



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนกรกฎาคมถึงธันวาคม พ.ศ. 2566

ภาคผนวก ค

ใบรับรองผลการตรวจวิเคราะห์
ผลกระทบสิ่งแวดล้อม



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

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คุณภาพอากาศในบรรยากาศ



Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821277-1

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Sample Number : 23118147-1
Sampled Date : Oct 19, 2023
Sample Description : Air Quality
Location : บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced : Oct 26, 2023
Condition of Sample : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,1,1-Trichloroethane	19/10/23 - 20/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloroethane	19/10/23 - 20/10/23	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	19/10/23 - 20/10/23	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	19/10/23 - 20/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	19/10/23 - 20/10/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	19/10/23 - 20/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	19/10/23 - 20/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	19/10/23 - 20/10/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	19/10/23 - 20/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	19/10/23 - 20/10/23	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	19/10/23 - 20/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

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Air Testing									
1,2-Dichloroethane	19/10/23 - 20/10/23	ug/m3	0.07	0.20	Not Detected	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropane	19/10/23 - 20/10/23	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoroethane	19/10/23 - 20/10/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	19/10/23 - 20/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	19/10/23 - 20/10/23	ug/m3	0.04	0.11	<0.11	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	19/10/23 - 20/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	19/10/23 - 20/10/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	19/10/23 - 20/10/23	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	19/10/23 - 20/10/23	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	19/10/23 - 20/10/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	19/10/23 - 20/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
2-Pentanone	19/10/23 - 20/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	19/10/23 - 20/10/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	19/10/23 - 20/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	19/10/23 - 20/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	19/10/23 - 20/10/23	ug/m3	0.05	0.18	1.62	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	19/10/23 - 20/10/23	ug/m3	0.08	0.24	3.71	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	19/10/23 - 20/10/23	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	19/10/23 - 20/10/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	19/10/23 - 20/10/23	ug/m3	0.07	0.22	Not Detected	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	19/10/23 - 20/10/23	ug/m3	0.05	0.16	0.70	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	19/10/23 - 20/10/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

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Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Bromodichloromethane	19/10/23 - 20/10/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromoform	19/10/23 - 20/10/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	19/10/23 - 20/10/23	ug/m3	0.06	0.19	Not Detected	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanal	19/10/23 - 20/10/23	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	19/10/23 - 20/10/23	ug/m3	0.05	0.16	<0.16	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	19/10/23 - 20/10/23	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	19/10/23 - 20/10/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	19/10/23 - 20/10/23	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	19/10/23 - 20/10/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	19/10/23 - 20/10/23	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	19/10/23 - 20/10/23	ug/m3	0.30	1.03	2.68	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	19/10/23 - 20/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	19/10/23 - 20/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	19/10/23 - 20/10/23	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	19/10/23 - 20/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	19/10/23 - 20/10/23	ug/m3	0.80	2.47	2.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	19/10/23 - 20/10/23	ug/m3	0.06	0.17	<0.17	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	19/10/23 - 20/10/23	ug/m3	0.30	0.94	4.33	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	19/10/23 - 20/10/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	19/10/23 - 20/10/23	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	19/10/23 - 20/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	19/10/23 - 20/10/23	ug/m3	0.40	1.15	<1.15	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	19/10/23 - 20/10/23	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	19/10/23 - 20/10/23	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	19/10/23 - 20/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	19/10/23 - 20/10/23	ug/m3	0.20	0.66	4.53	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	19/10/23 - 20/10/23	ug/m3	0.50	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	19/10/23 - 20/10/23	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	19/10/23 - 20/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	19/10/23 - 20/10/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	19/10/23 - 20/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	19/10/23 - 20/10/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	19/10/23 - 20/10/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Air Testing									
Pentane	19/10/23 - 20/10/23	ug/m3	0.50	1.48	4.49	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	19/10/23 - 20/10/23	ug/m3	0.50	1.19	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	19/10/23 - 20/10/23	ug/m3	0.30	0.86	3.61	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	19/10/23 - 20/10/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	19/10/23 - 20/10/23	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	19/10/23 - 20/10/23	ug/m3	0.60	1.88	2.64	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	19/10/23 - 20/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	19/10/23 - 20/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	19/10/23 - 20/10/23	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	19/10/23 - 20/10/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	19/10/23 - 20/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821277-1

Page 8 of 8

Sample Number 23118147-1
Sampled Date Oct 19, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	19/10/23 - 20/10/23	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

Sampled By : Yongsil Rangsee

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Nov 09, 2023

Report Number : 2821277-2

Page 1 of 1

Sample Number 23118147-1
Sampled Date Oct 19, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Air Testing							
Methane	10:00 AM - 01:00 PM	ppm	-	1.0	2.0	Total Hydrocarbon Analyzer (FID), Appendix C	Bangkok
Non-Methane Hydrocarbon	10:00 AM - 01:00 PM	ppm	-	1.0	1.2	Total Hydrocarbon Analyzer (FID), Appendix C	Bangkok
Total Hydrocarbon	10:00 AM - 01:00 PM	ppm	-	1.0	3.2	Total Hydrocarbon Analyzer (FID)	Bangkok

Sampled By : Yongsil Rangsee

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakyong

Scientist (3)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

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13955-91/ EMAIL

S:\Reports_Air_Working_NGL.rpt (4:02PM)



Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821278-1

Page 1 of 8

Sample Number : 23118147-2
Sampled Date : Oct 20, 2023
Sample Description : Air Quality
Location : บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced : Oct 26, 2023
Condition of Sample : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,1,1-Trichloroethane	20/10/23 - 21/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloroethane	20/10/23 - 21/10/23	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	20/10/23 - 21/10/23	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	20/10/23 - 21/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	20/10/23 - 21/10/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	20/10/23 - 21/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	20/10/23 - 21/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	20/10/23 - 21/10/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	20/10/23 - 21/10/23	ug/m3	0.80	2.46	<2.46	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	20/10/23 - 21/10/23	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	20/10/23 - 21/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023
Date Reported : Oct 31, 2023
Report Number : 2821278-1

Page 2 of 8

Sample Number 23118147-2
Sampled Date Oct 20, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,2-Dichloroethane	20/10/23 - 21/10/23	ug/m3	0.07	0.20	<0.20	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropane	20/10/23 - 21/10/23	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoroethane	20/10/23 - 21/10/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	20/10/23 - 21/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	20/10/23 - 21/10/23	ug/m3	0.04	0.11	<0.11	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	20/10/23 - 21/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	20/10/23 - 21/10/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	20/10/23 - 21/10/23	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	20/10/23 - 21/10/23	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	20/10/23 - 21/10/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	20/10/23 - 21/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821278-1

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Sample Number 23118147-2
Sampled Date Oct 20, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
2-Pentanone	20/10/23 - 21/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	20/10/23 - 21/10/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	20/10/23 - 21/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	20/10/23 - 21/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	20/10/23 - 21/10/23	ug/m3	0.05	0.18	1.37	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	20/10/23 - 21/10/23	ug/m3	0.08	0.24	3.99	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	20/10/23 - 21/10/23	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	20/10/23 - 21/10/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	20/10/23 - 21/10/23	ug/m3	0.07	0.22	Not Detected	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	20/10/23 - 21/10/23	ug/m3	0.05	0.16	0.70	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	20/10/23 - 21/10/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821278-1

Page 4 of 8

Sample Number 23118147-2
Sampled Date Oct 20, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Bromodichloromethane	20/10/23 - 21/10/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromoform	20/10/23 - 21/10/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	20/10/23 - 21/10/23	ug/m3	0.06	0.19	<0.19	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanal	20/10/23 - 21/10/23	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	20/10/23 - 21/10/23	ug/m3	0.05	0.16	0.19	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	20/10/23 - 21/10/23	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	20/10/23 - 21/10/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	20/10/23 - 21/10/23	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	20/10/23 - 21/10/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	20/10/23 - 21/10/23	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	20/10/23 - 21/10/23	ug/m3	0.30	1.03	2.85	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821278-1

Page 5 of 8

Sample Number 23118147-2
Sampled Date Oct 20, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	20/10/23 - 21/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	20/10/23 - 21/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	20/10/23 - 21/10/23	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	20/10/23 - 21/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	20/10/23 - 21/10/23	ug/m3	0.80	2.47	2.97	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	20/10/23 - 21/10/23	ug/m3	0.06	0.17	0.21	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	20/10/23 - 21/10/23	ug/m3	0.30	0.94	3.88	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	20/10/23 - 21/10/23	ug/m3	0.70	2.17	3.30	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	20/10/23 - 21/10/23	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	20/10/23 - 21/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	20/10/23 - 21/10/23	ug/m3	0.40	1.15	<1.15	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821278-1

Page 6 of 8

Sample Number : 23118147-2
Sampled Date : Oct 20, 2023
Sample Description : Air Quality
Location : บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced : Oct 26, 2023
Condition of Sample : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	20/10/23 - 21/10/23	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	20/10/23 - 21/10/23	ug/m3	1.50	4.34	<4.34	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	20/10/23 - 21/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	20/10/23 - 21/10/23	ug/m3	0.20	0.66	5.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	20/10/23 - 21/10/23	ug/m3	0.50	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	20/10/23 - 21/10/23	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	20/10/23 - 21/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	20/10/23 - 21/10/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	20/10/23 - 21/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	20/10/23 - 21/10/23	ug/m3	0.70	2.17	<2.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	20/10/23 - 21/10/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023
Date Reported : Oct 31, 2023
Report Number : 2821278-1

Page 7 of 8

Sample Number : 23118147-2
Sampled Date : Oct 20, 2023
Sample Description : Air Quality
Location : บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced : Oct 26, 2023
Condition of Sample : Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Pentane	20/10/23 - 21/10/23	ug/m3	0.50	1.48	2.66	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	20/10/23 - 21/10/23	ug/m3	0.50	1.19	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	20/10/23 - 21/10/23	ug/m3	0.30	0.86	2.51	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	20/10/23 - 21/10/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	20/10/23 - 21/10/23	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	20/10/23 - 21/10/23	ug/m3	0.60	1.88	3.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	20/10/23 - 21/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	20/10/23 - 21/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	20/10/23 - 21/10/23	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	20/10/23 - 21/10/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	20/10/23 - 21/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821278-1

Page 8 of 8

Sample Number 23118147-2
Sampled Date Oct 20, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	20/10/23 - 21/10/23	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

Sampled By : Yongsil Rangsee

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Nov 09, 2023

Report Number : 2821278-2

Page 1 of 1

Sample Number 23118147-2
Sampled Date Oct 20, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Air Testing							
Methane	10:00 AM - 01:00 PM	ppm	-	1.0	2.1	Total Hydrocarbon Analyzer (FID), Appendix C	Bangkok
Non-Methane Hydrocarbon	10:00 AM - 01:00 PM	ppm	-	1.0	1.1	Total Hydrocarbon Analyzer (FID), Appendix C	Bangkok
Total Hydrocarbon	10:00 AM - 01:00 PM	ppm	-	1.0	3.2	Total Hydrocarbon Analyzer (FID)	Bangkok

Sampled By : Yongsil Rangsee

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakyong

Scientist (3)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

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13955-91/ EMAIL

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821279-1

Page 1 of 8

Sample Number 23118147-3
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,1,1-Trichloroethane	21/10/23 - 22/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloroethane	21/10/23 - 22/10/23	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	21/10/23 - 22/10/23	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	21/10/23 - 22/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	21/10/23 - 22/10/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	21/10/23 - 22/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	21/10/23 - 22/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	21/10/23 - 22/10/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	21/10/23 - 22/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	21/10/23 - 22/10/23	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	21/10/23 - 22/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821279-1

Page 2 of 8

Sample Number 23118147-3
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,2-Dichloroethane	21/10/23 - 22/10/23	ug/m3	0.07	0.20	<0.20	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropane	21/10/23 - 22/10/23	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoroethane	21/10/23 - 22/10/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	21/10/23 - 22/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	21/10/23 - 22/10/23	ug/m3	0.04	0.11	<0.11	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	21/10/23 - 22/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	21/10/23 - 22/10/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	21/10/23 - 22/10/23	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	21/10/23 - 22/10/23	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	21/10/23 - 22/10/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	21/10/23 - 22/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821279-1

Page 3 of 8

Sample Number 23118147-3
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
2-Pentanone	21/10/23 - 22/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	21/10/23 - 22/10/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	21/10/23 - 22/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	21/10/23 - 22/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	21/10/23 - 22/10/23	ug/m3	0.05	0.18	1.88	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	21/10/23 - 22/10/23	ug/m3	0.08	0.24	5.51	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	21/10/23 - 22/10/23	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	21/10/23 - 22/10/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	21/10/23 - 22/10/23	ug/m3	0.07	0.22	Not Detected	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	21/10/23 - 22/10/23	ug/m3	0.05	0.16	0.58	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	21/10/23 - 22/10/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821279-1

Page 4 of 8

Sample Number 23118147-3
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Bromodichloromethane	21/10/23 - 22/10/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromoform	21/10/23 - 22/10/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	21/10/23 - 22/10/23	ug/m3	0.06	0.19	<0.19	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanal	21/10/23 - 22/10/23	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	21/10/23 - 22/10/23	ug/m3	0.05	0.16	0.19	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	21/10/23 - 22/10/23	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	21/10/23 - 22/10/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	21/10/23 - 22/10/23	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	21/10/23 - 22/10/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	21/10/23 - 22/10/23	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	21/10/23 - 22/10/23	ug/m3	0.30	1.03	2.97	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821279-1

Page 5 of 8

Sample Number 23118147-3
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	21/10/23 - 22/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	21/10/23 - 22/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	21/10/23 - 22/10/23	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	21/10/23 - 22/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	21/10/23 - 22/10/23	ug/m3	0.80	2.47	2.97	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	21/10/23 - 22/10/23	ug/m3	0.06	0.17	0.42	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	21/10/23 - 22/10/23	ug/m3	0.30	0.94	2.60	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	21/10/23 - 22/10/23	ug/m3	0.70	2.17	<2.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	21/10/23 - 22/10/23	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	21/10/23 - 22/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	21/10/23 - 22/10/23	ug/m3	0.40	1.15	<1.15	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821279-1

