Attachment D – Laboratory Transcripts

CHAIN OF CUSTODY

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 4971 6900 E: gladstone@alsglobal.com
MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
BRISBANE 21 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
NEWCASTLE 5 Rose Road Mayfield West 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
ORANGE 277-289 Woodward Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobe.com
PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)		FOR LABORATORY USE ONLY (Circle)
SITE: Botany			Custody Seal Intact? Yes No N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER: PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:	OF: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Colin McKay	CONTACT PH: 0448 977 926		Other comment:
SAMPLER: AY/PC	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY: Frank ALS
COC Emailed to ALS? (NO)	EDD FORMAT (or default):	DATE/TIME:	DATE/TIME: 13/2/15 1146
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com		RELINQUISHED BY:	RECEIVED BY:
Email Invoice to (will default to PM if no other addresses are listed):		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	Mercury - Total Recoverable								
1	BH01 (0-0.05)	10/02/2015	Soil			x								
2	BH01 (0.4-0.5)	10/02/2015	Soil			x								
3	BH02 (0-0.05)	10/02/2015	Soil			x								
4	BH02 (0.4-0.5)	10/02/2015	Soil			x								
5	BH03 (0-0.05)	10/02/2015	Soil			x								
6	BH03 (0.4-0.5)	10/02/2015	Soil			x								
7	BH04 (0-0.05)	10/02/2015	Soil			x								
8	BH04 (0.4-0.5)	10/02/2015	Soil			x								
9	BH05 (0-0.05)	10/02/2015	Soil			x								
10	BH05 (0.4-0.5)	10/02/2015	Soil			x								
11	BH06 (0-0.05)	10/02/2015	Soil			x								
12	BH06 (0.4-0.5)	10/02/2015	Soil			x								
				TOTAL		12								

Environmental Division
Sydney
Work Order
ES1503556

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

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MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com

NEWCASTLE 5-585 Maitland Road Mayfield West 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com

NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com

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WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	FOR LABORATORY USE ONLY (Circle)
SITE: Botany		Custody Seal Intact? Yes No N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14	Free Ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER: PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7
PROJECT MANAGER: Colin McKay CONTACT PH: 0448 977 926		Random Sample Temperature on Receipt: °C
SAMPLER: AY/PC SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY: Frank MS
COC Emailed to ALS? (NO) EDD FORMAT (or default):	DATE/TIME:	DATE/TIME: 13/2/15 1140
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com	RELINQUISHED BY:	RECEIVED BY:
Email Invoice to (will default to PM if no other addresses are listed):	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	Mercury - Total Recoverable							
13	BH07 (0-0.05)	10/02/2015	Soil			x							
14	BH07 (0.4-0.5)	10/02/2015	Soil			x							
15	BH08 (0-0.05)	10/02/2015	Soil			x							
16	BH08 (0.4-0.5)	10/02/2015	Soil			x							
17	BH09 (0-0.05)	10/02/2015	Soil			x							
18	BH09 (0.4-0.5)	10/02/2015	Soil			x							
19	BH10 (0-0.05)	10/02/2015	Soil			x							
20	BH10 (0.4-0.5)	10/02/2015	Soil			x							
21	BH11 (0-0.05)	10/02/2015	Soil			x							
22	BH11 (0.4-0.5)	10/02/2015	Soil			x							
23	BH12 (0-0.05)	10/02/2015	Soil			x							
24	BH12 (0.4-0.5)	10/02/2015	Soil			x							
				TOTAL		12							

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; I = Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

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CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	FOR LABORATORY USE ONLY (Circle)
SITE: Botany		Custody Seal Intact? Yes No N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14 — 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: Colin McKay CONTACT PH: 0448 977 926	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: AY/PC SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY: Frank ALS	RELINQUISHED BY:	RECEIVED BY:
COC Emailed to ALS? (NO) EDD FORMAT (or default):				
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com	DATE/TIME:	DATE/TIME: 13/2/15 1140	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	Mercury - Total Recoverable								
25	BH13 (0-0.05)	11/02/2015	Soil			x								
26	BH13 (0.4-0.5)	11/02/2015	Soil			x								
27	BH14 (0-0.05)	11/02/2015	Soil			x								
28	BH14 (0.4-0.5)	11/02/2015	Soil			x								
29	BH15 (0-0.05)	11/02/2015	Soil			x								
30	BH15 (0.4-0.5)	11/02/2015	Soil			x								
31	BH16 (0-0.05)	11/02/2015	Soil			x								
32	BH16 (0.4-0.5)	11/02/2015	Soil			x								
33	BH17 (0-0.05)	11/02/2015	Soil			x								
34	BH17 (0.4-0.5)	11/02/2015	Soil			x								
35	BH18 (0-0.05)	11/02/2015	Soil			x								
36	BH18 (0.2-0.3)	11/02/2015	Soil			x								
				TOTAL		12								

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.

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CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):		FOR LABORATORY USE ONLY (Circle)
SITE: Botany	(Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)		Custody Seal Intact? Yes No N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14	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: Colin McKay CONTACT PH: 0448 977 926		OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: AY/PC	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY: Frank ALS	RELINQUISHED BY:	RECEIVED BY:
COC Emailed to ALS? (NO)	EDD FORMAT (or default):				
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com		DATE/TIME:	DATE/TIME: 12/2/15 1140	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	Mercury - Total Recoverable								
37	BH19 (0-0.05)	11/02/2015	Soil			x								
38	BH19 (0.4-0.5)	11/02/2015	Soil			x								
39	BH20 (0-0.05)	11/02/2015	Soil			x								
40	BH20 (0.2-0.3)	11/02/2015	Soil			x								
41	BH21 (0-0.05)	11/02/2015	Soil			x								
42	BH21 (0.4-0.5)	11/02/2015	Soil			x								
43	BH22 (0-0.05)	11/02/2015	Soil			x								
44	BH22 (0.4-0.5)	11/02/2015	Soil			x								
45	BH23 (0-0.05)	11/02/2015	Soil			x								
46	BH23 (0.4-0.5)	11/02/2015	Soil			x								
47	BH24 (0-0.05)	11/02/2015	Soil			x								
48	BH24 (0.4-0.5)	11/02/2015	Soil			x								
				TOTAL		12								

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.

5/7

CHAIN OF CUSTODY

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CLIENT: WSP Environmental Pty Ltd		TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	
SITE: Botany			
PROJECT: Orica Mercury Independent Review	PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14	COC SEQUENCE NUMBER (Circle)
ORDER NUMBER:	PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:	COC: 1 2 3 4 5 6 7
PROJECT MANAGER: Colin McKay	CONTACT PH: 0448 977 926		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: AY/PC	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY: Frank ALS	RELINQUISHED BY:	RECEIVED BY:
COC Emailed to ALS? (NO)	EDD FORMAT (or default):				
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com		DATE/TIME:	DATE/TIME: 13/2/15 1140	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	Mercury - Total Recoverable								
49	BH25 (0-0.05)	11/02/2015	Soil			x								
50	BH25 (0.4-0.5)	11/02/2015	Soil			x								
51	BH26 (0-0.05)	11/02/2015	Soil			x								
52	BH26 (0.4-0.5)	11/02/2015	Soil			x								
53	BH27 (0-0.05)	11/02/2015	Soil			x								
54	BH27 (0.4-0.5)	11/02/2015	Soil			x								
55	BH28 (0-0.05)	12/02/2015	Soil			x								
56	BH28 (0.2-0.3)	12/02/2015	Soil			x								
57	BH29 (0-0.05)	12/02/2015	Soil			x								
58	BH29 (0.4-0.5)	12/02/2015	Soil			x								
59	BH30 (0-0.05)	12/02/2015	Soil			x								
60	BH30 (0.4-0.5)	12/02/2015	Soil			x								
				TOTAL		12								

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
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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.

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☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
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☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd

SITE: Botany

PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970

ORDER NUMBER: PURCHASE ORDER NO.:

PROJECT MANAGER: Colin McKay CONTACT PH: 0448 977 926

SAMPLER: AY/PC SAMPLER MOBILE:

COC Emailed to ALS? (NO) EDD FORMAT (or default):

Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com

Email Invoice to (will default to PM if no other addresses are listed):

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

ALS QUOTE NO.: SY/1085/14

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:
	Frank ALS		
DATE/TIME:	DATE/TIME: 13/2/15 1140	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	Mercury - Total Recoverable								
61	BH31 (0-0.05)	12/02/2015	Soil			x								
62	BH31 (0.4-0.5)	12/02/2015	Soil			x								
63	BH32 (0-0.05)	12/02/2015	Soil			x								
64	BH32 (0.4-0.5)	12/02/2015	Soil			x								
65	BH33 (0-0.05)	12/02/2015	Soil			x								
66	BH33 (0.4-0.5)	12/02/2015	Soil			x								
67	BH34 (0-0.05)	12/02/2015	Soil			x								
68	BH34 (0.2-0.3)	12/02/2015	Soil			x								
69	BH35 (0-0.05)	12/02/2015	Soil			x								
70	BH35 (0.3-0.4)	12/02/2015	Soil			x								
71	BH36 (0-0.05)	12/02/2015	Soil			x								
72	BH36 (0.4-0.5)	12/02/2015	Soil			x								
				TOTAL		12								

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.

7/7

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
☐GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
☐MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
☐MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
☐MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
☐NEWCASTLE 5/585 Maitland Road Mayfield West 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com
☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com
☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):
SITE: Botany	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics)
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14
ORDER NUMBER: PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:
PROJECT MANAGER: Colin McKay CONTACT PH: 0448 977 926	

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:			

SAMPLER: AY/PC	SAMPLER MOBILE:
COC Emailed to ALS? (NO)	EDD FORMAT (or default):
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com	
Email Invoice to (will default to PM if no other addresses are listed):	

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
	Frank ALS		
DATE/TIME:	DATE/TIME: 13/2/15 1140	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	Mercury - Total Recoverable	
73	BH37 (0-0.05)	12/02/2015	Soil			x	
74	BH37 (0.3-0.4)	12/02/2015	Soil			x	
75	BH38 (0-0.05)	12/02/2015	Soil			x	
76	BH38 (0.3-0.4)	12/02/2015	Soil			x	
77	BH39 (0-0.05)	12/02/2015	Soil			x	
78	BH39 (0.3-0.4)	12/02/2015	Soil			x	
79	BH40 (0-0.05)	12/02/2015	Soil			x	
80	BH40 (0.4-0.5)	12/02/2015	Soil			x	
81	DUP1	12/02/2015	Soil			x	
82	DUP2	12/02/2015	Soil			x	
83	DUP3	12/02/2015	Soil			x	
84	DUP4	12/02/2015	Soil			x	
					TOTAL	12	

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.

Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **ES1503556**		
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: ORICA MERCURY INDEPENDENT REVIEW 45970	Page	: 1 of 4
Order number	: 45970		
C-O-C number	: ----	Quote number	: ES2015WSPENV0359 (SY/1085/14)
Site	: Botany		
Sampler	: AY/PC	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 13-FEB-2015	Issue Date	: 13-FEB-2015 16:17
Client Requested Due Date	: 20-FEB-2015	Scheduled Reporting Date	: **20-FEB-2015**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 22.3'C - Ice bricks present
No. of coolers/boxes	: 3 ESKIES	No. of samples received	: 84
Security Seal	: Intact.	No. of samples analysed	: 84

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 received in appropriately pretreated and preserved containers.**
- **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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- 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 (14 days), Solid (60 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance 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 to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	SOIL - EA055-103 Moisture Content	SOIL - EG035T (solids) Total Mercury by FIMS
ES1503556-001	10-FEB-2015 15:00	BH01 (0-0.05)	✓	✓
ES1503556-002	10-FEB-2015 15:00	BH01 (0.4-0.5)	✓	✓
ES1503556-003	10-FEB-2015 15:00	BH02 (0-0.05)	✓	✓
ES1503556-004	10-FEB-2015 15:00	BH02 (0.4-0.5)	✓	✓
ES1503556-005	10-FEB-2015 15:00	BH03 (0-0.05)	✓	✓
ES1503556-006	10-FEB-2015 15:00	BH03 (0.4-0.5)	✓	✓
ES1503556-007	10-FEB-2015 15:00	BH04 (0-0.05)	✓	✓
ES1503556-008	10-FEB-2015 15:00	BH04 (0.4-0.5)	✓	✓
ES1503556-009	10-FEB-2015 15:00	BH05 (0-0.05)	✓	✓
ES1503556-010	10-FEB-2015 15:00	BH05 (0.4-0.5)	✓	✓
ES1503556-011	10-FEB-2015 15:00	BH06 (0-0.05)	✓	✓
ES1503556-012	10-FEB-2015 15:00	BH06 (0.4-0.5)	✓	✓
ES1503556-013	10-FEB-2015 15:00	BH07 (0-0.05)	✓	✓
ES1503556-014	10-FEB-2015 15:00	BH07 (0.4-0.5)	✓	✓
ES1503556-015	10-FEB-2015 15:00	BH08 (0-0.05)	✓	✓
ES1503556-016	10-FEB-2015 15:00	BH08 (0.4-0.5)	✓	✓
ES1503556-017	10-FEB-2015 15:00	BH09 (0-0.05)	✓	✓
ES1503556-018	10-FEB-2015 15:00	BH09 (0.4-0.5)	✓	✓
ES1503556-019	10-FEB-2015 15:00	BH10 (0-0.05)	✓	✓
ES1503556-020	10-FEB-2015 15:00	BH10 (0.4-0.5)	✓	✓
ES1503556-021	10-FEB-2015 15:00	BH11 (0-0.05)	✓	✓
ES1503556-022	10-FEB-2015 15:00	BH11 (0.4-0.5)	✓	✓
ES1503556-023	10-FEB-2015 15:00	BH12 (0-0.05)	✓	✓
ES1503556-024	10-FEB-2015 15:00	BH12 (0.4-0.5)	✓	✓
ES1503556-025	11-FEB-2015 15:00	BH13 (0-0.05)	✓	✓
ES1503556-026	11-FEB-2015 15:00	BH13 (0.4-0.5)	✓	✓
ES1503556-027	11-FEB-2015 15:00	BH14 (0-0.05)	✓	✓
ES1503556-028	11-FEB-2015 15:00	BH14 (0.4-0.5)	✓	✓
ES1503556-029	11-FEB-2015 15:00	BH15 (0-0.05)	✓	✓
ES1503556-030	11-FEB-2015 15:00	BH15 (0.4-0.5)	✓	✓
ES1503556-031	11-FEB-2015 15:00	BH16 (0-0.05)	✓	✓
ES1503556-032	11-FEB-2015 15:00	BH16 (0.4-0.5)	✓	✓
ES1503556-033	11-FEB-2015 15:00	BH17 (0-0.05)	✓	✓
ES1503556-034	11-FEB-2015 15:00	BH17 (0.4-0.5)	✓	✓
ES1503556-035	11-FEB-2015 15:00	BH18 (0-0.05)	✓	✓

			SOIL - EA055-103 Moisture Content	SOIL - EG035T (solids) Total Mercury by FIMS
ES1503556-036	11-FEB-2015 15:00	BH18 (0.2-0.3)	✓	✓
ES1503556-037	11-FEB-2015 15:00	BH19 (0-0.05)	✓	✓
ES1503556-038	11-FEB-2015 15:00	BH19 (0.4-0.5)	✓	✓
ES1503556-039	11-FEB-2015 15:00	BH20 (0-0.05)	✓	✓
ES1503556-040	11-FEB-2015 15:00	BH20 (0.2-0.3)	✓	✓
ES1503556-041	11-FEB-2015 15:00	BH21 (0-0.05)	✓	✓
ES1503556-042	11-FEB-2015 15:00	BH21 (0.4-0.5)	✓	✓
ES1503556-043	11-FEB-2015 15:00	BH22 (0-0.05)	✓	✓
ES1503556-044	11-FEB-2015 15:00	BH22 (0.4-0.5)	✓	✓
ES1503556-045	11-FEB-2015 15:00	BH23 (0-0.05)	✓	✓
ES1503556-046	11-FEB-2015 15:00	BH23 (0.4-0.5)	✓	✓
ES1503556-047	11-FEB-2015 15:00	BH24 (0-0.05)	✓	✓
ES1503556-048	11-FEB-2015 15:00	BH24 (0.4-0.5)	✓	✓
ES1503556-049	11-FEB-2015 15:00	BH25 (0-0.05)	✓	✓
ES1503556-050	11-FEB-2015 15:00	BH25 (0.4-0.5)	✓	✓
ES1503556-051	11-FEB-2015 15:00	BH26 (0-0.05)	✓	✓
ES1503556-052	11-FEB-2015 15:00	BH26 (0.4-0.5)	✓	✓
ES1503556-053	11-FEB-2015 15:00	BH27 (0-0.05)	✓	✓
ES1503556-054	11-FEB-2015 15:00	BH27 (0.4-0.5)	✓	✓
ES1503556-055	12-FEB-2015 15:00	BH28 (0-0.05)	✓	✓
ES1503556-056	12-FEB-2015 15:00	BH28 (0.2-0.3)	✓	✓
ES1503556-057	12-FEB-2015 15:00	BH29 (0-0.05)	✓	✓
ES1503556-058	12-FEB-2015 15:00	BH29 (0.4-0.5)	✓	✓
ES1503556-059	12-FEB-2015 15:00	BH30 (0-0.05)	✓	✓
ES1503556-060	12-FEB-2015 15:00	BH30 (0.4-0.5)	✓	✓
ES1503556-061	12-FEB-2015 15:00	BH31 (0-0.05)	✓	✓
ES1503556-062	12-FEB-2015 15:00	BH31 (0.4-0.5)	✓	✓
ES1503556-063	12-FEB-2015 15:00	BH32 (0-0.05)	✓	✓
ES1503556-064	12-FEB-2015 15:00	BH32 (0.4-0.5)	✓	✓
ES1503556-065	12-FEB-2015 15:00	BH33 (0-0.05)	✓	✓
ES1503556-066	12-FEB-2015 15:00	BH33 (0.4-0.5)	✓	✓
ES1503556-067	12-FEB-2015 15:00	BH34 (0-0.05)	✓	✓
ES1503556-068	12-FEB-2015 15:00	BH34 (0.2-0.3)	✓	✓
ES1503556-069	12-FEB-2015 15:00	BH35 (0-0.05)	✓	✓
ES1503556-070	12-FEB-2015 15:00	BH35 (0.3-0.4)	✓	✓
ES1503556-071	12-FEB-2015 15:00	BH36 (0-0.05)	✓	✓
ES1503556-072	12-FEB-2015 15:00	BH36 (0.4-0.5)	✓	✓
ES1503556-073	12-FEB-2015 15:00	BH37 (0-0.05)	✓	✓
ES1503556-074	12-FEB-2015 15:00	BH37 (0.3-0.4)	✓	✓
ES1503556-075	12-FEB-2015 15:00	BH38 (0-0.05)	✓	✓
ES1503556-076	12-FEB-2015 15:00	BH38 (0.3-0.4)	✓	✓

			SOIL - EA055-103 Moisture Content	SOIL - EG035T (solids) Total Mercury by FIMS
ES1503556-077	12-FEB-2015 15:00	BH39 (0-0.05)	✓	✓
ES1503556-078	12-FEB-2015 15:00	BH39 (0.3-0.4)	✓	✓
ES1503556-079	12-FEB-2015 15:00	BH40 (0-0.05)	✓	✓
ES1503556-080	12-FEB-2015 15:00	BH40 (0.4-0.5)	✓	✓
ES1503556-081	12-FEB-2015 15:00	DUP1	✓	✓
ES1503556-082	12-FEB-2015 15:00	DUP2	✓	✓
ES1503556-083	12-FEB-2015 15:00	DUP3	✓	✓
ES1503556-084	12-FEB-2015 15:00	DUP4	✓	✓

Proactive Holding Time Report

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

Requested Deliverables

ALL INVOICES ADDRESS

- A4 - AU Tax Invoice (INV)	Email	melbfinance@wspgroup.com

MR COLIN MCKAY

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

PHILIPPA CHILDS

- *AU Certificate of Analysis - NATA (COA)	Email	philippa.childs@wspgroup.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	philippa.childs@wspgroup.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	philippa.childs@wspgroup.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN	Email	philippa.childs@wspgroup.com
- Chain of Custody (CoC) (COC)	Email	philippa.childs@wspgroup.com
- EDI Format - ENMRG (ENMRG)	Email	philippa.childs@wspgroup.com
- EDI Format - ESDAT (ESDAT)	Email	philippa.childs@wspgroup.com

CERTIFICATE OF ANALYSIS

Work Order	: **ES1503556**	Page	: 1 of 19
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: ORICA MERCURY INDEPENDENT REVIEW 45970	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 45970		
C-O-C number	: ----	Date Samples Received	: 13-FEB-2015
Sampler	: AY/PC	Issue Date	: 20-FEB-2015
Site	: Botany		
		No. of samples received	: 84
Quote number	: SY/1085/14	No. of samples analysed	: 84

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics

General Comments

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

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

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

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

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 Contact 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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH01 (0-0.05)	BH01 (0.4-0.5)	BH02 (0-0.05)	BH02 (0.4-0.5)	BH03 (0-0.05)
			Client sampling date / time	10-FEB-2015 15:00	10-FEB-2015 15:00	10-FEB-2015 15:00	10-FEB-2015 15:00	10-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503556-001	ES1503556-002	ES1503556-003	ES1503556-004	ES1503556-005
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	1.1	2.3	7.4	4.0	5.0
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH03 (0.4-0.5)	BH04 (0-0.05)	BH04 (0.4-0.5)	BH05 (0-0.05)	BH05 (0.4-0.5)
			Client sampling date / time	10-FEB-2015 15:00	10-FEB-2015 15:00	10-FEB-2015 15:00	10-FEB-2015 15:00	10-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503556-006	ES1503556-007	ES1503556-008	ES1503556-009	ES1503556-010
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**3.9**	**13.7**	**10.2**	**9.0**	**11.1**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	**0.2**	**0.2**	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH06 (0-0.05)	BH06 (0.4-0.5)	BH07 (0-0.05)	BH07 (0.4-0.5)	BH08 (0-0.05)
				Client sampling date / time	10-FEB-2015 15:00	10-FEB-2015 15:00	10-FEB-2015 15:00	10-FEB-2015 15:00	10-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503556-011	ES1503556-012	ES1503556-013	ES1503556-014	ES1503556-015
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		**3.2**	**2.3**	**11.7**	**14.6**	**9.6**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		**0.1**	<0.1	<0.1	**0.1**	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH08 (0.4-0.5)	BH09 (0-0.05)	BH09 (0.4-0.5)	BH10 (0-0.05)	BH10 (0.4-0.5)
				Client sampling date / time	10-FEB-2015 15:00	10-FEB-2015 15:00	10-FEB-2015 15:00	10-FEB-2015 15:00	10-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503556-016	ES1503556-017	ES1503556-018	ES1503556-019	ES1503556-020
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		**4.8**	**10.2**	**4.7**	**3.5**	**3.3**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH11 (0-0.05)	BH11 (0.4-0.5)	BH12 (0-0.05)	BH12 (0.4-0.5)	BH13 (0-0.05)
				Client sampling date / time	10-FEB-2015 15:00	10-FEB-2015 15:00	10-FEB-2015 15:00	10-FEB-2015 15:00	11-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503556-021	ES1503556-022	ES1503556-023	ES1503556-024	ES1503556-025
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		1.4	2.8	5.8	3.0	5.2
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH13 (0.4-0.5)	BH14 (0-0.05)	BH14 (0.4-0.5)	BH15 (0-0.05)	BH15 (0.4-0.5)
			Client sampling date / time	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503556-026	ES1503556-027	ES1503556-028	ES1503556-029	ES1503556-030
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**3.8**	**22.5**	**4.3**	**13.2**	**4.0**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	**0.1**	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH16 (0-0.05)	BH16 (0.4-0.5)	BH17 (0-0.05)	BH17 (0.4-0.5)	BH18 (0-0.05)
				Client sampling date / time	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503556-031	ES1503556-032	ES1503556-033	ES1503556-034	ES1503556-035
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		**8.0**	<1.0	**13.6**	**4.0**	**11.9**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH18 (0.2-0.3)	BH19 (0-0.05)	BH19 (0.4-0.5)	BH20 (0-0.05)	BH20 (0.2-0.3)
				Client sampling date / time	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503556-036	ES1503556-037	ES1503556-038	ES1503556-039	ES1503556-040
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		**4.8**	**9.8**	**2.2**	**1.0**	**1.5**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	**0.1**	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH21 (0-0.05)	BH21 (0.4-0.5)	BH22 (0-0.05)	BH22 (0.4-0.5)	BH23 (0-0.05)
				Client sampling date / time	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503556-041	ES1503556-042	ES1503556-043	ES1503556-044	ES1503556-045
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		1.4	3.3	14.0	3.4	20.6
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	0.4	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH23 (0.4-0.5)	BH24 (0-0.05)	BH24 (0.4-0.5)	BH25 (0-0.05)	BH25 (0.4-0.5)
				Client sampling date / time	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503556-046	ES1503556-047	ES1503556-048	ES1503556-049	ES1503556-050
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		**5.9**	**2.6**	**2.0**	**3.0**	<1.0
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH26 (0-0.05)	BH26 (0.4-0.5)	BH27 (0-0.05)	BH27 (0.4-0.5)	BH28 (0-0.05)
				Client sampling date / time	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00	11-FEB-2015 15:00	12-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503556-051	ES1503556-052	ES1503556-053	ES1503556-054	ES1503556-055
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		**3.0**	**4.0**	**17.8**	**3.8**	**21.8**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		**0.1**	<0.1	**0.1**	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH28 (0.2-0.3)	BH29 (0-0.05)	BH29 (0.4-0.5)	BH30 (0-0.05)	BH30 (0.4-0.5)
				Client sampling date / time	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503556-056	ES1503556-057	ES1503556-058	ES1503556-059	ES1503556-060
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		**8.8**	**5.3**	**3.3**	**1.4**	**1.4**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		**0.1**	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH31 (0-0.05)	BH31 (0.4-0.5)	BH32 (0-0.05)	BH32 (0.4-0.5)	BH33 (0-0.05)
			Client sampling date / time	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503556-061	ES1503556-062	ES1503556-063	ES1503556-064	ES1503556-065
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**2.2**	**2.3**	**3.6**	<1.0	**1.6**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH33 (0.4-0.5)	BH34 (0-0.05)	BH34 (0.2-0.3)	BH35 (0-0.05)	BH35 (0.3-0.4)
			Client sampling date / time	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503556-066	ES1503556-067	ES1503556-068	ES1503556-069	ES1503556-070
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	1.9	13.2	7.0	20.2	7.9
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	0.1	0.6	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH36 (0-0.05)	BH36 (0.4-0.5)	BH37 (0-0.05)	BH37 (0.3-0.4)	BH38 (0-0.05)
				Client sampling date / time	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503556-071	ES1503556-072	ES1503556-073	ES1503556-074	ES1503556-075
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		9.1	3.0	7.7	7.7	5.2
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH38 (0.3-0.4)	BH39 (0-0.05)	BH39 (0.3-0.4)	BH40 (0-0.05)	BH40 (0.4-0.5)
			Client sampling date / time	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503556-076	ES1503556-077	ES1503556-078	ES1503556-079	ES1503556-080
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**7.1**	**3.2**	**5.3**	**6.6**	**4.8**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.2**	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	DUP1	DUP2	DUP3	DUP4	----
			Client sampling date / time	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00	12-FEB-2015 15:00	----
Compound	CAS Number	LOR	Unit	ES1503556-081	ES1503556-082	ES1503556-083	ES1503556-084	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**1.5**	**3.3**	**1.9**	**6.5**	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	**0.1**	----

QUALITY CONTROL REPORT

Work Order	: **ES1503556**	Page	: 1 of 5
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: ORICA MERCURY INDEPENDENT REVIEW 45970	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: Botany		
C-O-C number	: ----	Date Samples Received	: 13-FEB-2015
Sampler	: AY/PC	Issue Date	: 20-FEB-2015
Order number	: 45970		
		No. of samples received	: 84
Quote number	: SY/1085/14	No. of samples analysed	: 84

