73.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231627-028	AUS_MUR_GB_D3_4	**4-Bromofluorobenzene**	460-00-4	36.8 %	73.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231627-002	AUS_MUR_GB_A2_4	**4-Bromofluorobenzene**	460-00-4	71.6 %	73.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231627-029	AUS_MUR_GB_D4_4	**4-Bromofluorobenzene**	460-00-4	72.2 %	73.0-137 %	**Recovery less than lower data quality objective**
EP080-SD: TPH(V)/BTEX Surrogates	ES2231627-026	AUS_MUR_GB_D2_4_AS	**4-Bromofluorobenzene**	460-00-4	48.2 %	73.0-137 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved							
AUS_MUR_GS_S21_4,	AUS_MUR_GS_S30_4,	----	----	----	20-Sep-2022	15-Sep-2022	**5**
AUS_MUR_GS_S31_4,	AUS_MUR_GS_S32_4,						
AUS_MUR_GS_S34_4							

Matrix: **WATER**

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EP005: Total Organic Carbon (TOC)						
Clear Plastic Bottle - Natural						
AUS_MUR_RIN_4	----	----	----	16-Sep-2022	03-Sep-2022	**13**
Clear Plastic Bottle - Natural						
AUS_MUR_RIN_5, AUS_MUR_RIN_6	----	----	----	16-Sep-2022	04-Sep-2022	**12**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

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

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

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

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
AUS_MUR_GS_S14_4	**01-Sep-2022**	**----**	----	----	**15-Sep-2022**	15-Sep-2022	✓
Soil Glass Jar - Unpreserved (EA055)							
AUS_MUR_GS_S21_4, AUS_MUR_GS_S30_4, AUS_MUR_GS_S31_4, AUS_MUR_GS_S32_4, AUS_MUR_GS_S34_4	**01-Sep-2022**	**----**	----	----	**20-Sep-2022**	15-Sep-2022	×
Soil Glass Jar - Unpreserved (EA055)							
AUS_MUR_GB_A1_4, AUS_MUR_GB_A2_4, AUS_MUR_GB_A3_4, AUS_MUR_GB_A4_4, AUS_MUR_GB_A2_5, AUS_MUR_GB_A2_6	**02-Sep-2022**	**----**	----	----	**16-Sep-2022**	16-Sep-2022	✓
Soil Glass Jar - Unpreserved (EA055)							
AUS_MUR_GB_B1_4, AUS_MUR_GB_B2_4_AS, AUS_MUR_GB_B2_4_BS, AUS_MUR_GB_B3_4, AUS_MUR_GB_B4_4, AUS_MUR_GB_C1_4, AUS_MUR_GB_C2_4, AUS_MUR_GB_C2_5A, AUS_MUR_GB_C2_6, AUS_MUR_GB_C3_4, AUS_MUR_GB_C4_4A, AUS_MUR_GB_D1_4A, AUS_MUR_GB_D2_4_AS, AUS_MUR_GB_D2_4_BS, AUS_MUR_GB_D3_4, AUS_MUR_GB_D4_4	**03-Sep-2022**	**----**	----	----	**16-Sep-2022**	17-Sep-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA150: Particle Sizing							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)							
AUS_MUR_GS_S14_4, AUS_MUR_GS_S21_4, AUS_MUR_GS_S30_4, AUS_MUR_GS_S32_4, AUS_MUR_GS_S34_4, AUS_MUR_VC_001A_0.5, AUS_MUR_VC_001A_1.0, AUS_MUR_VC_002_0.5, AUS_MUR_VC_002_1.0	**01-Sep-2022**	**----**	----	----	**27-Sep-2022**	28-Feb-2023	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)							
AUS_MUR_GB_A1_4, AUS_MUR_GB_A2_4, AUS_MUR_GB_A3_4, AUS_MUR_GB_A4_4, AUS_MUR_GB_A2_5, AUS_MUR_GB_A2_6, AUS_MUR_VC_7B_0.5, AUS_MUR_VC_7B_1.0, AUS_MUR_VC8_C_0.5, AUS_MUR_VC8_C_1.0	**02-Sep-2022**	**----**	----	----	**27-Sep-2022**	01-Mar-2023	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)							
AUS_MUR_GB_B1_4, AUS_MUR_GB_B2_4_AS, AUS_MUR_GB_B2_4_BS, AUS_MUR_GB_B3_4, AUS_MUR_GB_B4_4, AUS_MUR_GB_C1_4, AUS_MUR_GB_C2_4, AUS_MUR_GB_C2_5A, AUS_MUR_GB_C2_6, AUS_MUR_GB_C3_4, AUS_MUR_GB_C4_4A, AUS_MUR_GB_D1_4A, AUS_MUR_GB_D2_4_AS, AUS_MUR_GB_D2_4_BS, AUS_MUR_GB_D3_4, AUS_MUR_GB_D4_4, AUS_MUR_VC_6B_0.5, AUS_MUR_VC_6B_1.0	**03-Sep-2022**	**----**	----	----	**27-Sep-2022**	02-Mar-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA150: Soil Classification based on Particle Size							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)							
AUS_MUR_GS_S14_4, AUS_MUR_GS_S21_4, AUS_MUR_GS_S30_4, AUS_MUR_GS_S32_4, AUS_MUR_GS_S34_4, AUS_MUR_VC_001A_0.5, AUS_MUR_VC_001A_1.0, AUS_MUR_VC_002_0.5, AUS_MUR_VC_002_1.0	**01-Sep-2022**	**----**	----	----	**27-Sep-2022**	28-Feb-2023	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)							
AUS_MUR_GB_A1_4, AUS_MUR_GB_A2_4, AUS_MUR_GB_A3_4, AUS_MUR_GB_A4_4, AUS_MUR_GB_A2_5, AUS_MUR_GB_A2_6, AUS_MUR_VC_7B_0.5, AUS_MUR_VC_7B_1.0, AUS_MUR_VC8_C_0.5, AUS_MUR_VC8_C_1.0	**02-Sep-2022**	**----**	----	----	**27-Sep-2022**	01-Mar-2023	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)							
AUS_MUR_GB_B1_4, AUS_MUR_GB_B2_4_AS, AUS_MUR_GB_B2_4_BS, AUS_MUR_GB_B3_4, AUS_MUR_GB_B4_4, AUS_MUR_GB_C1_4, AUS_MUR_GB_C2_4, AUS_MUR_GB_C2_5A, AUS_MUR_GB_C2_6, AUS_MUR_GB_C3_4, AUS_MUR_GB_C4_4A, AUS_MUR_GB_D1_4A, AUS_MUR_GB_D2_4_AS, AUS_MUR_GB_D2_4_BS, AUS_MUR_GB_D3_4, AUS_MUR_GB_D4_4, AUS_MUR_VC_6B_0.5, AUS_MUR_VC_6B_1.0	**03-Sep-2022**	**----**	----	----	**27-Sep-2022**	02-Mar-2023	✓
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES							
Soil Glass Jar - Unpreserved (EG005-SD)							
AUS_MUR_GS_S14_4, AUS_MUR_GS_S21_4, AUS_MUR_GS_S30_4, AUS_MUR_GS_S31_4, AUS_MUR_GS_S32_4, AUS_MUR_GS_S34_4	**01-Sep-2022**	**21-Sep-2022**	28-Feb-2023	✓	**21-Sep-2022**	28-Feb-2023	✓
Soil Glass Jar - Unpreserved (EG005-SD)							
AUS_MUR_GB_A1_4, AUS_MUR_GB_A2_4, AUS_MUR_GB_A3_4, AUS_MUR_GB_A4_4, AUS_MUR_GB_A2_5, AUS_MUR_GB_A2_6	**02-Sep-2022**	**21-Sep-2022**	01-Mar-2023	✓	**21-Sep-2022**	01-Mar-2023	✓
Soil Glass Jar - Unpreserved (EG005-SD)							
AUS_MUR_GB_B1_4, AUS_MUR_GB_B2_4_AS, AUS_MUR_GB_B2_4_BS, AUS_MUR_GB_B3_4, AUS_MUR_GB_B4_4, AUS_MUR_GB_C1_4, AUS_MUR_GB_C2_4, AUS_MUR_GB_C2_5A, AUS_MUR_GB_C2_6, AUS_MUR_GB_C3_4, AUS_MUR_GB_C4_4A, AUS_MUR_GB_D1_4A, AUS_MUR_GB_D2_4_AS, AUS_MUR_GB_D2_4_BS, AUS_MUR_GB_D3_4, AUS_MUR_GB_D4_4	**03-Sep-2022**	**21-Sep-2022**	02-Mar-2023	✓	**21-Sep-2022**	02-Mar-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020-SD: Total Metals in Sediments by ICPMS								
Soil Glass Jar - Unpreserved (EG020-SD)								
AUS_MUR_GS_S14_4,	AUS_MUR_GS_S21_4,	**01-Sep-2022**	**21-Sep-2022**	28-Feb-2023	✓	**21-Sep-2022**	28-Feb-2023	✓
AUS_MUR_GS_S30_4,	AUS_MUR_GS_S31_4,							
AUS_MUR_GS_S32_4,	AUS_MUR_GS_S34_4							
Soil Glass Jar - Unpreserved (EG020-SD)								
AUS_MUR_GB_A1_4,	AUS_MUR_GB_A2_4,	**02-Sep-2022**	**21-Sep-2022**	01-Mar-2023	✓	**21-Sep-2022**	01-Mar-2023	✓
AUS_MUR_GB_A3_4,	AUS_MUR_GB_A4_4,							
AUS_MUR_GB_A2_5,	AUS_MUR_GB_A2_6							
Soil Glass Jar - Unpreserved (EG020-SD)								
AUS_MUR_GB_B1_4,	AUS_MUR_GB_B2_4_AS,	**03-Sep-2022**	**21-Sep-2022**	02-Mar-2023	✓	**21-Sep-2022**	02-Mar-2023	✓
AUS_MUR_GB_B2_4_BS,	AUS_MUR_GB_B3_4,							
AUS_MUR_GB_B4_4,	AUS_MUR_GB_C1_4,							
AUS_MUR_GB_C2_4,	AUS_MUR_GB_C2_5A,							
AUS_MUR_GB_C2_6,	AUS_MUR_GB_C3_4,							
AUS_MUR_GB_C4_4A,	AUS_MUR_GB_D1_4A,							
AUS_MUR_GB_D2_4_AS,	AUS_MUR_GB_D2_4_BS,							
AUS_MUR_GB_D3_4,	AUS_MUR_GB_D4_4							
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T-LL)								
AUS_MUR_GS_S14_4,	AUS_MUR_GS_S21_4,	**01-Sep-2022**	**21-Sep-2022**	29-Sep-2022	✓	**23-Sep-2022**	29-Sep-2022	✓
AUS_MUR_GS_S30_4,	AUS_MUR_GS_S31_4,							
AUS_MUR_GS_S32_4,	AUS_MUR_GS_S34_4							
Soil Glass Jar - Unpreserved (EG035T-LL)								
AUS_MUR_GB_A1_4,	AUS_MUR_GB_A2_4,	**02-Sep-2022**	**21-Sep-2022**	30-Sep-2022	✓	**23-Sep-2022**	30-Sep-2022	✓
AUS_MUR_GB_A3_4,	AUS_MUR_GB_A4_4,							
AUS_MUR_GB_A2_5,	AUS_MUR_GB_A2_6							
Soil Glass Jar - Unpreserved (EG035T-LL)								
AUS_MUR_GB_B1_4,	AUS_MUR_GB_B2_4_AS,	**03-Sep-2022**	**21-Sep-2022**	01-Oct-2022	✓	**23-Sep-2022**	01-Oct-2022	✓
AUS_MUR_GB_B2_4_BS,	AUS_MUR_GB_B3_4,							
AUS_MUR_GB_B4_4,	AUS_MUR_GB_C1_4,							
AUS_MUR_GB_C2_4,	AUS_MUR_GB_C2_5A,							
AUS_MUR_GB_C2_6,	AUS_MUR_GB_C3_4,							
AUS_MUR_GB_C4_4A,	AUS_MUR_GB_D1_4A,							
AUS_MUR_GB_D2_4_AS,	AUS_MUR_GB_D2_4_BS,							
AUS_MUR_GB_D3_4,	AUS_MUR_GB_D4_4							

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP003: Total Organic Carbon (TOC) in Soil								
Soil Glass Jar - Unpreserved (EP003)								
AUS_MUR_GS_S14_4,	AUS_MUR_GS_S21_4,	**01-Sep-2022**	**22-Sep-2022**	29-Sep-2022	✓	**22-Sep-2022**	29-Sep-2022	✓
AUS_MUR_GS_S30_4,	AUS_MUR_GS_S31_4,							
AUS_MUR_GS_S32_4,	AUS_MUR_GS_S34_4							
Soil Glass Jar - Unpreserved (EP003)								
AUS_MUR_GB_A1_4,	AUS_MUR_GB_A2_4,	**02-Sep-2022**	**22-Sep-2022**	30-Sep-2022	✓	**22-Sep-2022**	30-Sep-2022	✓
AUS_MUR_GB_A3_4,	AUS_MUR_GB_A4_4,							
AUS_MUR_GB_A2_5,	AUS_MUR_GB_A2_6							
Soil Glass Jar - Unpreserved (EP003)								
AUS_MUR_GB_B1_4,	AUS_MUR_GB_B2_4_AS,	**03-Sep-2022**	**22-Sep-2022**	01-Oct-2022	✓	**22-Sep-2022**	01-Oct-2022	✓
AUS_MUR_GB_B2_4_BS,	AUS_MUR_GB_B3_4,							
AUS_MUR_GB_B4_4,	AUS_MUR_GB_C1_4,							
AUS_MUR_GB_C2_4,	AUS_MUR_GB_C2_5A,							
AUS_MUR_GB_C2_6,	AUS_MUR_GB_C3_4,							
AUS_MUR_GB_C4_4A,	AUS_MUR_GB_D1_4A,							
AUS_MUR_GB_D2_4_AS,	AUS_MUR_GB_D2_4_BS,							
AUS_MUR_GB_D3_4,	AUS_MUR_GB_D4_4							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_GS_S14_4,	AUS_MUR_GS_S21_4,	**01-Sep-2022**	**15-Sep-2022**	15-Sep-2022	✓	**21-Sep-2022**	25-Oct-2022	✓
AUS_MUR_GS_S30_4,	AUS_MUR_GS_S31_4,							
AUS_MUR_GS_S32_4,	AUS_MUR_GS_S34_4							
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_GB_A1_4,	AUS_MUR_GB_A2_4,	**02-Sep-2022**	**16-Sep-2022**	16-Sep-2022	✓	**21-Sep-2022**	26-Oct-2022	✓
AUS_MUR_GB_A3_4,	AUS_MUR_GB_A4_4,							
AUS_MUR_GB_A2_5,	AUS_MUR_GB_A2_6							
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_GB_C4_4A,	AUS_MUR_GB_D1_4A	**03-Sep-2022**	**15-Sep-2022**	17-Sep-2022	✓	**21-Sep-2022**	25-Oct-2022	✓
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_GB_B1_4,	AUS_MUR_GB_B2_4_AS,	**03-Sep-2022**	**16-Sep-2022**	17-Sep-2022	✓	**21-Sep-2022**	26-Oct-2022	✓
AUS_MUR_GB_B2_4_BS,	AUS_MUR_GB_B3_4,							
AUS_MUR_GB_B4_4,	AUS_MUR_GB_C1_4,							
AUS_MUR_GB_C2_4,	AUS_MUR_GB_C2_5A,							
AUS_MUR_GB_C2_6,	AUS_MUR_GB_C3_4,							
AUS_MUR_GB_D2_4_AS,	AUS_MUR_GB_D2_4_BS,							
AUS_MUR_GB_D3_4,	AUS_MUR_GB_D4_4							

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_GS_S14_4,	AUS_MUR_GS_S21_4,	**01-Sep-2022**	**15-Sep-2022**	15-Sep-2022	✓	**15-Sep-2022**	15-Sep-2022	✓
AUS_MUR_GS_S30_4,	AUS_MUR_GS_S31_4,							
AUS_MUR_GS_S32_4,	AUS_MUR_GS_S34_4							
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_GS_S14_4,	AUS_MUR_GS_S21_4,	**01-Sep-2022**	**15-Sep-2022**	15-Sep-2022	✓	**21-Sep-2022**	25-Oct-2022	✓
AUS_MUR_GS_S30_4,	AUS_MUR_GS_S31_4,							
AUS_MUR_GS_S32_4,	AUS_MUR_GS_S34_4							
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_GB_A1_4,	AUS_MUR_GB_A2_4,	**02-Sep-2022**	**16-Sep-2022**	16-Sep-2022	✓	**16-Sep-2022**	16-Sep-2022	✓
AUS_MUR_GB_A3_4,	AUS_MUR_GB_A4_4,							
AUS_MUR_GB_A2_5,	AUS_MUR_GB_A2_6							
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_GB_A1_4,	AUS_MUR_GB_A2_4,	**02-Sep-2022**	**16-Sep-2022**	16-Sep-2022	✓	**21-Sep-2022**	26-Oct-2022	✓
AUS_MUR_GB_A3_4,	AUS_MUR_GB_A4_4,							
AUS_MUR_GB_A2_5,	AUS_MUR_GB_A2_6							
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_GB_C4_4A,	AUS_MUR_GB_D1_4A	**03-Sep-2022**	**15-Sep-2022**	17-Sep-2022	✓	**21-Sep-2022**	25-Oct-2022	✓
Soil Glass Jar - Unpreserved (EP080-SD)								
AUS_MUR_GB_B1_4,	AUS_MUR_GB_B2_4_AS,	**03-Sep-2022**	**16-Sep-2022**	17-Sep-2022	✓	**16-Sep-2022**	17-Sep-2022	✓
AUS_MUR_GB_B2_4_BS,	AUS_MUR_GB_B3_4,							
AUS_MUR_GB_B4_4,	AUS_MUR_GB_C1_4,							
AUS_MUR_GB_C2_4,	AUS_MUR_GB_C2_5A,							
AUS_MUR_GB_C2_6,	AUS_MUR_GB_C3_4,							
AUS_MUR_GB_C4_4A,	AUS_MUR_GB_D1_4A,							
AUS_MUR_GB_D2_4_AS,	AUS_MUR_GB_D2_4_BS,							
AUS_MUR_GB_D3_4,	AUS_MUR_GB_D4_4							
Soil Glass Jar - Unpreserved (EP071-SD)								
AUS_MUR_GB_B1_4,	AUS_MUR_GB_B2_4_AS,	**03-Sep-2022**	**16-Sep-2022**	17-Sep-2022	✓	**21-Sep-2022**	26-Oct-2022	✓
AUS_MUR_GB_B2_4_BS,	AUS_MUR_GB_B3_4,							
AUS_MUR_GB_B4_4,	AUS_MUR_GB_C1_4,							
AUS_MUR_GB_C2_4,	AUS_MUR_GB_C2_5A,							
AUS_MUR_GB_C2_6,	AUS_MUR_GB_C3_4,							
AUS_MUR_GB_D2_4_AS,	AUS_MUR_GB_D2_4_BS,							
AUS_MUR_GB_D3_4,	AUS_MUR_GB_D4_4							