Page 6 of 8

Sample Number 23118147-3
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	21/10/23 - 22/10/23	ug/m3	0.50	1.39	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	21/10/23 - 22/10/23	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	21/10/23 - 22/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	21/10/23 - 22/10/23	ug/m3	0.20	0.66	7.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	21/10/23 - 22/10/23	ug/m3	0.50	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	21/10/23 - 22/10/23	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	21/10/23 - 22/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	21/10/23 - 22/10/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	21/10/23 - 22/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	21/10/23 - 22/10/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	21/10/23 - 22/10/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821279-1

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Sample Number 23118147-3
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Pentane	21/10/23 - 22/10/23	ug/m3	0.50	1.48	1.53	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	21/10/23 - 22/10/23	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	21/10/23 - 22/10/23	ug/m3	0.30	0.86	1.72	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	21/10/23 - 22/10/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	21/10/23 - 22/10/23	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	21/10/23 - 22/10/23	ug/m3	0.60	1.88	<1.88	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	21/10/23 - 22/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	21/10/23 - 22/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	21/10/23 - 22/10/23	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	21/10/23 - 22/10/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	21/10/23 - 22/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821279-1

Page 8 of 8

Sample Number 23118147-3
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	21/10/23 - 22/10/23	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

Sampled By : Yongsil Rangsee

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Nov 09, 2023

Report Number : 2821279-2

Page 1 of 1

Sample Number 23118147-3
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณพื้นที่โครงการ (GPS 47P 540003, 1014668)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Air Testing							
Methane	10:00 AM - 01:00 PM	ppm	-	1.0	2.0	Total Hydrocarbon Analyzer (FID), Appendix C	Bangkok
Non-Methane Hydrocarbon	10:00 AM - 01:00 PM	ppm	-	1.0	<1.0	Total Hydrocarbon Analyzer (FID), Appendix C	Bangkok
Total Hydrocarbon	10:00 AM - 01:00 PM	ppm	-	1.0	3.0	Total Hydrocarbon Analyzer (FID)	Bangkok

Sampled By : Yongsil Rangsee

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakyong

Scientist (3)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

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13955-91/ EMAIL

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821280-1

Page 1 of 8

Sample Number 23118147-4
Sampled Date Oct 19, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,1,1-Trichloroethane	19/10/23 - 20/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloroethane	19/10/23 - 20/10/23	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	19/10/23 - 20/10/23	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	19/10/23 - 20/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	19/10/23 - 20/10/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	19/10/23 - 20/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	19/10/23 - 20/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	19/10/23 - 20/10/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	19/10/23 - 20/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	19/10/23 - 20/10/23	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	19/10/23 - 20/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821280-1

Page 2 of 8

Sample Number 23118147-4
Sampled Date Oct 19, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,2-Dichloroethane	19/10/23 - 20/10/23	ug/m3	0.07	0.20	Not Detected	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropane	19/10/23 - 20/10/23	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoroethane	19/10/23 - 20/10/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	19/10/23 - 20/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	19/10/23 - 20/10/23	ug/m3	0.04	0.11	<0.11	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	19/10/23 - 20/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	19/10/23 - 20/10/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	19/10/23 - 20/10/23	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	19/10/23 - 20/10/23	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	19/10/23 - 20/10/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	19/10/23 - 20/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821280-1

Page 3 of 8

Sample Number 23118147-4
Sampled Date Oct 19, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
2-Pentanone	19/10/23 - 20/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	19/10/23 - 20/10/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	19/10/23 - 20/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	19/10/23 - 20/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	19/10/23 - 20/10/23	ug/m3	0.05	0.18	1.55	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	19/10/23 - 20/10/23	ug/m3	0.08	0.24	2.95	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	19/10/23 - 20/10/23	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	19/10/23 - 20/10/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	19/10/23 - 20/10/23	ug/m3	0.07	0.22	Not Detected	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	19/10/23 - 20/10/23	ug/m3	0.05	0.16	0.58	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	19/10/23 - 20/10/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821280-1

Page 4 of 8

Sample Number 23118147-4
Sampled Date Oct 19, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Bromodichloromethane	19/10/23 - 20/10/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromoform	19/10/23 - 20/10/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	19/10/23 - 20/10/23	ug/m3	0.06	0.19	<0.19	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanal	19/10/23 - 20/10/23	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	19/10/23 - 20/10/23	ug/m3	0.05	0.16	<0.16	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	19/10/23 - 20/10/23	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	19/10/23 - 20/10/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	19/10/23 - 20/10/23	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	19/10/23 - 20/10/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	19/10/23 - 20/10/23	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	19/10/23 - 20/10/23	ug/m3	0.30	1.03	3.72	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821280-1

Page 5 of 8

Sample Number 23118147-4
Sampled Date Oct 19, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	19/10/23 - 20/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	19/10/23 - 20/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	19/10/23 - 20/10/23	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	19/10/23 - 20/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	19/10/23 - 20/10/23	ug/m3	0.80	2.47	2.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	19/10/23 - 20/10/23	ug/m3	0.06	0.17	<0.17	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	19/10/23 - 20/10/23	ug/m3	0.30	0.94	2.34	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	19/10/23 - 20/10/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	19/10/23 - 20/10/23	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	19/10/23 - 20/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	19/10/23 - 20/10/23	ug/m3	0.40	1.15	<1.15	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821280-1

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Sample Number 23118147-4
Sampled Date Oct 19, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	19/10/23 - 20/10/23	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	19/10/23 - 20/10/23	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	19/10/23 - 20/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	19/10/23 - 20/10/23	ug/m3	0.20	0.66	3.80	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	19/10/23 - 20/10/23	ug/m3	0.50	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	19/10/23 - 20/10/23	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	19/10/23 - 20/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	19/10/23 - 20/10/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	19/10/23 - 20/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	19/10/23 - 20/10/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	19/10/23 - 20/10/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821280-1

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Sample Number 23118147-4
Sampled Date Oct 19, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Pentane	19/10/23 - 20/10/23	ug/m3	0.50	1.48	1.65	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	19/10/23 - 20/10/23	ug/m3	0.50	1.19	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	19/10/23 - 20/10/23	ug/m3	0.30	0.86	2.58	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	19/10/23 - 20/10/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	19/10/23 - 20/10/23	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	19/10/23 - 20/10/23	ug/m3	0.60	1.88	<1.88	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	19/10/23 - 20/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	19/10/23 - 20/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	19/10/23 - 20/10/23	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	19/10/23 - 20/10/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	19/10/23 - 20/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821280-1

Page 8 of 8

Sample Number 23118147-4
Sampled Date Oct 19, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	19/10/23 - 20/10/23	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

Sampled By : Yongsil Rangsee

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Nov 09, 2023

Report Number : 2821280-2

Page 1 of 1

Sample Number 23118147-4
Sampled Date Oct 19, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Air Testing							
Methane	09:00 AM - 12:00 PM	ppm	-	1.0	2.0	Total Hydrocarbon Analyzer (FID), Appendix C	Bangkok
Non-Methane Hydrocarbon	09:00 AM - 12:00 PM	ppm	-	1.0	1.6	Total Hydrocarbon Analyzer (FID), Appendix C	Bangkok
Total Hydrocarbon	09:00 AM - 12:00 PM	ppm	-	1.0	3.6	Total Hydrocarbon Analyzer (FID)	Bangkok

Sampled By : Yongsil Rangsee

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakyong

Scientist (3)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

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13955-91/ EMAIL

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821281-1

Page 1 of 8

Sample Number 23118147-5
Sampled Date Oct 20, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,1,1-Trichloroethane	20/10/23 - 21/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloroethane	20/10/23 - 21/10/23	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	20/10/23 - 21/10/23	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	20/10/23 - 21/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	20/10/23 - 21/10/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	20/10/23 - 21/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	20/10/23 - 21/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	20/10/23 - 21/10/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	20/10/23 - 21/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	20/10/23 - 21/10/23	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	20/10/23 - 21/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821281-1

Page 2 of 8

Sample Number 23118147-5
Sampled Date Oct 20, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,2-Dichloroethane	20/10/23 - 21/10/23	ug/m3	0.07	0.20	<0.20	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropane	20/10/23 - 21/10/23	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoroethane	20/10/23 - 21/10/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	20/10/23 - 21/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	20/10/23 - 21/10/23	ug/m3	0.04	0.11	<0.11	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	20/10/23 - 21/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	20/10/23 - 21/10/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	20/10/23 - 21/10/23	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	20/10/23 - 21/10/23	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	20/10/23 - 21/10/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	20/10/23 - 21/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821281-1

Page 3 of 8

Sample Number 23118147-5
Sampled Date Oct 20, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
2-Pentanone	20/10/23 - 21/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	20/10/23 - 21/10/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	20/10/23 - 21/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	20/10/23 - 21/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	20/10/23 - 21/10/23	ug/m3	0.05	0.18	3.07	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	20/10/23 - 21/10/23	ug/m3	0.08	0.24	5.08	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	20/10/23 - 21/10/23	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	20/10/23 - 21/10/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	20/10/23 - 21/10/23	ug/m3	0.07	0.22	Not Detected	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	20/10/23 - 21/10/23	ug/m3	0.05	0.16	0.70	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	20/10/23 - 21/10/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821281-1

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Sample Number 23118147-5
Sampled Date Oct 20, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Bromodichloromethane	20/10/23 - 21/10/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromoform	20/10/23 - 21/10/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	20/10/23 - 21/10/23	ug/m3	0.06	0.19	<0.19	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanal	20/10/23 - 21/10/23	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	20/10/23 - 21/10/23	ug/m3	0.05	0.16	0.19	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	20/10/23 - 21/10/23	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	20/10/23 - 21/10/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	20/10/23 - 21/10/23	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	20/10/23 - 21/10/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	20/10/23 - 21/10/23	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	20/10/23 - 21/10/23	ug/m3	0.30	1.03	4.13	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821281-1

Page 5 of 8

Sample Number 23118147-5
Sampled Date Oct 20, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	20/10/23 - 21/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	20/10/23 - 21/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	20/10/23 - 21/10/23	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	20/10/23 - 21/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	20/10/23 - 21/10/23	ug/m3	0.80	2.47	2.67	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	20/10/23 - 21/10/23	ug/m3	0.06	0.17	0.21	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	20/10/23 - 21/10/23	ug/m3	0.30	0.94	3.96	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	20/10/23 - 21/10/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	20/10/23 - 21/10/23	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	20/10/23 - 21/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	20/10/23 - 21/10/23	ug/m3	0.40	1.15	<1.15	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023
Date Reported : Oct 31, 2023
Report Number : 2821281-1

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Sample Number 23118147-5
Sampled Date Oct 20, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	20/10/23 - 21/10/23	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	20/10/23 - 21/10/23	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	20/10/23 - 21/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	20/10/23 - 21/10/23	ug/m3	0.20	0.66	5.16	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	20/10/23 - 21/10/23	ug/m3	0.50	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	20/10/23 - 21/10/23	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	20/10/23 - 21/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	20/10/23 - 21/10/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	20/10/23 - 21/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	20/10/23 - 21/10/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	20/10/23 - 21/10/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821281-1

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Sample Number 23118147-5
Sampled Date Oct 20, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Pentane	20/10/23 - 21/10/23	ug/m3	0.50	1.48	2.12	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	20/10/23 - 21/10/23	ug/m3	0.50	1.19	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	20/10/23 - 21/10/23	ug/m3	0.30	0.86	1.96	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	20/10/23 - 21/10/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	20/10/23 - 21/10/23	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	20/10/23 - 21/10/23	ug/m3	0.60	1.88	<1.88	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	20/10/23 - 21/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	20/10/23 - 21/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	20/10/23 - 21/10/23	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	20/10/23 - 21/10/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	20/10/23 - 21/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821281-1

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Sample Number 23118147-5
Sampled Date Oct 20, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	20/10/23 - 21/10/23	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

Sampled By : Yongsil Rangsee

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Approved by

Narumon Banchongkit
Supervisor



Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Nov 09, 2023

Report Number : 2821281-2

Page 1 of 1

Sample Number 23118147-5
Sampled Date Oct 20, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Air Testing							
Methane	09:00 AM - 12:00 PM	ppm	-	1.0	2.2	Total Hydrocarbon Analyzer (FID), Appendix C	Bangkok
Non-Methane Hydrocarbon	09:00 AM - 12:00 PM	ppm	-	1.0	1.2	Total Hydrocarbon Analyzer (FID), Appendix C	Bangkok
Total Hydrocarbon	09:00 AM - 12:00 PM	ppm	-	1.0	3.4	Total Hydrocarbon Analyzer (FID)	Bangkok

Sampled By : Yongsil Rangsee

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakyong

Scientist (3)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

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13955-91/ EMAIL

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821282-1

Page 1 of 8

Sample Number 23118147-6
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,1,1-Trichloroethane	21/10/23 - 22/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloroethane	21/10/23 - 22/10/23	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	21/10/23 - 22/10/23	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	21/10/23 - 22/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	21/10/23 - 22/10/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	21/10/23 - 22/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	21/10/23 - 22/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	21/10/23 - 22/10/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	21/10/23 - 22/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	21/10/23 - 22/10/23	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	21/10/23 - 22/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821282-1

Page 2 of 8

Sample Number 23118147-6
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,2-Dichloroethane	21/10/23 - 22/10/23	ug/m3	0.07	0.20	<0.20	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropane	21/10/23 - 22/10/23	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoroethane	21/10/23 - 22/10/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	21/10/23 - 22/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	21/10/23 - 22/10/23	ug/m3	0.04	0.11	<0.11	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	21/10/23 - 22/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	21/10/23 - 22/10/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	21/10/23 - 22/10/23	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	21/10/23 - 22/10/23	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	21/10/23 - 22/10/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	21/10/23 - 22/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821282-1

