Land Contamination Study
for the Extension of Public Golf Course
at Kau Sai Chau, Sai Kung

Remediation Action Plan

Reference	:	**R200-1.06**
Client	:	**China Harbour Engineering Company Limited**
Prepared by	:	**CH2M HILL Hong Kong Limited**
Date	:	**July 2006**

For and on behalf of CH2M HILL Hong Kong Limited

Prepared by :

Harry Lee
Consultant

Reviewed by :

David Yeung
Director

We confirm that this RAP conforms to the information and recommendations contained in the Approved EIA Report (Condition 2.4 of the Environmental Permit EP-224/2005).

Certified by :

Manuel Chua
Environmental Team Leader

Verified by :

Gary Tam
Independent Environmental Checker

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LIST OF ABBREVIATIONS

Approved EIA Report	Environmental Impact Assessment Report on the Extension of Public Golf Course at Kau Sai Chau, Sai Kung, approved by the EPD in November 2005 (EIAO Register No. AEIAR-091/2005)
Approved CAP	Contamination Assessment Plan prepared by the Consultant (CH2M's report ref.: R420-5.05 dated January 2006) and approved by the EPD in February 2006 (Ref. (36) in EP2/N8/O/47 IV)
Assignment	Land Contamination Study for the Extension of Public Golf Course at Kau Sai Chau, Sai Kung
CAP	Contamination Assessment Plan
CAR	Contamination Assessment Report
CHEC	China Harbour Engineering Company Limited
Client	China Harbour Engineering Company Limited
Consultant	CH2M HILL Hong Kong Limited (formerly traded as CH2M-IDC Hong Kong Limited)
Dutch B	Soil criteria used in the Netherlands for Contaminated Land (the Dutch List), and adopted by EPD as a General Guideline in Hong Kong. "Dutch B" denotes the level B of the contaminant in the Dutch List necessitating remediation
EIA	Environmental Impact Assessment
EIAO	Environmental Impact Assessment Ordinance (Cap. 499)
EP	Environmental Permit
EPD	Environmental Protection Department
ET	Environmental Team
Guidance Notes	Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/Dismantling Workshops, EPD (1999).
HKSAR	Hong Kong Special Administrative Region
HOKLAS	Hong Kong Laboratory Accreditation Scheme
IEC	Independent Environmental Checker
Main Contractor	China Harbour Engineering Company Limited
PCAP	Preliminary Contamination Assessment Plan (as included in Section 11.8 of the Approved EIA Report)
Project	Extension of Public Golf Course at Kau Sai Chau, Sai Kung
ProPECC Note	Practice Note for Professional Persons – Contaminated Land Assessment and Remediation, EPD (PN3/94)
RAP	Remediation Action Plan
SI	Site Investigation
S/S	Solidification/Stabilisation
Study Area	The area covered under the Project, i.e. Extension of Public Golf Course at Kau Sai Chau, Sai Kung
TCLP	Toxicity Characteristic Leaching Procedure

1. INTRODUCTION

1.1 Background Information

1.1.1 CH2M HILL Hong Kong Limited (formerly traded as CH2M-IDC Hong Kong Limited) (the Consultant) has been commissioned by China Harbour Engineering Company Limited (CHEC or the Client) to undertake the land contamination study for the Project "Extension of Public Golf Course at Kau Sai Chau, Sai Kung" (the Assignment). The concerned area of the Assignment (Study Area) is located at the eastern part of Kau Sai Chau Island, Sai Kung, immediately south and east of the existing golf course. Figure 1-1 shows the location of the Study Area.

1.1.2 The construction and operation of an 18-hole public golf course is the major component of the overall Project, which also includes the construction and/or operation of other facilities such as a closed low flow drainage system, desalination facilities, and temporary barging point (construction phase only).

1.1.3 The Study Area is currently undeveloped, comprising scrubland and incised stream courses. It is reported that there are a number of locations within the Study Area where the former landuse as an artillery firing range has removed the thin surface vegetation that the resultant bare ground has led to surface soil erosion due to runoff. There has been no formal activity in this area since its cessation of use as an artillery firing range; with on-going checking of unexploded ordnance (none detected) during the current Project.

1.1.4 As it is reported that the artillery firing range on Kau Sai Chau Island was used between the 1930's and mid-1970's, it is possible that such previous landuse might induce contamination to the soil and groundwater. The assessment of the potential environmental issues related to land contamination and the potential for the occurrence of soil contamination within the Study Area has been addressed in Section 11 of the Approved Environmental Impact Assessment Report, EIAO Register No. AEIAR-091/2005 (the "Approved EIA Report"); and a Preliminary Contamination Assessment Plan (PCAP) was prepared as presented in Section 11.8 of the Approved EIA Report.