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080-SD)							
AUS_MUR_GS_S14_4, AUS_MUR_GS_S21_4, AUS_MUR_GS_S30_4, AUS_MUR_GS_S31_4, AUS_MUR_GS_S32_4, AUS_MUR_GS_S34_4	**01-Sep-2022**	**15-Sep-2022**	15-Sep-2022	✓	**15-Sep-2022**	15-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP080-SD)							
AUS_MUR_GB_A1_4, AUS_MUR_GB_A2_4, AUS_MUR_GB_A3_4, AUS_MUR_GB_A4_4, AUS_MUR_GB_A2_5, AUS_MUR_GB_A2_6	**02-Sep-2022**	**16-Sep-2022**	16-Sep-2022	✓	**16-Sep-2022**	16-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP080-SD)							
AUS_MUR_GB_B1_4, AUS_MUR_GB_B2_4_AS, AUS_MUR_GB_B2_4_BS, AUS_MUR_GB_B3_4, AUS_MUR_GB_B4_4, AUS_MUR_GB_C1_4, AUS_MUR_GB_C2_4, AUS_MUR_GB_C2_5A, AUS_MUR_GB_C2_6, AUS_MUR_GB_C3_4, AUS_MUR_GB_C4_4A, AUS_MUR_GB_D1_4A, AUS_MUR_GB_D2_4_AS, AUS_MUR_GB_D2_4_BS, AUS_MUR_GB_D3_4, AUS_MUR_GB_D4_4	**03-Sep-2022**	**16-Sep-2022**	17-Sep-2022	✓	**16-Sep-2022**	17-Sep-2022	✓
EP080-SD: BTEXN							
Soil Glass Jar - Unpreserved (EP080-SD)							
AUS_MUR_GS_S14_4, AUS_MUR_GS_S21_4, AUS_MUR_GS_S30_4, AUS_MUR_GS_S31_4, AUS_MUR_GS_S32_4, AUS_MUR_GS_S34_4	**01-Sep-2022**	**15-Sep-2022**	15-Sep-2022	✓	**15-Sep-2022**	15-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP080-SD)							
AUS_MUR_GB_A1_4, AUS_MUR_GB_A2_4, AUS_MUR_GB_A3_4, AUS_MUR_GB_A4_4, AUS_MUR_GB_A2_5, AUS_MUR_GB_A2_6	**02-Sep-2022**	**16-Sep-2022**	16-Sep-2022	✓	**16-Sep-2022**	16-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP080-SD)							
AUS_MUR_GB_B1_4, AUS_MUR_GB_B2_4_AS, AUS_MUR_GB_B2_4_BS, AUS_MUR_GB_B3_4, AUS_MUR_GB_B4_4, AUS_MUR_GB_C1_4, AUS_MUR_GB_C2_4, AUS_MUR_GB_C2_5A, AUS_MUR_GB_C2_6, AUS_MUR_GB_C3_4, AUS_MUR_GB_C4_4A, AUS_MUR_GB_D1_4A, AUS_MUR_GB_D2_4_AS, AUS_MUR_GB_D2_4_BS, AUS_MUR_GB_D3_4, AUS_MUR_GB_D4_4	**03-Sep-2022**	**16-Sep-2022**	17-Sep-2022	✓	**16-Sep-2022**	17-Sep-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Natural (EG020A-T)							
AUS_MUR_RIN_4	**02-Sep-2022**	**20-Sep-2022**	01-Mar-2023	✓	**20-Sep-2022**	01-Mar-2023	✓
Clear Plastic Bottle - Natural (EG020A-T)							
AUS_MUR_RIN_5, AUS_MUR_RIN_6	**03-Sep-2022**	**20-Sep-2022**	02-Mar-2023	✓	**20-Sep-2022**	02-Mar-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Natural (EG035T)							
AUS_MUR_RIN_4	**02-Sep-2022**	**----**	----	----	**19-Sep-2022**	30-Sep-2022	✓
Clear Plastic Bottle - Natural (EG035T)							
AUS_MUR_RIN_5, AUS_MUR_RIN_6	**03-Sep-2022**	**----**	----	----	**19-Sep-2022**	01-Oct-2022	✓
EP005: Total Organic Carbon (TOC)							
Clear Plastic Bottle - Natural (EP005)							
AUS_MUR_RIN_4	**02-Sep-2022**	**----**	----	----	**16-Sep-2022**	03-Sep-2022	×
Clear Plastic Bottle - Natural (EP005)							
AUS_MUR_RIN_5, AUS_MUR_RIN_6	**03-Sep-2022**	**----**	----	----	**16-Sep-2022**	04-Sep-2022	×

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	7	62	11.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fe and Al in Sediments by ICPAES	EG005-SD	3	28	10.71	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	3	28	10.71	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	3	28	10.71	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	3	28	10.71	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	3	28	10.71	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	4	28	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Fe and Al in Sediments by ICPAES	EG005-SD	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	4	28	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	3	28	10.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Fe and Al in Sediments by ICPAES	EG005-SD	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	3	28	10.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS (Low Level)	EG035T-LL	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	3	28	10.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3
Total Fe and Al in Sediments by ICPAES	EG005-SD	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3). LORs per NODG
Total Metals in Sediments by ICPMS	EG020-SD	SOIL	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. Analyte list and LORs per NODG.
Total Mercury by FIMS (Low Level)	EG035T-LL	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP003	SOIL	In house C-IR17. Dried and pulverised sample is reacted with acid to remove inorganic Carbonates, then combusted in a furnace in the presence of strong oxidants / catalysts. The evolved (Organic) Carbon (as CO2) is automatically measured by infra-red detector.
TPH - Semivolatile Fraction	EP071-SD	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX in Sediments	EP080-SD	SOIL	In house: Referenced to USEPA SW 846 - 8260 Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Dry and Pulverise (up to 100g)	GEO30	SOIL	#
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In house: Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Tumbler Extraction of Solids for LVI (Non-concentrating)	ORG17D	SOIL	In house: 10g of sample, Na2SO4 and surrogate are extracted with 50mL 1:1 DCM/Acetone by end over end tumbling. An aliquot is concentrated by nitrogen blowdown to a reduced volume for analysis if required.
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)

Appendix 5 - Tables of Analysis Data

Excel spreadsheets provided by SMEC stats section

1. Lab reports (66) – All sediment analysis data
2. Lab reports (68) – All water analysis data

				Metals											Inorganics	BTEXN						
				Aluminium	Antimony	Arsenic	Cadmium	Chromium (III+VI)	Copper	Iron	Lead	Mercury	Nickel	Zinc	Moisture Content	Naphthalene (VOC)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				50	0.5	1	0.1	1	1		1	0.01	1	1	1	0.2	0.2	0.2	0.2	0.2	0.2
NADG (2009) SQG-High					25	70	10	370	270		220	1	52	410							
NADG (2009) Screening Level					2	20	1.5	80	65		50	0.15	21	200							
Location Code	Date	Field ID	Lab Report Number																		
1A	9/1/2022	AUS_MUR_VC_001A_0.5	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		AUS_MUR_VC_001A_1.0	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9/1/2022	AUS_MUR_VC_002_0.5	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		AUS_MUR_VC_002_1.0	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6B	9/3/2022	AUS_MUR_VC_6B_0.5	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		AUS_MUR_VC_6B_1.0	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7B	9/2/2022	AUS_MUR_VC_7B_0.5	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		AUS_MUR_VC_7B_1.0	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1	9/2/2022	AUS_MUR_GB_A1_4	ES2231627	3,830	<0.50	12.5	<0.1	11.3	1.4	8,150	3.8	<0.01	4.3	4.4	26.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A2	9/2/2022	AUS_MUR_GB_A2_4	ES2231627	6,380	<0.50	5.63	0.3	15.8	2.4	8,760	4.2	<0.01	6.2	8.0	42.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_GB_A2_5	ES2231627	6,570	<0.50	6.55	0.1	16.7	2.3	9,930	4.6	<0.01	6.4	7.8	38.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_GB_A2_6	ES2231627	5,250	<0.50	7.86	<0.1	13.6	1.7	9,600	4.5	<0.01	5.4	6.0	35.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A3	9/2/2022	AUS_MUR_GB_A3_4	ES2231627	5,670	<0.50	6.87	0.2	14.6	2.0	8,890	4.0	<0.01	5.5	6.9	31.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
A4	9/2/2022	AUS_MUR_GB_A4_4	ES2231627	5,060	<0.50	16.0	<0.1	13.2	1.6	13,000	4.6	<0.01	5.4	5.8	30.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
B1	9/3/2022	AUS_MUR_GB_B1_4	ES2231627	6,650	<0.50	4.05	<0.1	16.3	2.3	8,730	4.1	<0.01	6.1	7.9	38.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
B2	9/3/2022	AUS_MUR_GB_B2_4_AS	ES2231627	7,380	<0.50	9.43	<0.1	17.5	2.4	14,600	4.7	<0.01	7.0	8.6	40.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_GB_B2_4_BS	ES2231627	6,820	<0.50	12.5	<0.1	15.9	2.2	15,400	4.7	<0.01	6.6	7.8	31.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
B3	9/3/2022	AUS_MUR_GB_B3_4	ES2231627	6,040	<0.50	7.03	<0.1	14.9	2.1	10,400	4.4	<0.01	6.2	7.3	39.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
B4	9/3/2022	AUS_MUR_GB_B4_4	ES2231627	7,580	<0.50	4.57	0.1	18.2	2.7	10,600	4.6	<0.01	6.7	8.9	40.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
C	9/2/2022	AUS_MUR_VC8_C_0.5	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		AUS_MUR_VC8_C_1.0	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C1	9/3/2022	AUS_MUR_GB_C1_4	ES2231627	5,880	<0.50	24.3	0.1	14.8	2.0	18,600	5.9	<0.01	5.8	6.9	36.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
C2	9/3/2022	AUS_MUR_GB_C2_4	ES2231627	6,360	0.90	17.4	<0.1	14.8	2.0	15,900	5.5	<0.01	5.6	7.0	38.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_GB_C2_5A	ES2231627	9,260	<0.50	20.0	0.1	21.4	2.9	22,800	6.9	<0.01	8.1	10.2	42.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_GB_C2_6	ES2231627	5,720	<0.50	12.8	<0.1	13.7	1.8	12,800	4.9	<0.01	5.0	6.4	33.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
C3	9/3/2022	AUS_MUR_GB_C3_4	ES2231627	5,420	<0.50	16.3	<0.1	13.0	1.8	13,500	5.3	<0.01	5.0	5.9	39.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
C4	9/3/2022	AUS_MUR_GB_C4_4A	ES2231627	5,660	<0.50	29.8	<0.1	14.2	1.8	20,700	6.4	<0.01	5.6	6.3	35.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
D1	9/3/2022	AUS_MUR_GB_D1_4A	ES2231627	2,440	<0.50	47.8	<0.1	7.5	<1.0	16,600	6.2	<0.01	4.3	3.2	34.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
D2	9/3/2022	AUS_MUR_GB_D2_4_AS	ES2231627	2,660	<0.50	15.7	0.1	7.9	1.3	6,900	4.3	<0.01	3.0	3.9	38.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_GB_D2_4_BS	ES2231627	2,670	0.95	18.5	<0.1	8.2	1.4	8,020	4.9	<0.01	3.4	4.3	40.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
D3	9/3/2022	AUS_MUR_GB_D3_4	ES2231627	5,200	0.51	29.4	<0.1	18.6	2.0	17,800	7.6	<0.01	5.6	7.1	43.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
D4	9/3/2022	AUS_MUR_GB_D4_4	ES2231627	1,910	<0.50	21.3	<0.1	5.4	<1.0	8,670	4.0	<0.01	2.8	2.3	38.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S1	8/30/2022	AUS_MUR_GS_S1_1.0	ES2231582	2,450	<0.50	13.4	<0.1	7.4	<1.0	13,700	3.4	<0.01	3.4	2.7	33.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S1B	8/28/2022	AUS_MUR_VC_S1B_0.5	ES2230841	2,250	<0.50	17.0	<0.1	7.7	<1.0	10,700	3.9	<0.01	3.9	2.4	24.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S1B_1.0	ES2230841	2,220	<0.50	17.5	<0.1	8.0	<1.0	11,400	4.2	<0.01	4.0	3.0	31.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S2-1	8/30/2022	AUS_MUR_GS_S2-1	ES2230841	2,460	<0.50	17.5	<0.1	8.6	<1.0	12,700	4.5	<0.01	4.3	2.6	33.8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S2BS	8/28/2022	AUS_MUR_VC_S2BS_0.5	ES2230841	4,880	<0.50	14.2	0.1	13.5	1.4	13,400	4.4	<0.01	5.6	5.6	26.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S3	8/28/2022	AUS_MUR_VC_S3_0.5AS	ES2230841	2,110	<0.50	18.8	<0.1	7.3	<1.0	11,000	3.8	<0.01	3.5	2.2	34.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S3_1.0AS	ES2230841	3,050	<0.50	25.5	0.2	9.9	<1.0	15,500	4.9	<0.01	5.0	3.1	33.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S3_1.0B	ES2230841	2,660	<0.50	20.6	0.1	9.0	<1.0	12,200	4.0	<0.01	4.2	2.8	28.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	8/30/2022	AUS_MUR_GS_S3-1	ES2230841	1,360	<0.50	9.94	<0.1	4.8	<1.0	5,240	2.2	<0.01	2.2	1.5	37.8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S4	8/30/2022	AUS_MUR_GS_S4-1	ES2230841	4,230	<0.50	12.2	<0.1	11.2	1.1	11,000	3.8	<0.01	4.7	4.8	32.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S5	8/30/2022	AUS_MUR_GS_S5-1	ES2230841	2,100	<0.50	23.4	0.1	8.1	<1.0	10,100	3.6	<0.01	3.4	2.0	31.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S5A	8/28/2022	AUS_MUR_VC_S5A_0.5	ES2230841	1,810	<0.50	16.6	<0.1	7.1	<1.0	7,740	3.9	<0.01	3.3	2.3	37.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S5A_1.0	ES2230841	2,160	<0.50	26.0	0.1	7.5	<1.0	12,200	4.5	<0.01	3.9	2.2	32.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S6	8/28/2022	AUS_MUR_VC_S6_0.5	ES2230841	1,640	<0.50	17.0	<0.1	5.9	<1.0	7,300	2.9	<0.01	2.8	1.7	37.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S6_1.0	ES2230841	2,890	<0.50	20.8	0.1	9.5	<1.0	12,100	4.5	<0.01	4.2	2.9	27.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S6-1A	8/30/2022	AUS_MUR_GS_S6-1A	ES2230841	3,200	<0.50	29.6	0.1	9.8	<1.0	17,500	4.9	<0.01	5.1	3.8	33.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
				3,120	<0.50	20.2	0.1	9.5	<1.0	11,500	4.3	<0.01	4.2	3.5	35.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S7	8/28/2022	AUS_MUR_VC_S7_0.5	ES2230841	3,000	<0.50	23.6	0.1	9.4	<1.0	12,600	4.0	<0.01	4.0	3.0	31.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S7_1.0	ES2230841	4,760	<0.50	12.4	0.1	12.8	1.4	11,400	4.1	<0.01	5.1	5.6	31.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	8/30/2022	US_MUR_GS_S7-1	ES2230841	2,040	<0.50	15.4	<0.1	7.2	<1.0	7,740	3.4	<0.01	2.9	2.0	21.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S8_1	8/28/2022	AUS_MUR_VC_S8_1_1.0	ES2230841	2,940	<0.50	19.0	0.1	8.9	<1.0	11,900	4.0	<0.01	3.6	3.0	26.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S8_2	8/28/2022	AUS_MUR_VC_S8_2_0.5	ES2230841	2,050	<0.50	18.7	0.1	8.3	<1.0	8,550	3.8	<0.01	3.2	2.0	30.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		US_MUR_GS_S8_02_1.0	ES2230841	2,200	<0.50	21.0	0.1	8.0	<1.0	9,300	3.6	<0.01	2.9	2.0	28.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S8_3	8/29/2022	AUS_MUR_VC_S8_3_1.0	ES2230841	3,820	<0.50	29.2	0.1	17.1	<1.0	17,600	4.4	<0.01	4.5	3.3	25.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S9	8/28/2022	AUS_MUR_GS_S9_0.5	ES2230841	4,370	<0.50	12.6	0.1	12.3	1.3	10,800	4.2	<0.01	4.8	4.8	31.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_GS_S9_1.0	ES2230841	5,090	<0.50	10.6	<0.1	14.1	1.5	11,200	4.1	<0.01	5.3	5.7	36.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

