

ENVIRONMENT MONITORING REPORT FEBRUARY - 2026



ADANI VIZHINJAM PORT PVT. LTD. VIZHINJAM, KERALA

Report No.: SEAAL/EMR-AVPPL-2602

Report Date: 05th March, 2026

This Report presents the discussion and the results of Environmental Monitoring at Adani Vizhinjam Port. The monitoring has been conducted and the report has been prepared & issued by Standards Environmental & Analytical Laboratories, Ernakulum-683110 to M/s Adani Vizhinjam Port Pvt Limited, Thiruvananthapuram-695 014

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EMR-1
Executive Summary
Background:

As per the Environment Monitoring Plan prescribed in the EIA for Vizhinjam International Deepwater Multipurpose Seaport, continuous environment monitoring is being carried out by Standards Environmental & Analytical Laboratories (NABL Accredited testing laboratory vide certificate number TC12939, MoEF recognized Environmental Laboratory under the Environment (Protection) Act-1986) at specified frequency as mentioned in Service Order vide email dated 11.07.2022 awarded by Adani Vizhinjam Port Private Limited (AVPPL).

Environment Monitoring includes Ambient Air Quality, Ambient Noise, Marine Water (Physical, Chemical and Biological); Sediment (Physical, Chemical and Biological (Benthos), Ground Water (Physical, Chemical and Biological) and Surface Water (Physical, Chemical and Biological) was carried out at locations shown in following Google maps and co-ordinates as per the table below.

Co-ordinates of the Sampling Locations:

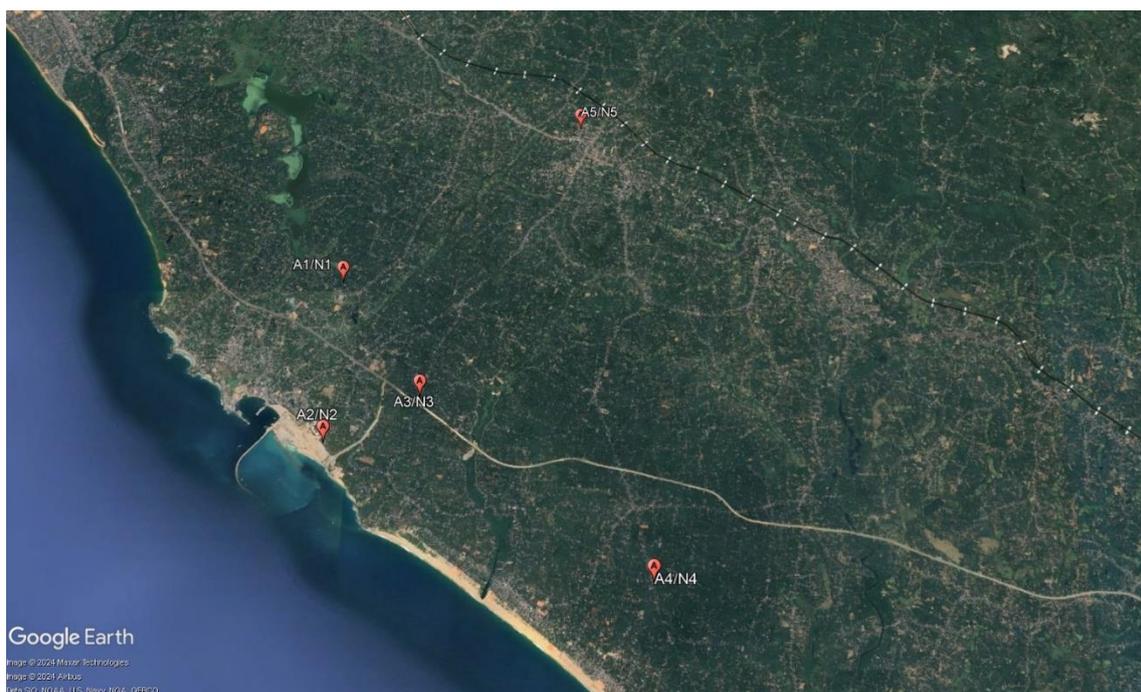
Sl. No.	Matrix	Location Name	Legend	Latitude	Longitude
1.	Ambient Air Quality	Venganoor	A1	8°23'55.10"N	77°00'12.19"E
		Port Site	A2	8°22'13.73"N	77°00'08.39"E
		Proposed Port Estate Area	A3	8°22'41.37"N	77°01'03.17"E
		Chani	A4	8°20'53.49"N	77°03'18.76"E
		Balarampuram	A5	8°25'43.85"N	77°02'38.79"E
2.	Ambient Noise	Venganoor	N1	8°23'55.10"N	77°00'12.19"E
		Port Site	N2	8°22'13.73"N	77°00'08.39"E
		Proposed Port Estate Area	N3	8°22'41.37"N	77°01'03.17"E
		Chani	N4	8°20'53.49"N	77°03'18.76"E
		Balarampuram	N5	8°25'43.85"N	77°02'38.79"E
3.	Marine Water	Near Kovalam Beach	M1	8°22'49.29"N	76°58'40.77"E
		Proposed Dredging Site	M2	8°22'31.11"N	76°58'57.92"E
		Port Basin	M3	8°22'06.96"N	76°59'27.85"E
		South of Breakwater	M4	8°21'51.07"N	77°00'00.21"E
		Inner Approach Channel	M5	8°21'12.68"N	77°00'35.14"E
		Kovalam Beach	M6	8°23'08.16"N	76°58'26.09"E
4.	Marine	Near Kovalam Beach	MS1	8°22'49.29"N	76°58'40.77"E

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Sl. No.	Matrix	Location Name	Legend	Latitude	Longitude
	Sediment	Proposed Dredging Site	MS2	8°22'31.11"N	76°58'57.92"E
		Port Basin	MS3	8°22'06.96"N	76°59'27.85"E
		South of Breakwater	MS4	8°21'51.07"N	77°00'00.21"E
		Inner Approach Channel	MS5	8°21'12.68"N	77°00'35.14"E
		Kovalam Beach	MS6	8°23'08.16"N	76°58'26.09"E
5.	Ground Water	Port Site	G1	8°22'03.72"N	77°00'16.92"E
		Proposed Port Estate Area	G2	8°22'24.96"N	77°01'45.84"E
		PAF Area	G3	8°22'17.60"N	77°00'11.12"E
6.	Surface Water	Poovar West Canal	S1	8°19'22.66"N	77°04'31.70"E
		Vizhinjam Branch Canal	S2	8°22'55.59"N	76°59'36.29"E
		Vellayani Lake	S3	8°25'31.91"N	76°59'37.10"E
		Poovar Estuary	S4	8°18'30.71"N	77°04'36.95"E