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

This Quality Control Report contains the following information:

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

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics

General Comments

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

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

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

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

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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA055: Moisture Content (QC Lot: 3825032)									
ES1503544-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	28.0	29.0	3.6	0% - 20%
ES1503556-010	BH05 (0.4-0.5)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	11.1	11.2	1.2	0% - 50%
EA055: Moisture Content (QC Lot: 3825033)									
ES1503556-019	BH10 (0-0.05)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	3.5	1.6	71.5	No Limit
ES1503556-030	BH15 (0.4-0.5)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	4.0	3.8	6.4	No Limit
EA055: Moisture Content (QC Lot: 3825034)									
ES1503556-039	BH20 (0-0.05)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	1.0	1.8	49.7	No Limit
ES1503556-050	BH25 (0.4-0.5)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	<1.0	<1.0	0.0	No Limit
EA055: Moisture Content (QC Lot: 3825035)									
ES1503556-059	BH30 (0-0.05)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	1.4	1.9	27.5	No Limit
ES1503556-070	BH35 (0.3-0.4)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	7.9	8.0	0.0	No Limit
EA055: Moisture Content (QC Lot: 3825036)									
ES1503556-079	BH40 (0-0.05)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	6.6	7.0	5.8	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3826725)									
ES1503556-001	BH01 (0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1503556-011	BH06 (0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3826726)									
ES1503556-021	BH11 (0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1503556-031	BH16 (0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3826727)									
ES1503556-041	BH21 (0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1503556-051	BH26 (0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3826728)									
ES1503556-061	BH31 (0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1503556-071	BH36 (0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3827909)									
ES1503556-081	DUP1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit

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

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3826725)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	88.3	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3826726)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	92.1	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3826727)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	84.8	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3826728)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	89.5	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3827909)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	89.0	70	105

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**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3826725)							
ES1503556-001	BH01 (0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	97.2	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3826726)							
ES1503556-021	BH11 (0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	99.8	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3826727)							
ES1503556-041	BH21 (0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	104	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3826728)							
ES1503556-061	BH31 (0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	99.7	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3827909)							
ES1503556-081	DUP1	EG035T: Mercury	7439-97-6	5 mg/kg	96.1	70	130

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

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

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3826725)										
ES1503556-001	BH01 (0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	97.2	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3826726)										
ES1503556-021	BH11 (0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	99.8	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3826727)										
ES1503556-041	BH21 (0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	104	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3826728)										
ES1503556-061	BH31 (0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	99.7	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3827909)										
ES1503556-081	DUP1	EG035T: Mercury	7439-97-6	5 mg/kg	96.1	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **ES1503556**	Page	: 1 of 8
Client	: WSP ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: ORICA MERCURY INDEPENDENT REVIEW 45970	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: Botany		
C-O-C number	: ----	Date Samples Received	: 13-FEB-2015
Sampler	: AY/PC	Issue Date	: 20-FEB-2015
Order number	: 45970		
		No. of samples received	: 84
Quote number	: SY/1085/14	No. of samples analysed	: 84

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

This Interpretive Quality Control Report contains the following information:

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

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and 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								
Soil Glass Jar - Unpreserved (EA055-103)								
BH01 (0-0.05),	BH01 (0.4-0.5),	**10-FEB-2015**	**----**	----	----	**16-FEB-2015**	24-FEB-2015	✓
BH02 (0-0.05),	BH02 (0.4-0.5),							
BH03 (0-0.05),	BH03 (0.4-0.5),							
BH04 (0-0.05),	BH04 (0.4-0.5),							
BH05 (0-0.05),	BH05 (0.4-0.5),							
BH06 (0-0.05),	BH06 (0.4-0.5),							
BH07 (0-0.05),	BH07 (0.4-0.5),							
BH08 (0-0.05),	BH08 (0.4-0.5),							
BH09 (0-0.05),	BH09 (0.4-0.5),							
BH10 (0-0.05),	BH10 (0.4-0.5),							
BH11 (0-0.05),	BH11 (0.4-0.5),							
BH12 (0-0.05),	BH12 (0.4-0.5)							
Soil Glass Jar - Unpreserved (EA055-103)								
BH13 (0-0.05),	BH13 (0.4-0.5),	**11-FEB-2015**	**----**	----	----	**16-FEB-2015**	25-FEB-2015	✓
BH14 (0-0.05),	BH14 (0.4-0.5),							
BH15 (0-0.05),	BH15 (0.4-0.5),							
BH16 (0-0.05),	BH16 (0.4-0.5),							
BH17 (0-0.05),	BH17 (0.4-0.5),							
BH18 (0-0.05),	BH18 (0.2-0.3),							
BH19 (0-0.05),	BH19 (0.4-0.5),							
BH20 (0-0.05),	BH20 (0.2-0.3),							
BH21 (0-0.05),	BH21 (0.4-0.5),							
BH22 (0-0.05),	BH22 (0.4-0.5),							
BH23 (0-0.05),	BH23 (0.4-0.5),							
BH24 (0-0.05),	BH24 (0.4-0.5),							
BH25 (0-0.05),	BH25 (0.4-0.5),							
BH26 (0-0.05),	BH26 (0.4-0.5),							
BH27 (0-0.05),	BH27 (0.4-0.5)							
Soil Glass Jar - Unpreserved (EA055-103)								

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 - Continued								
BH28 (0-0.05),	BH28 (0.2-0.3),	**12-FEB-2015**	**----**	----	----	**16-FEB-2015**	26-FEB-2015	✓
BH29 (0-0.05),	BH29 (0.4-0.5),							
BH30 (0-0.05),	BH30 (0.4-0.5),							
BH31 (0-0.05),	BH31 (0.4-0.5),							
BH32 (0-0.05),	BH32 (0.4-0.5),							
BH33 (0-0.05),	BH33 (0.4-0.5),							
BH34 (0-0.05),	BH34 (0.2-0.3),							
BH35 (0-0.05),	BH35 (0.3-0.4),							
BH36 (0-0.05),	BH36 (0.4-0.5),							
BH37 (0-0.05),	BH37 (0.3-0.4),							
BH38 (0-0.05),	BH38 (0.3-0.4),							
BH39 (0-0.05),	BH39 (0.3-0.4),							
BH40 (0-0.05),	BH40 (0.4-0.5),							
DUP1,	DUP2,							
DUP3,	DUP4							

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)								
BH01 (0-0.05),	BH01 (0.4-0.5),	**10-FEB-2015**	**17-FEB-2015**	10-MAR-2015	✓	**19-FEB-2015**	10-MAR-2015	✓
BH02 (0-0.05),	BH02 (0.4-0.5),							
BH03 (0-0.05),	BH03 (0.4-0.5),							
BH04 (0-0.05),	BH04 (0.4-0.5),							
BH05 (0-0.05),	BH05 (0.4-0.5),							
BH06 (0-0.05),	BH06 (0.4-0.5),							
BH07 (0-0.05),	BH07 (0.4-0.5),							
BH08 (0-0.05),	BH08 (0.4-0.5),							
BH09 (0-0.05),	BH09 (0.4-0.5),							
BH10 (0-0.05),	BH10 (0.4-0.5),							
BH11 (0-0.05),	BH11 (0.4-0.5),							
BH12 (0-0.05),	BH12 (0.4-0.5)							
Soil Glass Jar - Unpreserved (EG035T)								
BH13 (0-0.05),	BH13 (0.4-0.5),	**11-FEB-2015**	**17-FEB-2015**	11-MAR-2015	✓	**19-FEB-2015**	11-MAR-2015	✓
BH14 (0-0.05),	BH14 (0.4-0.5),							
BH15 (0-0.05),	BH15 (0.4-0.5),							
BH16 (0-0.05),	BH16 (0.4-0.5),							
BH17 (0-0.05),	BH17 (0.4-0.5),							
BH18 (0-0.05),	BH18 (0.2-0.3),							
BH19 (0-0.05),	BH19 (0.4-0.5),							
BH20 (0-0.05),	BH20 (0.2-0.3)							
Soil Glass Jar - Unpreserved (EG035T)								
BH21 (0-0.05),	BH21 (0.4-0.5),	**11-FEB-2015**	**17-FEB-2015**	11-MAR-2015	✓	**20-FEB-2015**	11-MAR-2015	✓
BH22 (0-0.05),	BH22 (0.4-0.5),							
BH23 (0-0.05),	BH23 (0.4-0.5),							
BH24 (0-0.05),	BH24 (0.4-0.5),							
BH25 (0-0.05),	BH25 (0.4-0.5),							
BH26 (0-0.05),	BH26 (0.4-0.5),							
BH27 (0-0.05),	BH27 (0.4-0.5)							
Soil Glass Jar - Unpreserved (EG035T)								

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 - Continued								
BH28 (0-0.05),	BH28 (0.2-0.3),	**12-FEB-2015**	**17-FEB-2015**	12-MAR-2015	✓	**20-FEB-2015**	12-MAR-2015	✓
BH29 (0-0.05),	BH29 (0.4-0.5),							
BH30 (0-0.05),	BH30 (0.4-0.5),							
BH31 (0-0.05),	BH31 (0.4-0.5),							
BH32 (0-0.05),	BH32 (0.4-0.5),							
BH33 (0-0.05),	BH33 (0.4-0.5),							
BH34 (0-0.05),	BH34 (0.2-0.3),							
BH35 (0-0.05),	BH35 (0.3-0.4),							
BH36 (0-0.05),	BH36 (0.4-0.5),							
BH37 (0-0.05),	BH37 (0.3-0.4),							
BH38 (0-0.05),	BH38 (0.3-0.4),							
BH39 (0-0.05),	BH39 (0.3-0.4),							
BH40 (0-0.05),	BH40 (0.4-0.5)							
Soil Glass Jar - Unpreserved (EG035T)								
DUP1,	DUP2,	**12-FEB-2015**	**18-FEB-2015**	12-MAR-2015	✓	**19-FEB-2015**	12-MAR-2015	✓
DUP3,	DUP4							

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	EA055-103	9	88	**10.2**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	9	84	**10.7**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	5	84	**6.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	5	84	**6.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	5	84	**6.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	In-house. A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 21st ed., 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 (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. 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 (2013) Schedule B(3) (Method 202)

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW 846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

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

Regular Sample Surrogates

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

Outliers : Analysis Holding Time Compliance

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

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

Outliers : Frequency of Quality Control Samples

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

- **No Quality Control Sample Frequency Outliers exist.**

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	FOR LABORATORY USE ONLY (Circle)	
SITE: Botany		Custody Seal Intact?	Yes / No / N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1985/14	Free ice / frozen ice bricks present upon receipt?	Yes / No / N/A
ORDER NUMBER: PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:	Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: Colin McKay CONTACT PH: 0448 977 926	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7	Other comment:	

SAMPLER: AY/PC SAMPLER MOBILE:	RELINQUISHED BY: Phillippa Childs	RECEIVED BY: Ravi	RELINQUISHED BY:
COC Emailed to ALS? (NO) EDD FORMAT (or default):	DATE/TIME: 16/2/15	DATE/TIME: 16/2/15 15:15	DATE/TIME:
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com			RECEIVED BY:
Email Invoice to (will default to PM if no other addresses are listed):			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	Mercury - Total Recoverable								
1	BH41 (0-0.05)	13/02/2015	Soil			x								
2	BH41 (0.4-0.5)	13/02/2015	Soil			x								
3	BH42 (0-0.05)	13/02/2015	Soil			x								
4	BH42 (0.4-0.5)	13/02/2015	Soil			x								
5	BH43 (0-0.05)	13/02/2015	Soil			x								
6	BH43 (0.4-0.5)	13/02/2015	Soil			x								
7	BH44 (0-0.05)	13/02/2015	Soil			x								
8	BH44 (0.4-0.5)	13/02/2015	Soil			x								
9	BH45 (0-0.05)	13/02/2015	Soil			x								
10	BH45 (0.4-0.5)	13/02/2015	Soil			x								
11	BH46 (0-0.05)	13/02/2015	Soil			x								
12	BH46 (0.4-0.5)	13/02/2015	Soil			x								
				TOTAL		12								

Environmental Division
Sydney
Work Order
ES1503682

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 →

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS: ☐ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	FOR LABORATORY USE ONLY (Circle)	
SITE: Botany		Custody Seal Intact?	Yes No N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14	Free ice / frozen ice bricks present upon receipt?	Yes No N/A
ORDER NUMBER: PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:	Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: Colin McKay CONTACT PH: 0448 977 926	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7	Other comment:	

SAMPLER: AY/PC SAMPLER MOBILE:	RELINQUISHED BY: Phillippa Childs	RECEIVED BY: Ran	RELINQUISHED BY:
COC Emailed to ALS? (NO) EDD FORMAT (or default):	DATE/TIME: 16/2/15	DATE/TIME: 16/2/15 15:15	DATE/TIME:
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com			RECEIVED BY:
Email Invoice to (will default to PM if no other addresses are listed):			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	Mercury - Total Recoverable								
13	BH47 (0-0.05)	13/02/2015	Soil			x								
14	BH47 (0.4-0.5)	13/02/2015	Soil			x								
15	BH48 (0-0.05)	13/02/2015	Soil			x								
16	BH48 (0.1-0.2)	13/02/2015	Soil			x								
17	BH49 (0-0.05)	13/02/2015	Soil			x								
18	BH49 (0.4-0.5)	13/02/2015	Soil			x								
19	BH50 (0-0.05)	13/02/2015	Soil			x								
20	BH50 (0.4-0.5)	13/02/2015	Soil			x								
21	BH51 (0-0.05)	13/02/2015	Soil			x								
22	BH51 (0.4-0.5)	13/02/2015	Soil			x								
23	BH52 (0-0.05)	13/02/2015	Soil			x								
24	BH52 (0.4-0.5)	13/02/2015	Soil			x								
				TOTAL		12								

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; U = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)		FOR LABORATORY USE ONLY (Circle)
SITE: Botany			Custody Seal Intact? Yes No N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14	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: Colin McKay CONTACT PH: 0448 977 926		OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: AY/PC	SAMPLER MOBILE:	RELINQUISHED BY: Philippa Childs	RECEIVED BY:	RELINQUISHED BY: / RECEIVED BY:
COC Emailed to ALS? (NO)	EDD FORMAT (or default):	DATE/TIME: 16/2/15	DATE/TIME: 16/2/15 15:15	DATE/TIME: / DATE/TIME:
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com				
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	Mercury - Total Recoverable							
25	BH53 (0-0.05)	13/02/2015	Soil			x							
26	BH53 (0.4-0.5)	13/02/2015	Soil			x							
27	BH54 (0-0.05)	13/02/2015	Soil			x							
28	BH54 (0.4-0.5)	13/02/2015	Soil			x							
29	BH55 (0-0.05)	13/02/2015	Soil			x							
30	BH55 (0.4-0.5)	13/02/2015	Soil			x							
31	BH56 (0-0.05)	13/02/2015	Soil			x							
32	BH56 (0.3-0.4)	13/02/2015	Soil			x							
33	BH57 (0-0.05)	13/02/2015	Soil			x							
34	BH57 (0.4-0.5)	13/02/2015	Soil			x							
35	BH58 (0-0.05)	13/02/2015	Soil			x							
36	BH58 (0.4-0.5)	13/02/2015	Soil			x							
				TOTAL		12							

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: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)		FOR LABORATORY USE ONLY (Circle)
SITE: Botany			Custody Seal Intact? Yes No N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1985/14	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER: PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:	OF: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Colin McKay	CONTACT PH: 0448 977 926		Other comment:
SAMPLER: AY/PC	SAMPLER MOBILE:	RELINQUISHED BY: Philippa Childs	RECEIVED BY: Raun
COC Emailed to ALS? (NO)	EDD FORMAT (or default):	DATE/TIME: 16/2/15	DATE/TIME: 16/2/15 15:15
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com		RELINQUISHED BY:	RECEIVED BY:
Email Invoice to (will default to PM if no other addresses are listed):		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	Mercury - Total Recoverable								
37	BH59 (0-0.05)	13/02/2015	Soil			x								
38	BH59 (0.4-0.5)	13/02/2015	Soil			x								
39	BH60 (0-0.05)	13/02/2015	Soil			x								
40	BH60 (0.1-0.2)	13/02/2015	Soil			x								
41	BH61 (0-0.05)	13/02/2015	Soil			x								
42	BH61 (0.4-0.5)	13/02/2015	Soil			x								
43	BH62 (0-0.05)	13/02/2015	Soil			x								
44	BH62 (0.4-0.5)	13/02/2015	Soil			x								
45	Dup5	13/02/2015	Soil			x								
						x								
						x								
						x								
				TOTAL		12								

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; L1 = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **ES1503682**		
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: ORICA MERCURY INDEPENDANT REVIEW 45970	Page	: 1 of 3
Order number	: ----		
C-O-C number	: ----	Quote number	: ES2015WSPENV0359 (SY/1085/14)
Site	: ----		
Sampler	: AY,PC	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 16-FEB-2015	Issue Date	: 18-FEB-2015 08:09
Client Requested Due Date	: 23-FEB-2015	Scheduled Reporting Date	: **23-FEB-2015**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 20.1'C - Ice bricks present
No. of coolers/boxes	: 2 ESKYS	No. of samples received	: 45
Security Seal	: Intact.	No. of samples analysed	: 45

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 received in appropriately pretreated and preserved containers.**
- **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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- 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 (14 days), Solid (60 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance 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 to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EG035T (solids) Total Mercury by FIMS	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP075 SIM PAH only SIM - PAH only
ES1503682-001	13-FEB-2015 15:00	BH41(0-0.05)	✓		✓		
ES1503682-002	13-FEB-2015 15:00	BH41(0.4-0.5)	✓		✓		
ES1503682-003	13-FEB-2015 15:00	BH42(0-0.05)	✓		✓		
ES1503682-004	13-FEB-2015 15:00	BH42(0.4-0.5)	✓		✓		
ES1503682-005	13-FEB-2015 15:00	BH43(0-0.05)	✓		✓		
ES1503682-006	13-FEB-2015 15:00	BH43(0.4-0.5)	✓		✓		
ES1503682-007	13-FEB-2015 15:00	BH44(0-0.05)	✓		✓		
ES1503682-008	13-FEB-2015 15:00	BH44(0.4-0.5)	✓		✓		
ES1503682-009	13-FEB-2015 15:00	BH45(0-0.05)	✓		✓		
ES1503682-010	13-FEB-2015 15:00	BH45(0.4-0.5)	✓		✓		
ES1503682-011	13-FEB-2015 15:00	BH46(0-0.05)	✓		✓		
ES1503682-012	13-FEB-2015 15:00	BH46(0.4-0.5)	✓		✓		
ES1503682-013	13-FEB-2015 15:00	BH47(0-0.05)	✓		✓		
ES1503682-014	13-FEB-2015 15:00	BH47(0.4-0.5)	✓		✓		
ES1503682-015	13-FEB-2015 15:00	BH48(0-0.05)	✓		✓		
ES1503682-016	13-FEB-2015 15:00	BH48(0.1-0.2)	✓		✓		
ES1503682-017	13-FEB-2015 15:00	BH49(0-0.05)	✓		✓		
ES1503682-018	13-FEB-2015 15:00	BH49(0.4-0.5)	✓		✓		
ES1503682-019	13-FEB-2015 15:00	BH50(0-0.05)	✓		✓		
ES1503682-020	13-FEB-2015 15:00	BH50(0.4-0.5)	✓		✓		
ES1503682-021	13-FEB-2015 15:00	BH51(0-0.05)	✓		✓		
ES1503682-022	13-FEB-2015 15:00	BH51(0.4-0.5)	✓		✓		
ES1503682-023	13-FEB-2015 15:00	BH52(0-0.05)	✓		✓		
ES1503682-024	13-FEB-2015 15:00	BH52(0.4-0.5)	✓		✓		
ES1503682-025	13-FEB-2015 15:00	BH53(0-0.05)	✓		✓		
ES1503682-026	13-FEB-2015 15:00	BH53(0.4-0.5)	✓		✓		
ES1503682-027	13-FEB-2015 15:00	BH54(0-0.05)	✓		✓		
ES1503682-028	13-FEB-2015 15:00	BH54(0.4-0.5)	✓		✓		
ES1503682-029	13-FEB-2015 15:00	BH55(0-0.05)	✓		✓		
ES1503682-030	13-FEB-2015 15:00	BH55(0.4-0.5	✓		✓		
ES1503682-031	13-FEB-2015 15:00	BH56(0-0.05)	✓		✓		
ES1503682-032	13-FEB-2015 15:00	BH56(0.3-0.4)	✓		✓		
ES1503682-033	13-FEB-2015 15:00	BH57(0-0.05)	✓		✓		
ES1503682-034	13-FEB-2015 15:00	BH57(0.4-0.5)	✓		✓		
ES1503682-035	13-FEB-2015 15:00	BH58(0-0.05)	✓		✓		

			SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EG035T (solids) Total Mercury by FIMS	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP075 SIM PAH only SIM - PAH only
ES1503682-036	13-FEB-2015 15:00	BH58(0.4-0.5)	✓		✓		
ES1503682-037	13-FEB-2015 15:00	BH59(0-0.05)	✓	✓	✓	✓	✓
ES1503682-038	13-FEB-2015 15:00	BH59(0.4-0.5)	✓		✓		
ES1503682-039	13-FEB-2015 15:00	BH60(0-0.05)	✓	✓	✓	✓	✓
ES1503682-040	13-FEB-2015 15:00	BH60(0.1 -0.2)	✓		✓		
ES1503682-041	13-FEB-2015 15:00	BH61(0-0.05)	✓	✓	✓	✓	✓
ES1503682-042	13-FEB-2015 15:00	BH61(0.4-0.5)	✓		✓		
ES1503682-043	13-FEB-2015 15:00	BH62(0-0.05)	✓	✓	✓	✓	✓
ES1503682-044	13-FEB-2015 15:00	BH62(0.4-0.5)	✓		✓		
ES1503682-045	13-FEB-2015 15:00	DUP5	✓		✓		

Proactive Holding Time Report

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

Requested Deliverables

MR COLIN MCKAY

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

PHILIPPA CHILDS

- *AU Certificate of Analysis - NATA (COA) Email philippa.childs@wspgroup.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email philippa.childs@wspgroup.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email philippa.childs@wspgroup.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN Email philippa.childs@wspgroup.com
- Chain of Custody (CoC) (COC) Email philippa.childs@wspgroup.com
- EDI Format - ENMRG (ENMRG) Email philippa.childs@wspgroup.com
- EDI Format - ESDAT (ESDAT) Email philippa.childs@wspgroup.com

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1503682**	Page	: 1 of 14
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: ORICA MERCURY INDEPENDANT REVIEW 45970	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 45970		
C-O-C number	: ----	Date Samples Received	: 16-FEB-2015
Sampler	: AY,PC	Issue Date	: 23-FEB-2015
Site	: ----		
		No. of samples received	: 45
Quote number	: SY/1085/14	No. of samples analysed	: 45

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics

General Comments

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

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

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

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

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 Contact 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

- **Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH41(0-0.05)	BH41(0.4-0.5)	BH42(0-0.05)	BH42(0.4-0.5)	BH43(0-0.05)
			Client sampling date / time	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503682-001	ES1503682-002	ES1503682-003	ES1503682-004	ES1503682-005
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	9.2	1.5	12.1	2.8	4.0
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH43(0.4-0.5)	BH44(0-0.05)	BH44(0.4-0.5)	BH45(0-0.05)	BH45(0.4-0.5)
				Client sampling date / time	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503682-006	ES1503682-007	ES1503682-008	ES1503682-009	ES1503682-010
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		**1.5**	**8.7**	<1.0	<1.0	**1.0**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH46(0-0.05)	BH46(0.4-0.5)	BH47(0-0.05)	BH47(0.4-0.5)	BH48(0-0.05)
			Client sampling date / time	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503682-011	ES1503682-012	ES1503682-013	ES1503682-014	ES1503682-015
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**17.7**	**11.7**	**2.1**	**4.2**	**2.8**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.2**	**0.2**	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH48(0.1-0.2)	BH49(0-0.05)	BH49(0.4-0.5)	BH50(0-0.05)	BH50(0.4-0.5)
				Client sampling date / time	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503682-016	ES1503682-017	ES1503682-018	ES1503682-019	ES1503682-020
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		**6.4**	**7.7**	**5.8**	**8.9**	**6.3**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	**0.2**	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH51(0-0.05)	BH51(0.4-0.5)	BH52(0-0.05)	BH52(0.4-0.5)	BH53(0-0.05)
			Client sampling date / time	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503682-021	ES1503682-022	ES1503682-023	ES1503682-024	ES1503682-025
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	4.4	3.0	6.4	10.7	5.4
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH53(0.4-0.5)	BH54(0-0.05)	BH54(0.4-0.5)	BH55(0-0.05)	BH55(0.4-0.5
			Client sampling date / time	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503682-026	ES1503682-027	ES1503682-028	ES1503682-029	ES1503682-030
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	7.2	9.1	5.2	3.5	8.3
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	0.1	0.3	0.1	0.8	0.4

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH56(0-0.05)	BH56(0.3-0.4)	BH57(0-0.05)	BH57(0.4-0.5)	BH58(0-0.05)
				Client sampling date / time	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503682-031	ES1503682-032	ES1503682-033	ES1503682-034	ES1503682-035
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		16.6	15.4	31.8	14.7	3.1
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		0.8	0.2	4.7	0.7	0.8

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH58(0.4-0.5)	BH59(0-0.05)	BH59(0.4-0.5)	BH60(0-0.05)	BH60(0.1 -0.2)
				Client sampling date / time	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503682-036	ES1503682-037	ES1503682-038	ES1503682-039	ES1503682-040
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		3.8	8.5	2.5	3.9	3.0
EG005T: Total Metals by ICP-AES									
Chromium	7440-47-3	2	mg/kg		----	10	----	2	----
Lead	7439-92-1	5	mg/kg		----	64	----	21	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	0.2	0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	<0.1	----	<0.1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	----	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	----	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	----	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	----	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	----	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	----	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	0.6	----	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	1.2	----	1.2	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	103	----	78.0	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		----	91.8	----	89.8	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH58(0.4-0.5)	BH59(0-0.05)	BH59(0.4-0.5)	BH60(0-0.05)	BH60(0.1 -0.2)
				Client sampling date / time	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503682-036	ES1503682-037	ES1503682-038	ES1503682-039	ES1503682-040
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2-Chlorophenol-D4	93951-73-6	0.1	%		----	96.4	----	93.9	----
2.4.6-Tribromophenol	118-79-6	0.1	%		----	74.9	----	86.0	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		----	99.8	----	100	----
Anthracene-d10	1719-06-8	0.1	%		----	102	----	92.9	----
4-Terphenyl-d14	1718-51-0	0.1	%		----	75.8	----	98.5	----

Analytical Results

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

Compound	CAS Number	LOR	Unit	Client sample ID	BH61(0-0.05)	BH61(0.4-0.5)	BH62(0-0.05)	BH62(0.4-0.5)	DUP5
				Client sampling date / time	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00
					ES1503682-041	ES1503682-042	ES1503682-043	ES1503682-044	ES1503682-045
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		**11.3**	**8.7**	**10.6**	**8.9**	**12.0**
EG005T: Total Metals by ICP-AES									
Chromium	7440-47-3	2	mg/kg		**5**	----	**6**	----	----
Lead	7439-92-1	5	mg/kg		**80**	----	**52**	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		**0.2**	**0.2**	<0.1	<0.1	**0.4**
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	<0.1	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	**1.2**	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	**1.8**	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	**2.0**	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	**0.9**	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	**0.8**	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	**1.0**	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	**0.8**	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	**0.7**	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	----	**9.2**	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		<0.5	----	**1.0**	----	----
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	----	**1.3**	----	----
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	----	**1.6**	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**67.0**	----	**72.0**	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		**88.0**	----	**88.0**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH61(0-0.05)	BH61(0.4-0.5)	BH62(0-0.05)	BH62(0.4-0.5)	DUP5
				Client sampling date / time	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00	13-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503682-041	ES1503682-042	ES1503682-043	ES1503682-044	ES1503682-045
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2-Chlorophenol-D4	93951-73-6	0.1	%		97.8	----	95.8	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%		75.3	----	102	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		104	----	112	----	----
Anthracene-d10	1719-06-8	0.1	%		96.5	----	96.9	----	----
4-Terphenyl-d14	1718-51-0	0.1	%		96.8	----	89.8	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	Recovery Limits (%) High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129