				Metals											Inorganics	BTEXN					
				Aluminium	Antimony	Arsenic	Cadmium	Chromium (III+VI)	Copper	Iron	Lead	Mercury	Nickel	Zinc	Moisture Content	Naphthalene (VOC)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	8/29/2022	AUS_MUR_VC_S9_1.0	ES2230841	3,480	<0.50	19.6	0.1	11.0	<1.0	14,400	4.5	<0.01	4.6	3.5	21.8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S10	8/29/2022	AUS_MUR_GS_S10_0.5	ES2230841	4,710	<0.50	23.2	0.1	13.0	1.2	14,100	4.6	<0.01	5.1	4.8	36.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_GS_S10_1.0	ES2230841	6,110	<0.50	21.9	0.1	17.0	1.8	16,300	5.6	<0.01	6.4	6.8	33.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S11	8/29/2022	AUS_MUR_GS_S11_1	ES2230841	5,900	<0.50	10.7	<0.1	15.3	1.7	10,800	4.3	<0.01	5.8	6.4	35.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S11-2	8/29/2022	AUS_MUR_VC_S11-2_0.5	ES2230841	3,160	<0.50	27.1	0.1	10.8	<1.0	14,200	5.2	<0.01	4.6	3.9	28.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S11-2_1.0	ES2230841	5,330	<0.50	11.0	0.1	14.2	1.6	11,200	4.4	<0.01	5.6	5.7	33.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S11-3	8/29/2022	AUS_MUR_VC_S11-3_0.5	ES2230841	2,110	<0.50	41.1	0.1	8.2	<1.0	18,400	4.2	<0.01	3.2	2.2	24.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S11-3_1.0	ES2230841	6,300	<0.50	10.3	0.1	14.6	1.8	10,400	3.6	<0.01	5.5	6.0	28.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S12	8/29/2022	AUS_MUR_GS_S12_2	ES2230841	5,590	<0.50	21.5	0.1	15.8	1.6	15,200	4.9	<0.01	6.1	6.1	25.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S12_0.5	ES2230841	3,880	<0.50	26.4	0.1	11.7	1.0	13,700	5.0	<0.01	4.6	3.7	26.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S12_1.0	ES2230841	7,160	<0.50	16.2	0.1	18.3	2.2	15,800	5.3	<0.01	7.4	7.4	30.8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S13	8/29/2022	AUS_MUR_GS_S13_1	ES2230841	5,520	<0.50	14.3	0.1	14.7	1.6	11,800	4.4	<0.01	5.7	5.9	35.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S13_0.5	ES2230841	3,190	<0.50	24.8	0.1	10.0	<1.0	11,800	4.4	<0.01	4.3	3.2	35.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S13_1.0	ES2230841	6,490	<0.50	11.3	0.1	16.5	2.0	12,200	4.2	<0.01	6.2	6.7	32.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S14	9/1/2022	AUS_MUR_GS_S14_4	ES2231627	4,120	<0.50	16.8	<0.1	11.3	1.9	11,100	5.0	<0.01	4.3	7.1	34.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S14_0.5	ES2231588	4,890	<0.50	24.4	<0.1	10.9	1.4	12,700	5.0	<0.01	4.2	5.9	32.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S14_1.0	ES2231588	10,500	<0.50	13.5	<0.1	19.8	2.8	17,100	6.0	<0.01	6.6	11.1	35.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S15	9/1/2022	AUS_MUR_VC_S15_0.5	ES2231588	2,650	<0.50	27.2	<0.1	6.8	<1.0	10,300	4.2	<0.01	3.0	4.4	29.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S15_1.0	ES2231588	4,140	<0.50	27.2	<0.1	11.1	1.3	13,400	5.2	<0.01	4.4	6.3	31.8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S16	9/1/2022	AUS_MUR_VC_S16_0.5	ES2231588	8,350	<0.50	19.0	<0.1	15.8	2.2	14,900	5.3	<0.01	5.6	8.6	35.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S16_1.0	ES2231588	14,400	<0.50	14.1	<0.1	25.7	3.3	21,100	7.3	<0.01	7.8	11.5	35.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S17A	9/1/2022	AUS_MUR_VC_S17A_0.5	ES2231588	2,350	<0.50	32.8	<0.1	6.1	<1.0	10,200	4.3	<0.01	2.8	3.1	24.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S17A_1.0	ES2231588	2,720	<0.50	35.2	<0.1	6.8	<1.0	11,200	4.6	<0.01	3.0	3.4	31.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S18_1	9/1/2022	AUS_MUR_VC_S18_1_0.5	ES2231587	12,500	<0.50	11.5	<0.1	22.4	3.2	20,300	6.2	<0.01	7.5	12.1	36.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S18_1_1.0	ES2231587	24,900	<0.50	19.1	<0.1	39.6	7.4	37,100	12.8	<0.01	13.6	19.9	44.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S18_2A	9/1/2022	AUS_MUR_VC_S18_2A_0.	ES2231587	11,400	<0.50	9.82	<0.1	21.6	3.2	19,200	6.1	<0.01	7.4	11.6	39.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S18_2A_1.	ES2231587	20,700	<0.50	9.58	<0.1	37.1	6.8	32,900	18.2	<0.01	10.0	11.0	40.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S18_3	9/1/2022	AUS_MUR_VC_S18_3_0.5	ES2231588	11,700	<0.50	11.0	<0.1	21.9	3.1	17,500	6.2	<0.01	7.0	11.7	35.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S18_3_1.0	ES2231588	25,200	<0.50	26.0	<0.1	40.5	6.7	50,900	14.6	<0.01	12.0	18.9	46.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S19	8/31/2022	AUS_MUR_VC_S19_0.5	ES2231587	1,980	<0.50	24.6	<0.1	5.6	<1.0	8,810	4.0	<0.01	2.5	3.6	32.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S19_1.0	ES2231587	15,400	<0.50	13.2	<0.1	26.8	3.9	25,000	7.5	<0.01	8.3	12.9	37.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S21	8/31/2022	AUS_MUR_VC_S21_0.5	ES2231587	10,000	<0.50	13.5	0.1	20.1	2.9	19,100	6.3	<0.01	7.1	11.6	40.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S21_1.0	ES2231587	14,500	<0.50	9.07	<0.1	24.9	3.8	21,400	9.1	<0.01	7.2	10.9	35.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	9/1/2022	AUS_MUR_GS_S21_4	ES2231627	5,530	<0.50	17.9	<0.1	14.1	2.1	12,700	5.5	<0.01	4.9	8.0	36.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S22	8/31/2022	AUS_MUR_VC_S22_0.5A	ES2231586	9,330	<0.50	11.8	<0.1	17.6	2.5	16,000	5.4	<0.01	6.0	9.6	35.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S22_0.5B	ES2231586	11,600	<0.50	13.0	<0.1	20.9	2.9	20,000	6.2	<0.01	7.0	10.3	33.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S22_1.0A	ES2231586	13,500	<0.50	11.3	<0.1	23.5	3.3	22,200	8.0	<0.01	6.4	7.4	32.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S22_1.0B	ES2231586	16,300	<0.50	9.63	<0.1	28.0	4.5	43,500	18.0	<0.01	7.8	5.8	29.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S23	8/31/2022	AUS_MUR_VC_S23_0.5A	ES2231586	5,640	<0.50	25.8	0.1	11.9	1.6	13,900	5.1	<0.01	4.4	6.4	31.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S23_0.5B	ES2231586	7,830	<0.50	15.3	<0.1	15.4	2.1	15,300	5.0	<0.01	5.6	8.8	32.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S23_1.0A	ES2231586	20,200	<0.50	9.49	<0.1	34.6	5.9	28,000	13.2	<0.01	8.9	12.6	42.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S23_1.0B	ES2231586	23,100	<0.50	11.0	0.1	38.6	6.6	30,600	12.3	<0.01	11.6	17.9	48.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S24	8/31/2022	AUS_MUR_VC_S24_0.5	ES2231586	2,760	<0.50	34.7	0.1	7.8	<1.0	12,100	5.0	<0.01	3.4	3.8	34.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S24_1.0	ES2231586	8,450	<0.50	17.1	0.1	16.9	2.2	15,400	5.4	<0.01	6.1	9.1	32.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S25	8/31/2022	AUS_MUR_VC_S25_0.5	ES2231585	2,300	<0.50	31.3	<0.1	6.7	<1.0	9,860	4.5	<0.01	2.8	3.4	27.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S25_1.0	ES2231585	5,390	<0.50	29.8	0.1	12.0	1.4	13,900	5.6	<0.01	4.7	5.9	29.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S26B	8/31/2022	AUS_MUR_VC_S26B_0.5	ES2231585	2,280	<0.50	33.2	0.1	6.7	<1.0	9,780	4.6	<0.01	3.0	3.5	26.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S26B_1.0	ES2231585	16,300	<0.50	16.5	<0.1	28.4	4.9	28,100	10.1	<0.01	8.9	13.5	40.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S27	8/31/2022	AUS_MUR_VC_S27_0.5	ES2231585	2,980	<0.50	32.0	<0.1	7.3	<1.0	11,000	4.8	<0.01	3.4	3.6	26.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S27_1.0	ES2231585	4,860	<0.50	14.3	0.1	10.5	1.4	9,470	4.1	<0.01	4.0	5.7	37.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S28	8/31/2022	AUS_MUR_VC_S28_0.5	ES2231585	3,800	<0.50	20.8	0.1	9.6	1.2	11,000	4.4	<0.01	3.9	5.1	27.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S28_1.0	ES2231585	15,600	<0.50	11.3	<0.1	28.2	3.6	21,300	11.6	<0.01	6.8	8.2	32.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S29	8/31/2022	AUS_MUR_VC_S29_0.5	ES2231585	2,340	<0.50	32.6	0.1	7.0	<1.0	9,830	4.9	<0.01	3.2	3.1	29.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S29_1.0	ES2231585	2,930	<0.50	27.2	<0.1	7.9	<1.0	10,900	4.6	<0.01	3.2	3.7	31.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S30	9/1/2022	AUS_MUR_GS_S30_4	ES2231627	2,080	<0.50	44.3	0.1	7.5	1.0	11,700	6.2	<0.01	3.8	3.4	36.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S30B	8/31/2022	AUS_MUR_VC_S30B_0.5	ES2231584	1,920	<0.50	48.9	0.1	6.2	<1.0	11,500	5.3	<0.01	3.1	2.5	32.8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S30B_1.0	ES2231584	2,240	<0.50	43.5	0.1	7.2	<1.0	11,400	5.6	<0.01	3.2	3.2	33.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S31	9/1/2022	AUS_MUR_GS_S31_4	ES2231627	2,230	<0.50	42.6	<0.1	6.7	<1.0	12,900	5.6	<0.01	4.0	3.0	36.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S31_1	8/31/2022	AUS_MUR_VC_S31_1_0.5	ES2231583	2,160	<0.50	57.5	0.1	6.9	<1.0	15,900	6.0	<0.01	4.2	2.8	31.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S31_1_1.0	ES2231583	2,160	<0.50	38.2	0.1	6.4	<1.0	11,500	4.7	<0.01	3.6	3.0	29.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S31_2	8/31/2022	AUS_MUR_VC_S31_2_0.5	ES2231583	1,830	<0.50	36.0	<0.1	5.2	<1.0	9,460	4.0	<0.01	3.1	2.3	36.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S31_2_1.0	ES2231583	3,150	<0.50	50.6	0.1	7.1	<1.0	18,400	5.7	<0.01	3.9	3.2	34.8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S31_3A	8/31/2022	AUS_MUR_VC_S31_3A_0.	ES2231584	3,320	<0.50	19.4	<0.1	7.5	1.1	7,950	3.7	<0.01	3.3	4.3	37.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

				Metals											Inorganics	BTEXN					
				Aluminium	Antimony	Arsenic	Cadmium	Chromium (III+VI)	Copper	Iron	Lead	Mercury	Nickel	Zinc	Moisture Content	Naphthalene (VOC)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		AUS_MUR_VC_S31_3A_0.	ES2231584	2,760	<0.50	21.1	0.1	6.2	<1.0	7,450	3.8	<0.01	3.0	3.3	38.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S31_3A_1.	ES2231584	2,270	<0.50	25.4	<0.1	6.2	<1.0	9,400	4.1	<0.01	3.2	3.2	33.8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S31_3A_1.	ES2231584	2,640	<0.50	30.9	0.1	6.5	<1.0	10,400	4.6	<0.01	3.4	3.5	36.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S32	9/1/2022	AUS_MUR_GS_S32_4	ES2231627	2,300	<0.50	24.1	0.1	7.7	<1.0	10,800	4.9	<0.01	4.2	2.6	38.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S32_1A	8/30/2022	AUS_MUR_VC_S32_1A_0.	ES2231582	2,300	<0.50	13.5	0.1	6.6	<1.0	6,630	3.2	<0.01	3.2	2.5	35.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S32_1A_1.	ES2231582	7,100	<0.50	30.4	0.1	14.6	1.9	17,300	5.1	<0.01	6.5	7.1	34.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S32_3	8/31/2022	AUS_MUR_VC_S32_3_0.5	ES2231583	2,340	<0.50	23.1	0.1	7.5	<1.0	9,780	4.6	<0.01	4.3	2.5	29.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S32_3_1.0	ES2231583	2,760	<0.50	14.0	0.1	7.8	1.1	7,760	4.0	<0.01	3.7	3.2	34.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S33	8/30/2022	AUS_MUR_VC_S33_0.5	ES2231582	3,360	<0.50	32.6	0.1	9.9	<1.0	16,400	5.5	<0.01	4.7	3.4	31.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S33_1.0	ES2231582	9,360	<0.50	14.1	0.1	20.3	2.5	16,500	5.3	<0.01	7.1	9.3	33.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
S34	8/30/2022	AUS_MUR_VC_S34_0.5	ES2231582	3,900	<0.50	36.0	<0.1	11.0	<1.0	16,800	4.6	<0.01	4.2	3.2	25.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		AUS_MUR_VC_S34_1.0	ES2231582	6,910	<0.50	11.5	<0.1	15.0	1.9	12,400	4.0	<0.01	5.0	6.7	39.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	9/1/2022	AUS_MUR_GS_S34_4	ES2231627	2,310	<0.50	33.1	<0.1	9.5	<1.0	15,200	4.8	<0.01	3.5	2.2	23.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

					TRH								TPH					Organic			
				Xylene Total	Total BTEX	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	Total Organic Carbon	+1180µm	+150µm	+19.0mm
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%
EQL				0.5	0.2	3	3	3	3	3	5	3	3	3	3	5	3	0.02	1	1	1
NADG (2009) SQG-High																					
NADG (2009) Screening Level												550					550				
Location Code	Date	Field ID	Lab Report Number																		
1A	9/1/2022	AUS_MUR_VC_001A_0.5	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	6	<1
		AUS_MUR_VC_001A_1.0	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<1
2	9/1/2022	AUS_MUR_VC_002_0.5	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	14	<1
		AUS_MUR_VC_002_1.0	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	2	<1
6B	9/3/2022	AUS_MUR_VC_6B_0.5	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	39	<1
		AUS_MUR_VC_6B_1.0	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	47	<1
7B	9/2/2022	AUS_MUR_VC_7B_0.5	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	65	<1
		AUS_MUR_VC_7B_1.0	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	27	<1
A1	9/2/2022	AUS_MUR_GB_A1_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	5	<5	5	<3	<3	<3	<5	<3	0.22	19	85	<1
A2	9/2/2022	AUS_MUR_GB_A2_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	6	<5	6	<3	<3	<3	<5	<3	0.36	7	72	<1
		AUS_MUR_GB_A2_5	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	6	<5	6	<3	<3	<3	<5	<3	0.26	12	71	<1
		AUS_MUR_GB_A2_6	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	5	<5	5	<3	<3	<3	<5	<3	0.25	17	78	<1
A3	9/2/2022	AUS_MUR_GB_A3_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	5	<5	5	<3	<3	<3	<5	<3	0.32	5	66	<1
A4	9/2/2022	AUS_MUR_GB_A4_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	6	<5	6	<3	<3	<3	<5	<3	0.23	22	84	<1
B1	9/3/2022	AUS_MUR_GB_B1_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	6	<5	6	<3	<3	<3	<5	<3	0.32	4	48	<1
B2	9/3/2022	AUS_MUR_GB_B2_4_AS	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	7	<5	7	<3	<3	<3	<5	<3	0.26	28	66	<1
		AUS_MUR_GB_B2_4_BS	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	6	<5	6	<3	<3	<3	<5	<3	0.28	33	67	<1
B3	9/3/2022	AUS_MUR_GB_B3_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	6	<5	6	<3	<3	<3	<5	<3	0.30	12	57	<1
B4	9/3/2022	AUS_MUR_GB_B4_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	7	<5	7	<3	<3	<3	<5	<3	0.31	7	56	<1
C	9/2/2022	AUS_MUR_VC8_C_0.5	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	80	<1
		AUS_MUR_VC8_C_1.0	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54	63	<1
C1	9/3/2022	AUS_MUR_GB_C1_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	8	<5	8	<3	<3	6	<5	6	0.25	16	68	<1
C2	9/3/2022	AUS_MUR_GB_C2_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.25	18	70	<1
		AUS_MUR_GB_C2_5A	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	6	<5	6	<3	<3	<3	<5	<3	0.28	19	68	<1
		AUS_MUR_GB_C2_6	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	7	<5	7	<3	<3	5	<5	5	0.25	17	68	<1
C3	9/3/2022	AUS_MUR_GB_C3_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	6	<5	6	<3	<3	4	<5	4	0.19	23	78	<1
C4	9/3/2022	AUS_MUR_GB_C4_4A	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	10	<5	10	<3	<3	8	<5	8	0.25	24	78	<1
D1	9/3/2022	AUS_MUR_GB_D1_4A	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.13	17	96	<1
D2	9/3/2022	AUS_MUR_GB_D2_4_AS	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.16	3	86	<1
		AUS_MUR_GB_D2_4_BS	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.18	3	85	<1
D3	9/3/2022	AUS_MUR_GB_D3_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.19	13	82	<1
D4	9/3/2022	AUS_MUR_GB_D4_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.13	29	95	<1
S1	8/30/2022	AUS_MUR_GS_S1_1.0	ES2231582	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.07	18	95	<1
S1B	8/28/2022	AUS_MUR_VC_S1B_0.5	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.10	19	96	<1
		AUS_MUR_VC_S1B_1.0	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.16	-	-	-
S2-1	8/30/2022	AUS_MUR_GS_S2-1	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.15	10	98	<1
S2BS	8/28/2022	AUS_MUR_VC_S2BS_0.5	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.14	19	79	<1
S3	8/28/2022	AUS_MUR_VC_S3_0.5AS	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.07	33	95	<1
		AUS_MUR_VC_S3_1.0AS	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.08	32	95	<1
		AUS_MUR_VC_S3_1.0B	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.12	29	93	<1
	8/30/2022	AUS_MUR_GS_S3-1	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.10	-	-	-
S4	8/30/2022	AUS_MUR_GS_S4-1	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.17	27	86	<1
S5	8/30/2022	AUS_MUR_GS_S5-1	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.06	28	97	<1
S5A	8/28/2022	AUS_MUR_VC_S5A_0.5	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.11	22	97	<1
		AUS_MUR_VC_S5A_1.0	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.09	25	96	<1
S6	8/28/2022	AUS_MUR_VC_S6_0.5	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.11	23	95	<1
		AUS_MUR_VC_S6_1.0	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.10	23	87	<1
S6-1A	8/30/2022	AUS_MUR_GS_S6-1A	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.21	31	96	<1
				<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.11	-	-	-
S7	8/28/2022	AUS_MUR_VC_S7_0.5	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.14	35	90	<1
		AUS_MUR_VC_S7_1.0	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.14	19	76	<1
	8/30/2022	US_MUR_GS_S7-1	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.10	54	95	<1
S8_1	8/28/2022	AUS_MUR_VC_S8_1_1.0	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.10	35	91	<1
S8_2	8/28/2022	AUS_MUR_VC_S8_2_0.5	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.09	37	98	<1
		US_MUR_GS_S8_02_1.0	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.07	42	95	<1
S8_3	8/29/2022	AUS_MUR_VC_S8_3_1.0	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.33	44	94	<1
S9	8/28/2022	AUS_MUR_GS_S9_0.5	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.20	19	79	<1
		AUS_MUR_GS_S9_1.0	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.24	9	68	<1

