

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.

ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900

CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net

SAMPLING SOURCE : INSESW2 (UTM WGS 84 ZONE 47P 733530E 1725191N)

SAMPLE TYPE : SURFACE WATER

RECEIVED DATE : APRIL 1, 2022

SAMPLING DATE : MARCH 31, 2022

ANALYTICAL DATE : APRIL 1-14, 2022

SAMPLING TIME : 13:00 HOUR

REPORT NO. : 2022-U028877

SAMPLING METHOD : GRAB

WORK NO. : 2022-001205

SAMPLING BY : MR PORAWORN BUNNAG

ANALYSIS NO. : T22AG232-0004

ANALYZED BY : MISS NADNAPA KAMOLBONN

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			INSESW2 T22AG232-0004		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM4500-H ⁺ B)	7.4 (34°C)	5.0-9.0	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	43.4 (34°C)	-	0.1
CHLORIDE ^a	mg/L Cl ⁻	ARGENTOMETRIC METHOD (SM: 4500-Cl ⁻ B)	3.9	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	ND	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	1.20	-	0.005
TOTAL CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0005	≤ 0.01	0.0003
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
MERCURY ^b	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.002	0.0001
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.005*, ≤ 0.05**	0.002
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.1	0.002
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.05	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.600	≤ 1.0	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			INSESW2 T22AG232-0004		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.1	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.003
SAMPLE CONDITION					
WATER'S COLOUR/TURBID			YELLOW/CLEAR		
SEDIMENT			YELLOW		

^a : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

^b : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

^c : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

REGULATORY STANDARD : SURFACE WATER QUALITY STANDARDS CLASS 3, NOTIFICATION OF THE NATIONAL ENVIRONMENT 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 (1994).

CLASS 3 : MEDIUM CLEAN FRESH SURFACE WATER RESOURCES USED FOR

- (1) CONSUMPTION, BUT PASSING THROUGH ON ORDINARY TREATMENT PROCESS BEFORE USING
- (2) AGRICULTURE

≤ 0.005* : WHEN WATER HARDNESS NOT MORE THAN 100 mg/L AS CaCO₃

0.05** : WHEN WATER HARDNESS MORE THAN 100 mg/L AS CaCO₃

ND : NON-DETECTABLE.



(MR. BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : INSESW3 (UTM WGS 84 ZONE 47P 734788E 172885N)
SAMPLE TYPE : SURFACE WATER
SAMPLING DATE : MARCH 31, 2022
SAMPLING TIME : 13:20 HOUR
SAMPLING METHOD ° : GRAB
SAMPLING BY ° : MR PORAWORN BUNNAG
ANALYZED BY : MISS NADNAPA KAMOLBONN

RECEIVED DATE : APRIL 1, 2022
ANALYTICAL DATE : APRIL 1-14, 2022
REPORT NO. : 2022-U028878
WORK NO. : 2022-001205
ANALYSIS NO. : T22AG232-0005

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			INSESW3 T22AG232-0005		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM:4500-H° B)	7.7 (32°C)	5.0-9.0	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	30.8 (32°C)	-	0.1
CHLORIDE °	mg/L Cl ⁻	ARGENTOMETRIC METHOD (SM: 4500-Cl ⁻ B)	3.9	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	ND	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	2.72	-	0.005
TOTAL CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0003	≤ 0.01	0.0003
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.002	0.0001
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.005*, ≤ 0.05**	0.002
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.1	0.002
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.05	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.225	≤ 1.0	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			INSESW3 T22AG232-0005		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.1	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR YELLOW		

° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

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(1) CONSUMPTION, BUT PASSING THROUGH ON ORDINARY TREATMENT PROCESS BEFORE USING
(2) AGRICULTURE

≤ 0.005* : WHEN WATER HARDNESS NOT MORE THAN 100 mg/L AS CaCO₃

0.05** : WHEN WATER HARDNESS MORE THAN 100 mg/L AS CaCO₃

ND : NON-DETECTABLE.

Bhuchonk p.

(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

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ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : INSESW6 (UTM WGS 84 ZONE 47P 734945E 1723481N)
SAMPLE TYPE : SURFACE WATER
SAMPLING DATE : MARCH 31, 2022
SAMPLING TIME : 11:30 HOUR
SAMPLING METHOD : GRAB
SAMPLING BY : MR PORAWORN BUNNAG
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : APRIL 1, 2022
ANALYTICAL DATE : APRIL 1-14, 2022
REPORT NO. : 2022-U028879
WORK NO. : 2022-001205
ANALYSIS NO. : T22AG232-0006

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			INSESW6 T22AG232-0006		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM4500-H ⁺ B)	7.6 (29°C)	5.0-9.0	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	48.0 (29°C)	-	0.1
CHLORIDE ^a	mg/L Cl ⁻	ARGENTOMETRIC METHOD (SM: 4500-Cl ⁻ B)	3.4	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	ND	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	30.5	-	0.005
TOTAL CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0005	≤ 0.01	0.0003
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
MERCURY ^b	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.002	0.0001
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.005*, ≤ 0.05**	0.002
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 0.1	0.002
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.05	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.688	≤ 1.0	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			INSESW6 T22AG232-0006		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 0.1	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 1.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR YELLOW		

^a : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

^b : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

^c : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

REGULATORY STANDARD : SURFACE WATER QUALITY STANDARDS CLASS 3, NOTIFICATION OF THE NATIONAL ENVIRONMENT 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 (1994).

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(1) CONSUMPTION, BUT PASSING THROUGH ON ORDINARY TREATMENT PROCESS BEFORE USING
(2) AGRICULTURE

≤ 0.005* : WHEN WATER HARDNESS NOT MORE THAN 100 mg/L AS CaCO₃

0.05** : WHEN WATER HARDNESS MORE THAN 100 mg/L AS CaCO₃

ND : NON-DETECTABLE.

< LOQ : < LEVEL OF QUANTITATION (COPPER ≥ 0.002 AND < 0.025 mg/L, NICKEL ≥ 0.005 AND < 0.050 mg/L, ZINC ≥ 0.003 AND < 0.025 mg/L).