Page 3 of 8

Sample Number 23118147-6
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
2-Pentanone	21/10/23 - 22/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	21/10/23 - 22/10/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	21/10/23 - 22/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	21/10/23 - 22/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	21/10/23 - 22/10/23	ug/m3	0.05	0.18	2.09	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	21/10/23 - 22/10/23	ug/m3	0.08	0.24	4.51	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	21/10/23 - 22/10/23	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	21/10/23 - 22/10/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	21/10/23 - 22/10/23	ug/m3	0.07	0.22	Not Detected	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	21/10/23 - 22/10/23	ug/m3	0.05	0.16	0.58	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	21/10/23 - 22/10/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821282-1

Page 4 of 8

Sample Number 23118147-6
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Bromodichloromethane	21/10/23 - 22/10/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromoform	21/10/23 - 22/10/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	21/10/23 - 22/10/23	ug/m3	0.06	0.19	<0.19	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanal	21/10/23 - 22/10/23	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	21/10/23 - 22/10/23	ug/m3	0.05	0.16	<0.16	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	21/10/23 - 22/10/23	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	21/10/23 - 22/10/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	21/10/23 - 22/10/23	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	21/10/23 - 22/10/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	21/10/23 - 22/10/23	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	21/10/23 - 22/10/23	ug/m3	0.30	1.03	3.68	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821282-1

Page 5 of 8

Sample Number 23118147-6
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	21/10/23 - 22/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	21/10/23 - 22/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	21/10/23 - 22/10/23	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	21/10/23 - 22/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	21/10/23 - 22/10/23	ug/m3	0.80	2.47	2.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	21/10/23 - 22/10/23	ug/m3	0.06	0.17	0.42	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	21/10/23 - 22/10/23	ug/m3	0.30	0.94	7.35	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	21/10/23 - 22/10/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	21/10/23 - 22/10/23	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	21/10/23 - 22/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	21/10/23 - 22/10/23	ug/m3	0.40	1.15	<1.15	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

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555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821282-1

Page 6 of 8

Sample Number 23118147-6
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	21/10/23 - 22/10/23	ug/m3	0.50	1.39	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	21/10/23 - 22/10/23	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	21/10/23 - 22/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	21/10/23 - 22/10/23	ug/m3	0.20	0.66	4.98	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	21/10/23 - 22/10/23	ug/m3	0.50	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	21/10/23 - 22/10/23	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	21/10/23 - 22/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	21/10/23 - 22/10/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	21/10/23 - 22/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	21/10/23 - 22/10/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	21/10/23 - 22/10/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821282-1

Page 7 of 8

Sample Number 23118147-6
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Pentane	21/10/23 - 22/10/23	ug/m3	0.50	1.48	<1.48	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	21/10/23 - 22/10/23	ug/m3	0.50	1.19	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	21/10/23 - 22/10/23	ug/m3	0.30	0.86	1.76	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	21/10/23 - 22/10/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	21/10/23 - 22/10/23	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	21/10/23 - 22/10/23	ug/m3	0.60	1.88	<1.88	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	21/10/23 - 22/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	21/10/23 - 22/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	21/10/23 - 22/10/23	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	21/10/23 - 22/10/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	21/10/23 - 22/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

N. Banchongkit

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2821282-1

Page 8 of 8

Sample Number 23118147-6
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	21/10/23 - 22/10/23	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)

PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

Sampled By : Yongsil Rangsee

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Narumon Banchongkit
Supervisor

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118147

Date Received : Oct 25, 2023

Date Reported : Nov 09, 2023

Report Number : 2821282-2

Page 1 of 1

Sample Number 23118147-6
Sampled Date Oct 21, 2023
Sample Description Air Quality
Location บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 540110, 1014433)
Date Analysis Commenced Oct 26, 2023
Condition of Sample Drawn into one 6-L Canister and one 10-L air sampling bag

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Air Testing							
Methane	09:00 AM - 12:00 PM	ppm	-	1.0	2.1	Total Hydrocarbon Analyzer (FID), Appendix C	Bangkok
Non-Methane Hydrocarbon	09:00 AM - 12:00 PM	ppm	-	1.0	<1.0	Total Hydrocarbon Analyzer (FID), Appendix C	Bangkok
Total Hydrocarbon	09:00 AM - 12:00 PM	ppm	-	1.0	3.0	Total Hydrocarbon Analyzer (FID)	Bangkok

Sampled By : Yongsil Rangsee

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakyong

Scientist (3)

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

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13955-91/ EMAIL

S:\Reports_Air_Working_NGL.rpt (4:04PM)



Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118148
Date Received : Oct 25, 2023
Date Reported : Oct 31, 2023
Report Number : 2801226-1

Page 1 of 2

Sample Number : 23118148-1 to 3
Parameter : Wind Speed / Wind Direction
Location : บริเวณพื้นที่โครงการ (GPS 47P 0540003, 1014668)
Sampling Date : Oct 19 - Oct 22, 2023
Sampling by : Yongsil Rangsee

Time	Oct 19 - Oct 20, 2023			Oct 20 - Oct 21, 2023		Oct 21 - Oct 22, 2023				-			-			-			-		
	WS (m/s)	WD (deg)		WS (m/s)	WD (deg)	WS (m/s)	WD (deg)			-	-		-	-		-	-		-	-	
10:00 AM - 11:00 AM	0.0	-	-	0.7	296.0	WNW	2.1	5.0	N	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM - 12:00 PM	1.9	81.0	E	1.1	52.0	NE	1.9	0.0	N	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	1.1	345.0	NNW	1.9	54.0	NE	2.1	3.0	N	-	-	-	-	-	-	-	-	-	-	-	-
01:00 PM - 02:00 PM	0.7	11.0	N	1.9	99.0	E	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02:00 PM - 03:00 PM	10.1	285.0	WNW	1.4	22.0	NNE	1.7	4.0	N	-	-	-	-	-	-	-	-	-	-	-	-
03:00 PM - 04:00 PM	2.4	165.0	SSE	3.1	40.0	NE	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04:00 PM - 05:00 PM	1.5	111.0	ESE	0.8	334.0	NNW	2.0	34.0	NE	-	-	-	-	-	-	-	-	-	-	-	-
05:00 PM - 06:00 PM	1.1	197.0	SSW	0.0	-	-	0.3	88.0	E	-	-	-	-	-	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	0.4	167.0	SSE	0.2	-	-	1.2	93.0	E	-	-	-	-	-	-	-	-	-	-	-	-
07:00 PM - 08:00 PM	0.4	195.0	SSW	0.5	214.0	SW	0.5	175.0	S	-	-	-	-	-	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	0.8	242.0	WSW	0.9	251.0	WSW	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	0.4	183.0	S	0.1	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.2	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.6	197.0	SSW	0.8	290.0	WNW	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	0.4	235.0	SW	0.0	-	-	0.4	209.0	SSW	-	-	-	-	-	-	-	-	-	-	-	-
01:00 AM - 02:00 AM	0.9	198.0	SSW	0.9	177.0	S	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.6	206.0	SSW	1.1	311.0	NW	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	0.9	243.0	WSW	1.1	217.0	SW	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.8	236.0	SW	0.6	233.0	SW	0.9	122.0	ESE	-	-	-	-	-	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	0.5	194.0	SSW	0.7	179.0	S	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	0.6	241.0	WSW	0.8	232.0	SW	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07:00 AM - 08:00 AM	1.4	303.0	WNW	2.1	281.0	W	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	0.5	306.0	NW	0.0	-	-	2.0	146.0	SE	-	-	-	-	-	-	-	-	-	-	-	-
09:00 AM - 10:00 AM	0.4	224.0	SW	0.0	-	-	2.1	297.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Sarayuth Jittranont
Assistant General Manager



Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118148

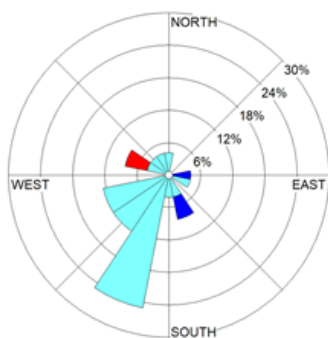
Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

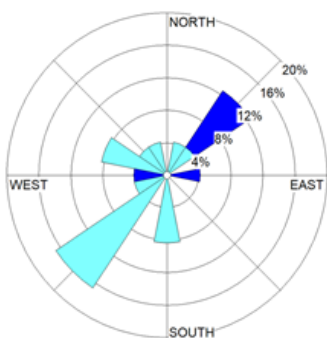
Report Number : 2801226-1

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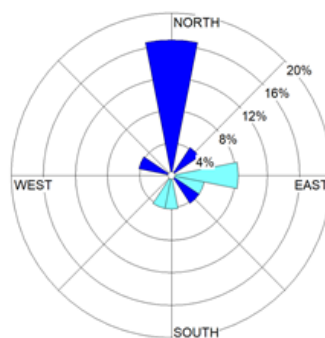
Wind Rose



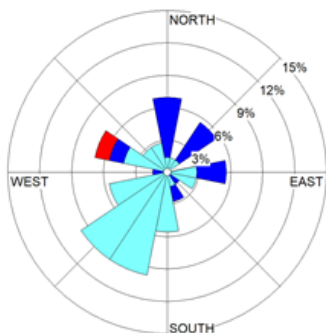
Date : Oct 19-20, 2023



Date : Oct 20-21, 2023



Date : Oct 21-22, 2023



Date : Oct 19-22, 2023

	WS(m/s)	%
	≥ 10.0	1.39
	8.0-10.0	0.00
	5.5-8.0	0.00
	3.3-5.5	0.00
	1.7-3.3	18.06
	0.3-1.7	51.39
	Calms	29.17

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Approved by

Sarayuth Jittrantont
Assistant General Manager



Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118148

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2801226-1

Page 1 of 2

Sample Number : 23118148-4 to 6
Parameter : Wind Speed / Wind Direction
Location : บริเวณบ้านพักอาศัยริม ทล.4079 (GPS 47P 0540110, 1014433)
Sampling Date : Oct 19 - Oct 22, 2023
Sampling by : Yongsil Rangsee

Time	Oct 19 - Oct 20, 2023			Oct 20 - Oct 21, 2023			Oct 21 - Oct 22, 2023			-			-			-			-		
	WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		WS (m/s)	WD (deg)		-	-		-	-		-	-		-	-	
09:00 AM - 10:00 AM	0.0	-	-	2.1	297.0	WNW	0.9	112.0	ESE	-	-	-	-	-	-	-	-	-	-	-	-
10:00 AM - 11:00 AM	0.0	-	-	0.1	-	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM - 12:00 PM	0.0	-	-	0.3	143.0	SE	0.3	283.0	WNW	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM - 01:00 PM	0.0	-	-	0.2	-	-	0.7	162.0	SSE	-	-	-	-	-	-	-	-	-	-	-	-
01:00 PM - 02:00 PM	0.0	-	-	0.2	-	-	0.3	227.0	SW	-	-	-	-	-	-	-	-	-	-	-	-
02:00 PM - 03:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03:00 PM - 04:00 PM	0.0	-	-	0.3	206.0	SSW	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04:00 PM - 05:00 PM	0.3	105.0	ESE	0.4	195.0	SSW	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05:00 PM - 06:00 PM	0.7	174.0	S	0.0	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06:00 PM - 07:00 PM	0.6	181.0	S	0.0	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07:00 PM - 08:00 PM	0.9	299.0	WNW	0.0	-	-	0.3	193.0	SSW	-	-	-	-	-	-	-	-	-	-	-	-
08:00 PM - 09:00 PM	0.9	185.0	S	0.3	275.0	W	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09:00 PM - 10:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:00 PM - 11:00 PM	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 PM - 12:00 AM	0.0	-	-	1.3	219.0	SW	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 AM - 01:00 AM	1.3	184.0	S	0.6	288.0	WNW	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01:00 AM - 02:00 AM	1.0	204.0	SSW	0.8	283.0	WNW	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02:00 AM - 03:00 AM	0.6	194.0	SSW	1.1	60.0	ENE	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03:00 AM - 04:00 AM	1.1	176.0	S	0.8	60.0	ENE	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04:00 AM - 05:00 AM	0.7	298.0	WNW	0.0	-	-	0.6	234.0	SW	-	-	-	-	-	-	-	-	-	-	-	-
05:00 AM - 06:00 AM	0.0	-	-	0.0	-	-	0.9	254.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-
06:00 AM - 07:00 AM	0.0	-	-	0.6	33.0	NNE	0.7	242.0	WSW	-	-	-	-	-	-	-	-	-	-	-	-
07:00 AM - 08:00 AM	1.4	198.0	SSW	0.9	63.0	ENE	0.9	259.0	W	-	-	-	-	-	-	-	-	-	-	-	-
08:00 AM - 09:00 AM	2.0	146.0	SE	3.0	146.0	SE	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Reference Method : Cup Anemometer & Anodized Aluminium Vane Method

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Approved by

Sarayuth Jitranont
Assistant General Manager



Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118148

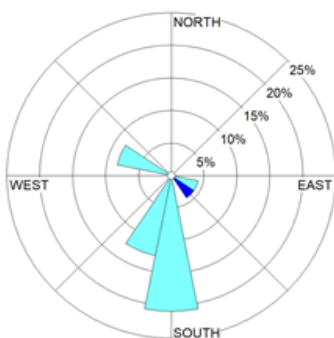
Date Received :Oct 25, 2023

Date Reported :Oct 31, 2023

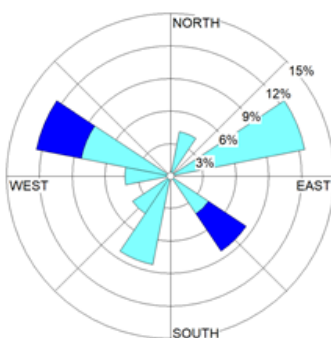
Report Number :2801226-1

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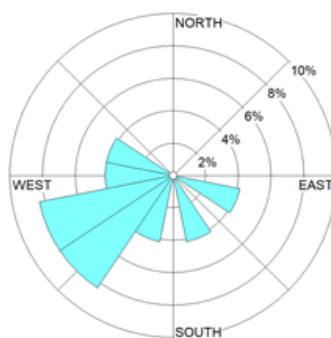
Wind Rose