						TRH							TPH					Organic			
				Xylene Total	Total BTEX	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	Total Organic Carbon	+1180µm	+150µm	+19.0mm
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%
	8/29/2022	AUS_MUR_VC_S9_1.0	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.14	36	90	<1
S10	8/29/2022	AUS_MUR_GS_S10_0.5	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.14	22	91	<1
		AUS_MUR_GS_S10_1.0	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.21	13	74	<1
S11	8/29/2022	AUS_MUR_GS_S11_1	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.24	18	80	<1
S11-2	8/29/2022	AUS_MUR_VC_S11-2_0.5	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.11	-	-	-
		AUS_MUR_VC_S11-2_1.0	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.16	20	74	<1
S11-3	8/29/2022	AUS_MUR_VC_S11-3_0.5	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.10	28	93	<1
		AUS_MUR_VC_S11-3_1.0	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.12	41	75	<1
S12	8/29/2022	AUS_MUR_GS_S12_2	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.26	18	75	<1
		AUS_MUR_VC_S12_0.5	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.15	31	93	<1
		AUS_MUR_VC_S12_1.0	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.16	20	70	<1
S13	8/29/2022	AUS_MUR_GS_S13_1	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.23	17	75	<1
		AUS_MUR_VC_S13_0.5	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.16	29	88	<1
		AUS_MUR_VC_S13_1.0	ES2230841	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.16	20	68	<1
S14	9/1/2022	AUS_MUR_GS_S14_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.22	8	71	<1
		AUS_MUR_VC_S14_0.5	ES2231588	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.13	11	62	<1
		AUS_MUR_VC_S14_1.0	ES2231588	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.20	<1	17	<1
S15	9/1/2022	AUS_MUR_VC_S15_0.5	ES2231588	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.14	10	61	<1
		AUS_MUR_VC_S15_1.0	ES2231588	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.13	10	66	<1
S16	9/1/2022	AUS_MUR_VC_S16_0.5	ES2231588	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.20	4	36	<1
		AUS_MUR_VC_S16_1.0	ES2231588	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.21	4	23	<1
S17A	9/1/2022	AUS_MUR_VC_S17A_0.5	ES2231588	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.12	23	89	<1
		AUS_MUR_VC_S17A_1.0	ES2231588	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.13	16	87	<1
S18_1	9/1/2022	AUS_MUR_VC_S18_1_0.5	ES2231587	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.19	4	26	<1
		AUS_MUR_VC_S18_1_1.0	ES2231587	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.81	14	21	<1
S18_2A	9/1/2022	AUS_MUR_VC_S18_2A_0.	ES2231587	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.23	4	27	<1
		AUS_MUR_VC_S18_2A_1.	ES2231587	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.44	1	4	<1
S18_3	9/1/2022	AUS_MUR_VC_S18_3_0.5	ES2231588	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.27	2	23	<1
		AUS_MUR_VC_S18_3_1.0	ES2231588	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.64	<1	2	<1
S19	8/31/2022	AUS_MUR_VC_S19_0.5	ES2231587	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.13	10	47	<1
		AUS_MUR_VC_S19_1.0	ES2231587	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.22	6	24	<1
S21	8/31/2022	AUS_MUR_VC_S21_0.5	ES2231587	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.20	8	24	<1
		AUS_MUR_VC_S21_1.0	ES2231587	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.33	<1	5	<1
	9/1/2022	AUS_MUR_GS_S21_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	6	<5	6	<3	<3	4	<5	4	0.24	5	53	<1
S22	8/31/2022	AUS_MUR_VC_S22_0.5A	ES2231586	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.20	5	36	<1
		AUS_MUR_VC_S22_0.5B	ES2231586	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.21	5	33	<1
		AUS_MUR_VC_S22_1.0A	ES2231586	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.24	5	14	<1
		AUS_MUR_VC_S22_1.0B	ES2231586	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.24	6	14	<1
S23	8/31/2022	AUS_MUR_VC_S23_0.5A	ES2231586	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.14	8	56	<1
		AUS_MUR_VC_S23_0.5B	ES2231586	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.16	10	53	<1
		AUS_MUR_VC_S23_1.0A	ES2231586	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.43	<1	3	<1
		AUS_MUR_VC_S23_1.0B	ES2231586	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.44	<1	3	<1
S24	8/31/2022	AUS_MUR_VC_S24_0.5	ES2231586	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.12	9	88	<1
		AUS_MUR_VC_S24_1.0	ES2231586	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.19	8	44	<1
S25	8/31/2022	AUS_MUR_VC_S25_0.5	ES2231585	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.12	11	95	<1
		AUS_MUR_VC_S25_1.0	ES2231585	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.11	9	77	<1
S26B	8/31/2022	AUS_MUR_VC_S26B_0.5	ES2231585	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.12	19	91	<1
		AUS_MUR_VC_S26B_1.0	ES2231585	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.23	2	13	<1
S27	8/31/2022	AUS_MUR_VC_S27_0.5	ES2231585	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.12	13	86	<1
		AUS_MUR_VC_S27_1.0	ES2231585	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.13	14	69	<1
S28	8/31/2022	AUS_MUR_VC_S28_0.5	ES2231585	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.15	10	71	<1
		AUS_MUR_VC_S28_1.0	ES2231585	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.28	4	29	<1
S29	8/31/2022	AUS_MUR_VC_S29_0.5	ES2231585	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.12	7	92	<1
		AUS_MUR_VC_S29_1.0	ES2231585	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.11	9	86	<1
S30	9/1/2022	AUS_MUR_GS_S30_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.10	5	96	<1
S30B	8/31/2022	AUS_MUR_VC_S30B_0.5	ES2231584	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.06	9	95	<1
		AUS_MUR_VC_S30B_1.0	ES2231584	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.06	7	93	<1
S31	9/1/2022	AUS_MUR_GS_S31_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.11	-	-	-
S31_1	8/31/2022	AUS_MUR_VC_S31_1_0.5	ES2231583	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.08	15	96	<1
		AUS_MUR_VC_S31_1_1.0	ES2231583	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.08	25	89	<1
S31_2	8/31/2022	AUS_MUR_VC_S31_2_0.5	ES2231583	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.08	20	89	<1
		AUS_MUR_VC_S31_2_1.0	ES2231583	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.09	18	82	<1
S31_3A	8/31/2022	AUS_MUR_VC_S31_3A_0.	ES2231584	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.07	23	90	<1

						TRH							TPH					Organic			
				Xylene Total	Total BTEX	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	Total Organic Carbon	+1180µm	+150µm	+19.0mm
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%
		AUS_MUR_VC_S31_3A_0.	ES2231584	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.08	24	90	<1
		AUS_MUR_VC_S31_3A_1.	ES2231584	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.09	15	81	<1
		AUS_MUR_VC_S31_3A_1.	ES2231584	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.04	21	84	<1
S32	9/1/2022	AUS_MUR_GS_S32_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.10	25	98	<1
S32_1A	8/30/2022	AUS_MUR_VC_S32_1A_0.	ES2231582	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.08	23	91	<1
		AUS_MUR_VC_S32_1A_1.	ES2231582	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.11	32	93	<1
S32_3	8/31/2022	AUS_MUR_VC_S32_3_0.5	ES2231583	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.06	11	97	<1
		AUS_MUR_VC_S32_3_1.0	ES2231583	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.08	13	92	<1
S33	8/30/2022	AUS_MUR_VC_S33_0.5	ES2231582	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.10	30	96	<1
		AUS_MUR_VC_S33_1.0	ES2231582	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.18	23	64	<1
S34	8/30/2022	AUS_MUR_VC_S34_0.5	ES2231582	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.20	34	99	<1
		AUS_MUR_VC_S34_1.0	ES2231582	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.10	26	64	<1
	9/1/2022	AUS_MUR_GS_S34_4	ES2231627	<0.5	<0.2	<3	<3.0	<3	<3	<3	<5	<3	<3	<3	<3	<5	<3	0.07	44	98	<1

				Particle Size													
				+2.36mm	+300µm	+37.5mm	+4.75mm	+425µm	+600µm	+75.0mm	+75µm	+9.5mm	Clay in soils <2um	Cobbles (>6cm)	Gravel (>2mm)	Sand (0.06-2.00 mm)	Silt (2-60 µm)
				%	%	%	%	%	%	%	%	%	%	%	%	%	%
EQL				1	1	1	1	1	1	1	1	1	1	1	1	1	1
NADG (2009) SQG-High																	
NADG (2009) Screening Level																	
Location Code	Date	Field ID	Lab Report Number														
1A	9/1/2022	AUS_MUR_VC_001A_0.5	ES2231627	<1	4	<1	<1	3	2	<1	9	<1	49	<1	<1	11	40
		AUS_MUR_VC_001A_1.0	ES2231627	<1	<1	<1	<1	<1	<1	<1	<1	<1	59	<1	<1	5	36
2	9/1/2022	AUS_MUR_VC_002_0.5	ES2231627	2	10	<1	<1	7	5	<1	17	<1	46	<1	2	21	31
		AUS_MUR_VC_002_1.0	ES2231627	<1	2	<1	<1	1	<1	<1	5	<1	51	<1	<1	11	38
6B	9/3/2022	AUS_MUR_VC_6B_0.5	ES2231627	4	25	<1	<1	20	16	<1	58	<1	18	<1	6	55	21
		AUS_MUR_VC_6B_1.0	ES2231627	9	33	<1	5	28	23	<1	56	<1	23	<1	11	49	17
7B	9/2/2022	AUS_MUR_VC_7B_0.5	ES2231627	19	44	<1	15	37	31	<1	74	<1	13	<1	21	52	14
		AUS_MUR_VC_7B_1.0	ES2231627	9	20	<1	6	17	15	<1	33	<1	35	<1	9	31	25
A1	9/2/2022	AUS_MUR_GB_A1_4	ES2231627	14	57	<1	<1	38	26	<1	89	<1	7	<1	16	74	3
A2	9/2/2022	AUS_MUR_GB_A2_4	ES2231627	3	27	<1	<1	14	10	<1	82	<1	8	<1	4	79	9
		AUS_MUR_GB_A2_5	ES2231627	8	28	<1	<1	19	15	<1	81	<1	11	<1	9	75	5
		AUS_MUR_GB_A2_6	ES2231627	10	39	<1	<1	26	22	<1	86	<1	9	<1	12	74	5
A3	9/2/2022	AUS_MUR_GB_A3_4	ES2231627	2	24	<1	<1	12	8	<1	78	<1	11	<1	3	77	9
A4	9/2/2022	AUS_MUR_GB_A4_4	ES2231627	14	42	<1	<1	32	28	<1	89	<1	7	<1	16	73	4
B1	9/3/2022	AUS_MUR_GB_B1_4	ES2231627	1	14	<1	<1	10	7	<1	74	<1	11	<1	2	75	12
B2	9/3/2022	AUS_MUR_GB_B2_4_AS	ES2231627	18	45	<1	6	40	35	<1	78	<1	11	<1	21	59	9
		AUS_MUR_GB_B2_4_BS	ES2231627	23	50	<1	8	46	41	<1	79	<1	12	<1	26	55	7
B3	9/3/2022	AUS_MUR_GB_B3_4	ES2231627	6	22	<1	<1	17	15	<1	76	<1	11	<1	8	69	12
B4	9/3/2022	AUS_MUR_GB_B4_4	ES2231627	3	22	<1	<1	16	12	<1	75	<1	11	<1	4	74	11
C	9/2/2022	AUS_MUR_VC8_C_0.5	ES2231627	34	64	<1	23	51	46	<1	84	<1	9	<1	36	48	7
		AUS_MUR_VC8_C_1.0	ES2231627	49	60	<1	37	59	58	<1	65	<1	14	<1	50	17	19
C1	9/3/2022	AUS_MUR_GB_C1_4	ES2231627	8	45	<1	<1	34	26	<1	80	<1	11	<1	11	72	6
C2	9/3/2022	AUS_MUR_GB_C2_4	ES2231627	8	50	<1	<1	40	30	<1	82	<1	12	<1	11	74	3
		AUS_MUR_GB_C2_5A	ES2231627	10	49	<1	3	40	31	<1	80	<1	14	<1	13	68	5
		AUS_MUR_GB_C2_6	ES2231627	6	49	<1	<1	39	29	<1	82	<1	13	<1	10	74	3
C3	9/3/2022	AUS_MUR_GB_C3_4	ES2231627	12	58	<1	<1	47	37	<1	86	<1	9	<1	15	73	3
C4	9/3/2022	AUS_MUR_GB_C4_4A	ES2231627	15	58	<1	4	48	37	<1	87	<1	6	<1	18	71	5
D1	9/3/2022	AUS_MUR_GB_D1_4A	ES2231627	5	90	<1	<1	81	52	<1	98	<1	2	<1	9	89	<1
D2	9/3/2022	AUS_MUR_GB_D2_4_AS	ES2231627	<1	28	<1	<1	13	8	<1	96	<1	4	<1	2	94	<1
		AUS_MUR_GB_D2_4_BS	ES2231627	<1	27	<1	<1	13	7	<1	96	<1	4	<1	2	94	<1
D3	9/3/2022	AUS_MUR_GB_D3_4	ES2231627	7	38	<1	<1	24	19	<1	91	<1	7	<1	9	83	1
D4	9/3/2022	AUS_MUR_GB_D4_4	ES2231627	5	90	<1	<1	86	71	<1	97	<1	2	<1	13	85	<1
S1	8/30/2022	AUS_MUR_GS_S1_1.0	ES2231582	4	89	<1	<1	73	48	<1	97	<1	3	<1	8	89	<1
S1B	8/28/2022	AUS_MUR_VC_S1B_0.5	ES2230841	2	93	<1	<1	83	58	<1	97	<1	3	<1	7	90	<1
		AUS_MUR_VC_S1B_1.0	ES2230841	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S2-1	8/30/2022	AUS_MUR_GS_S2-1	ES2230841	2	91	<1	<1	70	40	<1	99	<1	1	<1	4	95	<1
S2BS	8/28/2022	AUS_MUR_VC_S2BS_0.5	ES2230841	6	67	<1	2	57	42	<1	85	<1	13	<1	10	77	<1
S3	8/28/2022	AUS_MUR_VC_S3_0.5AS	ES2230841	5	92	<1	<1	86	70	<1	97	<1	3	<1	13	84	<1
		AUS_MUR_VC_S3_1.0AS	ES2230841	5	93	<1	<1	88	73	<1	96	<1	3	<1	13	84	<1
		AUS_MUR_VC_S3_1.0B	ES2230841	4	90	<1	<1	85	68	<1	95	<1	5	<1	12	83	<1
	8/30/2022	AUS_MUR_GS_S3-1	ES2230841	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S4	8/30/2022	AUS_MUR_GS_S4-1	ES2230841	6	76	<1	<1	66	54	<1	90	<1	9	<1	13	78	<1
S5	8/30/2022	AUS_MUR_GS_S5-1	ES2230841	4	94	<1	<1	84	64	<1	98	<1	2	<1	11	87	<1
S5A	8/28/2022	AUS_MUR_VC_S5A_0.5	ES2230841	2	95	<1	<1	86	63	<1	98	<1	2	<1	8	90	<1
		AUS_MUR_VC_S5A_1.0	ES2230841	4	93	<1	<1	82	62	<1	97	<1	2	<1	11	87	<1
S6	8/28/2022	AUS_MUR_VC_S6_0.5	ES2230841	3	88	<1	<1	75	57	<1	96	<1	4	<1	9	87	<1
		AUS_MUR_VC_S6_1.0	ES2230841	6	73	<1	<1	59	44	<1	91	<1	8	<1	12	80	<1
S6-1A	8/30/2022	AUS_MUR_GS_S6-1A	ES2230841	7	89	<1	<1	76	60	<1	97	<1	3	<1	14	83	<1
				-	-	-	-	-	-	-	-	-	-	-	-	-	-
S7	8/28/2022	AUS_MUR_VC_S7_0.5	ES2230841	11	80	<1	<1	69	56	<1	93	<1	6	<1	18	76	<1
		AUS_MUR_VC_S7_1.0	ES2230841	4	54	<1	<1	42	32	<1	83	<1	12	<1	9	74	5
	8/30/2022	US_MUR_GS_S7-1	ES2230841	14	92	<1	1	87	77	<1	97	<1	3	<1	26	71	<1
S8_1	8/28/2022	AUS_MUR_VC_S8_1_1.0	ES2230841	8	80	<1	<1	72	59	<1	94	<1	5	<1	16	79	<1
S8_2	8/28/2022	AUS_MUR_VC_S8_2_0.5	ES2230841	5	95	<1	<1	90	74	<1	98	<1	2	<1	15	83	<1
		US_MUR_GS_S8_02_1.0	ES2230841	6	92	<1	<1	88	75	<1	96	<1	4	<1	17	79	<1
S8_3	8/29/2022	AUS_MUR_VC_S8_3_1.0	ES2230841	10	90	<1	<1	84	74	<1	95	<1	5	<1	21	74	<1
S9	8/28/2022	AUS_MUR_GS_S9_0.5	ES2230841	5	55	<1	<1	44	34	<1	84	<1	10	<1	9	76	5
		AUS_MUR_GS_S9_1.0	ES2230841	3	31	<1	<1	21	15	<1	78	<1	17	<1	4	75	4