Locations of Ambient Air Quality & Ambient Noise Monitoring



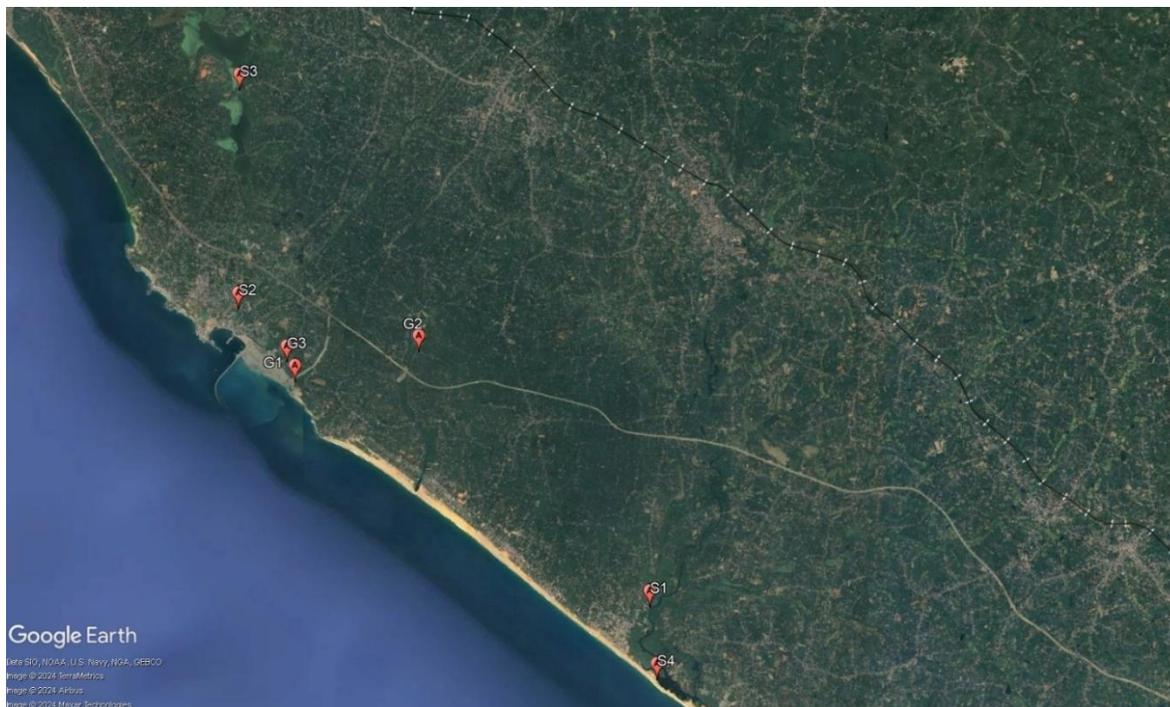
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Marine Water & Marine Sediment Sampling Locations



Ground Water & Surface Water Sampling Locations



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Ambient Air Quality Monitoring was carried out at 5 locations i.e., Venganoor, Port Site, Proposed Port Estate Area, Chani and Balarampuram. All 5 locations were monitored as per National Ambient Air Quality Standard (NAAQS), 2009 at a frequency of twice per week. The monitoring was conducted on the 2nd, 5th, 9th, 12th, 16th, 19th, 23rd and 26th February 2026. Ambient air monitoring started at all 5 locations for 24 hours with the help of programmable timer. After analysis of samples, the obtained results are compared with NAAQS, 2009. All the parameters at all locations were within the NAAQS limits. The results are available under section EMR-2.



RDS & FPS Under Operation



Preparation for Gaseous Sampling

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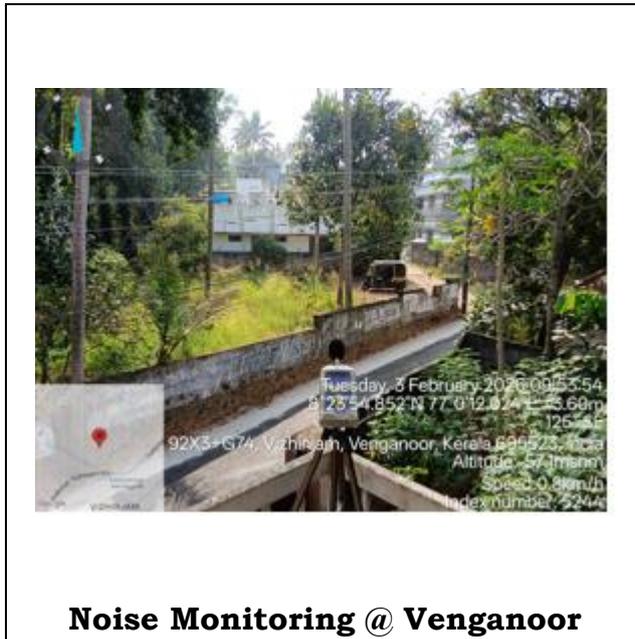


Ambient Noise Monitoring carried out at Venganoor, Port Site, Proposed Port Estate Area, Chani and Balaramapuram. Classification of locations as per the Noise Pollution (Regulation & Control) Rules, 2000 (Rules 3 (1) and 4(1)) is given in the following table. The results obtained were compared with Noise Pollution (Regulation & Control) Rules, 2000 (Rule 3(1) and 4(1)). The Leq values in the locations were within the limits. *The noise readings are furnished under section EMR-3.

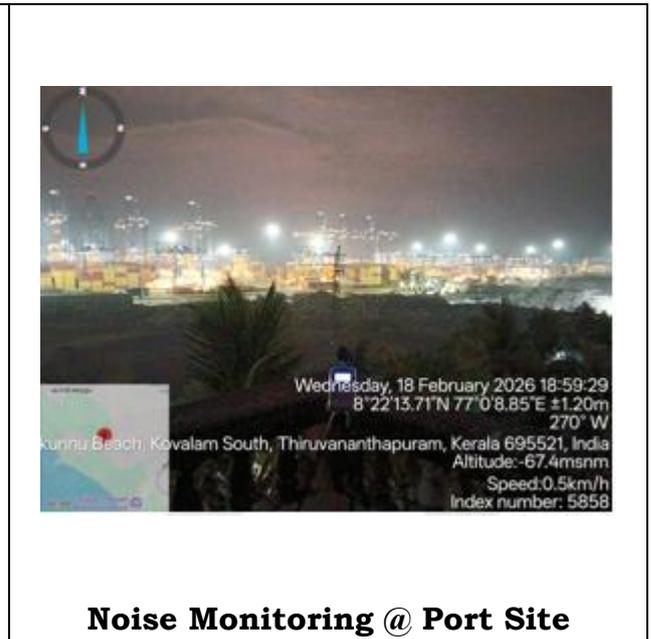
Legend	Location	Area Type
N1	Venganoor	Residential
N2	Port Site	Industrial
N3	Proposed Port Estate Area	Residential
N4	Chani	Residential
N5	Balaramapuram	Commercial

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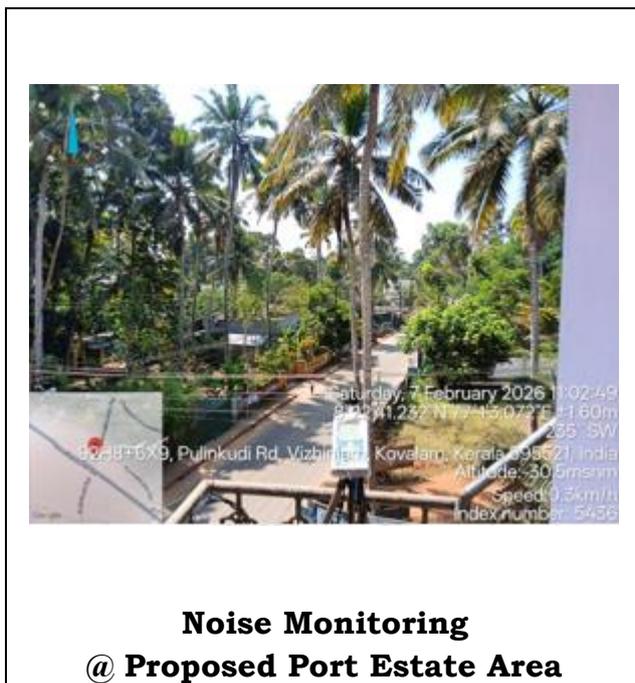
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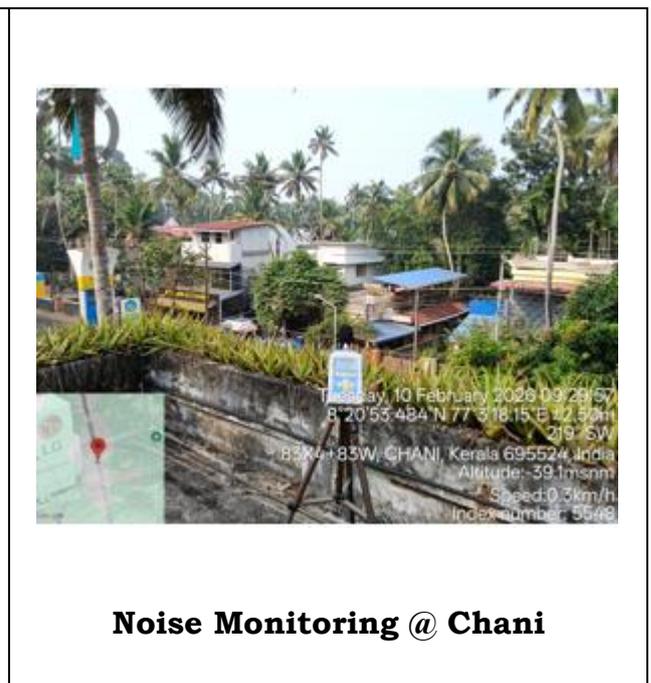
Noise Monitoring @ Venganoor



Noise Monitoring @ Port Site



Noise Monitoring @ Proposed Port Estate Area



Noise Monitoring @ Chani

Marine water samples were collected from 6 locations - Kovalam Beach, Near Kovalam Beach, Proposed Dredging Site, South of Break Water, Port Basin,

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and Inner Approach Chanel. The samples were analysed as per IS/APHA Standard Test Procedures, and the results are provided in Section EMR-4.1.





