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Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

ATTN: **Ms. Mei Ling Tang**

Report No.:	25936
Date of Issue:	2016-11-28
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-11-28
Page:	1 of 2

Sample Description : 3 samples as received by customer said to be sediment

Laboratory No. : 25936

Project No. : MA13057

Project Name : CEDD Maintenance Contract for Seawalls and Navigation Channels (2013-2016) Sediment Sampling and Testing Works at Lei Yu Mun (N1/144/1302)

Sampling Date : 2016-10-28

Test Requested & Methodology:

Item	Parameters	Ref. Method	Limit of Reporting
1	Cadmium (Cd)	In-house method SOP053 (ICP-AES) and SOP093 (digestion) (ICP-MS)	0.05 mg/kg
2	Chromium (Cr)		0.1 mg/kg
3	Copper (Cu)		0.2 mg/kg
4	Mercury (Hg)		0.05 mg/kg
5	Nickel (Ni)		0.2 mg/kg
6	Lead (Pb)		0.1 mg/kg
7	Silver (Ag)		0.1 mg/kg
8	Zinc (Zn)		0.2 mg/kg
9	Arsenic (As)		0.1 mg/kg

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

GLADYS CHEUNG
Chief Chemist

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TEST REPORT

Report No.:	25936
Date of Issue:	2016-11-28
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-11-28
Page:	2 of 2

Results:

Sample ID	DH1 (0.0-0.9m)	DH2 (0.0-0.9m)	DH3 (0.0-0.9m)
Sample Number	25936-1	25936-2	25936-3
Cadmium (Cd) (mg/kg)	<0.05	<0.05	<0.05
Chromium (Cr) (mg/kg)	2.4	3.2	4.9
Copper (Cu) (mg/kg)	8.0	10.4	9.4
Mercury (Hg) (mg/kg)	<0.05	<0.05	<0.05
Nickel (Ni) (mg/kg)	1.8	2.2	3.2
Lead (Pb) (mg/kg)	13	12	19
Silver (Ag) (mg/kg)	<0.1	<0.1	0.12
Zinc (Zn) (mg/kg)	23	28	48
Arsenic (As) (mg/kg)	2.7	3.3	4.2

Remarks: 1) < = less than

2) Results reported as dry weight basis

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

ATTN: **Ms. Mei Ling Tang**

Report No.:	25936A-V1
Date of Issue:	2016-12-08
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-11-28
Page:	1 of 2

Sample Description : 3 samples as received by customer said to be sediment
Laboratory No. : 25936A
Project No. : MA13057
Project Name : CEDD Maintenance Contract for Seawalls and Navigation Channels (2013-2016) Sediment Sampling and Testing Works at Lei Yu Mun (N1/144/1302)
Sampling Date : 2016-10-28

Test Requested & Methodology:

Item	Parameters	Ref. Method	Limit of Reporting
1	Acenaphtene	In-house method SOP090 (GC/MSD) and SOP091 (GC/MSD)	10 µg/kg
2	Acenaphtylene		10 µg/kg
3	Anthracene		10 µg/kg
4	Fluorene		10 µg/kg
5	Naphthalene		10 µg/kg
6	Phenanthrene		10 µg/kg
7	Low Molecular Weight PAHs	By calculation (Sum of item 1 to 6)	60 µg/kg

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

Report No.:	25936A-V1
Date of Issue:	2016-12-08
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-11-28
Page:	2 of 2

Results:

Sample ID	DH1 (0.0-0.9m)	DH2 (0.0-0.9m)	DH3 (0.0-0.9m)
Sample Number	25936-1	25936-2	25936-3
Acenaphtene (µg/kg)	<10	<10	<10
Acenaphtylene (µg/kg)	<10	<10	<10
Anthracene (µg/kg)	15	<10	<10
Fluorene (µg/kg)	<10	<10	<10
Naphthalene (µg/kg)	<10	<10	<10
Phenanthrene (µg/kg)	40	<10	<10
Low Molecular Weight PAHs (µg/kg)	71	<60	<60

Remarks: 1) < = less than
2) Results reported as dry weight basis
3) This report supersedes the one dated 2016/11/28 with certificate number 25936A