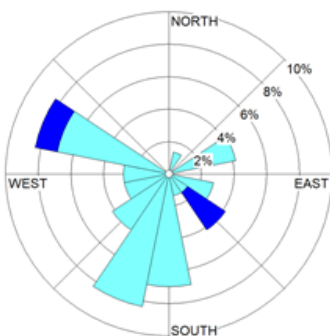
Date : Oct 19-20, 2023



Date : Oct 20-21, 2023



Date : Oct 21-22, 2023



Date : Oct 19-22, 2023

WS(m/s)	%
≥ 10.0	0.00
8.0-10.0	0.00
5.5-8.0	0.00
3.3-5.5	0.00
1.7-3.3	4.17
0.3-1.7	43.06
Calms	52.78

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Sarayuth Jittrantont
Assistant General Manager



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนกรกฎาคมถึงธันวาคม พ.ศ. 2566

คุณภาพเสียง



Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118149

Date Received : Oct 25, 2023
Date Reported : Nov 01, 2023
Report Number: 2823382-1

Page 1 of 1

Sample Number 23118149-1
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497)
Measurement Date Oct 19 - Oct 20, 2023
Measurement by Yongsil Rangsee
Sound Level meter Serial No. 331095

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	62.7	80.3	59.1
09:00 AM - 10:00 AM	63.0	80.0	58.7
10:00 AM - 11:00 AM	62.6	82.6	58.2
11:00 AM - 12:00 PM	62.2	79.4	57.8
12:00 PM - 01:00 PM	60.5	82.0	53.2
01:00 PM - 02:00 PM	55.6	79.9	46.8
02:00 PM - 03:00 PM	58.5	79.0	52.9
03:00 PM - 04:00 PM	59.3	78.3	54.8
04:00 PM - 05:00 PM	58.6	87.0	46.7
05:00 PM - 06:00 PM	57.3	87.5	46.2
06:00 PM - 07:00 PM	55.2	77.5	45.8
07:00 PM - 08:00 PM	52.4	71.2	47.9
08:00 PM - 09:00 PM	53.7	72.9	49.2
09:00 PM - 10:00 PM	51.7	67.7	47.9
10:00 PM - 11:00 PM	50.9	71.1	47.6
11:00 PM - 12:00 AM	50.6	73.8	45.7
12:00 AM - 01:00 AM	46.1	63.7	43.7
01:00 AM - 02:00 AM	48.3	63.3	45.0
02:00 AM - 03:00 AM	48.6	66.1	42.7
03:00 AM - 04:00 AM	50.3	73.2	43.2
04:00 AM - 05:00 AM	47.8	67.8	43.9
05:00 AM - 06:00 AM	50.9	68.0	47.3
06:00 AM - 07:00 AM	50.1	68.5	43.7
07:00 AM - 08:00 AM	54.3	79.1	44.9

Leq Average 24 hrs. (dB(A)) 57.5
Lmax (dB(A)) 87.5
L90 (dB(A)) 46.8
Ldn (dB(A)) 59.4
Standard (dB(A)) 70
Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Technical Management

Orawan R.

Orawan Rakyong
Scientist (3)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260
P/O : 4170008459
Project Name :
Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118149

Date Received : Oct 25, 2023
Date Reported : Nov 01, 2023
Report Number: 2823383-1

Page 1 of 1

Sample Number 23118149-2
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497)
Measurement Date Oct 20 - Oct 21, 2023
Measurement by Yongsil Rangsee
Sound Level meter Serial No. 331095

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	56.6	83.0	48.6
09:00 AM - 10:00 AM	55.2	75.8	46.7
10:00 AM - 11:00 AM	55.7	78.4	45.1
11:00 AM - 12:00 PM	55.4	76.2	46.0
12:00 PM - 01:00 PM	56.5	84.0	44.9
01:00 PM - 02:00 PM	62.5	77.7	57.4
02:00 PM - 03:00 PM	63.1	74.6	60.9
03:00 PM - 04:00 PM	54.9	82.2	46.0
04:00 PM - 05:00 PM	53.7	74.1	45.2
05:00 PM - 06:00 PM	55.3	78.9	45.6
06:00 PM - 07:00 PM	54.4	74.7	44.5
07:00 PM - 08:00 PM	51.6	68.9	45.6
08:00 PM - 09:00 PM	53.3	76.7	47.1
09:00 PM - 10:00 PM	53.8	74.5	47.5
10:00 PM - 11:00 PM	51.7	65.6	47.1
11:00 PM - 12:00 AM	50.8	67.6	46.2
12:00 AM - 01:00 AM	47.3	70.0	43.2
01:00 AM - 02:00 AM	49.4	72.2	44.9
02:00 AM - 03:00 AM	51.4	59.2	46.6
03:00 AM - 04:00 AM	49.2	65.3	43.7
04:00 AM - 05:00 AM	48.7	68.3	43.6
05:00 AM - 06:00 AM	50.9	73.8	46.1
06:00 AM - 07:00 AM	51.5	74.0	41.4
07:00 AM - 08:00 AM	58.4	75.8	56.7

Leq Average 24 hrs. (dB(A)) 55.8
Lmax (dB(A)) 84.0
L90 (dB(A)) 46.0
Ldn (dB(A)) 58.7
Standard (dB(A)) 70
115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ
โรงงาน พ.ศ. 2548

Technical Management

Orawan R.

Orawan Rakyong
Scientist (3)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Lot ID: 23118149

Date Received : Oct 25, 2023

Date Reported : Nov 01, 2023

Report Number: 2823384-1

Page 1 of 1

Sample Number 23118149-3
Parameter Noise (Leq 24 hrs.)
Location บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล. 4079 (GPS 47P 540146, 1014497)
Measurement Date Oct 21 - Oct 22, 2023
Measurement by Yongsil Rangsee
Sound Level meter Serial No. 331095

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:00 AM - 09:00 AM	58.9	80.2	56.1
09:00 AM - 10:00 AM	57.6	77.0	52.1
10:00 AM - 11:00 AM	59.0	81.4	55.6
11:00 AM - 12:00 PM	57.1	82.1	48.6
12:00 PM - 01:00 PM	57.8	87.7	43.6
01:00 PM - 02:00 PM	55.5	75.7	44.3
02:00 PM - 03:00 PM	54.5	80.9	44.5
03:00 PM - 04:00 PM	53.9	76.7	43.6
04:00 PM - 05:00 PM	55.4	82.4	44.9
05:00 PM - 06:00 PM	57.3	84.6	45.1
06:00 PM - 07:00 PM	54.6	76.1	42.8
07:00 PM - 08:00 PM	51.8	72.3	42.5
08:00 PM - 09:00 PM	52.3	75.5	44.9
09:00 PM - 10:00 PM	54.1	86.5	43.9
10:00 PM - 11:00 PM	51.3	74.6	43.1
11:00 PM - 12:00 AM	45.8	65.8	40.7
12:00 AM - 01:00 AM	44.9	67.3	40.2
01:00 AM - 02:00 AM	44.3	61.6	41.4
02:00 AM - 03:00 AM	46.1	71.3	41.9
03:00 AM - 04:00 AM	47.6	66.6	44.6
04:00 AM - 05:00 AM	47.1	62.1	43.8
05:00 AM - 06:00 AM	47.6	66.2	43.7
06:00 AM - 07:00 AM	55.1	79.1	42.8
07:00 AM - 08:00 AM	56.6	82.2	43.6

Leq Average 24 hrs. (dB(A)) 54.7
Lmax (dB(A)) 87.7
L90 (dB(A)) 43.7
Ldn (dB(A)) 57.6

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ
โรงงาน พ.ศ. 2548

Technical Management

Orawan R.

Orawan Rakyong
Scientist (3)

Approved by

Supot S.

Supot Salamteh
Section Head

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.



Analysis / Test Report

TESTING

No.0009

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

Lot ID: 23118150

Date Received : Oct 25, 2023

Date Reported : Nov 02, 2023

Report Number : 2823902-1

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

Sample No. 23118150-1
Parameter เสียงรบกวน
Location คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2 : บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล.4079 (GPS 47P 540146, 1014497)
Measurement Date Oct 19, 2023
Measurement by Yongsil Rangsee
Sound Level Meter 0331095

ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด ^(A)	เสียงขณะ ไม่มีการรบกวน ^(B)	ผลต่าง ระดับเสียง ^(A-B)	ตัวปรับค่า ^(C)	ปรับค่าเสียงจากแหล่งกำเนิด ^(D)		เสียงพื้นฐาน ^(E)	ค่าระดับ การรบกวน ^(D-E)
					กลางวัน ^(A-C)	กลางคืน ^{(A-C)+3}		
08:00 AM - 09:00 AM	62.7	57.3	5.4	1.5	61.2	-	46.2	15.0
09:00 AM - 10:00 AM	63.0	57.3	5.7	1.5	61.5	-	46.2	15.3
10:00 AM - 11:00 AM	62.6	57.3	5.3	1.5	61.1	-	46.2	14.9
11:00 AM - 12:00 PM	62.2	57.3	4.9	1.5	60.7	-	46.2	14.5
12:00 PM - 01:00 PM	60.5	57.3	3.2	3.0	57.5	-	46.2	11.3
01:00 PM - 02:00 PM	55.6	57.3	-1.7	7.0	48.6	-	46.2	2.4
02:00 PM - 03:00 PM	58.5	57.3	1.2	7.0	51.5	-	46.2	5.3
03:00 PM - 04:00 PM	59.3	57.3	2.0	4.5	54.8	-	46.2	8.6
04:00 PM - 05:00 PM	58.6	57.3	1.3	7.0	51.6	-	46.2	5.4
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1

มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 19 ตุลาคม 2566 (08:00 - 17:00 น.)
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.23118151-1 วันที่ตรวจวัด 19-20 ตุลาคม 2566)

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Kanokkorn Anek
Senior Manager



Analysis / Test Report

TESTING

No.0009

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

Lot ID: 23118150

Date Received : Oct 25, 2023

Date Reported : Nov 02, 2023

Report Number : 2823903-1

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

Sample No. 23118150-2
Parameter เสียงรบกวน
Location บริเวณเริ่มรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล.4079 (GPS 47P 540146, 1014497)
Measurement Date Oct 20, 2023
Measurement by Yongsil Rangsee
Sound Level Meter 0331095

ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด ^(A)	เสียงขณะ ไม่มีการรบกวน ^(B)	ผลต่าง ระดับเสียง ^(A-B)	ตัวปรับค่า ^(C)	ปรับค่าเสียงจากแหล่งกำเนิด ^(D)		เสียงพื้นฐาน ^(E)	ค่าระดับ การรบกวน ^(D-E)
					กลางวัน ^(A-C)	กลางคืน ^{(A-C)+3}		
08:00 AM - 09:00 AM	56.6	51.6	5.0	1.5	55.1	-	45.6	9.5
09:00 AM - 10:00 AM	55.2	51.6	3.6	2.0	53.2	-	45.6	7.6
10:00 AM - 11:00 AM	55.7	51.6	4.1	2.0	53.7	-	45.6	8.1
11:00 AM - 12:00 PM	55.4	51.6	3.8	2.0	53.4	-	45.6	7.8
12:00 PM - 01:00 PM	56.5	51.6	4.9	1.5	55.0	-	45.6	9.4
01:00 PM - 02:00 PM	62.5	51.6	10.9	0.5	62.0	-	45.6	16.4
02:00 PM - 03:00 PM	63.1	51.6	11.5	0.5	62.6	-	45.6	17.0
03:00 PM - 04:00 PM	54.9	51.6	3.3	3.0	51.9	-	45.6	6.3
04:00 PM - 05:00 PM	53.7	51.6	2.1	4.5	49.2	-	45.6	3.6
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1

มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 20 ตุลาคม 2566 (08:00 - 17:00 น.)
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.23118151-2 วันที่ตรวจวัด 20-21 ตุลาคม 2566)

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Kanokkorn Anek
Senior Manager



Analysis / Test Report

TESTING

No.0009

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

Lot ID: 23118150

Date Received : Oct 25, 2023

Date Reported : Nov 02, 2023

Report Number : 2823904-1

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

Sample No. 23118150-3
Parameter เสียงรบกวน
Location บริเวณเริ่มรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล.4079 (GPS 47P 540146, 1014497)
Measurement Date Oct 21, 2023
Measurement by Yongsil Rangsee
Sound Level Meter 0331095

ระดับเสียง (dB(A))

เวลา	เสียงจาก แหล่งกำเนิด ^(A)	เสียงขณะ ไม่มีการรบกวน ^(B)	ผลต่าง ระดับเสียง ^(A-B)	ตัวปรับค่า ^(C)	ปรับค่าเสียงจากแหล่งกำเนิด ^(D)		เสียงพื้นฐาน ^(E)	ค่าระดับ การรบกวน ^(D-E)
					กลางวัน ^(A-C)	กลางคืน ^{(A-C)+3}		
08:00 AM - 09:00 AM	58.9	56.6	2.3	4.5	54.4	-	43.6	10.8
09:00 AM - 10:00 AM	57.6	56.6	1.0	7.0	50.6	-	43.6	7.0
10:00 AM - 11:00 AM	59.0	56.6	2.4	4.5	54.5	-	43.6	10.9
11:00 AM - 12:00 PM	57.1	56.6	0.5	7.0	50.1	-	43.6	6.5
12:00 PM - 01:00 PM	57.8	56.6	1.2	7.0	50.8	-	43.6	7.2
01:00 PM - 02:00 PM	55.5	56.6	-1.1	7.0	48.5	-	43.6	4.9
02:00 PM - 03:00 PM	54.5	56.6	-2.1	7.0	47.5	-	43.6	3.9
03:00 PM - 04:00 PM	53.9	56.6	-2.7	7.0	46.9	-	43.6	3.3
04:00 PM - 05:00 PM	55.4	56.6	-1.2	7.0	48.4	-	43.6	4.8
ค่ามาตรฐาน								≤ 10

