Ms. CHENG Mei Sze, Maisie
Director of Environmental Protection
(E-mail: eiaocomment@epd.gov.hk)

By email only

8 May 2020

Dear Ms. Cheng,

Comments on the Project Profile for Tung Chung Line Extension (ESB-329/2020)

HKBWS is particularly concerned about the works associated with the proposed Tung Chung West (TCW) extension, as it is close to ecological sensitive receivers including Tung Chung Bay and Tung Chung Ecologically Important Stream, which their ecological and conservation importance are well-documented[1] and was even proposed to be Sites of Special Scientific Interest by various environmental NGOs[2] (Figure 1).

We recall an incident which occurred back in August 2015 when the construction and excavation works of the Express Rail Link were conducted approximately 25 metres under the fishponds at Mai Po (Figure 2). Slurry from the underground pressurized tunnel boring machine (TBM) excavation chamber leaked to aboveground through a plugged borehole, which flooded the Tam Kon Chau Road, damaged the structure of the affected fishpond and caused potential adverse ecological impacts on the nearby wetlands (Figure 3).

According to the geology profile in the Environmental Impact Assessment (EIA) report for the Hong Kong Section of Guangzhou - Shenzhen - Hong Kong Express Rail Link (AEIAR-143/2009), the geology at the tunnel construction work where the incident

[1] KFBG. 2013. *Ecological and Conservation Importance of Tung Chung, Lantau*. Kadoorie Farm and Botanic Garden, Hong Kong Special Administrative Region. 29pp. Retrieved from https://www.kfbg.org/upload/Documents/Free-Resources-Download/Report-and-Document/2013TungChungReport.pdf

[2] Joint green groups' recommended Development Permission Area (DPA) Plan for Tung Chung River, estuary, coastal areas and associated habitats. Retrieved from https://www.cahk.org.hk/images/upload/files/JGG%20Tung%20Chung%20DPA%20Jun2015_email.pdf

happened is Quaternary Alluvium/Colluvium (Figure 4). As described in the Civil Engineering and Development Department (CEDD) website, Quaternary superficial deposits "*are up to 50 m thick…The deposits are unlithified* (i.e. not converted into stone/rock) *and were formed by a variety of processes in a wide range of environments.*"[3] Underground tunnel boring works in such geological layer may cause the ground to be unstable and may affect any aboveground habitats.

Similar to the above incident at Mai Po, the geology of the current project site of our concern (i.e. the area near Yat Tung Estate, Tung Chung Bay and Valley) is Quaternary Alluvium/Colluvium (Figure 5). We are concerned similar leakage incident may occur during the underground construction work for the TCW extension, while with an appropriate tidal and wind influence, the leakage mixture may even have potential adverse ecological impacts on Tung Chung Bay and nearby shorelines.

HKBWS considers that all alternative alignments and construction methods for the TCW extension, as well as all ecological sensitive receivers in the area, should be comprehensively identified and considered, such that the proposed railway extension works would have minimal potential risks and adverse impacts on the ecologically sensitive and important conservation areas including the Tung Chung Bay and River.

We hope our comments would be taken into consideration during the consultation process. Thank you for your kind attention.

Yours sincerely,

Woo Ming Chuan
Assistant Conservation Manager
The Hong Kong Bird Watching Society

[3] CEDD - Onshore Superficial Deposits and Fill. Retrieved from https://www.cedd.gov.hk/eng/about-us/organisation/geo/pub_info/memoirs/geology/onshore/index.html

Figure 1. The ecological and conservation importance of Tung Chung Bay and Tung Chung River are well-documented and was even proposed to be Sites of Special Scientific Interest by various environmental NGOs.