1.1.5 As recommended in the Approved EIA Report, further land contamination assessment during the construction phase of the Project is required. In addition, the work related to land contamination is warranted as described in Condition 2.4 of the Project Environmental Permit (EP) No. EP-224/2005 and quoted as follows:

> *The Permit Holder shall, at least one month before the commencement of construction at the potentially contaminated land as indicated in Figure 2, submit to the Director for approval 3 hard copies and one electronic copy of the Contamination Assessment Plan (CAP) with exact sampling locations and testing parameters. A site investigation shall be carried out in accordance with the approved CAP. If land contamination is confirmed by the site investigation, the Permit Holder shall submit to the Director for approval 3 hard copies and one electronic copy of a Remediation Action Plan (RAP) including a Contamination Assessment Report (CAR). All remediation actions in the approved RAP shall be fully and properly implemented. No work on the identified potentially contaminated sites shall be carried out unless and until the CAP and RAP submitted under this condition are approved by the Director. Before submission to the Director, all plans and reports shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the EIA Report.*

1.1.6 A CAP was prepared by the Consultant (CH2M's report ref.: R420-5.05 dated January 2006) and approved by the Environmental Protection Department (EPD) of the HKSAR Government in February 2006 (Ref. (36) in EP2/N8/O/47 IV) (the "Approved CAP"). Detailed site investigation (SI) and laboratory analyses were subsequently conducted in February, May and June 2006 in accordance with the Approved CAP.

1.1.7 Subsequently, a Contamination Assessment Report (CAR) was prepared by the Consultant (CH2M HILL's report ref.: R067-7.06 dated July 2006). The CAR contained information regarding the actual SI strategy and locations, sampling methodology, site supervision, laboratory analytical methods and results, and the supplementary SI and its findings.

1.1.8 A total of seven (7) numbers of surface soil samples obtained at seven (7) sampling locations (primarily eroded areas within the Study Area) had been analysed and reported in the Approved EIA Report; during the current Project a further thirteen (13) sampling locations and thirty-four (34) numbers of soil samples at various depths have been sampled using hand auger and analysed for Lead (Pb) and total sulphur. The laboratory results revealed that there has been contamination of Pb at and around one (1) original sampling location (location "L3" as presented in the PCAP), specifically OL3 Pt4.

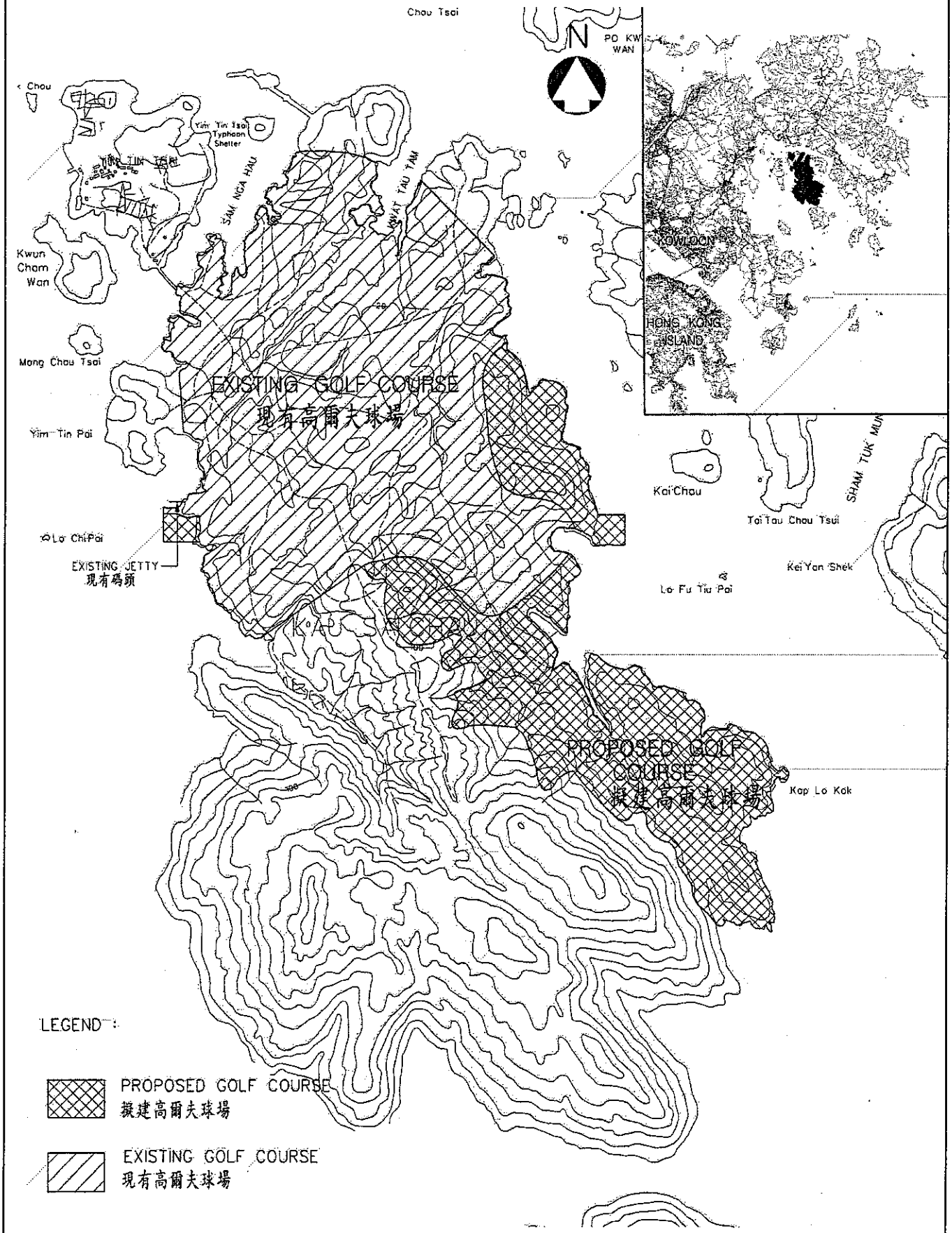
1.1.9 This Remediation Action Plan (RAP) serves to document the objectives of remediation, remediation alternatives evaluation, remediation design and operation, and implementation programme.

