

MRWQM

Data Validation (Schedule)

January 2025



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Pakar Scieno TW Sdn Bhd

Summary of MRWQM's 2025 Data

Month	Clean		Slightly Polluted		Polluted		Total Station
	% (No. of stn)		% (No. of stn)		% (No. of stn)		
January	66%	450	28%	194	6%	42	686
February							
March							
April							
May							
June							
July							
August							
September							
October							
November							
December							

Sampling Schedule & Progress (2025)

Sampling Schedule: Planned vs Actual

Month	Scheduled	Actual	Missed station	Replaced	Total	Reason
Jan	688	686	2	0	686	2 station under contingency: 3JEND023, 3JEND024 [Jalan ke station rosak]
Feb						
Mac						
April						
May						
June						
July						
Aug						
Sept						
Oct						
Nov						
Dec						

Summary of January'2025 Data

- **WQI:**
 - Class IV: **20** stations
 - State: **Johor, P.Pinang, Sarawak, Selangor, WPKL**

	ID STN	SUNGAI	DO (mg/L)	BOD (mg/L)	COD (mg/L)	SS (mg/L)	pH	NH3-N (mg/L)	DO INDEX	BOD INDEX	COD INDEX	AN INDEX	SS INDEX	pH Index	WQI Class
1	1PJRU005	Rambai, Juru, P.Pinang	2.71	18	47	12	6.746	6.27	25	38	47	0	91	99	47
2	1PJRU007	Rambai, Juru, P.Pinang	3.897	15	53	18	7.526	38.8	47	46	43	0	87	96	51
3	1PJRU008	Permatang Rawa, Juru, P.Pinang	3.153	12	59	20	7.522	39.6	34	55	38	0	86	96	49
4	1PJRU010	Kilang Ubi, Juru, P.Pinang	2.478	12	37	8	6.885	5.77	22	55	56	0	93	99	51
5	1PPNG004	Titi Kerawang, Pinang, P.Pinang	1.986	38	76	26	6.838	8.62	15	10	28	0	83	99	35
6	1PPNG008	Pinang, Pinang, P.Pinang	2.738	21	69	4	6.537	6.36	27	32	32	0	95	97	44
7	1PPNG012	Dondang, Pinang, P.Pinang	2.277	27	78	32	6.885	2.44	20	22	27	21	80	99	41
8	1PPNG021	Pinang, Pinang, P.Pinang	3.421	48	150	25	6.848	5.19	42	3	4	0	84	99	36
9	1PPRI006	Kereh, Perai, P.Pinang	3.75	26	87	50	7.28	26.8	46	23	23	0	72	98	41
10	1PPRI007	Air Melintas, Perai, P.Pinang	4.189	20	70	42	7.274	25.2	55	34	32	0	76	98	48

Summary of January'2024 Data

- **WQI:**
 - Class IV: **20** stations
 - State: **Johor, P.Pinang, Sarawak, Selangor, WPKL**

	ID STN	SUNGAI	DO (mg/L)	BOD (mg/L)	COD (mg/L)	SS (mg/L)	pH	NH3-N (mg/L)	DO INDEX	BOD INDEX	COD INDEX	AN INDEX	SS INDEX	pH Index	WQI Class
11	2BBLH002	Buloh, Buloh, Selangor	2.967	8	67	132	6.661	2.92	32	69	33	13	56	98	48
12	2BBLH003	Buloh, Buloh, Selangor	3.142	96	151	27	6.152	1.84	35	-9	4	32	83	93	36
13	2BKLG013	Kerayong, Klang, Selangor	3.296	30	77	15	7.131	7.08	39	18	28	0	89	99	43
14	2WKLG006	Bunos, Klang, WPKL	3.57	33	74	18	6.781	2.07	42	14	29	28	87	99	47
15	2WKLG037	Toba, Klang, WPKL	5.271	31	276	264	6.954	2.57	75	17	-10	19	43	100	40
16	2WKLG041	Air Busuk, Klang, WPKL	3.815	29	77	27	7.306	13.9	47	19	28	0	83	98	43
17	3JJHR007	Bukit Besar, Johor, Johor	3.354	17	68	51	7.236	9.1	38	41	33	0	72	98	45
18	3JSGT004	Segget, Segget, Johor	6.757	24	130	5,120	7.705	1.03	94	26	8	47	0	95	45
19	3JTRU011	Sengkuang, Tebrau, Johor	4.845	45	95	17	6.819	9.22	66	5	19	0	88	99	44
20	6QMKH002	Mukah, Mukah, Sarawak	1.89	< 1	149	8	3.673	0.33	13	96	4	69	93	22	50

Summary of January'2025 Data

Summary of January'2025 Data		
Total Station		686
Total Basin		77
Total River		337
NPE Level 1		
0 Station:		-
State:		-
WQI		
Class IV		20 station
State:		Johor, P.Pinang, Sarawak, Selangor, WPKL
Class V		0 station
State:		0

Summary of January'2025 Data

Extreme Value		No. of station	State
1	DO < 2mg/L	4	P.Pinang, Sarawak
2	NH ₃ N >2.7mg/L	78	Johor, Kedah, N.Sembilan, P.Pinang, Sabah, Selangor, WPKL
3	NO ₃ >7mg/L	27	All states except Kelantan, Melaka, Perlis, Sarawak, Terengganu
4	Cl >200mg/L	36	All states except Kedah, Kelantan, Melaka, Perlis, WPKL
5	As >0.1mg/L	1	Selangor: 2BKLG016: 0.116mg/L
6	Pb >0.05mg/L	0	
7	Zn >5.0mg/L	0	
8	Fe >5mg/L	3	Terengganu, Sarawak
9	O&G >1mg/L	100	All states except Kelantan, Melaka, Perlis, Sabah, Sarawak
10	E.Coli >50,000cfu/100mL	110	All states except Kelantan, Melaka, Perlis, Sarawak, Terengganu
11	T.Coliform >50,000cfu/100mL	284	All states except Kelantan, Melaka, perlis
12	E.Coli, T.Coli >50,000cfu/100mL located at muka sauk	2	Pahang
13	Deleted data	-	

MRWQM – Performance by Parameter

(In-situ) – Schedule Sampling

No.	Items	Unit	Quantity (No. of Stations)
A	Parameter Analysed (In-situ)		
1.	Dissolved Oxygen	mg/L	686
2.	Dissolved Oxygen	%	686
3.	pH	-	686
4.	Salinity	g/L	686
5.	Temperature	°C	686
6.	Turbidity	NTU	686
7.	Electrical Conductivity	μS/cm	686
8.	Flowrate	m/s	680

NA station: 6

MRWQM – Performance by Parameter

(Lab analysis)- Schedule Sampling

No.	Items	Unit	Quantity (No. of Station)
B	Parameter Analysed (lab Analysis)		
1.	BOD	mg/L	686
2.	COD	mg/L	686
3.	SS	mg/L	686
4.	NH ₃ N	mg/L	686
5.	NH ₃ F	mg/L	686
6.	Cyanide, CN	mg/L	686
7.	DS	mg/L	686
8.	TS	mg/L	680
9.	NO ₃	mg/L	686
10.	Cl	mg/L	686
11.	PO ₄	mg/L	686
12.	As	mg/L	686
13.	Hg	mg/L	686
14.	Cd	mg/L	686

MRWQM – Performance by Parameter

(Lab analysis) – Schedule sampling

No.	Items	Unit	Quantity (No. of Station)
B	Parameter Analysed (lab Analysis)		
15.	Cr	mg/L	686
16.	Pb	mg/L	686
17.	Zn	mg/L	686
18.	Ca	mg/L	686
19.	Fe	mg/L	686
20.	K	mg/L	686
21.	Mg	mg/L	686
22.	Na	mg/L	680
23.	OG	mg/L	686
24.	MBAS	mg/L	686
25.	E.Coli	cfu/100mL	686
26.	Total Coliform	cfu/100mL	686

2. River Water Quality Monitoring Program
 2a. Manual River Water Quality Monitoring (MRWQM)

No.	Items	Unit	Total frequencies for the month (actual)	Cost per parameter (RM)	Total (RM)
			B	C	BxC
	Parameter Analyzed (in situ)				
1	Dissolved Oxygen	mg/L	686	16.38	11,236.68
2	Dissolved Oxygen	% Sat	686	16.38	11,236.68
3	pH	-	686	29.48	20,223.28
4	Salinity	g/L (ppt)	686	16.38	11,236.68
5	Temperature	°C	686	29.48	20,223.28
6	Turbidity	NTU	686	29.48	20,223.28
7	Electrical Conductivity	mS/cm	686	16.38	11,236.68
	Parameter Analyzed (lab analysis)				
1	BOD	mg/l	686	10.48	7,189.28
2	COD	mg/l	686	8.52	5,844.72
3	SS	mg/l	686	6.22	4,266.92
4	NH3-N	mg/l	686	9.73	6,674.78
5	NH3F	mg/l	686	40.46	27,755.56
6	Cyanide	mg/l	686	9.76	6,695.36
8	DS	mg/l	686	5.90	4,047.40
9	TS	mg/l	686	5.84	4,006.24
10	NO3	mg/l	686	9.73	6,674.78
11	Cl	mg/l	686	9.73	6,674.78
12	PO4	mg/l	686	9.73	6,674.78
13	As	mg/l	686	23.35	16,018.10
14	Hg	mg/l	686	11.68	8,012.48
15	Cd	mg/l	686	23.35	16,018.10
16	Cr (total)	mg/l	686	23.35	16,018.10
17	Pb	mg/l	686	23.35	16,018.10
18	Zn	mg/l	686	23.35	16,018.10
19	Ca	mg/l	686	11.68	8,012.48
20	Fe	mg/l	686	11.68	8,012.48
21	K	mg/l	686	7.78	5,337.08
22	Mg	mg/l	686	7.78	5,337.08
23	Na	mg/l	686	7.78	5,337.08
24	OG	mg/l	686	9.73	6,674.78
25	MBAS	mg/l	686	11.68	8,012.48
26	<i>E-coli</i>	cfu/100ml	686	13.62	9,343.32
27	Total Coliform	cfu/100ml	686	13.62	9,343.32
28	Flowrate	m3/s	680	26.20	17,816.00
				TOTAL	363,450.24

ENVIRONMENTAL DATA
 MRWQM
 -SCHEDULE-

Bill To:
Jabatan Alam Sekitar
Kementerian Sumber Asli dan Kelestarian Alam(NRES)
Aras 1- 4, Podium 2 & 3, Wisma Sumber Asli
No 25, Persiaran Perdana, Presint 4
62574 Putrajaya

P. Invoice No: JAN25/2000569
Date: 12 February 2025
Service Tax No.: B16-1901-32000022

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ENVIRONMENTAL DATA
MRWQM
-SCHEDULE-

DESCRIPTION	RM
Concession Agreement dated 15 June 2016 in relation to Environmental Quality Monitoring Programme ("EQMP")	
VARIABLE EQMP MAINTENANCE CHARGES FOR THE MONTH OF JANUARY 2025	
River Quality Monitoring Programme	
a. Manual River Water Quality Monitoring (MRWQM) Programme	363,450.24
b. Triennial Baseline Characteristic River Water Quality Monitoring (BBCRWQM)	101,959.08
c. Continuous River Water Quality Monitoring (CRWQM) Programme	259,452.38
Less : data availability and late data transmission	-
RM : Seven Hundred Eighty Two Thousand Eight Hundred Fifty & Cts Sixty Four Only	
TOTAL (Excl. Service Tax)	724,861.70
Add Service Tax 8%	57,988.94
TOTAL (Incl. Service Tax)	782,850.64

All payments shall be made payable to Pakar Scieno TW Sdn Bhd

Bank Details:

Bank Name : Malayan Banking Berhad
Branch : Petaling Jaya Main
Address : 50-52, Jalan Sultan (52/4), 46200 Petaling Jaya
Contact No. : 03 - 7958 1348
Account No. : 5141 6965 7557

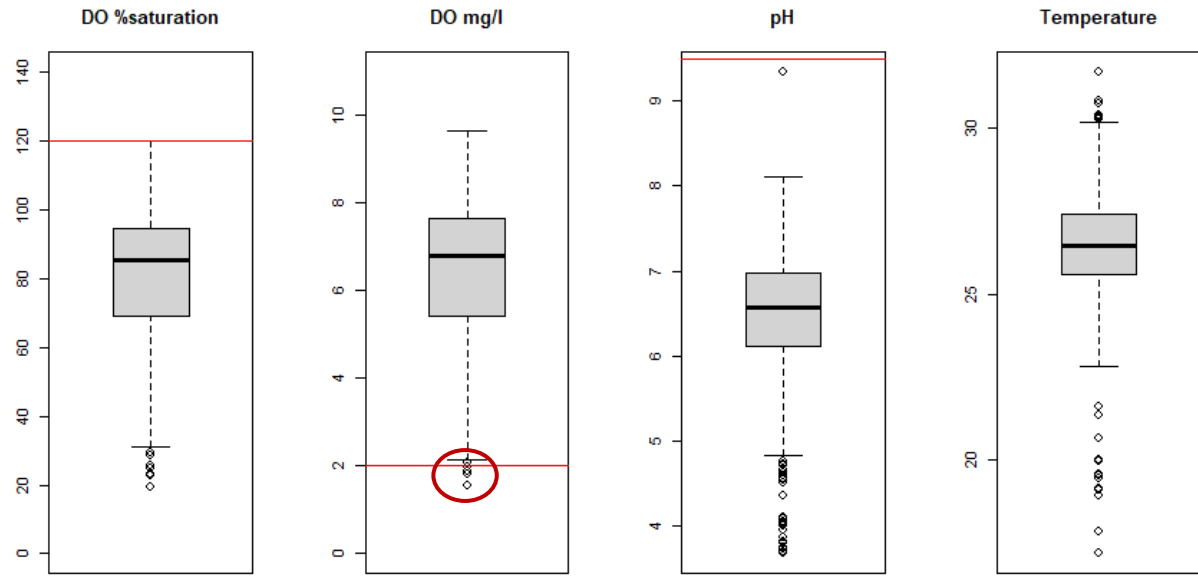
Please email payment advice to finance@pstw.com.my

PAKAR SCIENO TW SDN BHD

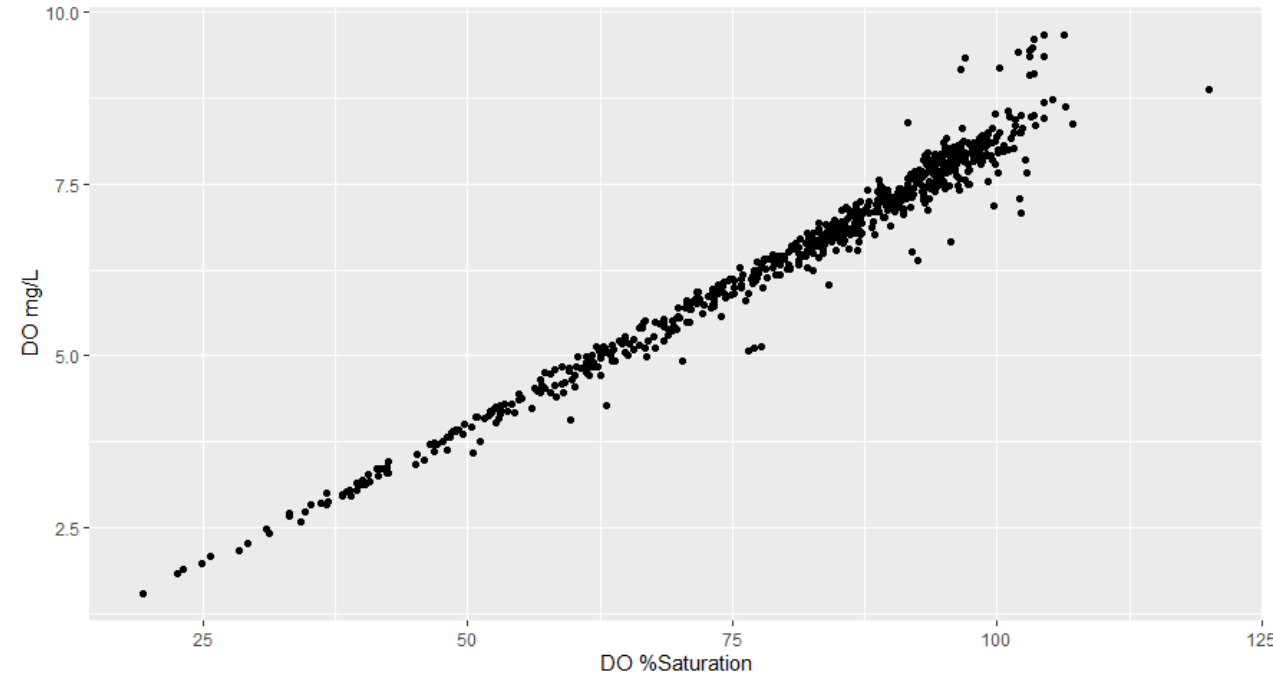
Dr. Abdul Rani Abdullah
Chief Executive Officer

Flowrate NA

No.	Station ID	Station Notes
1.	3JBPT021 (Semberong Dam, Batu Pahat, Johor)	Empangan
2.	3JEND027 (Empangan Labong, Endau, Johor)	Empangan
3.	3JJHR001 (Layang, Johor, Johor)	Muka Sauk
4.	3JPLI004 (Pulai Dam, Pulai, Johor)	Empangan
5.	4CAED001 (Anak Denau, Anak Denau, Pahang)	Empangan
6.	6QLPR002 (Ai, Lupar, Sarawak)	Empangan

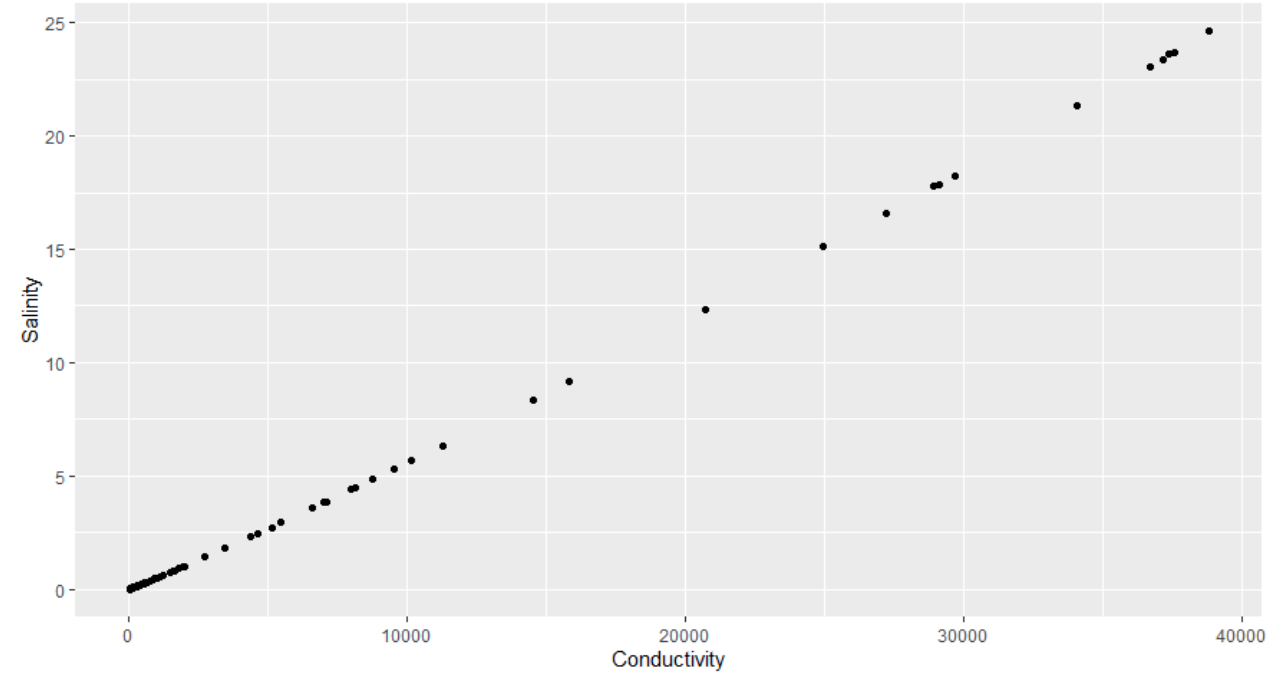
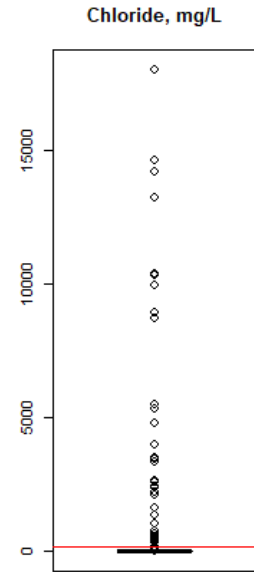
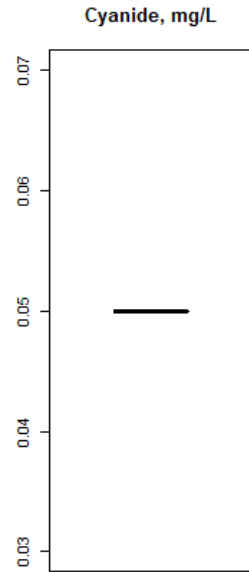
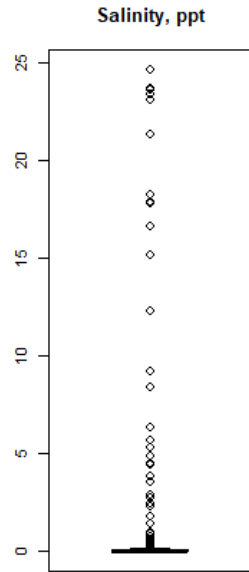
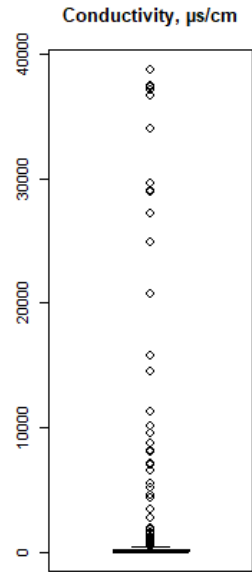


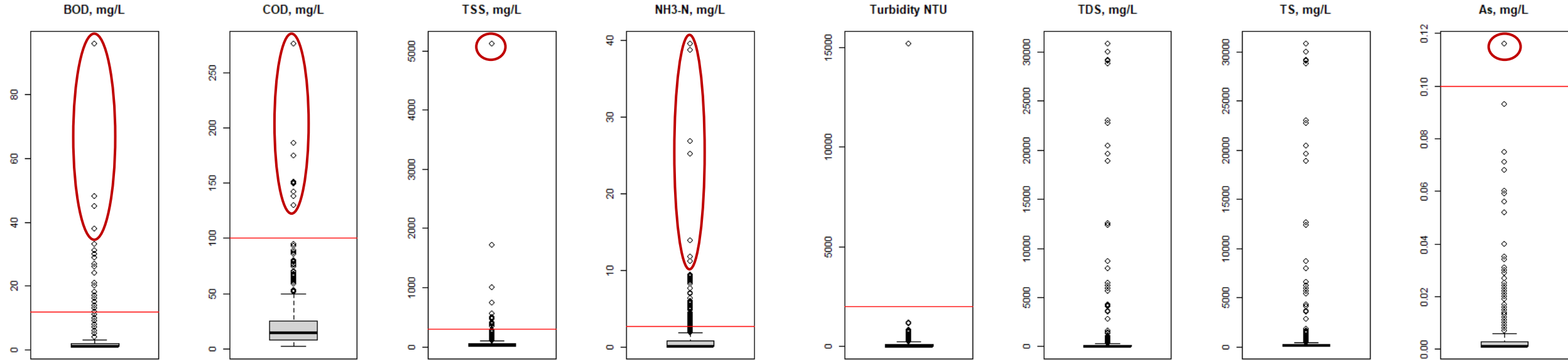
Extreme value DO(mg/L): 4 stn



Extreme value DO <2mg/L

	Station ID	Location	DO (mg/L)	DO (%)	Med	90 th	Distance from sea (±km)	Possible Source
1	1PPNG004	Titi Kerawang, Pinang, P.Pinang [Ambient]	1.986 Range: 0.183 – 5.186	24.967 Range: 2.492 – 64.371	DO: 3.317 DO%: 42.973	DO: 4.7076 DO%: 59.689	1.92	Workshop, storage and warehouse, kilang mee, kontena dan kotak keras bercetak, etc
2	6QMKH002	Mukah, Mukah, Sarawak [Ambient]	1.89 Range: 0.291 – 7.995	23.129 Range: 3.789 – 98.832	DO: 5.224 DO%: 67.021	DO: 7.2004 DO%: 92.104	16	None
3	6QRJG007	Salim, Rajang, Sarawak [Ambient]	1.831 Range: 2.337 – 7.156	22.56 Range: 29.607 – 90.749	DO: 5.107 DO%: 64.123	DO: 6.7256 DO%: 87.922	106.2	Workshop, pembinaan dan pembaikan kapal dan bot
4	6QRJG012	Rajang, Rajang, Sarawak [Ambient]	1.546 Range: 1.348 – 7.575	19.388 Range: 16.71 – 99.99	DO: 5.956 DO%: 75.354	DO: 7.2256 DO%: 91.598	95.6	Workshop, pengilangan perabot dan lekapan, pengilangan rumah kayu, manufactor cadar, span, tikar lantai dan paip getah, penyembelihan ayam, etc





Extreme value BOD & COD: 18 stn

Extreme value NH₃N: 7 stn

Extreme value TSS: 1 stn

1. 3JSGT004 (Segget, Segget, Johor) [Ambient]: 5120mg/L; Range: <1 – 184mg/L; Med.: 14mg/L; 90th: 34.6mg/L; Lab verified

Extreme value As: 1 stn

1. 2BKL016 (Klang, Klang, Selangor)[Ambient]: 0.116mg/L; Range: 0.013 – 0.283mg/L; Med.: 0.079mg/L; 90th: 0.2044mg/L; Lab verified: Repeated: 0.117mg/L, 0.124mg/L

Extreme value BOD & COD

	Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
1	1PPNG004	Titi Kerawang, Pinang, P.Pinang (Ambient)	38 Range: 2 – 24	76 Range: 13 – 60	BOD: 6 COD: 22	BOD: 12.6 COD: 44	0.144	45	1.92	Workshop, storage and warehouse, kilang mee, kontena dan kotak keras bercetak, etc	COD: Repeated: 79m/L
2	1PPNG021	Pinang, Pinang, P.Pinang (Ambient)	48 Range: 4 – 40	150 Range: 14 – 142	BOD: 20 COD: 60	BOD: 33 COD: 97.6	0.133	22	3.81	operation of sewage treatment, hospital, kilang pakaian, sekolah, etc	COD: Over extreme value; Repeated: 152mg/L; Smelly sample
3	2BBLH003	Buloh, Buloh, Selangor (Ambient)	96 Range: 3 – 108	151 Range: 11 – 260	BOD: 19 COD: 54	BOD: 54.6 COD: 137.8	0.109	15	19.2	Workshop, pengilangan perabot dan lekapan, pembiakan dan pemeliharaan ayam, itik, angsa, loji kumbahan IWK, scrap metal	BOD & COD: Exceed extreme value; Repeated: 155mg/L
4	2BTGI001	Tengi, Tenggi, Selangor (Ambient)	2 Range: <1 – 12	79 Range: 11 – 121	BOD: 3 COD: 34	BOD: 6 COD: 103.6	0.05	23	6.22	Loji rawatan air buangan kumbahan bandar, food industries, workshop, pembuatan peralatan dan mesin kecuali mesin elektrik, etc	COD: Repeated: 79mg/L; High colored sample
5	2BTGI003	Tengi, Tenggi, Selangor (Ambient)	3 Range: <1 – 14	86 Range: 12 – 110	BOD: 3 COD: 31	BOD: 7 COD: 75.6	0.017	6	22.1	Pengumpulan, penulenan dan edaran air (Loji Pembersihan Air Sungai Sireh)	COD: Over extreme value; Repeated: 88mg/L; High colored sample
6	2WKLG037	Toba, Klang, WPKL (Ambient)	31 Range: 4 – 45	276 Range: 11 – 121	BOD: 11 COD: 40	BOD: 24 COD: 68.4	0.119	23	75	Batu-bata Jubin dinding dan lantai; loji rawatan air buangan kumbahan bandar; workshop; laudering and dry cleaning, pressing; workshop; hospital; etc	COD: Over extreme value; Repeated: 315mg/L; High colored sample
7	3JABL001	Air Baloi, Air Baloi, Johor (Ambient)	<1.000 Range: <1 – 57	138 Range: 11 – 213	BOD: 4 COD: 116	BOD: 13 COD: 169.6	0.079	22	3.21	Pengetinan nenas, workshop	COD: Over extreme value; Repeated: 139mg/L; High colored sample
8	3JABL002	Air Baloi, Air Baloi, Johor (Ambient)	<1.000 Range: <1 – 75	186 Range: 8 – 216	BOD: 4 COD: 169	BOD: 17.2 COD: 200.6	0.04	2	10.9	None	COD: Over extreme value; Repeated: 187mg/L; High colored sample
9	3JABL003	Air Baloi, Air Baloi, Johor (Ambient)	<1.000 Range: <1 – 61	150 Range: 11 – 268	BOD: 4 COD: 143	BOD: 19.8 COD: 187.6	0.056	7	6.2	Pengetinan nenas, workshop	COD: Over extreme value; Repeated: 152mg/L; High colored sample
10	3JBNT007	Pinggan, Benut, Johor (Ambient)	<1.000 Range: <1 – 31	93 Range: 13 – 187	BOD: 3 COD: 64	BOD: 64 COD: 106	0.067	10	6.84	cable dan wayar, pengilangan perabot dan lekapan, produk makanan, operation sewage treatment, workshop, pembuatan barangan bercetak, kilang papan bergergaji, fabrikasi barangan plastik	COD: Over extreme value; Repeated: 90mg/L

