

## ภาคผนวก ข-6

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รายงานการใช้น้ำจากแม่น้ำป่าสัก



เลขที่ PD3 048/2567

๑ กุมภาพันธ์ 2567

เรื่อง : การแจ้งข้อมูลการใช้น้ำประปาประจำเดือน มกราคม 2567

เรียน : ผู้อำนวยการโครงการชลประทานสระบุรี

สิ่งที่ส่งมาด้วย : รายงานการใช้น้ำจากทางน้ำชลประทานแม่น้ำป่าสัก

ตามที่บริษัททีพีโอ โพลีน จำกัด (มหาชน) ได้รับอนุญาตให้ใช้น้ำจากทางน้ำชลประทานแม่น้ำป่าสักจากโครงการชลประทานสระบุรี ตามหนังสืออนุญาตเลขที่ สบ.01/2562 รวมไม่เกินเดือนละ 1,000,000 m<sup>3</sup> สำหรับข้อมูลการใช้น้ำประปาประจำเดือน มกราคม 2567 ทางบริษัทฯ ได้รับรวมข้อมูลดังกล่าวเรียบร้อยแล้ว และได้จัดส่งมาพร้อมนี้

จึงเรียนมาเพื่อโปรดทราบ

ขอ  
(นาย)   
ผู้รับมอบอำนาจ

กรุณาติดต่อ แผนกตั้งแควลลิ้ม  
โทรศัพท์ 0-3635-8999

๑/ก.พ/๖๗

บริษัท ทีพีโอ โพลีน จำกัด (มหาชน)  
TPI POLENE PUBLIC COMPANY LIMITED

26/56 ถนนแจ้งวัฒนะ แขวงทุ่งพญาไชย เขตสายไหม กรุงเทพฯ 10120 โทร. 0-2213-1039, 0-2285-5090 โทรสาร. +66(0) 2213-1035 2213-1038  
26/56 Chan Tat Moll Rd., Thungphayachai, Sathorn, Bangkok 10120 Thailand. Tel 0-2213-1039, 0-2285-5090 Fax. +66(0)2213-1035, 2213-1038



เลขที่ PD3 111/2567

๗ มีนาคม 2567

เรื่อง : การแจ้งข้อมูลการใช้น้ำประปาประจำเดือน กุมภาพันธ์ 2567

เรียน : ผู้อำนวยการโครงการชลประทานสระบุรี

สิ่งที่ส่งมาด้วย : รายงานการใช้น้ำจากทางน้ำชลประทานแม่น้ำป่าสัก

ตามที่บริษัททีพีโอ โพลีน จำกัด (มหาชน) ได้รับอนุญาตให้ใช้น้ำจากทางน้ำชลประทานแม่น้ำป่าสักจากโครงการชลประทานสระบุรี ตามหนังสืออนุญาตเลขที่ สบ.01/2562 รวมไม่เกินเดือนละ 1,000,000 m<sup>3</sup> สำหรับข้อมูลการใช้น้ำประปาประจำเดือน กุมภาพันธ์ 2567 ทางบริษัทฯ ได้รับรวมข้อมูลดังกล่าวเรียบร้อยแล้ว และได้จัดส่งมาพร้อมนี้

จึงเรียนมาเพื่อโปรดทราบ

ขอ  
(นาย)   
ผู้รับมอบอำนาจ

กรุณาติดต่อ แผนกตั้งแควลลิ้ม  
โทรศัพท์ 0-3635-8999

๗/๓/๖๗

บริษัท ทีพีโอ โพลีน จำกัด (มหาชน)  
TPI POLENE PUBLIC COMPANY LIMITED

26/56 ถนนแจ้งวัฒนะ แขวงทุ่งพญาไชย เขตสายไหม กรุงเทพฯ 10120 โทร. 0-2213-1039, 0-2285-5090 โทรสาร. +66(0) 2213-1035 2213-1038  
26/56 Chan Tat Moll Rd., Thungphayachai, Sathorn, Bangkok 10120 Thailand. Tel 0-2213-1039, 0-2285-5090 Fax. +66(0)2213-1035, 2213-1038

บริษัท ทีพีโอ โพลีน จำกัด (มหาชน)  
รายงานการใช้น้ำจากทางน้ำชลประทานแม่น้ำป่าสัก

เดือน	จดครั้งนี่		จดครั้งก่อน		ปริมาณการใช้จากแม่น้ำป่าสัก (ถูกบันทึกเมตร, m <sup>3</sup> )
	วันที่	เลขมิเตอร์	วันที่	เลขมิเตอร์	
มกราคม 2567	25 ม.ค. 67	31457978	25 ธ.ค. 66	30891734	566,244
กุมภาพันธ์ 2567					
มีนาคม 2567					
เมษายน 2567					
พฤษภาคม 2567					
มิถุนายน 2567					
กรกฎาคม 2567					
สิงหาคม 2567					
กันยายน 2567					
ตุลาคม 2567					
พฤศจิกายน 2567					
ธันวาคม 2567					

ผู้รายงาน  
วันที่ 26 มกราคม 2567

ผู้ตรวจสอบ  
วันที่ 26 มกราคม 2567

บริษัท ทีพีโอ โพลีน จำกัด (มหาชน)  
รายงานการใช้น้ำจากทางน้ำชลประทานแม่น้ำป่าสัก

เดือน	จดครั้งนี่		จดครั้งก่อน		ปริมาณการใช้จากแม่น้ำป่าสัก (ถูกบันทึกเมตร, m <sup>3</sup> )
	วันที่	เลขมิเตอร์	วันที่	เลขมิเตอร์	
มกราคม 2567	25 ม.ค. 67	31457978	25 ธ.ค. 66	30891734	566,244
กุมภาพันธ์ 2567	27 ก.พ. 67	31831914	25 ม.ค. 67	31457978	373,936
มีนาคม 2567					
เมษายน 2567					
พฤษภาคม 2567					
มิถุนายน 2567					
กรกฎาคม 2567					
สิงหาคม 2567					
กันยายน 2567					
ตุลาคม 2567					
พฤศจิกายน 2567					
ธันวาคม 2567					

ผู้รายงาน  
วันที่ 28 กุมภาพันธ์ 2567

ผู้ตรวจสอบ  
วันที่ 28 กุมภาพันธ์ 2567

ผู้ตรวจสอบ  
วันที่ 29 เมษายน 2567



เลขที่ PD3 264/2567

๗ มิถุนายน 2567

เรื่อง : การแจ้งข้อมูลการใช้น้ำแม่น้ำป่าสัก ประจำเดือน พฤษภาคม 2567  
 เรียน : ผู้อำนวยการโครงการชลประทานสระบุรี  
 สิ่งที่ส่งมาด้วย : รายงานการใช้น้ำจากทางน้ำชลประทานแม่น้ำป่าสัก

ตามที่บริษัททีพีโอ โพลีน จำกัด (มหาชน) ได้รับอนุญาตให้ใช้น้ำจากทางน้ำชลประทานแม่น้ำป่าสักจากโครงการชลประทานสระบุรี ตามหนังสืออนุญาตเลขที่ สน.01/2562 รวมไม่เกินเดือนละ 1,000,000 m<sup>3</sup>

สำหรับข้อมูลการใช้น้ำแม่น้ำป่าสักประจำเดือน พฤษภาคม 2567 ทางบริษัทฯ ได้รวบรวมข้อมูลดังกล่าวเรียบร้อยแล้ว และได้จัดส่งมาพร้อมนี้

จึงเรียนมาเพื่อโปรดทราบ

ขอแสดงความ

ผู้รับมอบอำนาจ

กรุณาติดต่อ แผนกสิ่งแวดล้อม  
 โทรศัพท์ 0-3635-8999

๗.๖.๖๗

บริษัท ทีพีโอ โพลีน จำกัด (มหาชน)

TPI POLENE PUBLIC COMPANY LIMITED

26/56 ถนนจันทน์วัดใหม่ แขวงทุ่งพลาญ เขตสาทร กรุงเทพมหานคร 10120 โทร 0-2213-1039, 0-2285-5090 โทรสาร +66(0) 2213-1035 2213-1038  
 26/56 Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Thailand. Tel 0-2213-1039, 0-2285-5090 Fax. +66(0)2213-1035, 2213-1038



เลขที่ PD3 359/2567

๕ กรกฎาคม 2567

เรื่อง : การแจ้งข้อมูลการใช้น้ำแม่น้ำป่าสัก ประจำเดือน มิถุนายน 2567  
 เรียน : ผู้อำนวยการโครงการชลประทานสระบุรี  
 สิ่งที่ส่งมาด้วย : รายงานการใช้น้ำจากทางน้ำชลประทานแม่น้ำป่าสัก

ตามที่บริษัททีพีโอ โพลีน จำกัด (มหาชน) ได้รับอนุญาตให้ใช้น้ำจากทางน้ำชลประทานแม่น้ำป่าสักจากโครงการชลประทานสระบุรี ตามหนังสืออนุญาตเลขที่ สน.01/2562 รวมไม่เกินเดือนละ 1,000,000 m<sup>3</sup>

สำหรับข้อมูลการใช้น้ำแม่น้ำป่าสักประจำเดือน มิถุนายน 2567 ทางบริษัทฯ ได้รวบรวมข้อมูลดังกล่าวเรียบร้อยแล้ว และได้จัดส่งมาพร้อมนี้

จึงเรียนมาเพื่อโปรดทราบ

ผู้รับมอบอำนาจ

กรุณาติดต่อ แผนกสิ่งแวดล้อม  
 โทรศัพท์ 0-3635-8999

๗/๗/๖๗

บริษัท ทีพีโอ โพลีน จำกัด (มหาชน)

TPI POLENE PUBLIC COMPANY LIMITED

26/56 ถนนจันทน์วัดใหม่ แขวงทุ่งพลาญ เขตสาทร กรุงเทพมหานคร 10120 โทร 0-2213-1039, 0-2285-5090 โทรสาร +66(0) 2213-1035 2213-1038  
 26/56 Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Thailand. Tel 0-2213-1039, 0-2285-5090 Fax. +66(0)2213-1035, 2213-1038

บริษัท ทีพีโอ โพลีน จำกัด (มหาชน)  
 รายงานการใช้น้ำจากทางน้ำชลประทานแม่น้ำป่าสัก