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

ATTN: **Ms. Mei Ling Tang**

Report No.:	25936B-V1
Date of Issue:	2016-12-08
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-11-28
Page:	1 of 2

Sample Description : 3 samples as received by customer said to be sediment
Laboratory No. : 25936B
Project No. : MA13057
Project Name : CEDD Maintenance Contract for Seawalls and Navigation Channels (2013-2016) Sediment Sampling and Testing Works at Lei Yu Mun (N1/144/1302)
Sampling Date : 2016-10-28

Test Requested & Methodology:

Item	Parameters	Ref. Method	Limit of Reporting
1	Benzo(a)anthracene	In-house method SOP090 (GC/MSD) and SOP091 (GC/MSD)	10 µg/kg
2	Benzo(a)pyrene		10 µg/kg
3	Benzo(b)fluoranthene		10 µg/kg
4	Benzo(k)fluoranthene		10 µg/kg
5	Benzo(ghi)perylene		10 µg/kg
6	Chrysene		10 µg/kg
7	Dibenz(ah)anthracene		10 µg/kg
8	Fluoranthene		10 µg/kg
9	Indeno(1,2,3-cd)pyrene		10 µg/kg
10	Pyrene		10 µg/kg
11	High Molecular Weight PAHs	By calculation (Sum of item 1 to 10)	100 µg/kg

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

Report No.:	25936B-V1
Date of Issue:	2016-12-08
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-11-28
Page:	2 of 2

Results:

Sample ID	DH1 (0.0-0.9m)	DH2 (0.0-0.9m)	DH3 (0.0-0.9m)
Sample Number	25936-1	25936-2	25936-3
Benzo(a)anthracene (µg/kg)	32	<10	<10
Benzo(a)pyrene (µg/kg)	38	<10	<10
Benzo(b)fluoranthene (µg/kg)	22	<10	<10
Benzo(k)fluoranthene (µg/kg)	16	<10	<10
Benzo(ghi)perylene (µg/kg)	24	<10	<10
Chrysene (µg/kg)	29	<10	<10
Dibenz(ah)anthracene (µg/kg)	<10	<10	<10
Fluoranthene (µg/kg)	51	<10	<10
Indeno(1,2,3-cd)pyrene (µg/kg)	23	<10	<10
Pyrene (µg/kg)	64	<10	<10
High Molecular Weight PAHs (µg/kg)	310	<100	<100

Remarks: 1) < = less than
2) Results reported as dry weight basis
3) This report supersedes the one dated 2016/11/28 with certificate number 25936B

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
RM 1710, Technology Park,
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ATTN: **Ms. Mei Ling Tang**

Report No.:	25936C-V1
Date of Issue:	2016-12-08
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-11-28
Page:	1 of 2

Sample Description : 3 samples as received by customer said to be sediment
Laboratory No. : 25936C
Project No. : MA13057
Project Name : CEDD Maintenance Contract for Seawalls and Navigation Channels (2013-2016) Sediment Sampling and Testing Works at Lei Yu Mun (N1/144/1302)
Sampling Date : 2016-10-28

Test Requested & Methodology:

Item	Parameters		Ref. Method	Limit of Reporting
1	2,4'-Dichlorobiphenyl	PCB8	In-house method SOP088 (GC/MSD)	2 µg/kg
2	2,2',5-Trichlorobiphenyl	PCB18		2 µg/kg
3	2,4,4'-Trichlorobiphenyl	PCB28		2 µg/kg
4	2,2', 3,5'-Tetrachlorobiphenyl	PCB44		2 µg/kg
5	2,2', 5,5'-Tetrachlorobiphenyl	PCB52		2 µg/kg
6	2,3', 4,4'-Tetrachlorobiphenyl	PCB66		2 µg/kg
7	3,3', 4,4'-Tetrachlorobiphenyl	PCB 77		2 µg/kg
8	2,2', 4,5,5'-Pentachlorobiphenyl	PCB101		2 µg/kg
9	2,3,3', 4,4'-Pentachlorobiphenyl	PCB105		2 µg/kg
10	2,3', 4,4',5-Pentachlorobiphenyl	PCB118		2 µg/kg
11	3,3', 4,4',5-Pentachlorobiphenyl	PCB126		2 µg/kg
12	2,2', 3,3',4,4'-Hexachlorobiphenyl	PCB128		2 µg/kg
13	2,2', 3,4,4',5'-Hexachlorobiphenyl	PCB138		2 µg/kg
14	2,2', 4,4',5,5'-Hexachlorobiphenyl	PCB153		2 µg/kg
15	3,3', 4,4',5,5'-Hexachlorobiphenyl	PCB169		2 µg/kg
16	2,2', 3,3',4,4',5-Heptachlorobiphenyl	PCB170		2 µg/kg
17	2,2', 3,4,4',5,5'-Heptachlorobiphenyl	PCB180		2 µg/kg
18	2,2', 3,4',5,5',6-Heptachlorobiphenyl	PCB187		2 µg/kg
19	Total PCBs		By calculation (Sum of item 1 to 18)	36 µg/kg