QUALITY CONTROL REPORT

Work Order	: **ES1503682**	Page	: 1 of 7
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: ORICA MERCURY INDEPENDANT REVIEW 45970	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 16-FEB-2015
Sampler	: AY,PC	Issue Date	: 23-FEB-2015
Order number	: 45970		
		No. of samples received	: 45
Quote number	: SY/1085/14	No. of samples analysed	: 45

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

This Quality Control Report contains the following information:

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

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics

General Comments

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

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

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

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

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

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	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA055: Moisture Content (QC Lot: 3826849)									
ES1503682-001	BH41(0-0.05)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	9.2	9.6	3.7	No Limit
ES1503682-012	BH46(0.4-0.5)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	11.7	11.9	1.7	0% - 50%
EA055: Moisture Content (QC Lot: 3826850)									
ES1503682-021	BH51(0-0.05)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	4.4	5.2	15.8	No Limit
ES1503682-032	BH56(0.3-0.4)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	15.4	17.2	11.2	0% - 50%
EA055: Moisture Content (QC Lot: 3826851)									
ES1503682-041	BH61(0-0.05)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	11.3	10.7	5.6	0% - 50%
ES1503781-007	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	16.5	15.7	4.6	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 3830142)									
ES1503682-037	BH59(0-0.05)	EG005T: Chromium	7440-47-3	2	mg/kg	10	12	16.9	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	64	78	19.3	0% - 50%
ES1503686-002	Anonymous	EG005T: Chromium	7440-47-3	2	mg/kg	90	92	1.6	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	16	16	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3829536)									
ES1503682-001	BH41(0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1503682-011	BH46(0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.2	0.4	41.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3829537)									
ES1503682-021	BH51(0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1503682-031	BH56(0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.8	0.6	18.7	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3830143)									
ES1503682-037	BH59(0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3828367)									
ES1503068-025	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3828369)									
ES1503068-025	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3828369) - continued									
ES1503068-025	Anonymous	EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

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

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 3830142)								
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	89.6	80	136
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	86.3	86	124
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3829536)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	81.8	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3829537)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	78.4	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3830143)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	78.5	70	105
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3828367)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	102	57.4	117
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3828369)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	93.0	80	124
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	87.4	77	123
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	86.6	79	123
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	88.4	77	123
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	88.2	79	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	92.0	79	123
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	80.2	79	123
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	79.6	79	125
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	84.0	73	121
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	88.6	81	123
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	4 mg/kg	80.4	70	118
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	89.0	77	123
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	86.4	76	122
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	77.8	71	113
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	84.6	71.7	113
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	90.2	72.4	114

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**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 3830142)							
ES1503682-037	BH59(0-0.05)	EG005T: Chromium	7440-47-3	50 mg/kg	101	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	92.4	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3829536)							
ES1503682-001	BH41(0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	96.0	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3829537)							
ES1503682-021	BH51(0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	93.8	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3830143)							
ES1503682-037	BH59(0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	86.4	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3828367)							
ES1503068-025	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	87.8	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3828369)							
ES1503068-025	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	90.6	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	111	70	130

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

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

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3828367)										
ES1503068-025	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	87.8	----	70	130	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3828369)										
ES1503068-025	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	90.6	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	111	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3829536)										
ES1503682-001	BH41(0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	96.0	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3829537)										
ES1503682-021	BH51(0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	93.8	----	70	130	----	----
EG005T: Total Metals by ICP-AES (QCLot: 3830142)										
ES1503682-037	BH59(0-0.05)	EG005T: Chromium	7440-47-3	50 mg/kg	101	----	70	130	----	----
		EG005T: Lead	7439-92-1	250 mg/kg	92.4	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3830143)										
ES1503682-037	BH59(0-0.05)									

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3830143) - continued										
ES1503682-037	BH59(0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	86.4	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **ES1503682**	Page	: 1 of 6
Client	: WSP ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: ORICA MERCURY INDEPENDANT REVIEW 45970	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 16-FEB-2015
Sampler	: AY,PC	Issue Date	: 23-FEB-2015
Order number	: 45970		
		No. of samples received	: 45
Quote number	: SY/1085/14	No. of samples analysed	: 45

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

This Interpretive Quality Control Report contains the following information:

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

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and 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							
Soil Glass Jar - Unpreserved (EA055-103)							
BH41(0-0.05), BH41(0.4-0.5), BH42(0-0.05), BH42(0.4-0.5), BH43(0-0.05), BH43(0.4-0.5), BH44(0-0.05), BH44(0.4-0.5), BH45(0-0.05), BH45(0.4-0.5), BH46(0-0.05), BH46(0.4-0.5), BH47(0-0.05), BH47(0.4-0.5), BH48(0-0.05), BH48(0.1-0.2), BH49(0-0.05), DUP5, BH49(0.4-0.5), BH50(0-0.05), BH50(0.4-0.5), BH51(0-0.05), BH51(0.4-0.5), BH52(0-0.05), BH52(0.4-0.5), BH53(0-0.05), BH53(0.4-0.5), BH54(0-0.05), BH54(0.4-0.5), BH55(0-0.05), BH55(0.4-0.5, BH56(0-0.05), BH56(0.3-0.4), BH57(0-0.05), BH57(0.4-0.5), BH58(0-0.05), BH58(0.4-0.5), BH59(0-0.05), BH59(0.4-0.5), BH60(0-0.05), BH60(0.1 -0.2), BH61(0-0.05), BH61(0.4-0.5), BH62(0-0.05), BH62(0.4-0.5)	**13-FEB-2015**	**----**	----	----	**17-FEB-2015**	27-FEB-2015	✓
Soil Glass Jar - Unpreserved (EA055-103)							
BH59(0-0.05), BH60(0-0.05), BH61(0-0.05), BH62(0-0.05)	**13-FEB-2015**	**----**	----	----	**18-FEB-2015**	27-FEB-2015	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
BH59(0-0.05), BH60(0-0.05), BH61(0-0.05), BH62(0-0.05)	**13-FEB-2015**	**19-FEB-2015**	12-AUG-2015	✓	**21-FEB-2015**	12-AUG-2015	✓

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)							
BH41(0-0.05), BH41(0.4-0.5),	**13-FEB-2015**	**19-FEB-2015**	13-MAR-2015	✓	**23-FEB-2015**	13-MAR-2015	✓
BH42(0-0.05), BH42(0.4-0.5),							
BH43(0-0.05), BH43(0.4-0.5),							
BH44(0-0.05), BH44(0.4-0.5),							
BH45(0-0.05), BH45(0.4-0.5),							
BH46(0-0.05), BH46(0.4-0.5),							
BH47(0-0.05), BH47(0.4-0.5),							
BH48(0-0.05), BH48(0.1-0.2),							
BH49(0-0.05), DUP5, BH49(0.4-0.5),							
BH50(0-0.05), BH50(0.4-0.5),							
BH51(0-0.05), BH51(0.4-0.5),							
BH52(0-0.05), BH52(0.4-0.5),							
BH53(0-0.05), BH53(0.4-0.5),							
BH54(0-0.05), BH54(0.4-0.5),							
BH55(0-0.05), BH55(0.4-0.5,							
BH56(0-0.05), BH56(0.3-0.4),							
BH57(0-0.05), BH57(0.4-0.5),							
BH58(0-0.05), BH58(0.4-0.5),							
BH59(0-0.05), BH59(0.4-0.5),							
BH60(0-0.05), BH60(0.1 -0.2),							
BH61(0-0.05), BH61(0.4-0.5),							
BH62(0-0.05), BH62(0.4-0.5)							
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
BH59(0-0.05), BH60(0-0.05),	**13-FEB-2015**	**18-FEB-2015**	27-FEB-2015	✓	**19-FEB-2015**	30-MAR-2015	✓
BH61(0-0.05), BH62(0-0.05)							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH59(0-0.05), BH60(0-0.05),	**13-FEB-2015**	**18-FEB-2015**	27-FEB-2015	✓	**18-FEB-2015**	30-MAR-2015	✓
BH61(0-0.05), BH62(0-0.05)							

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	EA055-103	6	60	**10.0**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	5	**20.0**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.0**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	5	47	**10.6**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	**10.0**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	5	**20.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	3	47	**6.4**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	5	**20.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	3	47	**6.4**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	5	**20.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	3	47	**6.4**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	In-house. A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 21st ed., 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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 21st ed., 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 (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. 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 (2013) Schedule B(3) (Method 202)
Tumbler Extraction of Solids	ORG17	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW 846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

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

Regular Sample Surrogates

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

Outliers : Analysis Holding Time Compliance

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

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

Outliers : Frequency of Quality Control Samples

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

- **No Quality Control Sample Frequency Outliers exist.**

CHAIN OF CUSTODY

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
NEWCASTLE 5/585 Maitland Road Mayfield West 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com
PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com
WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)
SITE: Botany	
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1005/14
ORDER NUMBER: PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:
PROJECT MANAGER: Colin McKay CONTACT PH: 0448 977 926	
SAMPLER: AY/PC SAMPLER MOBILE:	
COC Emailed to ALS? (NO) EDD FORMAT (or default):	
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com	
Email Invoice to (will default to PM if no other addresses are listed):	

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:
	Frank ALS		
DATE/TIME:	DATE/TIME: 18/2/15 1500	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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB				
1	BH63 (0-0.05)	17/02/2015	Soil			x								
2	BH63 (0.4-0.5)	17/02/2015	Soil			x								
3	BH64 (0-0.05)	17/02/2015	Soil			x								
4	BH64 (0.4-0.5)	17/02/2015	Soil			x								
5	BH65 (0-0.05)	17/02/2015	Soil			x								
6	BH65 (0.4-0.5)	17/02/2015	Soil			x								
7	BH66 (0-0.05)	17/02/2015	Soil			x								
8	BH66 (0.4-0.5)	17/02/2015	Soil			x								
9	BH67 (0-0.05)	17/02/2015	Soil			x								
10	BH67 (0.4-0.5)	17/02/2015	Soil			x								
11	BH68 (0-0.05)	17/02/2015	Soil			x								
12	BN68 (0.4-0.5)	17/02/2015	Soil			x								
				TOTAL		12								

Environmental Division
Sydney
Work Order
ES1503946
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 Ph: 08 8359 0890 E: adelaide@alsglobal.com
BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
NEWCASTLE 5/585 Maitland Road Mayfield West 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com
PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com
WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):		FOR LABORATORY USE ONLY (Circle)
SITE: Botany	(Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)		Custody Seal Intact? Yes No N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14	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: Colin McKay CONTACT PH: 0448 977 926		OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: AY/PC SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY: Frank ALS	RELINQUISHED BY:	RECEIVED BY:
COC Emailed to ALS? (NO) EDD FORMAT (or default):				
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com	DATE/TIME:	DATE/TIME: 18/2/15 1500	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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB				
13	BH69 (0-0.05)	17/02/2015	Soil			x								
14	BH69 (0.4-0.5)	17/02/2015	Soil			x								
15	BH70 (0-0.05)	17/02/2015	Soil			x								
16	BH70 (0.3-0.4)	17/02/2015	Soil			x								
17	BH71 (0-0.05)	17/02/2015	Soil			x								
18	BH71 (0.4-0.5)	17/02/2015	Soil			x								
19	BH72 (0-0.05)	17/02/2015	Soil			x								
20	BH72 (0.4-0.5)	17/02/2015	Soil			x								
21	BH73 (0-0.05)	17/02/2015	Soil			x								
22	BH73 (0.4-0.5)	17/02/2015	Soil			x								
23	BH74 (0-0.05)	17/02/2015	Soil			x								
24	BH74 (0.4-0.5)	17/02/2015	Soil			x								
					TOTAL	12								

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 Ph: 08 8359 0890 E: adelaide@alsglobal.com
☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
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☐MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
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☐MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
☐NEWCASTLE 5/585 Maitland Road Mayfield West 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com
☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com
☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)		FOR LABORATORY USE ONLY (Circle)
SITE: Botany			Custody Seal Intact? Yes No N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14	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: Colin McKay CONTACT PH: 0448 977 926		OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: AY/PC SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY: Frank Ng	RELINQUISHED BY:	RECEIVED BY:
COC Emailed to ALS? (NO) EDD FORMAT (or default):				
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com	DATE/TIME:	DATE/TIME: 18/2/15 1500	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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB				
25	BH75 (0-0.05)	17/02/2015	Soil			x								
26	BH75 (0.4-0.5)	17/02/2015	Soil			x								
27	BH76 (0-0.05)	17/02/2015	Soil			x								
28	BH76 (0.4-0.5)	17/02/2015	Soil			x								
29	Sed01	16/02/2015	Sediment			x								
30	Sed02	16/02/2015	Sediment			x								
31	Sed03	16/02/2015	Sediment			x								
32	Sed04	16/02/2015	Sediment			x								
33	Sed05	16/02/2015	Sediment			x								
34	Sed06	16/02/2015	Sediment			x								
35	Sed07	16/02/2015	Sediment			x								
36	Sed08	16/02/2015	Sediment			x								
				TOTAL		12								

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 →

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CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):		FOR LABORATORY USE ONLY (Circle)
SITE: Botany	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics)		Custody Seal Intact? Yes No N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14	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: Colin McKay CONTACT PH: 0448 977 926		OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: AY/PC SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY: Frank ALS	RELINQUISHED BY:	RECEIVED BY:
COC Emailed to ALS? (NO) EDD FORMAT (or default):				
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com	DATE/TIME:	DATE/TIME: 18/2/15 1500	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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB				
37	Sed09	16/02/2015	Sediment			x								
38	Sed10	16/02/2015	Sediment			x								
39	Sed11	16/02/2015	Sediment			x								
40	Sed12	16/02/2015	Sediment			x								
41	Sed13	16/02/2015	Sediment			x								
42	Sed14	16/02/2015	Sediment			x								
43	Sed15	16/02/2015	Sediment			x								
44	Sed16	16/02/2015	Sediment			x								
45	Sed17	16/02/2015	Sediment			x								
46	Sed18	16/02/2015	Sediment			x								
47	Sed19	16/02/2015	Sediment			x								
48	Sed20	16/02/2015	Sediment			x								
				TOTAL		12								

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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; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

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☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
SITE: Botany	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	Custody Seal Intact? Yes No N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14 — 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: Colin McKay CONTACT PH: 0448 977 928	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: AY/PC SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY: Frank ALS	RELINQUISHED BY:	RECEIVED BY:
COC Emailed to ALS? (NO) EDD FORMAT (or default):				
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com	DATE/TIME:	DATE/TIME: 18/2/15 1500	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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB				
49	Dup6	17/02/2015	Soil			x								
50	SedDup1	16/02/2015	Sediemnt			x								
				TOTAL		2								

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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; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **ES1503946**		
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 45970 ORICA MERCURY INDEPENDANT REVIEW	Page	: 1 of 3
Order number	: ----		
C-O-C number	: ----	Quote number	: ES2015WSPENV0359 (SY/1085/14)
Site	: ----		
Sampler	: AY/PC	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 18-FEB-2015	Issue Date	: 18-FEB-2015 18:49
Client Requested Due Date	: 25-FEB-2015	Scheduled Reporting Date	: **25-FEB-2015**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 18.4'C - Ice present
No. of coolers/boxes	: 3 ESKIES	No. of samples received	: 51
Security Seal	: Not intact.	No. of samples analysed	: 50

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 received in appropriately pretreated and preserved containers.**
- **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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Received extra sample DUP7 placed on hold, Please confirm.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance 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 to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EG035T (solids) Total Mercury by FIMS
ES1503946-001	17-FEB-2015 15:00	BH63(0-0.05)		✓	✓
ES1503946-002	17-FEB-2015 15:00	BH63(0.4-0.5)		✓	✓
ES1503946-003	17-FEB-2015 15:00	BH64(0-0.05)		✓	✓
ES1503946-004	17-FEB-2015 15:00	BH64(0.4-0.5)		✓	✓
ES1503946-005	17-FEB-2015 15:00	BH65(0-0.05)		✓	✓
ES1503946-006	17-FEB-2015 15:00	BH65(0.4-0.5)		✓	✓
ES1503946-007	17-FEB-2015 15:00	BH66(0-0.05)		✓	✓
ES1503946-008	17-FEB-2015 15:00	BH66(0.4-0.5)		✓	✓
ES1503946-009	17-FEB-2015 15:00	BH67(0-0.05)		✓	✓
ES1503946-010	17-FEB-2015 15:00	BH67(0.4-0.5)		✓	✓
ES1503946-011	17-FEB-2015 15:00	BH68(0-0.05)		✓	✓
ES1503946-012	17-FEB-2015 15:00	BH68(0.4-0.5)		✓	✓
ES1503946-013	17-FEB-2015 15:00	BH69(0-0.05)		✓	✓
ES1503946-014	17-FEB-2015 15:00	BH69(0.4-0.5)		✓	✓
ES1503946-015	17-FEB-2015 15:00	BH70(0-0.05)		✓	✓
ES1503946-016	17-FEB-2015 15:00	BH70(0.3-0.4)		✓	✓
ES1503946-017	17-FEB-2015 15:00	BH71(0-0.05)		✓	✓
ES1503946-018	17-FEB-2015 15:00	BH71(0.4-0.5)		✓	✓
ES1503946-019	17-FEB-2015 15:00	BH72(0-0.05)		✓	✓
ES1503946-020	17-FEB-2015 15:00	BH72(0.4-0.5)		✓	✓
ES1503946-021	17-FEB-2015 15:00	BH73(0-0.05)		✓	✓
ES1503946-022	17-FEB-2015 15:00	BH73(0.4-0.5)		✓	✓
ES1503946-023	17-FEB-2015 15:00	BH74(0-0.05)		✓	✓
ES1503946-024	17-FEB-2015 15:00	BH74(0.4-0.5)		✓	✓
ES1503946-025	17-FEB-2015 15:00	BH75(0-0.05)		✓	✓
ES1503946-026	17-FEB-2015 15:00	BH75(0.4-0.5)		✓	✓
ES1503946-027	17-FEB-2015 15:00	BH76(0-0.05)		✓	✓
ES1503946-028	17-FEB-2015 15:00	BH76(0.4-0.5)		✓	✓
ES1503946-029	16-FEB-2015 15:00	SED01		✓	✓
ES1503946-030	16-FEB-2015 15:00	SED02		✓	✓
ES1503946-031	16-FEB-2015 15:00	SED03		✓	✓
ES1503946-032	16-FEB-2015 15:00	SED04		✓	✓
ES1503946-033	16-FEB-2015 15:00	SED05		✓	✓
ES1503946-034	16-FEB-2015 15:00	SED06		✓	✓
ES1503946-035	16-FEB-2015 15:00	SED07		✓	✓

			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EG035T (solids) Total Mercury by FIMS
ES1503946-036	16-FEB-2015 15:00	SED08		✓	✓
ES1503946-037	16-FEB-2015 15:00	SED09		✓	✓
ES1503946-038	16-FEB-2015 15:00	SED10		✓	✓
ES1503946-039	16-FEB-2015 15:00	SED11		✓	✓
ES1503946-040	16-FEB-2015 15:00	SED12		✓	✓
ES1503946-041	16-FEB-2015 15:00	SED13		✓	✓
ES1503946-042	16-FEB-2015 15:00	SED14		✓	✓
ES1503946-043	16-FEB-2015 15:00	SED15		✓	✓
ES1503946-044	16-FEB-2015 15:00	SED16		✓	✓
ES1503946-045	16-FEB-2015 15:00	SED17		✓	✓
ES1503946-046	16-FEB-2015 15:00	SED18		✓	✓
ES1503946-047	16-FEB-2015 15:00	SED19		✓	✓
ES1503946-048	16-FEB-2015 15:00	SED20		✓	✓
ES1503946-049	17-FEB-2015 15:00	DUP6		✓	✓
ES1503946-050	16-FEB-2015 15:00	SEDDUP1		✓	✓
ES1503946-051	17-FEB-2015 15:00	DUP 7	✓		

Proactive Holding Time Report

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

Requested Deliverables

ALL INVOICES ADDRESS

- A4 - AU Tax Invoice (INV)	Email	melbfinance@wspgroup.com

MR COLIN MCKAY

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

PHILIPPA CHILDS

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

CERTIFICATE OF ANALYSIS

Work Order	: **ES1503946**	Page	: 1 of 12
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 45970 ORICA MERCURY INDEPENDANT REVIEW	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 18-FEB-2015
Sampler	: AY/PC	Issue Date	: 25-FEB-2015
Site	: ----		
		No. of samples received	: 51
Quote number	: SY/1085/14	No. of samples analysed	: 50

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Shobhna Chandra	Metals Coordinator	Sydney Inorganics

General Comments

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

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

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

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

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 Contact 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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH63(0-0.05)	BH63(0.4-0.5)	BH64(0-0.05)	BH64(0.4-0.5)	BH65(0-0.05)
			Client sampling date / time	17-FEB-2015 15:00	17-FEB-2015 15:00	17-FEB-2015 15:00	17-FEB-2015 15:00	17-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503946-001	ES1503946-002	ES1503946-003	ES1503946-004	ES1503946-005
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**4.5**	**2.4**	**5.0**	**3.0**	**6.8**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	**0.1**	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH65(0.4-0.5)	BH66(0-0.05)	BH66(0.4-0.5)	BH67(0-0.05)	BH67(0.4-0.5)
				Client sampling date / time	17-FEB-2015 15:00	17-FEB-2015 15:00	17-FEB-2015 15:00	17-FEB-2015 15:00	17-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503946-006	ES1503946-007	ES1503946-008	ES1503946-009	ES1503946-010
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		**3.8**	**8.5**	**3.9**	**3.4**	<1.0
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		**0.2**	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH68(0-0.05)	BH68(0.4-0.5)	BH69(0-0.05)	BH69(0.4-0.5)	BH70(0-0.05)
			Client sampling date / time	17-FEB-2015 15:00	17-FEB-2015 15:00	17-FEB-2015 15:00	17-FEB-2015 15:00	17-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503946-011	ES1503946-012	ES1503946-013	ES1503946-014	ES1503946-015
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**5.1**	**2.5**	**2.8**	**1.8**	**2.4**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.3**	<0.1	**0.2**	**0.1**	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH70(0.3-0.4)	BH71(0-0.05)	BH71(0.4-0.5)	BH72(0-0.05)	BH72(0.4-0.5)
			Client sampling date / time	17-FEB-2015 15:00	17-FEB-2015 15:00	17-FEB-2015 15:00	17-FEB-2015 15:00	17-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503946-016	ES1503946-017	ES1503946-018	ES1503946-019	ES1503946-020
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**8.3**	**5.5**	**1.2**	**25.1**	**17.0**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.1**	**1.7**	<0.1	**0.2**	**2.7**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH73(0-0.05)	BH73(0.4-0.5)	BH74(0-0.05)	BH74(0.4-0.5)	BH75(0-0.05)
			Client sampling date / time	17-FEB-2015 15:00	17-FEB-2015 15:00	17-FEB-2015 15:00	17-FEB-2015 15:00	17-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503946-021	ES1503946-022	ES1503946-023	ES1503946-024	ES1503946-025
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**6.5**	**3.1**	**1.9**	<1.0	**1.4**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	**0.1**	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH75(0.4-0.5)	BH76(0-0.05)	BH76(0.4-0.5)	SED01	SED02
				Client sampling date / time	17-FEB-2015 15:00	17-FEB-2015 15:00	17-FEB-2015 15:00	16-FEB-2015 15:00	16-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503946-026	ES1503946-027	ES1503946-028	ES1503946-029	ES1503946-030
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		<1.0	1.4	3.7	25.8	37.2
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SED03	SED04	SED05	SED06	SED07
			Client sampling date / time	16-FEB-2015 15:00	16-FEB-2015 15:00	16-FEB-2015 15:00	16-FEB-2015 15:00	16-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503946-031	ES1503946-032	ES1503946-033	ES1503946-034	ES1503946-035
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**54.0**	**58.0**	**46.1**	**57.0**	**64.9**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.2**	**0.1**	**0.1**	**0.3**	**0.3**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SED08	SED09	SED10	SED11	SED12
			Client sampling date / time	16-FEB-2015 15:00	16-FEB-2015 15:00	16-FEB-2015 15:00	16-FEB-2015 15:00	16-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503946-036	ES1503946-037	ES1503946-038	ES1503946-039	ES1503946-040
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**24.0**	**22.2**	**61.9**	**57.2**	**20.7**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	**0.3**	**0.3**	**0.1**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SED13	SED14	SED15	SED16	SED17
				Client sampling date / time	16-FEB-2015 15:00	16-FEB-2015 15:00	16-FEB-2015 15:00	16-FEB-2015 15:00	16-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503946-041	ES1503946-042	ES1503946-043	ES1503946-044	ES1503946-045
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		**61.3**	**22.4**	**18.8**	**22.8**	**21.1**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		**0.9**	**0.2**	<0.1	**0.1**	**0.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SED18	SED19	SED20	DUP6	SEDDUP1
			Client sampling date / time	16-FEB-2015 15:00	16-FEB-2015 15:00	16-FEB-2015 15:00	17-FEB-2015 15:00	16-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1503946-046	ES1503946-047	ES1503946-048	ES1503946-049	ES1503946-050
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**23.0**	**21.2**	**20.9**	**5.3**	**62.0**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.5**	<0.1	<0.1	**0.1**	**0.3**

QUALITY CONTROL REPORT

Work Order	: **ES1503946**	Page	: 1 of 5
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 45970 ORICA MERCURY INDEPENDANT REVIEW	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 18-FEB-2015
Sampler	: AY/PC	Issue Date	: 25-FEB-2015
Order number	: ----		
		No. of samples received	: 51
Quote number	: SY/1085/14	No. of samples analysed	: 50

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

This Quality Control Report contains the following information:

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

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Shobhna Chandra	Metals Coordinator	Sydney Inorganics

General Comments

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

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

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

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

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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA055: Moisture Content (QC Lot: 3829939)									
ES1503772-033	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	29.5	29.1	1.3	0% - 20%
ES1503797-019	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	7.4	7.6	2.2	No Limit
EA055: Moisture Content (QC Lot: 3829940)									
ES1503946-009	BH67(0-0.05)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	3.4	3.3	4.1	No Limit
ES1503946-020	BH72(0.4-0.5)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	17.0	17.7	4.2	0% - 50%
EA055: Moisture Content (QC Lot: 3829941)									
ES1503946-029	SED01	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	25.8	27.1	4.6	0% - 20%
ES1503946-040	SED12	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	20.7	22.5	8.0	0% - 20%
EA055: Moisture Content (QC Lot: 3829942)									
ES1503946-049	DUP6	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	5.3	4.7	11.5	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3832465)									
ES1503946-001	BH63(0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1503946-011	BH68(0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.3	0.3	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3832466)									
ES1503946-021	BH73(0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1503946-031	SED03	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.2	0.2	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3834329)									
ES1503946-039	SED11	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.3	0.2	0.0	No Limit
ES1503946-049	DUP6	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.0	No Limit

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

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3832465)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	82.7	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3832466)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	80.4	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3834329)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	78.6	70	105

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**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3832465)							
ES1503946-001	BH63(0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	96.7	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3832466)							
ES1503946-021	BH73(0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	98.0	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3834329)							
ES1503946-039	SED11	EG035T: Mercury	7439-97-6	5 mg/kg	88.0	70	130

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

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

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3832465)										
ES1503946-001	BH63(0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	96.7	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3832466)										
ES1503946-021	BH73(0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	98.0	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3834329)										