เดือน	จดครั้งนี้		จดครั้งก่อน		ปริมาณการใช้น้ำจากแม่น้ำป่าสัก (ลูกบาศก์เมตร, m <sup>3</sup> )
	วันที่	เลขมิเตอร์	วันที่	เลขมิเตอร์	
มกราคม 2567	25 ม.ค. 67	31457978	25 ธ.ค. 66	30891734	566,244
กุมภาพันธ์ 2567	27 ก.พ. 67	31831914	25 ม.ค. 67	31457978	373,936
มีนาคม 2567	26 มี.ค. 67	32333508	27 ก.พ. 67	31831914	501,594
เมษายน 2567	26 เม.ย. 67	32907050	26 มี.ค. 67	32333508	573,542
พฤษภาคม 2567	27 พ.ค. 67	33360707	26 เม.ย. 67	32907050	453,657
มิถุนายน 2567					
กรกฎาคม 2567					
สิงหาคม 2567					
กันยายน 2567					
ตุลาคม 2567					
พฤศจิกายน 2567					
ธันวาคม 2567					

ผู้รายงาน

วันที่ 28 พฤษภาคม 2567

ผู้ตรวจสอบ

วันที่ 28 พฤษภาคม 2567

บริษัท ทีพีโอ โพลีน จำกัด (มหาชน)

รายงานการใช้น้ำจากทางน้ำชลประทานแม่น้ำป่าสัก

เดือน	จดครั้งนี้		จดครั้งก่อน		ปริมาณการใช้น้ำจากแม่น้ำป่าสัก (ลูกบาศก์เมตร, m <sup>3</sup> )
	วันที่	เลขมิเตอร์	วันที่	เลขมิเตอร์	
มกราคม 2567	25 ม.ค. 67	31457978	25 ธ.ค. 66	30891734	566,244
กุมภาพันธ์ 2567	27 ก.พ. 67	31831914	25 ม.ค. 67	31457978	373,936
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เมษายน 2567	26 เม.ย. 67	32907050	26 มี.ค. 67	32333508	573,542
พฤษภาคม 2567	27 พ.ค. 67	33360707	26 เม.ย. 67	32907050	453,657
มิถุนายน 2567	26 มิ.ย. 67	33804361	27 พ.ค. 67	33360707	443,654
กรกฎาคม 2567					
สิงหาคม 2567					
กันยายน 2567					
ตุลาคม 2567					
พฤศจิกายน 2567					
ธันวาคม 2567					

ผู้รายงาน

วันที่ 27 มิถุนายน 2567

ผู้ตรวจสอบ

วันที่ 27 มิถุนายน 2567



## ภาคผนวก ข-7

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ผลการติดตามตรวจสอบคุณภาพน้ำใต้ดิน

## ANALYSIS REPORT

**CUSTOMER NAME** : TPI POLENE PUBLIC COMPANY LIMITED  
**ADDRESS** : 299 MOO 5 MITRAPARP ROAD MITRAPHAP TABKWANG KAENGKOT SARABURI 18260  
**CONTACT INFORMATION** : TEL : 06 4294 9161 e-mail : chod.padrnuk@gmail.com  
**SAMPLING SOURCE** : MONITORING WELL  
**SAMPLE TYPE** : GROUNDWATER  
**SAMPLING DATE** : FEBRUARY 20, 2024  
**SAMPLING TIME** : 10:15 HOUR  
**SAMPLING METHOD** : SUBMERSIBLE PUMP  
**SAMPLING BY** : MR ACHITA SAENGJIAN  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM

**RECEIVED DATE** : FEBRUARY 20, 2024  
**ANALYTICAL DATE** : FEBRUARY 20 - MARCH 1, 2024  
**ISSUE DATE** : APRIL 8, 2024  
**REPORT NO.** : 2024-U019776  
**WORK NO.** : 2023-010275  
**ANALYSIS NO.** : T24AD523-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT MW 1 T24AD523-0001	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM PART 4500-H <sup>+</sup> B AND 1060 B	7.2 (30°C)	-	-
TEMPERATURE °C	°C	THERMOMETER AT SITE (SM PART 2550 B)	30	-	-
ELECTRICAL CONDUCTIVITY °	µS/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM PART 2510 B)	10.10 (30°C)	-	0.1
TURBIDITY °	NTU	NEPHELOMETRIC METHOD (SM PART 2100 B)	36	-	0.1
SALINITY °	ppt	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM PART 2520 B)	0.6	-	0.1
BIOCHEMICAL OXYGEN DEMAND °	mg/L	MEMBRANE ELECTRODE METHOD (SM PART 5210 B AND PART 4500-D G)	1.1	-	10
CHEMICAL OXYGEN DEMAND °	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM PART 5220 D)	ND	-	25.0
TOTAL SUSPENDED SOLIDS °	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM PART 2540 D)	24.6	-	5.0
TOTAL DISSOLVED SOLIDS °	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM PART 2540 C)	634	-	25
TOTAL HARDNESS °	mg/L as CaCO <sub>3</sub>	EDTA TITRIMETRIC METHOD (SM PART 2340 C)	276	-	4.0
NITRATE-NITROGEN °	mg/L NO <sub>3</sub> -N	CADMIUM REDUCTION METHOD (SM PART 4500-NO <sub>3</sub> -E)	0.11	-	0.02
PHOSPHATE °	mg/L PO <sub>4</sub> -P	ASCORBIC ACID METHOD (SM PART 4500-P E)	0.12	-	0.03
RESIDUAL CHLORINE °	mg/L Cl <sub>2</sub>	DPO FERROUS TITRIMETRIC METHOD (SM PART 4500-CL F)	ND	-	0.1
SULPHATE °	mg/L SO <sub>4</sub> -S	TURBIDIMETRIC METHOD (SM PART 4500 -SO <sub>4</sub> -E)	108	-	0.3
FAT, OIL AND GREASE °	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM PART 5520 B)	ND	-	3
SODIUM ADSORPTION RATIO °	-	INDUCTIVELY COUPLED PLASMA (ICP) AND CALCULATION METHOD	1.64	-	-

ISO 9001:2015 CERTIFIED  
BY SGS GROUP (THAILAND) CO., LTD.

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- THIS ANALYSIS REPORT APPROVES ONLY FOR THE SAMPLES AS RECEIVED.

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PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT MW 1 T24AD523-0001	REGULATORY STANDARD	DETECTION LIMIT
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	0.064	≤ 5.0	0.003
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN		

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY : STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543)  
ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.

ND : NON-DETECTABLE  
< LOQ : < LIMIT OF QUANTITATION (COPPER ≥ 0.002 AND < 0.025 mg/L, LEAD ≥ 0.003 AND < 0.100 mg/L)

<sup>a</sup> : SAMPLING AT 09:30 HOUR ON MARCH 21, 2024. ANALYSIS NO. T24G4033-0001 (ANALYTICAL DATE: MARCH 21 - APRIL 1, 2024)

*Bhuchon*  
(MR BHUCHON PANICHERTUMPI)  
LABORATORY SUPERVISOR

APRIL 8, 2024

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3/3

2024-U019776

- End of Analysis Report -

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT MW 1 T24AD523-0001	REGULATORY STANDARD	DETECTION LIMIT
<b>METALS</b>					
ARSENIC <sup>a</sup> °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM PART 3114 C)	ND	≤ 0.01	0.0003
BARIUM °	mg/L Ba	NITRIC ACID-HYDROCHLORIC ACID DIGESTION AND INDUCTIVELY COUPLED PLASMA (ICP) METHOD (SM PART 3030 F AND PART 3120 B)	0.067	-	0.003
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	< 0.003	0.002
HEXAVALENT CHROMIUM °	mg/L Cr <sup>6+</sup>	COLOURIMETRIC METHOD (SM PART 3500-CR B)	ND	≤ 0.05	0.006
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	< LOQ	≤ 10	0.002
TOTAL IRON °	mg/L Fe	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	3.59	-	0.005
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	< LOQ	≤ 0.01	0.003
MANGANESE <sup>a</sup> °	mg/L Mn	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 0.5	0.002
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE TP HEM 002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM PART 3112 B	ND	≤ 0.001	0.0001
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 0.02	0.005
SELENIUM °	mg/L Se	HYDRIDE GENERATION AAS METHOD (SM PART 3114 C)	ND	≤ 0.01	0.0005
TITANIUM °	mg/L Ti	NITRIC ACID-HYDROCHLORIC ACID DIGESTION AND INDUCTIVELY COUPLED PLASMA (ICP) METHOD (SM PART 3030 F AND PART 3120 B)	0.006	-	0.005

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2024-U019776

## ANALYSIS REPORT

**CUSTOMER NAME** : TPI POLENE PUBLIC COMPANY LIMITED  
**ADDRESS** : 299 MOO 5 MITRAPARP ROAD MITRAPHAP TABKWANG KAENGKOT SARABURI 18260  
**CONTACT INFORMATION** : TEL : 06 4294 9161 e-mail : chod.padrnuk@gmail.com  
**SAMPLING SOURCE** : MONITORING WELL  
**SAMPLE TYPE** : GROUNDWATER  
**SAMPLING DATE** : FEBRUARY 20, 2024  
**SAMPLING TIME** : 11:25 HOUR  
**SAMPLING METHOD** : SUBMERSIBLE PUMP  
**SAMPLING BY** : MR ACHITA SAENGJIAN  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM