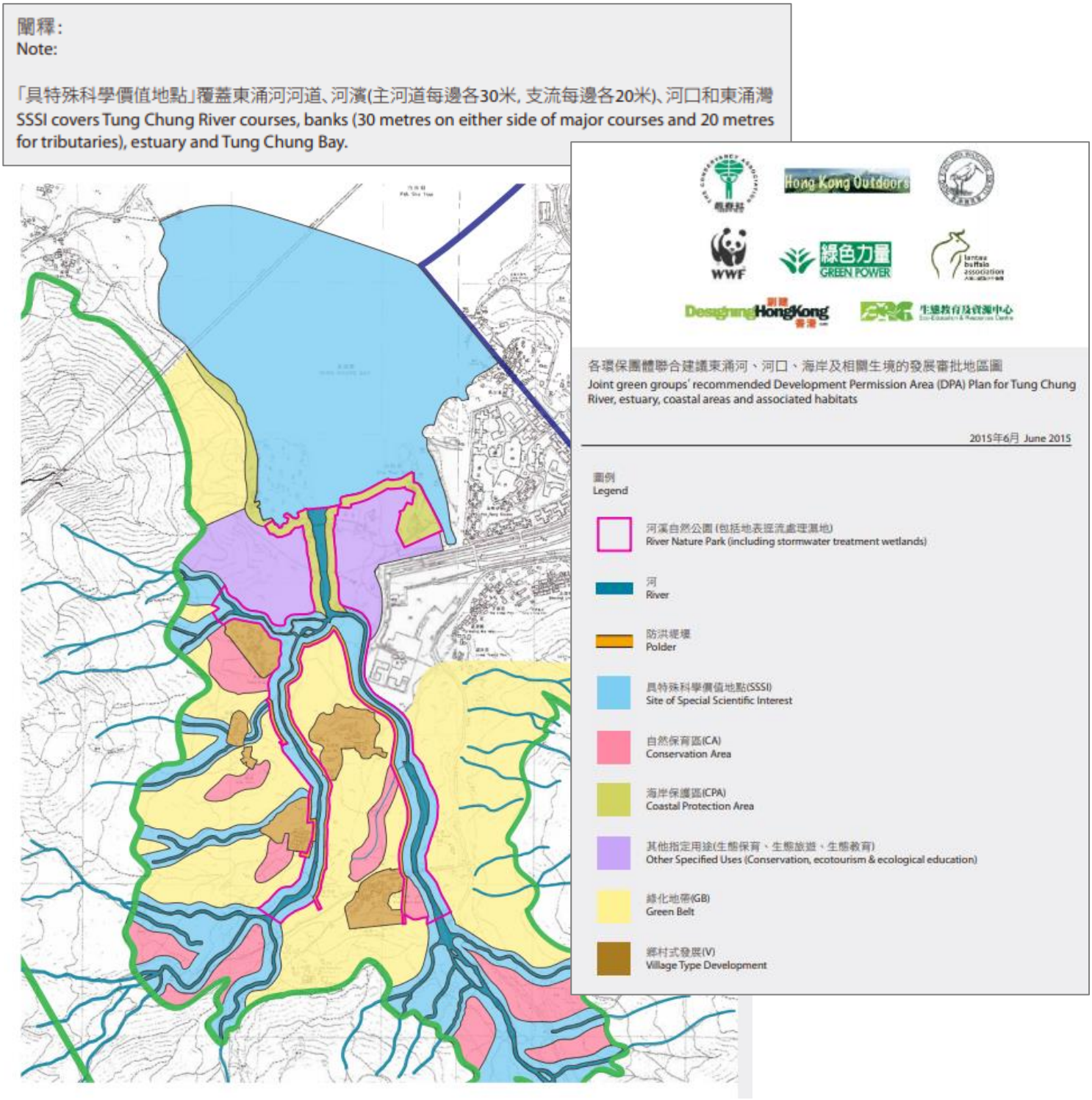


Figure 2. Ming Pao news article on 8 August 2015 about the slurry leakage at Tam Kon Chau Road, Mai Po.

A2 | 明報 | 2015年 8月8日 | 星期六 | 編輯/柯永倫 | 美術/胡春煌 要聞

主編推介

高鐵米埔鑽地 泥漿湧魚塘

加壓致裂縫噴漿 港鐵即時填補

高鐵工程一再延誤，其中滯後程度最嚴重之一的米埔段，鑽挖期間在地底進行人工加壓，御令泥漿沿地底氣孔溢出魚塘塘壆，大量污水流入具高度生態價值的魚塘。港鐵昨晚承認事件，稱泥漿湧出不常見，工程團隊即跟進，填補及清理路面。有工程師分析，港鐵在鑽挖期間過度加壓，會令地下水沿地層裂縫溢出，又稱過去幾年米埔段沿線魚塘出現氣泡從塘底升起現象，懷疑事件影響程度遠較想像中大，認為應暫停工程，評估餘下路段風險。有生態專家搶心鑽挖方法出問題，影響米埔濕地地層結構，引致連鎖反應，降低米埔生態價值。