1.2 Objectives and Outline

1.2.1 This RAP has been prepared following the guidance and steps outlined in the *Practice Note for Professional Persons – Contaminated Land Assessment and Remediation ProPECC PN3/94* (ProPECC Note) and the *Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/Dismantling Workshops* (Guidance Notes), both published by the EPD of the Government of HKSAR. This RAP is structured as follows:

- Description of the Project and the objectives of this RAP as described in this Section 1;
- Remediation objectives and alternatives evaluation in Section 2;
- Remediation design and operation in Section 3;
- Remediation implementation in Section 4; and
- Conclusions and Recommendations in Section 5.

1.2.2 For completeness, this RAP is to be read in conjunction with the CAR.



Source: Fig. 1.1 of the Approved EIA Report

Title: Location of the Study Area for the Land Contamination Study on Kau Sai Chau	**CH2M HILL Hong Kong Limited**
Project: Land Contamination Study for the Extension of Public Golf Course at Kau Sai Chau, Sai Kung - Remediation Action Plan	**Scale:** NTS
	Figure: 1-1

2. REMEDIATION OBJECTIVES AND ALTERNATIVES EVALUATION

2.1 Introduction

2.1.1 This Section presents the description of remediation objectives and evaluation of different remediation approaches.

2.2 Remediation Objectives

2.2.1 It has been identified in the Supplementary site investigation (SI) and summarised in the CAR that discrete Lead (Pb) contamination in soil is evident at sampling location OL3, Pt4, located at 824850 (Northing) and 850350 (Easting) of HK1980 Grid. The extent of Pb exceedance in soil has been completely delineated during the supplementary SI (see Figure 2-1). The proposed remediation depth and volume, as respectively presented in the CAR, are 1.5m and 36m^3. The result of laboratory analysis is presented in Table 2-1 below.

Table 2-1 Summary of Laboratory Results for the Supplementary SI Samples

Location	Depth of Soil Sample (m below ground level)	Lead (mg/kg dry weight)
OL3 Pt1 (contamination extent defined)	Surface	25
	0.5m	58
OL3 Pt2 (contamination extent defined)	Surface	45
	0.5m	63
	1.5m	46
OL3 Pt3 (contamination extent defined)	Surface	20
	0.5m	29
	1.2m	65
OL3 Pt4 (Pb contamination identified, additional sampling at A1, B1 and C1 required)	Surface	19
	0.5m	**210**
OL3 Pt5 (contamination extent defined)	Surface	19
	0.5m	33
	1.5m	32
A1 (contamination extent defined)	Surface	25
	0.5m	49
	1.5m	33
	2.4m	51
B1 (contamination extent defined)	Surface	22
	0.5m	100
	1.5m	52
C1 (contamination extent defined)	Surface	35
	0.5m	59
Dutch B Criteria		**150**

2.2.2 According to Appendix III of the ProPECC Note, the selection of appropriate remedial measures shall consider the following factors:

- Nature of contamination;
- Degree of contamination;
- Potential sensitive receivers: receivers that may be exposed to the contaminants are construction workers and residents of the future development;

- Time constraint;
- Treatment cost; and
- Local expertise availability – whether the expertise – staff and equipment are available locally. Some of the equipment might need to be fabricated or procured or leased from overseas suppliers.

2.2.3 Since the soil contamination is solely by heavy metal contamination, only relevant remediation approaches including soil flushing/washing, chemical extraction, capping, cement solidification/stabilisation, landfill disposal, and on-site backfilling will be considered.

2.3 Candidate Remediation Approaches

Soil Flushing and Soil Washing

2.3.1 Soil flushing and washing refers to elutriation of the contaminants from soil for recovery and treatment. It can be done in-situ by flooding the site with appropriate washing solution and recollect the elutriate from shallow well points or subsurface drains or ex-situ by excavating the soil from the ground and extracting the heavy metals from contaminated soil by running the soil through washing solution.