**RECEIVED DATE** : FEBRUARY 20, 2024  
**ANALYTICAL DATE** : FEBRUARY 20 - MARCH 1, 2024  
**ISSUE DATE** : APRIL 8, 2024  
**REPORT NO.** : 2024-U019776  
**WORK NO.** : 2023-010275  
**ANALYSIS NO.** : T24AD523-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT MW2 T24AD523-0004	REGULATORY STANDARD	DETECTION LIMIT
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM PART 4500-H <sup>+</sup> B AND 1060 B	7.1 (29°C)	-	-
TEMPERATURE °C	°C	THERMOMETER AT SITE (SM PART 2550 B)	29	-	-
ELECTRICAL CONDUCTIVITY °	µS/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM PART 2510 B)	1.217 (29°C)	-	0.1
TURBIDITY °	NTU	NEPHELOMETRIC METHOD (SM PART 2100 B)	55	-	0.1
SALINITY °	ppt	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM PART 2520 B)	0.6	-	0.1
BIOCHEMICAL OXYGEN DEMAND °	mg/L	MEMBRANE ELECTRODE METHOD (SM PART 5210 B AND PART 4500-D G)	1.4	-	10
CHEMICAL OXYGEN DEMAND °	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM PART 5220 D)	ND	-	25.0
TOTAL SUSPENDED SOLIDS °	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103- 105 °C (SM PART 2540 D)	36.6	-	5.0
TOTAL DISSOLVED SOLIDS °	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM PART 2540 C)	648	-	25
TOTAL HARDNESS °	mg/L as CaCO <sub>3</sub>	EDTA TITRIMETRIC METHOD (SM PART 2340 C)	277	-	4.0
NITRATE-NITROGEN °	mg/L NO <sub>3</sub> -N	CADMIUM REDUCTION METHOD (SM PART 4500-NO <sub>3</sub> -E)	0.12	-	0.02
PHOSPHATE °	mg/L PO <sub>4</sub> -P	ASCORBIC ACID METHOD (SM PART 4500-P E)	0.12	-	0.03
RESIDUAL CHLORINE °	mg/L Cl <sub>2</sub>	DPO FERROUS TITRIMETRIC METHOD (SM PART 4500-CL F)	ND	-	0.1
SULPHATE °	mg/L SO <sub>4</sub> -S	TURBIDIMETRIC METHOD (SM PART 4500 -SO <sub>4</sub> -E)	96.6	-	0.3
FAT, OIL AND GREASE °	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM PART 5520 B)	ND	-	3
SODIUM ADSORPTION RATIO °	-	INDUCTIVELY COUPLED PLASMA (ICP) AND CALCULATION METHOD	1.76	-	-

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PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT MW2 T24AD523-0004	REGULATORY STANDARD	DETECTION LIMIT
METALS					
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM PART 3114 C)	ND	≤ 0.01	0.0003
BARIUM °	mg/L Ba	NITRIC ACID-HYDROCHLORIC ACID DIGESTION AND INDUCTIVELY COUPLED PLASMA (ICP) METHOD (SM PART 3030 F AND PART 3120 B)	0.055	-	0.003
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 0.003	0.002
HEXAVALENT CHROMIUM °	mg/L Cr <sup>6+</sup>	COLOURIMETRIC METHOD (SM PART 3500-Cr B)	ND	≤ 0.05	0.006
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 10	0.002
TOTAL IRON °	mg/L Fe	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	3.08	-	0.005
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	< LOQ	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	0.416	≤ 0.5	0.002
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE TP HEM 002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM PART 3112 B	ND	≤ 0.001	0.0001
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 0.02	0.005
SELENIUM °	mg/L Se	HYDRIDE GENERATION AAS METHOD (SM PART 3114 C)	ND	≤ 0.01	0.0005
TITANIUM °	mg/L Ti	NITRIC ACID-HYDROCHLORIC ACID DIGESTION AND INDUCTIVELY COUPLED PLASMA (ICP) METHOD (SM PART 3030 F AND PART 3120 B)	ND	-	0.005

## ANALYSIS REPORT

**CUSTOMER NAME** : TPI POLENE PUBLIC COMPANY LIMITED  
**ADDRESS** : 299 MOO 5 MITRAPARP ROAD MITTRAPHAP TABKWANG KAE NGKOI SARABURI 18260  
**CONTACT INFORMATION** : TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com  
**SAMPLING SOURCE** : MONITORING WELL  
**SAMPLE TYPE** : GROUNDWATER  
**SAMPLING DATE** : FEBRUARY 20, 2024  
**SAMPLING TIME** : 11:15 HOUR  
**SAMPLING METHOD** : SUBMERSIBLE PUMP  
**SAMPLING BY** : MR ACHITA SAENGJAN  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM

**RECEIVED DATE** : FEBRUARY 20, 2024  
**ANALYTICAL DATE** : FEBRUARY 20 - MARCH 1, 2024  
**ISSUE DATE** : MARCH 13, 2024  
**REPORT NO.** : 2024-U019778  
**WORK NO.** : 2023-010275  
**ANALYSIS NO.** : T24AD523-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT MW3 T24AD523-0003	REGULATORY STANDARD	DETECTION LIMIT
pH °	-	ELECTROMETRIC METHOD (AT SITE) SM PART 4500-H <sup>+</sup> B AND 1060 B	7.8 (30°C)	-	-
TEMPERATURE °	°C	THERMOMETER AT SITE (SM PART 2550 B)	30	-	-
ELECTRICAL CONDUCTIVITY °	µS/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM PART 2510 B)	740 (30°C)	-	0.1
TURBIDITY °	NTU	NEPHELOMETRIC METHOD (SM PART 2100 B)	30	-	0.1
SALINITY °	ppt	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM PART 2520 B)	0.4	-	0.1
BIOCHEMICAL OXYGEN DEMAND °	mg/L	MEMBRANE ELECTRODE METHOD (SM PART 5210 B AND PART 4500-O <sub>2</sub> G)	ND	-	10
CHEMICAL OXYGEN DEMAND °	mg/L	CLOSED REFLEX COLOURIMETRIC METHOD (SM PART 5220 D)	ND	-	25.0
TOTAL SUSPENDED SOLIDS °	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM PART 2540 D)	24.4	-	5.0
TOTAL DISSOLVED SOLIDS °	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM PART 2540 C)	431	-	25
TOTAL HARDNESS °	mg/L as CaCO <sub>3</sub>	EDTA TITRIMETRIC METHOD (SM PART 2340 C)	124	-	4.0
NITRATE-NITROGEN °	mg/L NO <sub>3</sub> -N	CADMIUM REDUCTION METHOD (SM PART 4500-NO <sub>3</sub> -E)	0.19	-	0.02
PHOSPHATE °	mg/L PO <sub>4</sub> -P	ASCORBIC ACID METHOD (SM PART 4500-P-E)	ND	-	0.03
RESIDUAL CHLORINE °	mg/L Cl <sub>2</sub>	DPD FERROUS TITRIMETRIC METHOD (SM PART 4500-Cl F)	ND	-	0.1
SULPHATE °	mg/L SO <sub>4</sub> <sup>2-</sup>	TURBIDIMETRIC METHOD (SM PART 4500-SO <sub>4</sub> <sup>2-</sup> F)	106	-	0.3
FAT, OIL AND GREASE °	mg/L	LIQUID LIQUID PARTITION-GRAVIMETRIC METHOD (SM PART 8520 B)	ND	-	3
SODIUM ADSORPTION RATIO °	-	INDUCTIVELY COUPLED PLASMA (ICP) AND CALCULATION METHOD	2.14	-	-



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT MW2 T24AD523-0004	REGULATORY STANDARD	DETECTION LIMIT
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	< LOQ	≤ 5.0	0.003
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN		

° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY : STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543)

ND : NON-DETECTABLE  
< LOQ : < LIMIT OF QUANTITATION (LEAD ≥ 0.003 AND < 0.100 mg/L, ZINC ≥ 0.003 AND < 0.025 mg/L)

A : SAMPLING AT 09:35 HOUR ON MARCH 21, 2024, ANALYSIS NO. T24AG033-0002 (ANALYTICAL DATE : MARCH 21/26, 2024)

*Bruchok P.*  
(MR BHUCHONK PANCHLERTUMPI)  
LABORATORY SUPERVISOR

APRIL 8, 2024

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT MW3 T24AD523-0003	REGULATORY STANDARD	DETECTION LIMIT
METALS					
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM PART 3114 C)	0.0034	< 0.01	0.0003
BARIUM °	mg/L Ba	NITRIC ACID-HYDROCHLORIC ACID DIGESTION AND INDUCTIVELY COUPLED PLASMA (ICP) METHOD (SM PART 3030 F AND PART 3120 B)	0.020	-	0.003
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 0.003	0.002
HEXAVALENT CHROMIUM °	mg/L Cr <sup>6+</sup>	COLOURIMETRIC METHOD (SM PART 3500-Cr B)	ND	≤ 0.05	0.006
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 10	0.002
TOTAL IRON °	mg/L Fe	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	0.474	-	0.005
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	< LOQ	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	0.112	≤ 0.5	0.002
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE TP HEM 002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM PART 3112 B	ND	≤ 0.001	0.0001
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE TP GW 01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 0.02	0.005
SELENIUM °	mg/L Se	HYDRIDE GENERATION AAS METHOD (SM PART 3114 C)	ND	≤ 0.01	0.0005
TITANIUM °	mg/L Ti	NITRIC ACID-HYDROCHLORIC ACID DIGESTION AND INDUCTIVELY COUPLED PLASMA (ICP) METHOD (SM PART 3030 F AND PART 3120 B)	ND	-	0.005

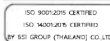
PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MW3 T24AD523-0003		
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	< LOQ	≤ 5.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN		

° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543) ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.  
ND : NON-DETECTABLE  
< LOQ : < LIMIT OF QUANTIFICATION (LEAD ≥ 0.003 AND < 0.100 mg/L, ZINC ≥ 0.003 AND < 0.025 mg/L).

*Bruchonk p.*  
(MR. BRUCHONK PANICHLERTUMPI)  
LABORATORY SUPERVISOR

MARCH 13, 2024



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2024-U019778

- End of Analysis Report -

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MW4 T24AD523-0002		
METALS					
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM PART 3114 C)	0.0022	≤ 0.01	0.0003
BARIUM °	mg/L Ba	NITRIC ACID-HYDROCHLORIC ACID DIGESTION AND INDUCTIVELY COUPLED PLASMA (ICP) METHOD (SM PART 3030 F AND PART 3120 B)	0.076	-	0.003
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 0.003	0.002
HEXAVALENT CHROMIUM °	mg/L Cr <sup>6+</sup>	COLOURIMETRIC METHOD (SM PART 3500-Cr <sup>6+</sup> )	ND	≤ 0.05	0.006
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	< LOQ	≤ 1.0	0.002
TOTAL IRON °	mg/L Fe	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	23.3	-	0.005
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	< LOQ	-	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	-	0.002
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE-TP-HEM-002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM PART 3112 B	ND	≤ 0.001	0.0001
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 0.02	0.005
SELENIUM °	mg/L Se	HYDRIDE GENERATION AAS METHOD (SM PART 3114 C)	ND	≤ 0.01	0.0005
TITANIUM °	mg/L Ti	NITRIC ACID-HYDROCHLORIC ACID DIGESTION AND INDUCTIVELY COUPLED PLASMA (ICP) METHOD (SM PART 3030 F AND PART 3120 B)	0.008	-	0.005



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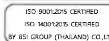
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2024-U019777

