Desilting Works

at

Hung Shui Kiu Channel,

Tuen Mun

Project Profile

Drainage Services Department

November 2009

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1. BASIC INFORMATION

Project Tile

1.1 Desilting works at Hung Shui Kiu Channel, Tuen Mun.

Purpose and Nature of the works

1.2 The desilting works are responding to flooding complaints for the Hung Shui Kiu Channel. The desilting works are undertaken by the Drainage Services Department (DSD) and aimed at removing the silting stockpiled at the channel.

Name of Project Proponent

1.3 Drainage Services Department is the works department.

Location and Scale of the Desilting Works

1.4 An annual routine desilting works is proposed for Hung Shui Kiu Channel, Tuen Mun as illustrated in the location plan (Appendix A). The desilting works comprise the removal of about 1000m^3/year silting at the channel in the forthcoming ten years, in which part of the desilting works may be implemented in the conservation area. All the silting will be removed by backhoe and transported off site by lorry.

1.5 The desilting works are considered the most suitable and environmental friendly method to improve the flow of the channel and no other alternatives were found adequate.

Number and Types of Designated Projects to be Covered by the Project Profile

1.6 In accordance with the EIAO Schedule 2, Part I, the desilting work is a designated project because of the following items:

(a) Item C.12(a)(viii): A dredging operation exceeding 500,000m^3 or a dredging operation which is less than 500m from the nearest boundary of an existing planned conservation area.

(b) Item I.1(b)(vii): A drainage channel or river training and diversion works which discharges or discharge into an area which is less than 300m from the nearest boundary of an existing or planned conservation area.

(c) Item Q.1: All projects involve dredging works partly or wholly in an existing or gazette proposed conservation area and it is not under exceptional cases in Sections Q1(a) to (j)..

Name and Telephone Number of Contact Person

1.7 The contact person of the desilting works is Mr. M. L. CHAN, Mainland North Division of Drainage Services Department, telephone number at 2332 2471 and facsimile number at 2770 4761.

2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

Planning and Implementation

2.1 The desilting works are managed by the Drainage Services Department and carried out by the term contractor.

Works Schedule

2.2 The routine desilting works are proposed to be implemented annually, in which the programme of carrying out desilting works will be reviewed from time to time.

3. POSSIBLE IMPACT TO THE ENVIRONMENT

3.1 Based on the nature and location of the desilting works, potential environmental impacts associated with the project are identified and presented below:

Construction Impacts

Air Quality

3.2 The Contractor shall observe and comply with the Air Pollution Control Ordinance and its subsidiary regulations, particularly Air Pollution Control (Construction Dust) Regulation and Air Pollution Control (Smoke) Regulation.

3.3 The Contractor shall undertake at all times to prevent dust nuisance and smoke as a result of his activities and shall ensure that there will be adequate water supply/storage for dust suppression.

3.4 Scattered cottages and NW/NT Refuse Transfer Station are identified as the potential Air Sensitive Receivers (ASR). Possible air quality impacts during desilting works being taken place include:.

(i) Dust arising from the removal of silting, minor wind erosion of open site and stockpiling areas;

(ii) Emissions from mechanical equipment such as backhoes and trucks.

3.5 A ten-year desilting programme with an approximate 1000m^3 silting to be removed annually, which is expected lasting for 2 months each year. The desilting period would be 9 hours per day and 26 working days per month while the assumed average hauling volume of the truck is 5 m^3/hour, which is depending on the location to be desilted along the channel. All trucks would be well covered and dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation would be applied.

3.6 There are no organic materials expected in the sediments, which possibly are the soil particles eroded by water flowing from upstream of the channel. Therefore, no odour and air impacts to the ASR are anticipated.

Noise

3.7 The Contractor shall observe and comply with the Noise Control Ordinance and its subsidiary regulations.

3.8 The existing noise sensitive receivers (NSR) within 300m from the desilting works are scattered cottages. The nearest cottage is approximately 50m away from the desilting area, in which the noise impact is considered to be insignificant. At present, there is no planned noise sensitive receiver within 300m from the project boundary that may be affected by the desilting works.