Reference Method : Based on ISO 1996-1

มาตรฐาน

- ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวนและระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548
- ประกาศกรมโรงงานอุตสาหกรรม เรื่อง วิธีการตรวจวัดระดับเสียงรบกวน ระดับเสียงเฉลี่ย 24 ชั่วโมง และระดับเสียงสูงสุดที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2553
- ประกาศกระทรวงสาธารณสุข เรื่อง กำหนดค่ามาตรฐานมลพิษทางเสียงอันเกิดจากการประกอบกิจการที่เป็นอันตรายต่อสุขภาพ พ.ศ. 2561
ระดับเสียงจากแหล่งกำเนิด ทำการตรวจวัด วันที่ 21 ตุลาคม 2566 (08:00 - 17:00 น.)
ระดับเสียงพื้นฐานและระดับเสียงขณะไม่มีการรบกวน (Sample No.23118151-3 วันที่ตรวจวัด 21-22 ตุลาคม 2566)

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Kanokkorn Anek
Senior Manager



Analysis / Test Report

TESTING
No.0009

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

Lot ID: 23118151
Date Received : Oct 25, 2023
Date Reported : Nov 02, 2023
Report No. : 2823906-1

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

Sample No. 23118151-1
Parameter Noise
Location คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2 : บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล.4079 (GPS 47P 540146, 1014497)
Measurement Date Oct 19 - 20, 2023
Measurement by Yongsil Rangsee
Sound Level Meter 0331095

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
05:00 PM - 06:00 PM	57.3	87.5	46.2
06:00 PM - 07:00 PM	55.2	77.5	45.8
07:00 PM - 08:00 PM	52.4	71.2	47.9
08:00 PM - 09:00 PM	53.7	72.9	49.2
09:00 PM - 10:00 PM	51.7	67.7	47.9
06:00 AM - 07:00 AM	50.1	68.5	43.7
07:00 AM - 08:00 AM	54.3	79.1	44.9

Reference Method : Based on ISO 1996-1

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Kanokkorn Anek
Senior Manager



Analysis / Test Report

TESTING
No.0009

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

Lot ID: 23118151
Date Received : Oct 25, 2023
Date Reported : Nov 02, 2023
Report No. : 2823907-1

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

Sample No. 23118151-2
Parameter Noise
Location บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล.4079 (GPS 47P 540146, 1014497) (Shut down)
Measurement Date Oct 20 - 21, 2023
Measurement by Yongsil Rangsee
Sound Level Meter 0331095

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
05:00 PM - 06:00 PM	55.3	78.9	45.6
06:00 PM - 07:00 PM	54.4	74.7	44.5
07:00 PM - 08:00 PM	51.6	68.9	45.6
08:00 PM - 09:00 PM	53.3	76.7	47.1
09:00 PM - 10:00 PM	53.8	74.5	47.5
06:00 AM - 07:00 AM	51.5	74.0	41.4
07:00 AM - 08:00 AM	58.4	75.8	56.7

Reference Method : Based on ISO 1996-1

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Kanokkorn Anek
Senior Manager



Analysis / Test Report

TESTING
No.0009

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

Lot ID: 23118151
Date Received : Oct 25, 2023
Date Reported : Nov 02, 2023
Report No. : 2823908-1

P/O : 4170008459

Project Name :

Project Location : คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

Page 1 of 1

Sample No. 23118151-3
Parameter Noise
Location บริเวณริมรั้วโครงการด้านที่อยู่ใกล้เคียงบ้านพักอาศัยริม ทล.4079 (GPS 47P 540146, 1014497) (Shut down)
Measurement Date Oct 21 - 22, 2023
Measurement by Yongsil Rangsee
Sound Level Meter 0331095

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
05:00 PM - 06:00 PM	57.3	84.6	45.1
06:00 PM - 07:00 PM	54.6	76.1	42.8
07:00 PM - 08:00 PM	51.8	72.3	42.5
08:00 PM - 09:00 PM	52.3	75.5	44.9
09:00 PM - 10:00 PM	54.1	86.5	43.9
06:00 AM - 07:00 AM	55.1	79.1	42.8
07:00 AM - 08:00 AM	56.6	82.2	43.6

Reference Method : Based on ISO 1996-1

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Kanokkorn Anek
Senior Manager



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนกรกฎาคมถึงธันวาคม พ.ศ. 2566

คุณภาพน้ำทิ้งจากพื้นที่ทิ้งตะกอน



Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location: คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่2

Lot ID: 23118145

Date Received : Oct 25, 2023

Date Reported : Oct 27, 2023

Report Number : 2801224-1

Page 1 of 1

Sample Number 23118145-1
Sampled Date Oct 24, 2023 12:40 PM
Sample Description น้ำทิ้งจากพื้นที่ทิ้งตะกอนดิน
Location บริเวณบ่อพักน้ำทิ้งก่อนระบายออกสู่ระบบน้ำสาธารณะ
Date Analysis Commenced Oct 25, 2023
Condition of Sample Contained in two plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Metals Testing							
Arsenic	mg/L	0.001	0.005	0.008	≤0.25	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 3125 B, 3030 F	Songkhla
Water Testing							
pH at 25 degree C *		-	-	6.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment , effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017) and effluent standard for factories, industrial estate and industrial park set by Notification of Marine Department No.164/2560

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-0001

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บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนกรกฎาคมถึงธันวาคม พ.ศ. 2566

ทรัพยากรทางชีวภาพ



สถานีวิจัยประมงศรีราชา

101/12 หมู่ 9 ต. บางพระ

อ. ศรีราชา จ. ชลบุรี 20110

โทร./โทรสาร. (038) 311379

Client : PTT Oil and Retail Business Public Company Limited

Address : 555 Ardnarong Rd., Klongtoey, Klongtoey, Bangkok, Thailand, 10260

Project Location: คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

รายงานผลการวิเคราะห์แพลงก์ตอนพืช

ตาราง ผลการวิเคราะห์แพลงก์ตอนพืช (เก็บตัวอย่างวันที่ 24 ตุลาคม 2566)

ชนิดแพลงก์ตอนพืช	ปริมาณแพลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)		
	23118141-1	23118141-2	23118141-3
Division Cyanophyta			
Class Cyanophyceae			
Order Nostocales			
Family Oscillatoriaceae			
1. <i>Oscillatoria anguina</i>	9,000	16,000	35,000
2. <i>Oscillatoria limnetica</i>	-	8,000	18,000
3. <i>Oscillatoria princeps</i>	9,000	-	-
4. <i>Oscillatoria</i> sp.	47,000	72,000	44,000
5. <i>Oscillatoria tenuis</i>	9,000	8,000	26,000
Family Nostocaceae			
6. <i>Pseudanabaena limnetica</i>	-	-	18,000
7. <i>Raphidiopsis</i> sp.	-	16,000	-
Family Rivulariaceae			
8. <i>Calothrix</i> sp.	-	8,000	-

ตาราง ผลการวิเคราะห์แฟลงก์ตอนพืช (เก็บตัวอย่างวันที่ 24 ตุลาคม 2566)

(ต่อ)

ชนิดแฟลงก์ตอนพืช	ปริมาณแฟลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)		
	23118141-1	23118141-2	23118141-3
Division Chlorophyta			
Class Chlorophyceae			
Order Volvocales			
Family Volvocaceae			
9. <i>Eudorina elegans</i>	-	16,000	9,000
10. <i>Pandorina morum</i>	47,000	48,000	-
Order Chlorococcales			
Family Hydrodictyaceae			
11. <i>Pediastrum duplex</i>	-	8,000	9,000
12. <i>Pediastrum simplex</i>	-	8,000	-
Family Coelastraceae			
13. <i>Coelastrum microporum</i>	9,000	-	-
Family Oocystaceae			
14. <i>Ankistrodesmus falcatus</i>	9,000	-	-
15. <i>Ankistrodesmus spiralis</i>	-	16,000	-
16. <i>Tetraedron gracile</i>	9,000	8,000	-
Family Scenedesmaceae			
17. <i>Scenedesmus armatus</i>	-	-	9,000
18. <i>Scenedesmus dimorphus</i>	-	16,000	18,000
19. <i>Scenedesmus opoliensis</i>	19,000	8,000	-
Order Ulotrichales			
Family Ulotrichaceae			
20. <i>Geminella</i> sp.	9,000	32,000	9,000
Order Zygomatales			
Family Desmidiaceae			
21. <i>Closterium ehrenbergii</i>	-	8,000	-
22. <i>Closterium gracile</i>	9,000	-	9,000

ตาราง ผลการวิเคราะห์แพลงก์ตอนพืช (เก็บตัวอย่างวันที่ 24 ตุลาคม 2566)

(ต่อ)

ชนิดแพลงก์ตอนพืช	ปริมาณแพลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)		
	23118141-1	23118141-2	23118141-3
23. <i>Closterium lineatum</i>	9,000	-	-
24. <i>Cosmarium</i> sp.	9,000	16,000	-
25. <i>Staurastrum freemanii</i>	-	8,000	-
26. <i>Staurastrum gracile</i>	-	24,000	18,000
27. <i>Staurastrum longispinum</i>	-	24,000	-
28. <i>Staurastrum manfeldtii</i>	-	24,000	-
Class Euglenophyceae			
Order Euglenales			
Family Euglenaceae			
29. <i>Euglena acus</i>	19,000	8,000	-
30. <i>Euglena</i> sp.	-	8,000	-
31. <i>Euglena viridis</i>	19,000	-	-
32. <i>Lepocinclis ovum</i>	47,000	40,000	9,000
33. <i>Phacus angulatus</i>	-	8,000	-
34. <i>Phacus hamatus</i>	-	16,000	-
35. <i>Phacus longicauda</i>	9,000	-	-
36. <i>Phacus pleuronectes</i>	-	8,000	-
37. <i>Phacus stokesii</i>	-	-	9,000
38. <i>Phacus tortus</i>	-	16,000	-
39. <i>Strombomonas australica</i>	58,000	24,000	9,000
40. <i>Strombomonas deflandrei</i>	28,000	48,000	44,000
41. <i>Strombomonas</i> sp.	-	-	26,000
42. <i>Trachelomonas crebea</i>	-	48,000	9,000
43. <i>Trachelomonas daugerdiana</i>	9,000	40,000	9,000
44. <i>Trachelomonas hispida</i>	168,000	193,000	185,000
45. <i>Trachelomonas lacustris</i>	9,000	-	-
46. <i>Trachelomonas mirabilis</i>	19,000	16,000	-
47. <i>Trachelomonas superba</i>	28,000	16,000	9,000

ตาราง ผลการวิเคราะห์แพลงก์ตอนพืช (เก็บตัวอย่างวันที่ 24 ตุลาคม 2566)

(ต่อ)

ชนิดแพลงก์ตอนพืช	ปริมาณแพลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)		
	23118141-1	23118141-2	23118141-3
Division Chromophyta			
Class Bacillariophyceae			
Order Biddulphiales			
Suborder Coscinodiscineae			
Family Thalassiosiraceae			
48. <i>Cyclotella stelligera</i>	28,000	32,000	-
Family Melosiraceae			
49. <i>Melosira varians</i>	-	8,000	-
Family Aulacoseiraceae			
50. <i>Aulacoseira granulata</i>	-	8,000	-
Order Bacillariales			
Suborder Fragilariineae			
Family Fragilariaceae			
51. <i>Fragilaria capucina</i>	-	16,000	-
52. <i>Diatoma tenue</i>	-	-	18,000
53. <i>Synedra ulna</i>	19,000	105,000	26,000
Suborder Bacillariineae			
Family Eunotiaceae			
54. <i>Eunotia lineolata</i>	9,000	-	-
Family Achnanthaceae			
55. <i>Cocconeis</i> sp.	9,000	-	-
Family Naviculaceae			
56. <i>Gyrosigma attenuatum</i>	-	8,000	-
57. <i>Gyrosigma distortum</i>	-	8,000	-
58. <i>Navicula cuspidata</i>	9,000	-	-
59. <i>Pinnularia gibba</i>	9,000	8,000	-
60. <i>Pinnularia viridis</i>	9,000	-	9,000

ตาราง ผลการวิเคราะห์แพลงก์ตอนพืช (เก็บตัวอย่างวันที่ 24 ตุลาคม 2566)

(ต่อ)

ชนิดแพลงก์ตอนพืช	ปริมาณแพลงก์ตอนพืช (หน่วยต่อลูกบาศก์เมตร)		
	23118141-1	23118141-2	23118141-3
Family Bacillariaceae			
61. <i>Nitzschia lorenziana</i>	9,000	16,000	-
62. <i>Nitzschia palea</i>	-	8,000	-
63. <i>Nitzschia sigmoidea</i>	-	8,000	-
Family Surirellaceae			
64. <i>Surirella elegans</i>	-	-	18,000
65. <i>Surirella linearis</i>	-	8,000	9,000
66. <i>Surirella robusta</i>	9,000	8,000	-
Class Crysothryxaceae			
Order Synurales			
Family Mallomonadaceae			
67. <i>Mallomonas litomesa</i>	9,000	32,000	-
Class Dinophyceae			
Order Peridiniales			
Family Peridiniaceae			
68. <i>Peridinium gatunense</i>	65,000	72,000	9,000
69. <i>Peridinium</i> sp.	-	89,000	62,000
ชนิดแพลงก์ตอนพืช	35	51	28
ปริมาณแพลงก์ตอนพืช	800,000	1,315,000	682,000
ดัชนีความหลากหลายแพลงก์ตอนพืช	3.0778	3.4490	2.8267
ดัชนีความสม่ำเสมอแพลงก์ตอนพืช	0.8657	0.8772	0.8483

Sample Location :