2.3.2 The advantages of this treatment method are that the removal of contaminants is permanent and no additional treatments are necessary if the process is successful. However, the technology might introduce potential toxins into the soil system from the flushing solution. In addition, the treatment and transport of the used flushing solution is cost-intensive and has a risk of transporting the contaminants to uncontaminated area.

2.3.3 In consideration of the small volume of contaminated soils (say only 36m^3), the practicability of the soil flushing or washing method is considered low.

Electro-kinetic Separation

2.3.4 The principle of electro-kinetic remediation relies upon application of a low-intensity direct current through the soil between ceramic electrodes that are divided into a cathode array and an anode array. This mobilises charged species, causing ions and water to move toward the electrodes. Metal ions, ammonium ions, and positively charged organic compounds will move toward the cathode. Anions such as chloride, cyanide, fluoride, nitrate, and negatively charged organic compounds will move toward the anode. The current creates an acid front at the anode and a base front at the cathode. This generation of acidic condition in-situ may help to mobilise sorbed metal contaminants for transport to the collection system at the cathode.

2.3.5 Collected metals have to be treated or stabilised prior to disposal and the efficiency of the method depends largely on the soil properties. Also, undesirable products (e.g., chlorine gas) can form as by-products of the oxidation/reduction reactions. This effective remediation technology for heavy metal contaminated soil, however, is not well established in Hong Kong and local availability of the equipment also restricts adoption of this method. Not to mention the relatively high cost of operation and maintenance of the system.

Capping

2.3.6 Capping for contaminated soil is a physical separation method to prevent exposure of sensitive receivers to the contaminants buried under the ground. Soil caps can range from a one-layer system of vegetated soil to a complex multi-layer system of soils and geosynthetics.

2.3.7 The capping system does not remove or reduce toxicity, mobility, or volume of hazardous constituents in the soil, but does mitigate migration. A cap, by itself, cannot prevent the horizontal flow of ground water through the contaminated soil, only the vertical entry of water into the contaminated soil.

2.3.8 The site is currently under construction for the future golf course where excavation works, earth filling and final import fill and vegetative layer for the concerned location will be applied. The applicability of soil capping alone as the remediation method is considered insufficient; nevertheless, this could be regarded as partial remediation, in conjunction with the ultimately selected remediation approach.

Cement Solidification/ Stabilisation

2.3.9 Contaminants can be physically bound or enclosed within a stabilised mass (solidification), or chemical reactions can be induced between the stabilising agent and contaminants to reduce their mobility (stabilisation).

2.3.10 Solidification/stabilisation (S/S) reduces the mobility of hazardous substances and contaminants in the environment through both physical and chemical means. Unlike other remedial technologies, S/S seeks to trap or immobilise contaminants within their "host" medium (i.e., the soil for the subject site), instead of removing them through chemical or physical treatment.

2.3.11 Leachability testing is to be performed to measure the immobilisation of contaminants. S/S techniques can be used alone or combined with other treatment and disposal methods to yield a product or material suitable for land disposal or, in other cases that can be applied to other beneficial use. These techniques have been used as both final and interim remedial measures. The volume of soil will usually increase by up to 30% after the S/S process.

Excavation and Disposal to Landfill

2.3.12 Contaminated soil can be excavated from the site and transported to a permitted off-site treatment and/or disposal facility. Some pre-treatment of the contaminated media is usually required in order to meet land disposal restrictions, i.e. toxicity characteristic leaching procedure (TCLP) limits. However, landfill space is valuable and limited in Hong Kong. Excavation and disposal to landfills is typically only considered as the last resort when no in-situ remediation can be proved to be feasible, the contamination is localised and the quantity of contaminated soil for landfilling is small.

