

Legislative Council Public Works Subcommittee

Supplementary Information on Environmental Infrastructure Projects

163DR: Northeast New Territories (NENT) landfill extension

At the Public Works Subcommittee Meeting held on 2 July 2013, Members requested the Administration to provide supplementary information on the following issue:

PWSC (2013-14)20 At the request of Dr Hon Fernando CHEUNG, the Administration was requested to provide the water quality reports in the past three years on the water samples taken from the stream at Wo Keng Shan Tsuen which was a water quality monitoring point for the Northeast New Territories Landfill.

The existing Northeast New Territories (NENT) Landfill was designed and constructed as a secure containment facility, which primarily consists of multi-layer impermeable composite liners to contain the leachate generated, so that the waste is deposited and treated under a controlled environment. All leachate generated from the landfill area is collected by the leachate collection system and diverted to the on-site leachate treatment plant.

All treated leachate is discharged to the Drainage Services Department (DSD) Sewage Pumping Station at the northwestern part of the NENT Landfill (along the direction of Kong Yiu Channel) and finally to Shek Wu Hui Sewage Treatment Works for further treatment (please refer to **Figure 1** on locations of various features).

In accordance with the Contract, the NENT Landfill contractor is required to perform routine environmental monitoring work, including ground water and surface water quality of the nearby streams and channels (e.g. the Ping Yuen River at Wo Keng Shan Tsuen). Environmental Protection Department (EPD) also regularly conducts surveillance checks and collects samples to ensure no adverse impact to the surrounding environment. The water quality monitoring results of the NENT Landfill for Ping Yuen River meet the compliance requirements in the past 3 years, as listed in **Table 1**.

From the “Annual River Water Quality Monitoring Report” published by EPD¹, the water quality of Ping Yuen River (also known as River Ganges) has been improving during the last decade. Its upstream station is graded as “Excellent” under the Water Quality Index in the past 3 years. The water quality monitoring report for Ping Yuen River on key parameters is attached in **Table 2** for reference.

¹Website: http://www.epd.gov.hk/epd/english/environmentinhk/water/river_quality/rwq_report.html