Extreme value BOD & COD

	Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
11	3JSGT004	Segget, Segget, Johor (Ambient)	24 Range: 2 – 25	130 Range: 9 – 85	BOD: 8 COD: 26	BOD: 18.6 COD: 48.2	0.118	26	43.6	Hotels, etc	COD: Exceed extreme value; Repeated: 148mg/L
12	3JSLG001	Sanglang, Sanglang, Johor (Ambient)	<1.000 Range: <1 – 31	80 Range: 12 – 820	BOD: 3 COD: 73	BOD: 10.6 COD: 121.2	0.088	15	4.93	Kilang aduan, pengilangan produk kayu dan gabus, kilang kelapa: serbuk dan minyak kelapa, household hardware, kitchenware chinaware, glassware orname, pembuatan kelengkapan radio dan televisyen, workshop	COD: Over extreme value; Repeated: 81mg/L; High colored sample
13	3JTRU011	Sengkuang, Tebrau, Johor (Ambient)	45 Range: 5 – 76	95 Range: 19 – 230	BOD: 24 COD: 73	BOD: 42.4 COD: 127.2	0.133	31	1.28	Loji PPR Sri Stulang, Farmasi utk kegunaan manusia dan haiwan, workshop, petrol lubricating oils, bahan-bahan plastik	COD: Exceed extreme value; Repeated: 95mg/L
14	4CBBR001	Bebar, Bebar, Pahang (Ambient)	<1.000 Range: <1 – 11	95 Range: 12 – 112	BOD: 2 COD: 35	BOD: 8 COD: 67.2	0.094	71	12.4	Kilang papan bergergaji, pengilangan produk kayu dan gabus, etc	COD: Exceed extreme value; Repeated: 88mg/L
15	4CBBR003	Serai, Bebar, Pahang (Ambient)	<1.000 Range: <1 – 26	89 Range: 13 – 116	BOD: 3 COD: 30	BOD: 8 COD: 76	0.09	71	12.6	None	COD: Exceed extreme value; Repeated: 86mg/L
16	6QMKH002	Mukah, Mukah, Sarawak (Ambient)	<1.000 Range: <1 – 4	149 Range: 10 – 157	BOD: 1 COD: 32	BOD: 2 COD: 106.2	0.028	2	16	None	COD: Lab verified
17	6QRJG021	Daro, Rajang, Sarawak (Ambient)	3 Range: <1 – 4	175 Range: 5 – 234	BOD: 1 COD: 153	BOD: 2 COD: 202.2	0.025	2	54.4	None	COD: Sample is highly dark brownish; Repeated: 173mg/L
18	6QRJG022	Jemoreng, Rajang, Sarawak (Ambient)	2 Range: <1 – 3	142 Range: 8 – 204	BOD: 1 COD: 146	BOD: 2 COD: 191.6	0.031	2	13.5	None	COD: Sample is in brownish color; Repeated: 139mg/L

Summary Extreme value BOD & COD

	Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
1	1PPNG004	Titi Kerawang, Pinang, P.Pinang (Ambient)	38 Range: 2 – 24	76 Range: 13 – 60	BOD: 6 COD: 22	BOD: 12.6 COD: 44	0.144	45	1.92	Workshop, storage and warehouse, kilang mee, kontena dan kotak keras bercetak, etc	COD: Repeated: 79m/L
2	1PPNG021	Pinang, Pinang, P.Pinang (Ambient)	48 Range: 4 – 40	150 Range: 14 – 142	BOD: 20 COD: 60	BOD: 33 COD: 97.6	0.133	22	3.81	operation of sewage treatment, hospital, kilang pakaian, sekolah, etc	COD: Over extreme value; Repeated: 152mg/L; Smelly sample
3	2BBLH003	Buloh, Buloh, Selangor (Ambient)	96 Range: 3 – 108	151 Range: 11 – 260	BOD: 19 COD: 54	BOD: 54.6 COD: 137.8	0.109	15	19.2	Workshop, pengilangan perabot dan lekapan, pembiakan dan pemeliharaan ayam, itik, angsa, loji kumbahan IWK, scrap metal	BOD & COD: Exceed extreme value; Repeated: 155mg/L
5	2BTGI003	Tengi, Tenggi, Selangor (Ambient)	3 Range: <1 – 14	86 Range: 12 – 110	BOD: 3 COD: 31	BOD: 7 COD: 75.6	0.017	6	22.1	Pengumpulan, penulenan dan edaran air (Loji Pembersihan Air Sungai Sireh)	COD: Over extreme value; Repeated: 88mg/L; High colored sample
6	2WKLG037	Toba, Klang, WPKL (Ambient)	31 Range: 4 – 45	276 Range: 11 – 121	BOD: 11 COD: 40	BOD: 24 COD: 68.4	0.119	23	75	Batu-bata Jubin dinding dan lantai; loji rawatan air buangan kumbahan bandar; workshop; laudering and dry cleaning, pressing; workshop; hospital; etc	COD: Over extreme value; Repeated: 315mg/L; High colored sample
11	3JSGT004	Segget, Segget, Johor (Ambient)	24 Range: 2 – 25	130 Range: 9 – 85	BOD: 8 COD: 26	BOD: 18.6 COD: 48.2	0.118	26	43.6	Hotels, etc	COD: Exceed extreme value; Repeated: 148mg/L
14	4CBBR001	Bebar, Bebar, Pahang (Ambient)	<1.000 Range: <1 – 11	95 Range: 12 – 112	BOD: 2 COD: 35	BOD: 8 COD: 67.2	0.094	71	12.4	Kilang papan bergergaji, pengilangan produk kayu dan gabus, etc	COD: Exceed extreme value; Repeated: 88mg/L
15	4CBBR003	Serai, Bebar, Pahang (Ambient)	<1.000 Range: <1 – 26	89 Range: 13 – 116	BOD: 3 COD: 30	BOD: 8 COD: 76	0.09	71	12.6	None	COD: Exceed extreme value; Repeated: 86mg/L
16	6QMKH002	Mukah, Mukah, Sarawak (Ambient)	<1.000 Range: <1 – 4	149 Range: 10 – 157	BOD: 1 COD: 32	BOD: 2 COD: 106.2	0.028	2	16	None	COD: Lab verified

Summary Extreme value BOD & COD, O&G

Station ID	Location	BOD (mg/L)	COD (mg/L)	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
1 1PPNG004	Titi Kerawang, Pinang, P.Pinang (Ambient)	38 Range: 2 – 24	76 Range: 13 – 60	9 Range: <1 – 5	BOD: 6 COD: 22 O&G: 1	BOD: 12.6 COD: 44 O&G: 2	0.144	45	1.92	Workshop, storage and warehouse, kilang mee, kontena dan kotak keras bercetak, etc	COD: Repeated: 79m/L O&G: Exceed extreme value

	Station located at down/upstream	Reading at station
Downstream station	1PPNG008 (±0.97km)	BOD: 21mg/L; COD: 69mg/L; O&G: 3mg/L
Upstream station	[Tributaries] 1PPNG021 (±1.88km)	BOD: 48mg/L; COD: 150mg/L; O&G: <1mg/L
	[Main] 1PPNG014 (±1.73km)	BOD: 4mg/L; COD: 22mg/L; O&G: 1mg/l
CRWQM	None	None

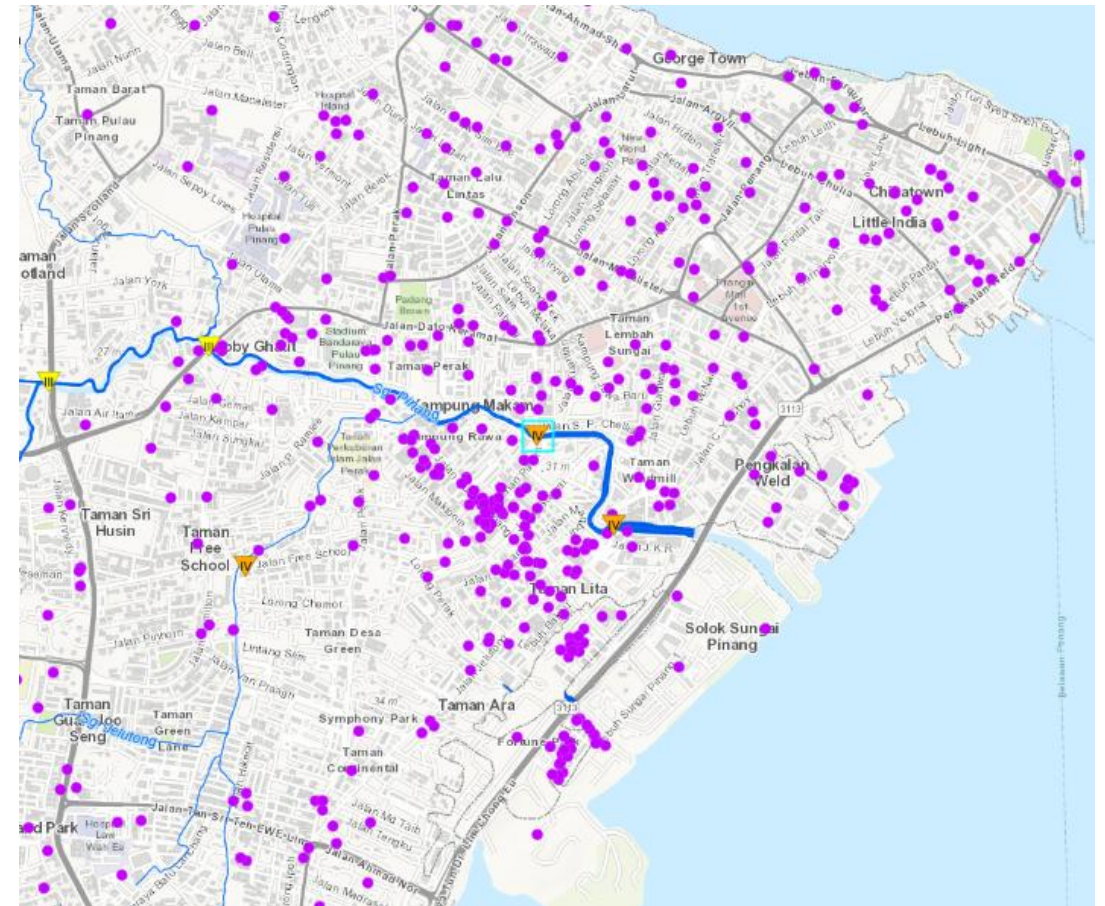


Summary Extreme value BOD & COD, O&G

Station ID	Location	BOD (mg/L)	COD (mg/L)	O&G (mg/L)	Med (mg/L)	90 th (mg/L)
1 1PPNG004	Titi Kerawang, Pinang, P.Pinang (Ambient)	38 Range: 2 – 24	76 Range: 13 – 60	9 Range: <1 – 5	BOD: 6 COD: 22 O&G: 1	BOD: 12.6 COD: 44 O&G: 2

Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
0.144	45	1.92	Workshop, storage and warehouse, kilang mee, kontena dan kotak keras bercetak, etc	COD: Repeated: 79mg/L O&G: Exceed extreme value

	Station located at down/upstream	Reading at station
Downstream station	1PPNG008 (±0.97km)	BOD: 21mg/L; COD: 69mg/L; O&G: 3mg/L
Upstream station	[Tributaries] 1PPNG021 (±1.88km)	BOD: 48mg/L; COD: 150mg/L; O&G: <1mg/L
	[Main] 1PPNG014 (±1.73km)	BOD: 4mg/L; COD: 22mg/L; O&G: 1mg/l
CRWQM	None	None



Summary Extreme value BOD & COD, O&G

	Station ID	Location	BOD (mg/L)	COD (mg/L)	O&G (mg/L)	Med (mg/L)	90 th (mg/L)
1	1PPNG004	Titi Kerawang, Pinang, P.Pinang (Ambient)	38 Range: 2 – 24	76 Range: 13 – 60	9 Range: <1 – 5	BOD: 6 COD: 22 O&G: 1	BOD: 12.6 COD: 44 O&G: 2

Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
0.144	45	1.92	Workshop, storage and warehouse, kilang mee, kontena dan kotak keras bercetak, etc	COD: Repeated: 79m/L O&G: Exceed extreme value

	Station located at down/upstream	Reading at station
Downstream station	1PPNG008 (±0.97km)	BOD: 21mg/L; COD: 69mg/L; O&G: 3mg/L
Upstream station	[Tributaries] 1PPNG021 (±1.88km)	BOD: 48mg/L; COD: 150mg/L; O&G: <1mg/L
	[Main] 1PPNG014 (±1.73km)	BOD: 4mg/L; COD: 22mg/L; O&G: 1mg/l
CRWQM	None	None

Current River Water Quality Index (WQI)

35
WQI

CLASS IV

1PPNG004

River: SUNGAI TITI KERAWANG

Basin: PINANG

State: P.PINANG

Sampling Date: 23/01/2025 11:10:00

Sampling Frequency

No. 2	No. 3	No. 4	No. 5	No. 6	No. 1
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Water Quality

IN-SITU

Parameter	Concentration	Sub Index
Dissolved Oxygen	1.986 mg/L	-
Dissolved Oxygen	24.967 %	15
pH	6.838	99
Conductivity	304.306 µS/cm	-
Salinity	0.144 ppt	-
Temperature	27.069 °C	-
Turbidity	21.941 NTU	-
Flowrate	0.1 m/s	-

Parameter	Concentration	Sub Index
BOD	38 mg/L	10
COD	76 mg/L	28
NH ₃ N	8.62 mg/L	0
NH ₃ F	0.0287 mg/L	-
TSS	26 mg/L	83
DS	260 mg/L	-
TS	286 mg/L	-
As	0.003 mg/L	-
Cd	<0.001 mg/L	-
Cr	<0.001 mg/L	-
Hg	<0.0001 mg/L	-
Pb	0.001 mg/L	-
Zn	0.023 mg/L	-
Ca	12.5 mg/L	-
Mg	2.7 mg/L	-
Na	29.8 mg/L	-
K	5.8 mg/L	-
Fe	1.12 mg/L	-
Cyanide	<0.05 mg/L	-
Cl	45 mg/L	-
NO ₃	0.18 mg/L	-
PO ₄	1.76 mg/L	-
MBAS	<0.05 mg/L	-
O&G	9 mg/L	-
E. Coli	180000 cfu/100ml	-
Total Coliform	1310000 cfu/100ml	-

Summary Extreme value BOD & COD, O&G

Station ID	Location	BOD (mg/L)	COD (mg/L)	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
1 1PPNG004	Titi Kerawang, Pinang, P.Pinang (Ambient)	38 Range: 2 – 24	76 Range: 13 – 60	9 Range: <1 – 5	BOD: 6 COD: 22 O&G: 1	BOD: 12.6 COD: 44 O&G: 2	0.144	45	1.92	Workshop, storage and warehouse, kilang mee, kontena dan kotak keras bercetak, etc	COD: Repeated: 79m/L O&G: Exceed extreme value

	Station located at down/upstream	Reading at station
Downstream station	1PPNG008 (±0.97km)	BOD: 21mg/L; COD: 69mg/L; O&G: 3mg/L
Upstream station	[Tributaries] 1PPNG021 (±1.88km)	BOD: 48mg/L; COD: 150mg/L; O&G: <1mg/L
	[Main] 1PPNG014 (±1.73km)	BOD: 4mg/L; COD: 22mg/L; O&G: 1mg/l
CRWQM	None	None

RIVER WATER QUALITY (MRWQM) DATA FOR SELECTED PARAMETERS (1PPNG004) FROM JULY 2017 TO JANUARY 2025

DATE TIME	Conc. DO (mg/L)	Sat. DO (%)	pH	Conductivity (µS/cm)	Salinity (ppt)	Turbidity (NTU)	Flowrate (m/s)	BOD (mg/L)	COD (mg/L)	NH ₃ N (mg/L)	NH ₃ (mg/L)	TSS (mg/L)	DS (mg/L)	K (mg/L)	Cl (mg/L)	NO ₃ (mg/L)	PO ₄ (mg/L)	O&G (mg/L)	E. Coli (cfu/100ml)	TC (cfu/100ml)	WQI (Index)
23/01/2025 11:10 AM	1.986	24.967	6.838	304.306	0.144	21.941	0.1	38.000	76.000	8.620	10.500	26.000	260.000	5.800	45.000	0.180	1.760	9.000	180000.000	1310000.000	35
10/11/2024 11:09 AM	3.638	46.227	6.920	199.659	0.093	11.560	0.1	8.000	27.000	3.250	3.940	7.000	137.000	3.500	21.000	2.180	0.720	2.000	250000.000	1640000.000	61
15/09/2024 11:09 AM	5.186	64.371	6.669	99.518	0.046	54.361	<0.1	4.000	13.000	<0.010	<0.010	15.000	88.000	3.200	11.000	3.260	0.250	3.000	270000.000	580000.000	85
19/07/2024 10:42 AM	1.956	25.324	6.895	3454.899	1.802	22.929	0.1	15.000	44.000	1.710	2.080	5.000	2700.000	29.600	1070.000	0.190	0.740	1.000	430000.000	1580000.000	52
14/05/2024 10:21 AM	4.446	57.958	7.097	179.613	0.083	10.826	TR	2.000	13.000	2.050	TR	9.000	160.000	3.600	20.000	1.850	TR	TR	TR	2020000.000	75
17/03/2024 10:57 AM	2.307	29.555	6.866	501.967	0.240	17.161	0.1	14.000	44.000	5.000	6.070	16.000	426.000	6.600	102.000	0.240	1.360	3.000	1700000.000	4700000.000	48
22/01/2024 11:10 AM	2.587	32.504	6.981	272.434	0.128	15.407	0.1	24.000	52.000	8.210	9.960	20.000	226.000	5.000	32.000	0.090	1.980	2.000	1500000.000	5400000.000	43

Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
2 1PPNG021	Pinang, Pinang, P.Pinang (Ambient)	48 Range: 4 – 40	150 Range: 14 – 142	BOD: 20 COD: 60	BOD: 33 COD: 97.6	0.133	22	3.81	operation of sewage treatment, hospital, kilang pakaian, sekolah, etc	COD: Over extreme value; Repeated: 152mg/L; Smelly sample

Historical NPE			
	NPE LEVEL	Date	Parameter
1	2	11/11/2024	BOD: 25mg/L; COD: 103mg/L; NH ₃ N: 11.3mg/L; NH ₃ : 13.7mg/L; O&G: 9mg/L

	Station located at down/upstream	Reading at station
Downstream station	1PPNG004 (±1.79km)	BOD: 38mg/L; COD: 76mg/L
Upstream station	1PPNG003 (±2.12km)	BOD: 3mg/L; COD: 13mg/L
CRWQM	None	None



Summary Extreme value BOD & COD

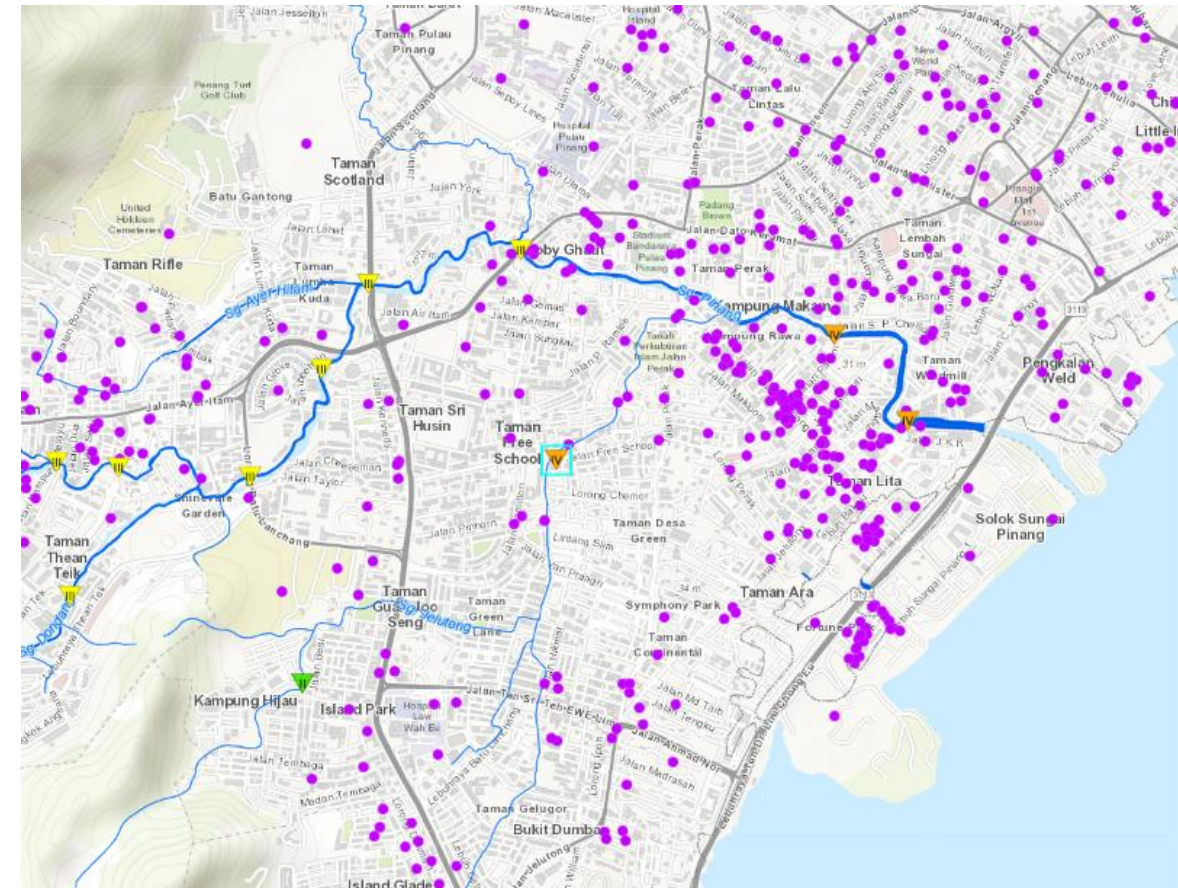
Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)
2	1PPNG021 Pinang, Pinang, P.Pinang (Ambient)	48 Range: 4 – 40	150 Range: 14 – 142	BOD: 20 COD: 60	BOD: 33 COD: 97.6	0.133

Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
22	3.81	operation of sewage treatment, hospital, kilang pakaian, sekolah, etc	COD: Over extreme value; Repeated: 152mg/L; Smelly sample

Historical NPE

NPE LEVEL	Date	Parameter
1	2	11/11/2024
BOD: 25mg/L; COD: 103mg/L; NH ₃ N: 11.3mg/L; NH ₃ : 13.7mg/L; O&G: 9mg/L		

	Station located at down/upstream	Reading at station
Downstream station	1PPNG004 (±1.79km)	BOD: 38mg/L; COD: 76mg/L
Upstream station	1PPNG003 (±2.12km)	BOD: 3mg/L; COD: 13mg/L
CRWQM	None	None



Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)
2	1PPNG021 Pinang, Pinang, P.Pinang (Ambient)	48 Range: 4 – 40	150 Range: 14 – 142	BOD: 20 COD: 60	BOD: 33 COD: 97.6	0.133

Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
22	3.81	operation of sewage treatment, hospital, kilang pakaian, sekolah, etc	COD: Over extreme value; Repeated: 152mg/L; Smelly sample

Historical NPE			
NPE LEVEL	Date	Parameter	
1	2	11/11/2024	BOD: 25mg/L; COD: 103mg/L; NH ₃ N: 11.3mg/L; NH ₃ : 13.7mg/L; O&G: 9mg/L

	Station located at down/upstream	Reading at station
Downstream station	1PPNG004 (±1.79km)	BOD: 38mg/L; COD: 76mg/L
Upstream station	1PPNG003 (±2.12km)	BOD: 3mg/L; COD: 13mg/L
CRWQM	None	None

Current River Water Quality Index (WQI)

36
WQI
CLASS IV

1PPNG021
River: PINANG
Basin: PINANG
State: P.PINANG
Sampling Date: 24/01/2025 11:23:00

Sampling Frequency

No. 2	No. 3	No. 4	No. 5	No. 6	No. 1
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Water Quality			
IN-SITU			
Parameter	Concentration	Sub Index	
Dissolved Oxygen	3.421 mg/L	-	
Dissolved Oxygen	45.069 %	42	
pH	6.848	99	
Conductivity	282.874 µS/cm	-	
Salinity	0.133 ppt	-	
Temperature	29.716 °C	-	
Turbidity	23.268 NTU	-	
Flowrate	0.1 m/s	-	

Parameter	Concentration	Sub Index	
BOD	48 mg/L	3	
COD	150 mg/L	4	
NH ₃ -N	5.19 mg/L	0	
NH ₃ F	0.0212 mg/L	-	
TSS	25 mg/L	84	
DS	232 mg/L	-	
TS	257 mg/L	-	
As	0.002 mg/L	-	
Cd	<0.001 mg/L	-	
Cr	<0.001 mg/L	-	
Hg	<0.0001 mg/L	-	
Pb	<0.001 mg/L	-	
Zn	0.028 mg/L	-	
Ca	16.8 mg/L	-	
Mg	1.6 mg/L	-	
Na	26.6 mg/L	-	
K	6.8 mg/L	-	
Fe	1 mg/L	-	
Cyanide	<0.05 mg/L	-	
Cl	22 mg/L	-	
NO ₃	0.33 mg/L	-	
PO ₄	1.51 mg/L	-	
MBAS	<0.05 mg/L	-	
O&G	<1 mg/L	-	
E. Coli	340000 cfu/100ml	-	
Total Coliform	1490000 cfu/100ml	-	

Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
2 1PPNG021	Pinang, Pinang, P.Pinang (Ambient)	48 Range: 4 – 40	150 Range: 14 – 142	BOD: 20 COD: 60	BOD: 33 COD: 97.6	0.133	22	3.81	operation of sewage treatment, hospital, kilang pakaian, sekolah, etc	COD: Over extreme value; Repeated: 152mg/L; Smelly sample

Historical NPE			
	NPE LEVEL	Date	Parameter
1	2	11/11/2024	BOD: 25mg/L; COD: 103mg/L; NH ₃ N: 11.3mg/L; NH ₃ : 13.7mg/L; O&G: 9mg/L

	Station located at down/upstream	Reading at station
Downstream station	1PPNG004 (±1.79km)	BOD: 38mg/L; COD: 76mg/L
Upstream station	1PPNG003 (±2.12km)	BOD: 3mg/L; COD: 13mg/L
CRWQM	None	None