## ANALYSIS REPORT

**CUSTOMER NAME** : TPI POLENE PUBLIC COMPANY LIMITED  
**ADDRESS** : 299 MOO 5 MITRAPAP ROAD MITTRAPHAP TABKWANG KAENGKOI SARABURI 18260  
**CONTACT INFORMATION** : TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com  
**SAMPLING SOURCE** : MONITORING WELL  
**SAMPLE TYPE** : GROUNDWATER  
**SAMPLING DATE** : FEBRUARY 20, 2024  
**SAMPLING TIME** : 11:35 HOUR  
**SAMPLING METHOD** : SUBMERGIBLE PUMP  
**SAMPLING BY** : MR. ACHITA SAENGJIAN  
**ANALYZED BY** : MISS NAPAPORN KHUNNOCKHUM  
**RECEIVED DATE** : FEBRUARY 20, 2024  
**ANALYTICAL DATE** : FEBRUARY 20 - MARCH 5, 2024  
**ISSUE DATE** : APRIL 8, 2024  
**REPORT NO.** : 2024-U019777  
**WORK NO.** : 2023-010275  
**ANALYSIS NO.** : T24AD523-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MW4 T24AD523-0002		
pH °	-	ELECTROMETRIC METHOD (AT SITE) SM PART 4500-H <sup>+</sup> B AND 1060 B	7.7 (39°C)	-	-
TEMPERATURE °	°C	THERMOMETER AT SITE (SM PART 2550 B)	39	-	-
ELECTRICAL CONDUCTIVITY °	µS/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM PART 2510 B)	938 (39°C)	-	0.1
TURBIDITY °	NTU	NEPHELOMETRIC METHOD (SM PART 2130 B)	450	-	0.1
SALINITY °	ppt	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM PART 2520 B)	0.6	-	0.1
BIOCHEMICAL OXYGEN DEMAND °	mg/L	MEMBRANE ELECTRODE METHOD (SM PART 5210 B AND PART 4500-C G)	9.7	-	10
CHEMICAL OXYGEN DEMAND °	mg/L	CLOSED REFLEX, COLOURIMETRIC METHOD (SM PART 5220 D)	ND	-	25.0
TOTAL SUSPENDED SOLIDS °	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM PART 2540 D)	140	-	5.0
TOTAL DISSOLVED SOLIDS °	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM PART 2540 C)	625	-	25
TOTAL HARDNESS °	mg/L as CaCO <sub>3</sub>	EDTA TITRIMETRIC METHOD (SM PART 2340 C)	319	-	4.0
NITRATE-NITROGEN °	mg/L NO <sub>3</sub> -N	CADMIUM REDUCTION METHOD (SM PART 4500-NO <sub>3</sub> -E)	0.25	-	0.02
PHOSPHATE °	mg/L PO <sub>4</sub> <sup>3-</sup>	ASCORBIC ACID METHOD (SM PART 4500-P E)	0.03	-	0.03
RESIDUAL CHLORINE °	mg/L Cl <sub>2</sub>	DPO FERROUS TITRIMETRIC METHOD (SM PART 4500-Cl F)	ND	-	0.1
SULPHATE °	mg/L SO <sub>4</sub> <sup>2-</sup>	TURBIDIMETRIC METHOD (SM PART 4500-SO <sub>4</sub> <sup>2-</sup> E)	152	-	0.3
FAT, OIL AND GREASE °	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM PART 5520 B)	ND	-	3
SODIUM ADSORPTION RATIO °	-	INDUCTIVELY COUPLED PLASMA (ICP) AND CALCULATION METHOD	1.16	-	-



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PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MW4 T24AD523-0002		
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	0.037	≤ 5.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			BROWN/TURBID BROWN		

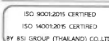
° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543) ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.  
ND : NON-DETECTABLE  
< LOQ : < LIMIT OF QUANTIFICATION (COPPER ≥ 0.002 AND < 0.025 mg/L, LEAD ≥ 0.003 AND < 0.100 mg/L)

° : SAMPLING AT 09:40 HOUR ON MARCH 21, 2024, ANALYSIS NO. T24AG333-0003 (ANALYTICAL DATE : MARCH 21 - APRIL 1, 2024)

*Bruchonk p.*  
(MR. BRUCHONK PANICHLERTUMPI)  
LABORATORY SUPERVISOR

APRIL 8, 2024



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2024-U019777

- End of Analysis Report -



ANALYSIS REPORT

**CUSTOMER NAME** : TPI POLENE PUBLIC COMPANY LIMITED  
**ADDRESS** : 299 MOO 5 MITRAPARP ROAD MITTRAPHAP TABKWANG KAENGKOI SARABURI 18260  
**CONTACT INFORMATION** : TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com  
**SAMPLING SOURCE** : THE OPPOSITE SIDE OF WAT SAB BON  
**SAMPLE TYPE** : GROUNDWATER  
**SAMPLING DATE** : FEBRUARY 20, 2024  
**SAMPLING TIME** : 10:50 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR ACHITA SAENGJIAN  
**ANALYZED BY** : MISS NADRAPA KAMOLBOON

**RECEIVED DATE** : FEBRUARY 20, 2024  
**ANALYTICAL DATE** : FEBRUARY 20 - MARCH 1, 2024  
**ISSUE DATE** : MARCH 12, 2024  
**REPORT NO.** : 2024-U020028  
**WORK NO.** : 2023-010275  
**ANALYSIS NO.** : T24AD524-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT GROUNDWATER T24AD524-0002	REGULATORY STANDARD	DETECTION LIMIT
CYANIDE	µg/L CN	DISTILLATION, PYRIDINE-BARBITURIC ACID METHOD (SM PART 4500-CN C AND PART 4500-CN E)	ND	≤ 200	5
METALS					
ARSENIC	mg/L As	HYDRIDE GENERATION AAS METHOD (SM PART 3114 C)	ND	≤ 0.01	0.0003
CADMIUM	mg/L Cd	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 0.003	0.002
HEXAVALENT CHROMIUM	mg/L Cr <sup>6+</sup>	COLOURIMETRIC METHOD (SM PART 3500-Cr B)	ND	≤ 0.05	0.006
COPPER	mg/L Cu	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 10	0.002
LEAD	mg/L Pb	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 0.01	0.003
MANGANESE	mg/L Mn	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	< LOQ	≤ 0.5	0.002
MERCURY	mg/L Hg	IN-HOUSE METHOD: UAE-TP-HEM-002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM PART 3112 B	ND	≤ 0.001	0.0001
NICKEL	mg/L Ni	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 0.02	0.005
SELENIUM	mg/L Se	HYDRIDE GENERATION AAS METHOD (SM PART 3114 C)	ND	≤ 0.01	0.0005



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PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			GROUNDWATER T24AD524-0002		
ZINC	mg/L Zn	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	< 5.0	0.003
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR -		

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>RD</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>RD</sup> EDITION, 2017.

REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543)  
ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535,  
PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL. 117, SPECIAL PART 950, DATED SEPTEMBER 15,  
B.E. 2543 (2000).

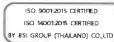
ND : NON-DETECTABLE

< LOQ : < LIMIT OF QUANTITATION (MANGANESE ≥ 0.002 AND < 0.025 mg/L)

*Benawan V.*

(MISS BENJAWAN VIRIYOTHA)  
LABORATORY SUPERVISOR

MARCH 13, 2024



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2024-U020028

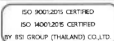
- End of Analysis Report -

ANALYSIS REPORT

**CUSTOMER NAME** : TPI POLENE PUBLIC COMPANY LIMITED  
**ADDRESS** : 299 MOO 5 MITRAPARP ROAD MITTRAPHAP TABKWANG KAENGKOI SARABURI 18260  
**CONTACT INFORMATION** : TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com  
**SAMPLING SOURCE** : THE OPPOSITE SIDE OF WAT SAB BON  
**SAMPLE TYPE** : GROUNDWATER  
**SAMPLING DATE** : FEBRUARY 20, 2024  
**SAMPLING TIME** : 10:50 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR ACHITA SAENGJIAN  
**ANALYZED BY** : MISS WORAKON PADSONGCHAN

**RECEIVED DATE** : FEBRUARY 20, 2024  
**ANALYTICAL DATE** : FEBRUARY 20-29, 2024  
**ISSUE DATE** : MARCH 12, 2024  
**REPORT NO.** : 2024-U020029  
**WORK NO.** : 2023-010275  
**ANALYSIS NO.** : T24AD524-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT GROUNDWATER T24AD524-0002	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
CHLORIDANE	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	≤ 0.2	0.02	-
LINDANE	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	≤ 0.2	0.02	-
ORGANOCHLORINE PESTICIDES						
DDT	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	≤ 2	0.04	-
DIELDRIN	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	≤ 0.03	0.02	-
HEPTACHLOR	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	≤ 0.4	0.02	-
HEPTACHLOR EPOXIDE	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	≤ 0.2	0.02	-
POLYCHLORINATED BIPHENYLS(PCBs)						
PCB1254	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6431 B)	ND	-	0.10	-



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PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			GROUNDWATER T24AD524-0002			
VOLATILE ORGANIC COMPOUNDS						
VINYL CHLORIDE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	≤ 2	-	0.20
SAMPLE CONDITION						
WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR -			

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>RD</sup> EDITION, 2017.

REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543)  
ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535,  
PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL. 117, SPECIAL PART 950, DATED SEPTEMBER 15,  
B.E. 2543 (2000).