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3834329) - continued										
ES1503946-039	SED11	EG035T: Mercury	7439-97-6	5 mg/kg	88.0	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **ES1503946**	Page	: 1 of 6
Client	: WSP ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 45970 ORICA MERCURY INDEPENDANT REVIEW	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 18-FEB-2015
Sampler	: AY/PC	Issue Date	: 25-FEB-2015
Order number	: ----		
		No. of samples received	: 51
Quote number	: SY/1085/14	No. of samples analysed	: 50

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

This Interpretive Quality Control Report contains the following information:

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

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and 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							
Soil Glass Jar - Unpreserved (EA055-103)							
SED01, SED02, SED03, SED04, SED05, SED06, SED07, SED08, SED09, SED10, SED11, SED12, SED13, SED14, SED15, SED16, SED17, SED18, SED19, SED20, SEDDUP1	**16-FEB-2015**	**----**	----	----	**19-FEB-2015**	02-MAR-2015	✓
Soil Glass Jar - Unpreserved (EA055-103)							
BH63(0-0.05), BH63(0.4-0.5), BH64(0-0.05), BH64(0.4-0.5), BH65(0-0.05), BH65(0.4-0.5), BH66(0-0.05), BH66(0.4-0.5), BH67(0-0.05), BH67(0.4-0.5), BH68(0-0.05), BH68(0.4-0.5), BH69(0-0.05), BH69(0.4-0.5), BH70(0-0.05), BH70(0.3-0.4), BH71(0-0.05), DUP6, BH71(0.4-0.5), BH72(0-0.05), BH72(0.4-0.5), BH73(0-0.05), BH73(0.4-0.5), BH74(0-0.05), BH74(0.4-0.5), BH75(0-0.05), BH75(0.4-0.5), BH76(0-0.05), BH76(0.4-0.5)	**17-FEB-2015**	**----**	----	----	**19-FEB-2015**	03-MAR-2015	✓

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)							
SED01, SED02, SED03, SED04, SED05, SED06, SED07, SED08, SED09, SED10	**16-FEB-2015**	**21-FEB-2015**	16-MAR-2015	✓	**24-FEB-2015**	16-MAR-2015	✓
Soil Glass Jar - Unpreserved (EG035T)							
SED11, SED12, SED13, SED14, SED15, SED16, SED17, SED18, SED19, SED20, SEDDUP1	**16-FEB-2015**	**24-FEB-2015**	16-MAR-2015	✓	**24-FEB-2015**	16-MAR-2015	✓
Soil Glass Jar - Unpreserved (EG035T)							
BH63(0-0.05), BH63(0.4-0.5), BH64(0-0.05), BH64(0.4-0.5), BH65(0-0.05), BH65(0.4-0.5), BH66(0-0.05), BH66(0.4-0.5), BH67(0-0.05), BH67(0.4-0.5), BH68(0-0.05), BH68(0.4-0.5), BH69(0-0.05), BH69(0.4-0.5), BH70(0-0.05), BH70(0.3-0.4), BH71(0-0.05), BH71(0.4-0.5), BH72(0-0.05), BH72(0.4-0.5), BH73(0-0.05), BH73(0.4-0.5), BH74(0-0.05), BH74(0.4-0.5), BH75(0-0.05), BH75(0.4-0.5), BH76(0-0.05), BH76(0.4-0.5)	**17-FEB-2015**	**21-FEB-2015**	17-MAR-2015	✓	**24-FEB-2015**	17-MAR-2015	✓
Soil Glass Jar - Unpreserved (EG035T)							
DUP6	**17-FEB-2015**	**24-FEB-2015**	17-MAR-2015	✓	**24-FEB-2015**	17-MAR-2015	✓

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	EA055-103	7	65	**10.8**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	6	48	**12.5**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	3	48	**6.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	3	48	**6.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	3	48	**6.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	In-house. A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 21st ed., 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 (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. 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 (2013) Schedule B(3) (Method 202)

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW 846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

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

Regular Sample Surrogates

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

Outliers : Analysis Holding Time Compliance

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

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

Outliers : Frequency of Quality Control Samples

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

- **No Quality Control Sample Frequency Outliers exist.**

CHAIN OF CUSTODY

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

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MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com

MELBOURNE 24 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

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SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com

WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS: ☐ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	FOR LABORATORY USE ONLY (Circle)	
SITE: Botany		Custody Seal Intact?	Yes / No / N/A
PROJECT: Orica Mercury Independent Review — PROJECT NO.: 45970	ALS QUOTE NO.: SY/1065/14	Free ice / frozen ice bricks present upon receipt?	Yes / No / N/A
ORDER NUMBER: — PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:	Random Sample Temperature on Receipt:	7.8 °C
PROJECT MANAGER: Colin McKay — CONTACT PH: 0448 977 926	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7	Other comment:	
SAMPLER: AY/PC — SAMPLER MOBILE:	RELINQUISHED BY: Colin McKay	RECEIVED BY: SG	RELINQUISHED BY:
COC Emailed to ALS? (NO) — EDD FORMAT (or default):	DATE/TIME: 20/2/15	DATE/TIME: 20/12/15 1750	DATE/TIME:
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com			RECEIVED BY:
Email Invoice to (will default to PM if no other addresses are listed):			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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB				
1	BH77 (0-0.05)	19/02/2015	Soil			x								
2	BH77 (0.3-0.4)	19/02/2015	Soil			x								
3	BH78 (0-0.05)	19/02/2015	Soil			x								
4	BH78 (0.4-0.5)	19/02/2015	Soil			x								
5	BH79 (0-0.05)	19/02/2015	Soil			x								
6	BH79 (0.4-0.5)	19/02/2015	Soil			x								
7	BH80(0-0.05)	19/02/2015	Soil			x								
8	BH80 (0.4-0.5)	19/02/2015	Soil			x								
9	BH81 (0-0.05)	19/02/2015	Soil			x	x	x	x	x				
10	BH81 (0.4-0.5)	19/02/2015	Soil			x								
11	BH82 (0-0.05)	19/02/2015	Soil			x	x	x	x	x				
12	BH82 (0.4-0.5)	19/02/2015	Soil			x								
				TOTAL		12	2	2	2	2				

Environmental Division
Sydney
Work Order
ES1504242

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 Ph: 08 8359 0890 E: adelaide@alsglobal.com
BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5630 E: gladstone@alsglobal.com
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MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 8372 6735 E: mudgee.sales@alsglobal.com
NEWCASTLE 5/585 Maitland Road Mayfield West 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
ORANGE 4/13 Quarry Place North Nowra NSW 2541 Ph: 02 4421 2003 E: nowra@alsglobal.com
PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7555 E: samples.perth@alsglobal.com
SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com
WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):		FOR LABORATORY USE ONLY (Circle)
CONTACT: Botany	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics)		Custody Seal Intact? Yes No N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14	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: Colin McKay CONTACT PH: 0448 977 926		OF: 1 2 3 4 5 6 7	Other comment: 7.8

SAMPLER: AY/PC	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY: / RECEIVED BY:
COC Emailed to ALS? (NO)	EDD FORMAT (or default):			
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com		DATE/TIME: 20/11/15	DATE/TIME: 20/2/15 1750	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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB				
13	BH83 (0-0.05)	19/02/2015	Soil			x	x	x	x	x				
14	BH83 (0.3-0.4)	19/02/2015	Soil			x								
15	BH84 (0-0.05)	19/02/2015	Soil			x	x	x	x	x				
16	BH84 (0.4-0.5)	19/02/2015	Soil			x								
17	BH85 (0-0.05)	19/02/2015	Soil			x								
18	BH85 (0.4-0.5)	19/02/2015	Soil			x								
19	BH86 (0-0.05)	19/02/2015	Soil			x	x	x	x	x				
20	BH86 (0.4-0.5)	19/02/2015	Soil			x								
21	BH87 (0-0.05)	19/02/2015	Soil			x								
22	BH87 (0.4-0.5)	19/02/2015	Soil			x								
23	BH88 (0-0.05)	19/02/2015	Soil			x								
24	BH88 (0.4-0.5)	19/02/2015	Soil			x								
				TOTAL		12	3	3	3	3				

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; U = Ultra Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

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CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS: ☐ Standard TAT (List due date):		FOR LABORATORY USE ONLY (Circle)
SITE: Botany	(Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)		Custody Seal Intact? (Yes) No N/A
PROJECT: Orica Mercury Independent Review — PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14	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: Colin McKay — CONTACT PH: 0448 977 926		OF: 1 2 3 4 5 6 7	Other comment: 7.8

SAMPLER: AY/PC — SAMPLER MOBILE:	RELINQUISHED BY: Colin McKay	RECEIVED BY: Sey ALS	RELINQUISHED BY:	RECEIVED BY:
COC Emailed to ALS? (NO) — EDD FORMAT (or default):				
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com	DATE/TIME: 20/1/15	DATE/TIME: 20/2/15 1750	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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB				
25	BH89 (0-0.05)	19/02/2015	Soil			x								
26	BH89 (0.3-0.4)	19/02/2015	Soil			x								
27	BH90 (0-0.05)	19/02/2015	Soil			x								
28	BH90 (0.4-0.5)	19/02/2015	Soil			x								
29	BH91 (0-0.05)	19/02/2015	Soil			x								
30	BH91 (0.4-0.5)	19/02/2015	Soil			x								
31	BH92 (0-0.05)	19/02/2015	Soil			x	x	x	x	x				
32	BH92 (0.4-0.5)	19/02/2015	Soil			x								
33	BH93 (0-0.05)	19/02/2015	Soil			x								
34	BH93 (0.4-0.5)	19/02/2015	Soil			x								
35	BH94 (0-0.05)	19/02/2015	Soil			x								
36	BH94 (0.4-0.5)	19/02/2015	Soil			x								
					TOTAL	12	1	1	1	1				

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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; LI = Lugo's Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

CHAIN OF CUSTODY

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EK: ADDITIONS 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com

MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com

MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

MURGEE 27 Sydney Road Muswellbrook NSW 2850 Ph: 02 6372 6735 E: murgee.mail@alsglobal.com

NEWCASTLE 5/585 Maitland Road Mayfield West 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com

NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com

PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

TOWNSVILLE 12-16 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 F: townsville.environmental@alsglobal.com

WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 8295 3100 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)		FOR LABORATORY USE ONLY (Circle)
SITE: Botany			Custody Seal Intact? Yes No N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14	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: Colin McKay CONTACT PH: 0448 977 926		OF: 1 2 3 4 5 6 7	Other comment: 7.8
SAMPLER: AY/PC SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY: / RECEIVED BY:
COC Emailed to ALS? (NO) EDD FORMAT (or default):	DATE/TIME: 20/1/15	DATE/TIME: 20/12/15 1750	DATE/TIME: / DATE/TIME:
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com			
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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB				
37	BH95 (0-0.05)	20/02/2015	Soil			x	x	x	x	x				
38	BH95 (0.4-0.5)	20/02/2015	Soil			x								
39	BH96 (0-0.05)	20/02/2015	Soil			x								
40	BH96 (0.4-0.5)	20/02/2015	Soil			x								
41	BH97 (0-0.05)	20/02/2015	Soil			x								
42	BH97 (0.4-0.5)	20/02/2015	Soil			x								
43	BH98 (0-0.05)	20/02/2015	Soil			x								
44	BH98 (0.4-0.5)	20/02/2015	Soil			x								
45	BH99 (0-0.05)	20/02/2015	Soil			x								
46	BH99 (0.4-0.5)	20/02/2015	Soil			x								
47	BH100 (0-0.05)	20/02/2015	Soil			x								
48	BH100 (0.3-0.4)	20/02/2015	Soil			x								
				TOTAL		12	1	1	1	1				

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 Ph. 08 8359 0890 E: adelaide@alsglobal.com
☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
☐GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
☐MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
☐MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
☐MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
☐NEWCASTLE 5/585 Maitland Road Mayfield West 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com
☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com
☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd		TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
SITE: Botany		(Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)	Custody Seal intact? **Yes** (circled) No N/A
PROJECT: Orica Mercury Independent Review	PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14 — 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: Colin McKay	CONTACT PH: 0448 977 926	OF: 1 2 3 4 5 6 7	Other comment: 7.@

SAMPLER: AY/PC	SAMPLER MOBILE:	RELINQUISHED BY: Colin McKay	RECEIVED BY: Soyshan	RELINQUISHED BY:	RECEIVED BY:
COC Emailed to ALS? (NO)	EDD FORMAT (or default):				
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com		DATE/TIME: 20/1/15	DATE/TIME: 20/2/15 17:50	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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB				
49	BH101 (0-0.05)	20/02/2015	Soil			x								
50	BH101 (0.4-0.5)	20/02/2015	Soil			x								
51	BH102 (0-0.05)	20/02/2015	Soil			x								
52	BH102 (0.4-0.5)	20/02/2015	Soil			x								
53	BH103 (0-0.05)	20/02/2015	Soil			x								
54	BH103 (0.4-0.5)	20/02/2015	Soil			x								
55	BH104 (0-0.05)	20/02/2015	Soil			x								
56	BH104 (0.4-0.5)	20/02/2015	Soil			x								
57	BH105 (0-0.05)	20/02/2015	Soil			x								
58	BH105 (0.2-0.3)	20/02/2015	Soil			x								
59	BH106 (0-0.05)	20/02/2015	Soil			x								
60	BH106 (0.4-0.5)	20/02/2015	Soil			x								
				TOTAL		12								

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.

6

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
☐ BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
☐ GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
☐ MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
☐ MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
☐ MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
☐ NEWCASTLE 5/585 Maitland Road Mayfield West 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
☐ NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com
☐ PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
☐ SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
☐ TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com
☐ WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd
SITE: Botany
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970
ORDER NUMBER: PURCHASE ORDER NO.:
PROJECT MANAGER: Colin McKay CONTACT PH: 0448 977 926
SAMPLER: AY/PC SAMPLER MOBILE:
COC Emailed to ALS? (NO) EDD FORMAT (or default):
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com
Email Invoice to (will default to PM if no other addresses are listed):

TURNAROUND REQUIREMENTS: ☐ Standard TAT (List due date):
(Standard TAT may be longer for some tests e.g., Ultra Trace Organics)
ALS QUOTE NO.: SY/1086/14
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: 7.8

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
[signature]	SOJO [signature]		
DATE/TIME: 21/1/15	DATE/TIME: 20/2/15 1750	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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB	BTEX			
61	Dup 8	19/02/2015	Soil			x	x	x	x	x				
62	Trip Spike	20/02/2015	Soil								x			
63	Trip Blank	20/02/2015	Soil								x			
64	Rinsate Blank	20/02/2015	~~Soil~~ W			x	x	x	x	x				
65	TSC													
				TOTAL		2	2	2	2	2	2			

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.

Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **ES1504242**		
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: ORICA MERCURY INDEPENDENT REVIEW	Page	: 1 of 4
Order number	: 45970		
C-O-C number	: ----	Quote number	: ES2015WSPENV0359 (SY/1085/14)
Site	: ----		
Sampler	: AY/PC	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 20-FEB-2015	Issue Date	: 23-FEB-2015 13:19
Client Requested Due Date	: 02-MAR-2015	Scheduled Reporting Date	: **02-MAR-2015**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 7.8'C - Ice present
No. of coolers/boxes	: 3 HARDS	No. of samples received	: 65
Security Seal	: Intact.	No. of samples analysed	: 65

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 received in appropriately pretreated and preserved containers.**
- **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 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 (14 days), Solid (60 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance 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 to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EG035T (solids) Total Mercury by FIMS	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - EP080 BTEXN
ES1504242-001	19-FEB-2015 15:00	BH77(0-0.05)	✓		✓			
ES1504242-002	19-FEB-2015 15:00	BH77(0.3-0.4)	✓		✓			
ES1504242-003	19-FEB-2015 15:00	BH78(0-0.05)	✓		✓			
ES1504242-004	19-FEB-2015 15:00	BH78(0.4-0.5)	✓		✓			
ES1504242-005	19-FEB-2015 15:00	BH79(0-0.05)	✓		✓			
ES1504242-006	19-FEB-2015 15:00	BH79(0.4-0.5)	✓		✓			
ES1504242-007	19-FEB-2015 15:00	BH80(0-0.05)	✓		✓			
ES1504242-008	19-FEB-2015 15:00	BH80(0.4-0.5)	✓		✓			
ES1504242-009	19-FEB-2015 15:00	BH81(0-0.05)	✓	✓	✓	✓	✓	
ES1504242-010	19-FEB-2015 15:00	BH81(0.4-0.5)	✓		✓			
ES1504242-011	19-FEB-2015 15:00	BH82(0-0.05)	✓	✓	✓	✓	✓	
ES1504242-012	19-FEB-2015 15:00	BH82(0.4-0.5)	✓		✓			
ES1504242-013	19-FEB-2015 15:00	BH83(0-0.05)	✓	✓	✓	✓	✓	
ES1504242-014	19-FEB-2015 15:00	BH83(0.3-0.4)	✓		✓			
ES1504242-015	19-FEB-2015 15:00	BH84(0-0.05)	✓	✓	✓	✓	✓	
ES1504242-016	19-FEB-2015 15:00	BH84(0.4-0.5)	✓		✓			
ES1504242-017	19-FEB-2015 15:00	BH85(0-0.05)	✓		✓			
ES1504242-018	19-FEB-2015 15:00	BH85(0.4-0.5)	✓		✓			
ES1504242-019	19-FEB-2015 15:00	BH86(0-0.05)	✓	✓	✓	✓	✓	
ES1504242-020	19-FEB-2015 15:00	BH86(0.4-0.5)	✓		✓			
ES1504242-021	19-FEB-2015 15:00	BH87(0-0.05)	✓		✓			
ES1504242-022	19-FEB-2015 15:00	BH87(0.4-0.5)	✓		✓			
ES1504242-023	19-FEB-2015 15:00	BH88(0-0.05)	✓		✓			
ES1504242-024	19-FEB-2015 15:00	BH88(0.4-0.5)	✓		✓			
ES1504242-025	19-FEB-2015 15:00	BH89(0-0.05)	✓		✓			
ES1504242-026	19-FEB-2015 15:00	BH89(0.3-0.4)	✓		✓			
ES1504242-027	19-FEB-2015 15:00	BH90(0-0.05)	✓		✓			
ES1504242-028	19-FEB-2015 15:00	BH90(0.4-0.5)	✓		✓			
ES1504242-029	19-FEB-2015 15:00	BH91(0-0.05)	✓		✓			
ES1504242-030	19-FEB-2015 15:00	BH91(0.4-0.5)	✓		✓			
ES1504242-031	19-FEB-2015 15:00	BH92(0-0.05)	✓	✓	✓	✓	✓	
ES1504242-032	19-FEB-2015 15:00	BH92(0.4-0.5)	✓		✓			
ES1504242-033	19-FEB-2015 15:00	BH93(0-0.05)	✓		✓			
ES1504242-034	19-FEB-2015 15:00	BH93(0.4-0.5)	✓		✓			
ES1504242-035	19-FEB-2015 15:00	BH94(0-0.05)	✓		✓			

			SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EG035T (solids) Total Mercury by FIMS	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - EP080 BTEXN
ES1504242-036	19-FEB-2015 15:00	BH94(0.4-0.5)	✓		✓			
ES1504242-037	20-FEB-2015 15:00	BH95(0-0.05)	✓	✓	✓	✓	✓	
ES1504242-038	20-FEB-2015 15:00	BH95(0.4-0.5)	✓		✓			
ES1504242-039	20-FEB-2015 15:00	BH96(0-0.05)	✓		✓			
ES1504242-040	20-FEB-2015 15:00	BH96(0.4-0.5)	✓		✓			
ES1504242-041	20-FEB-2015 15:00	BH97(0-0.05)	✓		✓			
ES1504242-042	20-FEB-2015 15:00	BH97(0.4-0.5)	✓		✓			
ES1504242-043	20-FEB-2015 15:00	BH98(0-0.05)	✓		✓			
ES1504242-044	20-FEB-2015 15:00	BH98(0.4-0.5)	✓		✓			
ES1504242-045	20-FEB-2015 15:00	BH99(0-0.05)	✓		✓			
ES1504242-046	20-FEB-2015 15:00	BH99(0.4-0.5)	✓		✓			
ES1504242-047	20-FEB-2015 15:00	BH100(0-0.05)	✓		✓			
ES1504242-048	20-FEB-2015 15:00	BH100(0.3-0.4)	✓		✓			
ES1504242-049	20-FEB-2015 15:00	BH101(0-0.05)	✓		✓			
ES1504242-050	20-FEB-2015 15:00	BH101(0.4-0.5)	✓		✓			
ES1504242-051	20-FEB-2015 15:00	BH102(0-0.05)	✓		✓			
ES1504242-052	20-FEB-2015 15:00	BH102(0.4-0.5)	✓		✓			
ES1504242-053	20-FEB-2015 15:00	BH103(0-0.05)	✓		✓			
ES1504242-054	20-FEB-2015 15:00	BH103(0.4-0.5)	✓		✓			
ES1504242-055	20-FEB-2015 15:00	BH104(0-0.05)	✓		✓			
ES1504242-056	20-FEB-2015 15:00	BH104(0.4-0.5)	✓		✓			
ES1504242-057	20-FEB-2015 15:00	BH105(0-0.05)	✓		✓			
ES1504242-058	20-FEB-2015 15:00	BH105(0.2-0.3)	✓		✓			
ES1504242-059	20-FEB-2015 15:00	BH106(0-0.05)	✓		✓			
ES1504242-060	20-FEB-2015 15:00	BH106(0.4-0.5)	✓		✓			
ES1504242-061	19-FEB-2015 15:00	DUP 8	✓	✓	✓	✓	✓	
ES1504242-062	20-FEB-2015 15:00	TRIP SPIKE						✓
ES1504242-063	20-FEB-2015 15:00	TRIP BLANK						✓
ES1504242-065	20-FEB-2015 15:00	TSC						✓

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - EG020T Total Recoverable Metals by ICPMS (including	WATER - EG035T Total Mercury by FIMS	WATER - EP066-PCB-WA Polychlorinated Biphenyls (PCB)	WATER - EP075 SIM PAH only SIM - PAH only
ES1504242-064	20-FEB-2015 15:00	RINSATE BLANK	✓	✓	✓	✓

Proactive Holding Time Report

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

Requested Deliverables

ALL INVOICES ADDRESS		
- A4 - AU Tax Invoice (INV)	Email	melbfinance@wspgroup.com
MR COLIN MCKAY		
- *AU Certificate of Analysis - NATA (COA)	Email	colin.mckay@wspgroup.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	colin.mckay@wspgroup.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	colin.mckay@wspgroup.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	colin.mckay@wspgroup.com.au
- A4 - AU Tax Invoice (INV)	Email	colin.mckay@wspgroup.com.au
- Chain of Custody (CoC) (COC)	Email	colin.mckay@wspgroup.com.au
- EDI Format - ENMRG (ENMRG)	Email	colin.mckay@wspgroup.com.au
- EDI Format - ESDAT (ESDAT)	Email	colin.mckay@wspgroup.com.au
PHILIPPA CHILDS		
- *AU Certificate of Analysis - NATA (COA)	Email	philippa.childs@wspgroup.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	philippa.childs@wspgroup.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	philippa.childs@wspgroup.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN	Email	philippa.childs@wspgroup.com
- A4 - AU Tax Invoice (INV)	Email	philippa.childs@wspgroup.com
- Chain of Custody (CoC) (COC)	Email	philippa.childs@wspgroup.com
- EDI Format - ENMRG (ENMRG)	Email	philippa.childs@wspgroup.com
- EDI Format - ESDAT (ESDAT)	Email	philippa.childs@wspgroup.com

CERTIFICATE OF ANALYSIS

Work Order	: **ES1504242**	Page	: 1 of 24
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: ORICA MERCURY INDEPENDENT REVIEW	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 45970		
C-O-C number	: ----	Date Samples Received	: 20-FEB-2015
Sampler	: AY/PC	Issue Date	: 02-MAR-2015
Site	: ----		
		No. of samples received	: 65
Quote number	: SY/1085/14	No. of samples analysed	: 65

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Shobhna Chandra	Metals Coordinator	Sydney Inorganics

General Comments

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

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

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

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

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 Contact 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

- **Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.**
- **Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH77(0-0.05)	BH77(0.3-0.4)	BH78(0-0.05)	BH78(0.4-0.5)	BH79(0-0.05)
			Client sampling date / time	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504242-001	ES1504242-002	ES1504242-003	ES1504242-004	ES1504242-005
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	2.2	4.1	4.1	3.3	3.6
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	1.0	2.0	2.8	2.3	0.7

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH79(0.4-0.5)	BH80(0-0.05)	BH80(0.4-0.5)	BH81(0-0.05)	BH81(0.4-0.5)
				Client sampling date / time	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1504242-006	ES1504242-007	ES1504242-008	ES1504242-009	ES1504242-010
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		2.7	5.2	2.4	2.4	1.4
EG005T: Total Metals by ICP-AES									
Chromium	7440-47-3	2	mg/kg		----	----	----	3	----
Lead	7439-92-1	5	mg/kg		----	----	----	51	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		0.7	1.5	0.6	0.5	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	----	<0.1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		----	----	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		----	----	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		----	----	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		----	----	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		----	----	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		----	----	----	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		----	----	----	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	----	----	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	----	----	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	----	----	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	----	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	----	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	----	----	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	----	----	1.2	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	89.6	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		----	----	----	98.0	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH79(0.4-0.5)	BH80(0-0.05)	BH80(0.4-0.5)	BH81(0-0.05)	BH81(0.4-0.5)
			Client sampling date / time	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504242-006	ES1504242-007	ES1504242-008	ES1504242-009	ES1504242-010
EP075(SIM)S: Phenolic Compound Surrogates - Continued								
2-Chlorophenol-D4	93951-73-6	0.1	%	----	----	----	100	----
2.4.6-Tribromophenol	118-79-6	0.1	%	----	----	----	77.5	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	----	----	----	90.0	----
Anthracene-d10	1719-06-8	0.1	%	----	----	----	84.9	----
4-Terphenyl-d14	1718-51-0	0.1	%	----	----	----	89.0	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH82(0-0.05)	BH82(0.4-0.5)	BH83(0-0.05)	BH83(0.3-0.4)	BH84(0-0.05)
				Client sampling date / time	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1504242-011	ES1504242-012	ES1504242-013	ES1504242-014	ES1504242-015
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		3.2	1.2	5.7	3.4	4.2
EG005T: Total Metals by ICP-AES									
Chromium	7440-47-3	2	mg/kg		12	----	5	----	7
Lead	7439-92-1	5	mg/kg		111	----	62	----	124
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		0.8	<0.1	0.5	0.2	1.2
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	<0.1	----	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		0.7	----	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		1.0	----	0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		1.0	----	0.5	----	0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		0.6	----	<0.5	----	0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		3.3	----	1.0	----	1.0
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	----	0.6	----	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	----	1.2	----	1.2
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		95.9	----	81.2	----	86.1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		105	----	111	----	107

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH82(0-0.05)	BH82(0.4-0.5)	BH83(0-0.05)	BH83(0.3-0.4)	BH84(0-0.05)
			Client sampling date / time	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504242-011	ES1504242-012	ES1504242-013	ES1504242-014	ES1504242-015
EP075(SIM)S: Phenolic Compound Surrogates - Continued								
2-Chlorophenol-D4	93951-73-6	0.1	%	96.3	----	101	----	96.7
2.4.6-Tribromophenol	118-79-6	0.1	%	84.7	----	95.3	----	84.7
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	90.6	----	88.3	----	86.2
Anthracene-d10	1719-06-8	0.1	%	86.3	----	80.6	----	77.5
4-Terphenyl-d14	1718-51-0	0.1	%	89.6	----	86.3	----	80.9