3.9 Noise generated from construction activity is not restricted in the period 0700 – 1900 hours during weekdays, except Public Holidays. However, the EIAO – TM identifies a daytime general construction noise limit of 75 dB(A) $Leq_{(30\ minutes)}$ for domestic premises and 70 dB(A) $Leq_{(30\ minutes)}$ for educational institutes during normal teaching hours (65 dB(A) $Leq_{(30\ minutes)}$ during examination hours). This standard has been used as an assessment criterion in the noise assessment.

3.10 The proposed construction period of the desilting works will be carried out within the period 0700-1900 hours during normal weekdays and weekends with no construction work to be carried out within the restricted hours under the NCO.

3.11 The possible noise impacts are originated from the backhoes and transporting trucks, such that noisy construction activities will be effectively reduced by means of silent type machineries, acoustic linings or shields for the desilting works to avoid disturbance to any nearby noise sensitive receivers. The assumed hauling volume in average is $5m^3$/hour, so it is expected that only one truck transports the silting from the loading area within the working hours. The transport route of the desilted materials will not affect the public and residences and all machineries will be shut down while idling.

3.12 Before the commencement of any works, the Engineer may require the methods of working, plant equipment and sound-reducing measures to be used on the Site to be made available for trial demonstration inspection and approval to ensure that they are suitable for the project.

3.13 The Contractor shall devise, arrange methods of working and carry out the works in such a manner so as to minimize noise impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented.

3.14 Measures that are to be taken to protect adjacent NSRs, if necessary, shall include, but not be limited to, adequate noise barriers. The barriers shall be of substantial construction and designed to reduce transmission of noise. The barriers shall be surmounted with baffle boxes designed to reduce transmission of noise. The barriers shall be designed to BS 5228(1984). The locations and details of the barriers shall be submitted to the Engineer for approval before works commence adjacent to the NSRs.

Water Quality

3.15 The Contractor shall observe and comply with the Water Pollution Control Ordinance and its subsidiary regulations.

3.16 The desilting works will be divided into two phases for the sake of not interrupting the water flow and affecting the water quality in the channel during wet seasons, which may be achieved by implementing the works in phrases at the right bank and the left bank. Containment structures such as sand bags barrier or other means as approved will be provided for the active desilting works area to facilitate a dry or at least confined working area within the Hung Shui Kiu Channel. Where possible, the desilting works will be programmed to be carried out during the periods of low flow.

3.17 Besides, there is no water generated during the desilting works are taking place, thus adverse water quality impact during the construction phase is not anticipated. There is no direct impact of water quality to the existing environment expected due to the proposed works.

3.18 The Contractor shall follow the practices, and be responsible for the design, construction, operation and maintenance of all the mitigation measures as specified in the Professional Persons Environmental Consultative Committee Practice Note (Pro PECC PN) 1/94 "Construction Site Drainage" issued by the Director of Environmental Protection. The design of the mitigation measures shall be submitted by the Contractor for approval.

Wastes Management

3.19 The Contractor shall observe and comply with the Waste Disposal Ordinance and its subsidiary regulations.

3.20 The Contractor shall not permit any sewage, waste water or effluent containing sand; cement, silt or any other suspended or dissolved material to flow from the Site onto any adjoining land or allow any waste matter which is not part of the final product from waste processing plants to be deposited anywhere within the Site. The Contractor shall arrange removal of such matter from the site in a proper manner to the satisfaction of the Engineer in consultation with the Director of Environmental Protection.

3.21 The Contractor shall ensure that Construction and Demolition (C&D) materials are sorted into public fill (inert portion) and C&D waste (non-inert portion). The public fill which comprises soil, rock, concrete, brick, cement plaster/mortar, inert building debris, aggregate and asphalt shall be reused in earth filling, reclamation or site formation works. The C&D waste which comprises metal, timber, paper, glass, junk and general garbage shall be reused or recycled and, as the last resort, disposal of at landfills.

3.22 The Contractor shall record the amount of wastes generated, recycled and disposed of. Training shall be provided for workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling.