**Marine Water Sampling
@ Inner Approach Channel**

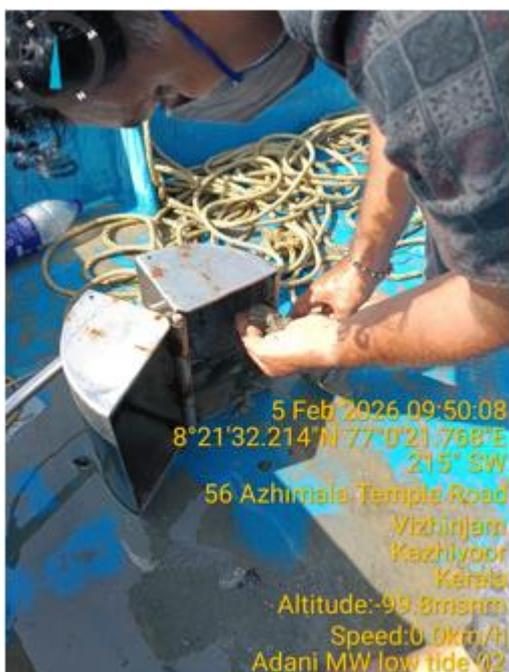


**Marine Water Sampling
@ Port Basin**

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Sediment samples were collected from 6 locations - Kovalam Beach, Near Kovalam Beach, Proposed Dredging Site, South of Break Water, Port Basin, and Inner Approach Channel. The samples were analysed as per IS/APHA Standard Test Procedures, and the results are provided in Section EMR-4.3.



**Marine Sediment Sampling
 @ Proposed Dredging Site**



**Marine Sediment Sampling
 @ Kovalam Beach**

Ground water samples were collected from 3 locations (open wells) - Port Site, Proposed Port Estate Area, and Port Annex Facility area (PAF). All the parameters at all locations were within the acceptable limits as per IS 10500:2012. However, the water from these locations is not used for drinking purposes. The results are provided in Section EMR-5.



**Ground Water Sampling
 @ PAF Area**



**Ground Water Sampling
 @ Port Estate Area**

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**Ground Water Sampling
@ Port Estate Area**

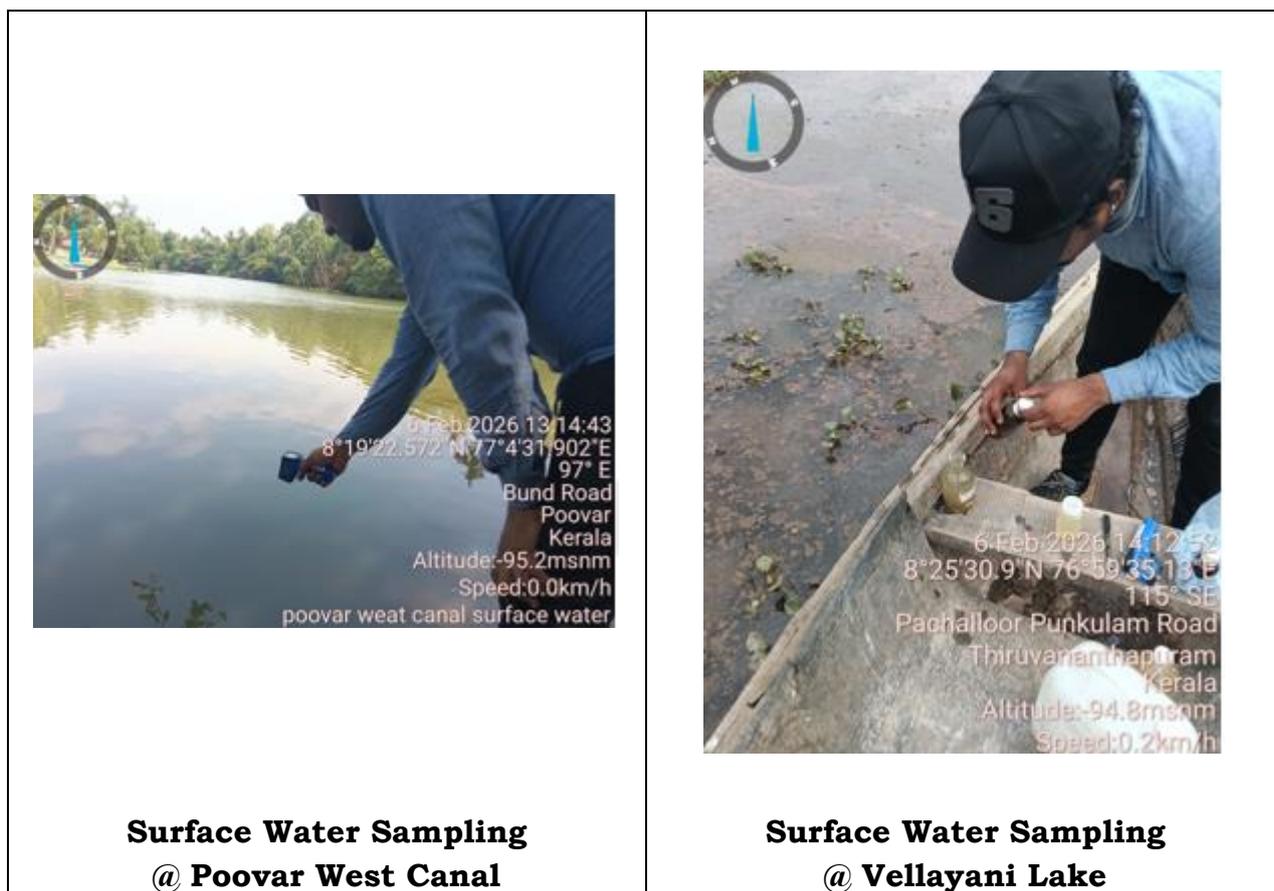


**Ground Water Sampling
@ Port Site**

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Surface water samples were collected from 4 locations - Poovar West Canal, Vizhinjam Branch Canal, Vellayani Lake and Poovar Estuary. The samples were analysed as per the standard procedures and the results are provided in Section EMR-6.



 <p>Surface Water Sampling @ Vizhinjam Branch Canal</p>	 <p>Surface Water Sampling @ Poovar Estuary</p>
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The detailed results of Environmental monitoring carried out for the month of February 2026 are presented in subsequent sections.