RIVER WATER QUALITY (MRWQM) DATA FOR SELECTED PARAMETERS (1PPNG021) FROM JULY 2017 TO JANUARY 2025

DATE TIME	Conc. DO (mg/L)	Sat. DO (%)	pH	Conductivity (µS/cm)	Salinity (ppt)	Turbidity (NTU)	Flowrate (m/s)	BOD (mg/L)	COD (mg/L)	NH ₃ N (mg/L)	NH ₃ (mg/L)	TSS (mg/L)	DS (mg/L)	K (mg/L)	Cl (mg/L)	NO ₃ (mg/L)	PO ₄ (mg/L)	O&G (mg/L)	E. Coli (cfu/100ml)	TC (cfu/100ml)	WQI (Index)
24/01/2025 11:23 AM	3.421	45.069	6.848	282.874	0.133	23.268	0.1	48.000	150.000	5.190	6.310	25.000	232.000	6.800	22.000	0.330	1.510	<1.000	340000.000	1490000.000	36
11/11/2024 10:18 AM	3.975	51.736	7.038	258.290	0.121	37.368	0.1	25.000	103.000	11.300	13.700	46.000	227.000	6.100	18.000	0.120	2.570	9.000	360000.000	1590000.000	42
11/09/2024 10:28 AM	2.782	36.402	7.004	246.387	0.115	20.825	0.1	26.000	98.000	4.600	5.590	30.000	210.000	6.500	17.000	0.030	1.720	10.000	6300000.000	9100000.000	39
18/07/2024 10:17 AM	2.254	30.122	7.006	270.479	0.126	17.881	<0.1	19.000	97.000	7.840	9.530	16.000	236.000	6.800	22.000	0.290	2.370	3.000	430000.000	1660000.000	40
13/05/2024 10:34 AM	5.957	79.690	7.331	203.146	0.094	31.761	TR	17.000	55.000	2.200	TR	16.000	184.000	4.400	17.000	0.220	TR	TR	TR	3540000.000	64
18/03/2024 10:11 AM	2.709	34.857	6.894	270.749	0.127	16.278	0.1	17.000	45.000	11.700	14.100	16.000	229.000	7.000	20.000	0.190	2.920	4.000	54000000.000	143000000.000	48
21/01/2024 10:07 AM	2.412	30.762	6.836	229.070	0.107	53.091	0.2	35.000	78.000	6.760	8.210	12.000	197.000	4.900	20.000	0.160	2.000	5.000	390000.000	1580000.000	38

Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
3 2BBLH003	Buloh, Buloh, Selangor (Ambient)	96 Range: 3 – 108	151 Range: 11 – 260	BOD: 19 COD: 54	BOD: 54.6 COD: 137.8	0.109	15	19.2	Workshop, pengilangan perabot dan lekapan, pembiakan dan pemeliharaan ayam, itik, angsa, loji kumbahan IWK, scrap metal	BOD & COD: Exceed extreme value; Repeated: 155mg/L

Historical NPE			
	NPE LEVEL	Date	Parameter
1	2	19/9/2023	BOD: 92mg/L; COD: 252mg/L
2	2	20/11/2023	BOD: 62mg/L; COD: 149mg/L

	Station located at down/upstream	Reading at station
Downstream station	2BBLH006 (±7.19km)	BOD: 12mg/L; COD: 38mg/L
Upstream station	2BBLH004 (±6.88km)	BOD: 9mg/L; COD: 35mg/L
CRWQM	None	None



Summary Extreme value BOD & COD

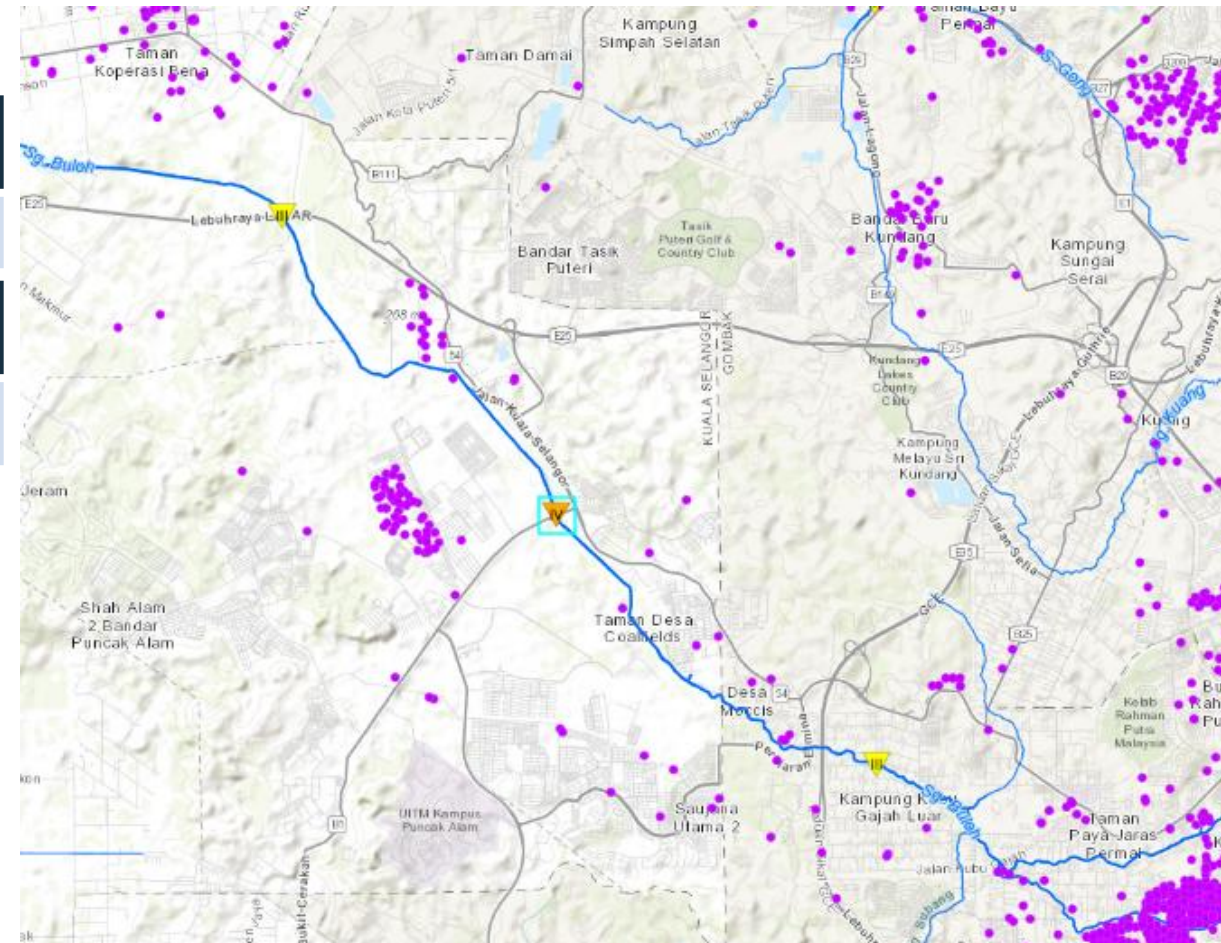
Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)
3	2BBLH003 Buloh, Buloh, Selangor (Ambient)	96 Range: 3 – 108	151 Range: 11 – 260	BOD: 19 COD: 54	BOD: 54.6 COD: 137.8	0.109

Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
15	19.2	Workshop, pengilangan perabot dan lekapan, pembiakan dan pemeliharaan ayam, itik, angsa, loji kumbahan IWK, scrap metal	BOD & COD: Exceed extreme value; Repeated: 155mg/L

Historical NPE

NPE LEVEL	Date	Parameter
1	19/9/2023	BOD: 92mg/L; COD: 252mg/L
2	20/11/2023	BOD: 62mg/L; COD: 149mg/L

	Station located at down/upstream	Reading at station
Downstream station	2BBLH006 (±7.19km)	BOD: 12mg/L; COD: 38mg/L
Upstream station	2BBLH004 (±6.88km)	BOD: 9mg/L; COD: 35mg/L
CRWQM	None	None



Summary Extreme value BOD & COD

	Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)
3	2BBLH003	Buloh, Buloh, Selangor (Ambient)	96 Range: 3 – 108	151 Range: 11 – 260	BOD: 19 COD: 54	BOD: 54.6 COD: 137.8	0.109

Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
15	19.2	Workshop, pengilangan perabot dan lekapan, pembiakan dan pemeliharaan ayam, itik, angsa, loji kumbahan IWK, scrap metal	BOD & COD: Exceed extreme value; Repeated: 155mg/L

Historical NPE			
	NPE LEVEL	Date	Parameter
1	2	19/9/2023	BOD: 92mg/L; COD: 252mg/L
2	2	20/11/2023	BOD: 62mg/L; COD: 149mg/L

	Station located at down/upstream	Reading at station
Downstream station	2BBLH006 (±7.19km)	BOD: 12mg/L; COD: 38mg/L
Upstream station	2BBLH004 (±6.88km)	BOD: 9mg/L; COD: 35mg/L
CRWQM	None	None

Current River Water Quality Index (WQI)

36
WQI

CLASS IV

2BBLH003
River: BULOH
Basin: BULOH
State: SELANGOR
Sampling Date: 21/01/2025 11:23:00

Sampling Frequency

No. 2	No. 3	No. 4	No. 5	No. 6	No. 1
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Water Quality

IN-SITU

Parameter	Concentration	Sub Index
Dissolved Oxygen	3.142 mg/L	-
Dissolved Oxygen	40.036 %	35
pH	6.152	93
Conductivity	232.292 µS/cm	-
Salinity	0.109 ppt	-
Temperature	27.828 °C	-
Turbidity	23.037 NTU	-
Flowrate	0.2 m/s	-

Parameter	Concentration	Sub Index
BOD	96 mg/L	-9
COD	151 mg/L	4
NH ₃ -N	1.84 mg/L	32
NH ₃ F	0.0013 mg/L	-
TSS	27 mg/L	83
DS	191 mg/L	-
TS	218 mg/L	-
As	0.008 mg/L	-
Cd	<0.001 mg/L	-
Cr	0.002 mg/L	-
Hg	<0.0001 mg/L	-
Pb	0.001 mg/L	-
Zn	0.024 mg/L	-
Ca	20 mg/L	-
Mg	1.4 mg/L	-
Na	16.4 mg/L	-
K	4.8 mg/L	-
Fe	2.43 mg/L	-
Cyanide	<0.05 mg/L	-
Cl	15 mg/L	-
NO ₃	0.04 mg/L	-
PO ₄	0.04 mg/L	-
MBAS	<0.05 mg/L	-
O&G	2 mg/L	-
E. Coli	175000 cfu/100ml	-
Total Coliform	1200000 cfu/100ml	-

Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
3 2BBLH003	Buloh, Buloh, Selangor (Ambient)	96 Range: 3 – 108	151 Range: 11 – 260	BOD: 19 COD: 54	BOD: 54.6 COD: 137.8	0.109	15	19.2	Workshop, pengilangan perabot dan lekapan, pembiakan dan pemeliharaan ayam, itik, angsa, loji kumbahan IWK, scrap metal	BOD & COD: Exceed extreme value; Repeated: 155mg/L

Historical NPE

	NPE LEVEL	Date	Parameter
1	2	19/9/2023	BOD: 92mg/L; COD: 252mg/L
2	2	20/11/2023	BOD: 62mg/L; COD: 149mg/L

	Station located at down/upstream	Reading at station
Downstream station	2BBLH006 (±7.19km)	BOD: 12mg/L; COD: 38mg/L
Upstream station	2BBLH004 (±6.88km)	BOD: 9mg/L; COD: 35mg/L
CRWQM	None	None

RIVER WATER QUALITY (MRWQM) DATA FOR SELECTED PARAMETERS (2BBLH003) FROM JULY 2017 TO JANUARY 2025

DATE TIME	Conc. DO (mg/L)	Sat. DO (%)	pH	Conductivity (µS/cm)	Salinity (ppt)	Turbidity (NTU)	Flowrate (m/s)	BOD (mg/L)	COD (mg/L)	NH ₃ N (mg/L)	NH ₃ (mg/L)	TSS (mg/L)	DS (mg/L)	K (mg/L)	Cl (mg/L)	NO ₃ (mg/L)	PO ₄ (mg/L)	O&G (mg/L)	E. Coli (cfu/100ml)	TC (cfu/100ml)	WQI (Index)
21/01/2025 11:23 AM	3.142	40.036	6.152	232.292	0.109	23.037	0.2	96.000	151.000	1.840	2.230	27.000	191.000	4.800	15.000	0.040	0.040	2.000	175000.000	1200000.000	36
16/11/2024 11:47 AM	4.044	52.260	6.827	212.137	0.099	28.748	0.1	12.000	42.000	1.560	1.890	28.000	189.000	4.000	27.000	0.090	0.020	1.000	110000.000	1350000.000	61
18/09/2024 11:57 AM	3.740	47.951	6.663	206.248	0.096	18.402	0.1	22.000	74.000	1.290	1.570	24.000	183.000	4.300	16.000	0.160	0.070	2.000	24000.000	1560000.000	52
19/07/2024 12:42 PM	3.469	43.779	6.967	186.768	0.087	94.861	0.2	19.000	55.000	2.230	2.710	70.000	145.000	4.400	14.000	0.060	0.150	2.000	180000.000	1270000.000	48
18/05/2024 12:30 PM	3.247	42.107	6.785	173.460	0.080	40.399	TR	4.000	15.000	1.560	TR	10.000	139.000	3.300	12.000	1.460	TR	TR	TR	1190000.000	69
22/03/2024 11:40 AM	3.154	41.376	6.412	228.863	0.107	23.160	0.4	81.000	121.000	0.930	1.130	28.000	157.000	4.600	25.000	0.220	0.050	3.000	180000.000	450000.000	41
19/01/2024 11:58 AM	2.435	31.052	6.705	150.054	0.069	75.704	0.2	21.000	47.000	0.280	0.340	39.000	108.000	3.000	10.000	0.710	0.070	<1.000	60000.000	1020000.000	53

Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
5 2BTGI003	Tengi, Tenggi, Selangor (Ambient)	3 Range: <1 – 14	86 Range: 12 – 110	BOD: 3 COD: 31	BOD: 7 COD: 75.6	0.017	6	22.1	Pengumpulan, penulenan dan edaran air (Loji Pembersihan Air Sungai Sireh)	COD: Over extreme value; Repeated: 88mg/L; High colored sample

Historical NPE			
	NPE LEVEL	Date	Parameter
1	Makluman	29/1/2024	BOD: 5mg/L; COD: 110mg/L

	Station located at down/upstream	Reading at station
Downstream station	2BTGI001 (±14.2km)	BOD: 2mg/L; COD: 79mg/L
Upstream station	None	None
CRWQM	None	None



Summary Extreme value BOD & COD

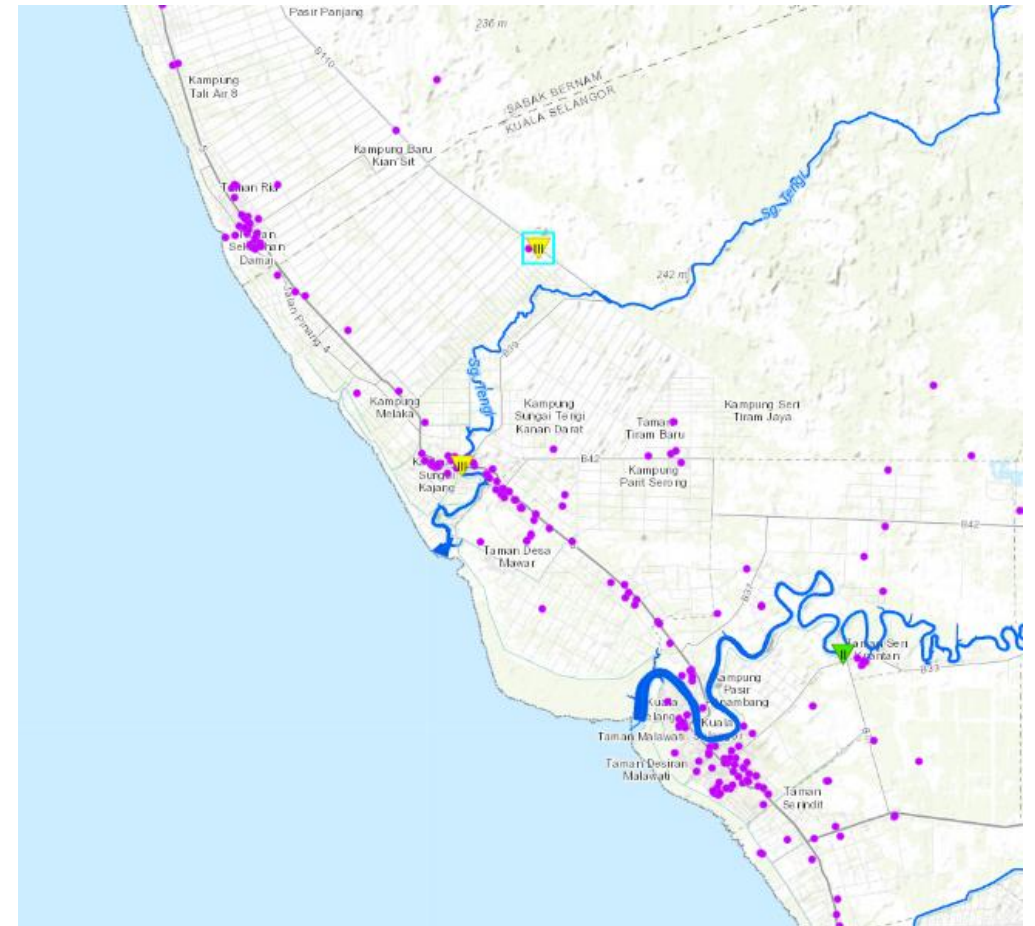
Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)
5	2BTGI003 Tengi, Tengi, Selangor (Ambient)	3 Range: <1 – 14	86 Range: 12 – 110	BOD: 3 COD: 31	BOD: 7 COD: 75.6	0.017

Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
6	22.1	Pengumpulan, penulenan dan edaran air (Loji Pembersihan Air Sungai Sireh)	COD: Over extreme value; Repeated: 88mg/L; High colored sample

Historical NPE

NPE LEVEL	Date	Parameter
1	29/1/2024	BOD: 5mg/L; COD: 110mg/L

Station located at down/upstream	Reading at station
Downstream station	2BTGI001 (±14.2km) BOD: 2mg/L; COD: 79mg/L
Upstream station	None None
CRWQM	None None



Summary Extreme value BOD & COD

	Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)
5	2BTGI003	Tengi, Tenggi, Selangor (Ambient)	3 Range: <1 – 14	86 Range: 12 – 110	BOD: 3 COD: 31	BOD: 7 COD: 75.6	0.017

Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
6	22.1	Pengumpulan, penulenan dan edaran air (Loji Pembersihan Air Sungai Sireh)	COD: Over extreme value; Repeated: 88mg/L; High colored sample

Current River Water Quality Index (WQI)

69
WQI

2BTGI003
River: TENGI
Basin: TENGI
State: SELANGOR
Sampling Date: 30/01/2025 14:00:00

CLASS III

Sampling Frequency

No. 2	No. 3	No. 4	No. 5	No. 6	No. 1
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Water Quality

IN-SITU

Parameter	Concentration	Sub Index
Dissolved Oxygen	4.358 mg/L	-
Dissolved Oxygen	54.81 %	57
pH	4.832	51
Conductivity	38.971 µS/cm	-
Salinity	0.017 ppt	-
Temperature	27.124 °C	-
Turbidity	36.765 NTU	-
Flowrate	0.3 m/s	-

Historical NPE

	NPE LEVEL	Date	Parameter
1	Makluman	29/1/2024	BOD: 5mg/L; COD: 110mg/L

	Station located at down/upstream	Reading at station
Downstream station	2BTGI001 (±14.2km)	BOD: 2mg/L; COD: 79mg/L
Upstream station	None	None
CRWQM	None	None

Parameter	Concentration	Sub Index
BOD	3 mg/L	88
COD	86 mg/L	23
NH ₃ -N	0.01 mg/L	99
NH ₃ -F	0 mg/L	-
TSS	8 mg/L	93
DS	33 mg/L	-
TS	41 mg/L	-
As	0.002 mg/L	-
Cd	<0.001 mg/L	-
Cr	<0.001 mg/L	-
Hg	<0.0001 mg/L	-
Pb	0.001 mg/L	-
Zn	0.014 mg/L	-
Ca	1.2 mg/L	-
Mg	0.5 mg/L	-
Na	1.7 mg/L	-
K	1.4 mg/L	-
Fe	1.01 mg/L	-
Cyanide	<0.05 mg/L	-
Cl	6 mg/L	-
NO ₃	0.62 mg/L	-
PO ₄	0.11 mg/L	-
MBAS	<0.05 mg/L	-
O&G	<1 mg/L	-
E. Coli	100 cfu/100ml	-
Total Coliform	4000 cfu/100ml	-

Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
5 2BTGI003	Tengi, Tenggi, Selangor (Ambient)	3 Range: <1 – 14	86 Range: 12 – 110	BOD: 3 COD: 31	BOD: 7 COD: 75.6	0.017	6	22.1	Pengumpulan, penulenan dan edaran air (Loji Pembersihan Air Sungai Sireh)	COD: Over extreme value; Repeated: 88mg/L; High colored sample

Historical NPE			
	NPE LEVEL	Date	Parameter
1	Makluman	29/1/2024	BOD: 5mg/L; COD: 110mg/L

	Station located at down/upstream	Reading at station
Downstream station	2BTGI001 (±14.2km)	BOD: 2mg/L; COD: 79mg/L
Upstream station	None	None
CRWQM	None	None

RIVER WATER QUALITY (MRWQM) DATA FOR SELECTED PARAMETERS (2BTGI003) FROM JULY 2017 TO JANUARY 2025

DATE TIME	Conc. DO (mg/L)	Sat. DO (%)	pH	Conductivity (µS/cm)	Salinity (ppt)	Turbidity (NTU)	Flowrate (m/s)	BOD (mg/L)	COD (mg/L)	NH ₃ N (mg/L)	NH ₃ (mg/L)	TSS (mg/L)	DS (mg/L)	K (mg/L)	Cl (mg/L)	NO ₃ (mg/L)	PO ₄ (mg/L)	O&G (mg/L)	E. Coli (cfu/100ml)	TC (cfu/100ml)	WQI (Index)
30/01/2025 02:00 PM	4.358	54.810	4.832	38.971	0.017	36.765	0.3	3.000	86.000	0.010	0.020	8.000	33.000	1.400	6.000	0.620	0.110	<1.000	100.000	4000.000	69
26/11/2024 04:10 PM	4.263	53.627	4.767	39.491	0.017	55.091	0.1	<1.000	89.000	<0.010	<0.010	24.000	34.000	1.800	5.000	0.610	0.140	<1.000	200.000	28500.000	68
27/09/2024 04:08 PM	5.120	65.146	6.951	41.789	0.018	163.878	0.1	<1.000	21.000	0.020	0.020	40.000	25.000	2.200	7.000	1.360	0.020	<1.000	700.000	27000.000	85
28/07/2024 04:14 PM	5.647	75.670	6.952	41.807	0.018	37.158	0.1	2.000	53.000	0.020	0.020	15.000	29.000	2.100	4.000	0.920	0.100	1.000	100.000	3800.000	84
27/05/2024 05:20 PM	2.816	36.709	4.271	43.631	0.019	70.948	TR	14.000	102.000	0.020	TR	17.000	36.000	1.200	6.000	0.790	TR	TR	TR	7000.000	52
27/03/2024 03:39 PM	5.558	73.223	6.412	228.354	0.106	274.531	0.3	1.000	38.000	0.060	0.070	88.000	35.000	2.500	11.000	2.350	0.260	<1.000	900.000	37000.000	80
29/01/2024 05:16 PM	5.159	66.250	4.198	57.312	0.025	17.947	0.2	5.000	110.000	0.010	0.020	4.000	43.000	1.200	7.000	0.750	0.190	<1.000	200.000	4000.000	67

Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
6 2WKLG037	Toba, Klang, WPKL (Ambient)	31 Range: 4 – 45	276 Range: 11 – 121	BOD: 11 COD: 40	BOD: 24 COD: 68.4	0.119	23	75	Batu-bata Jubin dinding dan lantai; loji rawatan air buangan kumbahan bandar; workshop; laudering and dry cleaning, pressing; workshop; hospital; etc	COD: Over extreme value; Repeated: 315mg/L; High colored sample

	Station located at down/upstream	Reading at station
Downstream station	2WKLG015 (±2.65km)	BOD: 5mg/L; COD: 25mg/L
Upstream station	None	None
CRWQM	[Downstream station] CR12W (±14.4km)	

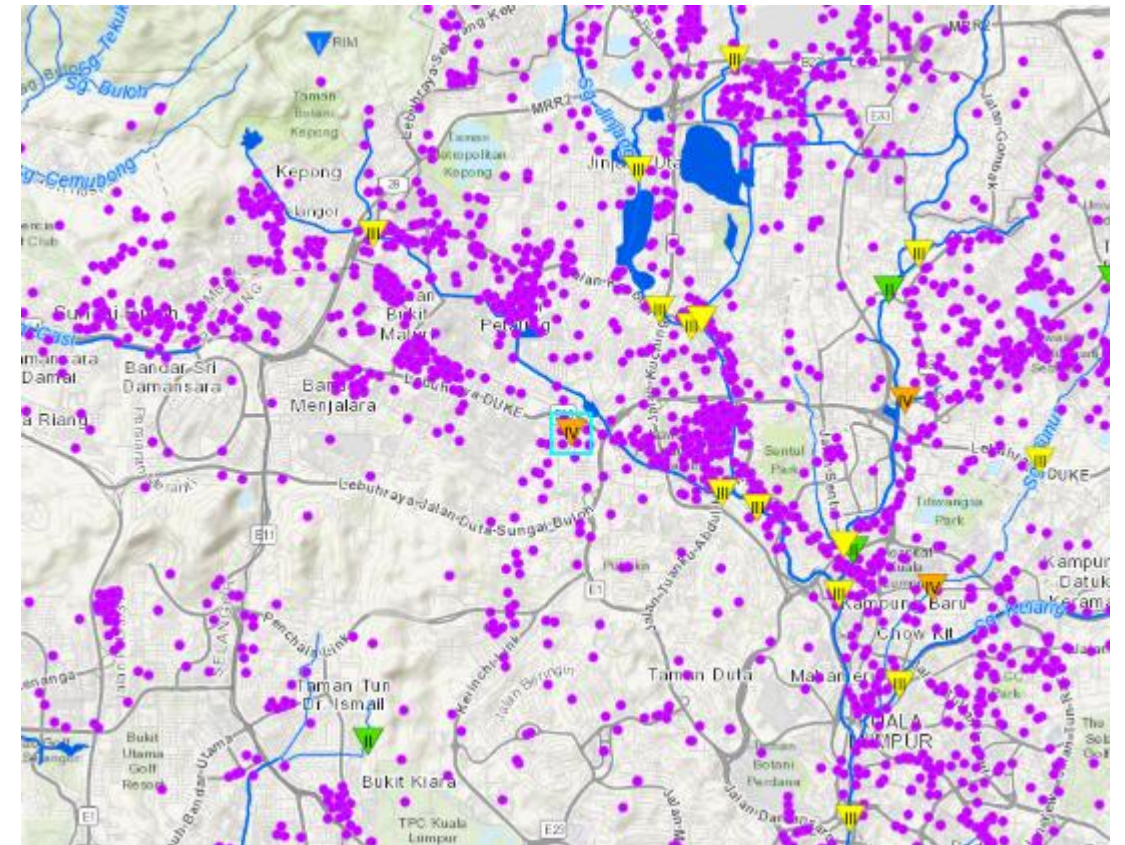


Summary Extreme value BOD & COD

	Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)
6	2WKLG037	Toba, Klang, WPKL (Ambient)	31 Range: 4 – 45	276 Range: 11 – 121	BOD: 11 COD: 40	BOD: 24 COD: 68.4	0.119

Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
23	75	Batu-bata Jubin dinding dan lantai; loji rawatan air buangan kumbahan bandar; workshop; laudering and dry cleaning, pressing; workshop; hospital; etc	COD: Over extreme value; Repeated: 315mg/L; High colored sample

	Station located at down/upstream	Reading at station
Downstream station	2WKLG015 (±2.65km)	BOD: 5mg/L; COD: 25mg/L
Upstream station	None	None
CRWQM	[Downstream station] CR12W (±14.4km)	



Summary Extreme value BOD & COD

	Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)
6	2WKLG037	Toba, Klang, WPKL (Ambient)	31 Range: 4 – 45	276 Range: 11 – 121	BOD: 11 COD: 40	BOD: 24 COD: 68.4	0.119

Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
23	75	Batu-bata Jubin dinding dan lantai; loji rawatan air buangan kumbahan bandar; workshop; laudering and dry cleaning, pressing; workshop; hospital; etc	COD: Over extreme value; Repeated: 315mg/L; High colored sample