3.23 The wastes generated are mainly natural sandy silt, which has been laboratory tested and classified as L type sediment representing very least or even no contaminated constituents. The laboratory tested results are enclosed in Appendix B. Moreover, the silting will further be tested in accordance with the Toxicity Characteristic Leaching Procedure before dumping at landfill, in which the handling/treatment of sediment materials will be proceeded in accordance with the requirements stipulated in ETWB TCW No. 34/2002.

Ecology

3.24 The works aim at removing surplus silting stockpiled at the channel and no tree felling is required. Besides, there are no valuable tree species observed in the vicinity, thus no significant ecological impact are anticipated during the execution of the desilting works

3.25 This is because the desilting works are carried out in a relatively confined area that very limited water will flow inside the works area. Moreover, no waste water will be generated from the works and there is no species of conservation concerned in the proposed works area. Furthermore, all the natural section of the channel such as size, depth and shape will not be modified. It only aims to remove the silting obstructing the water flow leading to flooding, therefore, there is no adverse ecological impact anticipated and the proposed works will not affect areas of conservation value in the surrounding area.

Landscape and Visual Impact

3.26 The landscape and visual impact during and after the completion of desilting works are minimized.

Major Elements of the Surrounding Environment

The major element of countryside setting of the surrounding environment is listed below:

3.27 Countryside setting

Hung Shui Kiu (HSK) Channel is a natural stream, which bypasses the conservation area. Grass is scattered at the banks of HSK channel. To the West of the HSK channel outlet is the Northwest N.T. Refuse Transfer Station. Furthermore, no air sensitive receiver or heritage sensitive receiver is located in the surrounding environment. No tree felling is required during the course of the works being carried out. Therefore, the desilting works will not adversely affect the present condition of the conservation area.

Environmental Protection Measures to be Incorporated in the Design and any Further Environmental Implications

3.28 Good site practice and appropriate measures as stipulated in ETWB Technical Circular (Works) No.5/2005 would be implemented during the construction stage to minimize disturbance and potential environmental impact cause to the watercourse.

3.29 The natural bottom and existing flow in the river will be preserved as much as possible to avoid disturbance to the river habitats. The temporary access track on riverbed should be kept to the minimum width and length.

3.30 Stockpiling of construction materials will be properly covered and located away from the natural channel

3.31 The proposed works site inside or in the proximity of natural channel will be temporarily isolated as possible by placing sandbags or other means as approved in order to prevent adverse impacts on the water quality.

3.32 Noise nuisance will be minimized to the surrounding environment during the course of desilting works being taken place as the works will be carried out in daytime from 0900 hours to 1900 hours Monday to Saturday except public holidays.

3.33 All the silting will be transported off site by lorry and no haul road will be constructed.

3.34 Water will be sprayed to minimize the dust generation during the desilting works being taken place.

3.35 The desilting works are anticipated to be carried out once a year to ensure the channel is properly functioning, which is depending on the actual conditions of the channel and reviewed from time to time. Besides, this low frequency of desilting works will not give any significant impacts and adverse effects on the surrounding environment.

Appendix A

Site Location Plan

drawing title

Desilting Works at Hung Shui Kiu Channel

洪水橋排水道疏浚工程

drawn	O. L. WU	date	17-3-2009
checked	M. L. CHAN	date	17-3-2009
approved		date	
office	MAINLAND NORTH DIVISION		

sketch no.	scale
MNS-TM0024	NTS

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Appendix B

Laboratory Test Results for Silting Stockpiled

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: PAUL Y CONSTRUCTION CO LTD	*Laboratory*	: ALS Technichem (HK) Pty Ltd	*Page*	: 1 of 8
Contact	: MR KEN LUI	*Contact*	: Alice Wong	*Work Order*	: HK0711805
Address	: 31/F, PAUL Y CENTRE, NO 51 HUNG TO ROAD, KOWLOON HONG KONG	*Address*	: 1/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong HONG KONG	*Amendment No.*	: 1
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Telephone	: ----	*Telephone*	: +852 2610 1044		
Facsimile	: 2742 5450	*Facsimile*	: +852 2610 2021		
Project	: DC_2007_03	*Quote number*	: ----	*Date received*	: 20 Aug 2007
Order number	: TME/CM/037/07			*Date of issue*	: 5 Oct 2007
C-O-C number	: ----			*No. of samples*	- *Received* : 1
Site	: ----				- *Analysed* : 1