明報記者 馬耀森

團體稱曾見魚塘冒泡 工程師倡停工評估

港鐵自2011年展開米埔段鑽挖工程以來，有團體已觀察到隧道沿線魚塘冒出氣泡，懷疑與鑽挖工程有關；港鐵2011年向立法會提交文件，亦提及鑽挖過程要加壓，以壓實濕地的泥土，避免出現地陷，但因氣壓太大，產生空氣外泄。今次是港鐵首次承認因鑽挖工程產生泥漿，影響米埔魚塘水質。

觀鳥會：前日見鑽孔噴2米泥漿

事發地點位於米埔担竿洲，**香港觀鳥會保育主任胡明川**表示，該會前日派員到該處，跟進雀鳥在魚塘覓食情況，發現担竿路一個面積約1公頃魚塘塘壆的鑽探孔湧出大量泥漿，高度達2米，有如天然噴泉，泥漿源源不絕沿塘壆流向兩邊道路及魚塘，偶然有車經過，濺起大量泥漿。該會表示，鑽探孔是港鐵年前進行高鐵工程時，取樣後遺下的洞穴，直徑逾1米。

本報跟隨觀鳥會人員昨再到上址，發現十多人在清理及修補，包括在湧出泥漿的鑽探孔位置灌漿，阻止泥漿溢出；另有工人將路面泥漿沖刷至魚塘旁邊的蘆草塘，令水變得混濁。在場**有自稱港鐵承建商職員**表示，港鐵檢查受污水影響魚塘，發現水位由正常的約1米增至昨日的約3米，顯示塘底向下陷，加上魚塘中央不斷有氣泡冒出，反映魚塘受影響，水土大量流失。**港鐵**回應時，未有提及魚塘是否受影響，本報昨聯絡**魚塘員責人彭先生**，惟他不願回應。

觀鳥會研究經理余日東說，魚塘對養魚水質有很高要求，港鐵工程溢出泥漿中有污水，流入魚塘會嚴重影響水質，不宜養魚；污水流入蘆葦蚊，會沿連接的河流流出后海灣，影響整個生態系統（見另稿）。

港鐵稱情況不常見 泥漿暫引入荒廢魚塘

港鐵表示，前日下午約1時，高鐵跨境段工程團隊的巡邏隊伍，於巡察中發現有泥漿從一個魚塘塘壆湧出，工程團隊即作出跟進，填補及清理有關路面。爲盡快清理路面，承建商將泥漿暫時引入附近一個荒廢的魚塘儲存，並已安排吸泥車盡快到場清理。

港鐵發言人解釋，採用隧道鑽挖方式興建的高鐵跨境段隧道，位於米埔魚塘下方約25米挖掘。在隧道鑽挖工程期間，必須在隧道鑽挖機前端進行人工加壓，達至水土壓力平衡，以確保施工安全；施加壓力會因應隧道的深度及地質情況不時調整，倘若地層有微細的氣孔，有可能出現氣壓溢漏的情況，惟泥漿湧出的情況並不常見。港鐵相信，加了氣壓的泥漿沿氣孔溢出，令魚塘塘壆及路面受影響。

專家倡可以「凍土法」施工

公共專業聯盟政策召集人黎廣德表示，鑽挖隧道加壓是工程界普遍採用技術，免地下水倒流，估計港鐵加壓壓力太大，或鑽挖期間遇到未能預見的地層結構，以致地下水從地層的裂縫或水井噴射而出，「絕不能說是正常現象」。他質疑港鐵最初爲高鐵估算造價時，爲減成本犧牲環保措施，如以「凍土法」令地下水結冰，便可避免鑽探流失。港鐵2003年鑽挖塑原濕地興建落馬洲支線隧道，亦有採用「凍土法」，但工程費多出20億元。資料顯示，港鐵並非以「凍土法」鑽挖米埔段隧道。