Location, Legend	Venganoor, A1
Month, Year	February, 2026

Date of Sampling	Results					
	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO _x µg/m ³	CO mg/m ³	HC ppm
02-02-2026	38.5	18.6	4.36	5.10	BDL	BDL
05-02-2026	40.2	21.3	4.96	5.88	BDL	BDL
09-02-2026	50.9	24.6	4.20	5.36	BDL	BDL
12-02-2026	52.1	25.2	4.55	5.60	BDL	BDL
16-02-2026	50.2	24.3	4.12	5.45	BDL	BDL
19-02-2026	48.6	23.6	4.88	5.70	BDL	BDL
23-02-2026	55.3	26.1	4.25	5.45	BDL	BDL
26-02-2026	40.3	19.6	4.16	5.02	BDL	BDL
NAAQS 2009 Limits	100	60	80	80	4	-

Note: National Ambient Air Quality Standards (Industrial, Residential, Rural and other Area).
BDL: Below Detectable Limit

Location, Legend	Port Site, A2
Month, Year	February, 2026

Date of Sampling	Results					
	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO _x µg/m ³	CO mg/m ³	HC ppm
02-02-2026	88.8	43.1	4.96	5.88	BDL	BDL
05-02-2026	72.1	35.2	4.65	5.72	BDL	BDL
09-02-2026	84.5	41.6	4.33	5.45	BDL	BDL
12-02-2026	78.1	38.5	4.22	5.60	BDL	BDL
16-02-2026	80.3	39.6	4.80	5.87	BDL	BDL
19-02-2026	81.2	40.2	4.30	5.62	BDL	BDL
23-02-2026	76.5	37.5	4.25	5.74	BDL	BDL
26-02-2026	86.1	42.5	4.15	5.68	BDL	BDL
NAAQS 2009 Limits	100	60	80	80	4	-

Note: National Ambient Air Quality Standards (Industrial, Residential, Rural and other Area).
BDL: Below Detectable Limit

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Location, Legend	Proposed Port Estate Area, A3
Month, Year	February, 2026

Date of Sampling	Results					
	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO _x µg/m ³	CO mg/m ³	HC ppm
02-02-2026	42.1	20.5	4.12	5.02	BDL	BDL
05-02-2026	50.6	24.8	4.85	5.78	BDL	BDL
09-02-2026	53.4	25.5	4.36	5.75	BDL	BDL
12-02-2026	58.4	28.4	4.20	5.45	BDL	BDL
16-02-2026	51.6	24.3	4.12	4.96	BDL	BDL
19-02-2026	48.7	23.1	4.36	5.68	BDL	BDL
23-02-2026	49.6	23.4	4.15	5.12	BDL	BDL
26-02-2026	55.9	26.4	4.25	5.33	BDL	BDL
NAAQS 2009 Limits	100	60	80	80	4	-

Note: National Ambient Air Quality Standards (Industrial, Residential, Rural and other Area).
BDL: Below Detectable Limit

Location, Legend	Chani, A4
Month, Year	February, 2026

Date of Sampling	Results					
	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO _x µg/m ³	CO mg/m ³	HC ppm
02-02-2026	52.1	25.4	4.36	5.88	BDL	BDL
05-02-2026	56.3	27.4	4.55	5.78	BDL	BDL
09-02-2026	50.2	22.8	4.12	5.25	BDL	BDL
12-02-2026	59.4	28.7	4.85	5.92	BDL	BDL
16-02-2026	55.2	26.5	4.26	5.45	BDL	BDL
19-02-2026	50.6	24.6	4.36	5.55	BDL	BDL
23-02-2026	48.9	23.1	4.78	5.65	BDL	BDL
26-02-2026	51.8	23.5	4.45	5.75	BDL	BDL
NAAQS 2009 Limits	100	60	80	80	4	-

Note: National Ambient Air Quality Standards (Industrial, Residential, Rural and other Area).
BDL: Below Detectable Limit

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Location, Legend	Balarampuram, A5
Month, Year	February, 2026

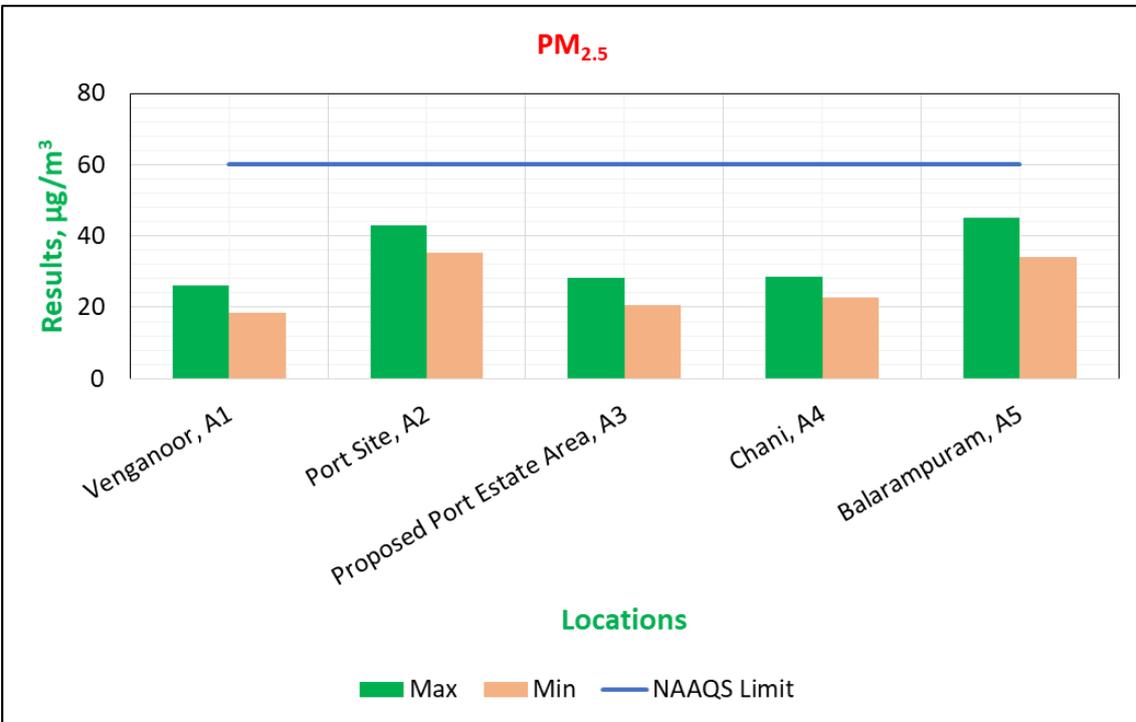
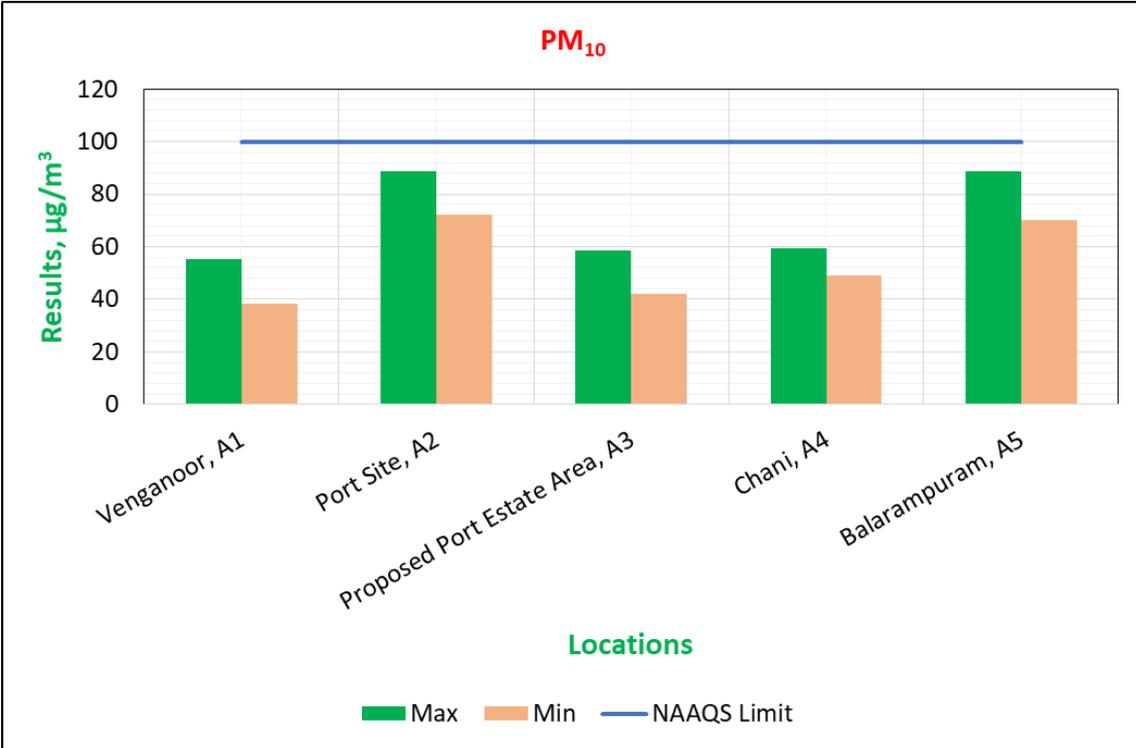
Date of Sampling	Results					
	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO _x µg/m ³	CO mg/m ³	HC ppm
02-02-2026	88.6	45.1	4.35	5.75	BDL	BDL
05-02-2026	70.2	34.2	4.22	5.36	BDL	BDL
09-02-2026	78.6	38.9	4.63	5.78	BDL	BDL
12-02-2026	82.3	40.3	4.25	5.68	BDL	BDL
16-02-2026	80.6	38.6	4.12	5.36	BDL	BDL
19-02-2026	75.1	35.6	4.22	5.65	BDL	BDL
23-02-2026	78.3	37.4	4.78	5.87	BDL	BDL
26-02-2026	70.1	34.5	4.88	6.00	BDL	BDL
NAAQS 2009 Limits	100	60	80	80	4	-