ND : NON-DETECTABLE

*Benawan V.*

(MISS BENJAWAN VIRIYOTHA)  
LABORATORY SUPERVISOR

MARCH 13, 2024



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2024-U020029

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## ANALYSIS REPORT

**CUSTOMER NAME** : TPI POLENE PUBLIC COMPANY LIMITED  
**ADDRESS** : 299 MOO 5 MITRAPAP ROAD MITTRAPHAP TABKWANG KAENGKOT SARABURI 18260  
**CONTACT INFORMATION** : TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com  
**SAMPLING SOURCE** : THE OPPOSITE SIDE OF WAT SAB BON  
**SAMPLE TYPE** : GROUNDWATER  
**SAMPLING DATE** : FEBRUARY 20, 2024  
**SAMPLING TIME** : 10:50 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. ACHITA SAENGJAN  
**ANALYZED BY** : MISS WORAKON PADSONGCHAN

**RECEIVED DATE** : FEBRUARY 20, 2024  
**ANALYTICAL DATE** : FEBRUARY 20-29, 2024  
**ISSUE DATE** : MARCH 12, 2024  
**REPORT NO.** : 2024-U020030  
**WORK NO.** : 2023-010275  
**ANALYSIS NO.** : T24AD524-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT GROUNDWATER T24AD524-0002	REGULATORY STANDARD	LIMIT OF QUANTITATION (LOQ)
VOLATILE ORGANIC COMPOUNDS					
BENZENE *	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	≤ 5	0.20
CARBON TETRACHLORIDE *	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	≤ 5	0.20
1,2-DICHLOROETHANE *	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	≤ 5	0.20
1,1-DICHLOROETHYLENE *	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	≤ 7	0.20
cis-1,2-DICHLOROETHYLENE *	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	≤ 70	0.20
trans-1,2-DICHLOROETHYLENE *	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	≤ 100	0.20
DICHLOROMETHANE *	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	≤ 5	0.20
ETHYLBENZENE *	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	≤ 700	0.20
STYRENE *	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	≤ 100	0.20
TETRACHLOROETHYLENE *	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	≤ 5	0.20
TOLUENE *	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	≤ 1000	0.20
TRICHLOROETHYLENE *	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	≤ 5	0.20
1,1,1-TRICHLOROETHANE *	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	≤ 200	0.20
1,1,2-TRICHLOROETHANE *	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	≤ 5	0.20



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PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT GROUNDWATER T24AD524-0002	REGULATORY STANDARD	LIMIT OF QUANTITATION (LOQ)
TOTAL XYLENES *	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.60	≤ 10,000	0.60
<b>SAMPLE CONDITION</b>					
WATER'S COLOUR/TURBID			COLOURLESS/CLEAR		
SEDIMENT			-		

\* : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
\* : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
\* : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543)  
ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535,  
PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL. 117, SPECIAL PART 950, DATED SEPTEMBER 15, B.E. 2543 (2000).

*Peyawan V.*  
(MISS BENJAWAN VRIYOTHAI)  
LABORATORY SUPERVISOR

MARCH 13, 2024



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2024-U020030

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## ANALYSIS REPORT

**CUSTOMER NAME** : TPI POLENE PUBLIC COMPANY LIMITED  
**ADDRESS** : 299 MOO 5 MITRAPAP ROAD MITTRAPHAP TABKWANG KAENGKOT SARABURI 18260  
**CONTACT INFORMATION** : TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com  
**SAMPLING SOURCE** : THE OPPOSITE SIDE OF WAT SAB BON  
**SAMPLE TYPE** : GROUNDWATER  
**SAMPLING DATE** : FEBRUARY 20, 2024  
**SAMPLING TIME** : 10:50 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. ACHITA SAENGJAN  
**ANALYZED BY** : MISS WORAKON PADSONGCHAN

**RECEIVED DATE** : FEBRUARY 20, 2024  
**ANALYTICAL DATE** : FEBRUARY 20-27, 2024  
**ISSUE DATE** : MARCH 12, 2024  
**REPORT NO.** : 2024-U020031  
**WORK NO.** : 2023-010275  
**ANALYSIS NO.** : T24AD524-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT GROUNDWATER T24AD524-0002	REGULATORY STANDARD	DETECTION LIMIT
2,4-D	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6640 B)	ND	≤ 30	10
ATRAZINE	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD	ND	≤ 3	10
BENZO(a)PYRENE	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (FID) METHOD (SM PART 6440 B)	ND	≤ 0.2	0.10
PENTACHLOROPHENOL	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (FID) METHOD (SM PART 6420 B)	ND	≤ 1	10
<b>SAMPLE CONDITION</b>					
WATER'S COLOUR/TURBID			COLOURLESS/CLEAR		
SEDIMENT			-		

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543)  
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PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL. 117, SPECIAL PART 950, DATED SEPTEMBER 15, B.E. 2543 (2000).

ND : NON-DETECTABLE

*Peyawan V.*  
(MISS BENJAWAN VRIYOTHAI)  
LABORATORY SUPERVISOR

MARCH 13, 2024



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## ANALYSIS REPORT

**CUSTOMER NAME** : TPI POLENE PUBLIC COMPANY LIMITED  
**ADDRESS** : 299 MOO 5 MITRAPAP ROAD MITTRAPHAP TABKWANG KAENGKOT SARABURI 18260  
**CONTACT INFORMATION** : TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com  
**SAMPLING SOURCE** : ฝั่งตรงข้าม วัด 5  
**SAMPLE TYPE** : GROUNDWATER  
**SAMPLING DATE** : FEBRUARY 20, 2024  
**SAMPLING TIME** : 13:30 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. ACHITA SAENGJAN  
**ANALYZED BY** : MISS NAPAPORN KHUNNOKKHUM

**RECEIVED DATE** : FEBRUARY 20, 2024  
**ANALYTICAL DATE** : FEBRUARY 20 - MARCH 1, 2024  
**ISSUE DATE** : MARCH 12, 2024  
**REPORT NO.** : 2024-U020033  
**WORK NO.** : 2023-010275  
**ANALYSIS NO.** : T24AD524-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT GROUNDWATER T24AD524-0003	REGULATORY STANDARD	DETECTION LIMIT
pH *	-	ELECTROMETRIC METHOD (AT SITE) SM PART 4500-H <sup>+</sup> B AND 1060 B	7.8 (35°C)	-	-
TEMPERATURE °	°C	THERMOMETER AT SITE (SM PART 2550 B)	35	-	-
TURBIDITY °	NTU	NEPHELOMETRIC METHOD (SM PART 2100 B)	17	-	0.1
ELECTRICAL CONDUCTIVITY °	µS/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM PART 2540 B)	843 (35°C)	-	0.1
SALINITY °	ppt	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM PART 2520 B)	0.5	-	0.1
BIOCHEMICAL OXYGEN DEMAND °	mg/L	MEMBRANE ELECTRODE METHOD (SM PART 5210 B AND PART 4500-O <sub>2</sub> G)	ND	-	10
CHEMICAL OXYGEN DEMAND °	mg/L	CLOSED REFLEX, COLOURIMETRIC METHOD (SM PART 5220 D)	ND	-	25.0
TOTAL SUSPENDED SOLIDS *	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM PART 2540 D)	ND	-	5.0
TOTAL DISSOLVED SOLIDS *	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM PART 2540 C)	669	-	25
TOTAL HARDNESS *	mg/L as CaCO <sub>3</sub>	EDTA TITRIMETRIC METHOD (SM PART 2340 C)	423	-	4.0
NITRATE NITROGEN °	mg/L NO <sub>3</sub> -N	CADMIUM REDUCTION METHOD (SM PART 4500-NO <sub>3</sub> -E)	ND	-	0.02
PHOSPHATE °	mg/L PO <sub>4</sub> <sup>3-</sup>	ASORBIC ACID METHOD (SM PART 4500-P-E)	ND	-	0.03
RESIDUAL CHLORINE °	mg/L Cl <sub>2</sub>	DIP FERROUS TITRIMETRIC METHOD (SM PART 4500-CL <sub>2</sub> -F)	ND	-	0.1
SULPHATE °	mg/L SO <sub>4</sub> <sup>2-</sup>	TURBIDIMETRIC METHOD (SM PART 4500-SO <sub>4</sub> <sup>2-</sup> -E)	222	-	0.3
FAT, OIL AND GREASE °	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM PART 5520 B)	ND	-	3
SODIUM ADSORPTION RATIO °	-	INDUCTIVELY COUPLED PLASMA (ICP) AND CALCULATION METHOD	0.257	-	-



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PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			GROUNDWATER T24AD524-0003		
METALS					
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM PART 3114 C)	0.0003	≤ 0.01	0.0003
BARIUM °	mg/L Ba	NITRIC ACID-HYDROCHLORIC ACID DIGESTION AND INDUCTIVELY COUPLED PLASMA (ICP) METHOD (SM PART 3030 F AND PART 3120 B)	0.014	-	0.003
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 0.003	0.002
HEXAVALENT CHROMIUM °	mg/L Cr <sup>6+</sup>	COLOURIMETRIC METHOD (SM PART 3500 Cr B)	ND	≤ 0.05	0.006
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 10	0.002
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	0.153	-	0.005
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	0.034	≤ 0.5	0.002
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE-TP-HEM-002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM PART 3112 B	ND	≤ 0.001	0.0001
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	≤ 0.02	0.005
SELENIUM °	mg/L Se	HYDRIDE GENERATION AAS METHOD (SM PART 3114 C)	ND	≤ 0.01	0.0005
TITANIUM °	mg/L Ti	NITRIC ACID-HYDROCHLORIC ACID DIGESTION AND INDUCTIVELY COUPLED PLASMA (ICP) METHOD (SM PART 3030 F AND PART 3120 B)	ND	-	0.005

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			GROUNDWATER T24AD524-0003		
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	< LOQ	≤ 5.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR BROWN		

° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543) ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535, PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL. 117, SPECIAL PART 950, DATED SEPTEMBER 15, B.E. 2543 (2000).

ND : NON-DETECTABLE

< LOQ : < LIMIT OF QUANTITATION (ZINC ≥ 0.003 AND < 0.025 mg/L)

*Benjawan V.*

(MISS BENJAWAN VIRIYOTHAJ)  
LABORATORY SUPERVISOR

MARCH 13, 2024

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2024-U020033

- End of Analysis Report -

## ANALYSIS REPORT

**CUSTOMER NAME** : TP1 POLENE PUBLIC COMPANY LIMITED  
**ADDRESS** : 299 MOO 5 MITRAPAR ROAD MITTRAPHAP TABKWANG KAENGKROI SARABURI 18260  
**CONTACT INFORMATION** : TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : BLANK (GROUNDWATER)  
**SAMPLING DATE** : -  
**SAMPLING TIME** : -  
**SAMPLING METHOD** : -  
**SAMPLING BY** : -  
**ANALYZED BY** : MISS NADNAPA KAMOLBOON

**RECEIVED DATE** : FEBRUARY 20, 2024  
**ANALYTICAL DATE** : FEBRUARY 20 - MARCH 5, 2024  
**ISSUE DATE** : MARCH 12, 2024  
**REPORT NO.** : 2024-U020051  
**WORK NO.** : 2023-010275  
**ANALYSIS NO.** : 2024-FB0147, 2024-TB0144