Figure 1: Location Plan of Water Quality Monitoring Points at Ping Yuen River

圖 1: 平原河水質監測點位置圖

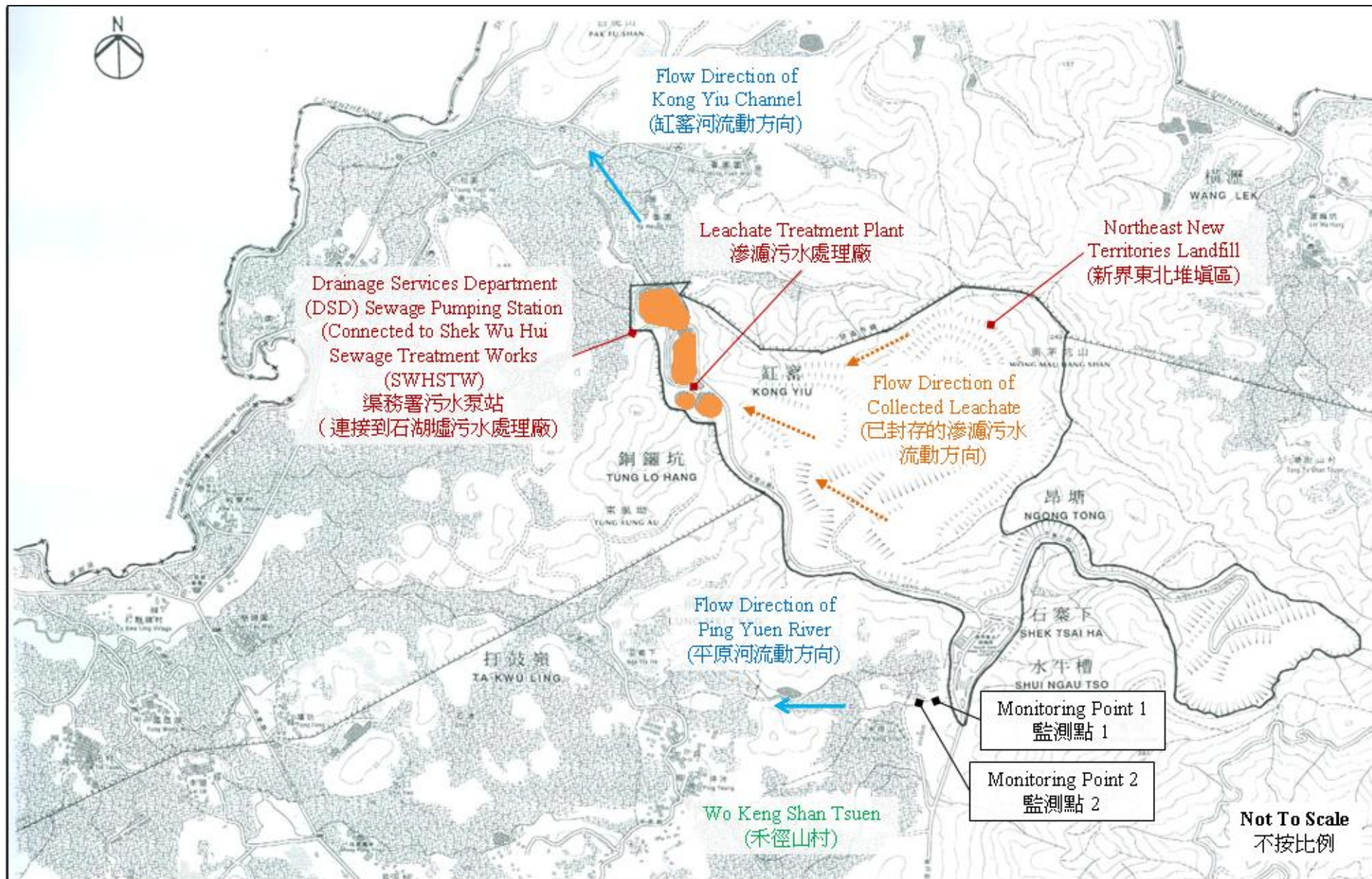


Table 1: Water Quality Monitoring Reports under NENT Landfill (June 2010 – June 2013)

表 1: 新界東北堆填區的水質監測報告 (由 2010 年 6 月至 2013 年 6 月)

Date 日期	Monitoring Point ⁽¹⁾⁽²⁾ 監測點 ⁽¹⁾⁽²⁾	5-day Biochemical Oxygen Demand (mg/L) 五天生化需氧量 (毫克/升)	Chemical Oxygen Demand (mg/L) 化學需氧量 (毫克/升)	Total Suspended Solids (mg/L) 總懸浮固體 (毫克/升)	Ammonia – Nitrogen (mg/L) 氨-氮 (毫克/升)
4-Jun-10	1	<2	2	10	0.10
1-Sep-10	1	<2	<2	4	0.13
1-Dec-10	1	<2	<2	6	0.15
1-Mar-11	1	<2	4	14	0.26
3-Jun-11	1	<2	4	9	0.18
1-Sep-11	1	<2	4	12	0.05
1-Dec-11	1	<2	3	6	0.11
2-Mar-12	1	<2	5	10	0.22
4-Jun-12	1	<2	<2	<3	0.16
3-Sep-12	1	<2	3	7	0.07
10-Dec-12	1	<2	4	18	0.16
1-Mar-13	1	<2	3	8	0.24
25-Jun-13 ⁽³⁾	1	<2	<5	10	Not tested 未測試
Average Value 平均數值		<2	3	9	0.15
Maximum Value 最高數值		<2	5	18	0.26
Minimum Value 最低數值		<2	<2	<3	0.05
Compliance Requirement Level ⁽⁴⁾ 達標要求水平 ⁽⁴⁾		20	Not Applicable 不適用	30	0.5
Compliance Percentage 達標比率		100%	Not Applicable 不適用	100%	100%

Remarks 註:-

- (1) Location of Water Quality Monitoring Point at Ping Yuen River is shown in Figure 1.
平原河水質監測點位置詳見圖 1。
- (2) The purpose for Water Quality Monitoring Point 1 is to ensure the compliance of environmental performance of NENT Landfill.
水質監測點 1 的目的是確保新界東北堆填區的環境表現符合要求。
- (3) This water sample and analysis work was conducted by EPD Regional Office (North). The main purpose of the monitoring is on the pollution level, which is commonly indicated by biochemical oxygen demand, chemical oxygen demand and the total suspended solids.
此水質樣本由環保署區域辦事處(北)負責採樣及分析，主要目的為監察污染水平，而污染水平一般由五天生化需氧量、化學需氧量及總懸浮固體顯示。
- (4) Stringent environmental requirement is imposed at NENT Landfill. For instance, ammonia-nitrogen at the surface water monitoring points shall be less than 0.5 mg/L, which is equivalent to “excellent” level of Water Quality Index (WQI). 新界東北堆填區環境監控方面的合約要求水平相當嚴格。以地面水為例，含氨氮量少於 0.5 毫克/升就相等於香港河溪水質指數的「極佳」水平。

Table 2: Water Quality Monitoring Programme for Ping Yuen River (June 2010 – May 2013) - extracted from EPD's Annual River Water Quality Monitoring Reports⁽¹⁾