(MR. BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : INSESW7 (UTM WGS 84 ZONE 47P 735012E 1722203N)
SAMPLE TYPE : SURFACE WATER
SAMPLING DATE : MARCH 31, 2022
SAMPLING TIME : 11:00 HOUR
SAMPLING METHOD ° : GRAB
SAMPLING BY ° : MR PORAWORN BUNNAG
ANALYZED BY : MISS NADNAPA KAMOLBORN

RECEIVED DATE : APRIL 1, 2022
ANALYTICAL DATE : APRIL 1-14, 2022
REPORT NO. : 2022-U028880
WORK NO. : 2022-001205
ANALYSIS NO. : T22AG232-0007

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			INSESW7 T22AG232-0007		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM:4500-H° B)	7.5 (32°C)	5.0-9.0	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	41.8 (32°C)	-	0.1
CHLORIDE °	mg/L Cl	ARGENTOMETRIC METHOD (SM: 4500-Cl° B)	4.4	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	ND	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	1.68	-	0.005
TOTAL CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0004	≤ 0.01	0.0003
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.002	0.0001
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.005*, ≤ 0.05**	0.002
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.1	0.002
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.05	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.408	≤ 1.0	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			INSESW7 T22AG232-0007		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.1	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR BROWN		

^a : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

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^c : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

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- (1) CONSUMPTION, BUT PASSING THROUGH ON ORDINARY TREATMENT PROCESS BEFORE USING
- (2) AGRICULTURE

≤ 0.005* : WHEN WATER HARDNESS NOT MORE THAN 100 mg/L AS CaCO₃

0.05** : WHEN WATER HARDNESS MORE THAN 100 mg/L AS CaCO₃

ND : NON-DETECTABLE.



(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.

ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900

CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net

SAMPLING SOURCE : INESWCON (UTM WGS 84 ZONE 47P 735916E 1722026N)

SAMPLE TYPE : SURFACE WATER

RECEIVED DATE : APRIL 1, 2022

SAMPLING DATE : MARCH 31, 2022

ANALYTICAL DATE : APRIL 1-14, 2022

SAMPLING TIME : 10:45 HOUR

REPORT NO. : 2022-U028882

SAMPLING METHOD ^c : GRAB

WORK NO. : 2022-001205

SAMPLING BY ^c : MR PORAWORN BUNNAG

ANALYSIS NO. : T22AG232-0008

ANALYZED BY : MISS NADNAPA KAMOLBOON

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			INESWCON T22AG232-0008		
pH ^c	-	ELECTROMETRIC METHOD AT SITE (SM4500-H ⁺ B)	7.3 (29°C)	5.0-9.0	-
ELECTRICAL CONDUCTIVITY ^c	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	41.4 (29°C)	-	0.1
CHLORIDE ^a	mg/L Cl ⁻	ARGENTOMETRIC METHOD (SM: 4500-Cl ⁻ B)	3.9	-	2.0
SULPHATE ^c	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	ND	-	0.3
TOTAL PETROLEUM HYDROCARBONS ^c	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
IRON ^c	mg/L Fe	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	5.51	-	0.005
TOTAL CHROMIUM ^c	mg/L Cr	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
ARSENIC ^c	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0004	≤ 0.01	0.0003
CHROMIUM HEXAVALENT ^c	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
MERCURY ^b	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.002	0.0001
CADMIUM ^c	mg/L Cd	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.005*, ≤ 0.05**	0.002
COPPER ^c	mg/L Cu	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.1	0.002
LEAD ^c	mg/L Pb	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.05	0.003
MANGANESE ^c	mg/L Mn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.446	≤ 1.0	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			INESWCON T22AG232-0008		
NICKEL ^c	mg/L Ni	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.1	0.005
ZINC ^c	mg/L Zn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.003
SAMPLE CONDITION					
WATER'S COLOUR/TURBID			YELLOW/CLEAR		
SEDIMENT			YELLOW		

^a : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

^b : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

^c : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

REGULATORY STANDARD : SURFACE WATER QUALITY STANDARDS CLASS 3, NOTIFICATION OF THE NATIONAL ENVIRONMENT 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 (1994).

CLASS 3 : MEDIUM CLEAN FRESH SURFACE WATER RESOURCES USED FOR

- (1) CONSUMPTION, BUT PASSING THROUGH ON ORDINARY TREATMENT PROCESS BEFORE USING
- (2) AGRICULTURE

≤ 0.005* : WHEN WATER HARDNESS NOT MORE THAN 100 mg/L AS CaCO₃

0.05** : WHEN WATER HARDNESS MORE THAN 100 mg/L AS CaCO₃

ND : NON-DETECTABLE.



(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.

ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900

CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecoohai.net

SAMPLING SOURCE : NSE-K-SW1 (UTM WGS 84 ZONE 47P 735066E 1720186N)

SAMPLE TYPE : SURFACE WATER

RECEIVED DATE : APRIL 1, 2022

SAMPLING DATE : MARCH 31, 2022

ANALYTICAL DATE : APRIL 1-14, 2022

SAMPLING TIME : 09:40 HOUR

REPORT NO. : 2022-U028884

SAMPLING METHOD : GRAB

WORK NO. : 2022-001205

SAMPLING BY : MR PORAWORN BUNNAG

ANALYSIS NO. : T22AG232-0009

ANALYZED BY : MISS NADNAPA KAMOLBOON

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			NSE-K-SW1 T22AG232-0009		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM4500-H ⁺ B)	8.0 (30°C)	5.0-9.0	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	112 (30°C)	-	0.1
CHLORIDE °	mg/L Cl ⁻	ARGENTOMETRIC METHOD (SM: 4500-Cl ⁻ B)	5.4	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	7.0	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	13.9	-	0.005
TOTAL CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0003	≤ 0.01	0.0003
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	0.0019	≤ 0.002	0.0001
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.005*, ≤ 0.05**	0.002
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.1	0.002
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.05	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.206	≤ 1.0	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			NSE-K-SW1 T22AG232-0009		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.1	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.003
SAMPLE CONDITION					
WATER'S COLOUR/TURBID			YELLOW/CLEAR		
SEDIMENT			YELLOW		

^a : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

^b : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

^c : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

REGULATORY STANDARD : SURFACE WATER QUALITY STANDARDS CLASS 3, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD, NO.8, B.E. 2537 ISSUED UNDER THE ENCHANCEMENT 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 (1994).

CLASS 3 : MEDIUM CLEAN FRESH SURFACE WATER RESOURCES USED FOR

- (1) CONSUMPTION, BUT PASSING THROUGH ON ORDINARY TREATMENT PROCESS BEFORE USING
- (2) AGRICULTURE

≤ 0.005* : WHEN WATER HARDNESS NOT MORE THAN 100 mg/L AS CaCO₃

0.05** : WHEN WATER HARDNESS MORE THAN 100 mg/L AS CaCO₃

ND : NON-DETECTABLE.