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	*Position*	*Authorised results for:-*
Anh Ngoc Huynh	**Senior Chemist**	**Organics**
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Paul Y Construction Co Ltd
Sediment Quality Report
Order No. : TME/CM/037/07
ALS Batch NO : HK0711805

Analyte Description			Silver	Arsenic	Cadmium	Chromium	Copper	Nickel	Lead	Zinc	Mercury	Total PCB*	Low M.Wt PAHs	High M.Wt PAHs	Tributyltin - Soluble**	Classification
Unit (In dry Wt basis)			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/Kg	ug/Kg	ug/Kg	ug TBT/L	
Reporting Limits			0.1	1	0.2	1	1	1	1	1	0.05	2	550	1700	0.005	
Lower Chemical Exceedance Level (LCEL)			1	12	1.5	80	65	40	75	200	0.5	23	550	1700	0.15	
Upper Chemical Exceedance Level (UCEL)			*2*	*42*	*4*	*160*	*110*	*40*	*110*	*270*	*1*	*180*	*3160*	*9600*	*0.15*	
10 x (LCEL)			10	120	15	800	650	400	750	2000	5	230	5500	17000	1.5	
Sample Description																
ALS Lab ID	Sample ID	Sampling Date														
HK0711805001	TME/CM/037/07(A)	15/08/2007	<0.1	2	<0.2	6	6	2	49	42	<0.05	All PCB congeners are<3 ug/kg	<550	<1700	--	L

Bold: Value that exceed LCEL
Bold Italic and Underline: Value that exceed UCEL

Total PCB*: None of the 24 PCB congeners were found in the samples.
For detail information, please refer to ALS Batch No: HK 0711805

Tributyltin - Soluble** : Insufficient interstitial water for analysis of TBT for sample #1 TME/CM/037/07(A).

Category L: Analytical results less than ≤ Lower Chemical Exceedance Level
Category M: Analytical results less than > Lower & ≤ Upper Chemical Exceedance Level
Category H: Analytical results less than > Upper Chemical Exceedance Level

Prepare by **ALS Technichem**

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYICAL CHEMISTRY & TESTING SERVICES

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Signatory	*Position*	*Authorised results for:-*
Anh Ngoc Huynh	**Senior Chemist**	**Organics**
Fung Lim Chee, Richard	**General Manager**	**Inorganics**

Paul Y Construction Co Ltd
Sediment Quality Report
Order No. : TME/CM/037/07
ALS Batch NO : HK0711806

Analyte Description			Silver	Arsenic	Cadmium	Chromium	Copper	Nickel	Lead	Zinc	Mercury	Total PCB*	Low M.Wt PAHs	High M.Wt PAHs	Tributyltin - Soluble**	Classification
Unit (In dry Wt basis)			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/Kg	ug/Kg	ug/Kg	ug TBT/L	
Reporting Limits			0.1	1	0.2	1	1	1	1	1	0.05	2	550	1700	0.005	
Lower Chemical Exceedance Level (LCEL)			**1**	**12**	**1.5**	**80**	**65**	**40**	**75**	**200**	**0.5**	**23**	**550**	**1700**	**0.15**	
Upper Chemical Exceedance Level (UCEL)			***2***	***42***	***4***	***160***	***110***	***40***	***110***	***270***	***1***	***180***	***3160***	***9600***	***0.15***	
10 x (LCEL)			**10**	**120**	**15**	**800**	**650**	**400**	**750**	**2000**	**5**	**230**	**5500**	**17000**	**1.5**	
Sample Description																
ALS Lab ID	Sample ID	Sampling Date														
HK0711806001	TME/CM/037/07(B)	15/08/2007	<0.1	<1	<0.2	3	2	<1	23	18	<0.05	All PCB congeners are<3 ug/kg	<550	<1700	--	L