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH84(0.4-0.5)	BH85(0-0.05)	BH85(0.4-0.5)	BH86(0-0.05)	BH86(0.4-0.5)
			Client sampling date / time	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504242-016	ES1504242-017	ES1504242-018	ES1504242-019	ES1504242-020
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	3.8	2.7	2.8	3.0	1.4
EG005T: Total Metals by ICP-AES								
Chromium	7440-47-3	2	mg/kg	----	----	----	5	----
Lead	7439-92-1	5	mg/kg	----	----	----	82	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	0.1	0.2	<0.1	0.2	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	<0.1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	----	----	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	----	----	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg	----	----	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	----	----	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg	----	----	----	0.8	----
Pyrene	129-00-0	0.5	mg/kg	----	----	----	0.9	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	----	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg	----	----	----	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	----	----	0.6	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	----	----	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	----	0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	----	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	----	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	----	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	----	2.8	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	----	0.6	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	----	0.9	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	----	1.2	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	----	83.7	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	----	----	----	94.8	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH84(0.4-0.5)	BH85(0-0.05)	BH85(0.4-0.5)	BH86(0-0.05)	BH86(0.4-0.5)
			Client sampling date / time	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504242-016	ES1504242-017	ES1504242-018	ES1504242-019	ES1504242-020
EP075(SIM)S: Phenolic Compound Surrogates - Continued								
2-Chlorophenol-D4	93951-73-6	0.1	%	----	----	----	97.0	----
2.4.6-Tribromophenol	118-79-6	0.1	%	----	----	----	79.9	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	----	----	----	80.8	----
Anthracene-d10	1719-06-8	0.1	%	----	----	----	76.9	----
4-Terphenyl-d14	1718-51-0	0.1	%	----	----	----	80.0	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH87(0-0.05)	BH87(0.4-0.5)	BH88(0-0.05)	BH88(0.4-0.5)	BH89(0-0.05)
			Client sampling date / time	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504242-021	ES1504242-022	ES1504242-023	ES1504242-024	ES1504242-025
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**4.7**	**1.9**	**4.2**	**2.9**	**1.6**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	**0.1**	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH89(0.3-0.4)	BH90(0-0.05)	BH90(0.4-0.5)	BH91(0-0.05)	BH91(0.4-0.5)
			Client sampling date / time	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504242-026	ES1504242-027	ES1504242-028	ES1504242-029	ES1504242-030
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**1.6**	**3.7**	**2.4**	**2.9**	**1.6**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.1**	**2.3**	<0.1	**0.2**	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH92(0-0.05)	BH92(0.4-0.5)	BH93(0-0.05)	BH93(0.4-0.5)	BH94(0-0.05)
			Client sampling date / time	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504242-031	ES1504242-032	ES1504242-033	ES1504242-034	ES1504242-035
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	3.1	4.8	2.8	2.8	3.0
EG005T: Total Metals by ICP-AES								
Chromium	7440-47-3	2	mg/kg	3	----	----	----	----
Lead	7439-92-1	5	mg/kg	52	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.2	<0.1	0.3
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	1.3	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	1.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	0.8	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	0.8	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	1.3	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	1.0	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	0.6	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	0.8	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	8.6	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	1.3	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	1.6	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.8	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	97.2	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	98.0	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH92(0-0.05)	BH92(0.4-0.5)	BH93(0-0.05)	BH93(0.4-0.5)	BH94(0-0.05)
			Client sampling date / time	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00	19-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504242-031	ES1504242-032	ES1504242-033	ES1504242-034	ES1504242-035
EP075(SIM)S: Phenolic Compound Surrogates - Continued								
2-Chlorophenol-D4	93951-73-6	0.1	%	90.1	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	80.2	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	80.2	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	78.6	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	81.6	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH94(0.4-0.5)	BH95(0-0.05)	BH95(0.4-0.5)	BH96(0-0.05)	BH96(0.4-0.5)
				Client sampling date / time	19-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1504242-036	ES1504242-037	ES1504242-038	ES1504242-039	ES1504242-040
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		3.0	1.3	1.7	3.9	2.4
EG005T: Total Metals by ICP-AES									
Chromium	7440-47-3	2	mg/kg		----	8	----	----	----
Lead	7439-92-1	5	mg/kg		----	45	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	0.2	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	<0.1	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	0.6	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	1.2	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	80.2	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		----	109	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH94(0.4-0.5)	BH95(0-0.05)	BH95(0.4-0.5)	BH96(0-0.05)	BH96(0.4-0.5)
			Client sampling date / time	19-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504242-036	ES1504242-037	ES1504242-038	ES1504242-039	ES1504242-040
EP075(SIM)S: Phenolic Compound Surrogates - Continued								
2-Chlorophenol-D4	93951-73-6	0.1	%	----	101	----	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	----	78.5	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	----	96.0	----	----	----
Anthracene-d10	1719-06-8	0.1	%	----	85.7	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	----	86.9	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH97(0-0.05)	BH97(0.4-0.5)	BH98(0-0.05)	BH98(0.4-0.5)	BH99(0-0.05)
			Client sampling date / time	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504242-041	ES1504242-042	ES1504242-043	ES1504242-044	ES1504242-045
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	3.0	1.3	4.1	4.0	8.9
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH99(0.4-0.5)	BH100(0-0.05)	BH100(0.3-0.4)	BH101(0-0.05)	BH101(0.4-0.5)
			Client sampling date / time	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504242-046	ES1504242-047	ES1504242-048	ES1504242-049	ES1504242-050
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	2.5	8.1	8.0	2.0	2.1
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH102(0-0.05)	BH102(0.4-0.5)	BH103(0-0.05)	BH103(0.4-0.5)	BH104(0-0.05)
			Client sampling date / time	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504242-051	ES1504242-052	ES1504242-053	ES1504242-054	ES1504242-055
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**2.0**	**6.4**	**2.5**	**2.1**	**1.8**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.1**	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH104(0.4-0.5)	BH105(0-0.05)	BH105(0.2-0.3)	BH106(0-0.05)	BH106(0.4-0.5)
			Client sampling date / time	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504242-056	ES1504242-057	ES1504242-058	ES1504242-059	ES1504242-060
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	<1.0	**1.4**	**2.6**	**2.4**	**1.8**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	DUP 8	TRIP SPIKE	TRIP BLANK	TSC	----
			Client sampling date / time	19-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00	----
Compound	CAS Number	LOR	Unit	ES1504242-061	ES1504242-062	ES1504242-063	ES1504242-065	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**2.2**	----	----	----	----
EG005T: Total Metals by ICP-AES								
Chromium	7440-47-3	2	mg/kg	**3**	----	----	----	----
Lead	7439-92-1	5	mg/kg	**43**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.2**	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	**1.4**	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	**1.6**	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	**1.6**	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	**0.8**	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	**0.7**	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	**0.8**	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	**0.6**	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	**7.5**	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	**0.8**	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**1.1**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.4**	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	----	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg	----	**3.6**	<0.5	**4.8**	----
Ethylbenzene	100-41-4	0.5	mg/kg	----	**0.7**	<0.5	**0.8**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	DUP 8	TRIP SPIKE	TRIP BLANK	TSC	----
				Client sampling date / time	19-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00	20-FEB-2015 15:00	----
Compound	CAS Number	LOR	Unit		ES1504242-061	ES1504242-062	ES1504242-063	ES1504242-065	----
EP080: BTEXN - Continued									
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	**4.0**	<0.5	**4.0**	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	**1.8**	<0.5	**1.8**	----
^ Total Xylenes	1330-20-7	0.5	mg/kg		----	**5.8**	<0.5	**5.8**	----
^ Sum of BTEX	----	0.2	mg/kg		----	**10.1**	<0.2	**11.4**	----
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	<1	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**76.7**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		**103**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%		**92.7**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%		**80.7**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		**79.1**	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%		**78.4**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%		**83.0**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		----	**87.9**	**111**	**112**	----
Toluene-D8	2037-26-5	0.1	%		----	**105**	**115**	**111**	----
4-Bromofluorobenzene	460-00-4	0.1	%		----	**89.0**	**115**	**113**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	RINSATE BLANK	----	----	----	----
			Client sampling date / time	20-FEB-2015 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1504242-064	----	----	----	----
EG020T: Total Metals by ICP-MS								
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	1	µg/L	<1	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**75.1**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**29.4**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	**54.5**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	**45.0**	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**31.7**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	RINSATE BLANK	----	----	----	----
			Client sampling date / time	20-FEB-2015 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1504242-064	----	----	----	----
EP075(SIM)T: PAH Surrogates - Continued								
Anthracene-d10	1719-06-8	0.1	%	**82.8**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	**84.8**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	28.5	129
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10.0	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27.4	113
4-Terphenyl-d14	1718-51-0	32	112

QUALITY CONTROL REPORT

Work Order	: **ES1504242**	Page	: 1 of 10
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: ORICA MERCURY INDEPENDENT REVIEW	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 20-FEB-2015
Sampler	: AY/PC	Issue Date	: 02-MAR-2015
Order number	: 45970		
		No. of samples received	: 65
Quote number	: SY/1085/14	No. of samples analysed	: 65

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

This Quality Control Report contains the following information:

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

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Shobhna Chandra	Metals Coordinator	Sydney Inorganics

General Comments

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

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

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

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

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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA055: Moisture Content (QC Lot: 3835088)									
ES1504226-015	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	4.0	3.6	9.5	No Limit
ES1504229-007	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	12.0	10.2	16.4	0% - 50%
EA055: Moisture Content (QC Lot: 3835089)									
ES1504242-009	BH81(0-0.05)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	2.4	2.0	16.2	No Limit
ES1504242-020	BH86(0.4-0.5)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	1.4	1.4	0.0	No Limit
EA055: Moisture Content (QC Lot: 3835090)									
ES1504242-029	BH91(0-0.05)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	2.9	2.6	10.8	No Limit
ES1504242-040	BH96(0.4-0.5)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	2.4	2.8	13.5	No Limit
EA055: Moisture Content (QC Lot: 3835091)									
ES1504242-049	BH101(0-0.05)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	2.0	2.4	19.5	No Limit
ES1504242-060	BH106(0.4-0.5)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	1.8	1.4	28.8	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 3838215)									
ES1504242-009	BH81(0-0.05)	EG005T: Chromium	7440-47-3	2	mg/kg	3	4	28.2	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	51	54	6.6	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 3839446)									
ES1503864-002	Anonymous	EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
ES1504323-006	Anonymous	EG005T: Chromium	7440-47-3	2	mg/kg	41	37	10.2	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	10	16	39.2	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3837839)									
ES1504242-001	BH77(0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	1.0	1.0	0.0	0% - 50%
ES1504242-014	BH83(0.3-0.4)	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.2	0.2	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3837840)									
ES1504242-026	BH89(0.3-0.4)	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.0	No Limit
ES1504242-038	BH95(0.4-0.5)	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3838216)									
ES1504242-009	BH81(0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.5	0.5	0.0	No Limit
ES1504242-051	BH102(0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3839447)									
ES1503864-002	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1504323-006	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3833370)									
ES1503864-002	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EW1500633-004	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3833372)									
ES1503864-002	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EW1500633-004	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080: BTEXN (QC Lot: 3833384)									

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 3833384) - continued									
ES1503864-002	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020T: Total Metals by ICP-MS (QC Lot: 3833432)									
ES1504131-006	Anonymous	EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.009	0.008	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.030	0.029	0.0	0% - 20%
ES1504191-001	Anonymous	EG020A-T: Chromium	7440-47-3	0.001	mg/L	2.80	2.78	0.8	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3841155)									
ES1504120-038	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES1504694-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

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

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 3838215)								
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	105	80	136
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	95.6	86	124
EG005T: Total Metals by ICP-AES (QCLot: 3839446)								
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	96.2	80	136
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	92.1	86	124
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3837839)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	75.1	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3837840)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	77.8	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3838216)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	80.1	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3839447)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	73.9	70	105
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3833370)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	98.5	57.4	117
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3833372)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	86.8	80	124
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	87.0	77	123
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	80.6	79	123
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	80.4	77	123
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	86.1	79	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	94.6	79	123
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	84.2	79	123
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	95.5	79	125
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	79.5	73	121
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	81.1	81	123
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	4 mg/kg	80.6	70	118
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	81.4	77	123
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	82.5	76	122
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	71.3	71	113
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	73.9	71.7	113

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3833372) - continued								
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	75.9	72.4	114
EP080: BTEXN (QCLot: 3833384)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	102	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	97.9	62	128
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	104	58	118
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	101	60	120
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	103	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	112	62	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 3833432)								
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	110	84	116
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	108	84	116
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3841155)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	96.5	77	115
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3833650)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	103	61.6	107
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3833648)								
EP075(SIM): Naphthalene	91-20-3	0.2	µg/L	<1.0	5 µg/L	77.5	58.6	119
EP075(SIM): Acenaphthylene	208-96-8	0.2	µg/L	<1.0	5 µg/L	88.4	63.6	114
EP075(SIM): Acenaphthene	83-32-9	0.2	µg/L	<1.0	5 µg/L	81.6	62.2	113
EP075(SIM): Fluorene	86-73-7	0.2	µg/L	<1.0	5 µg/L	89.9	63.9	115
EP075(SIM): Phenanthrene	85-01-8	0.2	µg/L	<1.0	5 µg/L	88.3	62.6	116
EP075(SIM): Anthracene	120-12-7	0.2	µg/L	<1.0	5 µg/L	87.6	64.3	116
EP075(SIM): Fluoranthene	206-44-0	0.2	µg/L	<1.0	5 µg/L	95.8	63.6	118
EP075(SIM): Pyrene	129-00-0	0.2	µg/L	<1.0	5 µg/L	96.0	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	0.2	µg/L	<1.0	5 µg/L	91.5	64.1	117
EP075(SIM): Chrysene	218-01-9	0.2	µg/L	<1.0	5 µg/L	87.8	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.2	µg/L	<1.0	5 µg/L	90.0	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.2	µg/L	<1.0	5 µg/L	97.1	61.7	117
EP075(SIM): Benzo(a)pyrene	50-32-8	0.2	µg/L	<0.5	5 µg/L	76.5	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	<1.0	5 µg/L	74.4	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.2	µg/L	<1.0	5 µg/L	77.3	61.2	117

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3833648) - continued								
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.2	µg/L	<1.0	5 µg/L	72.3	59.1	118

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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005T: Total Metals by ICP-AES (QCLot: 3838215)							
ES1504242-009	BH81(0-0.05)	EG005T: Chromium	7440-47-3	50 mg/kg	103	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	102	70	130
EG005T: Total Metals by ICP-AES (QCLot: 3839446)							
ES1503864-002	Anonymous	EG005T: Chromium	7440-47-3	50 mg/kg	100	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	91.8	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3837839)							
ES1504242-001	BH77(0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	87.9	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3837840)							
ES1504242-026	BH89(0.3-0.4)	EG035T: Mercury	7439-97-6	5 mg/kg	93.3	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3838216)							
ES1504242-009	BH81(0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	97.3	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3839447)							
ES1503864-002	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	89.6	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3833370)							
ES1503864-002	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	91.2	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3833372)							
ES1503864-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	96.7	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	93.0	70	130
EP080: BTEXN (QCLot: 3833384)							
ES1503864-002	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	116	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	109	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	115	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	110	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	114	70	130

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Recovery Limits (%) Low	Matrix Spike (MS) Report: Recovery Limits (%) High
EP080: BTEXN (QCLot: 3833384) - continued							
ES1503864-002	Anonymous	EP080: Naphthalene	91-20-3	2.5 mg/kg	116	70	130

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Recovery Limits (%) Low	Matrix Spike (MS) Report: Recovery Limits (%) High
EG020T: Total Metals by ICP-MS (QCLot: 3833432)							
ES1504132-001	Anonymous	EG020A-T: Chromium	7440-47-3	1 mg/L	112	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	113	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3841155)							
ES1504120-040	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	93.6	70	130

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

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%) MS	Spike Recovery (%) MSD	Recovery Limits (%) Low	Recovery Limits (%) High	RPDs (%) Value	RPDs (%) Control Limit
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3833370)										
ES1503864-002	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	91.2	----	70	130	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3833372)										
ES1503864-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	96.7	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	93.0	----	70	130	----	----
EP080: BTEXN (QCLot: 3833384)										
ES1503864-002	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	116	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	109	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	115	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	110	----	70	130	----	----
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	114	----	70	130	----	----
		EP080: Naphthalene	91-20-3	2.5 mg/kg	116	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3837839)										
ES1504242-001	BH77(0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	87.9	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3837840)										
ES1504242-026	BH89(0.3-0.4)	EG035T: Mercury	7439-97-6	5 mg/kg	93.3	----	70	130	----	----
EG005T: Total Metals by ICP-AES (QCLot: 3838215)										

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EG005T: Total Metals by ICP-AES (QCLot: 3838215) - continued										
ES1504242-009	BH81(0-0.05)	EG005T: Chromium	7440-47-3	50 mg/kg	103	----	70	130	----	----
		EG005T: Lead	7439-92-1	250 mg/kg	102	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3838216)										
ES1504242-009	BH81(0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	97.3	----	70	130	----	----
EG005T: Total Metals by ICP-AES (QCLot: 3839446)										
ES1503864-002	Anonymous	EG005T: Chromium	7440-47-3	50 mg/kg	100	----	70	130	----	----
		EG005T: Lead	7439-92-1	250 mg/kg	91.8	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3839447)										
ES1503864-002	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	89.6	----	70	130	----	----

Sub-Matrix: **WATER**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EG020T: Total Metals by ICP-MS (QCLot: 3833432)										
ES1504132-001	Anonymous	EG020A-T: Chromium	7440-47-3	1 mg/L	112	----	70	130	----	----
		EG020A-T: Lead	7439-92-1	1 mg/L	113	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3841155)										
ES1504120-040	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	93.6	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **ES1504242**	Page	: 1 of 10
Client	: WSP ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: ORICA MERCURY INDEPENDENT REVIEW	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 20-FEB-2015
Sampler	: AY/PC	Issue Date	: 02-MAR-2015
Order number	: 45970		
		No. of samples received	: 65
Quote number	: SY/1085/14	No. of samples analysed	: 65

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

This Interpretive Quality Control Report contains the following information:

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

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and 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							
Soil Glass Jar - Unpreserved (EA055-103)							
BH77(0-0.05), BH77(0.3-0.4), BH78(0-0.05), BH78(0.4-0.5), BH79(0-0.05), BH79(0.4-0.5), BH80(0-0.05), BH80(0.4-0.5), BH81(0-0.05), BH81(0.4-0.5), BH82(0-0.05), BH82(0.4-0.5), BH83(0-0.05), BH83(0.3-0.4), BH84(0-0.05), BH84(0.4-0.5), BH85(0-0.05), DUP 8, BH85(0.4-0.5), BH86(0-0.05), BH86(0.4-0.5), BH87(0-0.05), BH87(0.4-0.5), BH88(0-0.05), BH88(0.4-0.5), BH89(0-0.05), BH89(0.3-0.4), BH90(0-0.05), BH90(0.4-0.5), BH91(0-0.05), BH91(0.4-0.5), BH92(0-0.05), BH92(0.4-0.5), BH93(0-0.05), BH93(0.4-0.5), BH94(0-0.05), BH94(0.4-0.5)	**19-FEB-2015**	**----**	----	----	**24-FEB-2015**	05-MAR-2015	✓
Soil Glass Jar - Unpreserved (EA055-103)							
BH95(0-0.05), BH95(0.4-0.5), BH96(0-0.05), BH96(0.4-0.5), BH97(0-0.05), BH97(0.4-0.5), BH98(0-0.05), BH98(0.4-0.5), BH99(0-0.05), BH99(0.4-0.5), BH100(0-0.05), BH100(0.3-0.4), BH101(0-0.05), BH101(0.4-0.5), BH102(0-0.05), BH102(0.4-0.5), BH103(0-0.05), BH103(0.4-0.5), BH104(0-0.05), BH104(0.4-0.5), BH105(0-0.05), BH105(0.2-0.3), BH106(0-0.05), BH106(0.4-0.5)	**20-FEB-2015**	**----**	----	----	**24-FEB-2015**	06-MAR-2015	✓

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
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
BH81(0-0.05), BH82(0-0.05), BH83(0-0.05), BH84(0-0.05), BH86(0-0.05), BH92(0-0.05)	**19-FEB-2015**	**26-FEB-2015**	18-AUG-2015	✓	**28-FEB-2015**	18-AUG-2015	✓
Soil Glass Jar - Unpreserved (EG005T)							
DUP 8	**19-FEB-2015**	**27-FEB-2015**	18-AUG-2015	✓	**28-FEB-2015**	18-AUG-2015	✓
Soil Glass Jar - Unpreserved (EG005T)							
BH95(0-0.05)	**20-FEB-2015**	**26-FEB-2015**	19-AUG-2015	✓	**28-FEB-2015**	19-AUG-2015	✓

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)								
BH77(0-0.05),	BH77(0.3-0.4),	**19-FEB-2015**	**26-FEB-2015**	19-MAR-2015	✓	**01-MAR-2015**	19-MAR-2015	✓
BH78(0-0.05),	BH78(0.4-0.5),							
BH79(0-0.05),	BH79(0.4-0.5),							
BH80(0-0.05),	BH80(0.4-0.5),							
BH81(0-0.05),	BH81(0.4-0.5),							
BH82(0-0.05),	BH82(0.4-0.5),							
BH83(0-0.05),	BH83(0.3-0.4),							
BH84(0-0.05),	BH84(0.4-0.5),							
BH85(0-0.05),	BH85(0.4-0.5),							
BH86(0-0.05),	BH86(0.4-0.5),							
BH87(0-0.05),	BH87(0.4-0.5),							
BH88(0-0.05),	BH88(0.4-0.5),							
BH89(0-0.05),	BH89(0.3-0.4),							
BH90(0-0.05),	BH90(0.4-0.5),							
BH91(0-0.05),	BH91(0.4-0.5),							
BH92(0-0.05),	BH92(0.4-0.5),							
BH93(0-0.05),	BH93(0.4-0.5),							
BH94(0-0.05),	BH94(0.4-0.5)							
Soil Glass Jar - Unpreserved (EG035T)								
DUP 8		**19-FEB-2015**	**27-FEB-2015**	19-MAR-2015	✓	**01-MAR-2015**	19-MAR-2015	✓
Soil Glass Jar - Unpreserved (EG035T)								
BH95(0-0.05),	BH95(0.4-0.5),	**20-FEB-2015**	**26-FEB-2015**	20-MAR-2015	✓	**01-MAR-2015**	20-MAR-2015	✓
BH96(0-0.05),	BH96(0.4-0.5),							
BH97(0-0.05),	BH97(0.4-0.5),							
BH98(0-0.05),	BH98(0.4-0.5),							
BH99(0-0.05),	BH99(0.4-0.5),							
BH100(0-0.05),	BH100(0.3-0.4),							
BH101(0-0.05),	BH101(0.4-0.5),							
BH102(0-0.05),	BH102(0.4-0.5),							
BH103(0-0.05),	BH103(0.4-0.5),							
BH104(0-0.05),	BH104(0.4-0.5),							
BH105(0-0.05),	BH105(0.2-0.3),							
BH106(0-0.05),	BH106(0.4-0.5)							
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066)								
BH81(0-0.05),	BH82(0-0.05),	**19-FEB-2015**	**24-FEB-2015**	05-MAR-2015	✓	**27-FEB-2015**	05-APR-2015	✓
BH83(0-0.05),	BH84(0-0.05),							
BH86(0-0.05),	BH92(0-0.05),							
DUP 8								
Soil Glass Jar - Unpreserved (EP066)								
BH95(0-0.05)		**20-FEB-2015**	**24-FEB-2015**	06-MAR-2015	✓	**27-FEB-2015**	05-APR-2015	✓

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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH81(0-0.05), BH82(0-0.05), BH83(0-0.05), BH84(0-0.05), BH86(0-0.05), BH92(0-0.05), DUP 8	**19-FEB-2015**	**24-FEB-2015**	05-MAR-2015	✓	**27-FEB-2015**	05-APR-2015	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH95(0-0.05)	**20-FEB-2015**	**24-FEB-2015**	06-MAR-2015	✓	**27-FEB-2015**	05-APR-2015	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
TRIP SPIKE, TRIP BLANK, TSC	**20-FEB-2015**	**24-FEB-2015**	06-MAR-2015	✓	**26-FEB-2015**	06-MAR-2015	✓

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 - Nitric Acid; Unspecified (EG020A-T)							
RINSATE BLANK	**20-FEB-2015**	**23-FEB-2015**	19-AUG-2015	✓	**23-FEB-2015**	19-AUG-2015	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unspecified (EG035T)							
RINSATE BLANK	**20-FEB-2015**	**----**	----	----	**01-MAR-2015**	20-MAR-2015	✓
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066)							
RINSATE BLANK	**20-FEB-2015**	**24-FEB-2015**	27-FEB-2015	✓	**25-FEB-2015**	05-APR-2015	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
RINSATE BLANK	**20-FEB-2015**	**24-FEB-2015**	27-FEB-2015	✓	**24-FEB-2015**	05-APR-2015	✓

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	EA055-103	8	80	**10.0**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	13	**15.4**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	17	**11.8**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	8	80	**10.0**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	3	27	**11.1**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	7	**14.3**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	13	**7.7**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	17	**5.9**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	4	80	**5.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	27	**7.4**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	7	**14.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	13	**7.7**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	17	**5.9**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	4	80	**5.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	27	**7.4**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	7	**14.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	13	**7.7**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	17	**5.9**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	4	80	**5.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	27	**7.4**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	7	**14.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

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	12	**16.7**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	2	19	**10.5**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	**14.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	1	**100.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	12	**8.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

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*	
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	**14.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	1	**100.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	12	**8.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	12	**8.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	In-house. A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 21st ed., 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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 21st ed., 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 (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 21st ed., 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 AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the 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 (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	WATER	USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) 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	USEPA 200.2 Mod. 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 (2013) Schedule B(3) (Method 202)
Methanolic Extraction of Soils for Purge and Trap	* ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 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	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 (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW 846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

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

Regular Sample Surrogates

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

Outliers : Analysis Holding Time Compliance

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

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

Outliers : Frequency of Quality Control Samples

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

- **No Quality Control Sample Frequency Outliers exist.**

CHAIN OF CUSTODY

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

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MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

BRISBANE 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

NEWCASTLE 5/585 Maitland Road Mayfield West 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com

ORANGE 4/3 Geary Place North Orange NSW 2800 Ph: 02 6393 0600 E: orange@alsglobal.com

TOWNSVILLE 14-15 Desma Cct, Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com

PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)	
SITE: Botany	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	Custody Seal Intact?	Yes / No / N/A
PROJECT: Orica Mercury Independent Review — PROJECT NO.: 45970	ALS QUOTE NO.: SY/1065/14 — 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	Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: Colin McKay — CONTACT PH: 0448 977 926	OF: 8	Other comment:	
SAMPLER: AY/PC — SAMPLER MOBILE:	RELINQUISHED BY: Colin McKay — RECEIVED BY: Frank ALS	RELINQUISHED BY:	RECEIVED BY:
COC Emailed to ALS? (HO) — EDD FORMAT (or default):	DATE/TIME: 27/2/15 — DATE/TIME: 27/2/15 1700	DATE/TIME:	DATE/TIME:
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com			
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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB			
1	BH107 (0-0.05)	24/02/2015	Soil			x							
2	BH107 (0.4-0.5)	24/02/2015	Soil			x							
3	BH108 (0-0.05)	24/02/2015	Soil			x	x	x	x	x			
4	BH108 (0.4-0.5)	24/02/2015	Soil			x							
5	BH109 (0-0.05)	24/02/2015	Soil			x							
6	BH109 (0.4-0.5)	24/02/2015	Soil			x							
7	BH110(0-0.05)	24/02/2015	Soil			x	x	x	x	x			
8	BH110 (0.4-0.5)	24/02/2015	Soil			x							
9	BH111 (0-0.05)	24/02/2015	Soil			x	x	x	x	x			
10	BH111 (0.4-0.5)	24/02/2015	Soil			x							
11	BH112 (0-0.05)	24/02/2015	Soil			x	x	x	x	x			
12	BH112 (0.4-0.5)	24/02/2015	Soil			x							
				TOTAL		12	2	2	2	2			

Environmental Division Sydney

Work Order

ES1504881

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 Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag; L = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
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☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd

SITE: Botany

PROJECT: Orica Mercury Independent Review — PROJECT NO.: 45970

ORDER NUMBER: — PURCHASE ORDER NO.:

PROJECT MANAGER: Colin McKay — CONTACT PH: 0448 977 926

SAMPLER: AY/PC — SAMPLER MOBILE:

COC Emailed to ALS? (NO) — EDD FORMAT (or default):

Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com

Email Invoice to (will default to PM if no other addresses are listed):

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

ALS QUOTE NO.: SY/1086/14

COUNTRY OF ORIGIN:

COC SEQUENCE NUMBER (Circle)
COC: 2
OF: 8

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:
(signature)	Frank Ars		
DATE/TIME: 27/2/15	DATE/TIME: 27/2/15 1700	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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB				
13	BH113 (0-0.05)	24/02/2015	Soil			x								
14	BH113 (0.4-0.5)	24/02/2015	Soil			x								
15	BH114 (0-0.05)	24/02/2015	Soil			x	x	x	x	x				
16	BH114 (0.4-0.5)	24/02/2015	Soil			x								
17	BH115 (0-0.05)	24/02/2015	Soil			x								
18	BH115 (0.3-0.4)	24/02/2015	Soil			x								
19	BH116 (0-0.05)	24/02/2015	Soil			x	x	x	x	x				
20	BH117 (0-0.05)	24/02/2015	Soil			x								
21	BH117 (0.3-0.4)	24/02/2015	Soil			x								
22	BH118 (0-0.05)	24/02/2015	Soil			x								
23	BH118 (0.4-0.5)	24/02/2015	Soil			x								
24	BH119 (0-0.05)	24/02/2015	Soil			x								
				TOTAL		12	2	2	2	2				

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

ALS Laboratory: please tick →

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SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
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WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):		FOR LABORATORY USE ONLY (Circle)
SITE: Botany	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics)		Custody Seal Intact? Yes No N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14	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: 3	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Colin McKay CONTACT PH: 0448 877 926		OF: 6	Other comment:

SAMPLER: AY/PC SAMPLER MOBILE:	RELINQUISHED BY: [signature]	RECEIVED BY: Frank ALS	RELINQUISHED BY:	RECEIVED BY:
COC Emailed to ALS? (NO) EDD FORMAT (or default):				
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com	DATE/TIME: 27/2/15	DATE/TIME: 27/2/15 1700	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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB				
25	BH119 (0.4-0.5)	24/02/2015	Soil			x								
26	BH120 (0-0.05)	24/02/2015	Soil			x								
27	BH120 (0.4-0.5)	24/02/2015	Soil			x								
28	BH121 (0-0.05)	24/02/2015	Soil			x								
29	BH121 (0.4-0.5)	24/02/2015	Soil			x								
30	BH122 (0-0.05)	24/02/2015	Soil			x								
31	BH122 (0.4-0.5)	24/02/2015	Soil			x								
32	BH123 (0-0.05)	24/02/2015	Soil			x								
33	BH123 (0.4-0.5)	24/02/2015	Soil			x								
34	BH124 (0-0.05)	24/02/2015	Soil			x								
35	BH124 (0.4-0.5)	24/02/2015	Soil			x								
36	BH125 (0-0.05)	24/02/2015	Soil			x								
					TOTAL	12								

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 = Lugo's Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

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☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):		FOR LABORATORY USE ONLY (Circle)
SITE: Botany	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics)		Custody Seal Intact? Yes No N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1035/14	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: 4	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Colin McKay CONTACT PH: 0448 977 926		OF: 8	Other comment:

SAMPLER: AY/PC	SAMPLER MOBILE:	RELINQUISHED BY: [signature]	RECEIVED BY: Frank ALS	RELINQUISHED BY:	RECEIVED BY:
COC Emailed to ALS? (NO)	EDD FORMAT (or default):	DATE/TIME: 27/2/15	DATE/TIME: 27/2/15 1700	DATE/TIME:	DATE/TIME:
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com					
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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB				
37	BH125 (0.4-0.5)	24/02/2015	Soil			x								
38	BH126 (0-0.05)	24/02/2015	Soil			x								
39	BH126 (0.4-0.5)	24/02/2015	Soil			x								
40	BH127 (0-0.05)	24/02/2015	Soil			x								
41	BH127 (0.4-0.5)	24/02/2015	Soil			x								
42	BH128 (0-0.05)	26/02/2015	Soil			x								
43	BH128 (0.4-0.5)	26/02/2015	Soil			x								
44	BH129 (0-0.05)	26/02/2015	Soil			x								
45	BH129 (0.3-0.4)	26/02/2015	Soil			x								
46	BH130 (0-0.05)	26/02/2015	Soil			x								
47	BH130 (0.2-0.3)	26/02/2015	Soil			x								
48	BH131 (0-0.05)	26/02/2015	Soil			x								
				TOTAL		12								

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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; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

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MACKAY 78 Harbour Road Mackay QLD 4740 Ph 07 4944 0177 E mackay@alsglobal.com
MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph 03 8549 9600 E samples.melbourne@alsglobal.com
MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph 02 6372 6735 E mudgee.mail@alsglobal.com
NEWCASTLE 5/585 Maitland Road Mayfield West 2304 Ph 02 4014 2500 E samples.newcastle@alsglobal.com
NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph 02 4423 2063 E nowra@alsglobal.com
PERTH 10 Hod Way Malaga WA 6090 Ph 08 9209 7655 E samples.perth@alsglobal.com
SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph 02 8784 8555 E samples.sydney@alsglobal.com
TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph 07 4796 0600 E townsville.environmental@alsglobal.com
WOLLONGONG 20 Kenny Street Wollongong NSW 2500 Ph 02 4225 3125 E wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g.. Ultra Trace Organics) ☐ Standard TAT (List due date):
SITE: Botany	
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1085/14
ORDER NUMBER: PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:
PROJECT MANAGER: Colin McKay CONTACT PH: 0448 977 926	COC SEQUENCE NUMBER (Circle) COC: 5 OF: 8
SAMPLER: AY/PC SAMPLER MOBILE:	RELINQUISHED BY: [signature] DATE/TIME: 27/2/15
COC Emailed to ALS? (NO) EDD FORMAT (or default):	RECEIVED BY: Frank ALS DATE/TIME: 27/2/15 1200
Email Reports to: colin.mckay@wspgroup.com; phillips.childs@wspgroup.com	RELINQUISHED BY: DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):	RECEIVED BY: DATE/TIME:

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:			

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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB	
49	BH131 (0.4-0.5)	26/02/2015	Soil			x					
50	BH132 (0-0.05)	26/02/2015	Soil			x					
51	BH132 (0.4-0.5)	26/02/2015	Soil			x					
52	BH133 (0-0.05)	26/02/2015	Soil			x					
53	BH133 (0.4-0.5)	26/02/2015	Soil			x					
54	BH134 (0-0.05)	26/02/2015	Soil			x					
55	BH134 (0.4-0.5)	26/02/2015	Soil			x					
56	BH135 (0-0.05)	26/02/2015	Soil			x					
57	BH135 (0.3-0.4)	26/02/2015	Soil			x					
58	BH136 (0-0.05)	26/02/2015	Soil			x					
59	BH136 (0.4-0.5)	26/02/2015	Soil			x					
60	BH137 (0-0.05)	26/02/2015	Soil			x					
					TOTAL	12					

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 Ph: 08 8359 0890 E: adelaide@alsglobal.com
BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
NEWCASTLE 5/585 Maitland Road Mayfield West 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com
PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com
WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):		FOR LABORATORY USE ONLY (Circle)
SITE: Botany	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics)		Custody Seal Intact? Yes No N/A
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970	ALS QUOTE NO.: SY/1035/14	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: 6	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Colin McKay CONTACT PH: 0448 977 926		OF: 8	Other comment:

SAMPLER: AY/PC SAMPLER MOBILE:	RELINQUISHED BY: [signature]	RECEIVED BY: Frank ALS	RELINQUISHED BY:	RECEIVED BY:
COC Emailed to ALS? (NO) EDD FORMAT (or default):				
Email Reports to: colin.mckay@wspgroup.com; phillips.childs@wspgroup.com	DATE/TIME: 27/2/15	DATE/TIME: 27/2/15 1900	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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB				
61	BH137 (0.4-0.5)	26/02/2015	Soil			x								
62	BH138 (0-0.05)	26/02/2015	Soil			x								
63	BH138 (0.4-0.5)	26/02/2015	Soil			x								
64	BH139 (0-0.05)	26/02/2015	Soil			x								
65	BH139 (0.4-0.5)	26/02/2015	Soil			x								
66	BH140 (0-0.05)	26/02/2015	Soil			x								
67	BH140 (0.4-0.5)	26/02/2015	Soil			x								
68	BH141 (0-0.05)	26/02/2015	Soil			x								
69	BH141 (0.4-0.5)	26/02/2015	Soil			x								
70	BH142 (0-0.05)	26/02/2015	Soil			x								
71	BH142 (0.4-0.5)	26/02/2015	Soil			x								
72	BH143 (0-0.05)	26/02/2015	Soil			x								
					TOTAL	12								

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.

ALS

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ADELAIDE 2-1 Burma Road Pooraka SA 5095 Ph 08 8359 0890 E adelaide@alsglobal.com
☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph 07 3243 7222 E samples.brisbane@alsglobal.com
☐GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph 07 7471 5600 E gladstone@alsglobal.com
☐MACKAY 78 Harbour Road Mackay QLD 4740 Ph 07 4944 0177 E mackay@alsglobal.com
☐MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph 03 8549 9600 E samples.melbourne@alsglobal.com
☐MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph 02 6372 6735 E mudgee.mail@alsglobal.com
☐NEWCASTLE 5/585 Maitland Road Mayfield West NSW 2304 Ph 02 4014 2500 E samples.newcastle@alsglobal.com
☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph 02 4423 2063 E nowra@alsglobal.com
☐PERTH 10 Hod Way Malaga WA 6090 Ph 08 9209 7655 E samples.perth@alsglobal.com
☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph 02 8784 8555 E samples.sydney@alsglobal.com
☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph 07 4796 0600 E townsville.environmental@alsglobal.com
☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph 02 4225 3125 E wollongong@alsglobal.com

CLIENT: WSP Environmental Pty Ltd
SITE: Botany
PROJECT: Orica Mercury Independent Review PROJECT NO.: 45970
ORDER NUMBER: PURCHASE ORDER NO.:
PROJECT MANAGER: Colin McKay CONTACT PH: 0448 977 926
SAMPLER: AY/PC SAMPLER MOBILE:
COC Emailed to ALS? (NO) EDD FORMAT (or default):
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com
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):
ALS QUOTE NO.: SY/1065/14
COUNTRY OF ORIGIN:

COC SEQUENCE NUMBER (Circle)
COC: 7
OF: 8

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:
[signature]	Frank ALS		
DATE/TIME: 27/2/15	DATE/TIME: 27/2/15 1700	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	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB				
73	BH143 (0.4-0.5)	26/02/2015	Soil			x								
74	BH144 (0-0.05)	26/02/2015	Soil			x								
75	BH144 (0.4-0.5)	26/02/2015	Soil			x								
76	BH145 (0-0.05)	26/02/2015	Soil			x								
77	BH145 (0.4-0.5)	26/02/2015	Soil			x								
78	BH146 (0-0.05)	26/02/2015	Soil			x								
79	BH146 (0.4-0.5)	26/02/2015	Soil			x								
80	BH147 (0-0.05)	27/02/2015	Soil			x								
81	BH147 (0.4-0.5)	27/02/2015	Soil			x								
82	BH148 (0-0.05)	27/02/2015	Soil			x								
83	BH148 (0.4-0.5)	27/02/2015	Soil			x								
84	Dup 9	24/02/2015	Soil			x								
				TOTAL		12								

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 · BRISBANE 32 Shand Street Stafford QLD 4053 · GLADSTONE 46 Callemondah Drive Clinton QLD 4680 · MACKAY · MELBOURNE 2-4 Westall Road Springvale VIC 3171 · MUDGEE 27 Sydney Road Mudgee NSW 2850 · NEWCASTLE 5/585 Maitland Road Mayfield West 2304 · NOWRA 4/13 Geary Place North Nowra NSW 2541 · PERTH 10 Hod Way Malaga WA 6090 · SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 · TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 · WOLLONGONG 99 Kenny Street Wollongong NSW 2500

CLIENT: WSP Environmental Pty Ltd
SITE: Botany
PROJECT: Orica Mercury Independent Review — PROJECT NO.: 45970
ORDER NUMBER: — PURCHASE ORDER NO.:
PROJECT MANAGER: Colin McKay — CONTACT PH: 0448 977 926
SAMPLER: AY/PC — SAMPLER MOBILE:
COC Emailed to ALS? (NO) — EDD FORMAT (or default):
Email Reports to: colin.mckay@wspgroup.com; phillipa.childs@wspgroup.com
Email Invoice to (will default to PM if no other addresses are listed):
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):
ALS QUOTE NO.: SY/1085/14
COUNTRY OF ORIGIN:
COC SEQUENCE NUMBER (Circle) — COC: 8 — OF: 8

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:
[signature]	Frank ALS		
DATE/TIME: 27/2/15	DATE/TIME: 27/2/15 1700	DATE/TIME:	DATE/TIME:

ALS USE ONLY LAB ID	SAMPLE ID	DATE / TIME	MATRIX (Solid(S) Water(W))	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	Mercury - Total Recoverable	Chromium - Total	Lead - Total	PAH	PCB				Additional Information
85	Dup 10	26/02/2015	Soil			x								
86	Dup 11	26/02/2015	Soil			x								
87	Dup 12	26/02/2015	Soil			x								
88	Dup 13	26/02/2015	Soil			x								
89	Dup 14	27/02/2014	Soil			x								
90	Dup 7		Soil			X				Already @ Lab (ES1503946-51)				
				TOTAL		5								

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.

Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **ES1504881**		
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 45970 ORICA MERCURY INDEPENDENT REVIEW	Page	: 1 of 4
Order number	: 45970		
C-O-C number	: ----	Quote number	: ES2015WSPENV0359 (SY/1085/14)
Site	: ----		
Sampler	: AY/PC	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 27-FEB-2015	Issue Date	: 02-MAR-2015 18:49
Client Requested Due Date	: 09-MAR-2015	Scheduled Reporting Date	: **09-MAR-2015**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 7.8'C - Ice present
No. of coolers/boxes	: 3 ESKIES	No. of samples received	: 90
Security Seal	: Not intact.	No. of samples analysed	: 90

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 received in appropriately pretreated and preserved containers.**
- **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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample ID BH135(0.3-0.4) was received labelled as BH135(0.4-0.5) on the jar. Lab will follow sample ID on the jar for analysis.**
- 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 (14 days), Solid (60 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance 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 to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EG035T (solids) Total Mercury by FIMS	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP075 SIM PAH only SIM - PAH only
ES1504881-001	24-FEB-2015 15:00	BH107(0-0.05)	✓		✓		
ES1504881-002	24-FEB-2015 15:00	BH107(0.4-0.5)	✓		✓		
ES1504881-003	24-FEB-2015 15:00	BH108(0-0.05)	✓	✓	✓	✓	✓
ES1504881-004	24-FEB-2015 15:00	BH108(0.4-0.5)	✓		✓		
ES1504881-005	24-FEB-2015 15:00	BH109(0-0.05)	✓		✓		
ES1504881-006	24-FEB-2015 15:00	BH109(0.4-0.5)	✓		✓		
ES1504881-007	24-FEB-2015 15:00	BH110(0-0.05)	✓	✓	✓	✓	✓
ES1504881-008	24-FEB-2015 15:00	BH110(0.4-0.5)	✓		✓		
ES1504881-009	24-FEB-2015 15:00	BH111(0-0.05)	✓	✓	✓	✓	✓
ES1504881-010	24-FEB-2015 15:00	BH111(0.4-0.5)	✓		✓		
ES1504881-011	24-FEB-2015 15:00	BH112(0-0.05)	✓	✓	✓	✓	✓
ES1504881-012	24-FEB-2015 15:00	BH112(0.4-0.5)	✓		✓		
ES1504881-013	24-FEB-2015 15:00	BH113(0-0.05)	✓		✓		
ES1504881-014	24-FEB-2015 15:00	BH113(0.4-0.5)	✓		✓		
ES1504881-015	24-FEB-2015 15:00	BH114(0-0.05)	✓	✓	✓	✓	✓
ES1504881-016	24-FEB-2015 15:00	BH114(0.4-0.5)	✓		✓		
ES1504881-017	24-FEB-2015 15:00	BH115(0-0.05)	✓		✓		
ES1504881-018	24-FEB-2015 15:00	BH115(0.3-0.4)	✓		✓		
ES1504881-019	24-FEB-2015 15:00	BH116(0-0.05)	✓	✓	✓	✓	✓
ES1504881-020	24-FEB-2015 15:00	BH117(0-0.05)	✓		✓		
ES1504881-021	24-FEB-2015 15:00	BH117(0.3-0.4)	✓		✓		
ES1504881-022	24-FEB-2015 15:00	BH118(0-0.05)	✓		✓		
ES1504881-023	24-FEB-2015 15:00	BH118(0.4-0.5)	✓		✓		
ES1504881-024	24-FEB-2015 15:00	BH119(0-0.05)	✓		✓		
ES1504881-025	24-FEB-2015 15:00	BH119(0.4-0.5)	✓		✓		
ES1504881-026	24-FEB-2015 15:00	BH120(0-0.05)	✓		✓		
ES1504881-027	24-FEB-2015 15:00	BH120(0.4-0.5)	✓		✓		
ES1504881-028	24-FEB-2015 15:00	BH121(0-0.05)	✓		✓		
ES1504881-029	24-FEB-2015 15:00	BH121(0.4-0.5)	✓		✓		
ES1504881-030	24-FEB-2015 15:00	BH122(0-0.05)	✓		✓		
ES1504881-031	24-FEB-2015 15:00	BH122(0.4-0.5)	✓		✓		
ES1504881-032	24-FEB-2015 15:00	BH123(0-0.05)	✓		✓		
ES1504881-033	24-FEB-2015 15:00	BH123(0.4-0.5)	✓		✓		
ES1504881-034	24-FEB-2015 15:00	BH124(0-0.05)	✓		✓		
ES1504881-035	24-FEB-2015 15:00	BH124(0.4-0.5)	✓		✓		

			SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EG035T (solids) Total Mercury by FIMS	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP075 SIM PAH only SIM - PAH only
ES1504881-036	24-FEB-2015 15:00	BH125(0-0.05)	✓		✓		
ES1504881-037	24-FEB-2015 15:00	BH125(0.4-0.5)	✓		✓		
ES1504881-038	24-FEB-2015 15:00	BH126(0-0.05)	✓		✓		
ES1504881-039	24-FEB-2015 15:00	BH126(0.4-0.5)	✓		✓		
ES1504881-040	24-FEB-2015 15:00	BH127(0-0.05)	✓		✓		
ES1504881-041	24-FEB-2015 15:00	BH127(0.4-0.5)	✓		✓		
ES1504881-042	26-FEB-2015 15:00	BH128(0-0.05)	✓		✓		
ES1504881-043	26-FEB-2015 15:00	BH128(0.4-0.5)	✓		✓		
ES1504881-044	26-FEB-2015 15:00	BH129(0-0.05)	✓		✓		
ES1504881-045	26-FEB-2015 15:00	BH129(0.3-0.4)	✓		✓		
ES1504881-046	26-FEB-2015 15:00	BH130(0-0.05)	✓		✓		
ES1504881-047	26-FEB-2015 15:00	BH130(0.2-0.3)	✓		✓		
ES1504881-048	26-FEB-2015 15:00	BH131(0-0.05)	✓		✓		
ES1504881-049	26-FEB-2015 15:00	BH131(0.4-0.5)	✓		✓		
ES1504881-050	26-FEB-2015 15:00	BH132(0-0.05)	✓		✓		
ES1504881-051	26-FEB-2015 15:00	BH132(0.4-0.5)	✓		✓		
ES1504881-052	26-FEB-2015 15:00	BH133(0-0.05)	✓		✓		
ES1504881-053	26-FEB-2015 15:00	BH133(0.4-0.5)	✓		✓		
ES1504881-054	26-FEB-2015 15:00	BH134(0-0.05)	✓		✓		
ES1504881-055	26-FEB-2015 15:00	BH134(0.4-0.5)	✓		✓		
ES1504881-056	26-FEB-2015 15:00	BH135(0-0.05)	✓		✓		
ES1504881-057	26-FEB-2015 15:00	BH135(0.4-0.5))	✓		✓		
ES1504881-058	26-FEB-2015 15:00	BH136(0-0.05)	✓		✓		
ES1504881-059	26-FEB-2015 15:00	BH136(0.4-0.5)	✓		✓		
ES1504881-060	26-FEB-2015 15:00	BH137(0-0.05)	✓		✓		
ES1504881-061	26-FEB-2015 15:00	BH137(0.4-0.5)	✓		✓		
ES1504881-062	26-FEB-2015 15:00	BH138(0-0.05)	✓		✓		
ES1504881-063	26-FEB-2015 15:00	BH138(0.4-0.5)	✓		✓		
ES1504881-064	26-FEB-2015 15:00	BH139(0-0.05)	✓		✓		
ES1504881-065	26-FEB-2015 15:00	BH139(0.4-0.5)	✓		✓		
ES1504881-066	26-FEB-2015 15:00	BH140(0-0.05)	✓		✓		
ES1504881-067	26-FEB-2015 15:00	BH140(0.4-0.5)	✓		✓		
ES1504881-068	26-FEB-2015 15:00	BH141(0-0.05)	✓		✓		
ES1504881-069	26-FEB-2015 15:00	BH141(0.4-0.5)	✓		✓		
ES1504881-070	26-FEB-2015 15:00	BH142(0-0.05)	✓		✓		
ES1504881-071	26-FEB-2015 15:00	BH142(0.4-0.5)	✓		✓		
ES1504881-072	26-FEB-2015 15:00	BH143(0-0.05)	✓		✓		
ES1504881-073	26-FEB-2015 15:00	BH143(0.4-0.5)	✓		✓		
ES1504881-074	26-FEB-2015 15:00	BH144(0-0.05)	✓		✓		
ES1504881-075	26-FEB-2015 15:00	BH144(0.4-0.5)	✓		✓		
ES1504881-076	26-FEB-2015 15:00	BH145(0-0.05)	✓		✓		

			SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EG035T (solids) Total Mercury by FIMS	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP075 SIM PAH only SIM - PAH only
ES1504881-077	26-FEB-2015 15:00	BH145(0.4-0.5)	✓		✓		
ES1504881-078	26-FEB-2015 15:00	BH146(0-0.05)	✓		✓		
ES1504881-079	26-FEB-2015 15:00	BH146(0.4-0.5)	✓		✓		
ES1504881-080	26-FEB-2015 15:00	BH147(0-0.05)	✓		✓		
ES1504881-081	26-FEB-2015 15:00	BH147(0.4-0.5)	✓		✓		
ES1504881-082	26-FEB-2015 15:00	BH148(0-0.05)	✓		✓		
ES1504881-083	26-FEB-2015 15:00	BH148(0.4-0.5)	✓		✓		
ES1504881-084	26-FEB-2015 15:00	DUP9	✓		✓		
ES1504881-085	26-FEB-2015 15:00	DUP10	✓		✓		
ES1504881-086	26-FEB-2015 15:00	DUP11	✓		✓		
ES1504881-087	26-FEB-2015 15:00	DUP12	✓		✓		
ES1504881-088	26-FEB-2015 15:00	DUP13	✓		✓		
ES1504881-089	27-FEB-2015 15:00	DUP14	✓		✓		
ES1504881-090	17-FEB-2015 15:00	DUP7	✓		✓		

Proactive Holding Time Report

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

Requested Deliverables

ALL INVOICES ADDRESS

- A4 - AU Tax Invoice (INV)	Email	melbfinance@wspgroup.com

MR COLIN MCKAY

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

PHILIPPA CHILDS

- *AU Certificate of Analysis - NATA (COA)	Email	philippa.childs@wspgroup.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	philippa.childs@wspgroup.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	philippa.childs@wspgroup.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN	Email	philippa.childs@wspgroup.com
- Chain of Custody (CoC) (COC)	Email	philippa.childs@wspgroup.com
- EDI Format - ENMRG (ENMRG)	Email	philippa.childs@wspgroup.com
- EDI Format - ESDAT (ESDAT)	Email	philippa.childs@wspgroup.com

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1504881**	Page	: 1 of 25
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 45970 ORICA MERCURY INDEPENDENT REVIEW	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 45970		
C-O-C number	: ----	Date Samples Received	: 27-FEB-2015
Sampler	: AY/PC	Issue Date	: 05-MAR-2015
Site	: ----		
		No. of samples received	: 90
Quote number	: SY/1085/14	No. of samples analysed	: 90

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Shobhna Chandra	Metals Coordinator	Sydney Inorganics

General Comments

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

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

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

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

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 Contact 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

- **Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	LOR	Unit	Client sample ID	BH107(0-0.05)	BH107(0.4-0.5)	BH108(0-0.05)	BH108(0.4-0.5)	BH109(0-0.05)
				Client sampling date / time	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00
					ES1504881-001	ES1504881-002	ES1504881-003	ES1504881-004	ES1504881-005
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		7.5	1.6	3.5	1.3	6.7
EG005T: Total Metals by ICP-AES									
Chromium	7440-47-3	2	mg/kg		----	----	7	----	----
Lead	7439-92-1	5	mg/kg		----	----	209	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		0.2	<0.1	0.2	<0.1	0.3
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	<0.1	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		----	----	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		----	----	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		----	----	1.1	----	----
Anthracene	120-12-7	0.5	mg/kg		----	----	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		----	----	3.5	----	----
Pyrene	129-00-0	0.5	mg/kg		----	----	3.6	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	1.3	----	----
Chrysene	218-01-9	0.5	mg/kg		----	----	1.6	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	----	2.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	----	1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	2.0	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	----	1.3	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	----	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	----	2.0	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	----	19.9	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	----	2.6	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	----	2.9	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	----	3.1	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	88.0	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		----	----	94.3	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH107(0-0.05)	BH107(0.4-0.5)	BH108(0-0.05)	BH108(0.4-0.5)	BH109(0-0.05)
				Client sampling date / time	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1504881-001	ES1504881-002	ES1504881-003	ES1504881-004	ES1504881-005
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2-Chlorophenol-D4	93951-73-6	0.1	%		----	----	102	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%		----	----	102	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		----	----	111	----	----
Anthracene-d10	1719-06-8	0.1	%		----	----	97.6	----	----
4-Terphenyl-d14	1718-51-0	0.1	%		----	----	93.2	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH109(0.4-0.5)	BH110(0-0.05)	BH110(0.4-0.5)	BH111(0-0.05)	BH111(0.4-0.5)
				Client sampling date / time	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1504881-006	ES1504881-007	ES1504881-008	ES1504881-009	ES1504881-010
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		4.9	2.7	2.9	3.9	3.7
EG005T: Total Metals by ICP-AES									
Chromium	7440-47-3	2	mg/kg		----	3	----	5	----
Lead	7439-92-1	5	mg/kg		----	25	----	35	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	0.2	<0.1	0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	<0.1	----	<0.1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	----	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	----	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	----	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	----	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	----	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	----	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	0.6	----	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	1.2	----	1.2	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	71.0	----	87.0	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		----	90.4	----	114	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH109(0.4-0.5)	BH110(0-0.05)	BH110(0.4-0.5)	BH111(0-0.05)	BH111(0.4-0.5)
			Client sampling date / time	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504881-006	ES1504881-007	ES1504881-008	ES1504881-009	ES1504881-010
EP075(SIM)S: Phenolic Compound Surrogates - Continued								
2-Chlorophenol-D4	93951-73-6	0.1	%	----	**95.9**	----	**108**	----
2.4.6-Tribromophenol	118-79-6	0.1	%	----	**96.1**	----	**108**	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	----	**107**	----	**114**	----
Anthracene-d10	1719-06-8	0.1	%	----	**94.6**	----	**98.7**	----
4-Terphenyl-d14	1718-51-0	0.1	%	----	**108**	----	**97.2**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH112(0-0.05)	BH112(0.4-0.5)	BH113(0-0.05)	BH113(0.4-0.5)	BH114(0-0.05)
				Client sampling date / time	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1504881-011	ES1504881-012	ES1504881-013	ES1504881-014	ES1504881-015
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		4.4	2.0	2.0	2.8	6.1
EG005T: Total Metals by ICP-AES									
Chromium	7440-47-3	2	mg/kg		5	----	----	----	5
Lead	7439-92-1	5	mg/kg		60	----	----	----	115
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	----	----	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	----	----	----	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	----	----	----	1.2
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		83.0	----	----	----	94.0
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		96.3	----	----	----	100

