

คุณภาพน้ำใต้ดิน

Ref. No. WR307/03/22  
R-Pro-0212/2020

## Groundwater Quality Analysis Report

Project : PTT Asahi Chemical Co., Ltd.  
Project Location : WHA Eastern Industrial Estate (Map Ta Phut)  
8 Phangmuang Chapoh 3-1 Road, Huai Pong,  
Mueang Rayong, Rayong  
Client Name : NPC Safety and Environmental Service Co., Ltd.  
Sampling Method : Grab  
Sampling by : Udomsak Janjirawit  
S.P.S. Consulting Service Co., Ltd.

Sampling Date : 16 March 2022  
Date Received : 17 March 2022  
Date of Analysis : 17-23 March 2022  
Date Reported : 30 March 2022

Parameter	Analytical Method	MW4	Standard	LOQ
pH	Electronic Method (4500-H <sup>+</sup> B.)	5.20	6.5-9.2 <sup>(1)</sup>	-
Antimony (mg/L)	Digestion, Inductively Coupled Plasma Method (3030 F. & 3120 B.)	0.10	1.0	<0.01
Vanadium (mg/L)	Digestion, Inductively Coupled Plasma Method (3030 F. & 3120 B.)	0.006	17	<0.005
Total Petroleum Hydrocarbon (C <sub>5</sub> -C <sub>12</sub> ) - TPH (C <sub>5</sub> -C <sub>2</sub> ) (mg/L)	Purge and Trap Capillary-Column Gas Chromatographic/Flame Ionization Detector Method (Method 5030C & 8015D**)	<0.00004	1.4	<0.00004

### Remark:

Sample Characteristics: Yellow turbid with slightly precipitate

<sup>(1)</sup> In the case of acid or alkaline contamination, compare the result of pH value at down-gradient with up-gradient. The pH value change must not exceed one level and in the range of maximum allowable concentration of the groundwater quality standards for drinking purposes is 6.5 to 9.2

- TPH (C<sub>5</sub>-C<sub>12</sub>): Sum of n-Pentane, n-Hexane, n-Heptane, n-Octane

Standard = Criteria and Inspection of Soil and Groundwater Contamination in Factory Area, Notification of Ministry of Industry B.E. 2559 (2016)

Method = Based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23<sup>rd</sup> Edition, 2017.

Method\*\* = Based on United States Environmental Protection Agency (U.S. EPA) Method

Reported results refer to submitted samples only.

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Parameter	Analytical Method	MW4	Standard	LOQ
Acrylonitrile (mg/L)	Purge and Trap Capillary-Column Gas Chromatographic/Mass Spectrometric Method (Method 8260C)	<0.002	0.1	<0.002
Methyl Methacrylate (mg/L)	Purge and Trap Capillary-Column Gas Chromatographic/Mass Spectrometric Method (Method 8260C)	<0.007	-	<0.007

### Remark:

Sample Characteristics: Yellow turbid with slightly precipitate

Standard = The Standard Value of PTT AC

Method = Based on United States Environmental Protection Agency (U.S. EPA) Method.

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Parameter	Analytical Method	MW5	Standard	LOQ
pH	Electrometric Method (4500-H <sup>+</sup> B.)	5.84	6.5-9.2 <sup>(1)</sup>	-
Antimony (ng/L)	Digestion, Inductively Coupled Plasma Method (3030 F. & 3120 B.)	0.03	1.0	<0.01
Vanadium (ng/L)	Digestion, Inductively Coupled Plasma Method (3030 F. & 3120 B.)	0.008	17	<0.005
Total Petroleum Hydrocarbon (C <sub>9</sub> -C <sub>32</sub> ) - TPH (C <sub>5</sub> -C <sub>9</sub> ) (ng/L)	Purge and Trap Capillary-Column Gas Chromatographic/Flame Ionization Detector Method (Method 5030C & 8015D**)	<0.00004	1.4	<0.00004

### Remark:

Sample Characteristics: Brown turbid with slightly precipitate

<sup>(1)</sup> In the case of acid or alkaline contamination, compare the result of pH value at down-gradient with up-gradient. The pH value change must not exceed one level and in the range of maximum allowable concentration of the groundwater quality standards for drinking purposes is 6.5 to 9.2

- TPH (C<sub>5</sub>-C<sub>9</sub>): Sum of n-Pentane, n-Hexane, n-Heptane, n-Octane

Standard = Criteria and Inspection of Soil and Groundwater Contamination in Factory Area, Notification of Ministry of Industry B.E. 2559 (2016)

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Acrylonitrile (mg/L)	Purge and Trap Capillary-Column Gas Chromatographic/Mass Spectrometric Method (Method 8260C)	<0.002	0.1	<0.002
Methyl Methacrylate (mg/L)	Purge and Trap Capillary-Column Gas Chromatographic/Mass Spectrometric Method (Method 8260C)	<0.007	-	<0.007

### Remark:

Sample Characteristics: Brown turbid with slightly precipitate

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Parameter	Analytical Method	MW9*	Standard	LOQ
pH	Electrometric Method (4500-H <sub>2</sub> B.)	4.70	6.5-9.2 <sup>(1)</sup>	-
Antimony (mg/L)	Digestion, Inductively Coupled Plasma Method (3030 F. & 3120 B.)	<0.01	1.0	<0.01
Vanadium (mg/L)	Digestion, Inductively Coupled Plasma Method (3030 F. & 3120 B.)	<0.005	17	<0.005
Total Petroleum Hydrocarbon (C <sub>5</sub> -C <sub>33</sub> ) - TPH (C <sub>5</sub> -C <sub>3</sub> ) (mg/L)	Purge and Trap Capillary-Column Gas Chromatographic/Flame Ionization Detector Method (Method 5030C & 8015D**)	<0.00004	1.4	<0.00004

### Remark:

Sample Characteristics: Slightly precipitate

\* Up-gradient

<sup>(1)</sup> In the case of acid or alkaline contamination, compare the result of pH value at down-gradient with up-gradient. The pH value change must not exceed one level and in the range of maximum allowable concentration of the groundwater quality standards for drinking purposes is 6.5 to 9.2

- TPH (C<sub>5</sub>-C<sub>3</sub>): Sum of n-Pentane, n-Hexane, n-Heptane, n-Octane

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Methyl Methacrylate (mg/L)	Purge and Trap Capillary-Column Gas Chromatographic/Mass Spectrometric Method (Method 8260C)	<0.007	-	<0.007

### Remark:

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