On-site Backfilling

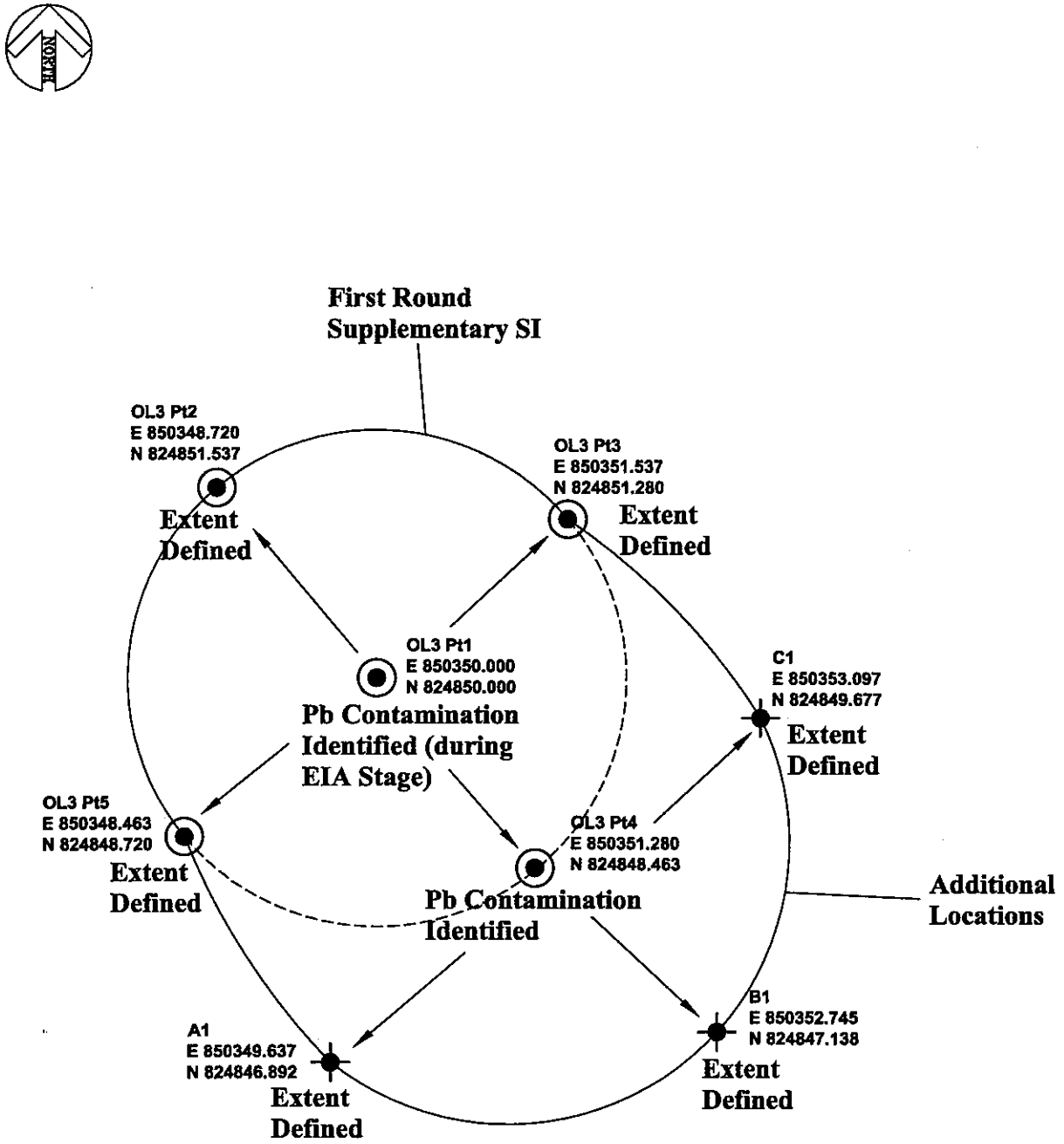
2.3.13 Following effective remediation, treated soils can be backfilled and compacted on site as part of the earth filling of the Project or to fill an excavated pit created by contaminated soils excavation. However, more stringent TCLP limits than disposal to landfill are to be followed. In addition, the treated soil will be subject to unconfined compressive strength (UCS) testing to guarantee the physical integrity of the solidified product.

2.4 Remediation Alternatives Evaluation

2.4.1 After considering factors such as nature and degree of contamination (mainly heavy metal), potential sensitive receivers, time constraints, treatment cost, volume of contaminated soil and availability of local expertise and technology; soil excavation for cement S/S followed by on-site backfilling is considered the most appropriate remediation approach for the Study Area. The selection process is summarised in Table 2-2 below.

Table 2-2 Soil Remediation Alternatives Selection Process Summary

Remediation	Decision	Comments
Treatment		
Soil Flushing and Soil Washing	×	Not practicable in view of small volume of contaminated soils (36m^3).
Electro-kinetic Separation	×	By-products formation, effectiveness yet to be locally demonstrated, questionable local availability, and high cost of systems operation and maintenance.
Capping	×	Regarded only as partial remediation.
Cement S/S	✓	Appropriate target contaminants, well-established local experience, small volume of contaminated soils (36m^3).
Soil disposal		
Excavation and Disposal to Landfill	×	Although the volume of remediated soil is small, handling, transportation and disposal to landfill sites from the remote Kau Sai Chau is not desirable.
On-site Backfilling	✓	Following successful S/S (i.e. passing the TCLP and UCS tests) the treated soil can be used as earth filling material, and thus transportation off-site can be avoided; less import fill required; and valuable landfill space preserved.