	Station located at down/upstream	Reading at station
Downstream station	2WKLG015 (±2.65km)	BOD: 5mg/L; COD: 25mg/L
Upstream station	None	None
CRWQM	[Downstream station] CR12W (±14.4km)	

Current River Water Quality Index (WQI)

40
WQI

CLASS IV

2WKLG037
River: TOBA
Basin: KLANG
State: WPKL
Sampling Date: 16/01/2025 13:22:00

Sampling Frequency

No. 2	No. 3	No. 4	No. 5	No. 6	No. 1
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Water Quality

IN-SITU

Parameter	Concentration	Sub Index
Dissolved Oxygen	5.271 mg/L	-
Dissolved Oxygen	67.631 %	75
pH	6.954	100
Conductivity	254.32 µS/cm	-
Salinity	0.119 ppt	-
Temperature	28.217 °C	-
Turbidity	112.357 NTU	-
Flowrate	0.3 m/s	-

Parameter	Concentration	Sub Index
BOD	31 mg/L	17
COD	276 mg/L	-10
NH ₃ N	2.57 mg/L	19
NH ₃ F	0.0121 mg/L	-
TSS	264 mg/L	43
DS	216 mg/L	-
TS	480 mg/L	-
As	0.005 mg/L	-
Cd	<0.001 mg/L	-
Cr	0.001 mg/L	-
Hg	<0.0001 mg/L	-
Pb	0.003 mg/L	-
Zn	0.149 mg/L	-
Ca	23.7 mg/L	-
Mg	2.1 mg/L	-
Na	17.5 mg/L	-
K	8.1 mg/L	-
Fe	1.05 mg/L	-
Cyanide	<0.05 mg/L	-
Cl	23 mg/L	-
NO ₃	9.19 mg/L	-
PO ₄	3.11 mg/L	-
MBAS	<0.05 mg/L	-
O&G	4 mg/L	-
E. Coli	270000 cfu/100ml	-
Total Coliform	1200000 cfu/100ml	-

Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
6 2WKLG037	Toba, Klang, WPKL (Ambient)	31 Range: 4 – 45	276 Range: 11 – 121	BOD: 11 COD: 40	BOD: 24 COD: 68.4	0.119	23	75	Batu-bata Jubin dinding dan lantai; loji rawatan air buangan kumbahan bandar; workshop; laudering and dry cleaning, pressing; workshop; hospital; etc	COD: Over extreme value; Repeated: 315mg/L; High colored sample

	Station located at down/upstream	Reading at station
Downstream station	2WKLG015 (±2.65km)	BOD: 5mg/L; COD: 25mg/L
Upstream station	None	None
CRWQM	[Downstream station] CR12W (±14.4km)	

RIVER WATER QUALITY (MRWQM) DATA FOR SELECTED PARAMETERS (2WKLG037) FROM JULY 2017 TO JANUARY 2025

DATE TIME	Conc. DO (mg/L)	Sat. DO (%)	pH	Conductivity (µS/cm)	Salinity (ppt)	Turbidity (NTU)	Flowrate (m/s)	BOD (mg/L)	COD (mg/L)	NH ₃ N (mg/L)	NH ₃ (mg/L)	TSS (mg/L)	DS (mg/L)	K (mg/L)	Cl (mg/L)	NO ₃ (mg/L)	PO ₄ (mg/L)	O&G (mg/L)	E. Coli (cfu/100ml)	TC (cfu/100ml)	WQI (Index)
16/01/2025 01:22 PM	5.271	67.631	6.954	254.320	0.119	112.357	0.3	31.000	276.000	2.570	3.120	264.000	216.000	8.100	23.000	9.190	3.110	4.000	270000.000	1200000.000	40
14/11/2024 11:47 AM	4.815	62.563	7.088	280.195	0.131	15.077	0.3	8.000	49.000	11.100	13.500	24.000	241.000	7.400	30.000	2.540	1.300	3.000	380000.000	790000.000	61
11/09/2024 11:40 AM	4.053	52.279	7.024	233.420	0.109	17.528	0.2	10.000	39.000	1.150	1.400	22.000	198.000	6.400	25.000	6.650	0.760	4.000	160000.000	920000.000	64
10/07/2024 02:52 PM	5.652	72.148	7.098	195.114	0.091	36.728	0.3	14.000	45.000	1.270	1.540	31.000	162.000	4.500	13.000	4.410	0.130	3.000	250000.000	580000.000	66
08/05/2024 11:03 AM	4.440	57.358	7.097	262.839	0.123	15.060	TR	12.000	40.000	5.460	TR	16.000	186.000	6.200	23.000	2.660	TR	TR	TR	2160000.000	58
11/03/2024 01:03 PM	3.731	49.456	7.073	269.503	0.126	16.708	0.4	19.000	48.000	5.030	6.110	24.000	219.000	6.800	26.000	2.260	1.000	3.000	630000.000	1770000.000	50
16/01/2024 11:53 AM	4.314	55.654	7.107	242.805	0.114	14.481	0.5	15.000	36.000	3.320	4.040	22.000	184.000	5.900	20.000	6.380	0.520	<1.000	410000.000	1520000.000	57

Summary Extreme value BOD & COD, Pb, O&G

Station ID	Location	BOD (mg/L)	COD (mg/L)	Pb (mg/L)	O&G (mg/L)	TSS (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
1 1 3JSGT004	Segget, Segget, Johor (Ambient)	24 Range: 2 – 25	130 Range: 9 – 85	0.047 Range: <0.001 – 0.004	7 Range: <1 - 4	5120 Range: <1 - 184	BOD: 8 COD: 26 Pb: 0.001 O&G: 1 TSS: 14	BOD: 18.6 COD: 48.2 Pb: 0.002 O&G: 3 TSS: 34.6	0.118	26	43.6	Hotels, etc	COD: Exceed extreme value; Repeated: 148mg/L Pb: Lab verified; Repeated: 0.045mg/L; 0.044mg/L O&G: Exceed extreme value TSS: Lab verified

Extreme value TSS: 1 stn

1. 3JSGT004 (Segget, Segget, Johor) [Ambient]: 5120mg/L; Range: <1 – 184mg/L; Med.: 14mg/L; 90th: 34.6mg/L; Lab verified

	Station located at down/upstream	Reading at station
Downstream station	3JSGT005 (±0.33km)	BOD: 11mg/L; COD: 50mg/L; Pb: <0.001mg/L; O&G: 3mg/L
Upstream station	3JSGT003 (±0.2km)	BOD: 5mg/L; COD: 15mg/L; Pb: 0.003mg/L; O&G: 1mg/L
CRWQM	None	None

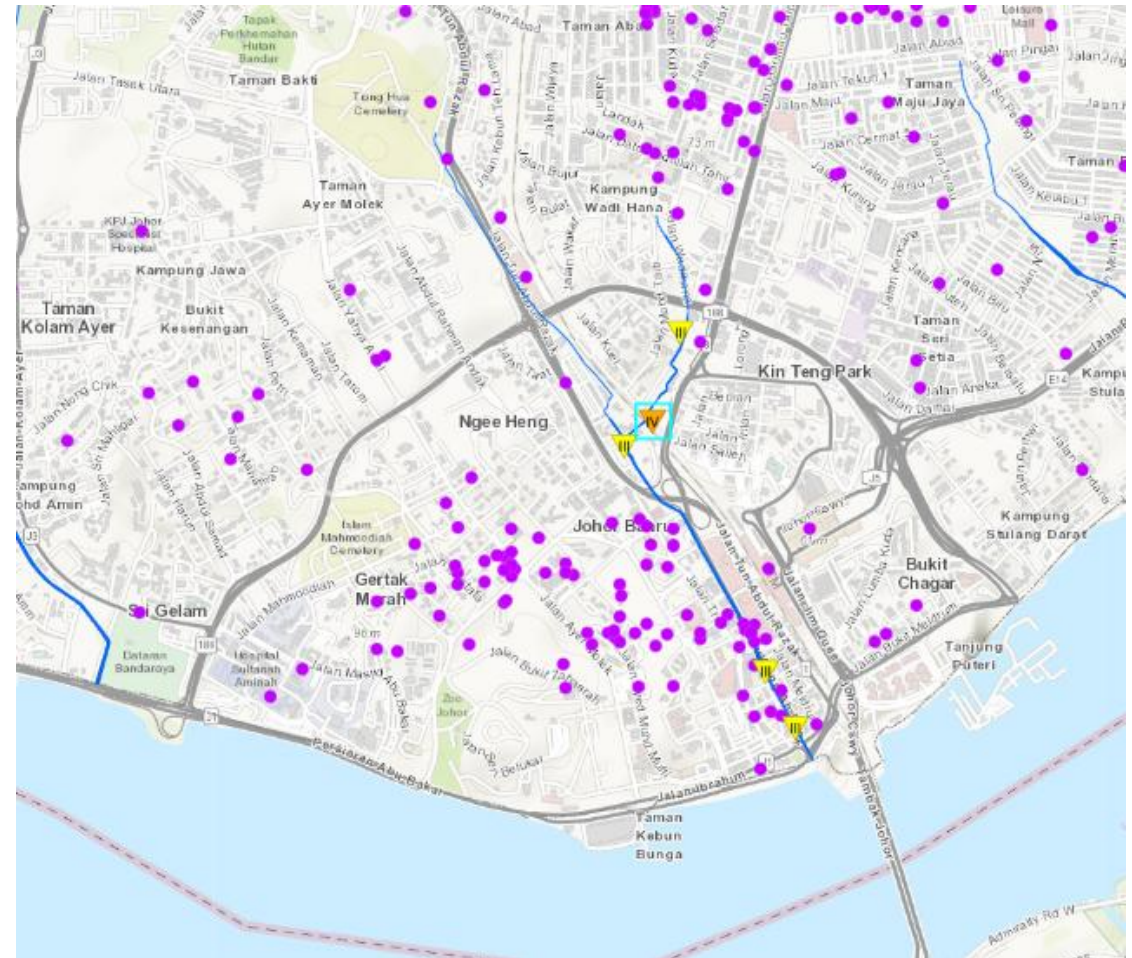


Summary Extreme value BOD & COD, Pb, O&G

Station ID	Location	BOD (mg/L)	COD (mg/L)	Pb (mg/L)	O&G (mg/L)	TSS (mg/L)	Med (mg/L)	90 th (mg/L)
1 1 3JSGT004	Segget, Segget, Johor (Ambient)	24 Range: 2 – 25	130 Range: 9 – 85	0.047 Range: <0.001 – 0.004	7 Range: <1 - 4	5120 Range: <1 - 184	BOD: 8 COD: 26 Pb: 0.001 O&G: 1 TSS: 14	BOD: 18.6 COD: 48.2 Pb: 0.002 O&G: 3 TSS: 34.6

Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
0.118	26	43.6	Hotels, etc	COD: Exceed extreme value; Repeated: 148mg/L Pb: Lab verified; Repeated: 0.045mg/L; 0.044mg/L O&G: Exceed extreme value TSS: Lab verified

	Station located at down/upstream	Reading at station
Downstream station	3JSGT005 (±0.33km)	BOD: 11mg/L; COD: 50mg/L; Pb: <0.001mg/L; O&G: 3mg/L
Upstream station	3JSGT003 (±0.2km)	BOD: 5mg/L; COD: 15mg/L; Pb: 0.003mg/L; O&G: 1mg/L
CRWQM	None	None



Summary Extreme value BOD & COD, Pb, O&G

Station ID	Location	BOD (mg/L)	COD (mg/L)	Pb (mg/L)	O&G (mg/L)	TSS (mg/L)	Med (mg/L)	90 th (mg/L)
3JSGT004	Segget, Segget, Johor (Ambient)	24 Range: 2 – 25	130 Range: 9 – 85	0.047 Range: <0.001 – 0.004	7 Range: <1 - 4	5120 Range: <1 - 184	BOD: 8 COD: 26 Pb: 0.001 O&G: 1 TSS: 14	BOD: 18.6 COD: 48.2 Pb: 0.002 O&G: 3 TSS: 34.6

Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
0.118	26	43.6	Hotels, etc	COD: Exceed extreme value; Repeated: 148mg/L Pb: Lab verified; Repeated: 0.045mg/L; 0.044mg/L O&G: Exceed extreme value TSS: Lab verified

	Station located at down/upstream	Reading at station
Downstream station	3JSGT005 (±0.33km)	BOD: 11mg/L; COD: 50mg/L; Pb: <0.001mg/L; O&G: 3mg/L
Upstream station	3JSGT003 (±0.2km)	BOD: 5mg/L; COD: 15mg/L; Pb: 0.003mg/L; O&G: 1mg/L
CRWQM	None	None

Current River Water Quality Index (WQI)

45

WQI

CLASS IV

3JSGT004
 River: SEGGET
 Basin: SEGGET
 State: JOHOR
 Sampling Date: 15/01/2025 14:54:00

Sampling Frequency

No. 2	No. 3	No. 4	No. 5	No. 6	No. 1
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Water Quality

IN-SITU

Parameter	Concentration	Sub Index
Dissolved Oxygen	6.757 mg/L	-
Dissolved Oxygen	85.305 %	94
pH	7.705	95
Conductivity	251.735 µS/cm	-
Salinity	0.118 ppt	-
Temperature	27.304 °C	-
Turbidity	15166.588 NTU	-
Flowrate	0.5 m/s	-

Parameter	Concentration	Sub Index
BOD	24 mg/L	26
COD	130 mg/L	8
NH ₃ N	1.03 mg/L	47
NH ₃ F	0.0251 mg/L	-
TSS	5120 mg/L	0
DS	250 mg/L	-
TS	5370 mg/L	-
As	0.009 mg/L	-
Cd	<0.001 mg/L	-
Cr	0.007 mg/L	-
Hg	<0.0001 mg/L	-
Pb	0.047 mg/L	-
Zn	0.231 mg/L	-
Ca	77.7 mg/L	-
Mg	4 mg/L	-
Na	17.9 mg/L	-
K	5.3 mg/L	-
Fe	4.67 mg/L	-
Cyanide	<0.05 mg/L	-
Cl	26 mg/L	-
NO ₃	3.73 mg/L	-
PO ₄	0.04 mg/L	-
MBAS	<0.05 mg/L	-
O&G	7 mg/L	-
E. Coli	140000 cfu/100ml	-
Total Coliform	560000 cfu/100ml	-

Summary Extreme value BOD & COD, Pb, O&G

Station ID	Location	BOD (mg/L)	COD (mg/L)	Pb (mg/L)	O&G (mg/L)	TSS (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
1 1 3JSGT004	Segget, Segget, Johor (Ambient)	24 Range: 2 – 25	130 Range: 9 – 85	0.047 Range: <0.001 – 0.004	7 Range: <1 – 4	5120 Range: <1 – 184	BOD: 8 COD: 26 Pb: 0.001 O&G: 1 TSS: 14	BOD: 18.6 COD: 48.2 Pb: 0.002 O&G: 3 TSS: 34.6	0.118	26	43.6	Hotels, etc	COD: Exceed extreme value; Repeated: 148mg/L Pb: Lab verified; Repeated: 0.045mg/L; 0.044mg/L O&G: Exceed extreme value TSS: Lab verified

	Station located at down/upstream	Reading at station
Downstream station	3JSGT005 (±0.33km)	BOD: 11mg/L; COD: 50mg/L; Pb: <0.001mg/L; O&G: 3mg/L
Upstream station	3JSGT003 (±0.2km)	BOD: 5mg/L; COD: 15mg/L; Pb: 0.003mg/L; O&G: 1mg/L
CRWQM	None	None

RIVER WATER QUALITY (MRWQM) DATA FOR SELECTED PARAMETERS (3JSGT004) FROM JULY 2017 TO JANUARY 2025

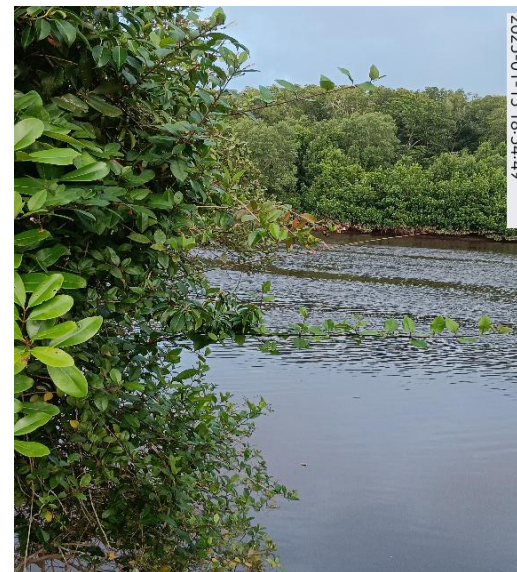
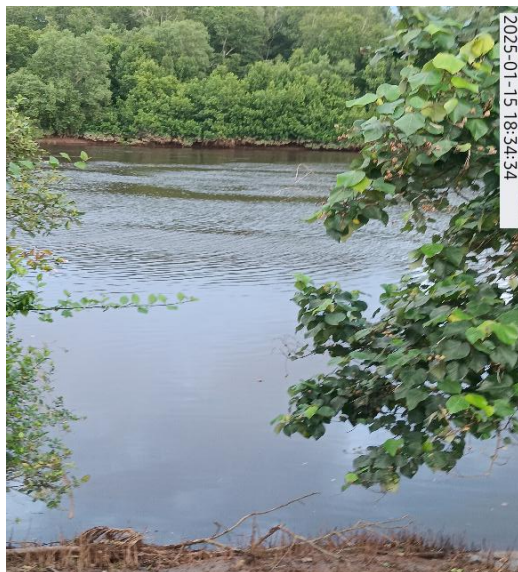
DATE TIME	Conc. DO (mg/L)	Sat. DO (%)	pH	Conductivity (µS/cm)	Salinity (ppt)	Turbidity (NTU)	Flowrate (m/s)	BOD (mg/L)	COD (mg/L)	NH ₃ N (mg/L)	NH ₃ (mg/L)	TSS (mg/L)	DS (mg/L)	Pb (mg/L)	K (mg/L)	Cl (mg/L)	NO ₃ (mg/L)	PO ₄ (mg/L)	O&G (mg/L)	E. Coli (cfu/100ml)	TC (cfu/100ml)	WQI (Index)
15/01/2025 02:54 PM	6.757	85.305	7.705	251.735	0.118	15166.588	0.5	24.000	130.000	1.030	1.250	5120.000	250.000	0.047	5.300	26.000	3.730	0.040	7.000	140000.000	560000.000	45
20/11/2024 10:40 AM	4.580	58.399	6.923	241.650	0.113	14.448	0.5	4.000	21.000	3.110	3.780	16.000	238.000	0.003	6.900	24.000	1.250	0.350	2.000	210000.000	1050000.000	69
21/09/2024 10:51 AM	5.960	77.076	7.354	283.871	0.133	27.707	0.7	20.000	52.000	4.350	5.280	10.000	275.000	<0.001	9.900	26.000	0.180	0.710	4.000	40000.000	510000.000	59
10/07/2024 11:03 AM	2.279	29.458	7.053	281.551	0.132	11.053	0.8	16.000	42.000	4.930	5.980	12.000	267.000	0.002	6.300	33.000	0.690	0.650	4.000	3000.000	32000.000	48
15/05/2024 10:43 AM	3.760	49.060	6.829	327.595	0.154	8.501	0.8	9.000	28.000	3.020	3.670	8.000	271.000	<0.001	5.800	24.000	1.900	0.130	<1.000	390000.000	1660000.000	62
11/03/2024 10:59 AM	3.108	39.752	6.935	338.323	0.160	16.855	TR	11.000	35.000	<0.010	TR	16.000	267.000	<0.001	6.600	37.000	1.340	TR	TR	TR	2000000.000	69
13/01/2024 02:18 PM	6.461	82.815	7.515	272.584	0.128	8.412	1.0	8.000	17.000	1.590	1.930	4.000	231.000	<0.001	4.800	16.000	3.280	0.130	2.000	9000.000	260000.000	78

Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
14 4CBBR001	Bebar, Bebar, Pahang (Ambient)	<1.000 Range: <1 – 11	95 Range: 12 – 112	BOD: 2 COD: 35	BOD: 8 COD: 67.2	0.094	71	12.4	Kilang papan bergergaji, pengilangan produk kayu dan gabus, etc	COD: Exceed extreme value; Repeated: 88mg/L

Historical NPE			
	NPE LEVEL	Date	Parameter
1	Makluman	19/3/2023	BOD: <1mg/L; COD: 96mg/L; Fe: 5.67mg/L; Cl: 367mg/L

	Station located at down/upstream	Reading at station
Downstream station	None	None
Upstream station	4CBBR004 (±43.6km)	BOD: <1mg/L; COD: 5mg/L
CRWQM	None	None



Summary Extreme value BOD & COD

	Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)
14	4CBBR001	Bebar, Bebar, Pahang (Ambient)	<1.000 Range: <1 – 11	95 Range: 12 – 112	BOD: 2 COD: 35	BOD: 8 COD: 67.2	0.094

Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
71	12.4	Kilang papan bergergaji, pengilangan produk kayu dan gabus, etc	COD: Exceed extreme value; Repeated: 88mg/L

Current River Water Quality Index (WQI)

76
WQI

4CBBR001
River: BEBAR
Basin: BEBAR
State: PAHANG
Sampling Date: 15/01/2025 18:35:00

CLASS III

Sampling Frequency

No. 2	No. 3	No. 4	No. 5	No. 6	No. 1
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Water Quality

IN-SITU

Parameter	Concentration	Sub Index
Dissolved Oxygen	6.912 mg/L	-
Dissolved Oxygen	84.386 %	93
pH	5.15	62
Conductivity	200.299 µS/cm	-
Salinity	0.094 ppt	-
Temperature	25.463 °C	-
Turbidity	25.67 NTU	-
Flowrate	0.1 m/s	-

Parameter	Concentration	Sub Index
BOD	<1 mg/L	96
COD	95 mg/L	19
NH ₃ N	0.04 mg/L	96
NH ₃ F	0 mg/L	-
TSS	40 mg/L	76
DS	257 mg/L	-
TS	297 mg/L	-
As	0.002 mg/L	-
Cd	<0.001 mg/L	-
Cr	<0.001 mg/L	-
Hg	<0.0001 mg/L	-
Pb	0.002 mg/L	-
Zn	0.014 mg/L	-
Ca	3.7 mg/L	-
Mg	5.3 mg/L	-
Na	34.9 mg/L	-
K	3.5 mg/L	-
Fe	2.86 mg/L	-
Cyanide	<0.05 mg/L	-
Cl	71 mg/L	-
NO ₃	0.32 mg/L	-
PO ₄	0.06 mg/L	-
MBAS	<0.05 mg/L	-
O&G	<1 mg/L	-
E. Coli	100 cfu/100ml	-
Total Coliform	3300 cfu/100ml	-

Historical NPE

	NPE LEVEL	Date	Parameter
1	Makluman	19/3/2023	BOD: <1mg/L; COD: 96mg/L; Fe: 5.67mg/L; Cl: 367mg/L

	Station located at down/upstream	Reading at station
Downstream station	None	None
Upstream station	4CBBR004 (±43.6km)	BOD: <1mg/L; COD: 5mg/L
CRWQM	None	None

Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
14 4CBBR001	Bebar, Bebar, Pahang (Ambient)	<1.000 Range: <1 – 11	95 Range: 12 – 112	BOD: 2 COD: 35	BOD: 8 COD: 67.2	0.094	71	12.4	Kilang papan bergergaji, pengilangan produk kayu dan gabus, etc	COD: Exceed extreme value; Repeated: 88mg/L

Historical NPE			
NPE LEVEL	Date	Parameter	
1 Makluman	19/3/2023	BOD: <1mg/L; COD: 96mg/L; Fe: 5.67mg/L; Cl: 367mg/L	

	Station located at down/upstream	Reading at station
Downstream station	None	None
Upstream station	4CBBR004 (±43.6km)	BOD: <1mg/L; COD: 5mg/L
CRWQM	None	None

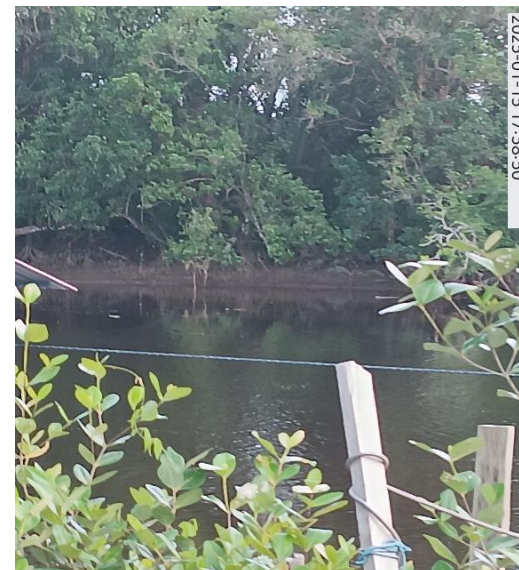
RIVER WATER QUALITY (MRWQM) DATA FOR SELECTED PARAMETERS (4CBBR001) FROM JULY 2017 TO JANUARY 2025

DATE TIME	Conc. DO (mg/L)	Sat. DO (%)	pH	Conductivity (µS/cm)	Salinity (ppt)	Turbidity (NTU)	Flowrate (m/s)	BOD (mg/L)	COD (mg/L)	NH ₃ N (mg/L)	NH ₃ (mg/L)	TSS (mg/L)	DS (mg/L)	K (mg/L)	Cl (mg/L)	NO ₃ (mg/L)	PO ₄ (mg/L)	O&G (mg/L)	E. Coli (cfu/100ml)	TC (cfu/100ml)	WQI (Index)
15/01/2025 06:35 PM	6.912	84.386	5.150	200.299	0.094	25.670	0.1	<1.000	95.000	0.040	0.050	40.000	257.000	3.500	71.000	0.320	0.060	<1.000	100.000	3300.000	76
27/11/2024 11:15 AM	5.831	72.878	3.768	272.279	0.128	33.447	0.1	<1.000	60.000	0.120	0.140	45.000	364.000	5.400	69.000	0.610	0.020	<1.000	300.000	3700.000	70
11/09/2024 05:51 PM	6.429	93.337	7.164	22301.088	13.322	16.470	0.2	3.000	33.000	<0.010	<0.010	5.000	22500.000	266.000	10400.000	6.960	<0.010	1.000	100.000	4200.000	90
18/07/2024 05:40 PM	6.139	89.840	7.360	36119.973	22.716	5.242	0.2	<1.000	36.000	<0.010	<0.010	4.000	26000.000	336.000	13500.000	0.530	<0.010	<1.000	500.000	2700.000	91
29/05/2024 05:50 PM	6.066	94.431	7.427	41987.547	26.781	16.228	TR	<1.000	24.000	<0.010	TR	21.000	26100.000	249.000	13200.000	0.610	TR	TR	TR	4500.000	92
16/03/2024 06:03 PM	6.024	88.127	7.547	28091.682	17.177	47.133	0.2	<1.000	38.000	0.130	0.150	57.000	20000.000	196.000	9150.000	0.230	0.010	1.000	200.000	3200.000	84

Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
15	Serai, Bebar, Pahang (Ambient)	<1.000 Range: <1 – 26	89 Range: 13 – 116	BOD: 3 COD: 30	BOD: 8 COD: 76	0.09	71	12.6	None	COD: Exceed extreme value; Repeated: 86mg/L

	Station located at down/upstream	Reading at station
Downstream station	None	None
Upstream station	None	None
CRWQM	None	None