Note: National Ambient Air Quality Standards (Industrial, Residential, Rural and other Area).
BDL: Below Detectable Limit

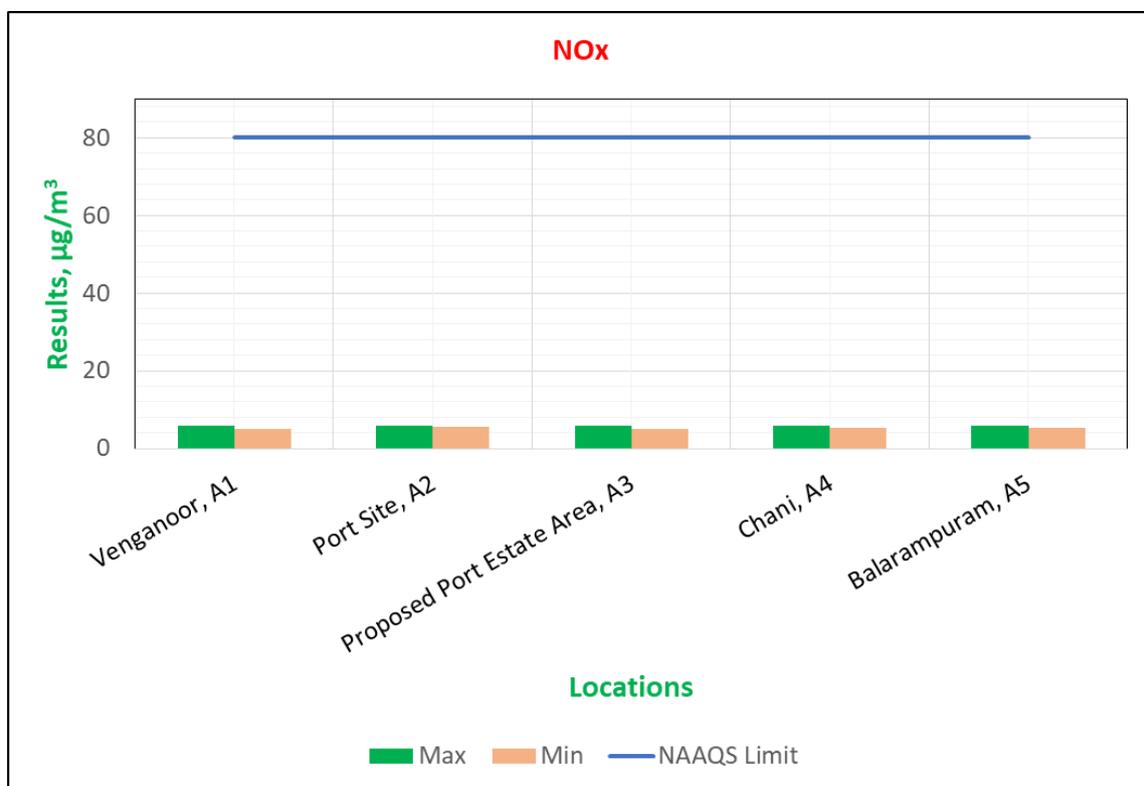
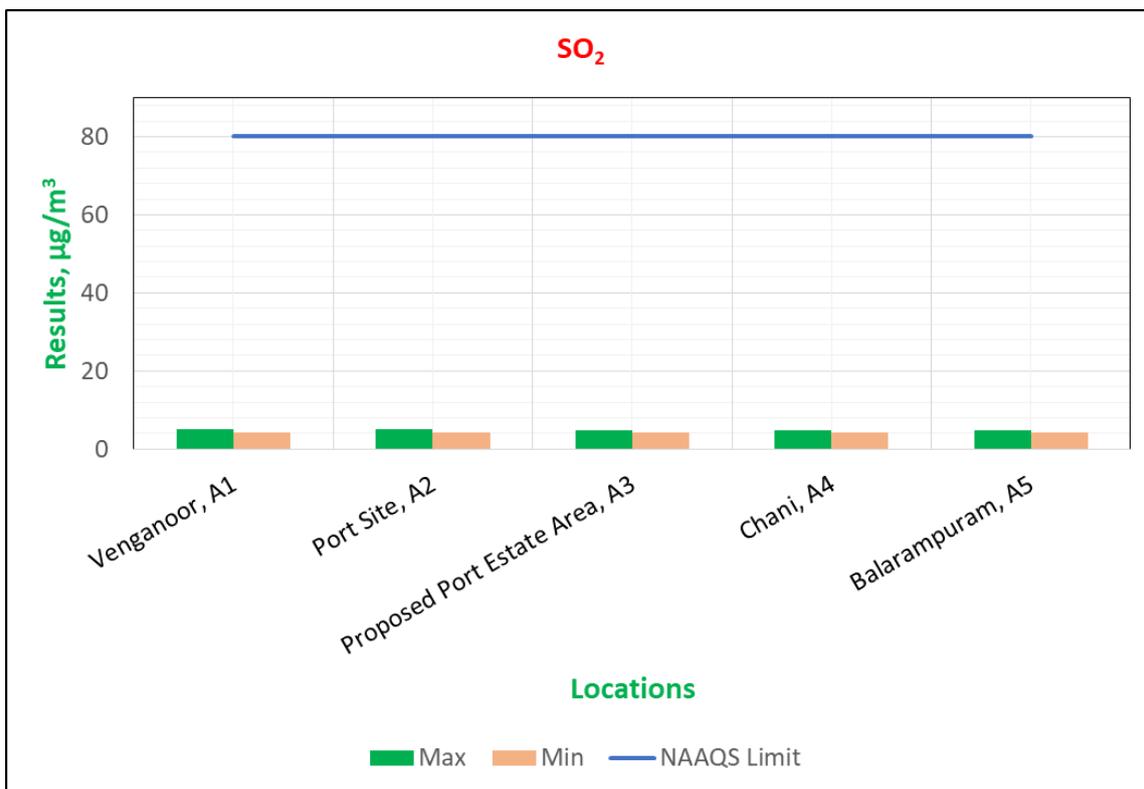
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EMR-2.1 Statistical Analysis of Ambient Air Quality