				Particle Size													
				+2.36mm	+300µm	+37.5mm	+4.75mm	+425µm	+600µm	+75.0mm	+75µm	+9.5mm	Clay in soils <2um	Cobbles (>6cm)	Gravel (>2mm)	Sand (0.06-2.00 mm)	Silt (2-60 µm)
				%	%	%	%	%	%	%	%	%	%	%	%	%	%
	8/29/2022	AUS_MUR_VC_S9_1.0	ES2230841	13	79	<1	3	70	58	<1	93	<1	5	<1	20	72	3
S10	8/29/2022	AUS_MUR_GS_S10_0.5	ES2230841	5	76	<1	<1	60	45	<1	93	<1	4	<1	10	83	3
		AUS_MUR_GS_S10_1.0	ES2230841	3	44	<1	<1	32	24	<1	82	<1	13	<1	6	76	5
S11	8/29/2022	AUS_MUR_GS_S11_1	ES2230841	4	54	<1	<1	42	33	<1	86	<1	12	<1	9	78	1
S11-2	8/29/2022	AUS_MUR_VC_S11-2_0.5	ES2230841	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		AUS_MUR_VC_S11-2_1.0	ES2230841	7	52	<1	<1	43	34	<1	82	<1	12	<1	11	73	4
S11-3	8/29/2022	AUS_MUR_VC_S11-3_0.5	ES2230841	8	78	<1	1	64	51	<1	95	<1	4	<1	14	81	1
		AUS_MUR_VC_S11-3_1.0	ES2230841	30	63	<1	24	58	52	<1	80	21	9	<1	33	48	10
S12	8/29/2022	AUS_MUR_GS_S12_2	ES2230841	5	49	<1	<1	38	30	<1	82	<1	12	<1	9	74	5
		AUS_MUR_VC_S12_0.5	ES2230841	9	81	<1	2	69	56	<1	95	<1	5	<1	16	79	<1
		AUS_MUR_VC_S12_1.0	ES2230841	10	45	<1	3	36	30	<1	79	<1	10	<1	13	65	12
S13	8/29/2022	AUS_MUR_GS_S13_1	ES2230841	6	47	<1	<1	37	29	<1	83	<1	12	<1	9	74	5
		AUS_MUR_VC_S13_0.5	ES2230841	9	72	<1	<1	60	50	<1	91	<1	9	<1	15	76	<1
		AUS_MUR_VC_S13_1.0	ES2230841	10	43	<1	3	36	29	<1	78	<1	15	<1	13	65	7
S14	9/1/2022	AUS_MUR_GS_S14_4	ES2231627	3	25	<1	<1	19	15	<1	88	<1	6	<1	4	85	5
		AUS_MUR_VC_S14_0.5	ES2231588	3	30	<1	<1	24	19	<1	83	<1	10	<1	6	76	8
		AUS_MUR_VC_S14_1.0	ES2231588	<1	3	<1	<1	2	1	<1	68	<1	19	<1	1	68	12
S15	9/1/2022	AUS_MUR_VC_S15_0.5	ES2231588	2	28	<1	<1	21	17	<1	86	<1	7	<1	5	81	7
		AUS_MUR_VC_S15_1.0	ES2231588	2	30	<1	<1	23	19	<1	86	<1	8	<1	4	81	7
S16	9/1/2022	AUS_MUR_VC_S16_0.5	ES2231588	1	16	<1	<1	12	9	<1	71	<1	17	<1	2	69	12
		AUS_MUR_VC_S16_1.0	ES2231588	1	10	<1	<1	8	6	<1	54	<1	30	<1	2	53	15
S17A	9/1/2022	AUS_MUR_VC_S17A_0.5	ES2231588	6	66	<1	<1	53	41	<1	95	<1	2	<1	11	84	3
		AUS_MUR_VC_S17A_1.0	ES2231588	4	60	<1	1	45	34	<1	93	<1	5	<1	8	84	3
S18_1	9/1/2022	AUS_MUR_VC_S18_1_0.5	ES2231587	2	10	<1	1	8	7	<1	61	<1	26	<1	3	59	12
		AUS_MUR_VC_S18_1_1.0	ES2231587	13	16	<1	11	16	15	<1	34	10	44	<1	13	21	22
S18_2A	9/1/2022	AUS_MUR_VC_S18_2A_0.	ES2231587	1	11	<1	<1	8	7	<1	57	<1	27	<1	2	55	16
		AUS_MUR_VC_S18_2A_1.	ES2231587	1	2	<1	<1	2	2	<1	6	<1	69	<1	1	9	21
S18_3	9/1/2022	AUS_MUR_VC_S18_3_0.5	ES2231588	<1	9	<1	<1	7	5	<1	53	<1	33	<1	1	53	13
		AUS_MUR_VC_S18_3_1.0	ES2231588	<1	1	<1	<1	<1	<1	<1	4	<1	75	<1	<1	8	17
S19	8/31/2022	AUS_MUR_VC_S19_0.5	ES2231587	6	25	<1	2	19	16	<1	75	<1	17	<1	7	68	8
		AUS_MUR_VC_S19_1.0	ES2231587	3	13	<1	<1	11	9	<1	48	<1	35	<1	4	44	17
S21	8/31/2022	AUS_MUR_VC_S21_0.5	ES2231587	5	14	<1	4	12	11	<1	54	<1	28	<1	6	49	17
		AUS_MUR_VC_S21_1.0	ES2231587	<1	2	<1	<1	1	<1	<1	11	<1	58	<1	<1	16	26
	9/1/2022	AUS_MUR_GS_S21_4	ES2231627	2	17	<1	<1	11	8	<1	78	<1	9	<1	3	81	7
S22	8/31/2022	AUS_MUR_VC_S22_0.5A	ES2231586	2	17	<1	<1	12	9	<1	64	<1	24	<1	3	63	10
		AUS_MUR_VC_S22_0.5B	ES2231586	2	15	<1	<1	12	9	<1	63	<1	25	<1	3	61	11
		AUS_MUR_VC_S22_1.0A	ES2231586	4	8	<1	2	7	6	<1	26	<1	43	<1	4	24	29
		AUS_MUR_VC_S22_1.0B	ES2231586	5	8	<1	4	7	6	<1	24	<1	50	<1	5	22	23
S23	8/31/2022	AUS_MUR_VC_S23_0.5A	ES2231586	5	28	<1	1	18	13	<1	78	<1	14	<1	6	73	7
		AUS_MUR_VC_S23_0.5B	ES2231586	6	26	<1	3	18	14	<1	78	<1	14	<1	7	72	7
		AUS_MUR_VC_S23_1.0A	ES2231586	<1	1	<1	<1	<1	<1	<1	7	<1	68	<1	<1	9	23
		AUS_MUR_VC_S23_1.0B	ES2231586	<1	1	<1	<1	<1	<1	<1	7	<1	67	<1	<1	12	21
S24	8/31/2022	AUS_MUR_VC_S24_0.5	ES2231586	4	47	<1	2	26	17	<1	94	<1	6	<1	6	88	<1
		AUS_MUR_VC_S24_1.0	ES2231586	5	22	<1	3	15	12	<1	68	<1	20	<1	6	64	10
S25	8/31/2022	AUS_MUR_VC_S25_0.5	ES2231585	2	75	<1	<1	53	34	<1	97	<1	3	<1	5	92	<1
		AUS_MUR_VC_S25_1.0	ES2231585	3	42	<1	<1	26	18	<1	89	<1	11	<1	5	84	<1
S26B	8/31/2022	AUS_MUR_VC_S26B_0.5	ES2231585	10	66	<1	7	47	34	<1	95	6	5	<1	13	82	<1
		AUS_MUR_VC_S26B_1.0	ES2231585	<1	6	<1	<1	4	3	<1	24	<1	51	<1	1	31	17
S27	8/31/2022	AUS_MUR_VC_S27_0.5	ES2231585	4	62	<1	2	40	27	<1	91	<1	9	<1	7	84	<1
		AUS_MUR_VC_S27_1.0	ES2231585	5	41	<1	<1	32	24	<1	87	<1	10	<1	8	79	3
S28	8/31/2022	AUS_MUR_VC_S28_0.5	ES2231585	6	35	<1	3	24	17	<1	90	<1	8	<1	7	83	2
		AUS_MUR_VC_S28_1.0	ES2231585	2	10	<1	2	7	6	<1	47	<1	40	<1	3	44	13
S29	8/31/2022	AUS_MUR_VC_S29_0.5	ES2231585	<1	67	<1	<1	44	25	<1	96	<1	4	<1	3	93	<1
		AUS_MUR_VC_S29_1.0	ES2231585	4	45	<1	1	27	18	<1	93	<1	7	<1	5	88	<1
S30	9/1/2022	AUS_MUR_GS_S30_4	ES2231627	<1	74	<1	<1	44	24	<1	98	<1	2	<1	2	96	<1
S30B	8/31/2022	AUS_MUR_VC_S30B_0.5	ES2231584	1	83	<1	<1	62	39	<1	97	<1	3	<1	4	93	<1
		AUS_MUR_VC_S30B_1.0	ES2231584	<1	71	<1	<1	49	28	<1	97	<1	3	<1	3	94	<1
S31	9/1/2022	AUS_MUR_GS_S31_4	ES2231627	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S31_1	8/31/2022	AUS_MUR_VC_S31_1_0.5	ES2231583	4	93	<1	2	84	56	<1	98	<1	2	<1	7	91	<1
		AUS_MUR_VC_S31_1_1.0	ES2231583	5	79	<1	<1	68	49	<1	95	<1	4	<1	11	84	1
S31_2	8/31/2022	AUS_MUR_VC_S31_2_0.5	ES2231583	4	80	<1	<1	71	51	<1	95	<1	4	<1	8	87	1
		AUS_MUR_VC_S31_2_1.0	ES2231583	6	68	<1	<1	58	42	<1	91	<1	6	<1	9	84	1
S31_3A	8/31/2022	AUS_MUR_VC_S31_3A_0.	ES2231584	3	80	<1	<1	72	54	<1	96	<1	4	<1	9	87	<1

				Particle Size													
				+2.36mm	+300µm	+37.5mm	+4.75mm	+425µm	+600µm	+75.0mm	+75µm	+9.5mm	Clay in soils <2um	Cobbles (>6cm)	Gravel (>2mm)	Sand (0.06-2.00 mm)	Silt (2-60 µm)
				%	%	%	%	%	%	%	%	%	%	%	%	%	%
		AUS_MUR_VC_S31_3A_0.	ES2231584	5	80	<1	<1	73	57	<1	95	<1	5	<1	11	84	<1
		AUS_MUR_VC_S31_3A_1.	ES2231584	5	58	<1	<1	48	34	<1	92	<1	7	<1	8	85	<1
		AUS_MUR_VC_S31_3A_1.	ES2231584	6	67	<1	2	58	43	<1	93	<1	6	<1	11	83	<1
S32	9/1/2022	AUS_MUR_GS_S32_4	ES2231627	4	96	<1	<1	89	70	<1	98	<1	2	<1	11	87	<1
S32_1A	8/30/2022	AUS_MUR_VC_S32_1A_0.	ES2231582	3	87	<1	<1	76	59	<1	93	<1	5	<1	9	84	2
		AUS_MUR_VC_S32_1A_1.	ES2231582	6	89	<1	<1	80	65	<1	95	<1	5	<1	14	81	<1
S32_3	8/31/2022	AUS_MUR_VC_S32_3_0.5	ES2231583	1	94	<1	<1	82	52	<1	97	<1	3	<1	4	93	<1
		AUS_MUR_VC_S32_3_1.0	ES2231583	2	85	<1	<1	69	46	<1	95	<1	3	<1	5	91	1
S33	8/30/2022	AUS_MUR_VC_S33_0.5	ES2231582	9	92	<1	1	79	59	<1	98	<1	2	<1	15	83	<1
		AUS_MUR_VC_S33_1.0	ES2231582	16	46	<1	9	38	31	<1	72	<1	19	<1	18	54	9
S34	8/30/2022	AUS_MUR_VC_S34_0.5	ES2231582	5	98	<1	<1	95	80	<1	99	<1	1	<1	14	85	<1
		AUS_MUR_VC_S34_1.0	ES2231582	18	51	<1	8	42	35	<1	69	<1	11	<1	21	48	20
	9/1/2022	AUS_MUR_GS_S34_4	ES2231627	22	92	<1	<1	76	60	<1	98	<1	2	<1	29	69	<1

			Metals		Organic	Particle Size
			Aluminium	Iron	Total Organic Carbon	+75µm
			mg/L	mg/L	mg/L	%
EQL			0.01	0.05	1	1
Field ID	Date	Lab Report Number				
AUS_MUR_RIN-3	8/31/2022	ES2231587	-	-	5	1
AUS_MUR_RIN_4	9/2/2022	ES2231627	0.50	0.36	34	-
AUS_MUR_RIN_5	9/3/2022	ES2231627	0.19	0.12	2	-
AUS_MUR_RIN_6	9/3/2022	ES2231627	0.45	0.09	2	-

Appendix 6 - Sample Locations and Offsets

Guardian Spreadsheet showing sample locations and offsets – P20015_WP1_5_SampleLocationOffsets_RevA

SAP Locations Count	223

Min	-12.73	-13.44	0.16
Max	12.75	19.64	21.28
Number of locations >10m offset			48
Number of locations >15m offset			3