Legend

- OL3 Pt1 - Supplementary Sampling Location
  OL3 Pt5
- A1 - C1 Additional Sampling Location

Title: As-constructed Supplementary Site Investigation Sampling Locations	**CH2M HILL Hong Kong Limited**
Project: Land Contamination Study for the Extension of Public Golf Course at Kau Sai Chau, Sai Kung - Remediation Action Plan	**Scale:** NTS
	Figure: 2-1

3. REMEDIATION DESIGN AND OPERATION

3.1 Introduction

3.1.1 This Section presents the design of the proposed remediation – cement S/S followed by on-site backfill.

3.2 Remediation Design – Cement Solidification/Stabilisation

Principle & Approach

3.2.1 S/S proposed here refers to the process where cement, fly ash and other inert solids such as sand are physically blended with the contaminated soil and allowed to set into a solid monolithic block. The metal contaminants will become physically bound into the matrix of the concrete monolith and will be extremely resistant to re-release except under the most aggressive acidic conditions.

3.2.2 Typically between 5% and 30% cement will be added to soil to form a mixture that will set. Trial test will usually be conducted prior to the exercise to determine the suitable amount of cement to be added, in order to be able to contain the contaminants. In this case, however, trial test will not be necessary as the volume of treatment is small ($36m^3$).

3.2.3 The cement S/S process will be conducted either in a mobile mixer or in a series of in-ground, compacted pits. The soil, cement, water and other additives (if required) will be poured in pre-determined proportions into the mixer or the pit and blended using an excavator or other appropriate hand tools. If mobile mixer is to be adopted, the mixed product shall form solid blocks for subsequent curing or be unloaded to the on-site backfilling location. On the other hand if the ground pit approach is to be adopted (i.e. cement S/S process at the on-site backfilling location), requirements stated in Section 3.3 below shall be followed.

Methodology, Volume, and Environmental Mitigation Measures

3.2.4 Contaminated soil will be excavated mainly with conventional earthmoving equipment such as excavators. Dust will be well controlled by the use of water sprays and other standard construction techniques. Workers, vehicles, instruments, and equipment will be decontaminated before leaving the site.

3.2.5 As presented in Table 5-1 of the CAR, contaminated soil is to be remediated from surface down to 1.5m or the bedrock level, whichever shallower. The contaminated material intended for S/S shall be excavated and placed in stockpiles in an assigned area with warning signs posted. The stockpile will be provided with drainage diversions to prevent surface water runoff from entering the stockpile and entraining contaminants in the flow. The stockpile will also be covered with impervious sheet to prevent wind erosion or rainfall percolation. In addition, silt fences or purpose-built bund walls will be used to prevent the release of sediment-laden rainwater from the stockpile area.

3.2.6 Oversize boulder (i.e. excavated material with >50mm diameter) within the extent of contaminated soil, if any, will be screened out during excavation. Since the oversize boulder is unlikely to be contaminated by heavy metals, and cement S/S is not applicable for the oversize material, steam-clean at 60°C for the material surface to remove surface contaminants and backfill with other cement S/S soil will be applied instead.

3.2.7 The extent of soil to be remediated with indicative cross-sections is presented in Figure 3-1 below.

Acceptance Criteria – TCLP and UCS Tests

3.2.8 S/S soils are required to comply with TCLP and UCS tests requirements. TCLP test shall be conducted according to USEPA Method 1311 and compared with the Universal Treatment Standards (UTS) of U.S. Resource Conservation and Recovery Act (RCRA) wastes that contain metals (in 40 CFR 268).

3.2.9 On the other hand, the solidification product shall also meet the UCS of at least 150psi (equivalent to 1MPa).

3.2.10 TCLP test and UCS test results shall be compared with the criteria in Table 3-1 below for compliance.

Table 3-1 On-site Backfilling Criteria for Remediated Soil

Parameter	Criteria
TCLP Test	
Pb	< 0.75mg/L
UCS Test	
UCS	≥ 1MPa

3.2.11 Given the small volume of soil to be remediated (36m^3), only one representative sample of the solidification product shall be tested for TCLP and UCS to determine the effectiveness of the remediation process. To ensure quality of the laboratory results, the TCLP and UCS tests shall be performed by a Hong Kong Laboratory Accreditation Scheme (HOKLAS) accredited laboratory.