(MR. BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : NSE-K-SW2 (UTM WGS 84 ZONE 47P 735493E 1720157N)
SAMPLE TYPE : SURFACE WATER
SAMPLING DATE : MARCH 31, 2022
SAMPLING TIME : 09:20 HOUR
SAMPLING METHOD ° : GRAB
SAMPLING BY ° : MR PORAWORN BUNNAG
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : APRIL 1, 2022
ANALYTICAL DATE : APRIL 1-14, 2022
REPORT NO. : 2022-U028886
WORK NO. : 2022-001205
ANALYSIS NO. : T22AG232-0010

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			NSE-K-SW2 T22AG232-0010		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM4500-H° B)	8.2 (32°C)	5.0-9.0	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	149 (32°C)	-	0.1
CHLORIDE °	mg/L Cl°	ARGENTOMETRIC METHOD (SM: 4500-Cl° B)	2.9	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	6.5	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.264	-	0.005
TOTAL CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0004	≤ 0.01	0.0003
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.002	0.0001
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.005*, ≤ 0.05**	0.002
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.1	0.002
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.05	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.048	≤ 1.0	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			NSE-K-SW2 T22AG232-0010		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.1	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.003
SAMPLE CONDITION					
WATER'S COLOUR/TURBID			BROWN/CLEAR		
SEDIMENT			BROWN		

° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

REGULATORY STANDARD : SURFACE WATER QUALITY STANDARDS CLASS 3, NOTIFICATION OF THE NATIONAL ENVIRONMENT 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 (1994).

CLASS 3 : MEDIUM CLEAN FRESH SURFACE WATER RESOURCES USED FOR
(1) CONSUMPTION, BUT PASSING THROUGH ON ORDINARY TREATMENT PROCESS BEFORE USING
(2) AGRICULTURE

≤ 0.005* : WHEN WATER HARDNESS NOT MORE THAN 100 mg/L AS CaCO₃

0.05** : WHEN WATER HARDNESS MORE THAN 100 mg/L AS CaCO₃

ND : NON-DETECTABLE.

Bhuchonk p.

(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : 9SW1 (UTM WGS 84 ZONE 47P 734840E 1717748N)
SAMPLE TYPE : SURFACE WATER
SAMPLING DATE : MAY 18, 2022
SAMPLING TIME : 12:30 HOUR
SAMPLING METHOD ° : GRAB
SAMPLING BY ° : MR KRIDSANAPONG NAMTHIP
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : MAY 19, 2022
ANALYTICAL DATE : MAY 19-29, 2022
REPORT NO. : 2022-U041128
WORK NO. : 2022-001205
ANALYSIS NO. : T22AJ459-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			9SW1 T22AJ459-0001		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM4500-H° B)	7.8 (32°C)	5.0-9.0	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	157 (32°C)	-	0.1
CHLORIDE °	mg/L Cl	ARGENTOMETRIC METHOD (SM: 4500-Cl B)	9.6	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	15.3	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	3.56	-	0.005
TOTAL CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0006	≤ 0.01	0.0003
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.002	0.0001
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.005*, ≤ 0.05**	0.002
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.1	0.002
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.05	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.201	≤ 1.0	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			9SW1 T22AJ459-0001		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.1	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.003
SAMPLE CONDITION					
WATER'S COLOUR/TURBID			YELLOW/TURBID		
SEDIMENT			BROWN		

° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

REGULATORY STANDARD : SURFACE WATER QUALITY STANDARDS CLASS 3, NOTIFICATION OF THE NATIONAL ENVIRONMENT 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 (1994).

CLASS 3 : MEDIUM CLEAN FRESH SURFACE WATER RESOURCES USED FOR
(1) CONSUMPTION, BUT PASSING THROUGH ON ORDINARY TREATMENT PROCESS BEFORE USING
(2) AGRICULTURE

≤ 0.005* : WHEN WATER HARDNESS NOT MORE THAN 100 mg/L AS CaCO₃

≤ 0.05** : WHEN WATER HARDNESS MORE THAN 100 mg/L AS CaCO₃

ND : NON-DETECTABLE.

Bhuchonk p.

(MR. BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

JUNE 6, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : 9SW2 (UTM WGS 84 ZONE 47P 735191E 1718239N)
SAMPLE TYPE : SURFACE WATER
SAMPLING DATE : MAY 18, 2022
SAMPLING TIME : 14:20 HOUR
SAMPLING METHOD ° : GRAB
SAMPLING BY ° : MR KRIDSANAPONG NAMTHIP
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : MAY 19, 2022
ANALYTICAL DATE : MAY 19-29, 2022
REPORT NO. : 2022-U041129
WORK NO. : 2022-001205
ANALYSIS NO. : T22AJ459-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			9SW2 T22AJ459-0002		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM4500-H ⁺ B)	8.4 (35°C)	5.0-9.0	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	418 (35°C)	-	0.1
CHLORIDE °	mg/L Cl ⁻	ARGENTOMETRIC METHOD (SM: 4500-Cl ⁻ B)	7.2	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	4.0	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.330	-	0.005
TOTAL CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0005	≤ 0.01	0.0003
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.002	0.0001
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.005*, ≤ 0.05**	0.002
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.1	0.002
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.05	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.031	≤ 1.0	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			9SW2 T22AJ459-0002		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.1	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.SW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.003
SAMPLE CONDITION					
WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID YELLOW		

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

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

REGULATORY STANDARD : SURFACE WATER QUALITY STANDARDS CLASS 3, NOTIFICATION OF THE NATIONAL ENVIRONMENT 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 GAZZETTE, VOL. 111, PART 16, DATED FEBRUARY 24, B.E. 2537 (1994).

CLASS 3 : MEDIUM CLEAN FRESH SURFACE WATER RESOURCES USED FOR
(1) CONSUMPTION, BUT PASSING THROUGH ON ORDINARY TREATMENT PROCESS BEFORE USING
(2) AGRICULTURE

≤ 0.005* : WHEN WATER HARDNESS NOT MORE THAN 100 mg/L AS CaCO₃
≤ 0.05** : WHEN WATER HARDNESS MORE THAN 100 mg/L AS CaCO₃
ND : NON-DETECTABLE.

Bhuchonk p.
(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

JUNE 6, 2022

คุณภาพน้ำใต้ดิน



ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : MWL44G-1 (UTM WGS 84 ZONE 47P 734539E 1725454N)
SAMPLE TYPE : GROUNDWATER
SAMPLING DATE : MARCH 30, 2022
SAMPLING TIME : 14:40 HOUR
SAMPLING METHOD ° : SUBMERSIBLE PUMP
SAMPLING BY ° : MR PORAWORN BUNNAG
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : APRIL 1, 2022
ANALYTICAL DATE : APRIL 1-14, 2022
REPORT NO. : 2022-U028656
WORK NO. : 2022-001205
ANALYSIS NO. : T22AG202-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWL44G-1 T22AG202-0001		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM4500-H° B)	6.5 (32°C)	-	-
CHLORIDE °	mg/L Cl	ARGENTOMETRIC METHOD (SM: 4500-Cl° B)	5.8	-	2.0
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	272 (32°C)	-	0.1
SULPHATE °	mg/L SO ₄ ²⁻ E	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	2.0	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	23.0	-	0.005
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	ND	≤ 0.01	0.0003
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr° B)	ND	≤ 0.05	0.006
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.001	0.0001
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 1.0	0.002
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	1.09	≤ 0.5	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWL44G-1 T22AG202-0001		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 5.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN		

° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO 20 (B.E. 2543)
ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.