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT		DETECTION LIMIT
			1 2024-FB0147	2 2024-TB0144	
TURBIDITY	NTU	NEPHELOMETRIC METHOD (SM PART 2100 B)	ND	ND	0.1
BIOCHEMICAL OXYGEN DEMAND	mg/L	MEMBRANE ELECTRODE METHOD (SM PART 5210 B AND PART 4500-O G)	ND	ND	10
CHEMICAL OXYGEN DEMAND	mg/L	CLOSED REFLEX, COLOURIMETRIC METHOD (SM PART 5220 D)	ND	ND	250
TOTAL SUSPENDED SOLIDS	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM PART 2540 D)	ND	ND	5.0
TOTAL DISSOLVED SOLIDS	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM PART 2540 C)	ND	ND	25
TOTAL HARDNESS	mg/L as CaCO <sub>3</sub>	EDTA TITRIMETRIC METHOD (SM PART 2340 C)	ND	ND	4.0
NITRATE-NITROGEN	mg/L NO <sub>3</sub> -N	CADMIUM REDUCTION METHOD (SM PART 4500-NO <sub>3</sub> -E)	ND	ND	0.02
PHOSPHATE	mg/L PO <sub>4</sub> -P	ASCORBIC ACID METHOD (SM PART 4500-PO <sub>4</sub> -P)	ND	ND	0.03
SULPHATE	mg/L SO <sub>4</sub> <sup>2-</sup>	TURBIDIMETRIC METHOD (SM PART 4500-SO <sub>4</sub> <sup>2-</sup> -E)	ND	ND	0.3
FAT, OIL AND GREASE	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM PART 5520 B)	ND	ND	3
CYANIDE	µg/L CN <sup>-</sup>	DISTILLATION, PYRIDINE-BARBITURIC ACID METHOD (SM PART 4500-CN C AND PART 4500-CN E)	ND	ND	5
METALS					
ARSENIC	mg/L As	HYDRIDE GENERATION AAS METHOD (SM PART 3114 C)	ND	ND	0.0003
BARIUM	mg/L Ba	NITRIC ACID-HYDROCHLORIC ACID DIGESTION AND INDUCTIVELY COUPLED PLASMA (ICP) METHOD (SM PART 3030 F AND PART 3120 B)	ND	ND	0.003
CADMIUM	mg/L Cd	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	ND	0.002
HEXAVALENT CHROMIUM	mg/L Cr <sup>6+</sup>	COLOURIMETRIC METHOD (SM PART 3500 Cr B)	ND	ND	0.006
COPPER	mg/L Cu	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	ND	0.002
IRON	mg/L Fe	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	ND	0.005
LEAD	mg/L Pb	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	ND	0.003

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PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT		DETECTION LIMIT
			1 2024-FB0147	2 2024-TB0144	
MANGANESE	mg/L Mn	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	ND	0.002
MERCURY	mg/L Hg	IN-HOUSE METHOD: UAE-TP-HEM-002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM PART 3112 B	ND	ND	0.0001
NICKEL	mg/L Ni	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	ND	0.005
SELENIUM	mg/L Se	HYDRIDE GENERATION AAS METHOD (SM PART 3114 C)	ND	ND	0.0005
TITANIUM	mg/L Ti	NITRIC ACID-HYDROCHLORIC ACID DIGESTION AND INDUCTIVELY COUPLED PLASMA (ICP) METHOD (SM PART 3030 F AND PART 3120 B)	ND	ND	0.005
ZINC	mg/L Zn	IN-HOUSE METHOD: UAE-TP-GW-01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM PART 3030 E AND PART 3111 B	ND	ND	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR -	COLOURLESS/CLEAR -	

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

RESULT 1 : FIELD BLANK

RESULT 2 : TRIP BLANK

ND : NON-DETECTABLE

*Benjawan V.*

(MISS BENJAWAN VIRIYOTHAJ)  
LABORATORY SUPERVISOR

MARCH 13, 2024

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2024-U020051

- End of Analysis Report -

ANALYSIS REPORT

**CUSTOMER NAME** : TPI POLENE PUBLIC COMPANY LIMITED  
**ADDRESS** : 299 MOO 5 MITRAPARP ROAD MITTRAPHAP TABKWANG KAENGKOT SARABURI 18260  
**CONTACT INFORMATION** : TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : BLANK (GROUNDWATER)  
**SAMPLING DATE** : -  
**SAMPLING TIME** : -  
**SAMPLING METHOD** : -  
**SAMPLING BY** : -  
**ANALYZED BY** : MISS WORAKON PADSONGCHAN  
**RECEIVED DATE** : FEBRUARY 20, 2024  
**ANALYTICAL DATE** : FEBRUARY 20-27, 2024  
**ISSUE DATE** : MARCH 12, 2024  
**REPORT NO.** : 2024-U020052  
**WORK NO.** : 2023-010275  
**ANALYSIS NO.** : 2024-FB0147, 2024-TB0144

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT		DETECTION LIMIT
			1 2024-FB0147	2 2024-TB0144	
2,4-D	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6640 B)	ND	ND	10
ATRAZINE	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD	ND	ND	10
BENZO(a)PYRENE	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (FID) METHOD (SM PART 6440 B)	ND	ND	0.10
PENTACHLOROPHENOL	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (FID) METHOD (SM PART 6420 B)	ND	ND	10
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR	COLOURLESS/CLEAR	

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
RESULT 1 : FIELD BLANK  
RESULT 2 : TRIP BLANK  
ND : NON-DETECTABLE

*Benjawan V.*  
(MISS BENJAWAN VIRIYOTHAJ)  
LABORATORY SUPERVISOR

MARCH 13, 2024

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PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			FIELD BLANK 2024-FB0147		
VOLATILE ORGANIC COMPOUNDS					
VINYL CHLORIDE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	-	0.20
SAMPLE CONDITION					
WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR		
			-		

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
ND : NON-DETECTABLE

*Benjawan V.*  
(MISS BENJAWAN VIRIYOTHAJ)  
LABORATORY SUPERVISOR

MARCH 13, 2024

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ANALYSIS REPORT

**CUSTOMER NAME** : TPI POLENE PUBLIC COMPANY LIMITED  
**ADDRESS** : 299 MOO 5 MITRAPARP ROAD MITTRAPHAP TABKWANG KAENGKOT SARABURI 18260  
**CONTACT INFORMATION** : TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : BLANK (GROUNDWATER)  
**SAMPLING DATE** : -  
**SAMPLING TIME** : -  
**SAMPLING METHOD** : -  
**SAMPLING BY** : -  
**ANALYZED BY** : MISS WORAKON PADSONGCHAN  
**RECEIVED DATE** : FEBRUARY 20, 2024  
**ANALYTICAL DATE** : FEBRUARY 20-29, 2024  
**ISSUE DATE** : MARCH 12, 2024  
**REPORT NO.** : 2024-U020053  
**WORK NO.** : 2023-010275  
**ANALYSIS NO.** : 2024-FB0147

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			FIELD BLANK 2024-FB0147		
CHLORDANE	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	0.02	-
LINDANE	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	0.02	-
ORGANOCHLORINE PESTICIDES					
DDT	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	0.04	-
DIELDRIN	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	0.02	-
HEPTACHLOR	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	0.02	-
HEPTACHLOR EPOXIDE	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	0.02	-
POLYCHLORINATED BIPHENYLS (PCBs)					
PCB1254	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6431 B)	ND	0.10	-

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ANALYSIS REPORT

**CUSTOMER NAME** : TPI POLENE PUBLIC COMPANY LIMITED  
**ADDRESS** : 299 MOO 5 MITRAPARP ROAD MITTRAPHAP TABKWANG KAENGKOT SARABURI 18260  
**CONTACT INFORMATION** : TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com  
**SAMPLING SOURCE** : -  
**SAMPLE TYPE** : BLANK (GROUNDWATER)  
**SAMPLING DATE** : -  
**SAMPLING TIME** : -  
**SAMPLING METHOD** : -  
**SAMPLING BY** : -  
**ANALYZED BY** : MISS WORAKON PADSONGCHAN  
**RECEIVED DATE** : FEBRUARY 20, 2024  
**ANALYTICAL DATE** : FEBRUARY 20-29, 2024  
**ISSUE DATE** : MARCH 12, 2024  
**REPORT NO.** : 2024-U020056  
**WORK NO.** : 2023-010275  
**ANALYSIS NO.** : 2024-TB0144

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			TRIP BLANK 2024-TB0144		
CHLORDANE	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	0.02	-
LINDANE	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	0.02	-
ORGANOCHLORINE PESTICIDES					
DDT	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	0.04	-
DIELDRIN	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	0.02	-
HEPTACHLOR	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	0.02	-
HEPTACHLOR EPOXIDE	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6630 C)	ND	0.02	-
POLYCHLORINATED BIPHENYLS (PCBs)					
PCB1254	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM PART 6431 B)	ND	0.10	-

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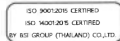
PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			TRIP BLANK 2024-TB0144		
VOLATILE ORGANIC COMPOUNDS					
VINYL CHLORIDE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
SAMPLE CONDITION					
WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR		

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>RD</sup> EDITION, 2017.  
ND : NON-DETECTABLE

*Benjawan V.*

(MISS BENJAWAN VIRIYOTHAI)  
LABORATORY SUPERVISOR

MARCH 13, 2024



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2024-U020056

- End of Analysis Report -

## ANALYSIS REPORT

CUSTOMER NAME	: TPI POLENE PUBLIC COMPANY LIMITED	RECEIVED DATE	: FEBRUARY 20, 2024
ADDRESS	: 299 MOO 5 MITRAPAP ROAD MITTRAPHAP TABKWANG KAENGKOI SARABURI 18260	ANALYTICAL DATE	: FEBRUARY 20-29, 2024
CONTACT INFORMATION	: TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com	ISSUE DATE	: MARCH 12, 2024
SAMPLING SOURCE	: -	REPORT NO.	: 2024-U020059
SAMPLE TYPE	: BLANK (GROUNDWATER)	WORK NO.	: 2023-010275
SAMPLING DATE	: -	ANALYSIS NO.	: 2024-FB0147
SAMPLING TIME	: -		
SAMPLING METHOD	: -		
SAMPLING BY	: -		
ANALYZED BY	: MISS WORAKON PADSONGCHAN		

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			FIELD BLANK 2024-FB0147		
VOLATILE ORGANIC COMPOUNDS					
BENZENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
CARBON TETRACHLORIDE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
1,2-DICHLOROETHANE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
1,1-DICHLOROETHYLENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
cis-1,2-DICHLOROETHYLENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
trans-1,2-DICHLOROETHYLENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
DICHLOROMETHANE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
ETHYLBENZENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
STYRENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
TETRACHLOROETHYLENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20



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PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			FIELD BLANK 2024-FB0147		
TOLUENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
TRICHLOROETHYLENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
1,1,1-TRICHLOROETHANE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
1,1,2-TRICHLOROETHANE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
TOTAL XYLENES	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.60	-	0.60
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR		

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>RD</sup> EDITION, 2017.