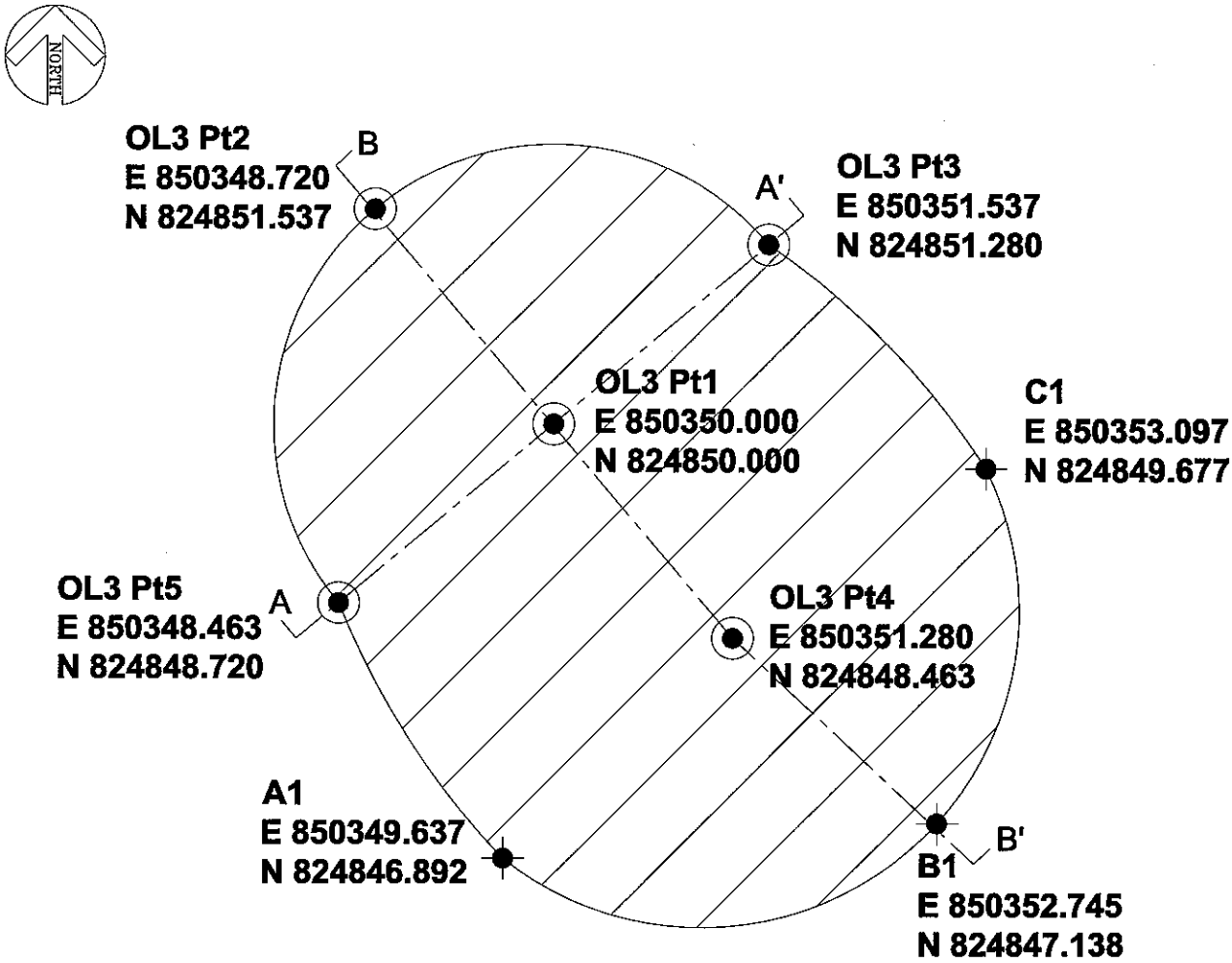
3.2.12 Since both the horizontal as well as vertical extents of Pb contamination have been delineated during the supplementary SI and reported in the CAR, confirmatory soil samples obtained at the horizontal sidewalls and the vertical bottom will not be required.

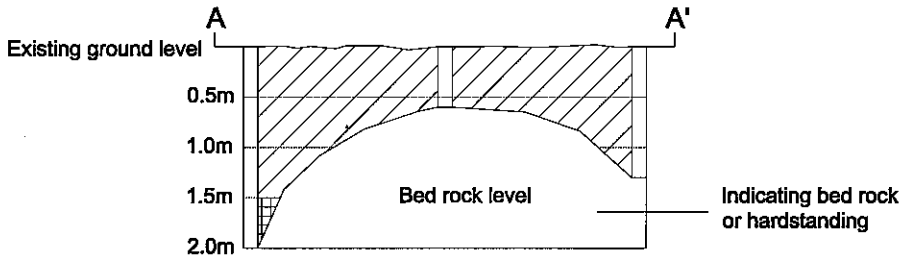
3.3 On-site Backfilling Requirements

3.3.1 Upon completion of the cement S/S process and with passing results of TCLP and UCS tests, the solidified product shall be buried at a nearby filling location of OL3 Pt4, such that the solidified product is:

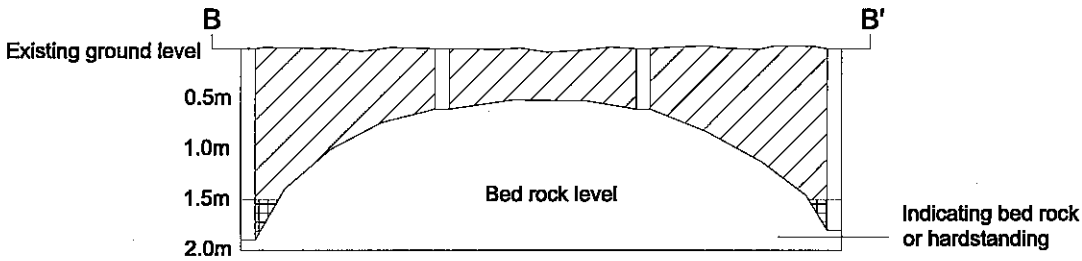
- Located under a layer of clean fill of at least 1.0m thick (excluding any underground utilities);
- At a horizontal distance of more than 30m away from any stream or watercourse;
- Vertically above the groundwater table by at least 1.0m; and
- Not used for any structural or landscaping purposes.