◀港鐵表示，高鐵跨境段工程團隊的巡邏隊伍，前日下午於巡察中發現有泥漿從一個魚塘塘壆湧出，工程團隊即時作出跟進，填補及清理路面。本報記者昨午見魚塘壆現水泡，港鐵工程人員在捏工，以混凝土補在溢出泥漿的塘壆表面。（鏡林枝攝）

高鐵米埔段隧道鑽挖工程，大量泥漿溢出地面流入魚塘，港鐵昨派員到場以混凝土填補塘壆，阻止泥漿溢出。（鏡林枝攝）

極危勺嘴鷸曾現事發魚塘

溢出泥漿魚塘附近曾出現瀕危鳥，米埔是國際重要濕地，有不少瀕危雀鳥出沒，香港觀鳥會去年9月於担竿洲一帶魚塘，發現極度瀕危、全球只有240對的勺嘴鷸在魚塘旁邊覓食。**觀鳥會研究經理余日東**說，勺嘴鷸是遷徙雀鳥，每年由北方南下到泰國及緬甸越冬，因此9月及翌年春季都會在香港「落腳」，之後繼續旅程。

勺嘴鷸與其他鷸一樣，有細長的喙，勺嘴鷸的喙扁平如杓子，方便在濕潤的泥土探測獵物。余日東說，勺嘴鷸身形矮小，身長約15厘，不怕羣，不像其他鷸鳥受驚羣羣盡中向外窺看，而會在廣闊泥灘混在其他雀鳥一同覓食。

（孔思義、黃莎萍攝/香港觀鳥會提供）

魚塘水質受損 或減稀鳥食糧

米埔是國際重要濕地，核心的沼澤區與外圍相連的魚塘均具高度生態價值，**香港觀鳥會研究經理余日東**說，養魚是人爲的經濟活動，但漁民於冬季放低水位，清理魚塘，露出塘底「雜魚」會成爲雀鳥佳餚，因此是生態鏈的一部分。若魚塘水質受影響，可能令魚類死亡，亦會令雀鳥食糧減少。

余日東表示，觀鳥會去年9月曾於担竿洲一帶魚塘，發現全球極度瀕危的勺嘴鷸在魚塘塘壆覓食，顯示該魚塘是勺嘴鷸其中一個棲息地點，「由於勺嘴鷸數量太少，只要有一個棲息地受影響，都可能影響該種雀鳥存活，因此值得關注」。

事實上，自港鐵2011年開展米埔段隧道鑽挖工程，已不時有團體稱沿線魚塘冒起氣泡，但並無證據證明與工程有關；余日東擔心，米埔隧道貫穿地下沉積層，此層充滿水分，鑽挖時容易滲水，若港鐵鑽挖方法有問題，造成的影響可能更大。担竿洲魚塘事件只是冰山一角，促請港鐵交代，鑽挖米埔段至今令多少魚塘受影響。

團體憂污水流后海灣 環署：派員了解

余日東說，米埔整個生態系統互相連繫，魚塘水質受影響，最終會經連接的河流，流進大海，影響后海灣泥灘水質。后海灣是全港水質管制最嚴格的水域，對於港鐵工程產生污水有機會排放到后海灣，**環保署**昨稱已派員到現場了解事件，又表示會密切監察事件，暫未採取執法行動。

Figure 3. Slurry from the underground pressurized TBM excavation chamber leaked to aboveground through a plugged borehole, which flooded the Tam Kon Chau Road, damaged the structure of the affected fishpond and caused potential adverse ecological impacts on the nearby wetlands.

6 August 2015

7 August 2015

8 August 2015

10 August 2015

Figure 4. The geology at the tunnel construction work where the incident happened (indicated by the red arrows) is Quaternary Alluvium/Colluvium. Image extracted from Figure NOL/ERL/300/C/XRL/ENS/M53/202 of the EIA report for the Hong Kong Section of Guangzhou - Shenzhen - Hong Kong Express Rail Link (AEIAR-143/2009).