*Benjawan V.*

(MISS BENJAWAN VIRIYOTHAI)  
LABORATORY SUPERVISOR

MARCH 13, 2024



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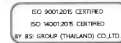
2024-U020059

- End of Analysis Report -

## ANALYSIS REPORT

CUSTOMER NAME	: TPI POLENE PUBLIC COMPANY LIMITED	RECEIVED DATE	: FEBRUARY 20, 2024
ADDRESS	: 299 MOO 5 MITRAPAP ROAD MITTRAPHAP TABKWANG KAENGKOI SARABURI 18260	ANALYTICAL DATE	: FEBRUARY 20-29, 2024
CONTACT INFORMATION	: TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com	ISSUE DATE	: MARCH 12, 2024
SAMPLING SOURCE	: -	REPORT NO.	: 2024-U020060
SAMPLE TYPE	: BLANK (GROUNDWATER)	WORK NO.	: 2023-010275
SAMPLING DATE	: -	ANALYSIS NO.	: 2024-TB0144
SAMPLING TIME	: -		
SAMPLING METHOD	: -		
SAMPLING BY	: -		
ANALYZED BY	: MISS WORAKON PADSONGCHAN		

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			TRIP BLANK 2024-TB0144		
VOLATILE ORGANIC COMPOUNDS					
BENZENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
CARBON TETRACHLORIDE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
1,2-DICHLOROETHANE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
1,1-DICHLOROETHYLENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
cis-1,2-DICHLOROETHYLENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
trans-1,2-DICHLOROETHYLENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
DICHLOROMETHANE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
ETHYLBENZENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
STYRENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
TETRACHLOROETHYLENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20



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PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	DETECTION LIMIT	LIMIT OF QUANTITATION (LOQ)
			TRIP BLANK 2024-TB0144		
TOLUENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
TRICHLOROETHYLENE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
1,1,1-TRICHLOROETHANE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
1,1,2-TRICHLOROETHANE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	0.20
TOTAL XYLENES	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.60	-	0.60
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR -		

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

*Benjawan V.*  
(MISS BENJAWAN VIRIYOTHAI)  
LABORATORY SUPERVISOR

MARCH 13, 2024



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2024-U020060

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## ANALYSIS REPORT

<b>CUSTOMER NAME</b>	: TPI POLENE PUBLIC COMPANY LIMITED	<b>RECEIVED DATE</b>	: FEBRUARY 20, 2024
<b>ADDRESS</b>	: 299 MOO 5 MITRAPAR ROAD MITTRAPHAP TABKWANG KAENGKOI SARABURI 18260	<b>ANALYTICAL DATE</b>	: FEBRUARY 20 - MARCH 1, 2024
<b>CONTACT INFORMATION</b>	: TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com	<b>ISSUE DATE</b>	: MARCH 12, 2024
<b>SAMPLE SOURCE</b>	: TPI PLAZA AREA	<b>REPORT NO.</b>	: 2024-U020005
<b>SAMPLE TYPE</b>	: GROUNDWATER	<b>WORK NO.</b>	: 2023-010275
<b>SAMPLING DATE</b>	: FEBRUARY 20, 2024	<b>ANALYSIS NO.</b>	: T24AD524-0001
<b>SAMPLING TIME</b>	: 12:40 HOUR		
<b>SAMPLING METHOD</b>	: GRAB		
<b>SAMPLING BY</b>	: MR ACHITA SAENGJAN		
<b>ANALYZED BY</b>	: MISS NADNAPA KAMOLBOON		

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD		DETECTION LIMIT
			GROUNDWATER T24AD524-0001	SUITABLE ALLOWANCE CONCENTRATION	MAXIMUM ALLOWABLE CONCENTRATION	
CYANIDE	µg/L CN	DISTILLATION, PYRIDINE-BARBITURIC ACID METHOD (SM. PART 4500-CN C AND PART 4500-CN E)	ND	NONE	≤ 0.1	5
METALS						
ARSENIC	mg/L As	HYDRIDE GENERATION AAS METHOD (SM. PART 3114 C)	ND	NONE	≤ 0.05	0.0003
CADMIUM	mg/L Cd	IN-HOUSE METHOD: UAE TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM. PART 3030 E AND PART 3111 B	ND	NONE	≤ 0.01	0.002
HEXAVALENT CHROMIUM	mg/L Cr <sup>6+</sup>	COLOURIMETRIC METHOD (SM. PART 3500-Cr B)	ND	-	-	0.006
NICKEL	mg/L Ni	IN-HOUSE METHOD: UAE TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM. PART 3030 E AND PART 3111 B	ND	-	-	0.005
LEAD	mg/L Pb	IN-HOUSE METHOD: UAE TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM. PART 3030 E AND PART 3111 B	ND	NONE	≤ 0.05	0.003
MERCURY	mg/L Hg	IN-HOUSE METHOD: UAE TP-HM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM. PART 3112 B	ND	NONE	≤ 0.001	0.0001
COPPER	mg/L Cu	IN-HOUSE METHOD: UAE TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM. PART 3030 E AND PART 3111 B	< LOQ	≤ 10	≤ 15	0.002
SELENIUM	mg/L Se	HYDRIDE GENERATION AAS METHOD (SM. PART 3114 C)	ND	NONE	≤ 0.01	0.0005



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PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD		DETECTION LIMIT
			GROUNDWATER T24AD524-0001	SUITABLE ALLOWANCE CONCENTRATION	MAXIMUM ALLOWABLE CONCENTRATION	
MANGANESE	mg/L Mn	IN-HOUSE METHOD: UAE TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM. PART 3030 E AND PART 3111 B	ND	≤ 0.3	≤ 0.5	0.002
ZINC	mg/L Zn	IN-HOUSE METHOD: UAE TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM. PART 3030 E AND PART 3111 B	< LOQ	≤ 5.0	≤ 15	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR -			

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.

REGULATORY STANDARD: GROUNDWATER QUALITY STANDARD FOR DRINKING PURPOSES, SUITABLE ALLOWANCE AND MAXIMUM ALLOWABLE CONCENTRATIONS. NOTIFICATION OF THE MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT: TECHNICAL CRITERIA AND MEASURES TO PREVENT PUBLIC HEALTH AND ENVIRONMENT HAZARD B.E.2561 (2008), ISSUED UNDER THE GROUND WATER ACT B.E.2520 (1977), PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL.125, SPECIAL PART 850 DATED MAY 21, B.E.2561 (2008)

ND : NON-DETECTABLE.  
< LOQ : < LIMIT OF QUANTITATION (COPPER ≥ 0.002 AND < 0.025 mg/L, ZINC ≥ 0.003 AND < 0.025 mg/L)

*Benjawan V.*  
(MISS BENJAWAN VIRIYOTHAI)  
LABORATORY SUPERVISOR

MARCH 13, 2024



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2024-U020060

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## ANALYSIS REPORT

<b>CUSTOMER NAME</b>	: TPI POLENE PUBLIC COMPANY LIMITED	<b>RECEIVED DATE</b>	: FEBRUARY 20, 2024
<b>ADDRESS</b>	: 299 MOO 5 MITRAPAR ROAD MITTRAPHAP TABKWANG KAENGKOI SARABURI 18260	<b>ANALYTICAL DATE</b>	: FEBRUARY 20-29, 2024
<b>CONTACT INFORMATION</b>	: TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com	<b>ISSUE DATE</b>	: MARCH 12, 2024
<b>SAMPLE SOURCE</b>	: TPI PLAZA AREA	<b>REPORT NO.</b>	: 2024-U020009
<b>SAMPLE TYPE</b>	: GROUNDWATER	<b>WORK NO.</b>	: 2023-010275
<b>SAMPLING DATE</b>	: FEBRUARY 20, 2024	<b>ANALYSIS NO.</b>	: T24AD524-0001
<b>SAMPLING TIME</b>	: 12:40 HOUR		
<b>SAMPLING METHOD</b>	: GRAB		
<b>SAMPLING BY</b>	: MR ACHITA SAENGJAN		
<b>ANALYZED BY</b>	: MISS WORAKORN PADSONGCHAN		

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD		DETECTION LIMIT
			GROUNDWATER T24AD524-0001	SUITABLE ALLOWANCE CONCENTRATION	MAXIMUM ALLOWABLE CONCENTRATION	
CHLORDANE	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM. PART 6630 C)	ND	-	-	0.02
LINDANE	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM. PART 6630 C)	ND	-	-	0.02
ORGANOCHLORINE PESTICIDES						
DDT	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM. PART 6630 C)	ND	-	-	0.04
DIELDRIN	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM. PART 6630 C)	ND	-	-	0.02
HEPTACHLOR	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM. PART 6630 C)	ND	-	-	0.02
HEPTACHLOR EPOXIDE	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM. PART 6630 C)	ND	-	-	0.02
POLYCHLORINATED BIPHENYLS(PCBs)						
PCB1254	µg/L	LIQUID-LIQUID EXTRACTION GAS CHROMATOGRAPHIC (ECD) METHOD (SM. PART 6431 B)	ND	-	-	0.10



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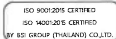
PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD		DETECTION LIMIT
			GROUNDWATER T24AD524-0001	SUITABLE ALLOWANCE CONCENTRATION	MAXIMUM ALLOWABLE CONCENTRATION	
VOLATILE ORGANIC COMPOUNDS						
VINYL CHLORIDE	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM PART 6200 B)	< 0.20	-	-	-
SAMPLE CONDITION						
WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR =			

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : GROUNDWATER QUALITY STANDARD FOR DRINKING PURPOSES, SUITABLE ALLOWANCE AND MAXIMUM ALLOWABLE CONCENTRATIONS, NOTIFICATION OF THE MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT : TECHNICAL CRITERIAS AND MEASURES TO PREVENT PUBLIC HEALTH AND ENVIRONMENT HAZARD B.E.2551 (2008), ISSUED UNDER THE GROUND WATER ACT B.E.2520 (1977), PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL.125, SPECIAL PART 850 DATED MAY 21, B.E.2551 (2008).  
ND : NON-DETECTABLE.