SAMPLE_NAME	Site	RECOVERY	SYMBOLOGY_CODE	OBJECTIVE	SAP Rev 5		Online Log		Offset - SAP vs Actual					SAP Rev 5 vs Online Log
					Target_E	Target_N	Actual_E	Actual_N	Delta_E	Delta_N	Delta_Position	Comment	Status	Target Position Offset
					[m]	[m]	[m]	[m]	[m]	[m]	[m]			[m]
AUS-MUR-CPT-001	AUS-MUR-CPT-001	0	IOGP1109 Seabed PCPT	Geotechnical characterisation			709,860.36	8,642,923.50				Geotechnical location - not included in SAP	Closed	
AUS-MUR-CPT-002	AUS-MUR-CPT-002	0	IOGP1109 Seabed PCPT	Geotechnical characterisation			700,516.89	8,642,430.91				Geotechnical location - not included in SAP	Closed	
AUS-MUR-CPT-003	AUS-MUR-CPT-003	0	IOGP1109 Seabed PCPT	Geotechnical characterisation			693,043.24	8,642,035.27				Geotechnical location - not included in SAP	Closed	
AUS-MUR-CPT-004	AUS-MUR-CPT-004	0	IOGP1109 Seabed PCPT	Geotechnical characterisation			689,039.90	8,641,993.31				Geotechnical location - not included in SAP	Closed	
AUS-MUR-CPT-004a	AUS-MUR-CPT-004a	0	IOGP1109 Seabed PCPT	Geotechnical characterisation			689,038.60	8,641,998.85				Geotechnical location - not included in SAP	Closed	
AUS-MUR-CPT-005	AUS-MUR-CPT-005	0	IOGP1109 Seabed PCPT	Geotechnical characterisation			684,566.74	8,642,754.03				Geotechnical location - not included in SAP	Closed	
AUS-MUR-CPT-006	AUS-MUR-CPT-006	0	IOGP1109 Seabed PCPT	Geotechnical characterisation			674,888.97	8,643,462.96				Geotechnical location - not included in SAP	Closed	
AUS-MUR-CPT-006a	AUS-MUR-CPT-006a	0	IOGP1109 Seabed PCPT	Geotechnical characterisation			674,889.15	8,643,468.73				Geotechnical location - not included in SAP	Closed	
AUS-MUR-CPT-006b	AUS-MUR-CPT-006b	0	IOGP1109 Seabed PCPT	Geotechnical characterisation			674,889.47	8,643,464.09				Geotechnical location - not included in SAP	Closed	
AUS-MUR-CPT-007	AUS-MUR-CPT-007	0	IOGP1109 Seabed PCPT	Geotechnical characterisation			667,475.27	8,643,703.59				Geotechnical location - not included in SAP	Closed	
AUS-MUR-CPT-008	AUS-MUR-CPT-008	0	IOGP1109 Seabed PCPT	Geotechnical characterisation			663,639.45	8,642,685.22				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GB-A1_1	A1	0	IOGP1110 Grab sample	Disposable grab sample	641,620.08	8,653,910.90	641,612.61	8,653,916.67	7.47	-5.77	9.44	-	-	0.0070
AUS-MUR-GB-A1_2	A1	0	IOGP1110 Grab sample	Disposable grab sample	641,620.08	8,653,910.90	641,612.72	8,653,908.12	7.36	2.78	7.86	-	-	0.0070
AUS-MUR-GB-A1_3	A1	0	IOGP1110 Grab sample	Disposable grab sample	641,620.08	8,653,910.90	641,628.79	8,653,907.13	-8.71	3.77	9.49	-	-	0.0070
AUS-MUR-GB-A1_3a	A1	0	IOGP1110 Grab sample	Disposable grab sample	641,620.08	8,653,910.90	641,629.24	8,653,907.72	-9.16	3.18	9.70	-	-	0.0070
AUS-MUR-GB-A1_4	A1	0	IOGP1110 Grab sample	Disposable grab sample	641,620.08	8,653,910.90	641,627.51	8,653,917.55	-7.43	-6.65	9.98	-	-	0.0070
AUS-MUR-GB-A2_1	A2	0	IOGP1110 Grab sample	Disposable grab sample	642,586.00	8,653,652.08	642,580.44	8,653,660.40	5.56	-8.32	10.01	-	-	0.0066
AUS-MUR-GB-A2_2	A2	0	IOGP1110 Grab sample	Disposable grab sample	642,586.00	8,653,652.08	642,590.55	8,653,660.12	-4.55	-8.04	9.24	-	-	0.0066
AUS-MUR-GB-A2_3	A2	0	IOGP1110 Grab sample	Disposable grab sample	642,586.00	8,653,652.08	642,592.32	8,653,646.64	-6.32	5.44	8.34	-	-	0.0066
AUS-MUR-GB-A2_4	A2	0	IOGP1110 Grab sample	Disposable grab sample	642,586.00	8,653,652.08	642,579.24	8,653,645.27	6.76	6.81	9.59	-	-	0.0066
AUS-MUR-GB-A2_5	A2	0	IOGP1110 Grab sample	Disposable grab sample	642,586.00	8,653,652.08	642,594.84	8,653,651.82	-8.84	0.26	8.84	-	-	0.0066
AUS-MUR-GB-A2_6	A2	0	IOGP1110 Grab sample	Disposable grab sample	642,586.00	8,653,652.08	642,579.20	8,653,649.59	6.80	2.49	7.24	-	-	0.0066
AUS-MUR-GB-A3_1	A3	0	IOGP1110 Grab sample	Disposable grab sample	642,327.18	8,652,686.15	642,319.78	8,652,692.07	7.40	-5.92	9.48	-	-	0.0028
AUS-MUR-GB-A3_2	A3	0	IOGP1110 Grab sample	Disposable grab sample	642,327.18	8,652,686.15	642,320.04	8,652,680.91	7.14	5.24	8.86	-	-	0.0028
AUS-MUR-GB-A3_3	A3	0	IOGP1110 Grab sample	Disposable grab sample	642,327.18	8,652,686.15	642,334.13	8,652,680.51	-6.95	5.64	8.95	-	-	0.0028
AUS-MUR-GB-A3_4	A3	0	IOGP1110 Grab sample	Disposable grab sample	642,327.18	8,652,686.15	642,334.54	8,652,692.60	-7.36	-6.45	9.78	-	-	0.0028
AUS-MUR-GB-A4_1	A4	0	IOGP1110 Grab sample	Disposable grab sample	641,361.26	8,652,944.97	641,356.01	8,652,939.24	5.25	5.73	7.77	-	-	0.0034
AUS-MUR-GB-A4_2	A4	0	IOGP1110 Grab sample	Disposable grab sample	641,361.26	8,652,944.97	641,354.84	8,652,952.92	6.42	-7.95	10.22	-	-	0.0034
AUS-MUR-GB-A4_3	A4	0	IOGP1110 Grab sample	Disposable grab sample	641,361.26	8,652,944.97	641,365.30	8,652,953.50	-4.04	-8.53	9.44	-	-	0.0034
AUS-MUR-GB-A4_4	A4	0	IOGP1110 Grab sample	Disposable grab sample	641,361.26	8,652,944.97	641,367.59	8,652,937.61	-6.33	7.36	9.71	-	-	0.0034
AUS-MUR-GB-B1_1	B1	0	IOGP1110 Grab sample	Disposable grab sample	647,611.06	8,651,711.59	647,603.20	8,651,707.92	7.86	3.67	8.67	-	-	0.0015
AUS-MUR-GB-B1_2	B1	0	IOGP1110 Grab sample	Disposable grab sample	647,611.06	8,651,711.59	647,605.62	8,651,718.47	5.44	-6.88	8.77	-	-	0.0015
AUS-MUR-GB-B1_3	B1	0	IOGP1110 Grab sample	Disposable grab sample	647,611.06	8,651,711.59	647,617.40	8,651,718.88	-6.34	-7.29	9.66	-	-	0.0015
AUS-MUR-GB-B1_4	B1	0	IOGP1110 Grab sample	Disposable grab sample	647,611.06	8,651,711.59	647,617.66	8,651,706.73	-6.60	4.86	8.20	-	-	0.0015
AUS-MUR-GB-B2_1	B2	0	IOGP1110 Grab sample	Disposable grab sample	648,576.98	8,651,452.77	648,568.10	8,651,457.06	8.88	-4.29	9.87	-	-	0.0046
AUS-MUR-GB-B2_2	B2	0	IOGP1110 Grab sample	Disposable grab sample	648,576.98	8,651,452.77	648,583.83	8,651,457.32	-6.85	-4.55	8.22	-	-	0.0046
AUS-MUR-GB-B2_3	B2	0	IOGP1110 Grab sample	Disposable grab sample	648,576.98	8,651,452.77	648,584.13	8,651,447.42	-7.15	5.35	8.93	-	-	0.0046
AUS-MUR-GB-B2_4	B2	0	IOGP1110 Grab sample	Disposable grab sample	648,576.98	8,651,452.77	648,570.21	8,651,447.21	6.77	5.56	8.76	-	-	0.0046
AUS-MUR-GB-B3_1	B3	0	IOGP1110 Grab sample	Disposable grab sample	648,318.17	8,650,486.85	648,325.97	8,650,492.14	-7.80	-5.29	9.43	-	-	0.0072
AUS-MUR-GB-B3_2	B3	0	IOGP1110 Grab sample	Disposable grab sample	648,318.17	8,650,486.85	648,323.99	8,650,480.07	-5.82	6.78	8.93	-	-	0.0072
AUS-MUR-GB-B3_3	B3	0	IOGP1110 Grab sample	Disposable grab sample	648,318.17	8,650,486.85	648,309.06	8,650,484.48	9.11	2.37	9.41	-	-	0.0072
AUS-MUR-GB-B3_4	B3	0	IOGP1110 Grab sample	Disposable grab sample	648,318.17	8,650,486.85	648,311.96	8,650,494.17	6.21	-7.32	9.60	-	-	0.0072
AUS-MUR-GB-B4_1	B4	0	IOGP1110 Grab sample	Disposable grab sample	647,352.24	8,650,745.66	647,359.75	8,650,752.75	-7.51	-7.09	10.33	-	-	0.0045
AUS-MUR-GB-B4_1a	B4	0	IOGP1110 Grab sample	Disposable grab sample	647,352.24	8,650,745.66	647,360.11	8,650,749.84	-7.87	-4.18	8.91	-	-	0.0045
AUS-MUR-GB-B4_1b	B4	0	IOGP1110 Grab sample	Disposable grab sample	647,352.24	8,650,745.66	647,360.24	8,650,749.52	-8.00	-3.86	8.88	-	-	0.0045
AUS-MUR-GB-B4_2	B4	0	IOGP1110 Grab sample	Disposable grab sample	647,352.24	8,650,745.66	647,359.36	8,650,739.30	-7.12	6.36	9.55	-	-	0.0045
AUS-MUR-GB-B4_3	B4	0	IOGP1110 Grab sample	Disposable grab sample	647,352.24	8,650,745.66	647,343.82	8,650,740.66	8.42	5.00	9.79	-	-	0.0045
AUS-MUR-GB-B4_4	B4	0	IOGP1110 Grab sample	Disposable grab sample	647,352.24	8,650,745.66	647,344.99	8,650,751.93	7.25	-6.27	9.58	-	-	0.0045
AUS-MUR-GB-C1_1	C1	0	IOGP1110 Grab sample	Disposable grab sample	673,013.78	8,648,615.31	673,006.08	8,648,622.63	7.70	-7.32	10.62	-	-	0.0000
AUS-MUR-GB-C1_2	C1	0	IOGP1110 Grab sample	Disposable grab sample	673,013.78	8,648,615.31	673,021.57	8,648,620.78	-7.79	-5.47	9.52	-	-	0.0000
AUS-MUR-GB-C1_3	C1	0	IOGP1110 Grab sample	Disposable grab sample	673,013.78	8,648,615.31	673,019.90	8,648,606.21	-6.12	9.10	10.97	-	-	0.0000
AUS-MUR-GB-C1_4	C1	0	IOGP1110 Grab sample	Disposable grab sample	673,013.78	8,648,615.31	673,007.16	8,648,608.09	6.62	7.22	9.80	-	-	0.0000
AUS-MUR-GB-C2_1	C2	0	IOGP1110 Grab sample	Disposable grab sample	673,979.71	8,648,356.49	673,969.53	8,648,359.76	10.18	-3.27	10.69	-	-	0.0040
AUS-MUR-GB-C2_2	C2	0	IOGP1110 Grab sample	Disposable grab sample	673,979.71	8,648,356.49	673,978.07	8,648,366.39	1.64	-9.90	10.03	-	-	0.0040
AUS-MUR-GB-C2_3	C2	0	IOGP1110 Grab sample	Disposable grab sample	673,979.71	8,648,356.49	673,988.15	8,648,359.12	-8.44	-2.63	8.84	-	-	0.0040
AUS-MUR-GB-C2_4	C2	0	IOGP1110 Grab sample	Disposable grab sample	673,979.71	8,648,356.49	673,988.94	8,648,352.09	-9.23	4.40	10.23	-	-	0.0040
AUS-MUR-GB-C2_5	C2	0	IOGP1110 Grab sample	Disposable grab sample	673,979.71	8,648,356.49	673,981.48	8,648,346.29	-1.77	10.20	10.35	-	-	0.0040
AUS-MUR-GB-C2_6	C2	0	IOGP1110 Grab sample	Disposable grab sample	673,979.71	8,648,356.49	673,969.13	8,648,352.02	10.58	4.47	11.48	-	-	0.0040
AUS-MUR-GB-C3_1	C3	0	IOGP1110 Grab sample	Disposable grab sample	673,720.89	8,647,390.56	673,727.72	8,647,396.78	-6.83	-6.22	9.24	-	-	0.0030
AUS-MUR-GB-C3_1a	C3	0	IOGP1110 Grab sample	Disposable grab sample	673,720.89	8,647,390.56	673,727.72	8,647,396.84	-6.83	-6.28	9.28	-	-	0.0030
AUS-MUR-GB-C3_1b	C3	0	IOGP1110 Grab sample	Disposable grab sample	673,720.89	8,647,390.56	673,728.18	8,647,397.10	-7.29	-6.54	9.80	-	-	0.0030
AUS-MUR-GB-C3_2	C3	0	IOGP1110 Grab sample	Disposable grab sample	673,720.89	8,647,390.56	673,727.25	8,647,382.70	-6.36	7.86	10.11	-	-	0.0030
AUS-MUR-GB-C3_3	C3	0	IOGP1110 Grab sample	Disposable grab sample	673,720.89	8,647,390.56	673,714.64	8,647,383.70	6.25	6.86	9.28	-	-	0.0030
AUS-MUR-GB-C3_4	C3	0	IOGP1110 Grab sample	Disposable grab sample	673,720.89	8,647,390.56	673,715.71	8,647,398.85	5.18	-8.29	9.77	-	-	0.0030
AUS-MUR-GB-C4_1	C4	0	IOGP1110 Grab sample	Disposable grab sample	672,754.96	8,647,649.38	672,749.14	8,647,656.84	5.82	-7.46	9.46	-	-	0.0010
AUS-MUR-GB-C4_2	C4	0	IOGP1110 Grab sample	Disposable grab sample	672,754.96	8,647,649.38	672,760.81	8,647,656.71	-5.85	-7.33	9.38	-	-	0.0010
AUS-MUR-GB-C4_3	C4	0	IOGP1110 Grab sample	Disposable grab sample	672,754.96	8,647,649.38	672,761.84	8,647,643.32	-6.88	6.06	9.17	-	-	0.0010
AUS-MUR-GB-C4_4	C4	0	IOGP1110 Grab sample	Disposable grab sample	672,754.96	8,647,649.38	672,744.09	8,647,644.77	10.87	4.61	11.81	-	-	0.0010
AUS-MUR-GB-D1_1	D1	0	IOGP1110 Grab sample	Disposable grab sample	686,160.53	8,646,894.78	686,153.73	8,646,888.46	6.80	6.32	9.28	-	-	0.0020
AUS-MUR-GB-D1_2	D1	0	IOGP1110 Grab sample	Disposable grab sample	686,160.53	8,646,894.78	686,154.24	8,646,901.98	6.29	-7.20	9.56	-	-	0.0020
AUS-MUR-GB-D1_3	D1	0	IOGP1110 Grab sample	Disposable grab sample	686,160.53	8,646,894.78	686,167.80	8,646,901.87	-7.27	-7.09	10.16	-	-	0.0020
AUS-MUR-GB-D1_4	D1	0	IOGP1110 Grab sample	Disposable grab sample	686,160.53	8,646,894.78	686,167.44	8,646,889.16	-6.91	5.62	8.91	-	-	0.0020
AUS-MUR-GB-D1_4	D1	0	IOGP1110 Grab sample	Disposable grab sample	686,160.53	8,646,894.78	686,167.12	8,646,888.78	-6.59	6.00	8.91	-	-	0.0020
AUS-MUR-GB-D2_1	D2	0	IOGP1110 Grab sample	Disposable grab sample	687,126.45	8,646,635.97	687,117.84	8,646,643.04	8.61	-7.07	11.14	-	-	0.0010