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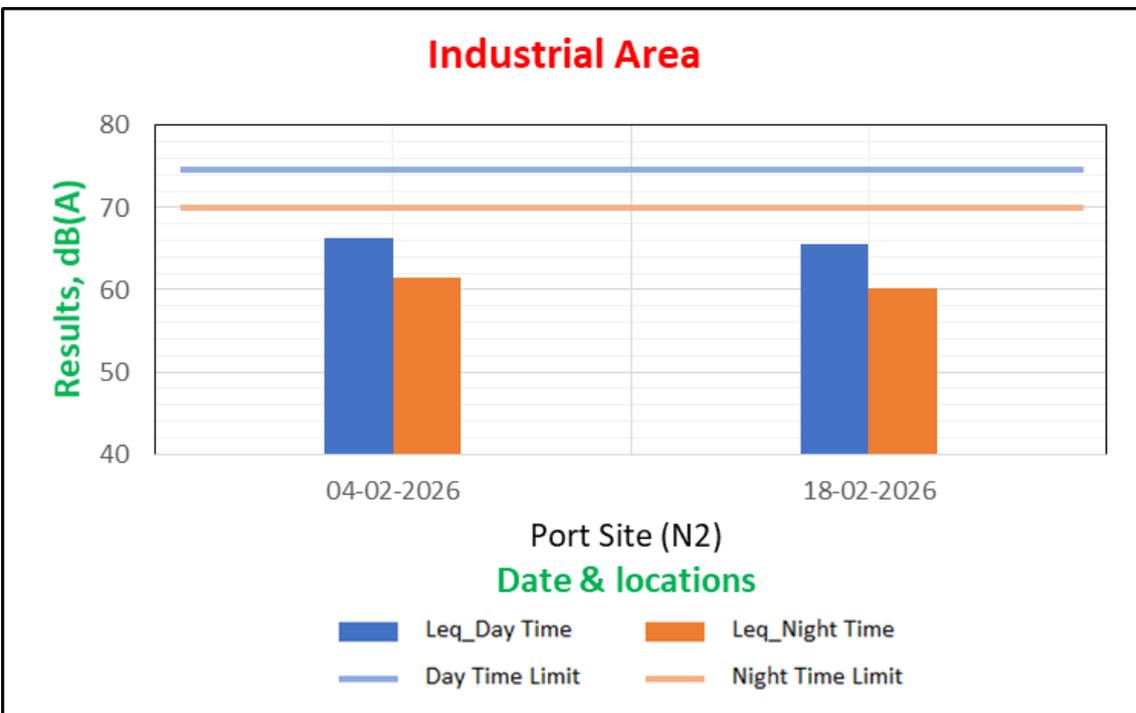
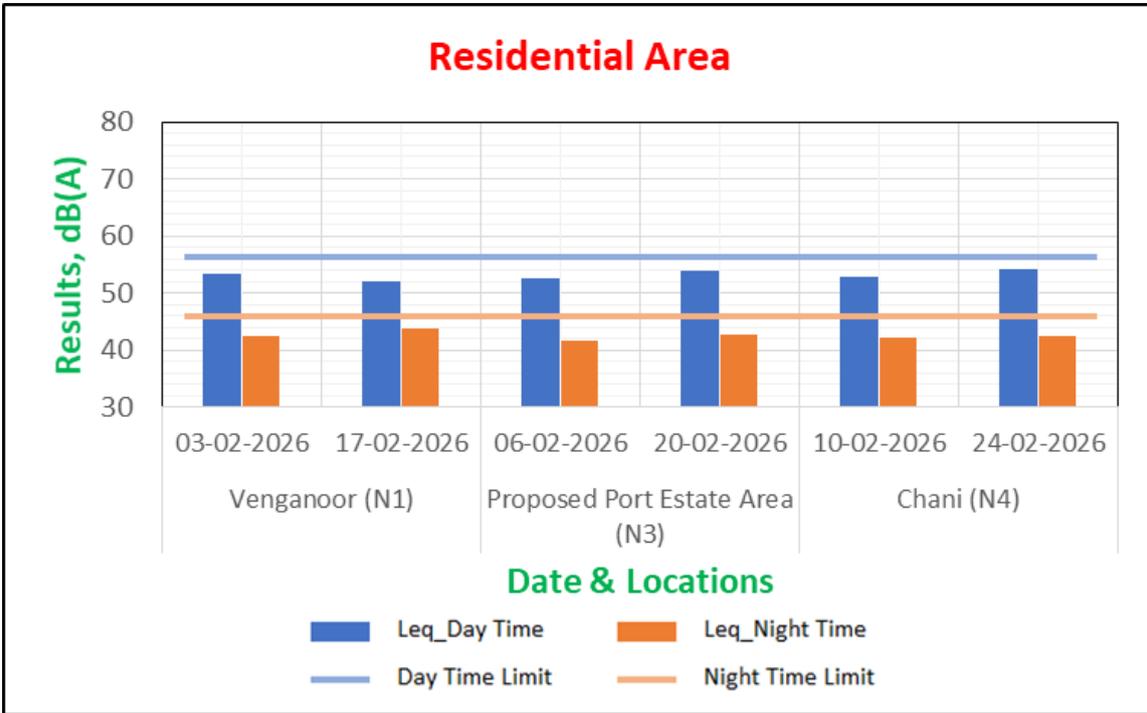
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EMR-3
Ambient Noise Monitoring Report

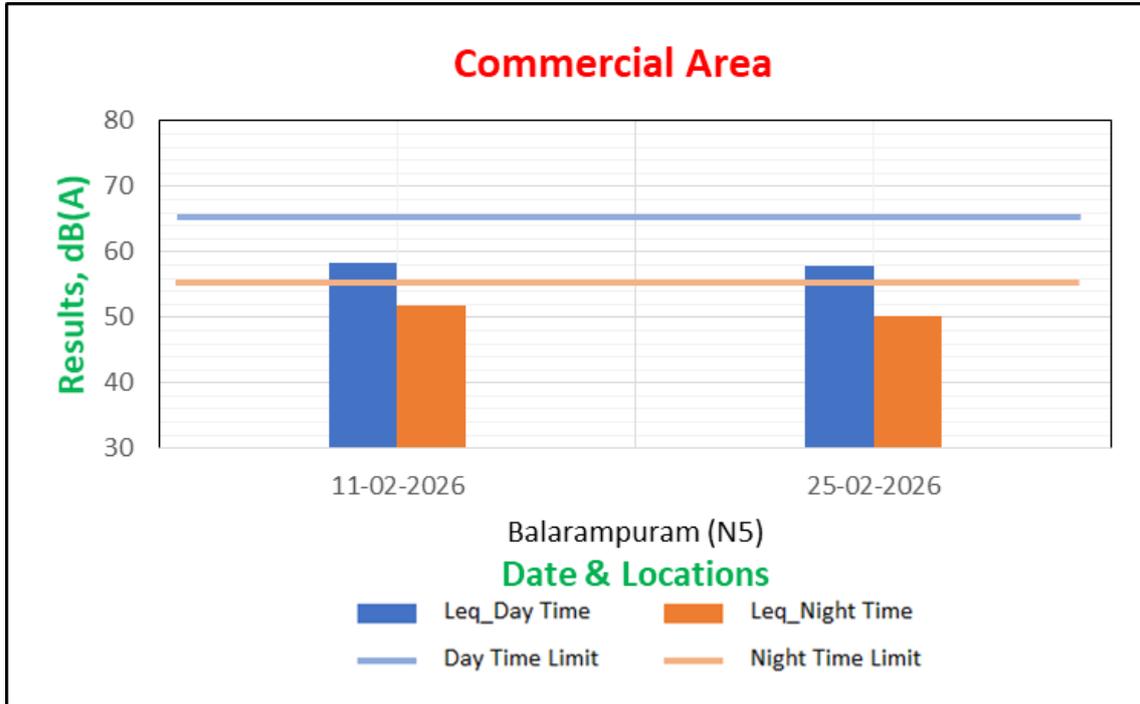
Location & Legend	Date of Sampling	Results (dB(A))					
		L _{max} Day time	L _{max} Night time	L _{min} Day time	L _{min} Night time	Leq Day time	Leq Night time
Venganoor (Residential) N1	03-02-2026	78.6	75.1	31.8	31.5	53.4	42.5
	17-02-2026	77.1	73.5	32.8	32.1	52.1	43.7
Port Site (Industrial) N2	04-02-2026	90.5	86.2	40.2	39.1	66.3	61.5
	18-02-2026	89.5	87.4	38.4	31.6	65.5	60.2
Proposed Port Estate Area (Residential) N3	06-02-2026	75.4	69.4	30.9	30.1	52.6	41.6
	20-02-2026	73.9	70.5	31.1	30.8	53.9	42.6
Chani (Residential) N4	10-02-2026	74.2	71.8	30.2	30.1	52.8	42.2
	24-02-2026	72.8	70.9	31.8	31.5	54.1	42.5
Balarampuram (Commercial) N5	11-02-2026	87.5	75.5	33.4	30.9	58.3	51.9
	25-02-2026	85.3	74.8	31.8	30.8	57.8	50.2
As per the Noise Pollution (Regulation & Control) Rules, 2000 [Rules 3 (1) and 4(1)]							
Area Code	Area Type	Limits in dB (A) Leq					
		Day (6 a.m. to 10 p.m.)		Night (10 p.m. to 6 a.m.)			
A	Industrial	75		70			
B	Commercial	65		55			
C	Residential	55		45			