表 2: 平原河水質監測報告 (由 2010 年 6 月至 2013 年 5 月) - 摘自環保署河溪水質報告⁽¹⁾

Date 日期	Monitoring Point ⁽²⁾ 監測點 ⁽²⁾	5-day Biochemical Oxygen Demand (mg/L) 五天生化需氧量 (毫克/升)	Chemical Oxygen Demand (mg/L) 化學需氧量 (毫克/升)	Total Suspended Solids (mg/L) 總懸浮固體 (毫克/升)	Ammonia – Nitrogen (mg/L) 氨-氮 (毫克/升)
23-Jun-10	2	6.80	16	120.0	0.03
28-Jul-10	2	1.20	12	110.0	0.04
26-Aug-10	2	3.80	11	180.0	0.03
17-Sep-10	2	0.89	6	6.1	0.05
27-Oct-10	2	0.74	<2	5.3	0.08
25-Nov-10	2	0.64	<2	5.0	0.11
9-Dec-10	2	3.70	7	59.0	0.07
20-Jan-11	2	0.78	<2	7.9	0.17
21-Feb-11	2	14.00	35	11.0	0.03
16-Mar-11	2	1.80	6	7.0	0.28
28-Apr-11	2	3.20	6	12.0	0.23
18-May-11	2	3.10	7	13.0	0.22
8-Jun-11	2	1.60	5	10.0	0.10
6-Jul-11	2	0.84	6	6.6	0.07
1-Aug-11	2	0.57	3	3.1	0.06
5-Sep-11	2	0.60	<2	5.0	0.08
7-Oct-11	2	0.90	4	5.5	0.09
4-Nov-11	2	0.15	3	3.6	0.06
1-Dec-11	2	0.36	3	4.9	0.10
11-Jan-12	2	0.46	4	2.3	0.05
9-Feb-12	2	0.43	2	7.2	0.11
21-Mar-12	2	2.10	8	10.0	0.07
19-Apr-12	2	4.50	23	500.0	0.07
23-May-12	2	0.37	2	2.3	0.09
21-Jun-12	2	23.00	20	780.0	0.14
26-Jul-12	2	1.60	11	31	0.01
13-Aug-12	2	7.20	35	520	0.03
19-Sep-12	2	0.72	<2	<0.5	0.08
3-Oct-12	2	5.80	8	5.8	0.09
1-Nov-12	2	0.99	5	4.6	0.11
7-Dec-12	2	0.84	3	37.0	0.12
3-Jan-13	2	0.75	5	9.5	0.21
1-Feb-13	2	0.35	2	7.3	0.17
1-Mar-13	2	0.48	3	5.7	0.12
18-Apr-13	2	7.80	12	97.0	0.04
3-May-13	2	0.42	3	3.5	0.09

Date 日期	Monitoring Point ⁽²⁾ 監測點 ⁽²⁾	5-day Biochemical Oxygen Demand (mg/L) 五天生化需氧量 (毫克/升)	Chemical Oxygen Demand (mg/L) 化學需氧量 (毫克/升)	Total Suspended Solids (mg/L) 總懸浮固體 (毫克/升)	Ammonia – Nitrogen (mg/L) 氨-氮 (毫克/升)
Average Value 平均數值		2.87	8	72.2	0.10
Maximum Value 最高數值		23.00	35	780.0	0.28
Minimum Value 最低數值		0.15	<2	<0.5	0.01

Remarks 註:-

- (1) The River Water Quality Reports summarize the river water data collected by EPD's long-term monitoring programme during the year. Water Quality Index (WQI), based on the level of dissolved oxygen, 5-day biochemical oxygen demand and ammonia-nitrogen, is used to indicate the extent of organic contamination of the river. The WQI classifies the river water quality into 5 categories (Excellent, Good, Fair, Bad and Very Bad) according to the level of organic pollution. The upstream station of the Ping Yuen River (also known as River Ganges) is graded as "Excellent" under the Water Quality Index in the past 3 years.

環境保護署每年出版的河溪水質報告總結過去一年的河溪水質監測計劃所收集的資料。環境保護署以水質指數來顯示河溪受有機物污染的程度。水質指數是以水中的溶解氧量、五日生化需氧量及氨氮含量來計。其後根據河溪所受到有機物污染的程度，將其水質分為五個級別：「極佳」、「良好」、「普通」、「惡劣」或「極劣」。過去三年平原河上游站的水質都被評為「極佳」級別。

- (2) Location of Water Quality Monitoring Point (upstream station of Ping Yuen River) is shown in Figure 1.

水質監測點(平原河上游站)位置詳見圖 1。