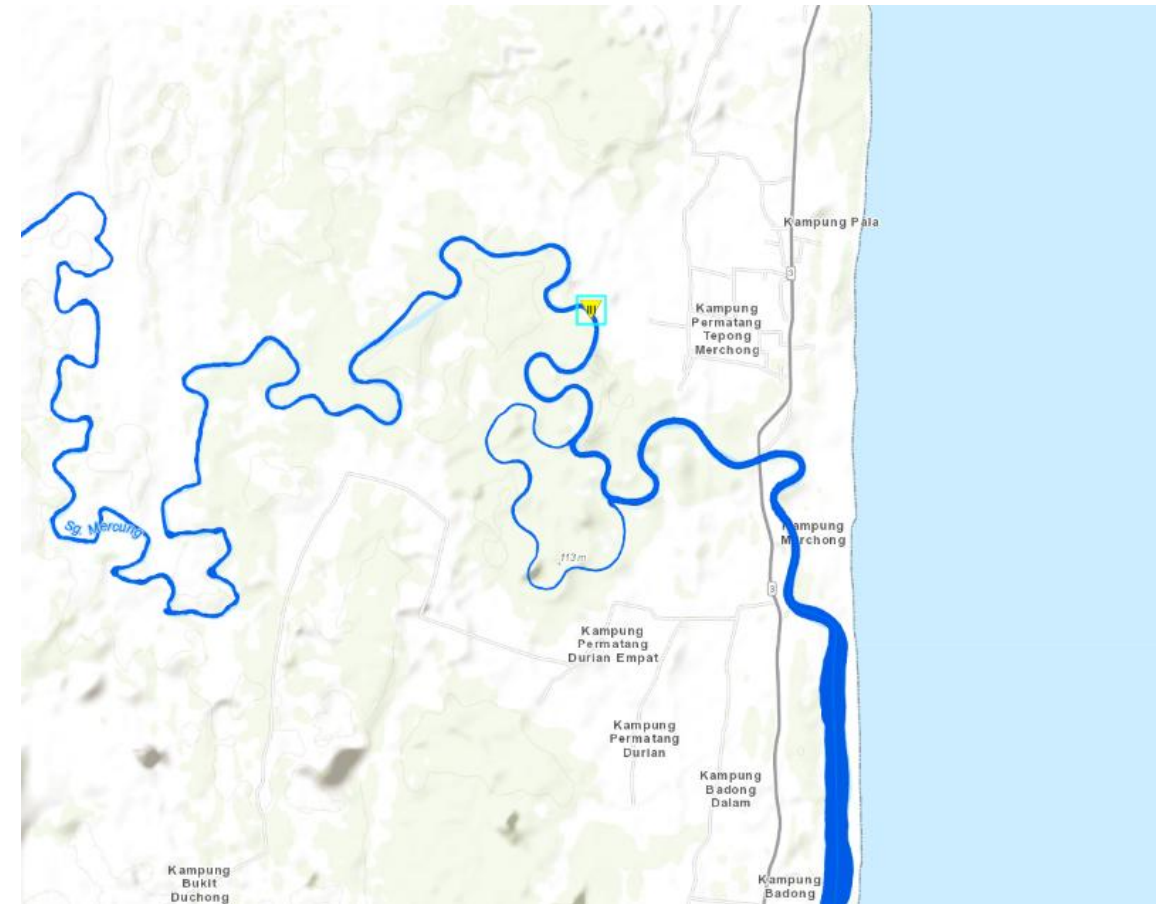


Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)
15	Serai, Bebar, Pahang (Ambient)	<1.000 Range: <1 – 26	89 Range: 13 – 116	BOD: 3 COD: 30	BOD: 8 COD: 76	0.09

Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
71	12.6	None	COD: Exceed extreme value; Repeated: 86mg/L

	Station located at down/upstream	Reading at station
Downstream station	None	None
Upstream station	None	None
CRWQM	None	None



Summary Extreme value BOD & COD

	Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)
15	4CBBR003	Serai, Bebar, Pahang (Ambient)	<1.000 Range: <1 – 26	89 Range: 13 – 116	BOD: 3 COD: 30	BOD: 8 COD: 76	0.09

Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
71	12.6	None	COD: Exceed extreme value; Repeated: 86mg/L

	Station located at down/upstream	Reading at station
Downstream station	None	None
Upstream station	None	None
CRWQM	None	None

Current River Water Quality Index (WQI)

72
WQI

CLASS III

4CBBR003
River: SERAI
Basin: BEBAR
State: PAHANG
Sampling Date: 15/01/2025 17:39:00

Sampling Frequency

No. 2	No. 3	No. 4	No. 5	No. 6	No. 1
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Water Quality

IN-SITU

Parameter	Concentration	Sub Index
Dissolved Oxygen	6.115 mg/L	-
Dissolved Oxygen	75.858 %	85
pH	4.587	44
Conductivity	192.048 µS/cm	-
Salinity	0.09 ppt	-
Temperature	26.333 °C	-
Turbidity	29.988 NTU	-
Flowrate	0.1 m/s	-

Parameter	Concentration	Sub Index
BOD	<1 mg/L	96
COD	89 mg/L	22
NH ₃ N	0.05 mg/L	95
NH ₃ F	0 mg/L	-
TSS	44 mg/L	75
DS	255 mg/L	-
TS	299 mg/L	-
As	0.002 mg/L	-
Cd	<0.001 mg/L	-
Cr	<0.001 mg/L	-
Hg	<0.0001 mg/L	-
Pb	0.002 mg/L	-
Zn	0.026 mg/L	-
Ca	3.7 mg/L	-
Mg	5.2 mg/L	-
Na	34 mg/L	-
K	3.5 mg/L	-
Fe	2.77 mg/L	-
Cyanide	<0.05 mg/L	-
Cl	71 mg/L	-
NO ₃	0.35 mg/L	-
PO ₄	0.07 mg/L	-
MBAS	<0.05 mg/L	-
O&G	1 mg/L	-
E. Coli	200 cfu/100ml	-
Total Coliform	4400 cfu/100ml	-

Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
15	4CBBR003 Serai, Bebar, Pahang (Ambient)	<1.000 Range: <1 – 26	89 Range: 13 – 116	BOD: 3 COD: 30	BOD: 8 COD: 76	0.09	71	12.6	None	COD: Exceed extreme value; Repeated: 86mg/L

	Station located at down/upstream	Reading at station
Downstream station	None	None
Upstream station	None	None
CRWQM	None	None

RIVER WATER QUALITY (MRWQM) DATA FOR SELECTED PARAMETERS (4CBBR003) FROM JULY 2017 TO JANUARY 2025

DATE TIME	Conc. DO (mg/L)	Sat. DO (%)	pH	Conductivity (µS/cm)	Salinity (ppt)	Turbidity (NTU)	Flowrate (m/s)	BOD (mg/L)	COD (mg/L)	NH ₃ N (mg/L)	NH ₃ (mg/L)	TSS (mg/L)	DS (mg/L)	K (mg/L)	Cl (mg/L)	NO ₃ (mg/L)	PO ₄ (mg/L)	O&G (mg/L)	E. Coli (cfu/100ml)	TC (cfu/100ml)	WQI (Index)
15/01/2025 05:39 PM	6.115	75.858	4.587	192.048	0.090	29.988	0.1	<1.000	89.000	0.050	0.060	44.000	255.000	3.500	71.000	0.350	0.070	1.000	200.000	4400.000	72
27/11/2024 12:17 PM	5.460	69.930	5.592	1184.200	0.584	15.580	0.1	<1.000	53.000	0.100	0.120	47.000	354.000	5.400	68.000	0.500	<0.010	<1.000	100.000	5800.000	77
11/09/2024 05:09 PM	6.118	91.144	6.791	27547.720	16.785	7.801	0.1	2.000	35.000	<0.010	<0.010	6.000	22600.000	266.000	10400.000	1.020	<0.010	<1.000	100.000	4000.000	90
18/07/2024 04:08 PM	6.277	89.936	7.255	28379.360	17.398	6.188	0.1	<1.000	23.000	<0.010	<0.010	5.000	26100.000	326.000	13800.000	0.810	0.020	<1.000	200.000	2600.000	93
23/05/2024 06:48 PM	5.472	82.029	6.839	33450.145	20.816	11.165	TR	<1.000	29.000	0.050	TR	7.000	17200.000	295.000	11700.000	1.430	TR	TR	TR	4600.000	90
16/03/2024 05:39 PM	6.331	97.196	7.860	39720.550	25.185	14.753	0.2	<1.000	30.000	<0.010	<0.010	13.000	30000.000	314.000	14100.000	0.120	<0.010	<1.000	100.000	2100.000	91
02/02/2024 06:03 PM	5.432	70.013	4.860	56.727	0.025	26.931	0.1	<1.000	72.000	<0.010	<0.010	9.000	52.000	3.000	12.000	0.060	0.050	<1.000	400.000	5700.000	76

Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
16	6QMKH002 Mukah, Mukah, Sarawak (Ambient)	<1.000 Range: <1 – 4	149 Range: 10 – 157	BOD: 1 COD: 32	BOD: 2 COD: 106.2	0.028	2	16	None	COD: Lab verified

	Station located at down/upstream	Reading at station
Downstream station	6QMKH001 (±8.47km)	BOD: <1mg/L; COD: 64mg/L
Upstream station	None	None
CRWQM	None	None

2025-01-15 11:41:41



2025-01-15 11:41:50



2025-01-15 11:42:02



2025-01-15 11:42:24

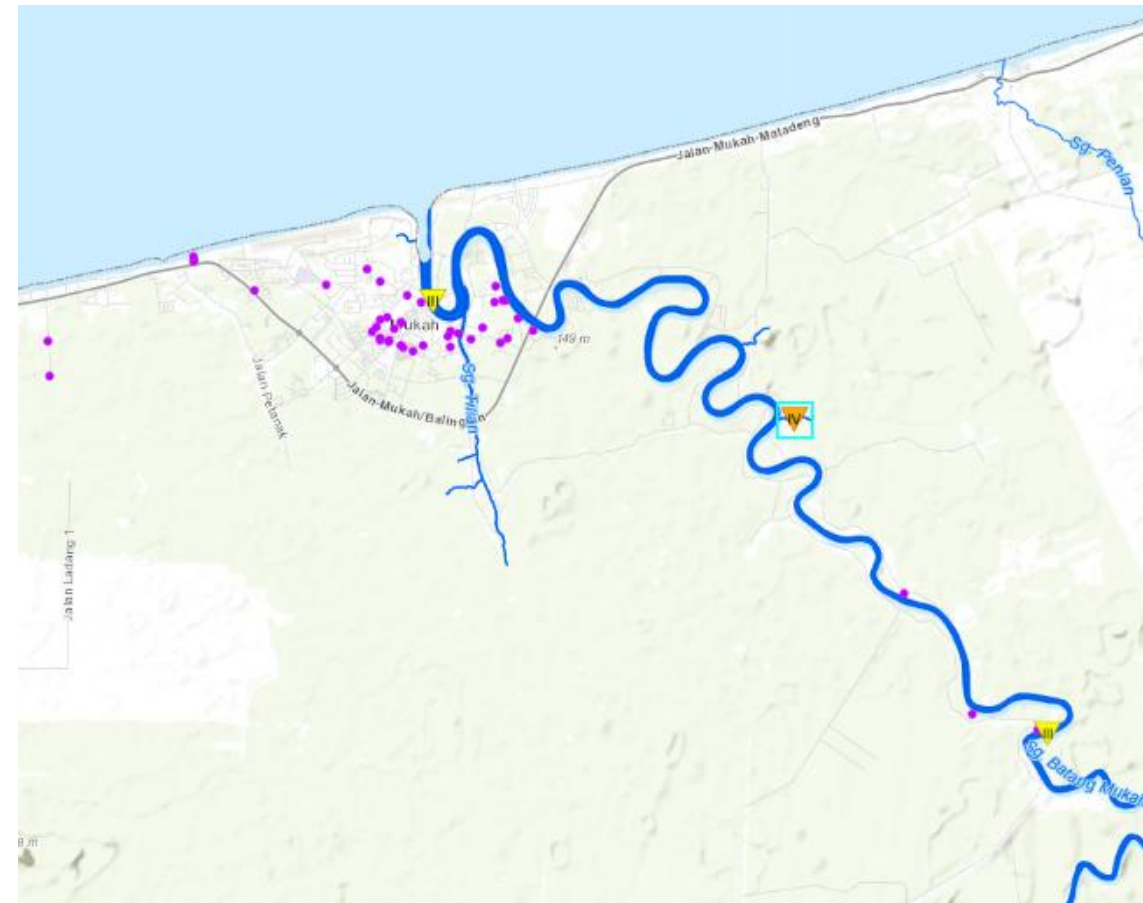


Summary Extreme value BOD & COD

	Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)
16	6QMKH002	Mukah, Mukah, Sarawak (Ambient)	<1.000 Range: <1 – 4	149 Range: 10 – 157	BOD: 1 COD: 32	BOD: 2 COD: 106.2	0.028

Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
2	16	None	COD: Lab verified

	Station located at down/upstream	Reading at station
Downstream station	6QMKH001 (±8.47km)	BOD: <1mg/L; COD: 64mg/L
Upstream station	None	None
CRWQM	None	None



Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)
16	6QMKH002 Mukah, Mukah, Sarawak (Ambient)	<1.000 Range: <1 – 4	149 Range: 10 – 157	BOD: 1 COD: 32	BOD: 2 COD: 106.2	0.028

Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
2	16	None	COD: Lab verified

	Station located at down/upstream	Reading at station
Downstream station	6QMKH001 (±8.47km)	BOD: <1mg/L; COD: 64mg/L
Upstream station	None	None
CRWQM	None	None

Current River Water Quality Index (WQI)

50
WQI

CLASS IV

6QMKH002
River: MUKAH
Basin: MUKAH
State: SARAWAK
Sampling Date: 15/01/2025 11:43:00

Sampling Frequency

No. 2	No. 3	No. 4	No. 5	No. 6	No. 1
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Water Quality

IN-SITU

Parameter	Concentration	Sub Index
Dissolved Oxygen	1.89 mg/L	-
Dissolved Oxygen	23.129 %	13
pH	3.673	22
Conductivity	62.924 µS/cm	-
Salinity	0.028 ppt	-
Temperature	25.605 °C	-
Turbidity	11.53 NTU	-
Flowrate	0.5 m/s	-

Parameter	Concentration	Sub Index
BOD	<1 mg/L	96
COD	149 mg/L	4
NH ₃ -N	0.33 mg/L	69
NH ₃ F	0 mg/L	-
TSS	8 mg/L	93
DS	39 mg/L	-
TS	47 mg/L	-
As	0.002 mg/L	-
Cd	<0.001 mg/L	-
Cr	0.001 mg/L	-
Hg	<0.0001 mg/L	-
Pb	0.001 mg/L	-
Zn	0.026 mg/L	-
Ca	1.2 mg/L	-
Mg	1.2 mg/L	-
Na	1.7 mg/L	-
K	1.7 mg/L	-
Fe	2.73 mg/L	-
Cyanide	<0.05 mg/L	-
Cl	2 mg/L	-
NO ₃	0.18 mg/L	-
PO ₄	0.06 mg/L	-
MBAS	<0.05 mg/L	-
O&G	<1 mg/L	-
E. Coli	1000 cfu/100ml	-
Total Coliform	13000 cfu/100ml	-

Summary Extreme value BOD & COD

Station ID	Location	BOD (mg/L)	COD (mg/L)	Med (mg/L)	90 th (mg/L)	Salinity (g/L)	Chloride (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
16	6QMKH002 Mukah, Mukah, Sarawak (Ambient)	<1.000 Range: <1 – 4	149 Range: 10 – 157	BOD: 1 COD: 32	BOD: 2 COD: 106.2	0.028	2	16	None	COD: Lab verified

	Station located at down/upstream	Reading at station
Downstream station	6QMKH001 (±8.47km)	BOD: <1mg/L; COD: 64mg/L
Upstream station	None	None
CRWQM	None	None

RIVER WATER QUALITY (MRWQM) DATA FOR SELECTED PARAMETERS (6QMKH002) FROM JULY 2017 TO JANUARY 2025

DATE TIME	Conc. DO (mg/L)	Sat. DO (%)	pH	Conductivity (µS/cm)	Salinity (ppt)	Turbidity (NTU)	Flowrate (m/s)	BOD (mg/L)	COD (mg/L)	NH ₃ N (mg/L)	NH ₃ (mg/L)	TSS (mg/L)	DS (mg/L)	K (mg/L)	Cl (mg/L)	NO ₃ (mg/L)	PO ₄ (mg/L)	O&G (mg/L)	E. Coli (cfu/100ml)	TC (cfu/100ml)	WQI (Index)
15/01/2025 11:43 AM	1.890	23.129	3.673	62.924	0.028	11.530	0.5	<1.000	149.000	0.330	0.400	8.000	39.000	1.700	2.000	0.180	0.060	<1.000	1000.000	13000.000	50
13/11/2024 11:46 AM	2.525	31.649	4.455	48.175	0.021	42.157	<0.1	2.000	107.000	0.020	0.020	22.000	29.000	1.400	2.000	0.320	0.030	<1.000	16000.000	47000.000	58
11/09/2024 11:56 AM	2.380	29.724	3.737	70.917	0.032	11.731	0.2	<1.000	72.000	0.150	0.180	8.000	31.000	7.400	2.000	0.090	0.040	<1.000	1000.000	15000.000	58
10/07/2024 11:46 AM	2.535	32.354	4.823	30.932	0.013	20.400	<0.1	2.000	113.000	0.890	1.080	16.000	24.000	1.700	1.000	0.200	0.030	<1.000	2000.000	11000.000	53
08/05/2024 12:52 PM	3.048	38.513	3.759	72.499	0.033	13.016	0.1	<1.000	148.000	0.170	0.210	19.000	59.000	1.600	2.000	0.510	0.060	<1.000	4000.000	21000.000	55
20/03/2024 12:10 PM	4.174	53.200	5.192	20.565	0.008	109.957	TR	<1.000	23.000	0.130	TR	83.000	16.000	1.100	<1.000	0.240	TR	TR	TR	16000.000	72
12/01/2024 12:33 PM	3.705	45.971	3.765	58.262	0.026	20.769	0.3	<1.000	157.000	0.120	0.150	17.000	44.000	1.000	2.000	0.450	0.120	<1.000	19000.000	55000.000	58

Extreme value NH₃N

	Station ID	Location	NH ₃ N (mg/L) Range: - -	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
1	1PJRU007	Rambai, Juru, P. Pinang [Impact B]	38.8 Range: 0.39 – 65.5	10.4	44.9	14.8	Operation of sewage treatment, food production, fabrikasi logam, etc	NH ₃ N: 25x: 38.7mg/L; 50x: 38.9mg/L
2	1PJRU008	Permatang Rawa, Juru, P. Pinang [Impact A]	39.6 Range: 0.87 – 65.5	7.88	42.38	17.2	Produk tanah liat, pengkuarian granit, Jubin batu bata konkrit dan plaster konkrit campuran, operation of sewage treatment, fabrikasi logam, etc	NH ₃ N: 20x: 39.2mg/L; 25x: 40mg/L
3	1PPRI006	Kereh, Perai, P.Pinang [Ambient]	26.8 Range: 1.28 – 55.6	12.7	39.02	16.1	Bahan plastic, kilang papan keras, pengilangan semula logam, IWK	NH ₃ N: 25x: 26.5mg/L; 50x: 27.1mg/L
4	1PPRI007	Air Melintas, Perai, P.Pinang [Impact A]	25.2 Range: 0.97 – 61.3	7.65	21.04	18.8	Fabrikasi dan pengacuan plastic barangan dapur, product makanan, kilang papan bergergaji	NH₃N: 25x: 24.9mg/L; 50x: 25.4mg/L
5	2WKLGO41	Air Busuk, Klang, WPKL [Ambient]	13.9 Range: 1.89 – 21.6	11.1	14.62	66.5	Transport of chemical and waste, workshop, pembinaan loji rawatan air buangan kumbahan bandar, percetakan komersil, etc	NH ₃ N: 10x: 14mg/L; 25x: 13.8mg/L
6	3JTRU001	Tebrau, Tebrau, Johor [Ambient]	11.1 Range: 0.84 – 174	8.45	36.46	20.6	Pembuatan sarung tangan, pembuatan peralatan dan mesin kecuali mesin elektrik, industrial area, etc	NH ₃ N: 10x: 11mg/L; 25x: 11.3mg/L
7	3JTRU002	Tebrau, Tebrau, Johor [Ambient]	11.7 Range: 0.02 – 38.2	3.76	16.34	16.3	food production, minuman ringan dan air berkarbonat, etc	NH ₃ N: 10x: 11.6mg/L; 25x: 11.8mg/L

Summary Extreme value NH₃N, PO₄

Station ID	Location	NH ₃ N (mg/L)	PO ₄ (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
4 1PPRI007	Air Melintas, Perai, P.Pinang [Impact A]	25.2 Range: 0.97 – 61.3	15 Range: 0.41 – 45.3	NH ₃ N: 7.65 PO ₄ : 5.15	NH ₃ N: 21.04 PO ₄ : 10.201	18.8	Fabrikasi dan pengacuan plastic barangan dapur, product makanan, kilang papan bergergaji	NH ₃ N: 25x: 24.9mg/L; 50x: 25.4mg/L PO ₄ : Over extreme value; 40x: 14.9mg/L; 50x: 15mg/L

Historical NPE

	NPE LEVEL	Date	Parameter
1	2	20/7/2024	NH ₃ N: 22.2mg/l; PO ₄ : 15mg/L

	Station located at down/upstream	Reading at station
Downstream station	1PPRI006 (±2.9km)	NH ₃ N: 26.8mg/L PO ₄ : 17.3mg/L
Upstream station	1PPRI008 (±2.75km)	NH ₃ N: 8.91mg/L PO ₄ : 4.01mg/L
CRWQM	None	



Summary Extreme value NH₃N, PO₄

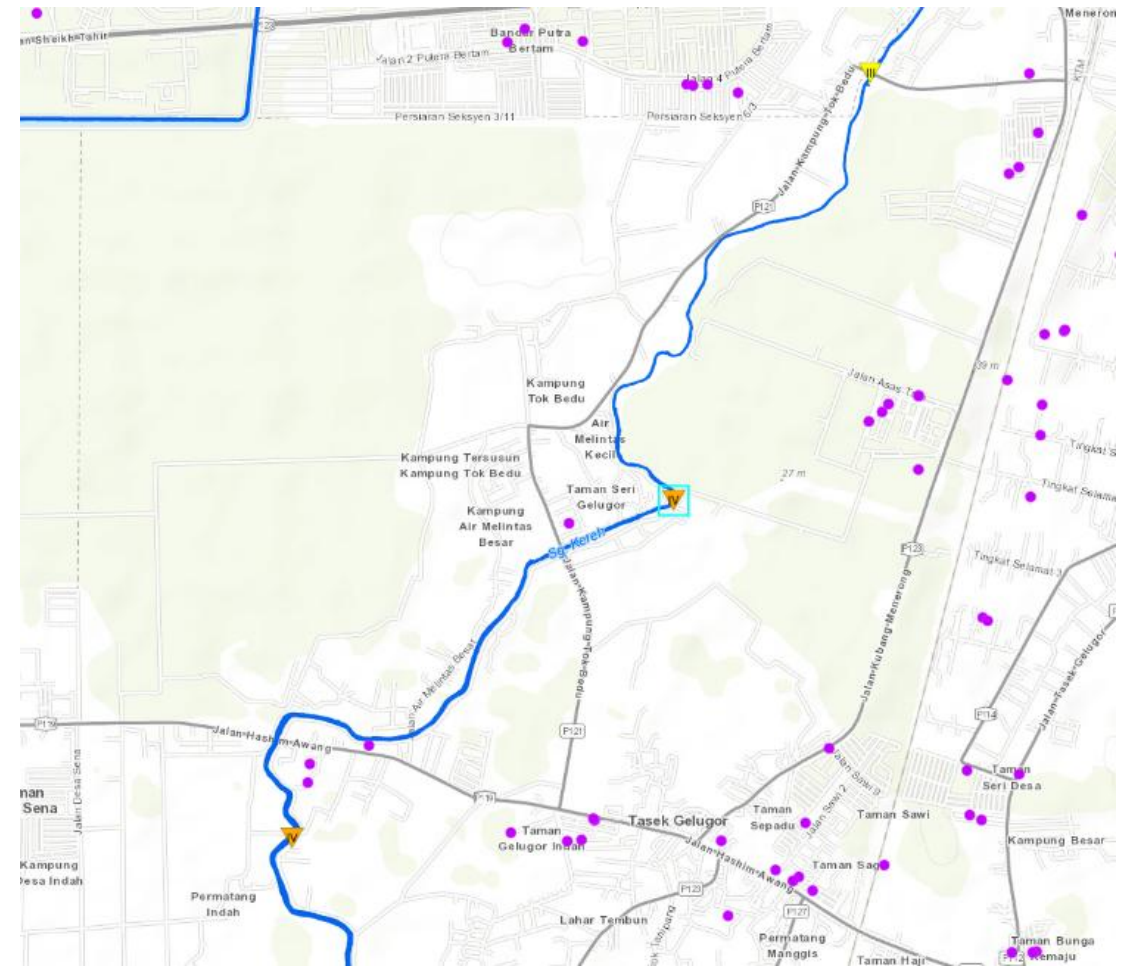
Station ID	Location	NH ₃ N (mg/L)	PO ₄ (mg/L)	Med (mg/L)	90 th (mg/L)
4 1PPRI007	Air Melintas, Perai, P.Pinang [Impact A]	25.2 Range: 0.97 – 61.3	15 Range: 0.41 – 45.3	NH ₃ N: 7.65 PO ₄ : 5.15	NH ₃ N: 21.04 PO ₄ : 10.201

Distance from sea (±km)	Possible Source	Lab verified
18.8	Fabrikasi dan pengacuan plastic barangan dapur, product makanan, kilang papan bergergaji	NH ₃ N: 25x: 24.9mg/L; 50x: 25.4mg/L PO ₄ : Over extreme value; 40x: 14.9mg/L; 50x: 15mg/L

Historical NPE

NPE LEVEL	Date	Parameter
1 2	20/7/2024	NH ₃ N: 22.2mg/l; PO ₄ : 15mg/L

	Station located at down/upstream	Reading at station
Downstream station	1PPRI006 (±2.9km)	NH ₃ N: 26.8mg/L PO ₄ : 17.3mg/L
Upstream station	1PPRI008 (±2.75km)	NH ₃ N: 8.91mg/L PO ₄ : 4.01mg/L
CRWQM	None	



Summary Extreme value NH₃N, PO₄

Station ID	Location	NH ₃ N (mg/L)	PO ₄ (mg/L)	Med (mg/L)	90 th (mg/L)
4 1PPRI007	Air Melintas, Perai, P.Pinang [Impact A]	25.2 Range: 0.97 – 61.3	15 Range: 0.41 – 45.3	NH ₃ N: 7.65 PO ₄ : 5.15	NH ₃ N: 21.04 PO ₄ : 10.201

Distance from sea (±km)	Possible Source	Lab verified
18.8	Fabrikasi dan pengacuan plastic barangan dapur, product makanan, kilang papan bergergaji	NH ₃ N: 25x: 24.9mg/L; 50x: 25.4mg/L PO ₄ : Over extreme value; 40x: 14.9mg/L; 50x: 15mg/L

Historical NPE

NPE LEVEL	Date	Parameter
1 2	20/7/2024	NH ₃ N: 22.2mg/l; PO ₄ : 15mg/L

	Station located at down/upstream	Reading at station
Downstream station	1PPRI006 (±2.9km)	NH ₃ N: 26.8mg/L PO ₄ : 17.3mg/L
Upstream station	1PPRI008 (±2.75km)	NH ₃ N: 8.91mg/L PO ₄ : 4.01mg/L
CRWQM	None	

Water Quality Index (WQI)

48

CLASS IV

1PPRI007 (2PR 08)
River: Sg. AIR MELINTAS
Basin: Sg. PERAI
State: P.PINANG
Sampling Date: 8/1/2025 10:53:00

Sampling Frequency

No. 2	No. 3	No. 4	No. 5	No. 6	No. 1
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Water Quality

IN SITU

Parameter	Concentration / Unit	Sub Index
Dissolved Oxygen	4.189 mg/L	-
Dissolved Oxygen	53.786 % Sat	55
pH	7.274	98
Conductivity	390.944 mS/cm	-
Salinity	0.185 ppt	-
Temperature	28.224 °C	-
Turbidity	50.510 NTU	-
Flowrate	0.1 m/s	-

Parameter	Concentration
BOD	20.000 mg/L
COD	70.000 mg/L
NH ₃ -N	25.200 mg/L
NH ₃ F	0.2461 mg/L
TSS	42.000 mg/L
DS	326.000 mg/L
TS	368.000 mg/L
As	0.004 mg/L
Cd	<0.001 mg/L
Cr	<0.001 mg/L
Hg	<0.0001 mg/L
Pb	0.002 mg/L
Zn	0.125 mg/L
Ca	11.000 mg/L
Mg	4.7000 mg/L
Na	13.300 mg/L
K	20.600 mg/L
Fe	2.390 mg/L
Cyanide	<0.050 mg/L
Cl	21.000 mg/L
NO ₃	0.300 mg/L
PO ₄	15.000 mg/L
MBAS	<0.050 mg/L
O&G	3.000 mg/L
E. Coli	460000.000 cfu/100ml
Total Coliform	940000.000 cfu/100ml