EMR-3.1
Statistical Analysis of Ambient Noise Monitoring
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EMR-4	Marine Ecological Survey
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EMR-4.1	Marine Water Analysis Report
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Location, Legend	Near Kovalam Beach, M1
Date of Sampling	05-02-2026

Parameter	Unit	Results	
		High Tide (15:50 – 17:10)	Low Tide (08:45 – 10:00)
Temperature	°C	28.3	27.6
Colour	Hazen	1	1
pH Value	-	8.01	8.04
Turbidity	N.T.U.	0.9	2.1
Electrical Conductivity (at 25°C)	µmho/cm	52400	52980
Total Suspended Solids	mg/L	BDL	BDL
Total Dissolved Solids	mg/L	33536	33900
Dissolved Oxygen	mg/L	6.9	7.0
Biochemical Oxygen Demand (3 days, 27°C)	mg/L	BDL	BDL
Floating Materials (Oil, grease and Scum (Including Petroleum Products)	mg/L	BDL	BDL
Nitrite (as NO ₂)	mg/L	0.039	0.042
Nitrate (as NO ₃)	mg/L	BDL	BDL
Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	BDL	BDL
Ammonical Nitrogen (as NH ₃ -N)	mg/L	BDL	BDL
Total Nitrogen (as N)	mg/L	BDL	BDL
Total Phosphorous (as P)	mg/L	BDL	BDL
Reactive Phosphorous	mg/L	BDL	BDL
Polycyclic Aromatic Hydrocarbon	mg/L	BDL	BDL
Salinity	ppt	34.011	34.435
Total Chlorophyll	mg/m ³	0.5	0.6
Total Coliforms	MPN/100 ml	BDL	BDL
Fecal Coliforms	MPN/100 ml	BDL	BDL

BDL: Below Detectable Limit

Location, Legend	Proposed Dredging Site, M2
Date of Sampling	05-02-2026

Parameter	Unit	Results
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		High Tide (15:50 – 17:10)	Low Tide (08:45 – 10:00)
Temperature	°C	28.0	27.8
Colour	Hazen	1	1
pH Value	-	7.93	7.95
Turbidity	N.T.U.	0.6	1.1
Electrical Conductivity (at 25°C)	µmho/cm	53610	53750
Total Suspended Solids	mg/L	BDL	BDL
Total Dissolved Solids	mg/L	34310	34440
Dissolved Oxygen	mg/L	6.9	7.0
Biochemical Oxygen Demand (3 days, 27°C)	mg/L	BDL	BDL
Floating Materials (Oil, grease and Scum (Including Petroleum Products)	mg/L	BDL	BDL
Nitrite (as NO ₂)	mg/L	0.032	0.038
Nitrate (as NO ₃)	mg/L	BDL	BDL
Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	BDL	BDL
Ammonical Nitrogen (as NH ₃ -N)	mg/L	BDL	BDL
Total Nitrogen (as N)	mg/L	BDL	BDL
Total Phosphorous (as P)	mg/L	BDL	BDL
Reactive Phosphorous	mg/L	BDL	BDL
Polycyclic Aromatic Hydrocarbon	mg/L	BDL	BDL
Salinity	ppt	34.897	35.000
Total Chlorophyll	mg/m ³	0.4	0.5
Total Coliforms	MPN/ 100 ml	BDL	BDL
Fecal Coliforms	MPN/ 100 ml	BDL	BDL
BDL: Below Detectable Limit			

Location, Legend	Port Basin, M3
Date of Sampling	05-02-2026

Parameter	Unit	Results
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		High Tide (15:50 – 17:10)	Low Tide (08:45 – 10:00)
Temperature	°C	27.8	27.5
Colour	Hazen	1	1
pH Value	-	7.88	7.92
Turbidity	N.T.U.	0.4	0.6
Electrical Conductivity (at 25°C)	µmho/cm	53100	53550
Total Suspended Solids	mg/L	BDL	BDL
Total Dissolved Solids	mg/L	33980	34270
Dissolved Oxygen	mg/L	6.8	6.9
Biochemical Oxygen Demand (3 days, 27°C)	mg/L	BDL	BDL
Floating Materials (Oil, grease and Scum (Including Petroleum Products)	mg/L	BDL	BDL
Nitrite (as NO ₂)	mg/L	0.030	0.039
Nitrate (as NO ₃)	mg/L	BDL	BDL
Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	BDL	BDL
Ammonical Nitrogen (as NH ₃ -N)	mg/L	BDL	BDL
Total Nitrogen (as N)	mg/L	BDL	BDL
Total Phosphorous (as P)	mg/L	BDL	BDL
Reactive Phosphorous	mg/L	BDL	BDL
Polycyclic Aromatic Hydrocarbon	mg/L	BDL	BDL
Salinity	ppt	34.523	34.853
Total Chlorophyll	mg/m ³	0.5	0.7
Total Coliforms	MPN/ 100 ml	BDL	BDL
Fecal Coliforms	MPN/ 100 ml	BDL	BDL
BDL: Below Detectable Limit			

Location, Legend	South of Breakwater, M4
Date of Sampling	05-02-2026

Parameter	Unit	Results
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		High Tide (15:50 – 17:10)	Low Tide (08:45 – 10:00)
Temperature	°C	27.7	27.3
Colour	Hazen	1	1
pH Value	-	7.96	7.98
Turbidity	N.T.U.	0.8	1.2
Electrical Conductivity (at 25°C)	µmho/cm	53520	53700
Total Suspended Solids	mg/L	BDL	BDL
Total Dissolved Solids	mg/L	34250	34360
Dissolved Oxygen	mg/L	7.0	6.9
Biochemical Oxygen Demand (3 days, 27°C)	mg/L	BDL	BDL
Floating Materials (Oil, grease and Scum (Including Petroleum Products)	mg/L	BDL	BDL
Nitrite (as NO ₂)	mg/L	0.032	0.035
Nitrate (as NO ₃)	mg/L	BDL	BDL
Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	BDL	BDL
Ammonical Nitrogen (as NH ₃ -N)	mg/L	BDL	BDL
Total Nitrogen (as N)	mg/L	BDL	BDL
Total Phosphorous (as P)	mg/L	BDL	BDL
Reactive Phosphorous	mg/L	BDL	BDL
Polycyclic Aromatic Hydrocarbon	mg/L	BDL	BDL
Salinity	ppt	34.831	34.963
Total Chlorophyll	mg/m ³	0.6	0.7
Total Coliforms	MPN/100 ml	BDL	BDL
Fecal Coliforms	MPN/100 ml	BDL	BDL
BDL: Below Detectable Limit			