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
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TEST REPORT

Report No.:	25936C-V1
Date of Issue:	2016-12-08
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-11-28
Page:	2 of 2

Results:

Sample ID	DH1 (0.0-0.9m)	DH2 (0.0-0.9m)	DH3 (0.0-0.9m)
Sample Number	25936-1	25936-2	25936-3
2,4'-Dichlorobiphenyl (µg/kg)	<2	<2	<2
2,2',5-Trichlorobiphenyl, µg/kg)	<2	<2	<2
2,4,4'-Trichlorobiphenyl, µg/kg)	<2	<2	<2
2,2', 3,5'-Tetrachlorobiphenyl (µg/kg)	<2	<2	<2
2,2', 5,5'-Tetrachlorobiphenyl (µg/kg)	<2	<2	<2
2,3', 4,4'-Tetrachlorobiphenyl (µg/kg)	<2	<2	<2
3,3', 4,4'-Tetrachlorobiphenyl (µg/kg)	<2	<2	<2
2,2', 4,5,5'-Pentachlorobiphenyl (µg/kg)	<2	<2	<2
2,3,3', 4,4'-Pentachlorobiphenyl (µg/kg)	<2	<2	<2
2,3', 4,4',5-Pentachlorobiphenyl (µg/kg)	<2	<2	<2
3,3', 4,4',5-Pentachlorobiphenyl (µg/kg)	<2	<2	<2
2,2', 3,3',4,4'-Hexachlorobiphenyl (µg/kg)	<2	<2	<2
2,2', 3,4,4',5'-Hexachlorobiphenyl (µg/kg)	<2	<2	<2
2,2', 4,4',5,5'-Hexachlorobiphenyl (µg/kg)	<2	<2	<2
3,3', 4,4',5,5'-Hexachlorobiphenyl (µg/kg)	<2	<2	<2
2,2', 3,3',4,4',5-Heptachlorobiphenyl (µg/kg)	<2	<2	<2
2,2', 3,4,4',5,5'-Heptachlorobiphenyl (µg/kg)	<2	<2	<2
2,2', 3,4',5,5',6-Heptachlorobiphenyl (µg/kg)	<2	<2	<2
Total PCBs (µg/kg)	<36	<36	<36

Remarks: 1) < = less than
2) Results reported as dry weight basis
3) This report supersedes the one dated 2016/11/28 with certificate number 25936C

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
RM 1710, Technology Park,
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ATTN: **Ms. Mei Ling Tang**

Report No.:	25936D
Date of Issue:	2016-11-28
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-11-28
Page:	1 of 1

Sample Description : 3 samples as received by customer said to be sediment

Laboratory No. : 25936D

Project No. : MA13057

Project Name : CEDD Maintenance Contract for Seawalls and Navigation Channels (2013-2016) Sediment Sampling and Testing Works at Lei Yu Mun (N1/144/1302)

Sampling Date : 2016-10-28

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

GLADYS CHEUNG
Chief Chemist

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TEST REPORT

Report No.:	25936D
Date of Issue:	2016-11-28
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-11-28
Page:	2 of 3

Tests Requested & Methodology:

Item	Parameters	Methodology	Limit of reporting
1	Sediment Oxygen Demand (SOD, 20 Days)	In-house method based on APHA 19ed 5210B	10 mg/kg
2	Total Organic Carbon	In-house method SOP154 (NDIR)	0.05%
3	Total Sulphide	USEPA Method 9030B	1.00 mg/kg*
4	Redox	Instrumental, pH/Redox Meter (electrodemetric)	1 mV
5	pH		pH 2.0 – 12.0
6	Acid volatile sulphide	EPA 821/R-91-100	1.00 mg/kg*
7	Moisture	APHA 19ed 2540G	1%
8	Ammonia Nitrogen (NH_3)	In-house method SOP130 (FIA)	0.5mg NH_3-N/kg
9	Salinity	Instrumental, conductivity Meter	1 ppt
10	Size Spectrum (Percentage of sand/silt/clay)	GEOSPEC 3:2001 Test 8.1	
	Size Spectrum (<63μm)		0.1%
	Size Spectrum (63-2000μm)		0.1%
	Size Spectrum (>2000μm)		0.1%

Remark: 1) * Limit of Reporting is reported as Detection Limit

****

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TEST REPORT

Report No.:	25936D
Date of Issue:	2016-11-28
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-11-28

Results:

Sample ID	DH1 (0.0-0.9m)	DH2 (0.0-0.9m)	DH3 (0.0-0.9m)
Sample Number	25936-1	25936-2	25936-3
Sediment Oxygen Demand (SOD, 20 Days) (mg/kg)	<10	<10	<10
Total Organic Carbon (%)	<0.05	<0.05	<0.05
Total Sulphide (mg/kg)	<1	<1	<1
Redox (mV)	280	240	300
pH (pH unit)	9.0	8.8	8.8
Acid Volatile Sulphide (AVS) (mg/kg)	<1	<1	<1
Moisture (%)	20	30	23
Ammonia Nitrogen (NH_3) (NH_3-N/kg)	1.5	2.0	2.1
Salinity (ppt)	2	2	2
Size Spectrum (Percentage of sand/silt/clay) Size Spectrum (<63μm) (%)	7.6	9.4	6.3
Size Spectrum (63-2000μm) (%)	92	91	94
Size Spectrum (>2000μm) (%)	<0.1	<0.1	<0.1

Remarks: 1) < = less than
2) Results reported as dry weight basis

**********END OF REPORT**********

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Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

ATTN: **Ms. Mei Ling Tang**

Report No.:	25936E
Date of Issue:	2016-11-28
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-11-28

Sample Description : 3 samples as received by customer said to be sediment for extracting 3 Elutriate Water samples

Laboratory No. : 25936E

Project No. : MA13057

Project Name : CEDD Maintenance Contract for Seawalls and Navigation Channels (2013-2016) Sediment Sampling and Testing Works at Lei Yu Mun (N1/144/1302)

Sampling Date : 2016-10-28

Test Requested & Methodology:

Item	Parameters	Ref. Method	Limit of Reporting
1	Ammoniacal Nitrogen	In-house method SOP057 (FIA)	0.05 mg NH_3-N/L
2	Total Kjeldahl Nitrogen	In-house method SOP058 (FIA)	0.5 mg N/L
3	Nitrate Content	In-house method SOP067 (FIA)	0.05 mg NO_3^--N/L
4	Nitrite Content	In-house method SOP068 (FIA)	0.01 mg NO_2^--N/L
5	Total Phosphorus	In-house method SOP055 (FIA)	0.05 mg-P/L

Results:

Sample ID	DH1 (0.0-0.9m)	DH2 (0.0-0.9m)	DH3 (0.0-0.9m)
Sample Number	25936-1	25936-2	25936-3
Ammoniacal Nitrogen (mg NH_3-N/L)	0.24	0.28	0.33
Total Kjeldahl Nitrogen (mg N/L)	2.1	2.8	1.2
Nitrate Content (mg NO_3^--N/L)	0.21	<0.05	<0.05
Nitrite Content (mg NO_2^--N/L)	0.02	0.01	<0.01
Total Phosphorus (mg-P/L)	0.11	0.21	0.13

Remark: 1) < = less than

**********END OF REPORT**********

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

GLADYS CHEUNG
Chief Chemist

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