ND : NON-DETECTABLE.

< LOQ : < LEVEL OF QUANTITATION (COPPER ≥ 0.002 AND < 0.025 mg/L, ZINC ≥ 0.003 AND < 0.025 mg/L).



(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.

ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900

CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net

SAMPLING SOURCE : MWL44G-2 (UTM WGS 84 ZONE 47P 734456E 1725445N)

SAMPLE TYPE : GROUNDWATER

RECEIVED DATE : APRIL 1, 2022

SAMPLING DATE : MARCH 30, 2022

ANALYTICAL DATE : APRIL 1-14, 2022

SAMPLING TIME : 15:00 HOUR

REPORT NO. : 2022-U028657

SAMPLING METHOD ° : SUBMERSIBLE PUMP

WORK NO. : 2022-001205

SAMPLING BY ° : MR PORAWORN BUNNAG

ANALYSIS NO. : T22AG202-0002

ANALYZED BY : MISS NADNAPA KAMOLBOON

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWL44G-2 T22AG202-0002		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM:4500-H° B)	6.6 (32°C)	-	-
CHLORIDE °	mg/L Cl	ARGENTOMETRIC METHOD (SM: 4500-Cl B)	12.6	-	2.0
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	625 (32°C)	-	0.1
SULPHATE °	mg/L SO ₄ ²⁻ E	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	ND	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	2.32	-	0.005
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0014	≤ 0.01	0.0003
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.001	0.0001
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.002
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.770	≤ 0.5	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWL44G-2 T22AG202-0002		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 5.0	0.003
SAMPLE CONDITION					
WATER'S COLOUR/TURBID			YELLOW/TURBID		
SEDIMENT			BROWN		

° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543) ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.

ND : NON-DETECTABLE.



(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : MWNSEB-1 (UTM WGS 84 ZONE 47P 734768E 1722999N)
SAMPLE TYPE : GROUNDWATER
SAMPLING DATE : MARCH 30, 2022
SAMPLING TIME : 09:20 HOUR
SAMPLING METHOD ° : SUBMERSIBLE PUMP
SAMPLING BY ° : MR PORAWORN BUNNAG
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : APRIL 1, 2022
ANALYTICAL DATE : APRIL 1-14, 2022
REPORT NO. : 2022-U028640
WORK NO. : 2022-001205
ANALYSIS NO. : T22AG200-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSEB-1 T22AG200-0001		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM:4500-H+ B)	7.0 (29°C)	-	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	285 (29°C)	-	0.1
CHLORIDE °	mg/L Cl	ARGENTOMETRIC METHOD (SM: 4500-Cl B)	ND	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	1.9	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	ND	≤ 0.01	0.0003
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.001	0.0001
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 1.0	0.002
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.649	-	0.005
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 0.5	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSEB-1 T22AG200-0001		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	1.15	≤ 5.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN		

° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543) ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.

ND : NON-DETECTABLE.

< LOQ : < LEVEL OF QUANTITATION (COPPER ≥ 0.002 AND < 0.025 mg/L, LEAD ≥ 0.003 AND < 0.100 mg/L, MANGANESE ≥ 0.002 AND < 0.025 mg/L).



(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : MWNSEB-2 (UTM WGS 84 ZONE 47P 734700E 1723002N)
SAMPLE TYPE : GROUNDWATER
SAMPLING DATE : MARCH 30, 2022
SAMPLING TIME : 09:40 HOUR
SAMPLING METHOD : SUBMERSIBLE PUMP
SAMPLING BY : MR PORAWORN BUNNAG
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : APRIL 1, 2022
ANALYTICAL DATE : APRIL 1-14, 2022
REPORT NO. : 2022-U028641
WORK NO. : 2022-001205
ANALYSIS NO. : T22AG200-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSEB-2 T22AG200-0002		
pH ^c	-	ELECTROMETRIC METHOD AT SITE (SM4500-H ⁺ B)	7.0 (29°C)	-	-
ELECTRICAL CONDUCTIVITY ^c	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	134 (29°C)	-	0.1
CHLORIDE ^a	mg/L Cl ⁻	ARGENTOMETRIC METHOD (SM: 4500-Cl ⁻ B)	ND	-	2.0
SULPHATE ^c	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	3.7	-	0.3
TOTAL PETROLEUM HYDROCARBONS ^c	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
CHROMIUM ^c	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
ARSENIC ^c	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0003	≤ 0.01	0.0003
CHROMIUM HEXAVALENT ^c	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
MERCURY ^b	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.001	0.0001
CADMIUM ^c	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
COPPER ^c	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.002
IRON ^c	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.238	-	0.005
LEAD ^c	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.01	0.003
MANGANESE ^c	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 0.5	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSEB-2 T22AG200-0002		
NICKEL ^c	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC ^c	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 5.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR BROWN		

^a : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

^b : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

^c : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543) ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.

ND : NON-DETECTABLE.

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

Bhuchonk P.

(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : MWNSE-K (UP GRADIENT) (UTM WGS 84 ZONE 47P 735133E 1720262N)
SAMPLE TYPE : GROUNDWATER
SAMPLING DATE : MARCH 30, 2022
SAMPLING TIME : 14:00 HOUR
SAMPLING METHOD ° : SUBMERSIBLE PUMP
SAMPLING BY ° : MR PORAWORN BUNNAG
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : APRIL 1, 2022
ANALYTICAL DATE : APRIL 1-20, 2022
REPORT NO. : 2022-U028852
WORK NO. : 2022-001205
ANALYSIS NO. : T22AG203-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT MWNSE-K (UP GRADIENT) T22AG203-0001	REGULATORY STANDARD	DETECTION LIMIT
pH °	-	ELECTROMETRIC METHOD AT SITE (SM:4500-H+ B)	6.8 (29°C)	-	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	219 (29°C)	-	0.1
CHLORIDE °	mg/L Cl	ARGENTOMETRIC METHOD (SM: 4500-Cl B)	3.4	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	13.8	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	ND	≤ 0.01	0.0003
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.002
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.282	-	0.005
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.036	≤ 0.5	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT MWNSE-K (UP GRADIENT) T22AG203-0001	REGULATORY STANDARD	DETECTION LIMIT
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.001	0.0001
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 5.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR WHITE		

° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543)
ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.

ND : NON-DETECTABLE.

< LOQ : < LEVEL OF QUANTITATION (LEAD ≥ 0.003 AND < 0.100 mg/L).