Summary Extreme value NH₃N, PO₄

Station ID	Location	NH ₃ N (mg/L)	PO ₄ (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
4 1PPRI007	Air Melintas, Perai, P.Pinang [Impact A]	25.2 Range: 0.97 – 61.3	15 Range: 0.41 – 45.3	NH ₃ N: 7.65 PO ₄ : 5.15	NH ₃ N: 21.04 PO ₄ : 10.201	18.8	Fabrikasi dan pengacuan plastic barangan dapur, product makanan, kilang papan bergergaji	NH ₃ N: 25x: 24.9mg/L; 50x: 25.4mg/L PO ₄ : Over extreme value; 40x: 14.9mg/L; 50x: 15mg/L

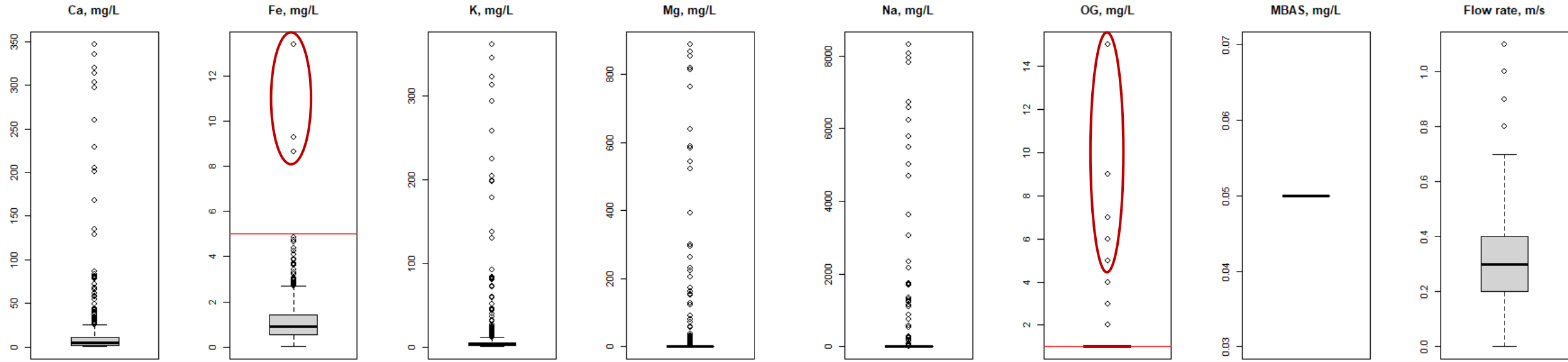
Historical NPE

	NPE LEVEL	Date	Parameter
1	2	20/7/2024	NH ₃ N: 22.2mg/l; PO ₄ : 15mg/L

	Station located at down/upstream	Reading at station
Downstream station	1PPRI006 (±2.9km)	NH ₃ N: 26.8mg/L PO ₄ : 17.3mg/L
Upstream station	1PPRI008 (±2.75km)	NH ₃ N: 8.91mg/L PO ₄ : 4.01mg/L
CRWQM	None	

RIVER WATER QUALITY (MRWQM) DATA FOR SELECTED PARAMETERS (1PPRI007) FROM JULY 2017 TO JANUARY 2025

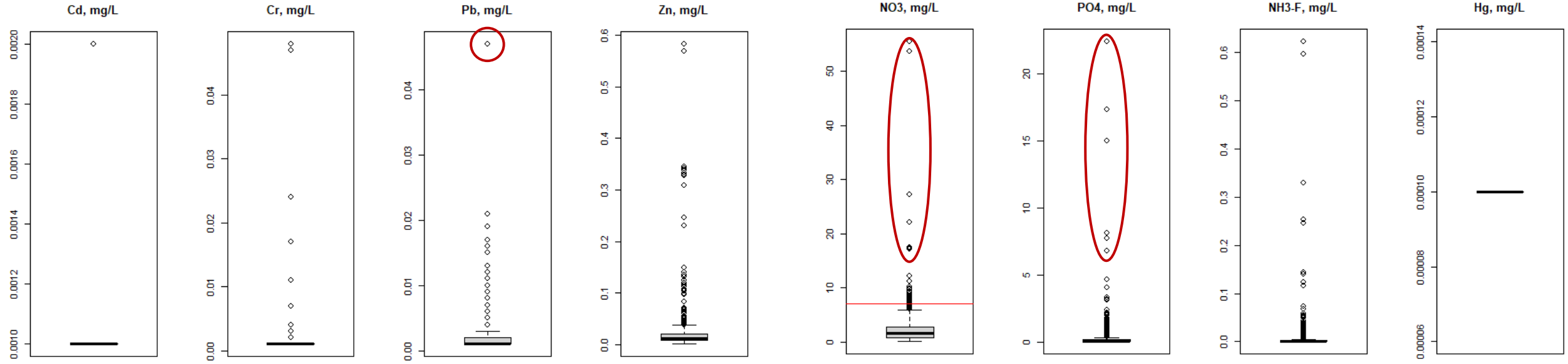
DATE TIME	Conc. DO (mg/L)	Sat. DO (%)	pH	Conductivity (µS/cm)	Salinity (ppt)	Turbidity (NTU)	Flowrate (m/s)	BOD (mg/L)	COD (mg/L)	NH ₃ N (mg/L)	NH ₃ (mg/L)	TSS (mg/L)	DS (mg/L)	K (mg/L)	Cl (mg/L)	NO ₃ (mg/L)	PO ₄ (mg/L)	O&G (mg/L)	E. Coli (cfu/100ml)	TC (cfu/100ml)	WQI (Index)
08/01/2025 10:53 AM	4.189	53.786	7.274	390.944	0.185	50.510	0.1	20.000	70.000	25.200	30.600	42.000	326.000	20.600	21.000	0.300	15.000	3.000	460000.000	940000.000	48
09/11/2024 11:53 AM	3.563	48.114	6.706	151.037	0.069	74.025	0.2	10.000	34.000	5.300	6.440	30.000	126.000	5.900	12.000	0.580	1.900	1.000	15000.000	62000.000	56
06/09/2024 10:34 AM	2.676	34.916	7.015	284.801	0.134	33.354	0.2	10.000	31.000	14.100	17.100	33.000	246.000	14.600	17.000	0.180	7.870	2.000	730000.000	1270000.000	52
20/07/2024 11:02 AM	3.689	48.824	7.280	407.993	0.193	34.297	0.2	12.000	69.000	22.200	27.000	23.000	354.000	21.300	31.000	0.360	15.000	3.000	100000.000	310000.000	51
10/05/2024 11:47 AM	4.496	61.496	7.093	200.755	0.093	61.441	TR	6.000	48.000	8.550	TR	27.000	178.000	9.800	15.000	0.100	TR	TR	TR	620000.000	62
11/03/2024 11:24 AM	4.838	63.452	7.073	165.870	0.077	34.824	0.2	11.000	33.000	5.820	7.070	24.000	141.000	6.700	11.000	0.020	3.070	3.000	30000.000	260000.000	61
10/01/2024 10:28 AM	4.814	61.321	6.962	169.674	0.079	37.115	0.2	5.000	18.000	7.650	9.290	20.000	146.000	6.800	11.000	0.800	3.520	<1.000	31000.000	103000.000	67



Extreme value Fe: 3 stn

1. 4TTGG010 (Nerus, Terengganu, Terengganu) [Impact B]: 8.64mg/L; Range: 0.06 – 33.4mg/L; Med.: 2.65mg/L; 90th: 10.44mg/L; Lab verified: Over extreme value; Repeated: 7.82mg/L
2. 6QLPR003 (Lupar, Lupar, Sarawak) [Ambient]: 13.39mg/L; Range: 0.161 – 29.7mg/L; Med.: 2.22mg/L; 90th: 12.22mg/L; Lab verified: sample is highly dark brownish; Repeated: 14.78mg/L
3. 6QSWK013 (Samarahan, Sarawak, Sarawak) [Ambient]: 9.26mg/L; Range: 0.013 – 31.6mg/L; Med.: 8.15mg/L; 90th: 20.474mg/L; Lab verified: sample is highly dark brownish; Repeated: 10.51mg/L

Extreme value O&G: 7 stn



Extreme value Pb: 1 stn

- 3JSGT004 (Segget, Segget, Johor) [Ambient]:
 0.047mg/L; Range: <0.001 – 0.004mg/L; Med.:
 0.001mg/L; 90th: 0.002mg/L; Lab verified: Repeated:
 0.045mg/L; 0.044mg/L

Extreme value NO₃: 8 stn

Extreme value PO₄: 7 stn

Extreme value NO₃

	Station ID	Location	NO ₃ (mg/L) Range: <0.01 – 57.4	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
1	1KPRI018	Jarak, Perai, Kedah [Ambient]	17.1 Range: <0.01 – 57.4	16.5	39.3	31	Kilang papan bergergaji	NO ₃ : Lab verified
2	1KPRI019	Jarak, Perai, Kedah [Ambient]	17.2 Range: <0.01 – 59.8	15.3	39.38	31.7	None	NO ₃ : Lab verified
3	1KPRI020	Seluang Bawah, Perai, Kedah [Impact B]	27.2 Range: 0.79 – 121	37.8	90.48	21.8	Kilang papan bergergaji, operation of sewage treatment, kilang papan lapis dan venir, kontena dan kotak kertas tidak bercetak, fabrikasi dan pengacuan plastik, pelbagai industry	NO ₃ : Lab verified
4	1KPRI021	Seluang, Perai, Kedah [Impact B]	53.6 Range: <0.01 – 292	61.2	140.4	33.8	Loji pengolahan kumbahan IWK, pemasangan dan pengubahsuaian kenderaan bermotor, operation of sewage treatment, research and development and other natural science and engineering, etc	NO ₃ : Over extreme value; 20x: 49.6mg/L, 25x: 57.7mg/L
5	1KPRI024	Jarak, Perai, Kedah [Ambient]	22 Range: <0.01 – 57.2	18.2	43.16	37.4	Farmasi utk kegunaan manusia dan haiwan, kilang biskut, fabrikasi logam, pembuatan dadah dan ubatan termasuk produk biologi, etc	NO ₃ : Lab verified
6	1PPRI010	Seluang Bawah, Perai, P.Pinang [Impact B]	55.5 Range: 1.84 – 271	65.6	174.8	37.2	Kawasan Perusahaan Kulim: Pembuatan aksesori dan alat ganti kenderaan bermotor, operation of sewage treatment, pengilangan produk kayu dan gabus, farmasi utk kegunaan manusia dan haiwan, pengilangan logam, fabrikasi dan pengacuan plastik: barangan dapur, etc	NO ₃ : Over extreme value; 20x: 55.9mg/L 25x: 55.1mg/L
7	3JJHR007	Bukit Besar, Johor, Johor [Impact A]	17.2 Range: <0.01 – 102	8.26	54.78	49.9	Ladang kelapa sawit, workshop, permix dan pengkuarian kilang minyak kelapa sawit mentah	NO ₃ : Repeated: 17mg/L
8	4CBTM001	Ringlet, Pahang, Pahang [Ambient]	17.4 Range: <0.01 – 36	24.3	28.72	Upstream	Workshop, sewage treatment plant, perumahan, pertanian bunga, etc	NO ₃ : Direct result (Out calibration 18.7mg/L)

Extreme value PO₄

	Station ID	Location	PO ₄ (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
1	1KMUD002	Jerong, Muda, Kedah [Impact A]	22.4 Range: <0.01 -23.2	0.425	6.226	39.9	Pembiakan dan pemeliharaan ayam / itik / angsa; Kilang getah SMR (Standarad Malaysian Rubber); Workshop; etc	PO ₄ : Exceed extreme value 40x: 22.2mg/L; 50x: 22.6mg/L
2	1KPRI024	Jarak, Perai, Kedah [Ambient]	7.72 Range: 0.23 – 106	8.38	30.43	37.4	Farmasi utk kegunaan manusia dan haiwan, kilang biskut, fabrikasi logam, pembuatan dadah dan ubatan termasuk produk biologi, etc	PO ₄ : 20x: 7.38mg/L; 25x: 8.06mg/L
3	1PJRU007	Rambai, Juru, P.Pinang [Impact B]	6.8 Range: 0.13 – 16.2	5.205	10.55	14.8	Operation of sewage treatment, food production, fabrikasi logam, etc	PO ₄ : 20x: 6.88mg/L; 25x: 6.72mg/L
4	1PJRU008	Permatang Rawa, Juru, P.Pinang [Impact A]	6.8 Range: 0.14 – 41.5	6.33	11.38	17.2	Produk tanah liat, pengkuarian granit, Jubin batu bata konkrit dan plaster konkrit campuran, operation of sewage treatment, fabrikasi logam, etc	PO ₄ : 20x: 6.88mg/L; 25x: 6.72mg/L
5	1PPRI006	Kereh, Perai, P.Pinang [Ambient]	17.3 Range: 0.57 – 35.7	7.42	26.56	16.1	Bahan plastic, kilang papan keras, pengilangan semula logam, IWK	PO ₄ : Over extreme value; 40x: 18mg/L; 50x: 16.7mg/L
6	1PPRI007	Air Melintas, Perai, P.Pinang [Impact A]	15 Range: 0.41 – 45.3	5.15	10.201	18.8	Fabrikasi dan pengacuan plastic barangan dapur, product makanan, kilang papan bergergaji	PO ₄ : Over extreme value; 40x: 14.9mg/L; 50x: 15mg/L
7	3JJHR007	Bukit Besar, Johor, Johor [Impact A]	8.12 Range: 0.36 – 14.7	5.035	9.254	49.9	Ladang kelapa sawit, workshop, permix dan pengkuarian kilang minyak kelapa sawit mentah	PO ₄ : 20x: 8.09mg/L; 25x: 8.15mg/L

Extreme value PO₄

	Station ID	Location	PO ₄ (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
1	1KMUD002	Jerong, Muda, Kedah [Impact A]	22.4 Range: <0.01 -23.2	0.425	6.226	39.9	Pembiakan dan pemeliharaan ayam / itik / angsa; Kilang getah SMR (Standarad Malaysian Rubber); Workshop; etc	PO ₄ : Exceed extreme value 40x: 22.2mg/L; 50x: 22.6mg/L

	Station located at down/upstream	Reading at station
Downstream station	1KMUD003 (±12km)	PO ₄ : 0.25mg/L
Upstream station	-	-
CRWQM	Downstream: CR03K (±17.4km)	-



Extreme value PO₄

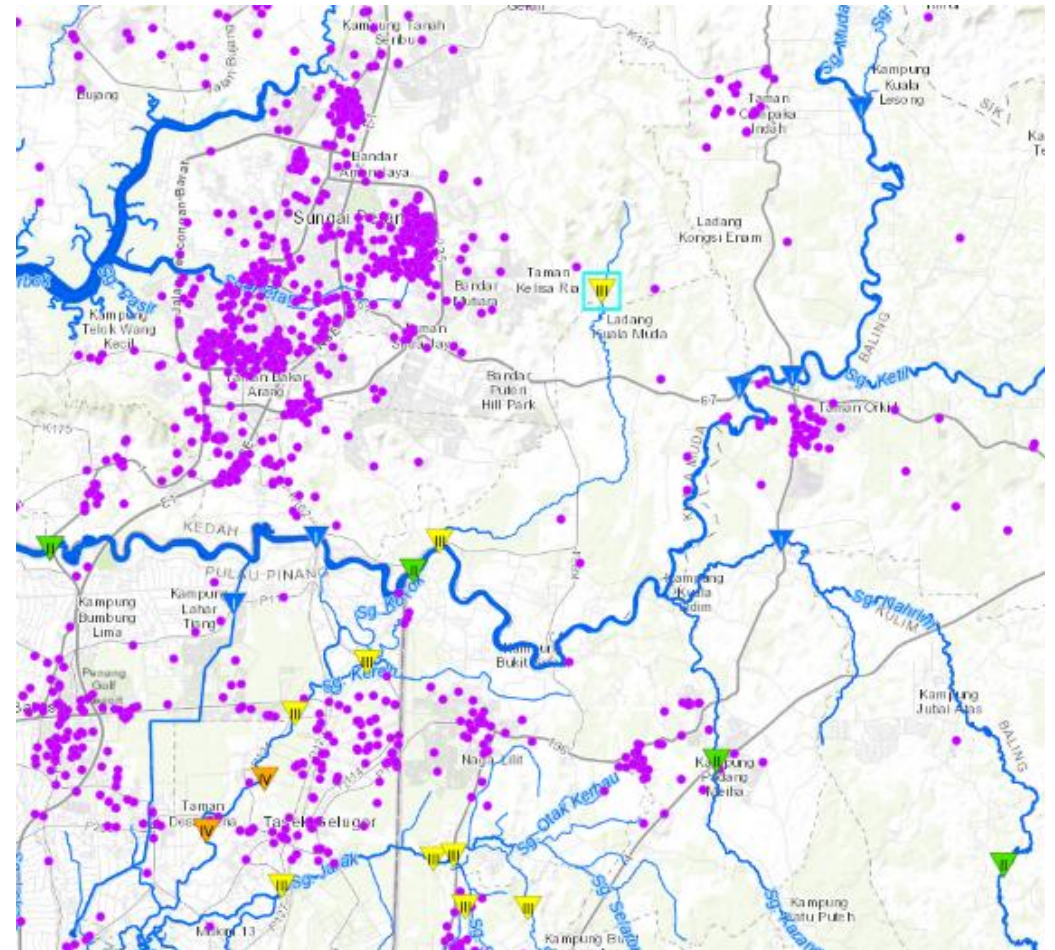
Station ID	Location	PO ₄ (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)
1 1KMUD002	Jerong, Muda, Kedah [Impact A]	22.4 Range: <0.01 -23.2	0.425	6.226	39.9

Possible Source	Lab verified
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Pembiakan dan pemeliharaan ayam / itik / angsa; Kilang getah SMR (Standard Malaysian Rubber); Workshop; etc

PO₄: Exceed extreme value 40x: 22.2mg/L; 50x: 22.6mg/L

	Station located at down/upstream	Reading at station
Downstream station	1KMUD003 (±12km)	PO ₄ : 0.25mg/L
Upstream station	-	-
CRWQM	Downstream: CR03K (±17.4km)	-



Extreme value PO₄

	Station ID	Location	PO ₄ (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)
1	1KMUD002	Jerong, Muda, Kedah [Impact A]	22.4 Range: <0.01 -23.2	0.425	6.226	39.9

Possible Source	Lab verified
Pembiakan dan pemeliharaan ayam / itik / angsa; Kilang getah SMR (Standard Malaysian Rubber); Workshop; etc	PO ₄ : Exceed extreme value 40x: 22.2mg/L; 50x: 22.6mg/L

	Station located at down/upstream	Reading at station
Downstream station	1KMUD003 (±12km)	PO ₄ : 0.25mg/L
Upstream station	-	-
CRWQM	Downstream: CR03K (±17.4km)	-

Water Quality Index (WQI)

73
CLASS III

1KMUD002 (2MD02)
 River: Sg. JERONG
 Basin: Sg. MUDA
 State: KEDAH
 Sampling Date: 19/1/2025 10:20:00

Sampling Frequency

No. 2	No. 3	No. 4	No. 5	No. 6	No. 1

Water Quality

IN SITU

Parameter	Concentration / Unit	Sub Index
Dissolved Oxygen	4.990 mg/L	-
Dissolved Oxygen	61.227 % Sat	66
pH	6.992	100
Conductivity	245.222 mS/cm	-
Salinity	0.115 ppt	-
Temperature	25.720 °C	-
Turbidity	20.514 NTU	-
Flowrate	0.1 m/s	-

Parameter	Concentration
BOD	5.000 mg/L
COD	31.000 mg/L
NH ₃ -N	0.870 mg/L
NH ₃ F	0.0037 mg/L
TSS	17.000 mg/L
DS	203.000 mg/L
TS	220.000 mg/L
As	0.004 mg/L
Cd	<0.001 mg/L
Cr	<0.001 mg/L
Hg	<0.0001 mg/L
Pb	<0.001 mg/L
Zn	0.007 mg/L
Ca	8.700 mg/L
Mg	6.7000 mg/L
Na	3.400 mg/L
K	44.500 mg/L
Fe	1.880 mg/L
Cyanide	<0.050 mg/L
Cl	7.000 mg/L
NO ₃	7.170 mg/L
PO ₄	22.400 mg/L
MBAS	<0.050 mg/L
O&G	2.000 mg/L
E. Coli	800.000 cfu/100ml
Total Coliform	36000.000 cfu/100ml

Extreme value PO₄

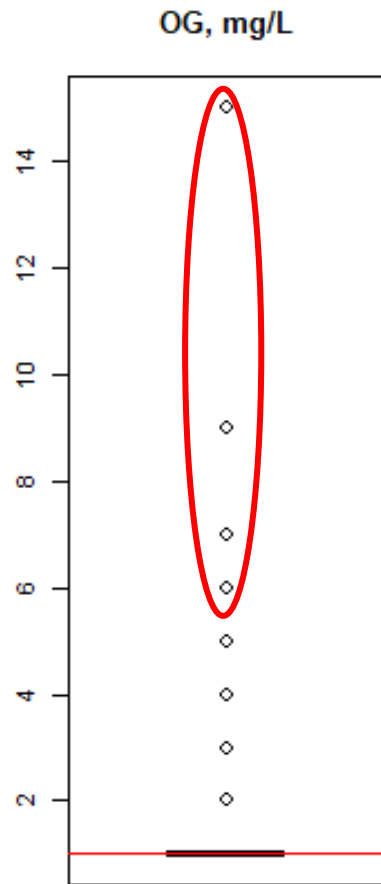
Station ID	Location	PO ₄ (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
1 1KMUD002	Jerong, Muda, Kedah [Impact A]	22.4 Range: <0.01 -23.2	0.425	6.226	39.9	Pembiakan dan pemeliharaan ayam / itik / angsa; Kilang getah SMR (Standarad Malaysian Rubber); Workshop; etc	PO ₄ : Exceed extreme value 40x: 22.2mg/L; 50x: 22.6mg/L

	Station located at down/upstream	Reading at station
Downstream station	1KMUD003 (±12km)	PO ₄ : 0.25mg/L
Upstream station	-	-
CRWQM	Downstream: CR03K (±17.4km)	-

RIVER WATER QUALITY (MRWQM) DATA FOR SELECTED PARAMETERS (1KMUD002) FROM JULY 2017 TO JANUARY 2025

DATE TIME	Conc. DO (mg/L)	Sat. DO (%)	pH	Conductivity (µS/cm)	Salinity (ppt)	Turbidity (NTU)	Flowrate (m/s)	BOD (mg/L)	COD (mg/L)	NH ₃ N (mg/L)	NH ₃ (mg/L)	TSS (mg/L)	DS (mg/L)	K (mg/L)	Cl (mg/L)	NO ₃ (mg/L)	PO ₄ (mg/L)	O&G (mg/L)	E. Coli (cfu/100ml)	TC (cfu/100ml)	WQI (Index)
19/01/2025 10:20 AM	4.990	61.227	6.992	245.222	0.115	20.514	0.1	5.000	31.000	0.870	1.050	17.000	203.000	44.500	7.000	7.170	22.400	2.000	800.000	36000.000	73
15/11/2024 10:11 AM	5.390	68.341	6.427	96.261	0.044	19.737	0.2	2.000	7.000	1.380	1.670	10.000	87.000	3.100	12.000	2.480	0.080	<1.000	1000.000	22000.000	81
04/09/2024 10:16 AM	5.003	63.671	6.690	98.619	0.045	43.233	0.1	3.000	15.000	<0.010	<0.010	22.000	85.000	4.000	10.000	2.250	0.410	1.000	6000.000	52000.000	85
08/07/2024 10:18 AM	3.952	50.550	6.912	152.995	0.071	27.751	0.2	4.000	28.000	4.730	5.740	18.000	128.000	5.600	11.000	1.680	0.700	1.000	12000.000	41500.000	63
18/05/2024 10:16 AM	5.433	70.454	7.088	142.565	0.066	43.909	TR	5.000	11.000	<0.010	TR	22.000	128.000	15.900	11.000	7.660	TR	TR	TR	64000.000	86
24/03/2024 10:14 AM	2.805	36.827	6.889	202.947	0.094	45.862	0.2	12.000	50.000	4.760	5.780	33.000	180.000	8.600	16.000	0.270	0.320	2.000	50000.000	470000.000	49
14/01/2024 10:04 AM	3.886	48.487	6.724	138.788	0.064	20.935	0.2	5.000	13.000	2.390	2.900	8.000	120.000	5.000	12.000	3.520	0.320	<1.000	500.000	29000.000	69

O&G >1mg/L



Oil & Grease >1mg/L

- **100** station
- State: **All state except Kelantan, Melaka, Perlis, Sabah, Sarawak**
- Extreme value O&G: 7 stn

O&G concentration	No. of Station
< 1mg/L	480
1 mg/L	106
2 – 5mg/L	94
6 – 10mg/L	5
11- 15mg/L	1
> 15mg/L	0
Total station	686

Extreme value O&G

	Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
1	1PPNG004	Titi Kerawang, Pinang, P.Pinang [Ambient]	9 Range: <1 – 5	1	2	1.92	Workshop, storage and warehouse, kilang mee, kontena dan kotak keras bercetak, etc	O&G: Exceed extreme value
2	1PPNG013	Dondang, Pinang, P.Pinang [Impact A]	5 Range: <1 – 4	1	3	9.82	produk fabrikasi logam, operation of sewage treatment, etc	O&G: Over extreme value
3	2BKLG013	Kerayong, Klang, Selangor [Ambient]	7 Range: <1 – 7	1	5.8	74.5	Restaurant, jubin batu bata konkrit dan plaster konkrit campuran, workshop, operation of sewage treatment, etc	O&G: Exceed extreme value
4	2WKLG006	Bunos, Klang, WPKL [Impact B]	15 Range: <1 – 272	3	13.8	61.9	Pembinaan loji rawatan air buangan kumbahan bandar, workshop, hospital, pembangunan perumahan, etc	O&G: Exceed extreme value
5	3JJHR007	Bukit Besar, Johor, Johor [Impact A]	6 Range: <1 – 7	1	3	49.9	Ladang kelapa sawit, workshop, permix dan pengkuarian kilang minyak kelapa sawit mentah	O&G: Over extreme value
6	3JSGT004	Segget, Segget, Johor [Ambient]	7 Range: <1 – 4	1	3	43.6	Hotels, etc	O&G: Exceed extreme value
7	3JTRU011	Sengkuang, Tebrau, Johor [Ambient]	9 Range: <1 – 17	1	7.9	1.28	Loji PPR Sri Stulang, Farmasi utk kegunaan manusia dan haiwan, workshop, petrol lubricating oils, bahan-bahan plastik	O&G: Exceed extreme value

Extreme value O&G

	Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
2	1PPNG013	Dondang, Pinang, P.Pinang [Impact A]	5 Range: <1 – 4	1	3	9.82	produk fabrikasi logam, operation of sewage treatment, etc	O&G: Over extreme value

	Station located at down/upstream	Reading at station
Downstream station	1PPNG011 (±3.26km)	O&G: 4mg/L
Upstream station	1PPNG012 (±0.28km)	O&G: 4mg/L
CRWQM	None	



Extreme value O&G

	Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)
2	1PPNG013	Dondang, Pinang, P.Pinang [Impact A]	5 Range: <1 – 4	1	3	9.82