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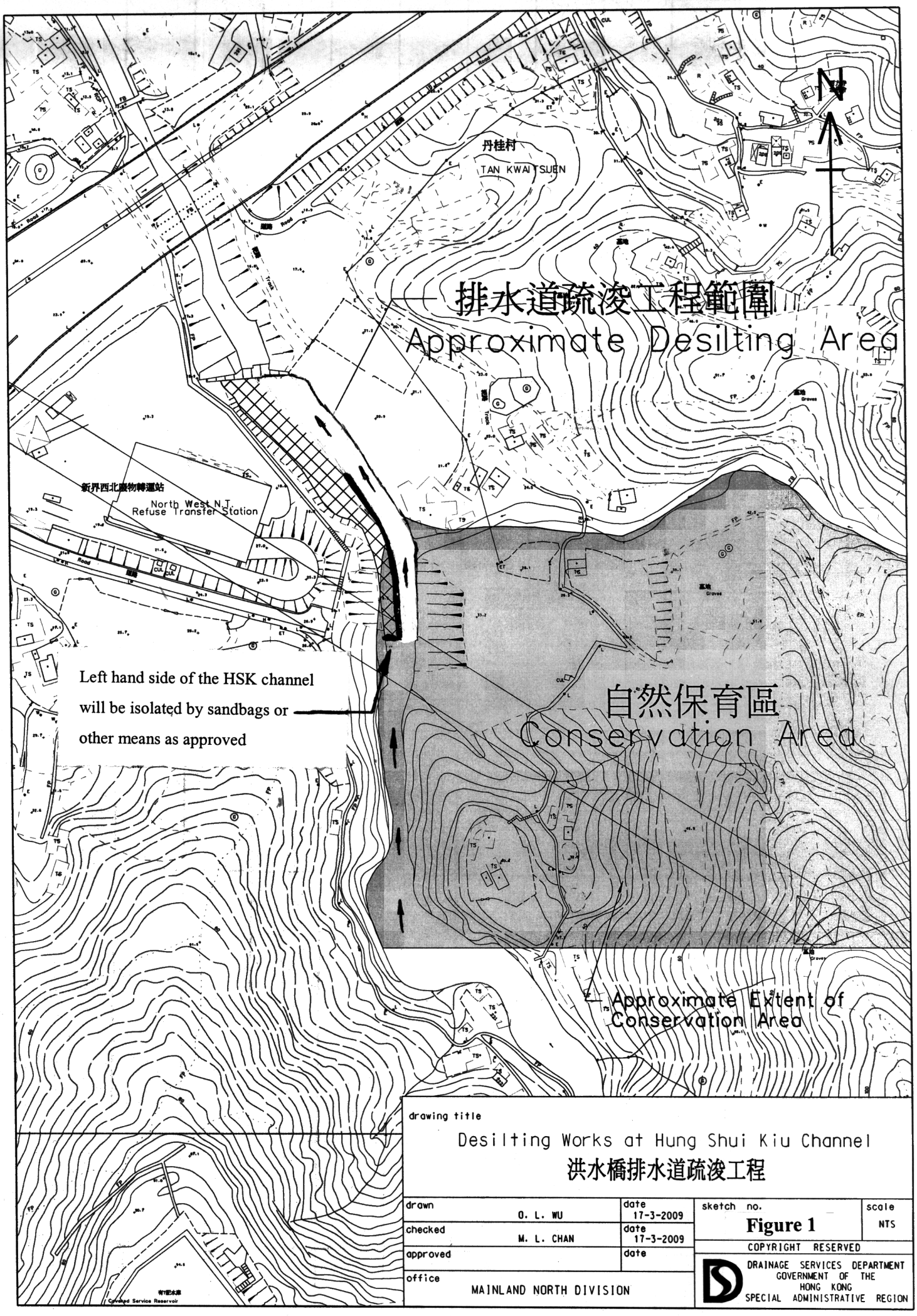
Category H: **Analytical results less than > Upper Chemical Exceedance Level**

Prepare by **ALS Technichem**

Figure 1

Left hand side of Hung Shui Kiu Channel



drawing title

Desilting Works at Hung Shui Kiu Channel

洪水橋排水道疏浚工程

drawn	O. L. WU	date 17-3-2009	sketch no. Figure 1 / scale NTS
checked	M. L. CHAN	date 17-3-2009	
approved		date	
office	MAINLAND NORTH DIVISION		