AUS-MUR-GB-D2_2	D2	0	IOGP1110 Grab sample	Disposable grab sample	687,126.45	8,646,635.97	687,134.08	8,646,641.49	-7.63	-5.52	9.42	-	-	0.0010
AUS-MUR-GB-D2_3	D2	0	IOGP1110 Grab sample	Disposable grab sample	687,126.45	8,646,635.97	687,134.00	8,646,628.34	-7.55	7.63	10.73	-	-	0.0010
AUS-MUR-GB-D2_4	D2	0	IOGP1110 Grab sample	Disposable grab sample	687,126.45	8,646,635.97	687,120.33	8,646,628.81	6.12	7.16	9.42	-	-	0.0010
AUS-MUR-GB-D3_1	D3	0	IOGP1110 Grab sample	Disposable grab sample	686,867.65	8,645,670.05	686,873.35	8,645,663.86	-5.70	6.19	8.41	-	-	0.0000
AUS-MUR-GB-D3_2	D3	0	IOGP1110 Grab sample	Disposable grab sample	686,867.65	8,645,670.05	686,874.92	8,645,675.75	-7.27	-5.70	9.24	-	-	0.0000
AUS-MUR-GB-D3_3	D3	0	IOGP1110 Grab sample	Disposable grab sample	686,867.65	8,645,670.05	686,860.93	8,645,677.73	6.72	-7.68	10.20	-	-	0.0000
AUS-MUR-GB-D3_4	D3	0	IOGP1110 Grab sample	Disposable grab sample	686,867.65	8,645,670.05	686,859.75	8,645,665.77	7.90	4.28	8.98	-	-	0.0000
AUS-MUR-GB-D4_1	D4	0	IOGP1110 Grab sample	Disposable grab sample	685,901.73	8,645,928.85	685,906.15	8,645,922.67	-4.42	6.18	7.60	-	-	0.0030
AUS-MUR-GB-D4_2	D4	0	IOGP1110 Grab sample	Disposable grab sample	685,901.73	8,645,928.85	685,895.96	8,645,923.62	5.77	5.23	7.79	-	-	0.0030
AUS-MUR-GB-D4_2a	D4	0	IOGP1110 Grab sample	Disposable grab sample	685,901.73	8,645,928.85	685,892.99	8,645,924.68	8.74	4.17	9.68	-	-	0.0030
AUS-MUR-GB-D4_3	D4	0	IOGP1110 Grab sample	Disposable grab sample	685,901.73	8,645,928.85	685,895.13	8,645,933.66	6.60	-4.81	8.16	-	-	0.0030
AUS-MUR-GB-D4_4	D4	0	IOGP1110 Grab sample	Disposable grab sample	685,901.73	8,645,928.85	685,910.32	8,645,933.84	-8.59	-4.99	9.94	-	-	0.0030
AUS-MUR-GS-S1_1	S1	0	IOGP1110 Grab sample	Grab sample at dredging area	647,676.78	8,646,789.44	647,677.47	8,646,785.30	-0.69	4.14	4.20	Target co-ords different from Online Log and SA	Closed	5.7698
AUS-MUR-GS-S1_2	S1	0	IOGP1110 Grab sample	Grab sample at dredging area	647,676.78	8,646,789.44	647,665.31	8,646,785.26	11.47	4.18	12.20	Target co-ords different from Online Log and SA	Closed	5.7698
AUS-MUR-GS-S1_3	S1	0	IOGP1110 Grab sample	Grab sample at dredging area	647,676.78	8,646,789.44	647,664.03	8,646,797.81	12.75	-8.37	15.25	Target co-ords different from Online Log and SA	Closed	5.7698
AUS-MUR-GS-S1_4	S1	0	IOGP1110 Grab sample	Grab sample at dredging area	647,676.78	8,646,789.44	647,680.02	8,646,796.45	-3.24	-7.01	7.73	Target co-ords different from Online Log and SA	Closed	5.7698
AUS-MUR-GS-S10_1	S10	0	IOGP1110 Grab sample	Grab sample at dredging area	640,345.17	8,648,671.87	640,336.39	8,648,668.56	8.78	3.31	9.39	Target co-ords different from Online Log and SA	Closed	0.1561
AUS-MUR-GS-S10_2	S10	0	IOGP1110 Grab sample	Grab sample at dredging area	640,345.17	8,648,671.87	640,338.79	8,648,679.51	6.38	-7.64	9.96	Target co-ords different from Online Log and SA	Closed	0.1561
AUS-MUR-GS-S10_3	S10	0	IOGP1110 Grab sample	Grab sample at dredging area	640,345.17	8,648,671.87	640,354.14	8,648,674.61	-8.97	-2.74	9.38	Target co-ords different from Online Log and SA	Closed	0.1561
AUS-MUR-GS-S10_4	S10	0	IOGP1110 Grab sample	Grab sample at dredging area	640,345.17	8,648,671.87	640,351.07	8,648,664.95	-5.90	6.92	9.09	Target co-ords different from Online Log and SA	Closed	0.1561
AUS-MUR-GS-S11_1	S11	0	IOGP1110 Grab sample	Grab sample at dredging area	640,340.33	8,648,673.11	640,329.51	8,648,670.00	10.82	3.11	11.26	Target co-ords different from Online Log and SA	Closed	1.3287
AUS-MUR-GS-S11_2	S11	0	IOGP1110 Grab sample	Grab sample at dredging area	640,340.33	8,648,673.11	640,331.59	8,648,677.93	8.74	-4.82	9.98	Target co-ords different from Online Log and SA	Closed	1.3287
AUS-MUR-GS-S11_3	S11	0	IOGP1110 Grab sample	Grab sample at dredging area	640,340.33	8,648,673.11	640,349.21	8,648,673.78	-8.88	-0.67	8.90	Target co-ords different from Online Log and SA	Closed	1.3287
AUS-MUR-GS-S11_4	S11	0	IOGP1110 Grab sample	Grab sample at dredging area	640,340.33	8,648,673.11	640,346.57	8,648,664.44	-6.24	8.67	10.68	Target co-ords different from Online Log and SA	Closed	1.3287
AUS-MUR-GS-S11_4a	S11	0	IOGP1110 Grab sample	Grab sample at dredging area	640,340.33	8,648,673.11	640,346.85	8,648,664.51	-6.52	8.60	10.79	Target co-ords different from Online Log and SA	Closed	1.3287
AUS-MUR-GS-S11_4b	S11	0	IOGP1110 Grab sample	Grab sample at dredging area	640,340.33	8,648,673.11	640,346.82	8,648,664.77	-6.49	8.34	10.57	Target co-ords different from Online Log and SA	Closed	1.3287
AUS-MUR-GS-S12_1	S12	0	IOGP1110 Grab sample	Grab sample at dredging area	640,319.02	8,648,678.58	640,307.72	8,648,682.76	11.30	-4.18	12.05	Target co-ords different from Online Log and SA	Closed	3.1298
AUS-MUR-GS-S12_2	S12	0	IOGP1110 Grab sample	Grab sample at dredging area	640,319.02	8,648,678.58	640,306.75	8,648,675.33	12.27	3.25	12.70	Target co-ords different from Online Log and SA	Closed	3.1298
AUS-MUR-GS-S12_3	S12	0	IOGP1110 Grab sample	Grab sample at dredging area	640,319.02	8,648,678.58	640,321.80	8,648,670.59	-2.78	7.99	8.46	Target co-ords different from Online Log and SA	Closed	3.1298
AUS-MUR-GS-S12_4	S12	0	IOGP1110 Grab sample	Grab sample at dredging area	640,319.02	8,648,678.58	640,325.03	8,648,679.96	-6.01	-1.38	6.16	Target co-ords different from Online Log and SA	Closed	3.1298
AUS-MUR-GS-S13_1	S13	0	IOGP1110 Grab sample	Grab sample at dredging area	640,304.49	8,648,682.31	640,305.59	8,648,688.88	-1.10	-6.57	6.66	Target co-ords different from Online Log and SA	Closed	0.7437
AUS-MUR-GS-S13_2	S13	0	IOGP1110 Grab sample	Grab sample at dredging area	640,304.49	8,648,682.31	640,313.75	8,648,684.82	-9.26	-2.51	9.59	Target co-ords different from Online Log and SA	Closed	0.7437
AUS-MUR-GS-S13_2a	S13	0	IOGP1110 Grab sample	Grab sample at dredging area	640,304.49	8,648,682.31	640,314.42	8,648,686.04	-9.93	-3.73	10.60	Target co-ords different from Online Log and SA	Closed	0.7437
AUS-MUR-GS-S13_3	S13	0	IOGP1110 Grab sample	Grab sample at dredging area	640,304.49	8,648,682.31	640,309.36	8,648,674.01	-4.87	8.30	9.62	Target co-ords different from Online Log and SA	Closed	0.7437
AUS-MUR-GS-S13_4	S13	0	IOGP1110 Grab sample	Grab sample at dredging area	640,304.49	8,648,682.31	640,294.72	8,648,678.30	9.77	4.01	10.56	Target co-ords different from Online Log and SA	Closed	0.7437
AUS-MUR-GS-S14_1	S14	0	IOGP1110 Grab sample	Grab sample at dredging area	692,474.90	8,642,005.50	692,467.53	8,642,001.60	7.37	3.90	8.34	-	-	0.0000
AUS-MUR-GS-S14_2	S14	0	IOGP1110 Grab sample	Grab sample at dredging area	692,474.90	8,642,005.50	692,480.22	8,642,011.77	-5.32	-6.27	8.22	-	-	0.0000
AUS-MUR-GS-S14_3	S14	0	IOGP1110 Grab sample	Grab sample at dredging area	692,474.90	8,642,005.50	692,467.37	8,642,011.20	7.53	-5.70	9.44	-	-	0.0000
AUS-MUR-GS-S14_4	S14	0	IOGP1110 Grab sample	Grab sample at dredging area	692,474.90	8,642,005.50	692,482.58	8,642,000.10	-7.68	5.40	9.39	-	-	0.0000
AUS-MUR-GS-S2_1	S2	0	IOGP1110 Grab sample	Grab sample at dredging area	647,658.37	8,646,794.16	647,652.89	8,646,807.60	5.48	-13.44	14.51	Target co-ords different from Online Log and SA	Closed	5.1947
AUS-MUR-GS-S2_2	S2	0	IOGP1110 Grab sample	Grab sample at dredging area	647,658.37	8,646,794.16	647,649.08	8,646,796.60	9.29	-2.44	9.61	Target co-ords different from Online Log and SA	Closed	5.1947
AUS-MUR-GS-S2_3	S2	0	IOGP1110 Grab sample	Grab sample at dredging area	647,658.37	8,646,794.16	647,664.05	8,646,792.05	-5.68	2.11	6.06	Target co-ords different from Online Log and SA	Closed	5.1947
AUS-MUR-GS-S2_4	S2	0	IOGP1110 Grab sample	Grab sample at dredging area	647,658.37	8,646,794.16	647,666.57	8,646,803.24	-8.20	-9.08	12.23	Target co-ords different from Online Log and SA	Closed	5.1947
AUS-MUR-GS-S21_1	S21	0	IOGP1110 Grab sample	Grab sample at dredging area	691,366.40	8,641,946.90	691,357.91	8,641,953.85	8.49	-6.95	10.97	-	-	0.0000
AUS-MUR-GS-S21_2	S21	0	IOGP1110 Grab sample	Grab sample at dredging area	691,366.40	8,641,946.90	691,373.71	8,641,952.78	-7.31	-5.88	9.38	-	-	0.0000
AUS-MUR-GS-S21_3	S21	0	IOGP1110 Grab sample	Grab sample at dredging area	691,366.40	8,641,946.90	691,375.46	8,641,941.80	-9.06	5.10	10.40	-	-	0.0000
AUS-MUR-GS-S21_4	S21	0	IOGP1110 Grab sample	Grab sample at dredging area	691,366.40	8,641,946.90	691,361.18	8,641,938.85	5.22	8.05	9.59	-	-	0.0000
AUS-MUR-GS-S3_1	S3	0	IOGP1110 Grab sample	Grab sample at dredging area	646,421.49	8,647,111.75	646,415.56	8,647,120.67	5.93	-8.92	10.71	Target co-ords different from Online Log and SA	Closed	0.2985
AUS-MUR-GS-S3_2	S3	0	IOGP1110 Grab sample	Grab sample at dredging area	646,421.49	8,647,111.75	646,412.24	8,647,108.96	9.25	2.79	9.66	Target co-ords different from Online Log and SA	Closed	0.2985
AUS-MUR-GS-S3_3	S3	0	IOGP1110 Grab sample	Grab sample at dredging area	646,421.49	8,647,111.75	646,428.45	8,647,105.79	-6.96	5.96	9.17	Target co-ords different from Online Log and SA	Closed	0.2985
AUS-MUR-GS-S3_4	S3	0	IOGP1110 Grab sample	Grab sample at dredging area	646,421.49	8,647,111.75	646,429.09	8,647,117.51	-7.60	-5.76	9.54	Target co-ords different from Online Log and SA	Closed	0.2985
AUS-MUR-GS-S30_1	S30	0	IOGP1110 Grab sample	Grab sample at dredging area	690,148.10	8,641,882.50	690,141.01	8,641,888.66	7.09	-6.16	9.39	-	-	0.0000
AUS-MUR-GS-S30_2	S30	0	IOGP1110 Grab sample	Grab sample at dredging area	690,148.10	8,641,882.50	690,153.29	8,641,889.44	-5.19	-6.94	8.67	-	-	0.0000
AUS-MUR-GS-S30_3	S30	0	IOGP1110 Grab sample	Grab sample at dredging area	690,148.10	8,641,882.50	690,154.26	8,641,875.77	-6.16	6.73	9.12	-	-	0.0000
AUS-MUR-GS-S30_4	S30	0	IOGP1110 Grab sample	Grab sample at dredging area	690,148.10	8,641,882.50	690,142.26	8,641,874.71	5.84	7.79	9.74	-	-	0.0000
AUS-MUR-GS-S31_1	S31	0	IOGP1110 Grab sample	Grab sample at dredging area	689,648.70	8,641,856.20	689,639.62	8,641,853.10	9.08	3.10	9.59	-	-	0.0000
AUS-MUR-GS-S31_2	S31	0	IOGP1110 Grab sample	Grab sample at dredging area	689,648.70	8,641,856.20	689,657.38	8,641,852.28	-8.68	3.92	9.52	-	-	0.0000
AUS-MUR-GS-S31_3	S31	0	IOGP1110 Grab sample	Grab sample at dredging area	689,648.70	8,641,856.20	689,656.00	8,641,862.37	-7.30	-6.17	9.56	-	-	0.0000
AUS-MUR-GS-S31_4	S31	0	IOGP1110 Grab sample	Grab sample at dredging area	689,648.70	8,641,856.20	689,641.95	8,641,862.05	6.75	-5.85	8.93	-	-	0.0000
AUS-MUR-GS-S32_1	S32	0	IOGP1110 Grab sample	Grab sample at dredging area	666,536.30	8,643,758.30	666,537.47	8,643,768.58	-1.17	-10.28	10.35	-	-	0.0000
AUS-MUR-GS-S32_2	S32	0	IOGP1110 Grab sample	Grab sample at dredging area	666,536.30	8,643,758.30	666,546.74	8,643,754.31	-10.44	3.99	11.18	-	-	0.0000
AUS-MUR-GS-S32_2a	S32	0	IOGP1110 Grab sample	Grab sample at dredging area	666,536.30	8,643,758.30	666,544.64	8,643,753.40	-8.34	4.90	9.67	-	-	0.0000
AUS-MUR-GS-S32_2b	S32	0	IOGP1110 Grab sample	Grab sample at dredging area	666,536.30	8,643,758.30	666,544.69	8,643,753.41	-8.39	4.89	9.71	-	-	0.0000
AUS-MUR-GS-S32_3	S32	0	IOGP1110 Grab sample	Grab sample at dredging area	666,536.30	8,643,758.30	666,531.24	8,643,749.06	5.06	9.24	10.53	-	-	0.0000
AUS-MUR-GS-S32_4	S32	0	IOGP1110 Grab sample	Grab sample at dredging area	666,536.30	8,643,758.30	666,526.94	8,643,759.67	9.36	-1.37	9.46	-	-	0.0000
AUS-MUR-GS-S32_4a	S32	0	IOGP1110 Grab sample	Grab sample at dredging area	666,536.30	8,643,758.30	666,526.80	8,643,759.59	9.50	-1.29	9.59	-	-	0.0000
AUS-MUR-GS-S34_1	S34	0	IOGP1110 Grab sample	Grab sample at dredging area	663,254.30	8,642,789.80	663,256.95	8,642,781.53	-2.65	8.27	8.68	-	-	0.0000
AUS-MUR-GS-S34_2	S34	0	IOGP1110 Grab sample	Grab sample at dredging area	663,254.30	8,642,789.80	663,262.11	8,642,798.63	-7.81	-8.83	11.79	-	-	0.0000
AUS-MUR-GS-S34_3	S34	0	IOGP1110 Grab sample	Grab sample at dredging area	663,254.30	8,642,789.80	663,249.97	8,642,798.60	4.33	-8.80	9.81	-	-	0.0000
AUS-MUR-GS-S34_4	S34	0	IOGP1110 Grab sample	Grab sample at dredging area	663,254.30	8,642,789.80	663,245.88	8,642,786.13	8.42	3.67	9.19	-	-	0.0000
AUS-MUR-GS-S4_1	S4	0	IOGP1110 Grab sample	Grab sample at dredging area	646,394.37	8,647,118.72	646,387.37	8,647,127.28	7.00	-8.56	11.06	Target co-ords different from Online Log and SA	Closed	1.0487
AUS-MUR-GS-S4_2	S4	0	IOGP1110 Grab sample	Grab sample at dredging area	646,394.37	8,647,118.72	646,384.74	8,647,115.28	9.63	3.44	10.22	Target co-ords different from Online Log and SA	Closed	1.0487
AUS-MUR-GS-S4_3	S4	0	IOGP1110 Grab sample	Grab sample at dredging area	646,394.37	8,647,118.72	646,399.64	8,647,112.00	-5.27	6.72	8.54	Target co-ords different from Online Log and SA	Closed	1.0487
AUS-MUR-GS-S4_4	S4	0	IOGP1110 Grab sample	Grab sample at dredging area	646,394.37	8,647,118.72	646,402.37	8,647,123.27	-8.00	-4.55	9.21	Target co-ords different from Online Log and SA	Closed	1.0487
AUS-MUR-GS-S4_4a	S4	0	IOGP1110 Grab sample	Grab sample at dredging area	646,394.37	8,647,118.72	646,403.71	8,647,122.54	-9.34	-3.82	10.10	Target co-ords different from Online Log and SA	Closed	1.0487
AUS-MUR-GS-S5_1	S5	0	IOGP1110 Grab sample	Grab sample at dredging area	641,324.12	8,648,420.53	641,321.54	8,648,427.60	2.58	-7.07	7.52	Target co-ords different from Online Log and SA	Closed	4.8839
AUS-MUR-GS-S5_2	S5	0	IOGP1110 Grab sample	Grab sample at dredging area	641,324.12	8,648,420.53	641,319.18	8,648,419.17	4.94	1.36	5.12	Target co-ords different from Online Log and SA	Closed	4.8839
AUS-MUR-GS-S5_3	S5	0	IOGP1110 Grab sample	Grab sample at dredging area	641,324.12	8,648,420.53	641,335.50	8,648,413.96	-11.38	6.57	13.14	Target co-ords different from Online Log and SA	Closed	4.8839
AUS-MUR-GS-S5_4	S5	0	IOGP1110 Grab sample	Grab sample at dredging area	641,324.12	8,648,420.53	641,336.85	8,648,426.81	-12.73	-6.28	14.20	Target co-ords different from Online Log and SA	Closed	4.8839
AUS-MUR-GS-S6_1	S6	0	IOGP1110 Grab sample	Grab sample at dredging area	641,317.48	8,648,422.23	641,308.77	8,648,416.01	8.71	6.22	10.71	Target co-ords different from Online Log and SA	Closed	0.2326
AUS-MUR-GS-S6_1a	S6	0	IOGP1110 Grab sample	Grab sample at dredging area	641,317.48	8,648,422.23	641,309.01	8,648,416.36	8.47	5.87	10.31	Target co-ords different from Online Log and SA	Closed	0.2326
AUS-MUR-GS-S6_2	S6	0	IOGP1110 Grab sample	Grab sample at dredging area	641,317.48	8,648,422.23	641,320.80	8,648,412.96	-3.32	9.27	9.85	Target co-ords different from Online Log and SA	Closed	0.2326
AUS-MUR-GS-S6_3	S6	0	IOGP1110 Grab sample	Grab sample at dredging area	641,317.48	8,648,422.23	641,325.11	8,648,428.51	-7.63	-6.28	9.88	Target co-ords different from Online Log and SA	Closed	0.2326