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH112(0-0.05)	BH112(0.4-0.5)	BH113(0-0.05)	BH113(0.4-0.5)	BH114(0-0.05)
			Client sampling date / time	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504881-011	ES1504881-012	ES1504881-013	ES1504881-014	ES1504881-015
EP075(SIM)S: Phenolic Compound Surrogates - Continued								
2-Chlorophenol-D4	93951-73-6	0.1	%	96.2	----	----	----	106
2.4.6-Tribromophenol	118-79-6	0.1	%	98.7	----	----	----	99.6
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	129	----	----	----	117
Anthracene-d10	1719-06-8	0.1	%	92.5	----	----	----	99.7
4-Terphenyl-d14	1718-51-0	0.1	%	91.9	----	----	----	97.9

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH114(0.4-0.5)	BH115(0-0.05)	BH115(0.3-0.4)	BH116(0-0.05)	BH117(0-0.05)
				Client sampling date / time	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1504881-016	ES1504881-017	ES1504881-018	ES1504881-019	ES1504881-020
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		<1.0	**9.5**	**2.5**	**1.8**	**6.6**
EG005T: Total Metals by ICP-AES									
Chromium	7440-47-3	2	mg/kg		----	----	----	**5**	----
Lead	7439-92-1	5	mg/kg		----	----	----	**75**	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	**0.2**	<0.1	**0.2**	**0.3**
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	----	<0.1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		----	----	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		----	----	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		----	----	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		----	----	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		----	----	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		----	----	----	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		----	----	----	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	----	----	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	----	----	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	----	----	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	----	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	----	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	----	----	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	----	----	**1.2**	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	**82.0**	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		----	----	----	**98.8**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH114(0.4-0.5)	BH115(0-0.05)	BH115(0.3-0.4)	BH116(0-0.05)	BH117(0-0.05)
				Client sampling date / time	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1504881-016	ES1504881-017	ES1504881-018	ES1504881-019	ES1504881-020
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2-Chlorophenol-D4	93951-73-6	0.1	%		----	----	----	98.7	----
2.4.6-Tribromophenol	118-79-6	0.1	%		----	----	----	94.8	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		----	----	----	107	----
Anthracene-d10	1719-06-8	0.1	%		----	----	----	92.2	----
4-Terphenyl-d14	1718-51-0	0.1	%		----	----	----	91.2	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH117(0.3-0.4)	BH118(0-0.05)	BH118(0.4-0.5)	BH119(0-0.05)	BH119(0.4-0.5)
			Client sampling date / time	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504881-021	ES1504881-022	ES1504881-023	ES1504881-024	ES1504881-025
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**5.1**	**2.7**	**4.3**	**5.8**	**5.5**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.2**	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH120(0-0.05)	BH120(0.4-0.5)	BH121(0-0.05)	BH121(0.4-0.5)	BH122(0-0.05)
			Client sampling date / time	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504881-026	ES1504881-027	ES1504881-028	ES1504881-029	ES1504881-030
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**2.8**	<1.0	**7.0**	**4.7**	**1.8**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH122(0.4-0.5)	BH123(0-0.05)	BH123(0.4-0.5)	BH124(0-0.05)	BH124(0.4-0.5)
			Client sampling date / time	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504881-031	ES1504881-032	ES1504881-033	ES1504881-034	ES1504881-035
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**1.0**	**6.9**	**3.5**	**32.2**	**19.2**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH125(0-0.05)	BH125(0.4-0.5)	BH126(0-0.05)	BH126(0.4-0.5)	BH127(0-0.05)
			Client sampling date / time	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00	24-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504881-036	ES1504881-037	ES1504881-038	ES1504881-039	ES1504881-040
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**3.5**	**1.1**	**4.2**	**3.0**	**16.1**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.1**	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH127(0.4-0.5)	BH128(0-0.05)	BH128(0.4-0.5)	BH129(0-0.05)	BH129(0.3-0.4)
			Client sampling date / time	24-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504881-041	ES1504881-042	ES1504881-043	ES1504881-044	ES1504881-045
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	5.6	8.0	3.4	6.7	2.7
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	0.3	0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH130(0-0.05)	BH130(0.2-0.3)	BH131(0-0.05)	BH131(0.4-0.5)	BH132(0-0.05)
			Client sampling date / time	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504881-046	ES1504881-047	ES1504881-048	ES1504881-049	ES1504881-050
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**19.3**	**17.4**	**11.4**	**5.2**	**4.1**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.3**	**0.2**	<0.1	**0.1**	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH132(0.4-0.5)	BH133(0-0.05)	BH133(0.4-0.5)	BH134(0-0.05)	BH134(0.4-0.5)
			Client sampling date / time	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504881-051	ES1504881-052	ES1504881-053	ES1504881-054	ES1504881-055
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**1.5**	**3.7**	**7.0**	**2.4**	**7.1**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	**0.1**	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH135(0-0.05)	BH135(0.4-0.5))	BH136(0-0.05)	BH136(0.4-0.5)	BH137(0-0.05)
			Client sampling date / time	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504881-056	ES1504881-057	ES1504881-058	ES1504881-059	ES1504881-060
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**3.6**	**3.2**	**3.0**	<1.0	**12.3**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.2**	<0.1	**0.2**	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH137(0.4-0.5)	BH138(0-0.05)	BH138(0.4-0.5)	BH139(0-0.05)	BH139(0.4-0.5)
			Client sampling date / time	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504881-061	ES1504881-062	ES1504881-063	ES1504881-064	ES1504881-065
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**4.4**	**2.6**	**2.1**	**8.5**	**5.2**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH140(0-0.05)	BH140(0.4-0.5)	BH141(0-0.05)	BH141(0.4-0.5)	BH142(0-0.05)
			Client sampling date / time	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504881-066	ES1504881-067	ES1504881-068	ES1504881-069	ES1504881-070
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**3.0**	**7.8**	**4.3**	**3.6**	**6.3**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.2**	<0.1	<0.1	<0.1	**0.1**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH142(0.4-0.5)	BH143(0-0.05)	BH143(0.4-0.5)	BH144(0-0.05)	BH144(0.4-0.5)
			Client sampling date / time	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504881-071	ES1504881-072	ES1504881-073	ES1504881-074	ES1504881-075
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**3.1**	**3.3**	**4.0**	**5.6**	**2.2**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	**0.1**	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH145(0-0.05)	BH145(0.4-0.5)	BH146(0-0.05)	BH146(0.4-0.5)	BH147(0-0.05)
			Client sampling date / time	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504881-076	ES1504881-077	ES1504881-078	ES1504881-079	ES1504881-080
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	5.5	2.3	2.6	3.8	5.6
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	3.0	1.6	0.1	0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH147(0.4-0.5)	BH148(0-0.05)	BH148(0.4-0.5)	DUP9	DUP10
			Client sampling date / time	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00
Compound	CAS Number	LOR	Unit	ES1504881-081	ES1504881-082	ES1504881-083	ES1504881-084	ES1504881-085
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**5.8**	**6.0**	**4.4**	**8.7**	**11.0**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	DUP11	DUP12	DUP13	DUP14	DUP7
				Client sampling date / time	26-FEB-2015 15:00	26-FEB-2015 15:00	26-FEB-2015 15:00	27-FEB-2015 15:00	17-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1504881-086	ES1504881-087	ES1504881-088	ES1504881-089	ES1504881-090
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		**5.0**	**5.3**	**3.0**	**5.6**	**6.2**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		**0.1**	<0.1	**0.1**	<0.1	<0.1

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	Recovery Limits (%) High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129

QUALITY CONTROL REPORT

Work Order	: **ES1504881**	Page	: 1 of 7
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
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Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 45970 ORICA MERCURY INDEPENDENT REVIEW	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 27-FEB-2015
Sampler	: AY/PC	Issue Date	: 05-MAR-2015
Order number	: 45970		
		No. of samples received	: 90
Quote number	: SY/1085/14	No. of samples analysed	: 90

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

This Quality Control Report contains the following information:

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

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Shobhna Chandra	Metals Coordinator	Sydney Inorganics

General Comments

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

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

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

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

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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA055: Moisture Content (QC Lot: 3843675)									
ES1504837-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	16.6	15.1	9.4	0% - 50%
ES1504837-011	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	24.5	24.4	0.5	0% - 20%
EA055: Moisture Content (QC Lot: 3843676)									
ES1504881-008	BH110(0.4-0.5)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	2.9	3.6	21.4	No Limit
ES1504881-019	BH116(0-0.05)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	1.8	3.2	58.6	No Limit
EA055: Moisture Content (QC Lot: 3843677)									
ES1504881-028	BH121(0-0.05)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	7.0	6.3	10.8	No Limit
ES1504881-039	BH126(0.4-0.5)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	3.0	3.6	17.1	No Limit
EA055: Moisture Content (QC Lot: 3843678)									
ES1504881-048	BH131(0-0.05)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	11.4	10.9	4.2	0% - 50%
ES1504881-059	BH136(0.4-0.5)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	<1.0	1.2	16.6	No Limit
EA055: Moisture Content (QC Lot: 3843680)									
ES1504881-068	BH141(0-0.05)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	4.3	4.6	7.5	No Limit
ES1504881-079	BH146(0.4-0.5)	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	3.8	1.9	65.8	No Limit
EA055: Moisture Content (QC Lot: 3843681)									
ES1504881-088	DUP13	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	3.0	2.3	24.6	No Limit
ES1505016-006	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	13.7	13.6	1.2	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 3845730)									
ES1504257-070	Anonymous	EG005T: Chromium	7440-47-3	2	mg/kg	6	6	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
ES1504881-003	BH108(0-0.05)	EG005T: Chromium	7440-47-3	2	mg/kg	7	7	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	209	228	8.6	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3843652)									
ES1504881-001	BH107(0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.2	0.2	0.0	No Limit
ES1504881-016	BH114(0.4-0.5)	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3843653)									
ES1504881-027	BH120(0.4-0.5)	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1504881-037	BH125(0.4-0.5)	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3843654)									
ES1504881-047	BH130(0.2-0.3)	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.2	0.2	0.0	No Limit
ES1504881-057	BH135(0.4-0.5))	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3843655)									
ES1504881-067	BH140(0.4-0.5)	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.1	0.0	No Limit
ES1504881-077	BH145(0.4-0.5)	EG035T: Mercury	7439-97-6	0.1	mg/kg	1.6	1.5	0.0	0% - 50%

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3845731)									
ES1504257-070	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1504881-003	BH108(0-0.05)	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.2	0.2	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3844062)									
ES1504881-003	BH108(0-0.05)	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3844063)									
ES1504881-003	BH108(0-0.05)	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	1.1	0.8	33.7	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	3.5	2.9	18.3	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	3.6	3.1	14.7	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	1.3	1.3	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	1.6	1.6	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	2.5	2.6	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	1.0	1.0	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	2.0	2.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	1.3	1.3	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	2.0	1.9	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	19.9	18.5	7.3	0% - 20%
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	2.6	2.6	0.0	No Limit

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

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 3845730)								
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	98.2	80	136
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	111	86	124
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3843652)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	78.7	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3843653)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	74.4	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3843654)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	74.9	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3843655)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	90.8	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3845731)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	76.6	70	105
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3844062)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	95.0	57.4	117
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3844063)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	103	80	124
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	99.8	77	123
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	101	79	123
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	119	77	123
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	102	79	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	102	79	123
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	114	79	123
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	113	79	125
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	98.8	73	121
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	100	81	123
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	4 mg/kg	90.4	70	118

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3844063) - continued								
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	110	77	123
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	102	76	122
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	96.1	71	113
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	93.6	71.7	113
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	92.8	72.4	114

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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005T: Total Metals by ICP-AES (QCLot: 3845730)							
ES1504257-070	Anonymous	EG005T: Chromium	7440-47-3	50 mg/kg	96.7	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	114	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3843652)							
ES1504881-001	BH107(0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	90.1	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3843653)							
ES1504881-027	BH120(0.4-0.5)	EG035T: Mercury	7439-97-6	5 mg/kg	87.8	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3843654)							
ES1504881-047	BH130(0.2-0.3)	EG035T: Mercury	7439-97-6	5 mg/kg	72.7	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3843655)							
ES1504881-067	BH140(0.4-0.5)	EG035T: Mercury	7439-97-6	5 mg/kg	81.0	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3845731)							
ES1504257-070	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	84.5	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3844062)							
ES1504881-003	BH108(0-0.05)	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	97.0	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3844063)							
ES1504881-003	BH108(0-0.05)	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	97.0	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	120	70	130

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

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

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3843652)										
ES1504881-001	BH107(0-0.05)	EG035T: Mercury	7439-97-6	5 mg/kg	90.1	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3843653)										
ES1504881-027	BH120(0.4-0.5)	EG035T: Mercury	7439-97-6	5 mg/kg	87.8	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3843654)										
ES1504881-047	BH130(0.2-0.3)	EG035T: Mercury	7439-97-6	5 mg/kg	72.7	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3843655)										
ES1504881-067	BH140(0.4-0.5)	EG035T: Mercury	7439-97-6	5 mg/kg	81.0	----	70	130	----	----
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3844062)										
ES1504881-003	BH108(0-0.05)	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	97.0	----	70	130	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3844063)										
ES1504881-003	BH108(0-0.05)	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	97.0	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	120	----	70	130	----	----
EG005T: Total Metals by ICP-AES (QCLot: 3845730)										
ES1504257-070	Anonymous	EG005T: Chromium	7440-47-3	50 mg/kg	96.7	----	70	130	----	----
		EG005T: Lead	7439-92-1	250 mg/kg	114	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3845731)										
ES1504257-070	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	84.5	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **ES1504881**	Page	: 1 of 8
Client	: WSP ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 45970 ORICA MERCURY INDEPENDENT REVIEW	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 27-FEB-2015
Sampler	: AY/PC	Issue Date	: 05-MAR-2015
Order number	: 45970		
		No. of samples received	: 90
Quote number	: SY/1085/14	No. of samples analysed	: 90

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

This Interpretive Quality Control Report contains the following information:

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

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and 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							
Soil Glass Jar - Unpreserved (EA055-103)							
DUP7	**17-FEB-2015**	**----**	----	----	**03-MAR-2015**	03-MAR-2015	✓
Soil Glass Jar - Unpreserved (EA055-103)							
BH107(0-0.05), BH107(0.4-0.5), BH108(0-0.05), BH108(0.4-0.5), BH109(0-0.05), BH109(0.4-0.5), BH110(0-0.05), BH110(0.4-0.5), BH111(0-0.05), BH111(0.4-0.5), BH112(0-0.05), BH112(0.4-0.5), BH113(0-0.05), BH113(0.4-0.5), BH114(0-0.05), BH114(0.4-0.5), BH115(0-0.05), BH115(0.3-0.4), BH116(0-0.05), BH117(0-0.05), BH117(0.3-0.4), BH118(0-0.05), BH118(0.4-0.5), BH119(0-0.05), BH119(0.4-0.5), BH120(0-0.05), BH120(0.4-0.5), BH121(0-0.05), BH121(0.4-0.5), BH122(0-0.05), BH122(0.4-0.5), BH123(0-0.05), BH123(0.4-0.5), BH124(0-0.05), BH124(0.4-0.5), BH125(0-0.05), BH125(0.4-0.5), BH126(0-0.05), BH126(0.4-0.5), BH127(0-0.05), BH127(0.4-0.5)	**24-FEB-2015**	**----**	----	----	**03-MAR-2015**	10-MAR-2015	✓
Soil Glass Jar - Unpreserved (EA055-103)							

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 - Continued							
BH128(0-0.05), BH128(0.4-0.5), BH129(0-0.05), BH129(0.3-0.4), BH130(0-0.05), BH130(0.2-0.3), BH131(0-0.05), BH131(0.4-0.5), BH132(0-0.05), BH132(0.4-0.5), BH133(0-0.05), BH133(0.4-0.5), BH134(0-0.05), BH134(0.4-0.5), BH135(0-0.05), BH135(0.4-0.5)), BH136(0-0.05), BH136(0.4-0.5), BH137(0-0.05), BH137(0.4-0.5), BH138(0-0.05), BH138(0.4-0.5), BH139(0-0.05), BH139(0.4-0.5), BH140(0-0.05), BH140(0.4-0.5), BH141(0-0.05), BH141(0.4-0.5), BH142(0-0.05), BH142(0.4-0.5), BH143(0-0.05), BH143(0.4-0.5), BH144(0-0.05), BH144(0.4-0.5), BH145(0-0.05), BH145(0.4-0.5), BH146(0-0.05), BH146(0.4-0.5), BH147(0-0.05), BH147(0.4-0.5), BH148(0-0.05), BH148(0.4-0.5), DUP9, DUP10, DUP11, DUP12, DUP13	**26-FEB-2015**	**----**	----	----	**03-MAR-2015**	12-MAR-2015	✓
Soil Glass Jar - Unpreserved (EA055-103)							
DUP14	**27-FEB-2015**	**----**	----	----	**03-MAR-2015**	13-MAR-2015	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
BH108(0-0.05), BH110(0-0.05), BH111(0-0.05), BH112(0-0.05), BH114(0-0.05), BH116(0-0.05)	**24-FEB-2015**	**04-MAR-2015**	23-AUG-2015	✓	**05-MAR-2015**	23-AUG-2015	✓

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)							
DUP7	**17-FEB-2015**	**04-MAR-2015**	17-MAR-2015	✓	**05-MAR-2015**	17-MAR-2015	✓
Soil Glass Jar - Unpreserved (EG035T)							
BH107(0-0.05), BH107(0.4-0.5), BH108(0.4-0.5), BH109(0-0.05), BH109(0.4-0.5), BH110(0.4-0.5), BH111(0.4-0.5), BH112(0.4-0.5), BH113(0-0.05), BH113(0.4-0.5), BH114(0.4-0.5), BH115(0-0.05), BH115(0.3-0.4), BH117(0-0.05), BH117(0.3-0.4), BH118(0-0.05), BH118(0.4-0.5), BH119(0-0.05), BH119(0.4-0.5), BH120(0-0.05), BH120(0.4-0.5), BH121(0-0.05), BH121(0.4-0.5), BH122(0-0.05), BH122(0.4-0.5), BH123(0-0.05), BH123(0.4-0.5), BH124(0-0.05), BH124(0.4-0.5), BH125(0-0.05), BH125(0.4-0.5), BH126(0-0.05), BH126(0.4-0.5), BH127(0-0.05), BH127(0.4-0.5)	**24-FEB-2015**	**03-MAR-2015**	24-MAR-2015	✓	**04-MAR-2015**	24-MAR-2015	✓
Soil Glass Jar - Unpreserved (EG035T)							
BH108(0-0.05), BH110(0-0.05), BH111(0-0.05), BH112(0-0.05), BH114(0-0.05), BH116(0-0.05)	**24-FEB-2015**	**04-MAR-2015**	24-MAR-2015	✓	**05-MAR-2015**	24-MAR-2015	✓
Soil Glass Jar - Unpreserved (EG035T)							

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 - Continued								
BH128(0-0.05),	BH128(0.4-0.5),	**26-FEB-2015**	**03-MAR-2015**	26-MAR-2015	✓	**04-MAR-2015**	26-MAR-2015	✓
BH129(0-0.05),	BH129(0.3-0.4),							
BH130(0-0.05),	BH130(0.2-0.3),							
BH131(0-0.05),	BH131(0.4-0.5),							
BH132(0-0.05),	BH132(0.4-0.5),							
BH133(0-0.05),	BH133(0.4-0.5),							
BH134(0-0.05),	BH134(0.4-0.5),							
BH135(0-0.05),	BH135(0.4-0.5)),							
BH136(0-0.05),	BH136(0.4-0.5),							
BH137(0-0.05),	BH137(0.4-0.5),							
BH138(0-0.05),	BH138(0.4-0.5),							
BH139(0-0.05),	BH139(0.4-0.5),							
BH140(0-0.05),	BH140(0.4-0.5),							
BH141(0-0.05),	BH141(0.4-0.5),							
BH142(0-0.05),	BH142(0.4-0.5),							
BH143(0-0.05),	BH143(0.4-0.5),							
BH144(0-0.05),	BH144(0.4-0.5),							
BH145(0-0.05),	BH145(0.4-0.5),							
BH146(0-0.05),	BH146(0.4-0.5),							
BH147(0-0.05),	BH147(0.4-0.5),							
BH148(0-0.05),	BH148(0.4-0.5),							
DUP9,	DUP10,							
DUP11								
Soil Glass Jar - Unpreserved (EG035T)								
DUP12,	DUP13	**26-FEB-2015**	**04-MAR-2015**	26-MAR-2015	✓	**05-MAR-2015**	26-MAR-2015	✓
Soil Glass Jar - Unpreserved (EG035T)								
DUP14		**27-FEB-2015**	**04-MAR-2015**	27-MAR-2015	✓	**05-MAR-2015**	27-MAR-2015	✓
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066)								
BH108(0-0.05),	BH110(0-0.05),	**24-FEB-2015**	**03-MAR-2015**	10-MAR-2015	✓	**04-MAR-2015**	12-APR-2015	✓
BH111(0-0.05),	BH112(0-0.05),							
BH114(0-0.05),	BH116(0-0.05)							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM))								
BH108(0-0.05),	BH110(0-0.05),	**24-FEB-2015**	**03-MAR-2015**	10-MAR-2015	✓	**04-MAR-2015**	12-APR-2015	✓
BH111(0-0.05),	BH112(0-0.05),							
BH114(0-0.05),	BH116(0-0.05)							

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	EA055-103	12	120	**10.0**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	6	**16.7**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	6	**16.7**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	10	98	**10.2**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	16	**12.5**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	6	**16.7**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	6	**16.7**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	5	98	**5.1**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	16	**6.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	6	**16.7**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	6	**16.7**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	5	98	**5.1**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	16	**6.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	6	**16.7**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	6	**16.7**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	5	98	**5.1**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	16	**6.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	In-house. A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 21st ed., 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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 21st ed., 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 (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. 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 (2013) Schedule B(3) (Method 202)
Tumbler Extraction of Solids	ORG17	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW 846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

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

Regular Sample Surrogates

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP075(SIM)T: PAH Surrogates	ES1504881-011	BH112(0-0.05)	**2-Fluorobiphenyl**	321-60-8	129 %	70-122 %	**Recovery greater than upper data quality objective**

Outliers : Analysis Holding Time Compliance

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

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

Outliers : Frequency of Quality Control Samples

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

- **No Quality Control Sample Frequency Outliers exist.**

5372-379

TAT: 9/3/15 1:45pm

Fadi Soro

From: Cindy Suen
Sent: Monday, 9 March 2015 1:24 PM
To: Fadi Soro; Celine Conceicao
Subject: FW: Additional methyl mercury analysis

Hi Fadi,
Would you please rebatch asap.

Hi Celine,
Can we report faster than 10 days?

Kind Regards,

Cindy Suen

Business Development Manager
ALS | Environmental Division

M +61 (0) 418 652 886

We are keen for your feedback! Please click here for your 1 question survey

---

From: Cindy Suen
Sent: Monday, 9 March 2015 1:23 PM
To: 'McKay, Colin'
Cc: Sydney
Subject: RE: Additional methyl mercury analysis

Hi Colin,
No worried, we will get this organised for you.
Methyl mercury is a specialist tests and the current TAT is 2 weeks.
I will see if it can be reported a bit earlier.

Environmental Division
Sydney
Work Order
ES1505565

Telephone : +61-2-8784 8555

Kind Regards,

Cindy Suen

Business Development Manager
ALS | Environmental Division

M +61 (0) 418 652 886

We are keen for your feedback! Please click here for your 1 question survey

---

From: McKay, Colin [mailto:colin.mckay@wspgroup.com]
Sent: Monday, 9 March 2015 12:31 PM
To: Cindy Suen
Cc: Sydney
Subject: Additional methyl mercury analysis

Hi Cindy,

I'm not sure who to contact about this so hoping you can pass it on.

I need two samples from the mercury assessment analysed for methyl mercury.

The samples are: (1)

- ES1503946041 (Sed13); and
- ES1503946046 (Sed18) (2)

Standard TAT should be fine.