*Benjawan V.*

(MISS BENJAWAN VIRIYOTHAI)  
LABORATORY SUPERVISOR

MARCH 13, 2024



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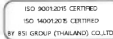
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## ANALYSIS REPORT

**CUSTOMER NAME** : TPI POLYENE PUBLIC COMPANY LIMITED  
**ADDRESS** : 299 MOO 5 MITRAPAP ROAD MITRAPAP TABKHANONG KAENGKROI SARABURI 18260  
**CONTACT INFORMATION** : TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com  
**SAMPLE SOURCE** : TPI PLAZA AREA  
**SAMPLE TYPE** : GROUNDWATER  
**SAMPLING DATE** : FEBRUARY 20, 2024  
**SAMPLING TIME** : 12:40 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. ACHITA SAEVONGJAN  
**ANALYZED BY** : MISS WORAKON PADSONGCHAN

**RECEIVED DATE** : FEBRUARY 20, 2024  
**ANALYTICAL DATE** : FEBRUARY 20-29, 2024  
**ISSUE DATE** : MARCH 12, 2024  
**REPORT NO.** : 2024-U020012  
**WORK NO.** : 2023-010275  
**ANALYSIS NO.** : T24AD524-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD		DETECTION LIMIT
			GROUNDWATER T24AD524-0001	SUITABLE ALLOWANCE CONCENTRATION	MAXIMUM ALLOWABLE CONCENTRATION	
VOLATILE ORGANIC COMPOUNDS						
BENZENE <sup>a</sup>	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	-	-
CARBON TETRACHLORIDE <sup>a</sup>	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	-	-
1,2-DICHLOROETHANE <sup>a</sup>	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	-	-
1,1-DICHLOROETHYLENE <sup>a</sup>	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	-	-
cis-1,2-DICHLOROETHYLENE <sup>a</sup>	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	-	-
trans-1,2-DICHLOROETHYLENE <sup>a</sup>	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	-	-
DICHLOROMETHANE <sup>a</sup>	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	-	-
ETHYLBENZENE <sup>a</sup>	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	-	-
STYRENE <sup>a</sup>	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	-	-



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PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD		DETECTION LIMIT
			GROUNDWATER T24AD524-0001	SUITABLE ALLOWANCE CONCENTRATION	MAXIMUM ALLOWABLE CONCENTRATION	
TETRACHLOROETHYLENE <sup>a</sup>	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHICMASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	-	-
TOLUENE <sup>a</sup>	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHICMASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	-	-
TRICHLOROETHYLENE <sup>a</sup>	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHICMASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	-	-
1,1,1-TRICHLOROETHANE <sup>a</sup>	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHICMASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	-	-
1,1,2-TRICHLOROETHANE <sup>a</sup>	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHICMASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.20	-	-	-

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD		DETECTION LIMIT
			GROUNDWATER T24AD524-0001	SUITABLE ALLOWANCE CONCENTRATION	MAXIMUM ALLOWABLE CONCENTRATION	
TOTAL XYLENES <sup>a</sup>	µg/L	PURGE AND TRAP GAS CHROMATOGRAPHICMASS SPECTROMETRIC METHOD (SM. PART 6200 B)	< 0.60	-	-	-
SAMPLE CONDITION						
WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR			

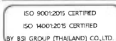
<sup>a</sup> : ISO/IEC 17005 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17005 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>rd</sup> EDITION, 2017.  
REGULATORY STANDARD : GROUNDWATER QUALITY STANDARD FOR DRINKING PURPOSES, SUITABLE ALLOWANCE AND MAXIMUM ALLOWABLE CONCENTRATIONS, NOTIFICATION OF THE MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT : TECHNICAL CRITERIAS AND MEASURES TO PREVENT PUBLIC HEALTH AND ENVIRONMENT HAZARD B.E.2551 (2008), ISSUED UNDER THE GROUND WATER ACT B.E.2520 (1977), PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL.125, SPECIAL PART 850 DATED MAY 21, B.E.2551 (2008).

*Benjawan V.*

(MISS BENJAWAN VIRIYOTHAI)  
LABORATORY SUPERVISOR

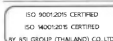
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2024-U020012

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## ANALYSIS REPORT

**CUSTOMER NAME** : TPI POLENE PUBLIC COMPANY LIMITED  
**ADDRESS** : 299 MOO 5 MITRAPAP ROAD MITRAPAP TABKHANONG KAENGKOT SARABURI 18260  
**CONTACT INFORMATION** : TEL : 06 4294 9161 e-mail : chod.padmuk@gmail.com  
**SAMPLING SOURCE** : แหล่งน้ำในทุ่งนา  
**SAMPLE TYPE** : GROUNDWATER  
**SAMPLING DATE** : FEBRUARY 20, 2024  
**SAMPLING TIME** : 14:10 HOUR  
**SAMPLING METHOD** : GRAB  
**SAMPLING BY** : MR. ACHITA SAENGJAN  
**ANALYZED BY** : MISS NAPAPORN KHUNNOCKHUM

**RECEIVED DATE** : FEBRUARY 20, 2024  
**ANALYTICAL DATE** : FEBRUARY 20 - MARCH 1, 2024  
**ISSUE DATE** : MARCH 12, 2024  
**REPORT NO.** : 2024-U020035  
**WORK NO.** : 2023-010275  
**ANALYSIS NO.** : T24ADS24-0005

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD		DETECTION LIMIT
			GROUNDWATER T24ADS24-0005	SUITABLE ALLOWANCE CONCENTRATION	MAXIMUM ALLOWABLE CONCENTRATION	
pH <sup>a</sup>	-	ELECTROMETRIC METHOD (AT SITE) SM: PART 4500-H <sup>+</sup> B AND 1060 B	8.1 (36°C)	7.0-8.5	6.5-9.2	-
ELECTRICAL CONDUCTIVITY <sup>c</sup>	µS/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: PART 2510 B)	712 (38°C)	-	-	0.1
TEMPERATURE <sup>c</sup>	°C	THERMOMETER AT SITE (SM: PART 2550 B)	36	-	-	-
TURBIDITY <sup>c</sup>	NTU	NEPHELOMETRIC METHOD (SM: PART 2130 B)	0.4	≤ 5	≤ 20	0.1
SALINITY <sup>c</sup>	ppt	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: PART 2520 B)	0.4	-	-	0.1
BIOCHEMICAL OXYGEN DEMAND <sup>c</sup>	mg/L	MEMBRANE ELECTRODE METHOD (SM: PART 5210 B AND PART 4500-O <sub>2</sub> G)	ND	-	-	1.0
TOTAL DISSOLVED SOLIDS <sup>b</sup>	mg/L	TOTAL DISSOLVED SOLIDS DRIED AT 180 °C (SM: PART 2540 C)	474	≤ 600	≤ 1,200	25
CHEMICAL OXYGEN DEMAND <sup>c</sup>	mg/L	CLOSED REFLUX, COLOURIMETRIC METHOD (SM: PART 5220 D)	ND	-	-	25.0
TOTAL SUSPENDED SOLIDS <sup>c</sup>	mg/L	TOTAL SUSPENDED SOLIDS DRIED AT 103-105 °C (SM: PART 2540 D)	ND	-	-	5.0
TOTAL HARDNESS <sup>a</sup>	mg/L as CaCO <sub>3</sub>	EDTA TITRIMETRIC METHOD (SM: PART 2340 C)	346	≤ 300	≤ 500	4.0
NITRATE NITROGEN <sup>c</sup>	mg/L NO <sub>3</sub> -N	CADMIUM REDUCTION METHOD (SM: PART 4500-NO <sub>3</sub> -E)	0.10	-	-	0.02
PHOSPHATE <sup>c</sup>	mg/L PO <sub>4</sub> -P	ASCORBIC ACID METHOD (SM: PART 4500-P E)	ND	-	-	0.03
RESIDUAL CHLORINE <sup>c</sup>	mg/L Cl <sub>2</sub>	DPO FERROUS TITRIMETRIC METHOD (SM: PART 4500-CL F)	ND	-	-	0.1
SULPHATE <sup>c</sup>	mg/L SO <sub>4</sub> <sup>2-</sup>	TURBIDIMETRIC METHOD (SM: PART 4500-SO <sub>4</sub> <sup>2-</sup> E)	72.4	≤ 200	≤ 250	0.3
FAT, OIL AND GREASE <sup>c</sup>	mg/L	LIQUID-LIQUID, PARTITION-GRAVIMETRIC METHOD (SM: PART 5520 B)	ND	-	-	3
SODIUM ADSORPTION RATIO <sup>c</sup>	-	INDUCTIVELY COUPLED PLASMA (ICP) AND CALCULATION METHOD	0.314	-	-	-



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PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD		DETECTION LIMIT
			GROUNDWATER T24ADS24-0005	SUITABLE ALLOWANCE CONCENTRATION	MAXIMUM ALLOWABLE CONCENTRATION	
HEXAVALENT CHROMIUM <sup>c</sup>	mg/L Cr <sup>6+</sup>	COLOURIMETRIC METHOD (SM: PART 3500-Cr B)	ND	-	-	0.006
NICKEL <sup>c</sup>	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: PART 3030 E AND PART 3111 B	ND	-	-	0.005
<b>SAMPLE CONDITION</b> WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR YELLOW			

<sup>a</sup> : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)  
<sup>b</sup> : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)  
<sup>c</sup> : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>RD</sup> EDITION, 2017.  
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23<sup>RD</sup> EDITION, 2017.  
REGULATORY STANDARD: GROUNDWATER QUALITY STANDARD FOR DRINKING PURPOSES, SUITABLE ALLOWANCE AND MAXIMUM ALLOWABLE CONCENTRATIONS, NOTIFICATION OF THE MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT, TECHNICAL CRITERIAS AND MEASURES TO PREVENT PUBLIC HEALTH AND ENVIRONMENT HAZARD B.E.2551(2008), ISSUED UNDER THE GROUND WATER ACT B.E.2520 (1977), PUBLISHED IN THE ROYAL GOVERNMENT GAZETTE, VOL.125, SPECIAL PART 85D DATED MAY 21 B.E.2551 (2008).

ND : NON-DETECTABLE  
< LOQ : < LIMIT OF QUANTIFICATION (IRON ≥ 0.005 AND < 0.050 mg/L, MANGANESE ≥ 0.002 AND < 0.025 mg/L, ZINC ≥ 0.003 AND < 0.025 mg/L)

*Benjawan V.*  
(MISS BENJAWAN VIRIYOTHAI)  
LABORATORY SUPERVISOR

MARCH 13, 2024



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- End of Analysis Report -