1. สถานี 23118141-1 : บริเวณแม่น้ำตาปีเหนือห่างจากท่าเทียบเรือ ปตท. 500 เมตร
2. สถานี 23118141-2 : บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือ ปตท.
3. สถานี 23118141-3 : บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร

Condition of Sample : contained in one plastic bottle, sample containers comply to pretreatment-preservation standards (APHA, USEPA)



(นางสาวกนกวรรณ ขาวดอน)
ผู้วิเคราะห์



(นายอองกต อินทรชาติ)
หัวหน้าสถานีวิจัยประมงศรีราชา



สถานีวิจัยประมงศรีราชา

101/12 หมู่ 9 ต. บางพระ

อ. ศรีราชา จ. ชลบุรี 20110

โทร./โทรสาร. (038) 311379

Client : PTT Oil and Retail Business Public Company Limited

Address : 555 Ardnarong Rd., Klongtoey, Klongtoey, Bangkok, Thailand, 10260

Project Location: คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

รายงานผลการวิเคราะห์แพลงก์ตอนสัตว์

ตาราง ผลการวิเคราะห์แพลงก์ตอนสัตว์ (เก็บตัวอย่างวันที่ 24 ตุลาคม 2566)

ชนิดแพลงก์ตอนสัตว์	ปริมาณแพลงก์ตอนสัตว์ (หน่วยต่อลูกบาศก์เมตร)		
	23118141-1	23118141-2	23118141-3
Phylum Protozoa			
Subphylum Plasmodroma			
Class Sarcodina			
Subclass Rhizopoda			
Order Testacida			
Family Arcellidae			
1. <i>Arcella</i> sp.	9,000	24,000	18,000
2. <i>Arcella vulgaris</i>	-	24,000	-
Family Diffugiidae			
3. <i>Centropyxis aculeata</i>	28,000	24,000	18,000
4. <i>Diffugia acuminata</i>	9,000	-	-
Family Euglyphidae			
5. <i>Euglypha acanthophora</i>	-	-	9,000
6. <i>Euglypha rotunda</i>	9,000	16,000	-

ตาราง ผลการวิเคราะห์แฟลงก์ตอนสัตว์ (เก็บตัวอย่างวันที่ 24 ตุลาคม 2566)

(ต่อ)

ชนิดแฟลงก์ตอนสัตว์	ปริมาณแฟลงก์ตอนสัตว์ (หน่วยต่อลูกบาศก์เมตร)		
	23118141-1	23118141-2	23118141-3
Subphylum Ciliophora			
Class Ciliata			
Subclass Holotricha			
Order Gymnostomatida			
7. <i>Coleps</i> sp.	-	8,000	-
8. <i>Didinium</i> sp.	28,000	24,000	-
Order Hymenostomatida			
9. <i>Paramecium</i> sp.	9,000	-	-
Subclass Spirotricha			
Order Oligotrichida			
10. <i>Halteria</i> sp.	-	8,000	-
Order Tintinnida			
Family Codonellidae			
11. <i>Tintinnopsis</i> sp.	47,000	40,000	35,000
Subclass Peritricha			
Order Peritrichida			
12. <i>Vorticella</i> sp.	-	16,000	-
Phylum Rotifera			
Class Monogononta			
Order Ploima			
Family Brachionidae			
13. <i>Anuraeopsis fissa</i>	-	8,000	-
14. <i>Keratella cochlearis</i>	-	-	9,000
15. <i>Keratella vulga</i>	9,000	-	-
Family Lecanidae			
16. <i>Lecane inermis</i>	9,000	-	-
17. <i>Lecane pyriformis</i>	-	8,000	-

ตาราง ผลการวิเคราะห์แพลงก์ตอนสัตว์ (เก็บตัวอย่างวันที่ 24 ตุลาคม 2566)

(ต่อ)

ชนิดแพลงก์ตอนสัตว์	ปริมาณแพลงก์ตอนสัตว์ (หน่วยต่อลูกบาศก์เมตร)		
	23118141-1	23118141-2	23118141-3
18. <i>Lecane stichaea</i> Family Trichocercidae	-	8,000	-
19. <i>Trichocerca pusilla</i> Family Synchaetidae	-	16,000	-
20. <i>Polyarthra dolichoptera</i>	37,000	-	-
21. <i>Polyarthra vulgaris</i>	-	24,000	-
Class Digononta Family Philodinidae			
22. <i>Rotaria</i> sp.	-	-	9,000
Phylum Arthropoda Class Crustacea Subclass Copepoda			
23. Copepod nauplius	9,000	8,000	-
ชนิดแพลงก์ตอนสัตว์	11	15	6
ปริมาณแพลงก์ตอนสัตว์	203,000	256,000	98,000
ดัชนีความหลากหลายแพลงก์ตอนสัตว์	2.1625	2.5693	1.6481
ดัชนีความสม่ำเสมอแพลงก์ตอนสัตว์	0.9018	0.9488	0.9198


Sample Location :

1. สถานี 23118141-1 : บริเวณแม่น้ำตาปีเหนือห่างจากท่าเทียบเรือ ปตท. 500 เมตร
2. สถานี 23118141-2 : บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือ ปตท.
3. สถานี 23118141-3 : บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร

Condition of Sample : contained in one plastic bottle, sample containers comply to pretreatment-preservation standards (APHA, USEPA)


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(นางสาวกนกวรรณ ขวาค้อน)
ผู้วิเคราะห์


.....

(นายอลงกต อินทรชาติ)
หัวหน้าสถานีวิจัยประมงศรีราชา



สถานีวิจัยประมงศรีราชา

101/12 หมู่ 9 ต. บางพระ

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รายงานผลการวิเคราะห์ผลผลิตเบื้องต้น (Primary productivity)

ค่า Primary productivity (ผลผลิตเบื้องต้น) จะบอกถึงความอุดมสมบูรณ์ของแหล่งน้ำ แหล่งน้ำใดที่มีค่า Primary productivity สูงก็就会有ความอุดมสมบูรณ์มาก ในทางกลับกันแหล่งน้ำใดที่มีค่า Primary productivity ต่ำก็就会有ความอุดมสมบูรณ์น้อย ซึ่งค่า Primary productivity มักจะมีความสัมพันธ์กับปริมาณแพลงก์ตอนพืชและแพลงก์ตอนสัตว์ในน้ำ และในการศึกษาเกี่ยวกับค่า Primary productivity จะมีส่วนที่ทำการศึกษาคือ 3 ส่วน คือ

ค่า Gross production เป็นค่าที่บอกถึงความสามารถในการผลิตของผู้ผลิตขั้นปฐมในแหล่งน้ำ ซึ่งก็คือแพลงก์ตอนพืช ในกระบวนการสังเคราะห์แสง ในกระบวนการดังกล่าวสามารถวัดได้โดยการวัดออกมาในรูปของปริมาณออกซิเจนที่เพิ่มขึ้นหรือปริมาณคาร์บอนไดออกไซด์ที่ใช้ไป แต่ในการคำนวณขั้นสุดท้ายมักจะคำนวณออกมาในรูปของคาร์บอน (C) ซึ่งเป็นสารอินทรีย์ที่เกิดขึ้นในกระบวนการผลิต โดยจะแสดงในรูปของ $\text{mgC}/\text{m}^3/\text{hr}$

ค่า Respiration จะบอกถึงการใช้ออกซิเจนของแพลงก์ตอนพืช และแพลงก์ตอนสัตว์ที่อยู่ในน้ำ รวมทั้งขบวนการย่อยสลายสารอินทรีย์ที่มีอยู่ในน้ำโดยแบคทีเรีย

ค่า Net production หรือผลผลิตเบื้องต้นสุทธิ จะบอกถึงความสามารถในการรองรับกิจกรรมในการใช้ออกซิเจนของแหล่งน้ำนั้นๆ เช่น การเพาะเลี้ยงสัตว์น้ำหรือเป็นแหล่งที่อยู่อาศัยให้กับสัตว์น้ำขนาดใหญ่อื่นๆ ถ้าค่า Net production มีค่าเป็นลบ แสดงว่าความสามารถในการผลิตของแพลงก์ตอนพืชน้อยกว่าการใช้ออกซิเจนของแพลงก์ตอนพืช แพลงก์ตอนสัตว์ที่อยู่ในน้ำและการย่อยสลายสารอินทรีย์ที่มีอยู่ในน้ำโดยแบคทีเรีย ซึ่งแสดงถึงความอุดมสมบูรณ์ของแพลงก์ตอนพืชในแหล่งน้ำบริเวณนั้นต่ำ หรือมีปริมาณแพลงก์ตอนพืชหรือการย่อยสลายสารอินทรีย์มาก แต่ค่าปริมาณออกซิเจนที่ละลายในน้ำที่วัดได้ในแหล่งน้ำนั้นอาจมาจากกระบวนการทางกายภาพ ได้แก่ กระแสน้ำและกระแสลม

ตาราง ผลการวิเคราะห์ผลผลิตเบื้องต้น บริเวณคลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2
(เก็บตัวอย่างเมื่อวันที่ 24 ตุลาคม 2566)

Station	Gross production (mgC/m ³ /hr)	Respiration (mgC/m ³ /hr)	Net production (mgC/m ³ /hr)
Lot 23118142-1 บริเวณแม่น้ำตาปีเหนือห่างจากท่าเทียบเรือปตท. 500 เมตร	54.73	32.84	27.37
Lot 23118142-2 บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือปตท.	72.20	32.84	44.84
Lot 23118142-3 บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือปตท. 500 เมตร	109.47	98.52	27.37

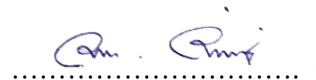
Condition of Sample : contained in incubation bottles; S1 –6 bottles, S2 – 6 bottles, S3 – 3 bottles,

จากการวิเคราะห์ค่าผลผลิตเบื้องต้นบริเวณคลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2 เก็บตัวอย่างมาเมื่อวันที่ 24 ตุลาคม 2566 ซึ่งค่าผลผลิตเบื้องต้นแสดงในรูปค่าของ Gross production โดยมีค่าอยู่ระหว่าง 54.73-109.47 mgC/m³/hr ดังแสดงไว้ในตาราง สถานีที่มีผลผลิตเบื้องต้นมากที่สุด คือ สถานี Lot 23118142-3 (บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือปตท. 500 เมตร) ซึ่งมีค่าผลผลิตเบื้องต้น 109.47 mgC/m³/hr ส่วนสถานีที่มีผลผลิตเบื้องต้นน้อยที่สุด คือ สถานี Lot 23118142-1 (บริเวณแม่น้ำตาปีเหนือห่างจากท่าเทียบเรือปตท. 500 เมตร) ซึ่งมีค่าผลผลิตเบื้องต้น 54.73 mgC/m³/hr ซึ่งปัจจัยที่มีผลต่อการเพิ่มขึ้นหรือลดลงของผลผลิตเบื้องต้นนี้ ได้แก่ ปริมาณของแพลงก์ตอนพืช แพลงก์ตอนสัตว์ อุณหภูมิ และปริมาณแสง ซึ่งจะมีผลต่อกระบวนการสังเคราะห์แสงของแพลงก์ตอนพืชในน้ำนั่นเอง



(นางสาวกนกวรรณ ขวาค่อน)

ผู้วิเคราะห์



(นายชองกต อินทรชาติ)

หัวหน้าสถานีวิจัยประมงศรีราชา



สถานีวิจัยประมงศรีราชา
101/12 หมู่ 9 ต. บางพระ
อ. ศรีราชา จ. ชลบุรี 20110
โทร./โทรสาร. (038) 311379

Client : PTT Oil and Retail Business Public Company Limited

Address : 555 Ardnarong Rd., Klongtoey, Klongtoey, Bangkok, Thailand, 10260

Project Location: คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่ 2

รายงานผลการวิเคราะห์สัตว์หน้าดิน

ตาราง ผลการวิเคราะห์สัตว์หน้าดิน (เก็บตัวอย่างวันที่ 24 ตุลาคม 2566)

ชนิดสัตว์หน้าดิน	ปริมาณสัตว์หน้าดิน (ตัวต่อตารางเมตร)		
	23118143-1	23118143-2	23118143-3
Phylum Annelida			
Class Polychaeta			
Order Capitellida			
Family Capitellidae			
<i>Heteromastus</i> sp. (ไส้เดือนทะเล)	-		45
Order Orbiniida			
Family Orbiniidae			
<i>Scoloplos</i> sp. (ไส้เดือนทะเล)	-		15
Phylum Mollusca			
Order Architaenioglossa			
Family Thiaridae			
<i>Melanoides</i> sp. (หอยเจดีย์)	30	45	-
<i>Tarebia</i> sp. (หอยเจดีย์)	178	60	-

ตาราง ผลการวิเคราะห์สัตว์หน้าดิน (เก็บตัวอย่างวันที่ 24 ตุลาคม 2566)

(ต่อ)

ชนิดสัตว์หน้าดิน	ปริมาณสัตว์หน้าดิน (ตัวต่อตารางเมตร)		
	23118143-1	23118143-2	23118143-3
Order Caenogastropoda			
Family Thiariidae			
<i>Sermyla</i> sp. (หอยเจดีย์)	60	45	178
<i>Thiara</i> sp. (หอยเจดีย์หนาม)	356	623	-
ชนิดสัตว์หน้าดิน	4	4	3
ปริมาณสัตว์หน้าดิน	624	773	238
ค่าดัชนีความหลากหลายสัตว์หน้าดิน	1.0491	0.7033	0.7064

Sample Location : 1. สถานี 23118143-1 : บริเวณแม่น้ำตาปีเหนือห่างจากท่าเทียบเรือ ปตท. 500 เมตร
 2. สถานี 23118143-2 : บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือ ปตท.
 3. สถานี 23118143-3 : บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร

Condition of Sample : contained in one plastic zip bag

.....

(นายอรรถวุฒิ กันทะวงศ์)

ผู้วิเคราะห์

.....