3.3.2 The exact locations, depths and ultimate volume of the buried solidified product shall be presented in the eventual Remediation Report (see Section 4.2 below).





Section A - A'



Section B - B'

Legend

- OL3 Pt1 - Supplementary Sampling Location OL3 Pt5
- A1 - C1 Additional Sampling Location
- Extent of Soil Contamination
- Uncontaminated Soil

Note: (Bed rock level for reference only subject to underground condition)

Title: Extent of Soil Contamination at the Concerned Discrete Location	**CH2M HILL Hong Kong Limited**
Project: Land Contamination Study for the Extension of Public Golf Course at Kau Sai Chau, Sai Kung - Remediation Action Plan	Scale: NTS Figure: 3-1

4. IMPLEMENTATION

4.1 Programme for Remediation

4.1.1 It is estimated that one (1) to two (2) weeks' time will be sufficient for carrying out the soil remediation works. The remediation works specified above will be carried out by the Main Contractor, upon approval of both the CAR and the RAP by EPD (tentatively scheduled in August 2006).

4.2 Supervision and Submission Requirements

4.2.1 The Consultant, as the remediation specialist for the Project, will provide necessary site supervision on remediation preparation, cement S/S process, and supervise the sampling of solidification product for TCLP and UCS tests.

4.2.2 Upon completion of the remediation works as outlined in this RAP, a Remediation Report will be compiled by the Consultant for submission to EPD to:

- Confirm that the Consultant oversaw and supervised the entire remediation work;
- Demonstrate that the proposed soil remediation has been carried out properly and satisfactorily in accordance with the CAR and RAP;
- Include photos showing the area of excavation, the solidification process, remediated soil, and disposal location, etc. for reference; and
- Include information about the solidification/stabilisation method (e.g. the % of cement used, number of days required for the solidification process, etc.).

5. SUMMARY / CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary / Conclusions

5.1.1 Upon the completion of the SI fieldwork and subsequent laboratory analyses for the Study, exceedance of Lead (Pb) has been identified at Location L3, warranting subsequent remediation actions to be carried out by the Main Contractor. The findings of the SI, supplementary SI and laboratory analysis are contained in the CAR for this Project.

5.1.2 During the supplementary SI carried out in May and June 2006, the extent of Lead contamination has been delineated; the design depth and volume of remediation will be 1.5m and 36m^3, respectively.

5.1.3 A number of applicable remediation technologies namely soil flushing/washing, electro-kinetic separation, capping, cement solidification/stabilisation, landfill disposal, and on-site backfilling have been discussed. The ultimate recommended remediation approach is cement solidification/stabilisation followed by on-site backfilling.

5.1.4 It has been designed that the excavated soil containing contaminants will be mixed with cement in the S/S process. One representative sample of the solidified product will be tested for TCLP and UCS tests. Upon passing the required results of the respective test, the solidified product will be backfilled on-site with the location, extent, and depths recorded.

5.1.5 The anticipated programme for undertaking the remediation works will be one to two weeks, upon approval of the CAR and the RAP by EPD. The Consultant will oversee the entire remediation works to be carried out or procured by the Main Contractor.

5.1.6 Upon satisfactory completion of the remediation works, the Consultant will compile the Remediation Report according to the requirements specified in this RAP for approval by EPD.

5.2 Recommendations

5.2.1 Preparation of a Remediation Report is required as indicated in EP Condition 2.4. It is recommended that, upon satisfactory completion of the remediation works and approval of the Remediation Report by EPD, the Condition 2.4 of EP-224/2005 shall be fully satisfied by the Permit Holder.

6. REFERENCES

1. Approved Environmental Impact Assessment (EIA) Report (EIAO Register No. AEIAR-091/2005) for the Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung.
2. Environmental Monitoring & Audit (EM&A) Manual (EIAO Register No. AEIAR-091/2005) for the Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung.
3. HKEPD (1993), Practice Note for Professional Persons – Contaminated Land Assessment and Remediation ("ProPECC PN 3/94").
4. HKEPD (1999), Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/Dismantling Workshops.
5. CH2M-IDC Hong Kong Ltd. (January 2006), Land Contamination Study for the Extension of Public Golf Course at Kau Sai Chau, Sai Kung – Contamination Assessment Plan.
6. CH2M HILL Hong Kong Ltd. (July 2006), Land Contamination Study for the Extension of Public Golf Course at Kau Sai Chau, Sai Kung – Contamination Assessment Report.