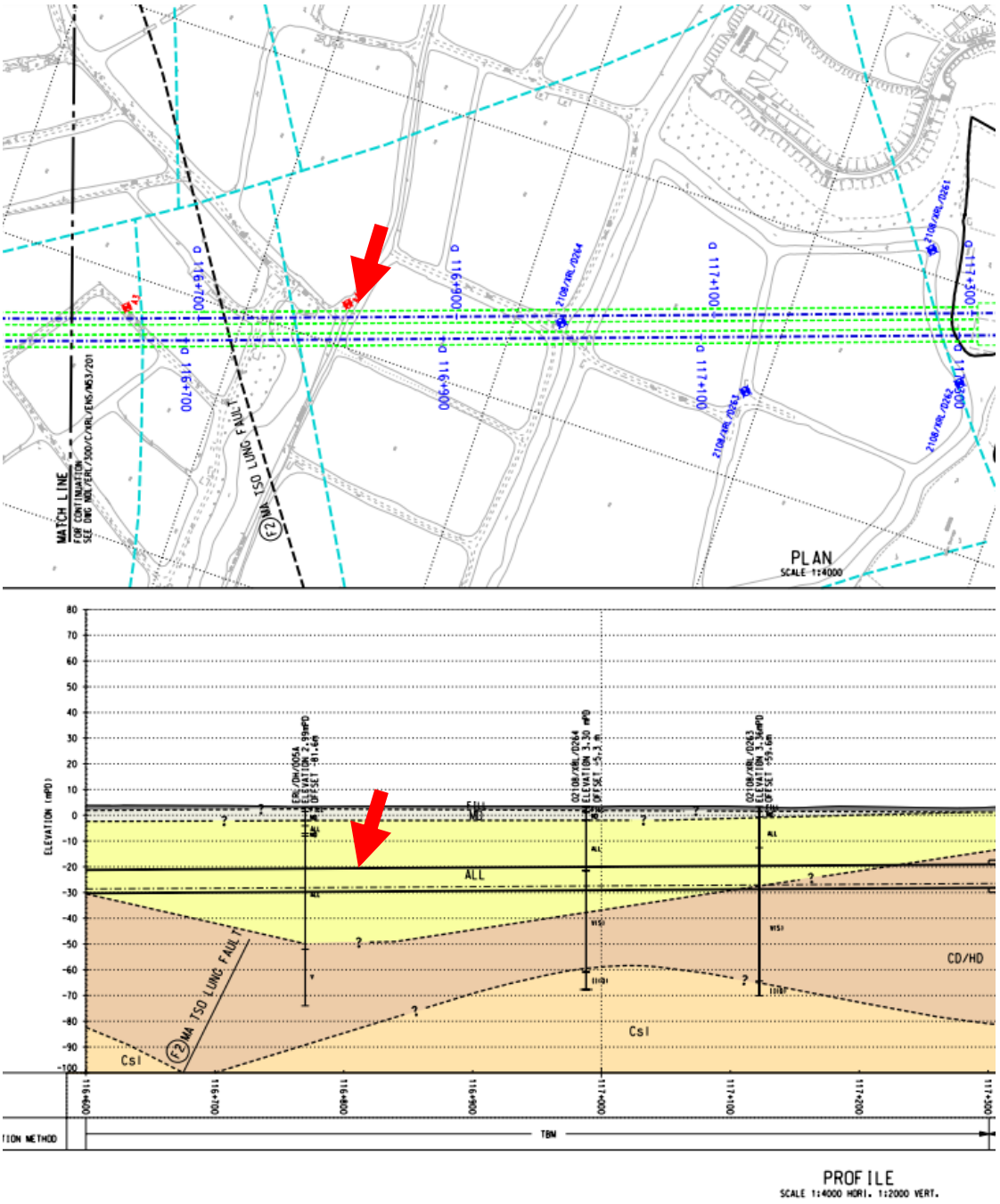
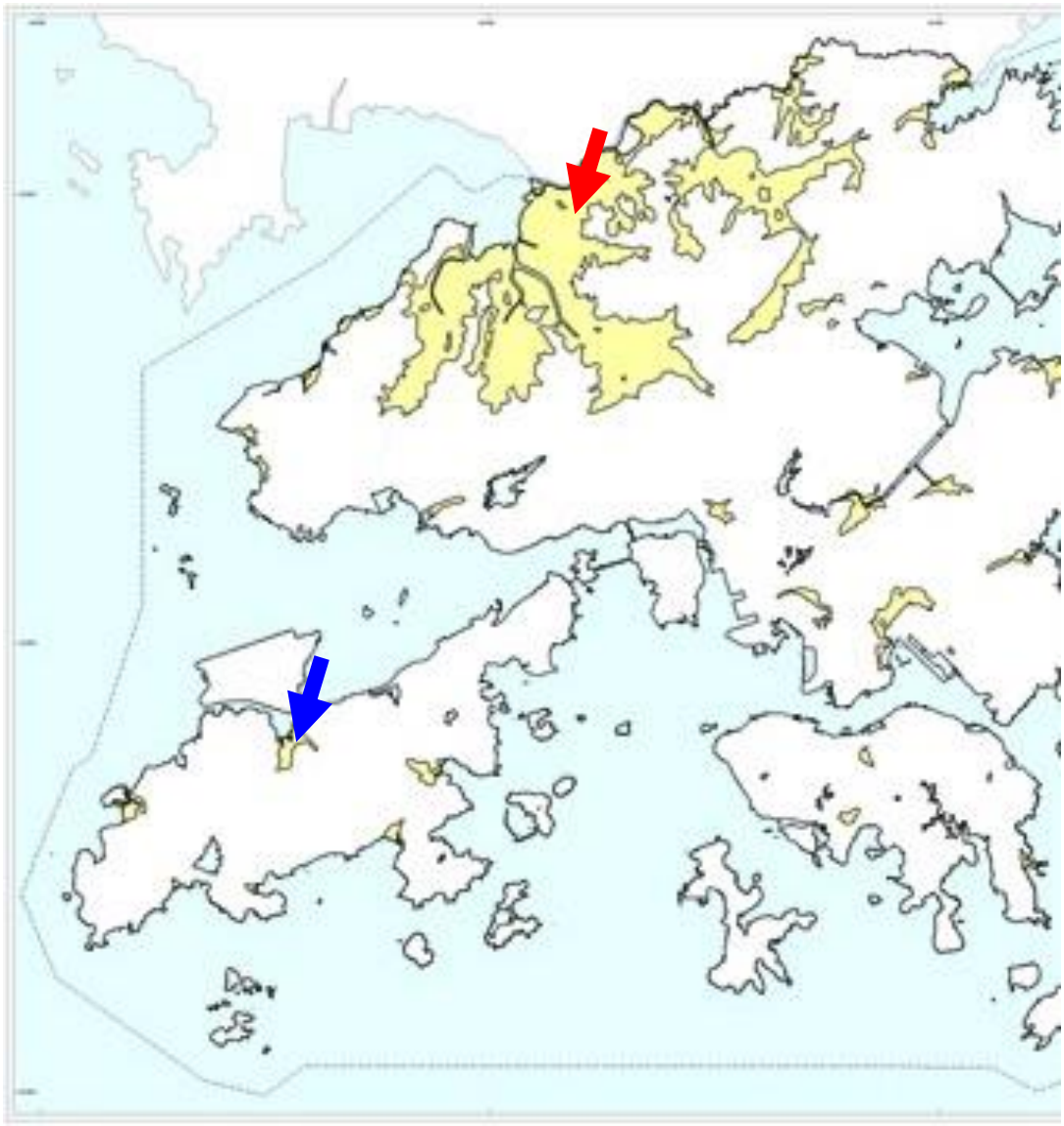


Figure 5. Similar to the above incident at Mai Po (indicated by red arrow), the geology of the current project site of our concern - the area near Yat Tung Estate, Tung Chung Bay and Valley (indicated by blue arrow) - is Quaternary Alluvium/ Colluvium (yellow in colour on the map[4]). We are concerned similar leakage incident would occur during the underground construction work for the TCW extension, while with an appropriate tidal and wind influence, the slurry mixture may even have adverse ecological impacts on Tung Chung Bay and nearby shorelines.



[4] CEDD - Quaternary Alluvium / Colluvium - Q. Retrieved from https://www.cedd.gov.hk/eng/about-us/organisation/geo/pub_info/memoirs/geology/vol/q_brief/index.html