(นายอลงกต อินทรชาติ)

หัวหน้าสถานีวิจัยประมงศรีราชา



บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนกรกฎาคมถึงธันวาคม พ.ศ. 2566

คุณภาพน้ำผิวดิน



Analysis / Test Report

TESTING

No.0166

Lot ID: 23118140

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2801218-1

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location: คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่2

Page 1 of 6

Sample Number	23118140-1
Sampled Date	Oct 24, 2023 2:40 PM
Sample Description	น้ำผิวดิน
Location	บริเวณแม่น้ำตาปีเหนือห่างจากท่าเทียบเรือ ปตท. 500 เมตร
Date Analysis Commenced	Oct 25, 2023
Condition of Sample	Contained in two BOD bottles, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
^[A] Fecal Coliform	MPN/100mL	-	-	2400.0	≤4000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B, E	Bangkok
^[A] Total Coliform	MPN/100mL	-	-	4900.0	≤20000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
BOD (5 days at 20 degree C) *	mg/L	-	2.0	<2.0	≤2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
Dissolved Oxygen *	mg/L	-	0.1	4.6	≥4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (C)	Songkhla
Oil & Grease	mg/L	-	3	<3	No Standard	In-house method : STM 13-006 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C		-	-	7.6	5.0-9.0	In-house method : STM 13-001 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	94	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	62	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

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Analysis / Test Report

TESTING

No.0166

Lot ID: 23118140

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2801218-1

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location: คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่2

Page 2 of 6

Guideline : Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act. B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)

n': Change from Natural condition not more than 3 degree C

n : Not Change from natural condition

Sampling By : Panya Kiartputtirak , Yuttapong Rattana

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co.,Ltd. Bangkok Branch, DSS Accreditation No. 0009.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location: คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่2

Lot ID: 23118140

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2801218-1

Page 3 of 6

Sample Number	23118140-2						
Sampled Date	Oct 24, 2023 2:50 PM						
Sample Description	น้ำผิวดิน						
Location	บริเวณแม่น้ำตาปีด้านหน้าท่าเทียบเรือ ปตท.						
Date Analysis Commenced	Oct 25, 2023						
Condition of Sample	Contained in two BOD bottles, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
^[A] Fecal Coliform	MPN/100mL	-	-	2400.0	≤4000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B, E	Bangkok
^[A] Total Coliform	MPN/100mL	-	-	4900.0	≤20000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
BOD (5 days at 20 degree C) *	mg/L	-	2.0	<2.0	≤2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
Dissolved Oxygen *	mg/L	-	0.1	4.8	≥4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (C)	Songkhla
Oil & Grease	mg/L	-	3	<3	No Standard	In-house method : STM 13-006 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C		-	-	7.7	5.0-9.0	In-house method : STM 13-001 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	106	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	58	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

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Analysis / Test Report

TESTING

No.0166

Lot ID: 23118140

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2801218-1

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location: คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่2

Page 4 of 6

Guideline : Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act. B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)

n': Change from Natural condition not more than 3 degree C

n : Not Change from natural condition

Sampling By : Panya Kiartputtirak , Yuttapong Rattana

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co.,Ltd. Bangkok Branch, DSS Accreditation No. 0009.
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Analysis / Test Report

TESTING

No.0166

Lot ID: 23118140

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2801218-1

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location: คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่2

Page 5 of 6

Sample Number	23118140-3						
Sampled Date	Oct 24, 2023 2:38 PM						
Sample Description	น้ำผิวดิน						
Location	บริเวณแม่น้ำตาปีท้ายน้ำห่างจากท่าเทียบเรือ ปตท. 500 เมตร						
Date Analysis Commenced	Oct 25, 2023						
Condition of Sample	Contained in two BOD bottles, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
^[A] Fecal Coliform	MPN/100mL	-	-	7900.0	≤4000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B, E	Bangkok
^[A] Total Coliform	MPN/100mL	-	-	13000.0	≤20000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
BOD (5 days at 20 degree C) *	mg/L	-	2.0	<2.0	≤2	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
Dissolved Oxygen *	mg/L	-	0.1	4.8	≥4	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-O (C)	Songkhla
Oil & Grease	mg/L	-	3	<3	No Standard	In-house method : STM 13-006 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C		-	-	7.6	5.0-9.0	In-house method : STM 13-001 based on Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	107	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	57	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

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Analysis / Test Report

TESTING

No.0166

Lot ID: 23118140

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2801218-1

Client : PTT Oil and Retail Business Public Company Limited
555, Ardnarong Rd., Klongtoey, Klongtoey, Bangkok Thailand 10260

P/O : 4170008459

Project Name :

Project Location: คลังปิโตรเลียมสุราษฎร์ธานี แห่งที่2

Page 6 of 6

Guideline : Notification of the National Environmental Board, No. 8, B.E.2537 issued under the Enhancement and Conservation of National Environmental Quality Act. B.E.2535, published in the Royal Government Gazette, Vol. 111, Part 16, Dated February 24, B.E. 2537 (Class 3)

n': Change from Natural condition not more than 3 degree C

n : Not Change from natural condition

Sampling By : Panya Kiartputtirak , Yuttapong Rattana

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- [A] Analysis conducted by ALS Laboratory Group (Thailand) Co.,Ltd. Bangkok Branch, DSS Accreditation No. 0009.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

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Approved by

Ananta B.

Ananta Boonphet
Scientist (2)

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บริษัท ปตท. น้ำมันและการค้าปลีก จำกัด (มหาชน)

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

โครงการทำเทียบเรือขนถ่ายน้ำมันและก๊าซปิโตรเลียมเหลวสุราษฎร์ธานี แห่งที่ 2

ระหว่างเดือนกรกฎาคมถึงธันวาคม พ.ศ. 2566

คุณภาพน้ำทิ้ง



Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2373509

Date Received : Jul 18, 2023

Date Reported : Jul 24, 2023

Report Number : 2727061-1

Page 1 of 1

Sample Number	2373509-1
Sampled Date	Jul 17, 2023 10:40 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 1 (คปสร) คลังใหม่
Date Analysis Commenced	Jul 18, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	26.4	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	60	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2373509

Date Received : Jul 18, 2023

Date Reported : Jul 24, 2023

Report Number : 2727061-2

Page 1 of 1

Sample Number	2373509-1						
Sampled Date	Jul 17, 2023 10:40 AM						
Sample Description	Wastewater						
Location	น้ำบ่อแยกไข 1 (คปสร) คลังใหม่						
Date Analysis Commenced	Jul 19, 2023						
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	Not Detected	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Nant Somb

Nanthawadee Somboon

Specialist 1

ทะเบียนเลขที่ ว-204-จ-4716

Approved by

Kanok Korn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2373509

Date Received : Jul 18, 2023

Date Reported : Jul 24, 2023

Report Number : 2727062-1

Page 1 of 1

Sample Number	2373509-2						
Sampled Date	Jul 17, 2023 10:50 AM						
Sample Description	Wastewater						
Location	น้ำบ่อแยกไข 2 (คปสร) คลังใหม่						
Date Analysis Commenced	Jul 18, 2023						
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	27.2	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	86	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2373509

Date Received : Jul 18, 2023

Date Reported : Jul 24, 2023

Report Number : 2727062-2

Page 1 of 1

Sample Number	2373509-2						
Sampled Date	Jul 17, 2023 10:50 AM						
Sample Description	Wastewater						
Location	น้ำบ่อแยกไข 2 (คปสร) คลังใหม่						
Date Analysis Commenced	Jul 19, 2023						
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Nant Somb

Nanthawadee Somboon

Specialist 1

ทะเบียนเลขที่ ว-204-จ-4716

Approved by

Kanok Korn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2373509

Date Received : Jul 18, 2023

Date Reported : Jul 24, 2023

Report Number : 2727063-1

Page 1 of 1

Sample Number	2373509-3
Sampled Date	Jul 17, 2023 10:30 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 3 (คปสร) คลังใหม่
Date Analysis Commenced	Jul 18, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	26.2	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	144	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2373509

Date Received : Jul 18, 2023

Date Reported : Jul 24, 2023

Report Number : 2727063-2

Page 1 of 1

Sample Number	2373509-3
Sampled Date	Jul 17, 2023 10:30 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 3 (คปสร) คลังใหม่
Date Analysis Commenced	Jul 19, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	Not Detected	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Nant Somb

Nanthawadee Somboon

Specialist 1

ทะเบียนเลขที่ ว-204-จ-4716

Approved by

Kanok Korn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2399405

Date Received : Sep 20, 2023

Date Reported : Sep 26, 2023

Report Number : 2789105-1

Page 1 of 1

Sample Number	2399405-1
Sampled Date	Sep 19, 2023 11:00 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 1 (คปสร) คลังใหม่
Date Analysis Commenced	Sep 20, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	27.3	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	52	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2399405

Date Received : Sep 20, 2023

Date Reported : Sep 26, 2023

Report Number : 2789105-2

Page 1 of 1

Sample Number	2399405-1						
Sampled Date	Sep 19, 2023 11:00 AM						
Sample Description	Wastewater						
Location	น้ำบ่อแยกไข 1 (คปสร) คลังใหม่						
Date Analysis Commenced	Sep 21, 2023						
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiarputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Siriluk P.

Siriluk Puengpang

Section Head

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2399405

Date Received : Sep 20, 2023

Date Reported : Sep 26, 2023

Report Number : 2789106-1

Page 1 of 1

Sample Number	2399405-2
Sampled Date	Sep 19, 2023 11:10 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 2 (คปสร) คลังใหม่
Date Analysis Commenced	Sep 20, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	27.4	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	118	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2399405

Date Received : Sep 20, 2023

Date Reported : Sep 26, 2023

Report Number : 2789106-2

Page 1 of 1

Sample Number	2399405-2
Sampled Date	Sep 19, 2023 11:10 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 2 (คปสร) คลังใหม่
Date Analysis Commenced	Sep 21, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiarputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Siriluk P.

Siriluk Puengpang

Section Head

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2399405

Date Received : Sep 20, 2023

Date Reported : Sep 26, 2023

Report Number : 2789107-1

Page 1 of 1

Sample Number	2399405-3
Sampled Date	Sep 19, 2023 11:20 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 3 (คปสร) คลังใหม่
Date Analysis Commenced	Sep 20, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	27	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.5	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	27.2	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	186	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2399405

Date Received : Sep 20, 2023

Date Reported : Sep 26, 2023

Report Number : 2789107-2

Page 1 of 1

Sample Number	2399405-3						
Sampled Date	Sep 19, 2023 11:20 AM						
Sample Description	Wastewater						
Location	น้ำบ่อแยกไข 3 (คปสร) คลังใหม่						
Date Analysis Commenced	Sep 21, 2023						
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiarputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Siriluk P.

Siriluk Puengpang

Section Head

ทะเบียนเลขที่ ว-204-จ-4720

Approved by

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23111789

Date Received : Oct 25, 2023

Date Reported : Oct 30, 2023

Report Number : 2819590-1

Page 1 of 1

Sample Number	23111789-1
Sampled Date	Oct 24, 2023 2:00 PM
Sample Description	Wastewater
Location	น้ำมันแยกไข 1 (คปสร) คลังใหม่
Date Analysis Commenced	Oct 25, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	26.2	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	39	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-0001

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Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23111789

Date Received : Oct 25, 2023

Date Reported : Oct 28, 2023

Report Number : 2819590-2

Page 1 of 1

Sample Number	23111789-1
Sampled Date	Oct 24, 2023 2:00 PM
Sample Description	Wastewater
Location	น้ำมันแยกไข 1 (คปสร) คลังใหม่
Date Analysis Commenced	Oct 26, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	Not Detected	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Suwimon C.

Suwimon Chairuangwut

Scientist (3)

ทะเบียนเลขที่ ว-204-จ-5417

Approved by

Kanokkorn Anek

Kanokkorn Anek

Senior Manager

ทะเบียนเลขที่ ว-204-ค-6111

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23111789

Date Received : Oct 25, 2023

Date Reported : Oct 30, 2023

Report Number : 2819591-1

Page 1 of 1

Sample Number	23111789-2						
Sampled Date	Oct 24, 2023 2:10 PM						
Sample Description	Wastewater						
Location	น้ำบ่อแยกไข 2 (คปสร) คลังใหม่						
Date Analysis Commenced	Oct 25, 2023						
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	26.8	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	54	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-0001

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Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23111789

Date Received : Oct 25, 2023

Date Reported : Oct 28, 2023

Report Number : 2819591-2

Page 1 of 1

Sample Number	23111789-2						
Sampled Date	Oct 24, 2023 2:10 PM						
Sample Description	Wastewater						
Location	น้ำบ่อแยกไข 2 (คปสร) คลังใหม่						
Date Analysis Commenced	Oct 26, 2023						
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Suwimon C.

Suwimon Chairuangwut
Scientist (3)
ทะเบียนเลขที่ ว-204-จ-5417

Approved by

Kanokkorn Anek

Kanokkorn Anek
Senior Manager
ทะเบียนเลขที่ ว-204-ค-6111

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23111789

Date Received : Oct 25, 2023

Date Reported : Oct 30, 2023

Report Number : 2819592-1

Page 1 of 1

Sample Number	23111789-3
Sampled Date	Oct 24, 2023 2:20 PM
Sample Description	Wastewater
Location	น้ำมันแยกไข 3 (คปสร) คลังใหม่
Date Analysis Commenced	Oct 25, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	26.6	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	148	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-0001

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23111789

Date Received : Oct 25, 2023

Date Reported : Oct 28, 2023

Report Number : 2819592-2

Page 1 of 1

Sample Number	23111789-3
Sampled Date	Oct 24, 2023 2:20 PM
Sample Description	Wastewater
Location	น้ำมันแยกไข 3 (คปสร) คลังใหม่
Date Analysis Commenced	Oct 26, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Suwimon C.