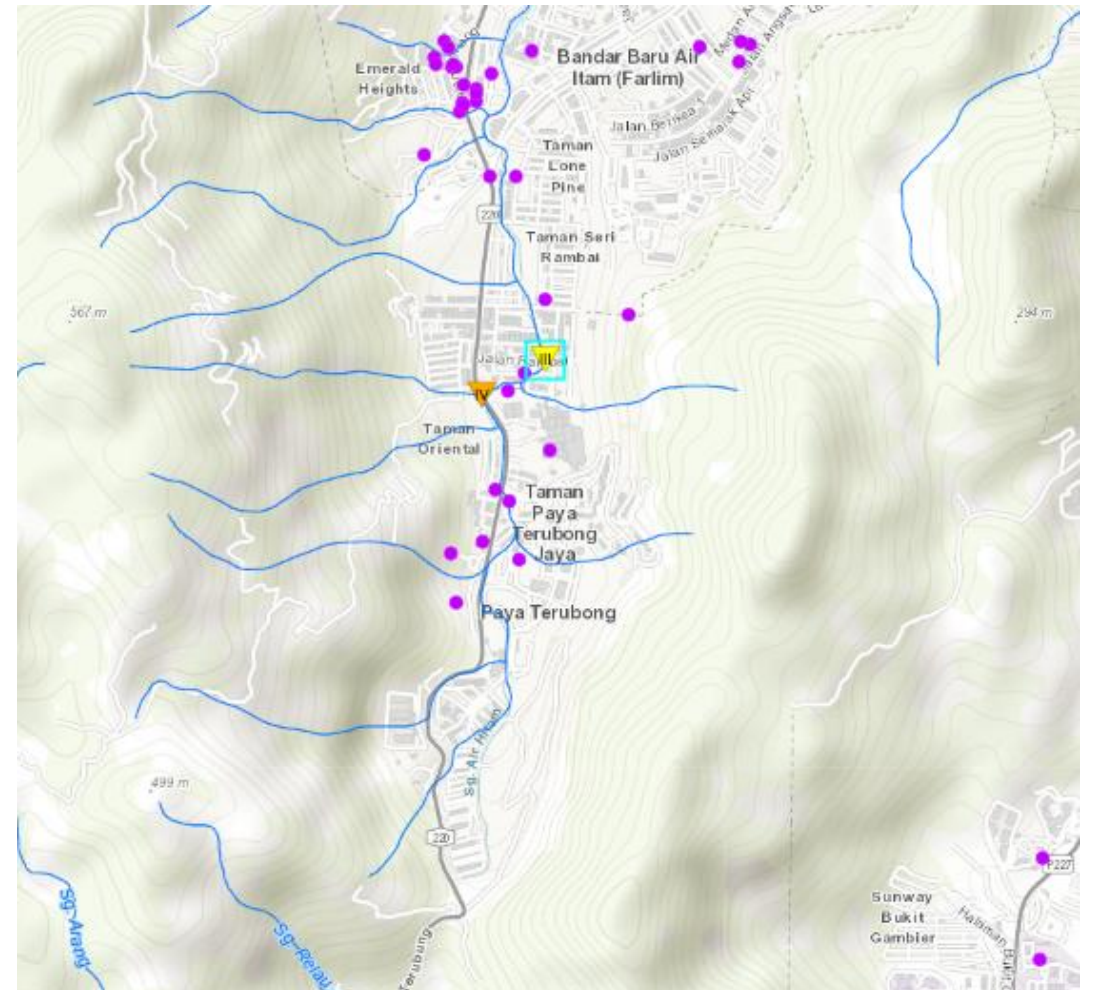
Possible Source

produk fabrikasi logam, operation of sewage treatment, etc

Lab verified

O&G: Over extreme value

	Station located at down/upstream	Reading at station
Downstream station	1PPNG011 (±3.26km)	O&G: 4mg/L
Upstream station	1PPNG012 (±0.28km)	O&G: 4mg/L
CRWQM	None	



Extreme value O&G

	Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)
2	1PPNG013	Dondang, Pinang, P.Pinang [Impact A]	5 Range: <1 – 4	1	3	9.82

Possible Source

produk fabrikasi logam, operation of sewage treatment, etc

Lab verified

O&G: Over extreme value

	Station located at down/upstream	Reading at station
Downstream station	1PPNG011 (±3.26km)	O&G: 4mg/L
Upstream station	1PPNG012 (±0.28km)	O&G: 4mg/L
CRWQM	None	

Current River Water Quality Index (WQI)

52
WQI

CLASS III

1PPNG013

River: DONDANG

Basin: PINANG

State: P.PINANG

Sampling Date: 24/01/2025 15:53:00

Sampling Frequency

No. 2 No. 3 No. 4 No. 5 No. 6 **No. 1**

Water Quality

IN-SITU

Parameter	Concentration	Sub Index
Dissolved Oxygen	3.128 mg/L	-
Dissolved Oxygen	40.399 %	35
pH	7.009	99
Conductivity	161.118 µS/cm	-
Salinity	0.075 ppt	-
Temperature	28.604 °C	-
Turbidity	11.822 NTU	-
Flowrate	0.2 m/s	-

Parameter	Concentration	Sub Index
BOD	14 mg/L	49
COD	51 mg/L	44
NH ₃ -N	2.77 mg/L	15
NH ₃ -F	0.0152 mg/L	-
TSS	14 mg/L	89
DS	136 mg/L	-
TS	150 mg/L	-
As	0.005 mg/L	-
Cd	<0.001 mg/L	-
Cr	<0.001 mg/L	-
Hg	<0.0001 mg/L	-
Pb	<0.001 mg/L	-
Zn	0.02 mg/L	-
Ca	11.5 mg/L	-
Mg	0.9 mg/L	-
Na	14.6 mg/L	-
K	4.6 mg/L	-
Fe	0.77 mg/L	-
Cyanide	<0.05 mg/L	-
Cl	10 mg/L	-
NO ₃	1.69 mg/L	-
PO ₄	0.81 mg/L	-
MBAS	<0.05 mg/L	-
O&G	5 mg/L	-
E. Coli	290000 cfu/100ml	-
Total Coliform	1380000 cfu/100ml	-

Extreme value O&G

Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
2 1PPNG013	Dondang, Pinang, P.Pinang [Impact A]	5 Range: <1 – 4	1	3	9.82	produk fabrikasi logam, operation of sewage treatment, etc	O&G: Over extreme value

	Station located at down/upstream	Reading at station
Downstream station	1PPNG011 (±3.26km)	O&G: 4mg/L
Upstream station	1PPNG012 (±0.28km)	O&G: 4mg/L
CRWQM	None	

RIVER WATER QUALITY (MRWQM) DATA FOR SELECTED PARAMETERS (1PPNG013) FROM JULY 2017 TO JANUARY 2025

DATE TIME	Conc. DO (mg/L)	Sat. DO (%)	pH	Conductivity (µS/cm)	Salinity (ppt)	Turbidity (NTU)	Flowrate (m/s)	BOD (mg/L)	COD (mg/L)	NH ₃ N (mg/L)	NH ₃ (mg/L)	TSS (mg/L)	DS (mg/L)	K (mg/L)	Cl (mg/L)	NO ₃ (mg/L)	PO ₄ (mg/L)	O&G (mg/L)	E. Coli (cfu/100ml)	TC (cfu/100ml)	WQI (Index)
24/01/2025 03:53 PM	3.128	40.399	7.009	161.118	0.075	11.822	0.2	14.000	51.000	2.770	3.360	14.000	136.000	4.600	10.000	1.690	0.810	5.000	290000.000	1380000.000	52
11/11/2024 03:36 PM	6.140	79.171	7.136	130.903	0.060	11.907	0.3	6.000	33.000	1.510	1.830	12.000	110.000	4.200	7.000	4.750	0.450	2.000	750000.000	1730000.000	76
11/09/2024 03:48 PM	4.597	59.809	6.983	150.158	0.069	11.371	0.2	11.000	39.000	0.620	0.760	12.000	130.000	4.400	10.000	1.960	0.510	3.000	400000.000	960000.000	69
18/07/2024 03:46 PM	3.441	45.025	7.219	205.617	0.096	14.513	0.2	25.000	90.000	4.450	5.410	18.000	177.000	5.300	18.000	0.790	1.580	3.000	390000.000	1520000.000	43
13/05/2024 03:28 PM	3.564	47.412	7.231	138.683	0.064	10.993	TR	12.000	47.000	1.910	TR	16.000	127.000	4.200	12.000	2.290	TR	TR	TR	2940000.000	59
18/03/2024 03:23 PM	2.899	38.021	7.023	167.800	0.078	27.888	0.2	18.000	61.000	4.170	5.060	26.000	149.000	4.600	10.000	0.890	1.180	4.000	5900000.000	14200000.000	45
21/01/2024 03:18 PM	3.252	41.409	7.039	132.817	0.061	12.533	0.2	11.000	43.000	3.000	3.640	8.000	116.000	3.300	10.000	1.960	0.890	3.000	2200000.000	5800000.000	56

Extreme value O&G

	Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
3	2BKLG013	Kerayong, Klang, Selangor [Ambient]	7 Range: <1 – 7	1	5.8	74.5	Restaurant, jubin batu bata konkrit dan plaster konkrit campuran, workshop, operation of sewage treatment, etc	O&G: Exceed extreme value

	Station located at down/upstream	Reading at station
Downstream station	2WKLG058 (±2.88km)	O&G: 3mg/L
Upstream station	None	None
CRWQM	Upstream: CR12W (±13.6km)	None

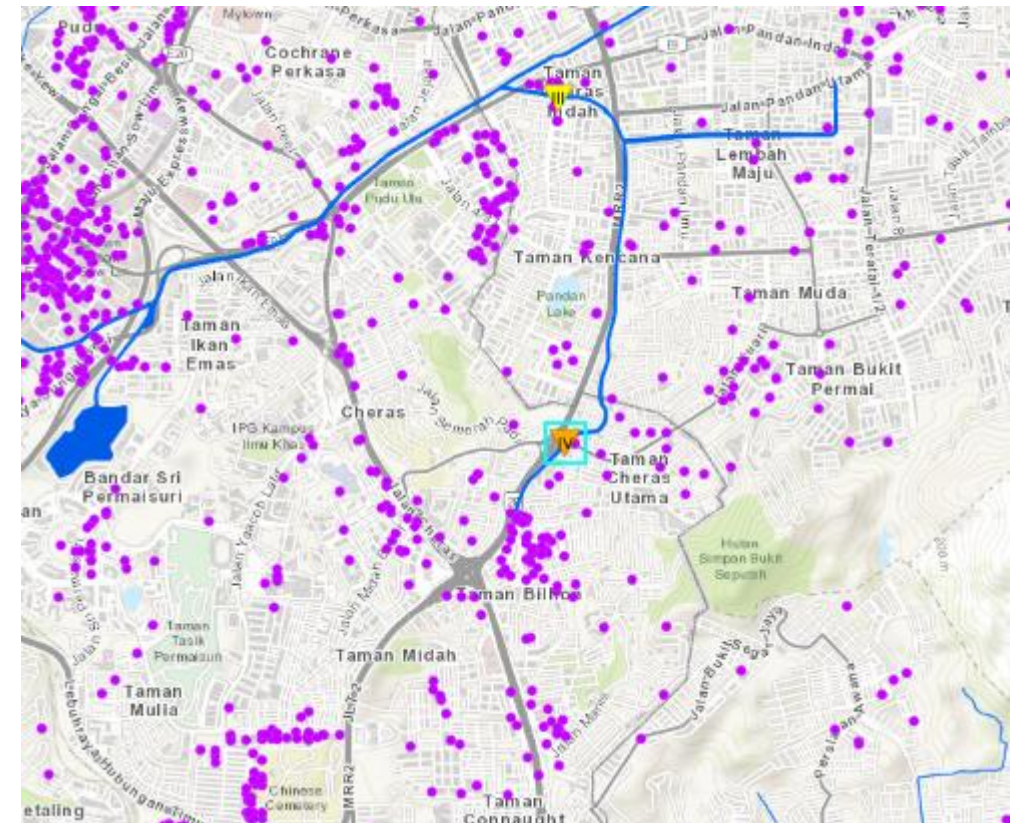


Extreme value O&G

	Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)
3	2BKLG013	Kerayong, Klang, Selangor [Ambient]	7 Range: <1 – 7	1	5.8	74.5

Possible Source	Lab verified
Restaurant, jubin batu bata konkrit dan plaster konkrit campuran, workshop, operation of sewage treatment, etc	O&G: Exceed extreme value

	Station located at down/upstream	Reading at station
Downstream station	2WKL058 (±2.88km)	O&G: 3mg/L
Upstream station	None	None
CRWQM	Upstream: CR12W (±13.6km)	None



Extreme value O&G

	Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)
3	2BKLG013	Kerayong, Klang, Selangor [Ambient]	7 Range: <1 – 7	1	5.8	74.5

Possible Source	Lab verified
Restaurant, jubin batu bata konkrit dan plaster konkrit campuran, workshop, operation of sewage treatment, etc	O&G: Exceed extreme value

	Station located at down/upstream	Reading at station
Downstream station	2WKLG058 (±2.88km)	O&G: 3mg/L
Upstream station	None	None
CRWQM	Upstream: CR12W (±13.6km)	None

Current River Water Quality Index (WQI)

43
WQI

CLASS IV

2BKLG013
 River: KERAYONG
 Basin: KLANG
 State: SELANGOR
 Sampling Date: 15/01/2025 12:25:00

Sampling Frequency

No. 2	No. 3	No. 4	No. 5	No. 6	No. 1
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Water Quality

IN-SITU

Parameter	Concentration	Sub Index
Dissolved Oxygen	3.296 mg/L	-
Dissolved Oxygen	42.562 %	39
pH	7.131	99
Conductivity	286.946 µS/cm	-
Salinity	0.135 ppt	-
Temperature	28.573 °C	-
Turbidity	23 NTU	-
Flowrate	0.1 m/s	-

Parameter	Concentration	Sub Index
BOD	30 mg/L	18
COD	77 mg/L	28
NH ₃ -N	7.08 mg/L	0
NH ₃ F	0.0511 mg/L	-
TSS	15 mg/L	89
DS	245 mg/L	-
TS	260 mg/L	-
As	0.023 mg/L	-
Cd	<0.001 mg/L	-
Cr	<0.001 mg/L	-
Hg	<0.0001 mg/L	-
Pb	<0.001 mg/L	-
Zn	0.015 mg/L	-
Ca	20.5 mg/L	-
Mg	1.4 mg/L	-
Na	20 mg/L	-
K	5.7 mg/L	-
Fe	1.46 mg/L	-
Cyanide	<0.05 mg/L	-
Cl	23 mg/L	-
NO ₃	0.64 mg/L	-
PO ₄	0.69 mg/L	-
MBAS	<0.05 mg/L	-
O&G	7 mg/L	-
E. Coli	520000 cfu/100ml	-
Total Coliform	1650000 cfu/100ml	-

Extreme value O&G

Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified	
3	2BKLG013	Kerayong, Klang, Selangor [Ambient]	7 Range: <1 – 7	1	5.8	74.5	Restaurant, jubin batu bata konkrit dan plaster konkrit campuran, workshop, operation of sewage treatment, etc	O&G: Exceed extreme value

	Station located at down/upstream	Reading at station
Downstream station	2WKLG058 (±2.88km)	O&G: 3mg/L
Upstream station	None	None
CRWQM	Upstream: CR12W (±13.6km)	None

RIVER WATER QUALITY (MRWQM) DATA FOR SELECTED PARAMETERS (2BKLG013) FROM JULY 2017 TO JANUARY 2025

DATE TIME	Conc. DO (mg/L)	Sat. DO (%)	pH	Conductivity (µS/cm)	Salinity (ppt)	Turbidity (NTU)	Flowrate (m/s)	BOD (mg/L)	COD (mg/L)	NH ₃ N (mg/L)	NH ₃ (mg/L)	TSS (mg/L)	DS (mg/L)	K (mg/L)	Cl (mg/L)	NO ₃ (mg/L)	PO ₄ (mg/L)	O&G (mg/L)	E. Coli (cfu/100ml)	TC (cfu/100ml)	WQI (Index)
15/01/2025 12:25 PM	3.296	42.562	7.131	286.946	0.135	23.000	0.1	30.000	77.000	7.080	8.590	15.000	245.000	5.700	23.000	0.640	0.690	7.000	520000.000	1650000.000	43
11/11/2024 01:14 PM	5.103	67.724	7.069	163.765	0.076	26.551	0.1	6.000	30.000	4.290	5.210	29.000	144.000	3.800	12.000	2.780	0.340	4.000	490000.000	1540000.000	66
11/09/2024 10:40 AM	3.978	51.101	7.207	286.473	0.135	11.423	0.1	19.000	54.000	3.420	4.160	17.000	244.000	6.900	27.000	0.470	1.360	<1.000	630000.000	1580000.000	52
12/07/2024 12:54 PM	4.764	61.232	7.139	282.413	0.133	14.641	0.1	8.000	32.000	3.890	4.720	18.000	219.000	6.500	19.000	3.450	0.540	1.000	150000.000	2350000.000	63
16/05/2024 04:56 PM	3.964	50.931	7.231	302.239	0.142	13.047	TR	10.000	40.000	5.460	TR	10.000	232.000	5.200	26.000	0.260	TR	TR	TR	3540000.000	58
18/03/2024 11:52 AM	3.516	47.274	7.237	298.452	0.140	10.068	0.2	14.000	51.000	5.780	7.020	12.000	241.000	6.200	21.000	3.390	1.020	3.000	1900000.000	6100000.000	53
10/01/2024 02:12 PM	4.307	56.255	7.109	305.960	0.144	14.445	0.1	33.000	68.000	5.540	6.730	23.000	240.000	6.100	23.000	3.960	0.340	6.000	415000.000	1710000.000	46

Extreme value O&G

Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
4	2WKL006 Bunos, Klang, WPKL [Impact B]	15 Range: <1 – 272	3	13.8	61.9	Pembinaan loji rawatan air buangan kumbahan bandar, workshop, hospital, pembangunan perumahan, etc	O&G: Exceed extreme value

Historical NPE			
	NPE LEVEL	Date	Parameter
1	NPE 2	13/1/2022	BOD: 679mg/L; COD: 1970mg/L
2	NPE 2	10/11/2022	O&G: 35mg/L
3	NPE 2	12/7/2024	O&G: 5mg/L
4	Makluman	10/9/2024	O&G: 12mg/L
5	NPE 2	11/11/2024	O&G: 20mg/L

	Station located at down/upstream	Reading at station
Downstream station	2WKL002 (±3.63km)	O&G: 2mg/L
Upstream station	2WKL039 (±2.53km)	O&G: <1mg/L
CRWQM	Downstream: CR12W (±9.83km)	None



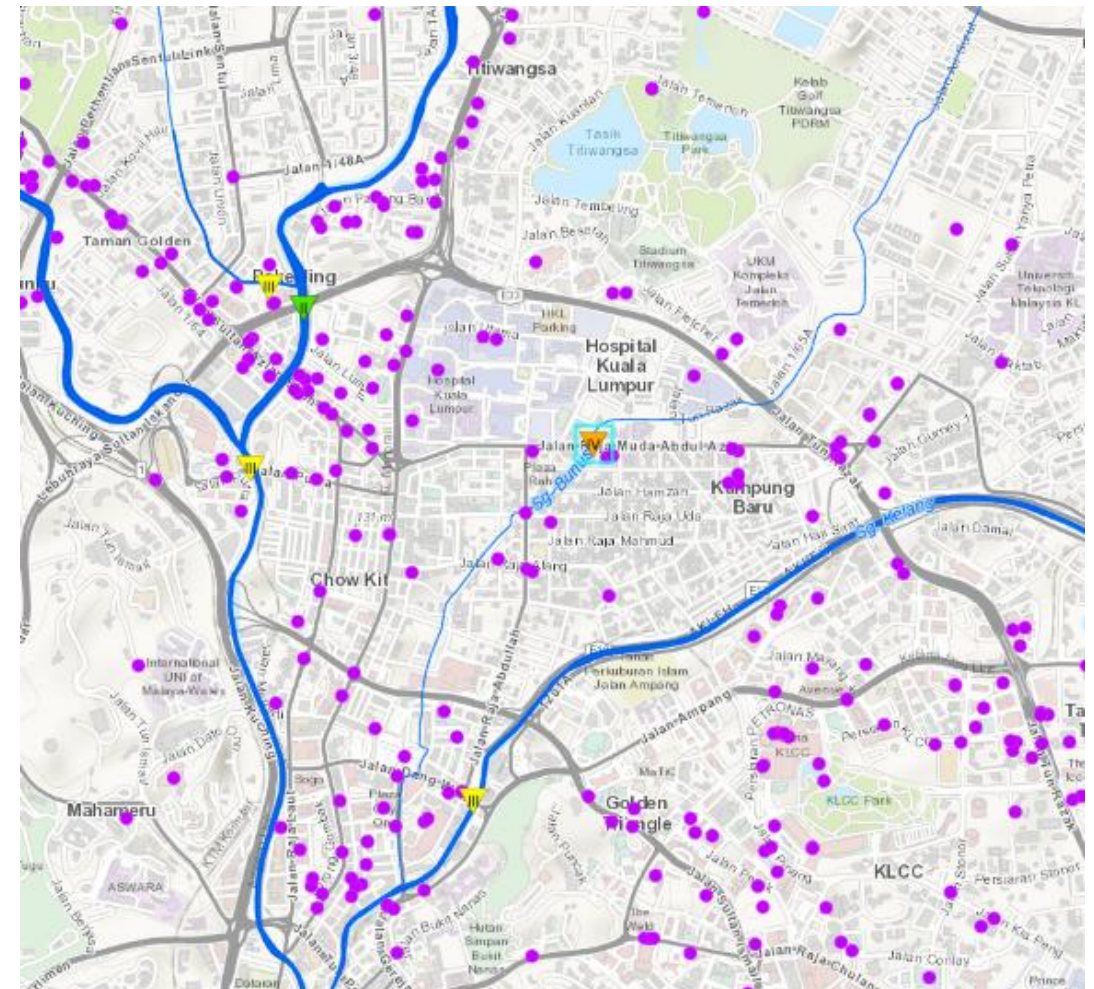
Extreme value O&G

Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)
4 2WKLG006	Bunos, Klang, WPKL [Impact B]	15 Range: <1 – 272	3	13.8	61.9

Possible Source	Lab verified
Pembinaan loji rawatan air buangan kumbahan bandar, workshop, hospital, pembangunan perumahan, etc	O&G: Exceed extreme value

	Station located at down/upstream	Reading at station
Downstream station	2WKLG002 (±3.63km)	O&G: 2mg/L
Upstream station	2WKLG039 (±2.53km)	O&G: <1mg/L
CRWQM	Downstream: CR12W (±9.83km)	None

Historical NPE			
	NPE LEVEL	Date	Parameter
1	NPE 2	13/1/2022	BOD: 679mg/L; COD: 1970mg/L
2	NPE 2	10/11/2022	O&G: 35mg/L
3	NPE 2	12/7/2024	O&G: 5mg/L
4	Makluman	10/9/2024	O&G: 12mg/L
5	NPE 2	11/11/2024	O&G: 20mg/L



Extreme value O&G

Parameter	Concentration	Sub Index
BOD	33 mg/L	14
COD	74 mg/L	29
NH ₃ -N	2.07 mg/L	28
NH ₃ -F	0.0062 mg/L	-
TSS	18 mg/L	87
DS	184 mg/L	-
TS	202 mg/L	-
As	0.006 mg/L	-
Cd	<0.001 mg/L	-
Cr	<0.001 mg/L	-
Hg	<0.0001 mg/L	-
Pb	<0.001 mg/L	-
Zn	0.014 mg/L	-
Ca	24.7 mg/L	-
Mg	1.7 mg/L	-
Na	10.3 mg/L	-
K	4.2 mg/L	-
Fe	0.61 mg/L	-
Cyanide	<0.05 mg/L	-
Cl	18 mg/L	-
NO ₃	0.2 mg/L	-
PO ₄	0.12 mg/L	-
MBAS	<0.05 mg/L	-
O&G	15 mg/L	-
E. Coli	480000 cfu/100ml	-
Total Coliform	1680000 cfu/100ml	-

Current River Water Quality Index (WQI)

47

WQI

CLASS IV

2WKLG006
 River: BUNOS
 Basin: KLANG
 State: WPKL
 Sampling Date: 15/01/2025 10:47:00

Sampling Frequency

No. 2	No. 3	No. 4	No. 5	No. 6	No. 1
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Water Quality

IN-SITU

Parameter	Concentration	Sub Index
Dissolved Oxygen	3.57 mg/L	-
Dissolved Oxygen	45.191 %	42
pH	6.781	99
Conductivity	225.334 μS/cm	-
Salinity	0.105 ppt	-
Temperature	27.458 °C	-
Turbidity	11.167 NTU	-
Flowrate	0.2 m/s	-

Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)
4	Bunos, Klang, WPKL [Impact B]	15	3	13.8	61.9

Possible Source	Lab verified
Pembinaan loji rawatan air buangan kumbahan bandar, workshop, hospital, pembangunan perumahan, etc	O&G: Exceed extreme value

	Station located at down/upstream	Reading at station
Downstream station	2WKLG002 (±3.63km)	O&G: 2mg/L
Upstream station	2WKLG039 (±2.53km)	O&G: <1mg/L
CRWQM	Downstream: CR12W (±9.83km)	None

Historical NPE			
	NPE LEVEL	Date	Parameter
1	NPE 2	13/1/2022	BOD: 679mg/L; COD: 1970mg/L
2	NPE 2	10/11/2022	O&G: 35mg/L
3	NPE 2	12/7/2024	O&G: 5mg/L
4	Makluman	10/9/2024	O&G: 12mg/L
5	NPE 2	11/11/2024	O&G: 20mg/L

Extreme value O&G

Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
4	2WKLG006 Bunos, Klang, WPKL [Impact B]	15 Range: <1 – 272	3	13.8	61.9	Pembinaan loji rawatan air buangan kumbahan bandar, workshop, hospital, pembangunan perumahan, etc	O&G: Exceed extreme value

	Station located at down/upstream	Reading at station
Downstream station	2WKLG002 (±3.63km)	O&G: 2mg/L
Upstream station	2WKLG039 (±2.53km)	O&G: <1mg/L
CRWQM	Downstream: CR12W (±9.83km)	None

RIVER WATER QUALITY (MRWQM) DATA FOR SELECTED PARAMETERS (2WKLG006) FROM JULY 2017 TO JANUARY 2025

DATE TIME	Conc. DO (mg/L)	Sat. DO (%)	pH	Conductivity (µS/cm)	Salinity (ppt)	Turbidity (NTU)	Flowrate (m/s)	BOD (mg/L)	COD (mg/L)	NH ₃ N (mg/L)	NH ₃ (mg/L)	TSS (mg/L)	DS (mg/L)	K (mg/L)	Cl (mg/L)	NO ₃ (mg/L)	PO ₄ (mg/L)	O&G (mg/L)	E. Coli (cfu/100ml)	TC (cfu/100ml)	WQI (Index)
15/01/2025 10:47 AM	3.570	45.191	6.781	225.334	0.105	11.167	0.2	33.000	74.000	2.070	2.520	18.000	184.000	4.200	18.000	0.200	0.120	15.000	480000.000	1680000.000	47
11/11/2024 11:01 AM	3.690	47.252	6.939	219.276	0.102	10.493	0.3	10.000	48.000	2.820	3.430	20.000	188.000	5.200	20.000	0.080	0.260	20.000	520000.000	1740000.000	57
10/09/2024 10:45 AM	2.291	29.274	6.645	215.639	0.101	7.078	0.2	10.000	28.000	1.660	2.020	17.000	186.000	5.300	22.000	0.160	0.280	12.000	1900000.000	11100000.000	57
12/07/2024 10:46 AM	3.279	41.080	6.618	222.067	0.104	26.766	0.3	12.000	53.000	1.250	1.520	26.000	176.000	5.300	15.000	0.520	0.140	5.000	185000.000	645000.000	57
16/05/2024 02:52 PM	3.889	49.635	7.124	234.701	0.110	12.724	TR	15.000	37.000	1.580	TR	12.000	174.000	3.900	14.000	0.200	TR	TR	TR	1810000.000	60
18/03/2024 10:34 AM	3.326	43.198	7.025	216.585	0.101	67.087	0.3	17.000	39.000	1.230	1.490	64.000	153.000	5.000	10.000	1.830	0.070	4.000	2200000.000	1460000.000	54
10/01/2024 12:38 PM	3.783	48.943	6.793	246.514	0.115	35.843	0.3	43.000	105.000	1.860	2.260	29.000	186.000	5.100	19.000	0.270	0.300	11.000	2900000.000	1570000.000	44

Extreme value O&G

Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
5 3JJHR007	Bukit Besar, Johor, Johor [Impact A]	6 Range: <1 – 7	1	3	49.9	Ladang kelapa sawit, workshop, permix dan pengkuarian kilang minyak kelapa sawit mentah	O&G: Over extreme value

Historical NPE			
	NPE LEVEL	Date	Parameter
1	Makluman	13/9/2022	BOD: 41mg/L; COD: 120mg/L
2	Makluman	24/7/2024	BOD: 36mg/L; COD: 98mg/L; O&G: 5mg/L

	Station located at down/upstream	Reading at station
Downstream station	3JJHR009 (±7.22km)	O&G: 2mg/L
Upstream station	None	None
CRWQM	None	None