AUS-MUR-GS-S6_4	S6	0	IOGP1110 Grab sample	Grab sample at dredging area	641,317.48	8,648,422.23	641,313.21	8,648,431.47	4.27	-9.24	10.18	Target co-ords different from Online Log and SA	Closed	0.2326
AUS-MUR-GS-S6_4a	S6	0	IOGP1110 Grab sample	Grab sample at dredging area	641,317.48	8,648,422.23	641,313.38	8,648,431.64	4.10	-9.41	10.26	Target co-ords different from Online Log and SA	Closed	0.2326
AUS-MUR-GS-S7_1	S7	0	IOGP1110 Grab sample	Grab sample at dredging area	640,968.79	8,648,511.76	640,960.39	8,648,507.87	8.40	3.89	9.26	Target co-ords different from Online Log and SA	Closed	0.1868
AUS-MUR-GS-S7_2	S7	0	IOGP1110 Grab sample	Grab sample at dredging area	640,968.79	8,648,511.76	640,963.86	8,648,520.16	4.93	-8.40	9.74	Target co-ords different from Online Log and SA	Closed	0.1868
AUS-MUR-GS-S7_3	S7	0	IOGP1110 Grab sample	Grab sample at dredging area	640,968.79	8,648,511.76	640,977.45	8,648,516.00	-8.66	-4.24	9.64	Target co-ords different from Online Log and SA	Closed	0.1868
AUS-MUR-GS-S7_4	S7	0	IOGP1110 Grab sample	Grab sample at dredging area	640,968.79	8,648,511.76	640,974.78	8,648,504.84	-5.99	6.92	9.15	Target co-ords different from Online Log and SA	Closed	0.1868
AUS-MUR-GS-S8_1	S8	0	IOGP1110 Grab sample	Grab sample at dredging area	640,931.99	8,648,521.21	640,923.36	8,648,517.58	8.63	3.63	9.36	Target co-ords different from Online Log and SA	Closed	0.4809
AUS-MUR-GS-S8_1a	S8	0	IOGP1110 Grab sample	Grab sample at dredging area	640,931.99	8,648,521.21	640,923.13	8,648,517.46	8.86	3.75	9.62	Target co-ords different from Online Log and SA	Closed	0.4809
AUS-MUR-GS-S8_1b	S8	0	IOGP1110 Grab sample	Grab sample at dredging area	640,931.99	8,648,521.21	640,924.25	8,648,519.37	7.74	1.84	7.95	Target co-ords different from Online Log and SA	Closed	0.4809
AUS-MUR-GS-S8_2	S8	0	IOGP1110 Grab sample	Grab sample at dredging area	640,931.99	8,648,521.21	640,926.36	8,648,528.67	5.63	-7.46	9.35	Target co-ords different from Online Log and SA	Closed	0.4809
AUS-MUR-GS-S8_3	S8	0	IOGP1110 Grab sample	Grab sample at dredging area	640,931.99	8,648,521.21	640,940.72	8,648,524.30	-8.73	-3.09	9.26	Target co-ords different from Online Log and SA	Closed	0.4809
AUS-MUR-GS-S8_4	S8	0	IOGP1110 Grab sample	Grab sample at dredging area	640,931.99	8,648,521.21	640,938.22	8,648,514.71	-6.23	6.50	9.00	Target co-ords different from Online Log and SA	Closed	0.4809
AUS-MUR-GS-S9_1	S9	0	IOGP1110 Grab sample	Grab sample at dredging area	640,896.15	8,648,530.41	640,891.19	8,648,538.60	4.96	-8.19	9.58	Target co-ords different from Online Log and SA	Closed	1.3217
AUS-MUR-GS-S9_2	S9	0	IOGP1110 Grab sample	Grab sample at dredging area	640,896.15	8,648,530.41	640,888.73	8,648,529.64	7.42	0.77	7.46	Target co-ords different from Online Log and SA	Closed	1.3217
AUS-MUR-GS-S9_3	S9	0	IOGP1110 Grab sample	Grab sample at dredging area	640,896.15	8,648,530.41	640,905.21	8,648,524.89	-9.06	5.52	10.61	Target co-ords different from Online Log and SA	Closed	1.3217
AUS-MUR-GS-S9_4	S9	0	IOGP1110 Grab sample	Grab sample at dredging area	640,896.15	8,648,530.41	640,905.73	8,648,535.78	-9.58	-5.37	10.98	Target co-ords different from Online Log and SA	Closed	1.3217
AUS-MUR-VC-001	AUS-MUR-VC-001	0	IOGP1115 Vibro Core	Geotechnical characterisation			709,862.03	8,642,918.97				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-001a	AUS-MUR-VC-001a	0	IOGP1115 Vibro Core	Geotechnical characterisation			709,864.66	8,642,927.63				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-002	AUS-MUR-VC-002	0	IOGP1115 Vibro Core	Geotechnical characterisation			700,512.36	8,642,430.45				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-003	AUS-MUR-VC-003	0	IOGP1115 Vibro Core	Geotechnical characterisation			693,047.94	8,642,036.07				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-003a	AUS-MUR-VC-003a	2.2	IOGP1115 Vibro Core	Geotechnical characterisation			693,043.12	8,642,040.23				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-004	AUS-MUR-VC-004	0	IOGP1115 Vibro Core	Geotechnical characterisation			689,033.64	8,641,998.46				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-004a	AUS-MUR-VC-004a	0	IOGP1115 Vibro Core	Geotechnical characterisation			689,042.02	8,642,002.10				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-004b	AUS-MUR-VC-004b	0	IOGP1115 Vibro Core	Geotechnical characterisation			689,033.88	8,642,001.65				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-004c	AUS-MUR-VC-004c	0	IOGP1115 Vibro Core	Geotechnical characterisation			689,043.13	8,641,998.91				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-004d	AUS-MUR-VC-004d	0	IOGP1115 Vibro Core	Geotechnical characterisation			689,035.82	8,642,004.88				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-004e	AUS-MUR-VC-004e	0	IOGP1115 Vibro Core	Geotechnical characterisation			689,025.59	8,642,000.23				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-005	AUS-MUR-VC-005	1.3	IOGP1115 Vibro Core	Geotechnical characterisation			684,566.57	8,642,750.08				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-005a	AUS-MUR-VC-005a	1.76	IOGP1115 Vibro Core	Geotechnical characterisation			684,564.83	8,642,757.33				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-006	AUS-MUR-VC-006	0	IOGP1115 Vibro Core	Geotechnical characterisation			674,889.42	8,643,458.58				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-006a	AUS-MUR-VC-006a	1.38	IOGP1115 Vibro Core	Geotechnical characterisation			674,889.27	8,643,473.96				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-006b	AUS-MUR-VC-006b	1.65	IOGP1115 Vibro Core	Geotechnical characterisation			674,886.20	8,643,459.96				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-007	AUS-MUR-VC-007	0.77	IOGP1115 Vibro Core	Geotechnical characterisation			667,474.55	8,643,709.16				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-007a	AUS-MUR-VC-007a	1.6	IOGP1115 Vibro Core	Geotechnical characterisation			667,474.70	8,643,695.56				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-007b	AUS-MUR-VC-007b	1	IOGP1115 Vibro Core	Geotechnical characterisation			667,472.79	8,643,702.57				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-008	AUS-MUR-VC-008	0.58	IOGP1115 Vibro Core	Geotechnical characterisation			663,640.90	8,642,680.53				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-008a	AUS-MUR-VC-008a	0.51	IOGP1115 Vibro Core	Geotechnical characterisation			663,637.21	8,642,689.97				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-008b	AUS-MUR-VC-008b	0.4	IOGP1115 Vibro Core	Geotechnical characterisation			663,641.38	8,642,685.21				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-008c	AUS-MUR-VC-008c	0.65	IOGP1115 Vibro Core	Geotechnical characterisation			663,640.98	8,642,692.63				Geotechnical location - not included in SAP	Closed	
AUS-MUR-VC-S1	S1	0	IOGP1115 Vibro Core	Grab sample at dredging area	647,676.78	8,646,789.44	647,675.82	8,646,789.41	0.96	0.03	0.96	-	-	0.0083
AUS-MUR-VC-S10	S10	1.42	IOGP1115 Vibro Core	Grab sample at dredging area	640,345.17	8,648,671.87	640,345.14	8,648,672.02	0.03	-0.15	0.16	-	-	0.0082
AUS-MUR-VC-S11-1	S11	1	IOGP1115 Vibro Core	Grab sample at dredging area	640,340.33	8,648,673.11	640,339.83	8,648,671.88	0.50	1.23	1.33	-	-	0.0009
AUS-MUR-VC-S11-2	S11	1.61	IOGP1115 Vibro Core	Grab sample at dredging area	640,340.33	8,648,673.11	640,337.08	8,648,673.43	3.25	-0.32	3.27	-	-	0.0009
AUS-MUR-VC-S11-3	S11	1.03	IOGP1115 Vibro Core	Grab sample at dredging area	640,340.33	8,648,673.11	640,339.31	8,648,675.92	1.02	-2.81	2.99	-	-	0.0009
AUS-MUR-VC-S12	S12	0	IOGP1115 Vibro Core	Grab sample at dredging area	640,319.02	8,648,678.58	640,318.61	8,648,679.56	0.41	-0.98	1.06	-	-	0.0028
AUS-MUR-VC-S12a	S12	1.65	IOGP1115 Vibro Core	Grab sample at dredging area	640,319.02	8,648,678.58	640,315.90	8,648,678.81	3.12	-0.23	3.13	-	-	0.0028
AUS-MUR-VC-S13	S13	1.6	IOGP1115 Vibro Core	Grab sample at dredging area	640,304.49	8,648,682.31	640,304.99	8,648,681.76	-0.50	0.55	0.74	-	-	0.0041
AUS-MUR-VC-S14	S14	2.7	IOGP1115 Vibro Core	Grab sample at dredging area	692,474.90	8,642,005.50	692,474.47	8,642,005.84	0.43	-0.34	0.55	-	-	0.0000
AUS-MUR-VC-S15	S15	2.2	IOGP1115 Vibro Core	Grab sample at dredging area	692,185.30	8,641,990.20	692,184.79	8,641,990.20	0.51	0.00	0.51	-	-	0.0000
AUS-MUR-VC-S16	S16	1.44	IOGP1115 Vibro Core	Grab sample at dredging area	691,985.60	8,641,979.60	691,986.77	8,641,979.88	-1.17	-0.28	1.20	Assume typo in SAP Rev 5	OPEN	600000.0000
AUS-MUR-VC-S17	S17	0	IOGP1115 Vibro Core	Grab sample at dredging area	691,775.80	8,641,968.50	691,775.91	8,641,968.63	-0.11	-0.13	0.17	-	-	0.0000
AUS-MUR-VC-S17a	S17	2.16	IOGP1115 Vibro Core	Grab sample at dredging area	691,775.80	8,641,968.50	691,777.79	8,641,978.01	-1.99	-9.51	9.72	-	-	0.0000
AUS-MUR-VC-S18_1	S18	2.3	IOGP1115 Vibro Core	Grab sample at dredging area	691,626.00	8,641,960.60	691,627.60	8,641,960.82	-1.60	-0.22	1.62	-	-	0.0000
AUS-MUR-VC-S18_2	S18	0	IOGP1115 Vibro Core	Grab sample at dredging area	691,626.00	8,641,960.60	691,627.38	8,641,952.63	-1.38	7.97	8.09	-	-	0.0000
AUS-MUR-VC-S18_2a	S18	1.38	IOGP1115 Vibro Core	Grab sample at dredging area	691,626.00	8,641,960.60	691,627.16	8,641,957.83	-1.16	2.77	3.00	-	-	0.0000
AUS-MUR-VC-S18_3	S18	1.75	IOGP1115 Vibro Core	Grab sample at dredging area	691,626.00	8,641,960.60	691,627.05	8,641,969.74	-1.05	-9.14	9.20	-	-	0.0000
AUS-MUR-VC-S19	S19	1.45	IOGP1115 Vibro Core	Grab sample at dredging area	691,556.10	8,641,956.90	691,556.35	8,641,955.88	-0.25	1.02	1.05	-	-	0.0000
AUS-MUR-VC-S1a	S1	1.9	IOGP1115 Vibro Core	Grab sample at dredging area	647,676.78	8,646,789.44	647,671.70	8,646,792.18	5.08	-2.74	5.77	-	-	0.0083
AUS-MUR-VC-S2	S2	0	IOGP1115 Vibro Core	Grab sample at dredging area	647,658.37	8,646,794.16	647,659.43	8,646,794.42	-1.06	-0.26	1.09	-	-	0.0043
AUS-MUR-VC-S20	S20	0	IOGP1115 Vibro Core	Grab sample at dredging area	691,426.30	8,641,950.10	691,424.98	8,641,948.89	1.32	1.21	1.79	-	-	0.0000
AUS-MUR-VC-S20a	S20	3	IOGP1115 Vibro Core	Grab sample at dredging area	691,426.30	8,641,950.10	691,429.23	8,641,949.04	-2.93	1.06	3.12	-	-	0.0000
AUS-MUR-VC-S21	S21	1.2	IOGP1115 Vibro Core	Grab sample at dredging area	691,366.40	8,641,946.90	691,367.43	8,641,947.90	-1.03	-1.00	1.44	-	-	0.0000
AUS-MUR-VC-S22	S22	1.01	IOGP1115 Vibro Core	Grab sample at dredging area	691,076.80	8,641,931.60	691,078.55	8,641,931.39	-1.75	0.21	1.76	-	-	0.0000
AUS-MUR-VC-S23	S23	1.95	IOGP1115 Vibro Core	Grab sample at dredging area	690,917.10	8,641,923.20	690,919.14	8,641,923.11	-2.04	0.09	2.04	-	-	0.0000
AUS-MUR-VC-S24	S24	3.1	IOGP1115 Vibro Core	Grab sample at dredging area	690,737.30	8,641,913.70	690,737.19	8,641,913.99	0.11	-0.29	0.31	-	-	0.0000
AUS-MUR-VC-S25	S25	2.35	IOGP1115 Vibro Core	Grab sample at dredging area	690,657.40	8,641,909.40	690,657.32	8,641,908.29	0.08	1.11	1.11	-	-	0.0000
AUS-MUR-VC-S26	S26	0	IOGP1115 Vibro Core	Grab sample at dredging area	690,647.40	8,641,908.90	690,649.74	8,641,909.07	-2.34	-0.17	2.35	-	-	0.0000
AUS-MUR-VC-S26a	S26	0	IOGP1115 Vibro Core	Grab sample at dredging area	690,647.40	8,641,908.90	690,643.95	8,641,909.01	3.45	-0.11	3.45	-	-	0.0000
AUS-MUR-VC-S26b	S26	2	IOGP1115 Vibro Core	Grab sample at dredging area	690,647.40	8,641,908.90	690,655.58	8,641,889.26	-8.18	19.64	21.28	-	-	0.0000
AUS-MUR-VC-S27	S27	2.4	IOGP1115 Vibro Core	Grab sample at dredging area	690,467.70	8,641,899.40	690,468.45	8,641,899.57	-0.75	-0.17	0.77	-	-	0.0000
AUS-MUR-VC-S28	S28	2.4	IOGP1115 Vibro Core	Grab sample at dredging area	690,457.70	8,641,898.90	690,458.24	8,641,899.03	-0.54	-0.13	0.56	-	-	0.0000
AUS-MUR-VC-S29	S29	1.97	IOGP1115 Vibro Core	Grab sample at dredging area	690,208.00	8,641,885.70	690,208.65	8,641,886.65	-0.65	-0.95	1.15	-	-	0.0000
AUS-MUR-VC-S2a	S2	1.84	IOGP1115 Vibro Core	Grab sample at dredging area	647,658.37	8,646,794.16	647,657.84	8,646,799.33	0.53	-5.17	5.19	-	-	0.0043
AUS-MUR-VC-S3	S3	1.95	IOGP1115 Vibro Core	Grab sample at dredging area	646,421.49	8,647,111.75	646,421.33	8,647,111.50	0.16	0.25	0.30	-	-	0.0060
AUS-MUR-VC-S30	S30	0.87	IOGP1115 Vibro Core	Grab sample at dredging area	690,148.10	8,641,882.50	690,147.15	8,641,881.96	0.95	0.54	1.09	-	-	0.0000
AUS-MUR-VC-S30a	S30	0	IOGP1115 Vibro Core	Grab sample at dredging area	690,148.10	8,641,882.50	690,151.97	8,641,882.53	-3.87	-0.03	3.87	-	-	0.0000
AUS-MUR-VC-S30b	S30	1.44	IOGP1115 Vibro Core	Grab sample at dredging area	690,148.10	8,641,882.50	690,151.93	8,641,877.98	-3.83	4.52	5.92	-	-	0.0000
AUS-MUR-VC-S31_1	S31	1.3	IOGP1115 Vibro Core	Grab sample at dredging area	689,648.70	8,641,856.20	689,647.96	8,641,856.83	0.74	-0.63	0.97	-	-	0.0000
AUS-MUR-VC-S31_2	S31	2.14	IOGP1115 Vibro Core	Grab sample at dredging area	689,648.70	8,641,856.20	689,647.73	8,641,851.57	0.97	4.63	4.73	-	-	0.0000
AUS-MUR-VC-S31_3	S31	0	IOGP1115 Vibro Core	Grab sample at dredging area	689,648.70	8,641,856.20	689,648.66	8,641,861.95	0.04	-5.75	5.75	-	-	0.0000
AUS-MUR-VC-S31_3a	S31	1.37	IOGP1115 Vibro Core	Grab sample at dredging area	689,648.70	8,641,856.20	689,653.69	8,641,860.50	-4.99	-4.30	6.59	-	-	0.0000
AUS-MUR-VC-S32_1	S32	0	IOGP1115 Vibro Core	Grab sample at dredging area	666,536.30	8,643,758.30	666,537.31	8,643,758.52	-1.01	-0.22	1.03	-	-	0.0000
AUS-MUR-VC-S32_1a	S32	1.41	IOGP1115 Vibro Core	Grab sample at dredging area	666,536.30	8,643,758.30	666,535.61	8,643,758.82	0.69	-0.52	0.86	-	-	0.0000
AUS-MUR-VC-S32_2	S32	0.9	IOGP1115 Vibro Core	Grab sample at dredging area	666,536.30	8,643,758.30	666,537.81	8,643,751.18	-1.51	7.12	7.28	-	-	0.0000

AUS-MUR-VC-S32_2a	S32	1.19	IOGP1115 Vibro Core	Grab sample at dredging area	666,536.30	8,643,758.30	666,530.46	8,643,751.34	5.84	6.96	9.09	-	-	0.0000
AUS-MUR-VC-S32_3	S32	2.24	IOGP1115 Vibro Core	Grab sample at dredging area	666,536.30	8,643,758.30	666,542.05	8,643,752.13	-5.75	6.17	8.43	-	-	0.0000
AUS-MUR-VC-S33	S33	1.27	IOGP1115 Vibro Core	Grab sample at dredging area	666,440.20	8,643,705.50	666,441.58	8,643,707.23	-1.38	-1.73	2.21	-	-	0.0000
AUS-MUR-VC-S34	S34	1	IOGP1115 Vibro Core	Grab sample at dredging area	663,254.30	8,642,789.80	663,253.67	8,642,790.77	0.63	-0.97	1.16	-	-	0.0000
AUS-MUR-VC-S4	S4	1.3	IOGP1115 Vibro Core	Grab sample at dredging area	646,394.37	8,647,118.72	646,393.50	8,647,119.31	0.87	-0.59	1.05	-	-	0.0092
AUS-MUR-VC-S5	S5	0	IOGP1115 Vibro Core	Grab sample at dredging area	641,324.12	8,648,420.53	641,324.23	8,648,419.26	-0.11	1.27	1.28	-	-	0.0024
AUS-MUR-VC-S5a	S5	1.75	IOGP1115 Vibro Core	Grab sample at dredging area	641,324.12	8,648,420.53	641,328.95	8,648,421.24	-4.83	-0.71	4.88	-	-	0.0024
AUS-MUR-VC-S6	S6	2.3	IOGP1115 Vibro Core	Grab sample at dredging area	641,317.48	8,648,422.23	641,317.31	8,648,422.08	0.17	0.15	0.23	-	-	0.0059
AUS-MUR-VC-S7	S7	2.5	IOGP1115 Vibro Core	Grab sample at dredging area	640,968.79	8,648,511.76	640,968.85	8,648,511.58	-0.06	0.18	0.19	-	-	0.0085
AUS-MUR-VC-S8-1	S8	1.6	IOGP1115 Vibro Core	Grab sample at dredging area	640,931.99	8,648,521.21	640,932.15	8,648,521.66	-0.16	-0.45	0.48	-	-	0.0082
AUS-MUR-VC-S8-2	S8	1.05	IOGP1115 Vibro Core	Grab sample at dredging area	640,931.99	8,648,521.21	640,932.70	8,648,518.89	-0.71	2.32	2.42	-	-	0.0082
AUS-MUR-VC-S8-3	S8	0	IOGP1115 Vibro Core	Grab sample at dredging area	640,931.99	8,648,521.21	640,935.36	8,648,516.38	-3.37	4.83	5.89	-	-	0.0082
AUS-MUR-VC-S8-3b	S8	3.45	IOGP1115 Vibro Core	Grab sample at dredging area	640,931.99	8,648,521.21	640,938.75	8,648,507.27	-6.76	13.94	15.49	-	-	0.0082
AUS-MUR-VC-S9	S9	2.35	IOGP1115 Vibro Core	Grab sample at dredging area	640,896.15	8,648,530.41	640,897.25	8,648,531.14	-1.10	-0.73	1.32	-	-	0.0086
AUS-MUR-VC-S9a	S9	0	IOGP1115 Vibro Core	Grab sample at dredging area	640,896.15	8,648,530.41	640,898.88	8,648,528.46	-2.73	1.95	3.35	-	-	0.0086
AUS-MUR-GS-NS01	NS01	na	IOGP1110 Grab sample	Seafloor sediment classification			718,955.20	8,643,120.60				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS02	NS02	na	IOGP1110 Grab sample	Seafloor sediment classification			718,460.10	8,643,219.70				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS03	NS03	na	IOGP1110 Grab sample	Seafloor sediment classification			717,973.80	8,643,314.00				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS04	NS04	na	IOGP1110 Grab sample	Seafloor sediment classification			717,475.80	8,643,315.60				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS05	NS05	na	IOGP1110 Grab sample	Seafloor sediment classification			716,975.80	8,643,309.10				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS06	NS06	na	IOGP1110 Grab sample	Seafloor sediment classification			716,477.90	8,643,261.90				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS07	NS07	na	IOGP1110 Grab sample	Seafloor sediment classification			715,977.70	8,643,255.40				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS08	NS08	na	IOGP1110 Grab sample	Seafloor sediment classification			715,478.50	8,643,209.00				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS09	NS09	na	IOGP1110 Grab sample	Seafloor sediment classification			714,979.30	8,643,202.80				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS10	NS10	na	IOGP1110 Grab sample	Seafloor sediment classification			714,479.20	8,643,156.10				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS11	NS11	na	IOGP1110 Grab sample	Seafloor sediment classification			713,980.80	8,643,149.60				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS12	NS12	na	IOGP1110 Grab sample	Seafloor sediment classification			713,481.70	8,643,101.80				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS13	NS13	na	IOGP1110 Grab sample	Seafloor sediment classification			712,981.70	8,643,095.40				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS14	NS14	na	IOGP1110 Grab sample	Seafloor sediment classification			712,484.10	8,643,049.50				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS15	NS15	na	IOGP1110 Grab sample	Seafloor sediment classification			711,982.10	8,643,042.80				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS16	NS16	na	IOGP1110 Grab sample	Seafloor sediment classification			711,482.30	8,642,995.40				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS17	NS17	na	IOGP1110 Grab sample	Seafloor sediment classification			710,982.60	8,642,989.40				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS18	NS18	na	IOGP1110 Grab sample	Seafloor sediment classification			710,487.30	8,642,944.30				Geotechnical location - not included in SAP	Closed	
AUS-MUR-GS-NS19	NS19	na	IOGP1110 Grab sample	Seafloor sediment classification			709,983.70	8,642,936.10				Geotechnical location - not included in SAP	Closed	

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