(MR. BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : MWNSE-K (DOWN GRADIENT) (UTM WGS 84 ZONE 47P 735274E 1720334N)
SAMPLE TYPE : GROUNDWATER
SAMPLING DATE : MARCH 30, 2022
SAMPLING TIME : 13:40 HOUR
SAMPLING METHOD ° : SUBMERSIBLE PUMP
SAMPLING BY ° : MR PORAWORN BUNNAG
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : APRIL 1, 2022
ANALYTICAL DATE : APRIL 1-20, 2022
REPORT NO. : 2022-U028854
WORK NO. : 2022-001205
ANALYSIS NO. : T22AG203-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSE-K (DOWN GRADIENT) T22AG203-0002		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM4500-H+ B)	7.4 (30°C)	-	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	1,275 (30°C)	-	0.1
CHLORIDE °	mg/L Cl ⁻	ARGENTOMETRIC METHOD (SM: 4500-Cl ⁻ B)	2.4	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻ E	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	ND	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0011	≤ 0.01	0.0003
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.002
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.273	-	0.005
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.142	≤ 0.5	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSE-K (DOWN GRADIENT) T22AG203-0002		
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.001	0.0001
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 5.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR		

° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543) ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.

ND : NON-DETECTABLE.

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



(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.

ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900

CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net

SAMPLING SOURCE : MWNSEC-1 (UTM WGS 84 ZONE 47P 735704E 1722526N)

SAMPLE TYPE : GROUNDWATER

RECEIVED DATE : APRIL 1, 2022

SAMPLING DATE : MARCH 30, 2022

ANALYTICAL DATE : APRIL 1-14, 2022

SAMPLING TIME : 10:40 HOUR

REPORT NO. : 2022-U028633

SAMPLING METHOD ° : SUBMERSIBLE PUMP

WORK NO. : 2022-001205

SAMPLING BY ° : MR PORAWORN BUNNAG

ANALYSIS NO. : T22AG201-0001

ANALYZED BY : MISS NADNAPA KAMOLBOON

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSEC-1 T22AG201-0001		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM4500-H° B)	7.0 (29°C)	-	-
CHLORIDE °	mg/L Cl	ARGENTOMETRIC METHOD (SM: 4500-Cl B)	2.4	-	2.0
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	656 (29°C)	-	0.1
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	ND	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.079	-	0.005
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0003	≤ 0.01	0.0003
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.001	0.0001
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.002
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 0.5	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSEC-1 T22AG201-0001		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 5.0	0.003
SAMPLE CONDITION					
WATER'S COLOUR/TURBID			COLOURLESS/CLEAR		
SEDIMENT			BROWN		

^a : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

^b : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

^c : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543) ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.

ND : NON-DETECTABLE.

< LOQ : < LEVEL OF QUANTITATION (MANGANESE ≥ 0.002 AND < 0.025 mg/L, ZINC ≥ 0.003 AND < 0.025 mg/L).



(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.

ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900

CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net

SAMPLING SOURCE : MWNSEC-2 (UTM WGS 84 ZONE 47P 735624E 1722518N)

SAMPLE TYPE : GROUNDWATER

RECEIVED DATE : APRIL 1, 2022

SAMPLING DATE : MARCH 30, 2022

ANALYTICAL DATE : APRIL 1-14, 2022

SAMPLING TIME : 11:00 HOUR

REPORT NO. : 2022-U028634

SAMPLING METHOD ° : SUBMERISBLE PUMP

WORK NO. : 2022-001205

SAMPLING BY ° : MR PORAWORN BUNNAG

ANALYSIS NO. : T22AG201-0002

ANALYZED BY : MISS NADNAPA KAMOLBOON

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSEC-2 T22AG201-0002		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM4500-H° B)	7.5 (30°C)	-	-
CHLORIDE °	mg/L Cl	ARGENTOMETRIC METHOD (SM: 4500-Cl B)	2.4	-	2.0
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	663 (30°C)	-	0.1
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	ND	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.112	-	0.005
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0006	≤ 0.01	0.0003
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.001	0.0001
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.002
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 0.5	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSEC-2 T22AG201-0002		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 5.0	0.003
SAMPLE CONDITION					
WATER'S COLOUR/TURBID			COLOURLESS/CLEAR		
SEDIMENT			BROWN		

° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

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

ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.

ND : NON-DETECTABLE.

< LOQ : < LEVEL OF QUANTITATION (MANGANESE ≥ 0.002 AND < 0.025 mg/L, ZINC ≥ 0.003 AND < 0.025 mg/L).



(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : MWNSEF-1 (UTM WGS 84 ZONE 47P 736371E 1722975N)
SAMPLE TYPE : GROUNDWATER
SAMPLING DATE : MARCH 30, 2022
SAMPLING TIME : 12:20 HOUR
SAMPLING METHOD ° : SUBMERSIBLE PUMP
SAMPLING BY ° : MR PORAWORN BUNNAG
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : APRIL 1, 2022
ANALYTICAL DATE : APRIL 1-14, 2022
REPORT NO. : 2022-U028676
WORK NO. : 2022-001205
ANALYSIS NO. : T22AG204-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSEF-1 T22AG204-0001		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM:4500-H ⁺ B)	6.7 (30°C)	-	-
CHLORIDE °	mg/L Cl ⁻	ARGENTOMETRIC METHOD (SM: 4500-Cl ⁻ B)	13.6	-	2.0
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	152 (30°C)	-	0.1
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	0.6	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	32.6	-	0.005
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0003	≤ 0.01	0.0003
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	< LOQ	≤ 0.001	0.0001
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.002
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.305	≤ 0.5	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSEF-1 T22AG204-0001		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.054	≤ 5.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID BROWN		

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

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23rd EDITION, 2017.
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23rd EDITION, 2017.
REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543)
ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.
ND : NON-DETECTABLE.
< LOQ : < LEVEL OF QUANTITATION (MERCURY ≥ 0.0001 AND < 0.0005 mg/L).

Bhuchonk p.
(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.

ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900

CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net

SAMPLING SOURCE : MWNSEF-2 (UTM WGS 84 ZONE 47P 736247E 1722957N)

SAMPLE TYPE : GROUNDWATER

RECEIVED DATE : APRIL 1, 2022

SAMPLING DATE : MARCH 30, 2022

ANALYTICAL DATE : APRIL 1-14, 2022

SAMPLING TIME : 11:30 HOUR

REPORT NO. : 2022-U028677

SAMPLING METHOD ° : SUBMERSIBLE PUMP

WORK NO. : 2022-001205

SAMPLING BY ° : MR PORAWORN BUNNAG

ANALYSIS NO. : T22AG204-0002

ANALYZED BY : MISS NADNAPA KAMOLBOON

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSEF-2 T22AG204-0002		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM:4500-H° B)	7.7 (32°C)	-	-
CHLORIDE °	mg/L Cl	ARGENTOMETRIC METHOD (SM: 4500-Cl° B)	10.7	-	2.0
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	354 (32°C)	-	0.1
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	ND	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	3.50	-	0.005
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0006	≤ 0.01	0.0003
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	< LOQ	≤ 0.001	0.0001
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.002
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	1.58	≤ 0.5	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSEF-2 T22AG204-0002		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 5.0	0.003
SAMPLE CONDITION					
WATER'S COLOUR/TURBID			YELLOW/TURBID		
SEDIMENT			BROWN		

° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

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

ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.

ND : NON-DETECTABLE.

< LOQ : < LEVEL OF QUANTITATION (MERCURY ≥ 0.0001 AND < 0.0005 mg/L, LEAD ≥ 0.003 AND < 0.100 mg/L).



(MR. BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

APRIL 22, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@eco thai.net
SAMPLING SOURCE : BR-GW1 (UTM WGS 84 ZONE 47P 733708E 1725856N)
SAMPLE TYPE : GROUNDWATER
SAMPLING DATE : MARCH 29, 2022
SAMPLING TIME : 15:15 HOUR
SAMPLING METHOD ° : GRAB
SAMPLING BY ° : MR PORAWORN BUNNAG
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : MARCH 30, 2022
ANALYTICAL DATE : MARCH 30 - APRIL 14, 2022
REPORT NO. : 2022-U028099
WORK NO. : 2022-001205
ANALYSIS NO. : T22AG076-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT BR-GW1 T22AG076-0001	REGULATORY STANDARD	DETECTION LIMIT
pH °	-	ELECTROMETRIC METHOD AT SITE (SM:4500-H ⁺ B)	8.1 (34°C)	-	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	566 (34°C)	-	0.1
CHLORIDE °	mg/L Cl ⁻	ARGENTOMETRIC METHOD (SM: 4500-Cl ⁻ B)	5.4	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻ E	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	ND	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0003	≤ 0.01	0.0003
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr ⁶⁺ B)	ND	≤ 0.05	0.006
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.002
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	-	0.005
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 0.5	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			BR-GW1 T22AG076-0001		
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.001	0.0001
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.072	≤ 5.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR		

° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

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

ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.

ND : NON-DETECTABLE.

< LOQ : < LEVEL OF QUANTITATION (IRON ≥ 0.005 AND < 0.050 mg/L, MANGANESE ≥ 0.002 AND < 0.025 mg/L).

Benjawan V.

(MISS BENJAWAN VIRIYOTHAI)
LABORATORY SUPERVISOR

APRIL 20, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : BAN NONG BUA SCHOOL (UTM WGS 84 ZONE 47P 734156E 1727170N)
SAMPLE TYPE : GROUNDWATER
SAMPLING DATE : MARCH 29, 2022
SAMPLING TIME : 15:30 HOUR
SAMPLING METHOD ° : GRAB
SAMPLING BY ° : MR PORAWORN BUNNAG
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : MARCH 30, 2022
ANALYTICAL DATE : MARCH 30 - APRIL 14, 2022
REPORT NO. : 2022-U028102
WORK NO. : 2022-001205
ANALYSIS NO. : T22AG076-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT BAN NONG BUA SCHOOL T22AG076-0002	REGULATORY STANDARD	DETECTION LIMIT
pH °	-	ELECTROMETRIC METHOD AT SITE (SM:4500-H° B)	8.0 (31°C)	-	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	872 (31°C)	-	0.1
CHLORIDE °	mg/L Cl	ARGENTOMETRIC METHOD (SM: 4500-Cl B)	86.6	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	2.9	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	ND	≤ 0.01	0.0003
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.002
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.631	-	0.005
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.321	≤ 0.5	0.002



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT BAN NONG BUA SCHOOL T22AG076-0002	REGULATORY STANDARD	DETECTION LIMIT
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	< LOQ	≤ 0.001	0.0001
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.034	≤ 5.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR BROWN		

° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543)
ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.

ND : NON-DETECTABLE.

< LOQ : < LEVEL OF QUANTITATION (MERCURY ≥ 0.0001 AND < 0.0005 mg/L).

Benjawan V.

(MISS BENJAWAN VIRIYOTHAI)
LABORATORY SUPERVISOR

APRIL 20, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.

ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900

CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net

SAMPLING SOURCE : 9GW3 (UTM WGS 84 ZONE 47P 735839E 1719777N)

SAMPLE TYPE : GROUNDWATER

SAMPLING DATE : MARCH 29, 2022

SAMPLING TIME : 14:40 HOUR

SAMPLING METHOD : GRAB

SAMPLING BY : MR PORAWORN BUNNAG

ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : MARCH 30, 2022

ANALYTICAL DATE : MARCH 30 - APRIL 14, 2022

REPORT NO. : 2022-U028103

WORK NO. : 2022-001205

ANALYSIS NO. : T22AG076-0003

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			9GW3 T22AG076-0003		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM:4500-H ⁺ B)	7.8 (30°C)	-	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	260 (30°C)	-	0.1
CHLORIDE °	mg/L Cl ⁻	ARGENTOMETRIC METHOD (SM: 4500-Cl ⁻ B)	28.9	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻ E	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	ND	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0006	≤ 0.01	0.0003
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr ⁶⁺ B)	ND	≤ 0.05	0.006
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.031	≤ 1.0	0.002
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	19.7	-	0.005
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.346	≤ 0.5	0.002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			9GW3 T22AG076-0003		
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.001	0.0001
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	9.97	≤ 5.0	0.003
SAMPLE CONDITION					
WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR YELLOW		

^a : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

^b : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

^c : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

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

ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.

ND : NON-DETECTABLE.

< LOQ : < LEVEL OF QUANTITATION (LEAD ≥ 0.003 AND < 0.100 mg/L).



(MISS BENJAWAN VIRIYOTHA)
LABORATORY SUPERVISOR

APRIL 20, 2022



ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : KHLONG MUANG MEDITATION (UTM WGS 84 ZONE 47P 734296E 1722806N)
SAMPLE TYPE : GROUNDWATER
SAMPLING DATE : MARCH 29, 2022
SAMPLING TIME : 15:00 HOUR
SAMPLING METHOD ° : GRAB
SAMPLING BY ° : MR PORAWORN BUNNAG
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : MARCH 30, 2022
ANALYTICAL DATE : MARCH 30 - APRIL 14, 2022
REPORT NO. : 2022-U028105
WORK NO. : 2022-001205
ANALYSIS NO. : T22AG076-0004

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			KHLONG MUANG MEDITATION T22AG076-0004		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM:4500-H+ B)	7.2 (32°C)	-	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	747 (32°C)	-	0.1
CHLORIDE °	mg/L Cl ⁻	ARGENTOMETRIC METHOD (SM: 4500-Cl ⁻ B)	15.2	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	ND	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0016	≤ 0.01	0.0003
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.002
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	-	0.005
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 0.5	0.002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			KHLONG MUANG MEDITATION T22AG076-0004		
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.001	0.0001
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 5.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR		

° : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

° : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

° : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543)
ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.