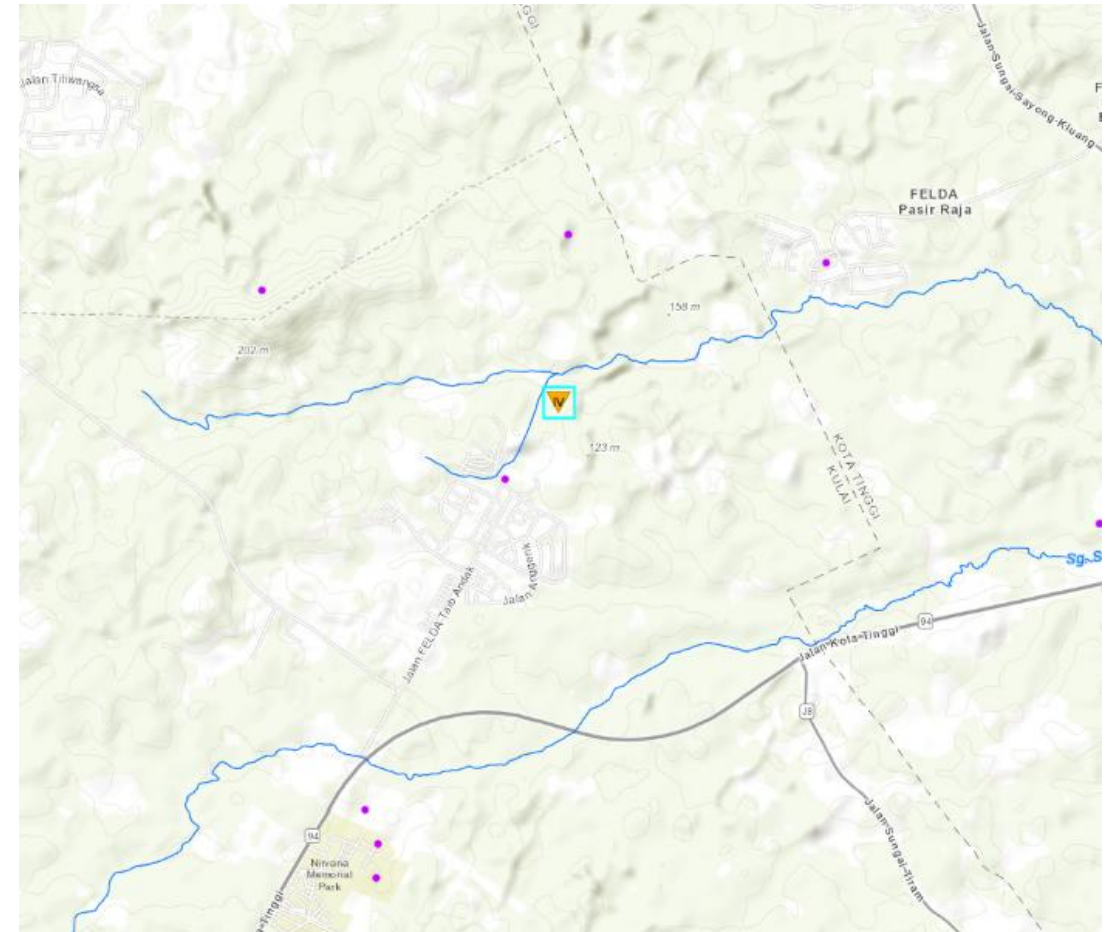
Extreme value O&G

	Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)
5	3JJHR007	Bukit Besar, Johor, Johor [Impact A]	6 Range: <1 – 7	1	3	49.9

Possible Source	Lab verified
Ladang kelapa sawit, workshop, permix dan pengkuarian kilang minyak kelapa sawit mentah	O&G: Over extreme value

Historical NPE			
	NPE LEVEL	Date	Parameter
1	Makluman	13/9/2022	BOD: 41mg/L; COD: 120mg/L
2	Makluman	24/7/2024	BOD: 36mg/L; COD: 98mg/L; O&G: 5mg/L

	Station located at down/upstream	Reading at station
Downstream station	3JJHR009 (±7.22km)	O&G: 2mg/L
Upstream station	None	None
CRWQM	None	None



Extreme value O&G

	Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)
5	3JJHR007	Bukit Besar, Johor, Johor [Impact A]	6 Range: <1 – 7	1	3	49.9

Possible Source	Lab verified
Ladang kelapa sawit, workshop, permix dan pengkuarian kilang minyak kelapa sawit mentah	O&G: Over extreme value

Historical NPE			
	NPE LEVEL	Date	Parameter
1	Makluman	13/9/2022	BOD: 41mg/L; COD: 120mg/L
2	Makluman	24/7/2024	BOD: 36mg/L; COD: 98mg/L; O&G: 5mg/L

	Station located at down/upstream	Reading at station
Downstream station	3JJHR009 (±7.22km)	O&G: 2mg/L
Upstream station	None	None
CRWQM	None	None

Current River Water Quality Index (WQI)

45
WQI

CLASS IV

3JJHR007
River: BUKIT BESAR
Basin: JOHOR
State: JOHOR
Sampling Date: 24/01/2025 09:24:00

Sampling Frequency

No. 2	No. 3	No. 4	No. 5	No. 6	No. 1
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Water Quality

IN-SITU

Parameter	Concentration	Sub Index
Dissolved Oxygen	3.354 mg/L	-
Dissolved Oxygen	42.001 %	38
pH	7.236	98
Conductivity	1011.383 µS/cm	-
Salinity	0.497 ppt	-
Temperature	26.723 °C	-
Turbidity	105.345 NTU	-
Flowrate	0.3 m/s	-

Parameter	Concentration	Sub Index
BOD	17 mg/L	41
COD	68 mg/L	33
NH ₃ N	9.1 mg/L	0
NH ₃ F	0.0733 mg/L	-
TSS	51 mg/L	72
DS	896 mg/L	-
TS	947 mg/L	-
As	0.002 mg/L	-
Cd	<0.001 mg/L	-
Cr	<0.001 mg/L	-
Hg	<0.0001 mg/L	-
Pb	0.001 mg/L	-
Zn	0.019 mg/L	-
Ca	23.7 mg/L	-
Mg	26.7 mg/L	-
Na	9 mg/L	-
K	199 mg/L	-
Fe	1 mg/L	-
Cyanide	<0.05 mg/L	-
Cl	83 mg/L	-
NO ₃	17.2 mg/L	-
PO ₄	8.12 mg/L	-
MBAS	<0.05 mg/L	-
O&G	6 mg/L	-
E. Coli	50000 cfu/100ml	-
Total Coliform	480000 cfu/100ml	-

Extreme value O&G

Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
5 3JJHR007	Bukit Besar, Johor, Johor [Impact A]	6 Range: <1 – 7	1	3	49.9	Ladang kelapa sawit, workshop, permix dan pengkuarian kilang minyak kelapa sawit mentah	O&G: Over extreme value

Historical NPE			
	NPE LEVEL	Date	Parameter
1	Makluman	13/9/2022	BOD: 41mg/L; COD: 120mg/L
2	Makluman	24/7/2024	BOD: 36mg/L; COD: 98mg/L; O&G: 5mg/L

	Station located at down/upstream	Reading at station
Downstream station	3JJHR009 (±7.22km)	O&G: 2mg/L
Upstream station	None	None
CRWQM	None	None

RIVER WATER QUALITY (MRWQM) DATA FOR SELECTED PARAMETERS (3JJHR007) FROM JULY 2017 TO JANUARY 2025

DATE TIME	Conc. DO (mg/L)	Sat. DO (%)	pH	Conductivity (µS/cm)	Salinity (ppt)	Turbidity (NTU)	Flowrate (m/s)	BOD (mg/L)	COD (mg/L)	NH ₃ N (mg/L)	NH ₃ (mg/L)	TSS (mg/L)	DS (mg/L)	K (mg/L)	Cl (mg/L)	NO ₃ (mg/L)	PO ₄ (mg/L)	O&G (mg/L)	E. Coli (cfu/100ml)	TC (cfu/100ml)	WQI (Index)
24/01/2025 09:24 AM	3.354	42.001	7.236	1011.383	0.497	105.345	0.3	17.000	68.000	9.100	11.100	51.000	896.000	199.000	83.000	17.200	8.120	6.000	50000.000	480000.000	45
26/11/2024 09:48 AM	2.592	33.035	7.093	732.967	0.355	56.951	0.3	16.000	56.000	14.600	17.700	43.000	702.000	170.000	72.000	4.290	4.300	4.000	7000.000	420000.000	44
13/09/2024 09:51 AM	4.988	63.402	7.120	716.668	0.347	33.580	0.2	10.000	44.000	0.030	0.040	18.000	642.000	157.000	78.000	60.100	4.820	3.000	2000.000	270000.000	75
24/07/2024 03:56 PM	4.810	64.416	8.046	1161.906	0.571	92.180	0.3	36.000	98.000	15.900	19.300	60.000	1063.000	243.000	127.000	18.900	7.680	5.000	10000.000	1090000.000	42
24/05/2024 07:17 AM	5.974	75.541	7.131	888.417	0.434	16.164	0.3	12.000	37.000	2.510	3.050	14.000	721.000	163.000	74.000	48.100	4.810	1.000	12000.000	790000.000	67
27/03/2024 11:14 AM	3.545	46.243	7.006	1108.503	0.545	34.491	TR	16.000	61.000	2.180	TR	26.000	817.000	91.700	356.000	4.030	TR	TR	TR	420000.000	53
24/01/2024 10:01 AM	5.311	66.519	6.955	686.590	0.332	59.944	0.2	7.000	45.000	0.330	0.400	39.000	543.000	117.000	60.000	44.000	2.470	2.000	30000.000	950000.000	72

Extreme value O&G

Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
7 3JTRU011	Sengkuang, Tebrau, Johor [Ambient]	9 Range: <1 – 17	1	7.9	1.28	Loji PPR Sri Stulang, Farmasi utk kegunaan manusia dan haiwan, workshop, petrol lubricating oils, bahan-bahan plastik	O&G: Exceed extreme value

Historical NPE			
	NPE LEVEL	Date	Parameter
1	NPE 2	3/5/2023	NH ₃ N: 21.4mg/L; O&G: 9mg/L
2	Makluman	14/7/2024	BOD: 57mg/L; COD: 149mg/L; O&G: 12mg/L
3	NPE 2	10/11/2024	O&G: 14mg/L

	Station located at down/upstream	Reading at station
Downstream station	None	None
Upstream station	None	None
CRWQM	None	None



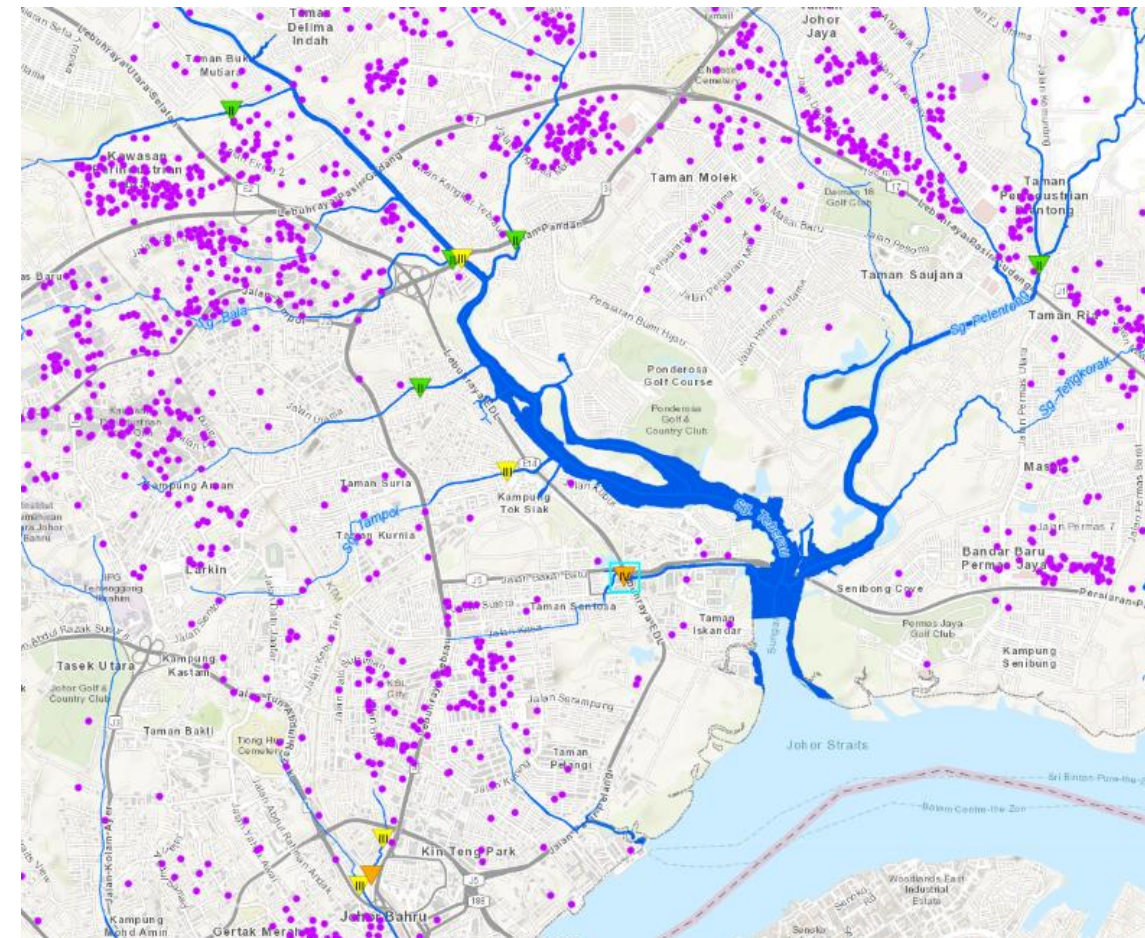
Extreme value O&G

7	Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)
	3JTRU011	Sengkuang, Tebrau, Johor [Ambient]	9 Range: <1 – 17	1	7.9	1.28

Possible Source	Lab verified
Loji PPR Sri Stulang, Farmasi utk kegunaan manusia dan haiwan, workshop, petrol lubricating oils, bahan-bahan plastik	O&G: Exceed extreme value

Historical NPE			
	NPE LEVEL	Date	Parameter
1	NPE 2	3/5/2023	NH ₃ N: 21.4mg/L; O&G: 9mg/L
2	Makluman	14/7/2024	BOD: 57mg/L; COD: 149mg/L; O&G: 12mg/L
3	NPE 2	10/11/2024	O&G: 14mg/L

	Station located at down/upstream	Reading at station
Downstream station	None	None
Upstream station	None	None
CRWQM	None	None



Extreme value O&G

	Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)
7	3JTRU011	Sengkuang, Tebrau, Johor [Ambient]	9 Range: <1 – 17	1	7.9	1.28

Possible Source	Lab verified
Loji PPR Sri Stulang, Farmasi utk kegunaan manusia dan haiwan, workshop, petrol lubricating oils, bahan-bahan plastik	O&G: Exceed extreme value

Historical NPE			
	NPE LEVEL	Date	Parameter
1	NPE 2	3/5/2023	NH ₃ N: 21.4mg/L; O&G: 9mg/L
2	Makluman	14/7/2024	BOD: 57mg/L; COD: 149mg/L; O&G: 12mg/L
3	NPE 2	10/11/2024	O&G: 14mg/L

	Station located at down/upstream	Reading at station
Downstream station	None	None
Upstream station	None	None
CRWQM	None	None

Current River Water Quality Index (WQI)

44
WQI

CLASS IV

3JTRU011
River: SENGKUANG
Basin: TEBRAU
State: JOHOR
Sampling Date: 15/01/2025 12:37:00

Sampling Frequency

No. 2	No. 3	No. 4	No. 5	No. 6	No. 1
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Water Quality

IN-SITU

Parameter	Concentration	Sub Index
Dissolved Oxygen	4.845 mg/L	-
Dissolved Oxygen	61.453 %	66
pH	6.819	99
Conductivity	282.47 µS/cm	-
Salinity	0.133 ppt	-
Temperature	27.561 °C	-
Turbidity	55.783 NTU	-
Flowrate	0.1 m/s	-

Parameter	Concentration	Sub Index
BOD	45 mg/L	5
COD	95 mg/L	19
NH ₃ -N	9.22 mg/L	0
NH ₃ F	0.0304 mg/L	-
TSS	17 mg/L	88
DS	329 mg/L	-
TS	346 mg/L	-
As	0.001 mg/L	-
Cd	<0.001 mg/L	-
Cr	<0.001 mg/L	-
Hg	<0.0001 mg/L	-
Pb	<0.001 mg/L	-
Zn	0.046 mg/L	-
Ca	22.6 mg/L	-
Mg	1.3 mg/L	-
Na	22.8 mg/L	-
K	7 mg/L	-
Fe	1.42 mg/L	-
Cyanide	<0.05 mg/L	-
Cl	31 mg/L	-
NO ₃	0.53 mg/L	-
PO ₄	1.34 mg/L	-
MBAS	<0.05 mg/L	-
O&G	9 mg/L	-
E. Coli	320000 cfu/100ml	-
Total Coliform	1550000 cfu/100ml	-

Extreme value O&G

Station ID	Location	O&G (mg/L)	Med (mg/L)	90 th (mg/L)	Distance from sea (±km)	Possible Source	Lab verified
7 3JTRU011	Sengkuang, Tebrau, Johor [Ambient]	9 Range: <1 – 17	1	7.9	1.28	Loji PPR Sri Stulang, Farmasi utk kegunaan manusia dan haiwan, workshop, petrol lubricating oils, bahan-bahan plastik	O&G: Exceed extreme value

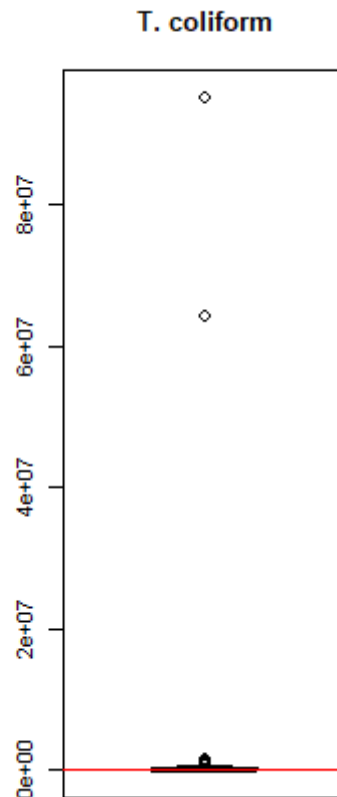
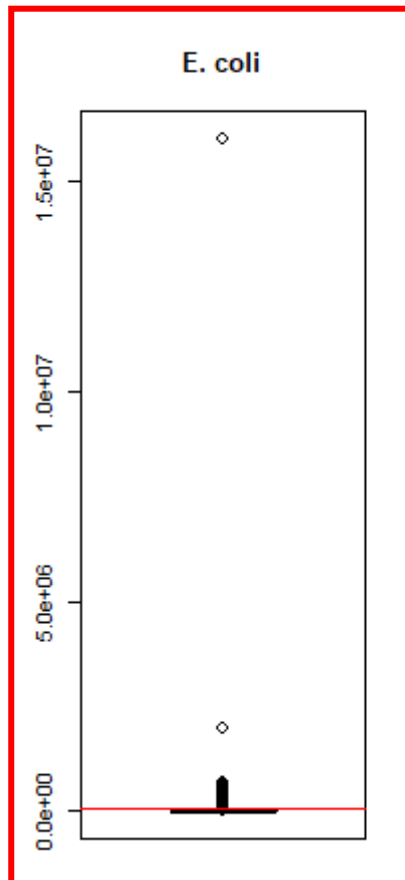
Historical NPE			
	NPE LEVEL	Date	Parameter
1	NPE 2	3/5/2023	NH ₃ N: 21.4mg/L; O&G: 9mg/L
2	Makluman	14/7/2024	BOD: 57mg/L; COD: 149mg/L; O&G: 12mg/L
3	NPE 2	10/11/2024	O&G: 14mg/L

	Station located at down/upstream	Reading at station
Downstream station	None	None
Upstream station	None	None
CRWQM	None	None

RIVER WATER QUALITY (MRWQM) DATA FOR SELECTED PARAMETERS (3JTRU011) FROM JULY 2017 TO JANUARY 2025

DATE TIME	Conc. DO (mg/L)	Sat. DO (%)	pH	Conductivity (µS/cm)	Salinity (ppt)	Turbidity (NTU)	Flowrate (m/s)	BOD (mg/L)	COD (mg/L)	NH ₃ N (mg/L)	NH ₃ (mg/L)	TSS (mg/L)	DS (mg/L)	K (mg/L)	Cl (mg/L)	NO ₃ (mg/L)	PO ₄ (mg/L)	O&G (mg/L)	E. Coli (cfu/100ml)	TC (cfu/100ml)	WQI (Index)
15/01/2025 12:37 PM	4.845	61.453	6.819	282.470	0.133	55.783	0.1	45.000	95.000	9.220	11.200	17.000	329.000	7.000	31.000	0.530	1.340	9.000	320000.000	1550000.000	44
10/11/2024 12:06 PM	2.993	40.227	6.927	241.539	0.113	49.535	0.3	35.000	102.000	8.190	9.940	32.000	234.000	6.800	24.000	0.360	0.990	14.000	430000.000	1820000.000	37
12/09/2024 12:07 PM	4.475	59.685	7.182	316.216	0.148	47.381	0.2	36.000	124.000	4.760	5.790	30.000	295.000	8.700	32.000	0.350	2.040	4.000	530000.000	1670000.000	43
14/07/2024 11:39 AM	3.128	40.682	7.232	350.956	0.166	46.512	0.3	57.000	149.000	14.700	17.900	30.000	329.000	9.300	34.000	0.230	3.320	12.000	2000000.000	43000000.000	33
18/05/2024 05:33 PM	3.125	40.384	6.798	328.901	0.155	37.242	0.2	36.000	126.000	9.590	11.600	22.000	283.000	6.100	31.000	0.100	1.710	4.000	230000.000	1620000.000	37
10/03/2024 03:08 PM	1.022	13.544	7.020	515.797	0.246	52.716	TR	6.000	19.000	17.500	TR	36.000	421.000	16.100	70.000	<0.010	TR	TR	TR	27600000.000	52
14/01/2024 12:03 PM	1.167	14.995	6.662	1228.638	0.607	14.957	0.0	39.000	85.000	9.900	12.000	20.000	447.000	8.500	82.000	0.060	1.690	3.000	490000.000	1620000.000	32

E.Coli > 50,000 cfu/100mL



E.Coli > 50,000 cfu/100mL

- **110** stations
- State: **All states except Kelantan, Melaka, Perlis, Sarawak, Terengganu**

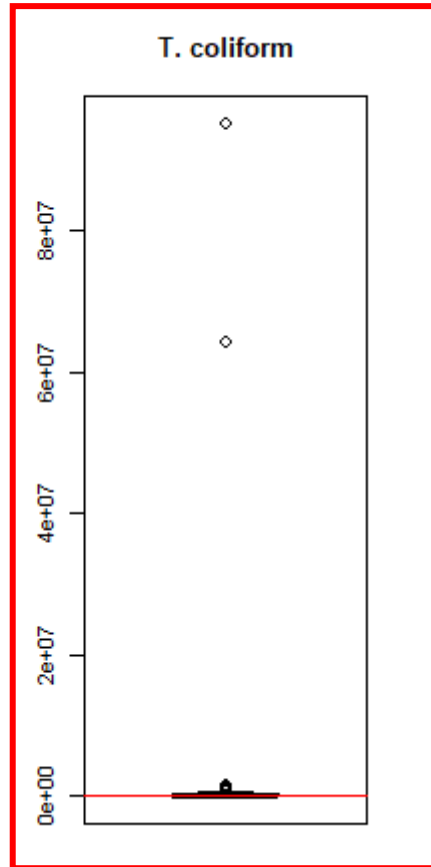
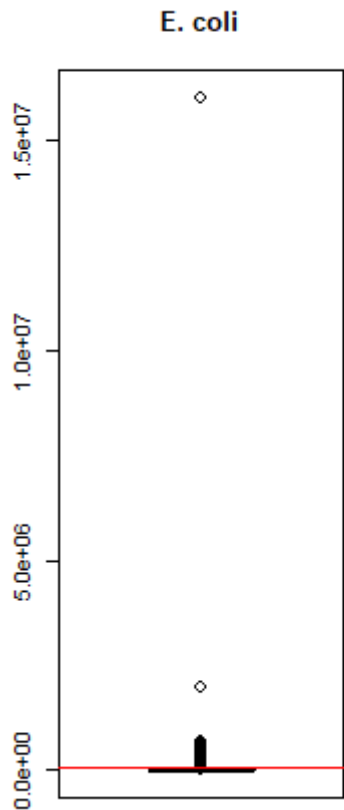
E.Coli concentration	No. of Station
< 1 cfu/100mL	0
1 - 500 cfu/100mL	179
501 – 5000 cfu/100mL	234
5001 – 10,000 cfu/100mL	84
10,001 – 50,000 cfu/100mL	79
> 50,000 cfu/100mL	110
Total station	686

T.Coliform >50,000cfu/100mL

T. Coliform >50,000 cfu/100mL

- **284** stations
- State: **All states except Kelantan, Melaka, Perlis**

T. Coliform concentration	No. of Station
< 1 cfu/100mL	0
1 - 500 cfu/100mL	3
501 – 5000 cfu/100mL	97
5001 – 10,000 cfu/100mL	49
10,001 – 50,000 cfu/100mL	253
> 50,000 cfu/100mL	284
Total station	686



E.Coli, T.Coliform > 50,000 cfu/100mL (Location at Muka Sauk)

Station ID	Location	E. Coli (cfu/100mL)	T. Coliform (cfu/100mL)	Med. (cfu/100mL)	90 th (cfu/100mL)	Distance from sea (±km)	Possible source
4CKTN020	Kuantan, Kuantan, Pahang [Ambient]	6000 Range: <1 – 52k	330000 Range: <1 -330k	EC: 700 TC: 26k	EC: 3000 TC: 73.6k	17.3	Operation of sewage treatment
4CRPN021	Keratong, Rompin, Pahang [Ambient]	5000 Range: <1 – 20k	300000 Range: 200 – 760k	EC: 500 TC: 29k	EC: 4000 TC: 112k	126.8	Kilang Minyak Kelapa Sawit mentah; Ladang kelapa sawit; etc

Thankyou

Prepared by

Reference



Fri 14/2/2025 2:33 PM

Fatin Nadzirah Binti Abdul Aziz <fatin.nadzirah@chemsain.com>

Query Data

To 'Aqilah Azmi'

Cc 'Lim Huey Chen'; fathin.karudin@chemsain.com; pstwproject@chemsain.com; 'Siti Nurhairunissa'; libau.barain@chemsain.com

i Follow up. Start by Friday, 14 February, 2025. Due by Friday, 14 February, 2025.

Dear Aqilah,

Please find my reply as below:

No.	Date Sampling	SAMPLE NO.	ID STN BARU	Parameter			Remarks
				As (mg/L)			
	20.01.2025	525010382-01	2BKLG016	0.116			No Transfer error Repeat Result = 0.117 mg/L Result ICP-OES = 0.124 mg/L

Thank you,

Best Regard 😊



FATIN NADZIRAH BINTI ABDUL AZIZ




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40150 Shah Alam, Selangor, Malaysia.

fatin.nadzirah@chemsain.com | 013-7337247

Query data:
Semenanjung Malaysia

 Reply
  Reply All
  Forward



Mon 17/2/2025 3:58 PM

Siti Nurhairunissa <siti.nurhairunissa@chemsain.com>

RE: Query Data

To 'Aqilah Azmi'

Cc winnie.ling@chemsain.com; 'Libau Barain'; 'Camelia Atep'

Dear Aqilah,

Kindly find the below repeated results .

Sarawak

No.	SAMPLE NO.	ID STN BARU	Parameter					Remarks
			BOD (mg/L)	COD (mg/L)	Cl (mg/L)			
	125010049-01	6QRJG021	3	175	2			The sample is highly in dark brownish. No Chloride correction needed. Repeated COD: 173 mg/L Repeated Cl: 1 mg/L
	125010048-01	6QRJG022	2	142	2			The sample is in brownish colour. No Chloride correction needed. Repeated COD: 139 mg/L Repeated Cl: 2 mg/L
			Fe (mg/L)					
	125010060-01	6QLPR003	13.39					The sample is highly in dark Repeated Fe: 14.78 mg/L
	125010001-01	6QSWK013	9.26					The sample is highly in dark brownish. Repeated Fe: 10.51 mg/L

Thanks.



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Query data:
Sabah & Sarawak