Suwimon Chairuangwut
Scientist (3)
ทะเบียนเลขที่ ว-204-จ-5417

Approved by

Kanokkorn Anek

Kanokkorn Anek
Senior Manager
ทะเบียนเลขที่ ว-204-ค-6111

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23121045

Date Received : Oct 25, 2023

Date Reported : Oct 30, 2023

Report Number : 2820240-1

Page 1 of 1

Sample Number 23121045-1
Sampled Date Oct 24, 2023 2:00 PM
Sample Description Wastewater
Location น้ำบ่อแยกไข 1 (คปสร) แห่งที่ 2 คลังใหม่
Date Analysis Commenced Oct 25, 2023
Condition of Sample Contained in three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Sulfide	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiarputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-0001

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Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

TESTING

No.0009

Lot ID: 23121045

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2820240-2

Page 1 of 1

Sample Number	23121045-1
Sampled Date	Oct 24, 2023 2:00 PM
Sample Description	Wastewater
Location	น้ำบ่อแยกไข 1 (คปสร) แห่งที่ 2 คลังใหม่
Date Analysis Commenced	Oct 25, 2023
Condition of Sample	Contained in three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
Fecal Coliform	MPN/100mL	-	-	79.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B, E	Bangkok
Total Coliform	MPN/100mL	-	-	240.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Settleable Solid *	mL/L/hr	-	0.1	<0.1	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak , Yuttapong Rattana

Remark :

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Sithichok Thongnguen

Scientist (3)

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23121045

Date Received : Oct 25, 2023

Date Reported : Oct 30, 2023

Report Number : 2820241-1

Page 1 of 1

Sample Number 23121045-2
Sampled Date Oct 24, 2023 2:10 PM
Sample Description Wastewater
Location น้ำบ่อแยกไข 2 (คปสร) แห่งที่ 2 คลังใหม่
Date Analysis Commenced Oct 25, 2023
Condition of Sample Contained in three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Sulfide	mg/L	-	0.5	<0.5	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-0001

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

TESTING

No.0009

Lot ID: 23121045

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2820241-2

Page 1 of 1

Sample Number	23121045-2
Sampled Date	Oct 24, 2023 2:10 PM
Sample Description	Wastewater
Location	น้ำบ่อแยกไข 2 (คปสร) แห่งที่ 2 คลังใหม่
Date Analysis Commenced	Oct 25, 2023
Condition of Sample	Contained in three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
Fecal Coliform	MPN/100mL	-	-	170.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B, E	Bangkok
Total Coliform	MPN/100mL	-	-	490.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Settleable Solid *	mL/L/hr	-	0.1	<0.1	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak , Yuttapong Rattana

Remark :

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Sithichok Thongnguen
Scientist (3)

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Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23121045

Date Received : Oct 25, 2023

Date Reported : Oct 30, 2023

Report Number : 2820242-1

Page 1 of 1

Sample Number 23121045-3
Sampled Date Oct 24, 2023 2:20 PM
Sample Description Wastewater
Location น้ำบ่อแยกไข 3 (คปสร) แห่งที่ 2 คลังใหม่
Date Analysis Commenced Oct 25, 2023
Condition of Sample Contained in three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Sulfide	mg/L	-	0.5	0.6	≤1.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-S2 (C, F)	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiarputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-0001

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

TESTING

No.0009

Lot ID: 23121045

Date Received : Oct 25, 2023

Date Reported : Oct 31, 2023

Report Number : 2820242-2

Page 1 of 1

Sample Number	23121045-3
Sampled Date	Oct 24, 2023 2:20 PM
Sample Description	Wastewater
Location	น้ำบ่อแยกไข 3 (คปสร) แห่งที่ 2 คลังใหม่
Date Analysis Commenced	Oct 25, 2023
Condition of Sample	Contained in three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Microbiological Testing							
Fecal Coliform	MPN/100mL	-	-	79.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B, E	Bangkok
Total Coliform	MPN/100mL	-	-	330.0	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 9221 B	Bangkok
Water Testing							
Settleable Solid *	mL/L/hr	-	0.1	<0.1	No Standard	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 F	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak , Yuttapong Rattana

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Approved by

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Sithichok Thongnguen

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23131397

Date Received : Dec 20, 2023

Date Reported : Dec 26, 2023

Report Number : 2873730-1

Page 1 of 1

Sample Number	23131397-1						
Sampled Date	Dec 19, 2023 10:00 AM						
Sample Description	Wastewater						
Location	น้ำบ่อแยกไข 1 (คปสร) คลังใหม่						
Date Analysis Commenced	Dec 20, 2023						
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	3.7	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	8.0	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	28.0	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	54	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Ananta B.

Ananta Boonphet
Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn
Section Head

ทะเบียนเลขที่ ว-267-ค-0001

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23131397

Date Received : Dec 20, 2023

Date Reported : Dec 26, 2023

Report Number : 2873730-2

Page 1 of 1

Sample Number	23131397-1
Sampled Date	Dec 19, 2023 10:00 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 1 (คปสร) คลังใหม่
Date Analysis Commenced	Dec 21, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	Not Detected	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Suwimon C.

Suwimon Chairuangwut
Scientist (3)
ทะเบียนเลขที่ ว-204-จ-5417

Approved by

Kanok Korn Anek

Kanokkorn Anek
Senior Manager
ทะเบียนเลขที่ ว-204-ค-6111

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23131397

Date Received : Dec 20, 2023

Date Reported : Dec 26, 2023

Report Number : 2873731-1

Page 1 of 1

Sample Number	23131397-2
Sampled Date	Dec 19, 2023 10:10 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 2 (คปสร) คลังใหม่
Date Analysis Commenced	Dec 20, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	28.5	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	114	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-0001

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23131397

Date Received : Dec 20, 2023

Date Reported : Dec 26, 2023

Report Number : 2873731-2

Page 1 of 1

Sample Number	23131397-2
Sampled Date	Dec 19, 2023 10:10 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 2 (คปสร) คลังใหม่
Date Analysis Commenced	Dec 21, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Suwimon C.

Suwimon Chairuangwut
Scientist (3)
ทะเบียนเลขที่ ว-204-จ-5417

Approved by

Kanok Korn Anek

Kanokkorn Anek
Senior Manager
ทะเบียนเลขที่ ว-204-ค-6111

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23131397

Date Received : Dec 20, 2023

Date Reported : Dec 26, 2023

Report Number : 2873732-1

Page 1 of 1

Sample Number	23131397-3
Sampled Date	Dec 19, 2023 10:20 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 3 (คปสร) คลังใหม่
Date Analysis Commenced	Dec 20, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	27.4	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	180	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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Technical Management

Ananta B.

Ananta Boonphet
Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn
Section Head

ทะเบียนเลขที่ ว-267-ค-0001

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Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23131397

Date Received : Dec 20, 2023

Date Reported : Dec 26, 2023

Report Number : 2873732-2

Page 1 of 1

Sample Number	23131397-3
Sampled Date	Dec 19, 2023 10:20 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 3 (คปสร) คลังใหม่
Date Analysis Commenced	Dec 21, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Suwimon C.

Suwimon Chairuangwut
Scientist (3)
ทะเบียนเลขที่ ว-204-จ-5417

Approved by

Kanok Korn Anek

Kanokkorn Anek
Senior Manager
ทะเบียนเลขที่ ว-204-ค-6111

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23123842

Date Received : Nov 17, 2023

Date Reported : Nov 23, 2023

Report Number : 2844010-1

Page 1 of 1

Sample Number	23123842-1
Sampled Date	Nov 16, 2023 9:10 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 1 (คปสร) คลังใหม่
Date Analysis Commenced	Nov 17, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	8.0	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	26.1	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	52	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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Technical Management

Ananta B.

Ananta Boonphet
Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn
Section Head

ทะเบียนเลขที่ ว-267-ค-0001

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Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23123842

Date Received : Nov 17, 2023

Date Reported : Nov 22, 2023

Report Number : 2844010-2

Page 1 of 1

Sample Number	23123842-1
Sampled Date	Nov 16, 2023 9:10 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 1 (คปสร) คลังใหม่
Date Analysis Commenced	Nov 20, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Suwimon C.

Suwimon Chairuangwut
Scientist (3)
ทะเบียนเลขที่ ว-204-จ-5417

Approved by

Kanok Korn Anek

Kanokkorn Anek
Senior Manager
ทะเบียนเลขที่ ว-204-ค-6111

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23123842

Date Received : Nov 17, 2023

Date Reported : Nov 23, 2023

Report Number : 2844011-1

Page 1 of 1

Sample Number	23123842-2
Sampled Date	Nov 16, 2023 9:18 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 2 (คปสร) คลังใหม่
Date Analysis Commenced	Nov 17, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	27.2	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	84	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-0001

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23123842

Date Received : Nov 17, 2023

Date Reported : Nov 22, 2023

Report Number : 2844011-2

Page 1 of 1

Sample Number	23123842-2						
Sampled Date	Nov 16, 2023 9:18 AM						
Sample Description	Wastewater						
Location	น้ำบ่อแยกไข 2 (คปสร) คลังใหม่						
Date Analysis Commenced	Nov 20, 2023						
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Suwimon C.

Suwimon Chairuangwut
Scientist (3)
ทะเบียนเลขที่ ว-204-จ-5417

Approved by

Kanok Korn Anek

Kanokkorn Anek
Senior Manager
ทะเบียนเลขที่ ว-204-ค-6111

Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. No part of this report may be reproduced in any form without written consent from the laboratory.
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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23123842

Date Received : Nov 17, 2023

Date Reported : Nov 23, 2023

Report Number : 2844012-1

Page 1 of 1

Sample Number	23123842-3
Sampled Date	Nov 16, 2023 9:20 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 3 (คปสร) คลังใหม่
Date Analysis Commenced	Nov 17, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.8	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	27.1	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	154	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Ananta B.

Ananta Boonphet
Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn
Section Head

ทะเบียนเลขที่ ว-267-ค-0001

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 23123842

Date Received : Nov 17, 2023

Date Reported : Nov 22, 2023

Report Number : 2844012-2

Page 1 of 1

Sample Number	23123842-3						
Sampled Date	Nov 16, 2023 9:20 AM						
Sample Description	Wastewater						
Location	น้ำบ่อแยกไข 3 (คปสร) คลังใหม่						
Date Analysis Commenced	Nov 20, 2023						
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-0013 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Technical Management

Suwimon C.

Suwimon Chairuangwut
Scientist (3)
ทะเบียนเลขที่ ว-204-จ-5417

Approved by

Kanok Korn Anek

Kanokkorn Anek
Senior Manager
ทะเบียนเลขที่ ว-204-ค-6111

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2385293

Date Received : Aug 18, 2023

Date Reported : Aug 24, 2023

Report Number : 2755864-1

Page 1 of 1

Sample Number	2385293-1
Sampled Date	Aug 17, 2023 11:30 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 1 (คปสร) คลังใหม่
Date Analysis Commenced	Aug 18, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	30.1	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	84	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2385293

Date Received : Aug 18, 2023

Date Reported : Aug 24, 2023

Report Number : 2755864-2

Page 1 of 1

Sample Number	2385293-1
Sampled Date	Aug 17, 2023 11:30 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 1 (คปสร) คลังใหม่
Date Analysis Commenced	Aug 21, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	Not Detected	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak , Yuttapong Rattana

Remark :

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Approved by

Siriluk P.

Siriluk Puengpang
Section Head

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2385293

Date Received : Aug 18, 2023

Date Reported : Aug 24, 2023

Report Number : 2755865-1

Page 1 of 1

Sample Number	2385293-2
Sampled Date	Aug 17, 2023 11:40 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 2 (คปสร) คลังใหม่
Date Analysis Commenced	Aug 18, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.7	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	28.2	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	56	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2385293

Date Received : Aug 18, 2023

Date Reported : Aug 24, 2023

Report Number : 2755865-2

Page 1 of 1

Sample Number	2385293-2
Sampled Date	Aug 17, 2023 11:40 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 2 (คปสร) คลังใหม่
Date Analysis Commenced	Aug 21, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak , Yuttapong Rattana

Remark :

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Approved by

Siriluk P.

Siriluk Puengpang
Section Head

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Analysis / Test Report

TESTING
No.0166

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2385293

Date Received : Aug 18, 2023

Date Reported : Aug 24, 2023

Report Number : 2755866-1

Page 1 of 1

Sample Number	2385293-3
Sampled Date	Aug 17, 2023 11:50 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 3 (คปสร) คลังใหม่
Date Analysis Commenced	Aug 18, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Songkhla
COD	mg/L	-	25	<25	≤120	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Songkhla
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Songkhla
pH at 25 degree C *		-	-	7.6	5.5-9.0	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Songkhla
Temperature *	Degree C	-	-	29.4	≤40	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Songkhla
Total Dissolved solids Dried at 180 degree C	mg/L	-	5	166	≤3000	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Songkhla
Total Suspended Solids	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Songkhla

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak ทะเบียนเลขที่ ว-267-จ-8343 , Yuttapong Rattana ทะเบียนเลขที่ ว-204-จ-8610

Remark :

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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Ananta B.

Ananta Boonphet

Scientist (2)

ทะเบียนเลขที่ ว-267-จ-0004

Approved by

Kanitta H.

Kanitta Hemprasatporn

Section Head

ทะเบียนเลขที่ ว-267-ค-7296

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Analysis / Test Report

Client : PTT Oil and Retail Business Public Company Limited
13 Moo 3, Surat-Paknum Road, Bangkung, Muang Suratthani, Suratthani Thailand 84000

P/O :

Project Name : คลังน้ำมันสุราษฎร์ธานี (คลังแห่งใหม่)

Project Location :

Lot ID: 2385293

Date Received : Aug 18, 2023

Date Reported : Aug 24, 2023

Report Number : 2755866-2

Page 1 of 1

Sample Number	2385293-3
Sampled Date	Aug 17, 2023 11:50 AM
Sample Description	Wastewater
Location	น้ำมันแยกไข 3 (คปสร) คลังใหม่
Date Analysis Commenced	Aug 21, 2023
Condition of Sample	Contained in one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Kjeldahl Nitrogen as N	mg/L	0.15	1.0	<1.0	≤100	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C)	Bangkok

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Panya Kiartputtirak , Yuttapong Rattana

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Approved by

Siriluk P.

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