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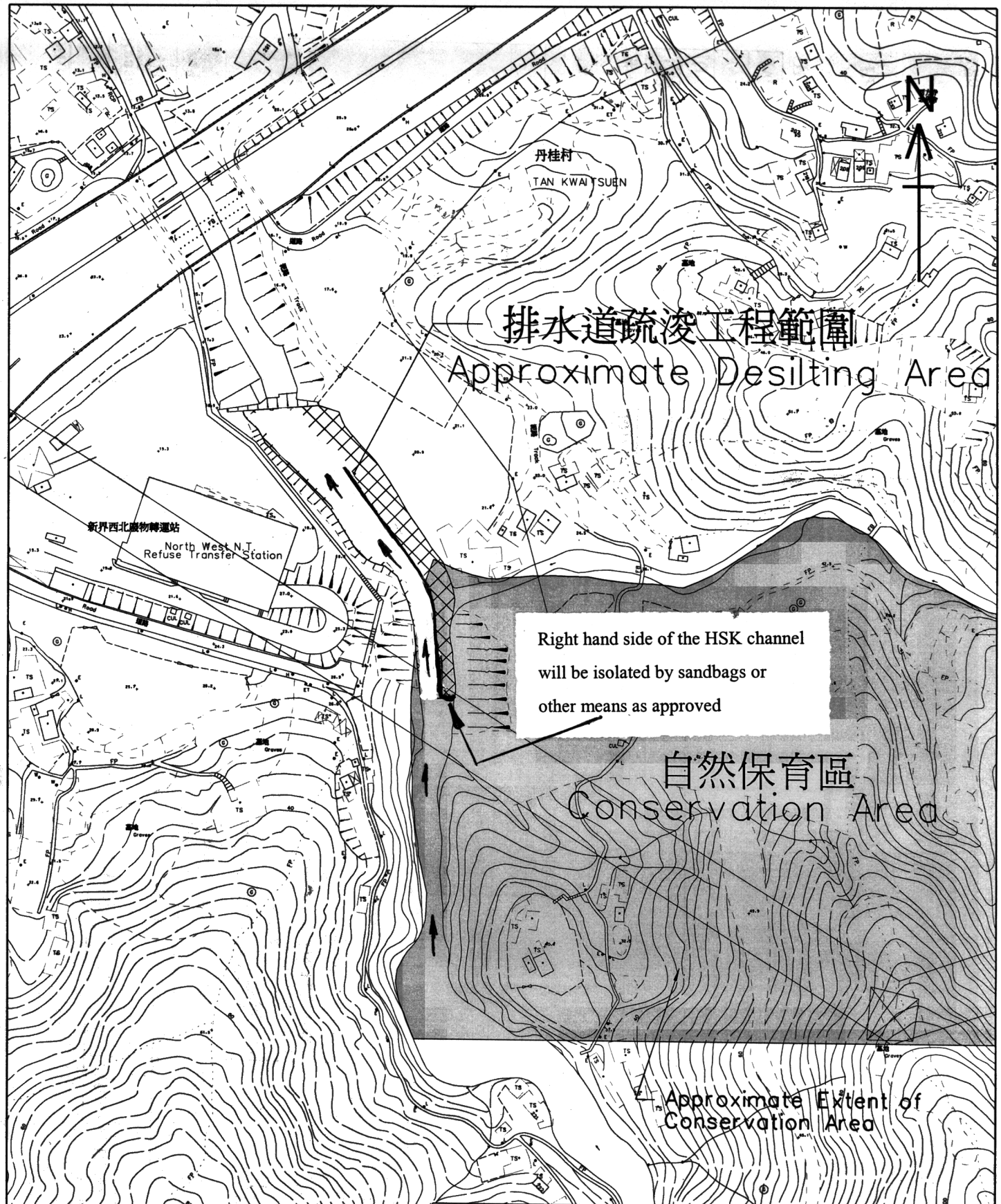
Figure 2

Right hand side of Hung Shui Kiu Channel



drawing title

Desilting Works at Hung Shui Kiu Channel

洪水橋排水道疏浚工程

drawn	O. L. WU	date 17-3-2009	sketch no. **Figure 2**
checked	M. L. CHAN	date 17-3-2009	scale NTS
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