Thanks in advance

Colin

Colin McKay
Principal Environmental Scientist

Level 1, 41 McLaren Street
North Sydney NSW 2060
Australia
T. +61 2 8907 0900
D. +61 2 8925 6724
M.+61 4 4897 7926
colin.mckay@wspgroup.com

www.wspgroup.com
www.pbworld.com

Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **ES1505565**		
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 45970 ORICA MERCURY INDEPENDANT REVIEW	Page	: 1 of 2
Order number	: 45970		
C-O-C number	: ----	Quote number	: ES2015WSPENV0359 (SY/1085/14)
Site	: BOTANY		
Sampler	: AY & PC	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 09-MAR-2015	Issue Date	: 09-MAR-2015 17:13
Client Requested Due Date	: 13-MAR-2015	Scheduled Reporting Date	: **13-MAR-2015**

Delivery Details

Mode of Delivery	: Samples on hand	Temperature	:
No. of coolers/boxes	: ----	No. of samples received	: 2
Security Seal	: Intact.	No. of samples analysed	: 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 received in appropriately pretreated and preserved containers.**
- **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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **THIS IS A REBATCH OF ES1503946.**
- 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 (14 days), Solid (60 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance 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 to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA055-103 Moisture Content	SOIL - EG036 Methyl Mercury
ES1505565-001	16-FEB-2015 15:00	SED13	✓	✓
ES1505565-002	16-FEB-2015 15:00	SED18	✓	✓

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: **SOIL**

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

Method		Due for extraction	Due for analysis	Samples Received		Instructions Received	
Client Sample ID(s)	Container			Date	Evaluation	Date	Evaluation
EA055-103: Moisture Content							
SED13	Soil Glass Jar - Unpreserved	----	02-MAR-2015	09-MAR-2015	×	----	----
SED18	Soil Glass Jar - Unpreserved	----	02-MAR-2015	09-MAR-2015	×	----	----

Requested Deliverables

ALL INVOICES ADDRESS

- A4 - AU Tax Invoice (INV)	Email	melbfinance@wspgroup.com

MR COLIN MCKAY

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

PHILIPPA CHILDS

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

CERTIFICATE OF ANALYSIS

Work Order	: **ES1505565**	Page	: 1 of 3
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 45970 ORICA MERCURY INDEPENDANT REVIEW	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 45970		
C-O-C number	: ----	Date Samples Received	: 09-MAR-2015
Sampler	: AY & PC	Issue Date	: 13-MAR-2015
Site	: BOTANY		
		No. of samples received	: 2
Quote number	: SY/1085/14	No. of samples analysed	: 2

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics

General Comments

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

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

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

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

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 Contact 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

Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)			Client sample ID	**SED13**	**SED18**	----	----	----
			Client sampling date / time	16-FEB-2015 15:00	16-FEB-2015 15:00	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**ES1505565-001**	**ES1505565-002**	**----**	**----**	**----**
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	**61.3**	**23.0**	----	----	----
EG036: Methyl Mercury								
Methyl mercury	22967-92-6	0.10	mg/kg	<0.10	<0.10	----	----	----

QUALITY CONTROL REPORT

Work Order	: **ES1505565**	Page	: 1 of 4
Client	: **WSP ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 45970 ORICA MERCURY INDEPENDANT REVIEW	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BOTANY		
C-O-C number	: ----	Date Samples Received	: 09-MAR-2015
Sampler	: AY & PC	Issue Date	: 13-MAR-2015
Order number	: 45970		
		No. of samples received	: 2
Quote number	: SY/1085/14	No. of samples analysed	: 2

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

This Quality Control Report contains the following information:

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

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics

General Comments

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

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

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

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

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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG036: Methyl Mercury (QC Lot: 3852115)									
EM1502274-001	Anonymous	EG036: Methyl mercury	22967-92-6	0.10	mg/kg	<0.10	<0.10	0.0	No Limit

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

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG036: Methyl Mercury (QCLot: 3852115)								
EG036: Methyl mercury	22967-92-6	0.1	mg/kg	<0.10	5.0 mg/kg	94.8	70	130

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**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG036: Methyl Mercury (QCLot: 3852115)							
EM1502274-001	Anonymous	EG036: Methyl mercury	22967-92-6	5.0 mg/kg	103	70	130

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

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

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EG036: Methyl Mercury (QCLot: 3852115)										
EM1502274-001	Anonymous	EG036: Methyl mercury	22967-92-6	5.0 mg/kg	103	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **ES1505565**	Page	: 1 of 5
Client	: WSP ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR COLIN MCKAY	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: colin.mckay@wspgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 45970 ORICA MERCURY INDEPENDANT REVIEW	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BOTANY		
C-O-C number	: ----	Date Samples Received	: 09-MAR-2015
Sampler	: AY & PC	Issue Date	: 13-MAR-2015
Order number	: 45970		
		No. of samples received	: 2
Quote number	: SY/1085/14	No. of samples analysed	: 2

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

This Interpretive Quality Control Report contains the following information:

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

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and 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								
Soil Glass Jar - Unpreserved (EA055-103)								
SED13,	SED18	**16-FEB-2015**	**----**	----	----	**10-MAR-2015**	02-MAR-2015	×
EG036: Methyl Mercury								
Soil Glass Jar - Unpreserved (EG036)								
SED13,	SED18	**16-FEB-2015**	**----**	----	----	**10-MAR-2015**	28-MAR-2015	✓

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)							
Methyl Mercury in Soil by IC/ICPMS	EG036	1	3	**33.3**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Methyl Mercury in Soil by IC/ICPMS	EG036	1	3	**33.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Methyl Mercury in Soil by IC/ICPMS	EG036	1	3	**33.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Methyl Mercury in Soil by IC/ICPMS	EG036	1	3	**33.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	In-house. A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Methyl Mercury in Soil by IC/ICPMS	EG036	SOIL	In-house

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW 846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

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

Regular Sample Surrogates

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

Outliers : Analysis Holding Time Compliance

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

Matrix: **SOIL**

Method	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA055: Moisture Content						
Soil Glass Jar - Unpreserved						
SED13, SED18	----	----	----	10-MAR-2015	02-MAR-2015	**8**

Outliers : Frequency of Quality Control Samples

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

- **No Quality Control Sample Frequency Outliers exist.**

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client:	NSW EPA	**Client Project Name and Number:**	45970 - Orica Botany Mercury Independent Review
Project Mgr:	Colin McKay	**PO No.:**	
Sampler:	AY/PC	**Envirolab Services Quote No. :**	
Address:	Botany	**Date results required:**	
Email:	colin.mckay@wspgroup.com	**Or choose:** standard / 1 day / 2 day / 3 day	
Phone:	0448 977 926 **Fax:**	*Note: Inform lab in advance if urgent turnaround is required - surcharge applies*	

Envirolab Services
12 Ashley St, Chatswood, NSW, 2067

Phone: 02 9910 6200
Fax: 02 9910 6201
E-mail: ahie@envirolabservices.com.au

Contact: Aileen Hie

Sample Information				Tests Required														Comments
Envirolab Sample ID	Client Sample ID	Oate sampled	Type of sample	Mercury														Provide as much information about the sample as you can
1	Trip1	11/12/2015		X														
2	Trip2	11/12/2015		X														
3	Trip3	12/02/2015		X														
4	Trip4	13/02/2015		X														

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

ENVIROLAB

Job No: 123535
Date Received: 13/2/15
Time Received: 13:15
Received by: JYH
Temp: ~~Cool~~/Ambient
Cooling: Ice/Icepack
Security: ~~Intact/Broken/None~~

Relinquished by (company):		**Received by (company):**	ELS
Print Name:	Colin McKay	**Print Name:**	JYH
Oate & Time:	12/02/2015	**Date & Time:**	13/2/15 13:15
Signature:		**Signature:**	

Samples Received: Cool or Ambient (circle one)
Temperature Recieved at: 8.0. **(if applicable)**
Transported by: Hand delivered / courier
Page No:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client:

WSP Environmental Pty Ltd
Level 1, 41 McLaren St
North Sydney NSW 2060

ph: 8925 6700
Fax: 8925 6799

Attention: Colin McKay

Sample log in details:

Your reference:	**45970, Orica Botany Mercury Independent Rev.**
Envirolab Reference:	**123535**
Date received:	13/2/2015
Date results expected to be reported:	**20/02/15**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	4 Soils
Turnaround time requested:	Standard
Temperature on receipt (°C)	8.0
Cooling Method:	Ice Pack
Sampling Date Provided:	YES

Comments:

If there is sufficient sample after testing, samples will be held for the following time frames from date of receipt of samples:
Water samples - 1 month
Soil and other solid samples - 2 months
Samples collected in canisters - 1 week. Canisters will then be cleaned.
All other samples are not retained after analysis
If you require samples to be retained for longer periods then retention fees will apply as per our pricelist.

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 123535

Client:
WSP Environmental Pty Ltd
Level 1, 41 McLaren St
North Sydney
NSW 2060

Attention: Colin McKay

Sample log in details:

Your Reference:	**45970, Orica Botany Mercury Independent Rev.**
No. of samples:	4 Soils
Date samples received / completed instructions received	13/2/2015 / 13/2/2015

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	20/02/15 / 18/02/15
Date of Preliminary Report:	Not Issued

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

Acid Extractable metals in soil					
Our Reference:	UNITS	123535-1	123535-2	123535-3	123535-4
Your Reference	----------	Trip 1	Trip 2	Trip 3	Trip 4
Date Sampled	----------	11/02/2015	11/02/2015	12/02/2015	13/02/2015
Type of sample		Soil	Soil	Soil	Soil
Date digested	-	16/02/2015	16/02/2015	16/02/2015	16/02/2015
Date analysed	-	16/02/2015	16/02/2015	16/02/2015	16/02/2015
Mercury	mg/kg	<0.1	<0.1	<0.1	0.1

Moisture					
Our Reference:	UNITS	123535-1	123535-2	123535-3	123535-4
Your Reference	----------	Trip 1	Trip 2	Trip 3	Trip 4
Date Sampled	----------	11/02/2015	11/02/2015	12/02/2015	13/02/2015
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	16/02/2015	16/02/2015	16/02/2015	16/02/2015
Date analysed	-	17/02/2015	17/02/2015	17/02/2015	17/02/2015
Moisture	%	1.8	3.4	2.8	4.6

Method ID	Methodology Summary
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			16/02/2015	123535-1	16/02/2015 || 16/02/2015	LCS-2	16/02/2015
Date analysed	-			16/02/2015	123535-1	16/02/2015 || 16/02/2015	LCS-2	16/02/2015
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	123535-1	<0.1 || <0.1	LCS-2	113%

Report Comments:

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client:	NSW EPA	**Client Project Name and Number:**	4S970 - Orica Botany Mercury Independent Review
Project Mgr:	Colin McKay	**PO No.:**	
Sampler:	AY/PC	**Envirolab Services Quote No. :**	
Address:	Botany	**Date results required:**	
Email:	colin.mckay@wspgroup.com ; philippa.childs@wspgro	**Dr choose:** standard / 1 day / 2 day / 3 day	
Phone:	0448 977 926 **Fax:**	*Note: Inform lab in advance if urgent turnaround is required - surcharge applies*	

Envirolab Services
12 Ashley St, Chatswood, NSW, 2067

Phone: 02 9910 6200
Fax: 02 9910 6201
E-mail: ahie@envirolabservices.com.au

Contact: Aileen Hie

Sample Information				Tests Required														Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Mercury														Provide as much information about the sample as you can
	Trip5	13/02/2015		X														

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 123620
Date Received: 16/2/15
Time Received: 14:50
Received by: JYH
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished by (company):		**Received by (company):**	ELS
Print Name:	Philippa Childs	**Print Name:**	JYH
Date & Time:	16/02/2015	**Date & Time:**	16/2/15 14:50.
Signature:		**Signature:**	

Samples Received: Cool or Ambient (circle one)
Temperature Recieved at: 13.9 **(If applicable)**
Transported by: Hand delivered / courier
Page No:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECIEPT ADVICE

Client Details	
Client	WSP Environmental Pty Ltd
Attention	Colin McKay

Sample Login Details	
Your Reference	45970-Orica Botany Mercury Independent Review
Envirolab Reference	123620
Date Sample Received	16/02/2015
Date Instructions Received	16/02/2015
Date Results Expected to be Reported	23/02/2015

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	1 Soil
Turnaround Time Requested	Standard
Temperature on receipt (°C)	13.9
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	Phone: 02 9910 6200
Fax: 02 9910 6201	Fax: 02 9910 6201
Email: ahie@envirolabservices.com.au	Email: jhurst@envirolabservices.com.au

Sample and Testing Details on following page

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

Sample Id	*Acid Extractable metals in soil*
Trip 5	✓

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 123620

Client:
WSP Environmental Pty Ltd
Level 1, 41 McLaren St
North Sydney
NSW 2060

Attention: Colin McKay

Sample log in details:

Your Reference:	**45970-Orica Botany Mercury Independent Review**
No. of samples:	1 Soil
Date samples received / completed instructions received	16/02/2015 / 16/02/2015

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	23/02/15 / 19/02/15
Date of Preliminary Report:	Not Issued

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

Acid Extractable metals in soil		
Our Reference:	UNITS	123620-1
Your Reference	----------	Trip 5
Date Sampled	----------	13/02/2015
Type of sample		Soil
Date digested	-	17/02/2015
Date analysed	-	17/02/2015
Mercury	mg/kg	0.4

Moisture		
Our Reference:	UNITS	123620-1
Your Reference	----------	Trip 5
Date Sampled	----------	13/02/2015
Type of sample		Soil
Date prepared	-	17/02/2015
Date analysed	-	18/02/2015
Moisture	%	11

Method ID	Methodology Summary
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			17/02/2015	[NT]	[NT]	LCS-10	17/02/2015
Date analysed	-			17/02/2015	[NT]	[NT]	LCS-10	17/02/2015
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-10	93%

Report Comments:

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client:	NSW EPA	**Client Project Name and Number:**	45970 - Orica Botany Mercury Independent Review
Project Mgr:	Colin McKay	**PO No.:**	
Sampler:	AY/PC	**Envirolab Services Quote No. :**	
Address:	Botany	**Date results required:**	
Email:	colin.mckay@wspgroup.com ; philippa.childs@wspgro	**Or choose:** standard / 1 day / 2 day / 3 day	
Phone:	0448 977 926 **Fax:**	*Note: Inform lab in advance if urgent turnaround is required - surcharge applies*	

Envirolab Services
12 Ashley St, Chatswood, NSW, 2067

Phone: 02 9910 6200
Fax: 02 9910 6201
E-mail: ahie@envirolabservices.com.au

Contact: Aileen Hie

Sample information				Tests Required														Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Mercury														Provide as much information about the sample as you can
1	Trip6	17/02/2015		X														
2	Sed Trap 1 SL			X														

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 123719
Date Received: 18/2
Time Received: 8:00
Received by: SL
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished by (company):		**Received by (company):**	ELS
Print Name:	Philippa Childs	**Print Name:**	Sophie
Date & Time:	17/02/2015	**Date & Time:**	18/02 8:00
Signature:		**Signature:**	

Samples Received: Cool or Ambient (circle one)
Temperature Recieved at: (if applicable)
Transported by: Hand delivered / courier

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECIEPT ADVICE

Client Details	
Client	WSP Environmental Pty Ltd
Attention	Colin McKay

Sample Login Details	
Your Reference	45970-Orica Botany Mercury Independent Review
Envirolab Reference	123719
Date Sample Received	18/02/2015
Date Instructions Received	18/02/2015
Date Results Expected to be Reported	25/02/2015

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	2 Soils
Turnaround Time Requested	Standard
Temperature on receipt (°C)	15.8
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	Phone: 02 9910 6200
Fax: 02 9910 6201	Fax: 02 9910 6201
Email: ahie@envirolabservices.com.au	Email: jhurst@envirolabservices.com.au

Sample and Testing Details on following page

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

Sample Id	*Acid Extractable metals in soil*
Trip 6	✓
Sed Trip 1	✓

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 123719

Client:

WSP Environmental Pty Ltd
Level 1, 41 McLaren St
North Sydney
NSW 2060

Attention: Colin McKay

Sample log in details:

Your Reference:	**45970-Orica Botany Mercury Independent Review**
No. of samples:	2 Soils
Date samples received / completed instructions received	18/02/2015 / 18/02/2015

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	25/02/15 / 23/02/15
Date of Preliminary Report:	Not Issued

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

Acid Extractable metals in soil			
Our Reference:	UNITS	123719-1	123719-2
Your Reference	----------	Trip 6	Sed Trip 1
Date Sampled	----------	17/02/2015	17/02/2015
Type of sample		Soil	Soil
Date digested	-	19/02/2015	19/02/2015
Date analysed	-	19/02/2015	19/02/2015
Mercury	mg/kg	0.1	0.2

Moisture			
Our Reference:	UNITS	123719-1	123719-2
Your Reference	----------	Trip 6	Sed Trip 1
Date Sampled	----------	17/02/2015	17/02/2015
Type of sample		Soil	Soil
Date prepared	-	19/02/2015	19/02/2015
Date analysed	-	20/02/2015	20/02/2015
Moisture	%	6.3	59

Method ID	Methodology Summary
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date digested	-			19/02/2015	123719-1	19/02/2015 || 19/02/2015	LCS-10	19/02/2015
Date analysed	-			19/02/2015	123719-1	19/02/2015 || 19/02/2015	LCS-10	19/02/2015
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	123719-1	0.1 || 0.2 || RPD: 67	LCS-10	91%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	123719-2	19/02/2015
Date analysed	-	[NT]	[NT]	123719-2	19/02/2015
Mercury	mg/kg	[NT]	[NT]	123719-2	84%

Report Comments:

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client:	NSW EPA	**Client Project Name and Number:**	45970 - Orica Botany Mercury Independent Review
Project Mgr:	Colin McKay	**PO No.:**	
Sampler:	AY/PC	**Envirolab Services Quote No. :**	
Address:	Botany	**Date results required:**	
Email:	colin.mckay@wspgroup.com ; philippa.childs@wspgro	**Or choose:** standard / 1 day / 2 day / 3 day	
Phone:	0448 977 926 **Fax:**	*Note: Inform lab in advance if urgent turnaround is required - surcharge applies*	

Envirolab Services
12 Ashley St, Chatswood, NSW, 2067

Phone: 02 9910 6200
Fax: 02 9910 6201
E-mail: ahie@envirolabservices.com.au

Contact: Aileen Hie

Sample Information				Tests Required														Comments
Envirolab Sample IO	Client Sample ID	Date sampled	Type of sample	Mercury														Provide as much information about the sample as you can
1	Trip8	19/02/2015		X														

Envirolab Services
~~12 Ashley St~~
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 12395

Date Received: 20/2/15
Time Received: 18:20
Received by: PT
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished by (company):		**Received by (company):**	
Print Name:	~~Philippa Childs~~	**Print Name:**	PT
Date & Time:	19/02/2015	**Date & Time:**	20/2/15 18:20
Signature:		**Signature:**	PT

Samples Received: Cool or Ambient (circle one)
Temperature Recieved at: (if applicable)
Transported by: Hand delivered / courier
Page No:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client:

WSP Environmental Pty Ltd
Level 1, 41 McLaren St
North Sydney NSW 2060

ph: 8925 6700
Fax: 8925 6799

Attention: Colin McKay

Sample log in details:

Your reference:	**45970 - Orica Botany Mercury Independent Rev**
Envirolab Reference:	**123951**
Date received:	20/02/2015
Date results expected to be reported:	**27/02/15**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	1 soil
Turnaround time requested:	Standard
Temperature on receipt (°C)	2
Cooling Method:	Ice
Sampling Date Provided:	YES

Comments:

If there is sufficient sample after testing, samples will be held for the following time frames from date of receipt of samples:
Water samples - 1 month
Soil and other solid samples - 2 months
Samples collected in canisters - 1 week. Canisters will then be cleaned.
All other samples are not retained after analysis
If you require samples to be retained for longer periods then retention fees will apply as per our pricelist.

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 123951

Client:

WSP Environmental Pty Ltd
Level 1, 41 McLaren St
North Sydney
NSW 2060

Attention: Colin McKay

Sample log in details:

Your Reference:	**45970 - Orica Botany Mercury Independent Rev**
No. of samples:	1 soil
Date samples received / completed instructions received	20/02/2015 / 20/02/2015

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	27/02/15 / 26/02/15
Date of Preliminary Report:	Not Issued

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

Acid Extractable metals in soil		
Our Reference:	UNITS	123951-1
Your Reference	----------	Trip 8
Date Sampled	----------	19/02/2015
Type of sample		Soil
Date digested	-	23/02/2015
Date analysed	-	23/02/2015
Mercury	mg/kg	0.2

Moisture		
Our Reference:	UNITS	123951-1
Your Reference	----------	Trip 8
Date Sampled	----------	19/02/2015
Type of sample		Soil
Date prepared	-	23/02/2015
Date analysed	-	24/02/2015
Moisture	%	4.0

Method ID	Methodology Summary
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			23/02/2015	[NT]	[NT]	LCS-6	23/02/2015
Date analysed	-			23/02/2015	[NT]	[NT]	LCS-6	23/02/2015
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-6	103%

Report Comments:

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

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Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

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Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

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CHAIN OF CUSTODY - Client

Envirolab Ref: 123951A
Due: 6/3/15
Std T/A.

ENVIROLAB SERVICES

Client:	NSW EPA
Project Mgr:	Colin McKay
Sampler:	AY/PC
Address:	Botany
Email:	colin.mckay@wspgroup.com ; philippa.childs@wspgro
Phone:	0448 977 926 Fax:

Client Project Name and Number:
45970 - Orica Botany Mercury Independent Review
PO No.:
Envirolab Services Quote No. :
Date results required:
Or choose: standard / 1 day / 2 day / 3 day
Note: Inform lab in advance if urgent turnaround is required - surcharge applies

Envirolab Services
12 Ashley St, Chatswood, NSW, 2067

Phone: 02 9910 6200
Fax: 02 9910 6201
E-mail: ahie@envirolabservices.com.au

Contact: Aileen Hie

Sample information				Tests Required															Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Mercury	Lead	Chromium	PAHs	PCBs											Provide as much information about the sample as you can
	Trip7	24/02/2015		X															
	Trip8	24/02/2015		X	X	X	X	X											
	Trip9	24/02/2015		X															Already at lab (See ALS Job 123951)
	Trip10	26/02/2015		X															
	Trip11	26/02/2015		X															
	Trip12	26/02/2015		X															
	Trip13	26/02/2015		X															
	Trip14	27/02/2015		X															

Relinquished by (company):	WSP
Print Name:	Colin McKay
Date & Time:	27/02/2015
Signature:	

Received by (company):	ELS
Print Name:	Aileen
Date & Time:	27/2/15
Signature:	AHie

Samples Received: Cool or Ambient (circle one)
Temperature Recieved at: (if applicable)
Transported by: Hand delivered / courier
Page No:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 123951-A

Client:
WSP Environmental Pty Ltd
Level 1, 41 McLaren St
North Sydney
NSW 2060

Attention: Colin McKay

Sample log in details:

Your Reference:	**45970 - Orica Botany Mercury Independent Rev**
No. of samples:	Additional Testing on 1 soil
Date samples received / completed instructions received	20/02/2015 / 27/02/15

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	6/03/15 / 4/03/15
Date of Preliminary Report:	Not Issued

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

PAHs in Soil		
Our Reference:	UNITS	123951-A-1
Your Reference	----------	Trip 8
Date Sampled	----------	19/02/2015
Type of sample		Soil
Date extracted	-	02/03/2015
Date analysed	-	02/03/2015
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	0.4
Anthracene	mg/kg	0.1
Fluoranthene	mg/kg	1
Pyrene	mg/kg	1.0
Benzo(a)anthracene	mg/kg	0.5
Chrysene	mg/kg	0.5
Benzo(b,j+k)fluoranthene	mg/kg	0.9
Benzo(a)pyrene	mg/kg	0.55
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	0.4
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.7
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.8
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.8
Total Positive PAHs	mg/kg	5.9
Surrogate p-Terphenyl-d14	%	92

PCBs in Soil		
Our Reference:	UNITS	123951-A-1
Your Reference	----------	Trip 8
Date Sampled	----------	19/02/2015
Type of sample		Soil
Date extracted	-	02/03/2015
Date analysed	-	03/03/2015
Arochlor 1016	mg/kg	<0.1
Arochlor 1221	mg/kg	<0.1
Arochlor 1232	mg/kg	<0.1
Arochlor 1242	mg/kg	<0.1
Arochlor 1248	mg/kg	<0.1
Arochlor 1254	mg/kg	<0.1
Arochlor 1260	mg/kg	<0.1
Surrogate TCLMX	%	92

Acid Extractable metals in soil		
Our Reference:	UNITS	123951-A-1
Your Reference	----------	Trip 8
Date Sampled	----------	19/02/2015
Type of sample		Soil
Date digested	-	02/03/2015
Date analysed	-	02/03/2015
Chromium	mg/kg	5
Lead	mg/kg	74

Method ID	Methodology Summary
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			02/03/2015	[NT]	[NT]	LCS-2	02/03/2015
Date analysed	-			02/03/2015	[NT]	[NT]	LCS-2	02/03/2015
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	91%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	96%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	92%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	92%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	108%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	88%
Benzo(b,j+k) fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	[NT]	[NT]	LCS-2	109%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	91	[NT]	[NT]	LCS-2	93%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			02/03/2015	[NT]	[NT]	LCS-2	02/03/2015
Date analysed	-			03/03/2015	[NT]	[NT]	LCS-2	03/03/2015
Arochlor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	LCS-2	113%
Arochlor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	77	[NT]	[NT]	LCS-2	94%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			02/03/2015	[NT]	[NT]	LCS-5	02/03/2015
Date analysed	-			02/03/2015	[NT]	[NT]	LCS-5	02/03/2015
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-5	101%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-5	96%

Report Comments:

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

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Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

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Spikes for Physical and Aggregate Tests are not applicable.
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Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
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CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client:	NSW EPA	**Client Project Name and Number:** 45970 - Drica Botany Mercury Independent Review	**Envirolab Services** 12 Ashley St, Chatswood, NSW, 2067
Project Mgr:	Colin McKay	**PO No.:**	Phone: 02 9910 6200
Sampler:	AY/PC	**Envirolab Services Quote No.:**	Fax: 02 9910 6201
Address:	Botany	**Date results required:**	E-mail: ahie@envirolabservices.com.au
Email:	colin.mckay@wspgroup.com ; philippa.childs@wspgro	**Dr choose:** standard / 1 day / 2 day / 3 day *Note: Inform lab in advance if urgent turnaround is required - surcharge applies*	Contact: Aileen Hie
Phone:	0448 977 926 **Fax:**		

Sample information				Tests Required														Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Mercury	Lead	Chromium	PAHs	PCBs										Provide as much information about the sample as you can
1	Trip7	24/02/2015		X														
7	Trip8	24/02/2015		X	X	X	X	X										Already at lab (See ALS Job 123951)
2	Trip9	24/02/2015		X														
3	Trip10	26/02/2015		X														
4	Trip11	26/02/2015		X														
5	Trip12	26/02/2015		X														
6	Trip13	26/02/2015		X														
7	Trip14	27/02/2015		X														

ENVIROLAB — Envirolab Services, 12 Ashley St, Chatswood NSW 2067 - Ph: (02) 9910 6200

Job No: 124539

Date Received: 27/02/15

Time Received: 16:00

Received by: D F

Temp: Cool/Ambient

Cooling: Ice/Icepack

Security: Intact/Broken/None

Relinquished by (company):	WSP	**Received by (company):**	ELS
Print Name:	Colin McKay	**Print Name:**	Daniel Farol
Date & Time:	27/02/2015	**Date & Time:**	27/02/15 16:00
Signature:		**Signature:**	

Samples Received: Cool or Ambient (circle one)

Temperature Recieved at: (if applicable)

Transported by: Hand delivered / courier

Page No:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client:

WSP Environmental Pty Ltd
Level 1, 41 McLaren St
North Sydney NSW 2060

ph: 8925 6700
Fax: 8925 6799

Attention: Colin McKay

Sample log in details:

Your reference:	**45970 - Orica Botany Mercury Independent Rev**
Envirolab Reference:	**124339**
Date received:	27/02/15
Date results expected to be reported:	**6/03/15**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	7 soils
Turnaround time requested:	Standard
Temperature on receipt (°C)	15.6
Cooling Method:	Ice
Sampling Date Provided:	YES

Comments:

If there is sufficient sample after testing, samples will be held for the following time frames from date of receipt of samples:
Water samples - 1 month
Soil and other solid samples - 2 months
Samples collected in canisters - 1 week. Canisters will then be cleaned.
All other samples are not retained after analysis
If you require samples to be retained for longer periods then retention fees will apply as per our pricelist.

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

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CERTIFICATE OF ANALYSIS 124339

Client:
WSP Environmental Pty Ltd
Level 1, 41 McLaren St
North Sydney
NSW 2060

Attention: Colin McKay

Sample log in details:

Your Reference:	**45970 - Orica Botany Mercury Independent Rev**
No. of samples:	7 soils
Date samples received / completed instructions received	27/02/15 / 27/02/15

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	6/03/15 / 4/03/15
Date of Preliminary Report:	Not Issued

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

Acid Extractable metals in soil						
Our Reference:	UNITS	124339-1	124339-2	124339-3	124339-4	124339-5
Your Reference	----------	Trip 7	Trip 9	Trip 10	Trip 11	Trip 12
Date Sampled	----------	24/02/2015	24/02/2015	26/02/2015	26/02/2015	26/02/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	02/03/2015	02/03/2015	02/03/2015	02/03/2015	02/03/2015
Date analysed	-	02/03/2015	02/03/2015	02/03/2015	02/03/2015	02/03/2015
Mercury	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1

Acid Extractable metals in soil			
Our Reference:	UNITS	124339-6	124339-7
Your Reference	----------	Trip 13	Trip 14
Date Sampled	----------	26/02/2015	27/02/2015
Type of sample		Soil	Soil
Date digested	-	02/03/2015	02/03/2015
Date analysed	-	02/03/2015	02/03/2015
Mercury	mg/kg	<0.1	<0.1

Moisture						
Our Reference:	UNITS	124339-1	124339-2	124339-3	124339-4	124339-5
Your Reference	----------	Trip 7	Trip 9	Trip 10	Trip 11	Trip 12
Date Sampled	----------	24/02/2015	24/02/2015	26/02/2015	26/02/2015	26/02/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	2/03/2015	2/03/2015	2/03/2015	2/03/2015	2/03/2015
Date analysed	-	3/03/2015	3/03/2015	3/03/2015	3/03/2015	3/03/2015
Moisture	%	8.3	11	10	2.5	1.8

Moisture			
Our Reference:	UNITS	124339-6	124339-7
Your Reference	----------	Trip 13	Trip 14
Date Sampled	----------	26/02/2015	27/02/2015
Type of sample		Soil	Soil
Date prepared	-	2/03/2015	2/03/2015
Date analysed	-	3/03/2015	3/03/2015
Moisture	%	2.4	4.4

Method ID	Methodology Summary
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			02/03/2015	[NT]	[NT]	LCS-1	02/03/2015
Date analysed	-			02/03/2015	[NT]	[NT]	LCS-1	02/03/2015
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-1	112%

Report Comments:

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.