ND : NON-DETECTABLE.

< LOQ : < LEVEL OF QUANTITATION (IRON ≥ 0.005 AND < 0.050 mg/L, MANGANESE ≥ 0.002 AND < 0.025 mg/L,
NICKEL ≥ 0.005 AND < 0.050 mg/L, ZINC ≥ 0.003 AND < 0.025 mg/L).

Benjawan V.

(MISS BENJAWAN VIRIYOTHAI)
LABORATORY SUPERVISOR

APRIL 20, 2022



ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : MWNSE-J1-1 (UTM WGS 84 ZONE 47P 734955E 1721010N)
SAMPLE TYPE : GROUNDWATER
SAMPLING DATE : MAY 18, 2022
SAMPLING TIME : 12:05 HOUR
SAMPLING METHOD ° : BAILER
SAMPLING BY ° : MR KRIDSANAPONG NAMTHIP
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : MAY 19, 2022
ANALYTICAL DATE : MAY 19-29, 2022
REPORT NO. : 2022-U041147
WORK NO. : 2022-001205
ANALYSIS NO. : T22AJ457-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSE-J1-1 T22AJ457-0001		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM4500-H° B)	7.6 (30°C)	-	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	564 (30°C)	-	0.1
CHLORIDE °	mg/L Cl ⁻	ARGENTOMETRIC METHOD (SM: 4500-Cl ⁻ B)	9.6	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	50.1	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	ND	≤ 0.01	0.0003
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 1.0	0.002
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	3.73	-	0.005
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.264	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.041	≤ 0.5	0.002
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.001	0.0001



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSE-J1-1 T22AJ457-0001		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 5.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			YELLOW/TURBID YELLOW		

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

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

Bhuchonk p.
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(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

JUNE 6, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : MWNSE-J1-2 (UTM WGS 84 ZONE 47P 735018E 1721012N)
SAMPLE TYPE : GROUNDWATER
SAMPLING DATE : MAY 18, 2022
SAMPLING TIME : 11:40 HOUR
SAMPLING METHOD ° : BAILER
SAMPLING BY ° : MR KRIDSANAPONG NAMTHIP
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : MAY 19, 2022
ANALYTICAL DATE : MAY 19-29, 2022
REPORT NO. : 2022-U041148
WORK NO. : 2022-001205
ANALYSIS NO. : T22AJ457-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSE-J1-2 T22AJ457-0002		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM4500-H° B)	7.7 (31°C)	-	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	1,852 (31°C)	-	0.1
CHLORIDE °	mg/L Cl	ARGENTOMETRIC METHOD (SM: 4500-Cl B)	7.7	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	10.9	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	ND	≤ 0.01	0.0003
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 1.0	0.002
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.971	-	0.005
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.075	≤ 0.5	0.002
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.001	0.0001



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			MWNSE-J1-2 T22AJ457-0002		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 5.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			YELLOW/CLEAR BROWN		

^a : ISO/IEC 17025 ACCREDITED BY THAI INDUSTRIAL STANDARDS INSTITUTE (TISI)

^b : ISO/IEC 17025 ACCREDITED BY DEPARTMENT OF SCIENCE SERVICE (DSS)

^c : VERIFIED BY OWN LABORATORY QUALITY SYSTEM, BUT STILL NOT ACCREDITED

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

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

REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543)
ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.

ND : NON-DETECTABLE.

< LOQ : < LEVEL OF QUANTITATION (COPPER ≥ 0.002 AND < 0.025 mg/L, LEAD ≥ 0.003 AND < 0.100 mg/L).

Bhuchonk p.

(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

JUNE 6, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : 9GW1 (UTM WGS 84 ZONE 47P 735095E 1718141N)
SAMPLE TYPE : GROUNDWATER
SAMPLING DATE : MAY 18, 2022
SAMPLING TIME : 15:05 HOUR
SAMPLING METHOD ° : GRAB
SAMPLING BY ° : MR KRIDSANAPONG NAMTHIP
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : MAY 19, 2022
ANALYTICAL DATE : MAY 19-29, 2022
REPORT NO. : 2022-U041134
WORK NO. : 2022-001205
ANALYSIS NO. : T22AJ497-0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			9GW1 T22AJ497-0001		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM:4500-H° B)	7.9 (31°C)	-	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	1,501 (31°C)	-	0.1
CHLORIDE °	mg/L Cl ⁻	ARGENTOMETRIC METHOD (SM: 4500-Cl ⁻ B)	13.5	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	12.4	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0008	≤ 0.01	0.0003
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.002
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	-	0.005
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.036	≤ 0.5	0.002
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.001	0.0001



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			9GW1 T22AJ497-0001		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 5.0	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR BROWN		

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

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23rd EDITION, 2017.
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23rd EDITION, 2017.
REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543)
ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.
ND : NON-DETECTABLE.
< LOQ : < LEVEL OF QUANTITATION (IRON ≥ 0.005 AND < 0.050 mg/L).

Bhuchonk p.
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(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

JUNE 6, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : 9GW2 (UTM WGS 84 ZONE 47P 734471E 1718000N)
SAMPLE TYPE : GROUNDWATER
SAMPLING DATE : MAY 18, 2022
SAMPLING TIME : 14:15 HOUR
SAMPLING METHOD ° : GRAB
SAMPLING BY ° : MR KRIDSANAPONG NAMTHIP
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : MAY 19, 2022
ANALYTICAL DATE : MAY 19-29, 2022
REPORT NO. : 2022-U041135
WORK NO. : 2022-001205
ANALYSIS NO. : T22AJ497-0002

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			9GW2 T22AJ497-0002		
pH °	-	ELECTROMETRIC METHOD AT SITE (SM4500-H° B)	6.9 (31°C)	-	-
ELECTRICAL CONDUCTIVITY °	µmhos/cm	ELECTRICAL CONDUCTIVITY METHOD AT SITE (SM: 2510 B)	980 (31°C)	-	0.1
CHLORIDE °	mg/L Cl	ARGENTOMETRIC METHOD (SM: 4500-Cl° B)	3.4	-	2.0
SULPHATE °	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	1.1	-	0.3
TOTAL PETROLEUM HYDROCARBONS °	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	-	3
METALS					
ARSENIC °	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	0.0063	≤ 0.01	0.0003
CADMIUM °	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.003	0.002
CHROMIUM °	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	-	0.005
CHROMIUM HEXAVALENT °	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	≤ 0.05	0.006
COPPER °	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 1.0	0.002
IRON °	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	< LOQ	-	0.005
LEAD °	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.01	0.003
MANGANESE °	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	0.048	≤ 0.5	0.002
MERCURY °	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	≤ 0.001	0.0001



PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	REGULATORY STANDARD	DETECTION LIMIT
			9GW2 T22AJ497-0002		
NICKEL °	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 0.02	0.005
ZINC °	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	≤ 5.0	0.003
SAMPLE CONDITION					
WATER'S COLOUR/TURBID			COLOURLESS/CLEAR		
SEDIMENT			BROWN		

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

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23rd EDITION, 2017.
SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23rd EDITION, 2017.
REGULATORY STANDARD : GROUNDWATER QUALITY STANDARDS, NOTIFICATION OF THE NATIONAL ENVIRONMENT BOARD NO.20 (B.E. 2543) ISSUED UNDER THE ENHANCEMENT AND CONSERVATION OF NATIONAL ENVIRONMENTAL QUALITY ACT B.E. 2535.
ND : NON-DETECTABLE.
< LOQ : < LEVEL OF QUANTITATION (IRON ≥ 0.005 AND < 0.050 mg/L).

Bhuchonk p.
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(MR BHUCHONK PANICHLERTUMPI)
LABORATORY SUPERVISOR

JUNE 6, 2022

ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecohtai.net
SAMPLING SOURCE : -
SAMPLE TYPE : BLANK (GROUNDWATER)
SAMPLING DATE : -
SAMPLING TIME : -
SAMPLING METHOD : -
SAMPLING BY : -
ANALYZED BY : MISS NADNAPA KAMOLBOON

RECEIVED DATE : MAY 19, 2022
ANALYTICAL DATE : MAY 19-29, 2022
REPORT NO. : 2022-U041149
WORK NO. : 2022-001205
ANALYSIS NO. : 2022-FB0528, 2022-TB0510

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT		DETECTION LIMIT
			1 2022-FB0528	2 2022-TB0510	
CHLORIDE	mg/L Cl ⁻	ARGENTOMETRIC METHOD (SM: 4500-Cl ⁻ B)	ND	ND	2.0
SULPHATE	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	ND	ND	0.3
TOTAL PETROLEUM HYDROCARBONS	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	ND	3
METALS					
ARSENIC	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	ND	ND	0.0003
CADMIUM	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	ND	0.002
CHROMIUM	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	ND	0.005
HEXAVALENT CHROMIUM	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	ND	0.006
COPPER	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	ND	0.002
IRON	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	ND	0.005
LEAD	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	ND	0.003
MANGANESE	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	ND	0.002
MERCURY	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	ND	0.0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT		DETECTION LIMIT
			1 2022-FB0528	2 2022-TB0510	
NICKEL	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	ND	0.005
ZINC	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	ND	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR -	COLOURLESS/CLEAR -	

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23RD EDITION, 2017.
 SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23RD EDITION, 2017.
 RESULT 1 : FIELD BLANK
 RESULT 2 : TRIP BLANK
 ND : NON-DETECTABLE.

Bhuchonk p.
 (MR BHUCHONK PANICHLERTUMPI)
 LABORATORY SUPERVISOR

JUNE 6, 2022



ANALYSIS REPORT

CUSTOMER NAME : ECO ORIENT RESOURCES (THAILAND) LTD.
ADDRESS : 555 RASA TOWER II, 12TH FLOOR, UNIT 1203 PHAHOLYOTHIN ROAD CHATUCHAK CHATUCHAK BANGKOK 10900
CONTACT INFORMATION : TEL : 0 2937 1124-9 e-mail : anucha@ecothai.net
SAMPLING SOURCE : -
SAMPLE TYPE : BLANK (GROUNDWATER) **RECEIVED DATE** : MAY 19, 2022
SAMPLING DATE : - **ANALYTICAL DATE** : MAY 19-29, 2022
SAMPLING TIME : - **REPORT NO.** : 2022-U041150
SAMPLING METHOD : - **WORK NO.** : 2022-001205
SAMPLING BY : - **ANALYSIS NO.** : 2022-EB0092
ANALYZED BY : MISS NADNAPA KAMOLBOON

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	DETECTION LIMIT
			EQUIPMENT BLANK 2022-EB0092	
CHLORIDE	mg/L Cl ⁻	ARGENTOMETRIC METHOD (SM: 4500-Cl ⁻ B)	ND	2.0
SULPHATE	mg/L SO ₄ ²⁻	TURBIDIMETRIC METHOD (SM: 4500-SO ₄ ²⁻ E)	ND	0.3
TOTAL PETROLEUM HYDROCARBONS	mg/L	SOXHLET EXTRACTION METHOD (SM: 5520 D AND 5520 F)	ND	3
METALS				
ARSENIC	mg/L As	HYDRIDE GENERATION AAS METHOD (SM: 3114 C)	ND	0.0003
CADMIUM	mg/L Cd	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	0.002
CHROMIUM	mg/L Cr	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	0.005
CHROMIUM HEXAVALENT	mg/L Cr ⁶⁺	COLOURIMETRIC METHOD (SM: 3500-Cr B)	ND	0.006
COPPER	mg/L Cu	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	0.002
IRON	mg/L Fe	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	0.005
LEAD	mg/L Pb	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	0.003
MANGANESE	mg/L Mn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	0.002
MERCURY	mg/L Hg	IN-HOUSE METHOD: UAE.TP.HEM.002 (COLD VAPOUR ATOMIC ABSORPTION SPECTROMETRIC METHOD); SM: 3112 B	ND	0.0001

PARAMETER	UNIT	METHOD OF ANALYSIS	RESULT	DETECTION LIMIT
			EQUIPMENT BLANK 2022-EB0092	
NICKEL	mg/L Ni	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	0.005
ZINC	mg/L Zn	IN-HOUSE METHOD: UAE.TP.GW.01 (NITRIC ACID DIGESTION AND DIRECT AIR ACETYLENE FLAME METHOD); SM: 3030 E AND 3111 B	ND	0.003
SAMPLE CONDITION WATER'S COLOUR/TURBID SEDIMENT			COLOURLESS/CLEAR	

IN-HOUSE : BASED ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23rd EDITION, 2017.
 SM : STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER, APHA, AWWA, WEF, 23rd EDITION, 2017.
 ND : NON-DETECTABLE.

Bhuchonk P.
 (MR BHUCHONK PANICHLERTUMPI)
 LABORATORY SUPERVISOR

JUNE 6, 2022