Location, Legend	Inner Approach Channel, M5
Date of Sampling	05-02-2026

Parameter	Unit	Results
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		High Tide (15:50 – 17:10)	Low Tide (08:45 – 10:00)
Temperature	°C	28.4	27.9
Colour	Hazen	1	1
pH Value	-	7.92	7.98
Turbidity	N.T.U.	0.6	1.3
Electrical Conductivity (at 25°C)	µmho/cm	53400	53650
Total Suspended Solids	mg/L	BDL	BDL
Total Dissolved Solids	mg/L	34170	34330
Dissolved Oxygen	mg/L	6.9	7.0
Biochemical Oxygen Demand (3 days, 27°C)	mg/L	BDL	BDL
Floating Materials (Oil, grease and Scum (Including Petroleum Products)	mg/L	BDL	BDL
Nitrite (as NO ₂)	mg/L	BDL	0.024
Nitrate (as NO ₃)	mg/L	BDL	BDL
Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	BDL	BDL
Ammonical Nitrogen (as NH ₃ -N)	mg/L	BDL	BDL
Total Nitrogen (as N)	mg/L	BDL	BDL
Total Phosphorous (as P)	mg/L	BDL	BDL
Reactive Phosphorous	mg/L	BDL	BDL
Polycyclic Aromatic Hydrocarbon	mg/L	BDL	BDL
Salinity	ppt	34.743	34.927
Total Chlorophyll	mg/m ³	0.4	0.6
Total Coliforms	MPN/ 100 ml	BDL	BDL
Fecal Coliforms	MPN/ 100 ml	BDL	BDL
BDL: Below Detectable Limit			

Location, Legend	Kovalam Beach, M6
Date of Sampling	05-02-2026

Parameter	Unit	Results
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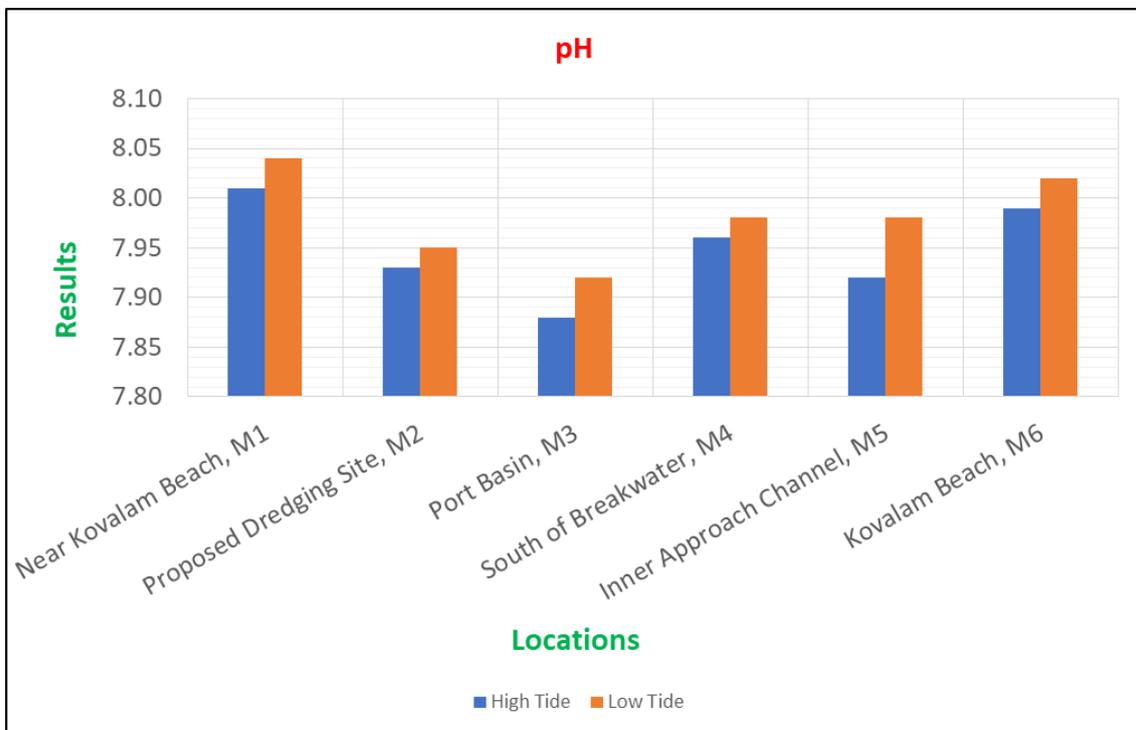
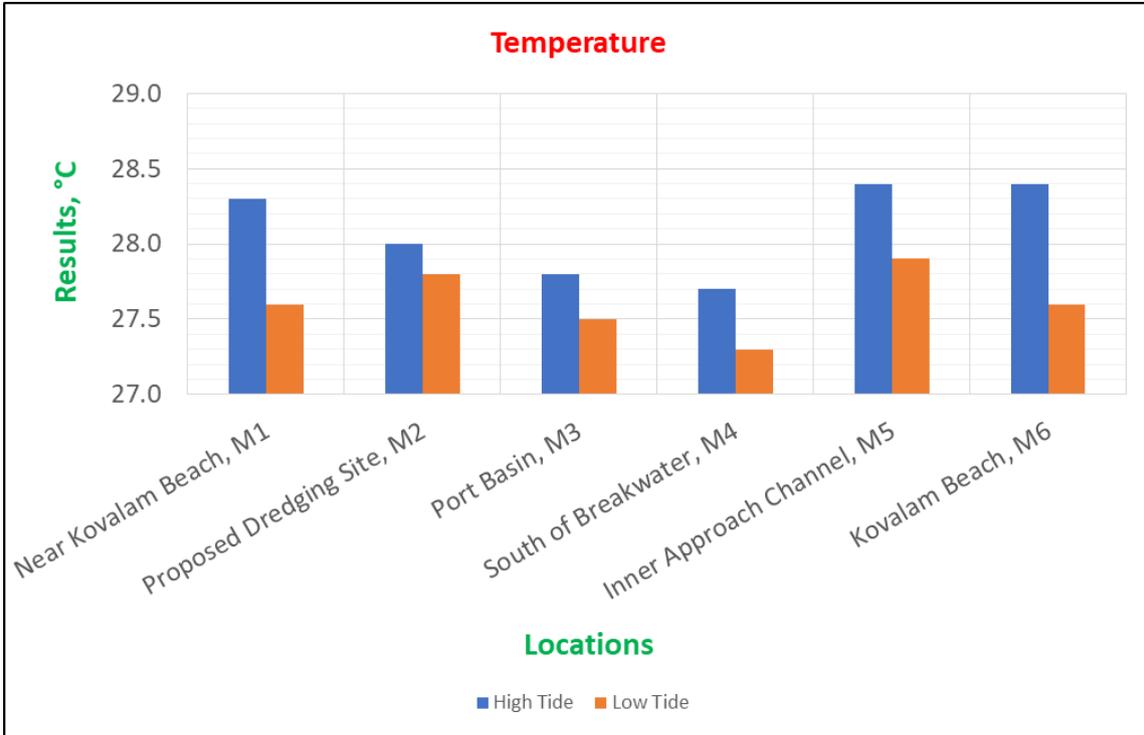
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		High Tide (15:50 – 17:10)	Low Tide (08:45 – 10:00)
Temperature	°C	28.4	27.6
Colour	Hazen	1	1
pH Value	-	7.99	8.02
Turbidity	N.T.U.	BDL	BDL
Electrical Conductivity (at 25°C)	µmho/cm	53450	53730
Total Suspended Solids	mg/L	BDL	BDL
Total Dissolved Solids	mg/L	34200	34380
Dissolved Oxygen	mg/L	6.8	7.0
Biochemical Oxygen Demand (3 days, 27°C)	mg/L	BDL	BDL
Floating Materials (Oil, grease and Scum (Including Petroleum Products)	mg/L	BDL	BDL
Nitrite (as NO ₂)	mg/L	0.029	0.030
Nitrate (as NO ₃)	mg/L	BDL	BDL
Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	BDL	BDL
Ammonical Nitrogen (as NH ₃ -N)	mg/L	BDL	BDL
Total Nitrogen (as N)	mg/L	BDL	BDL
Total Phosphorous (as P)	mg/L	BDL	BDL
Reactive Phosphorous	mg/L	BDL	BDL
Polycyclic Aromatic Hydrocarbon	mg/L	BDL	BDL
Salinity	ppt	34.780	34.985
Total Chlorophyll	mg/m ³	0.4	0.7
Total Coliforms	MPN/100 ml	BDL	BDL
Fecal Coliforms	MPN/100 ml	BDL	BDL
BDL: Below Detectable Limit			

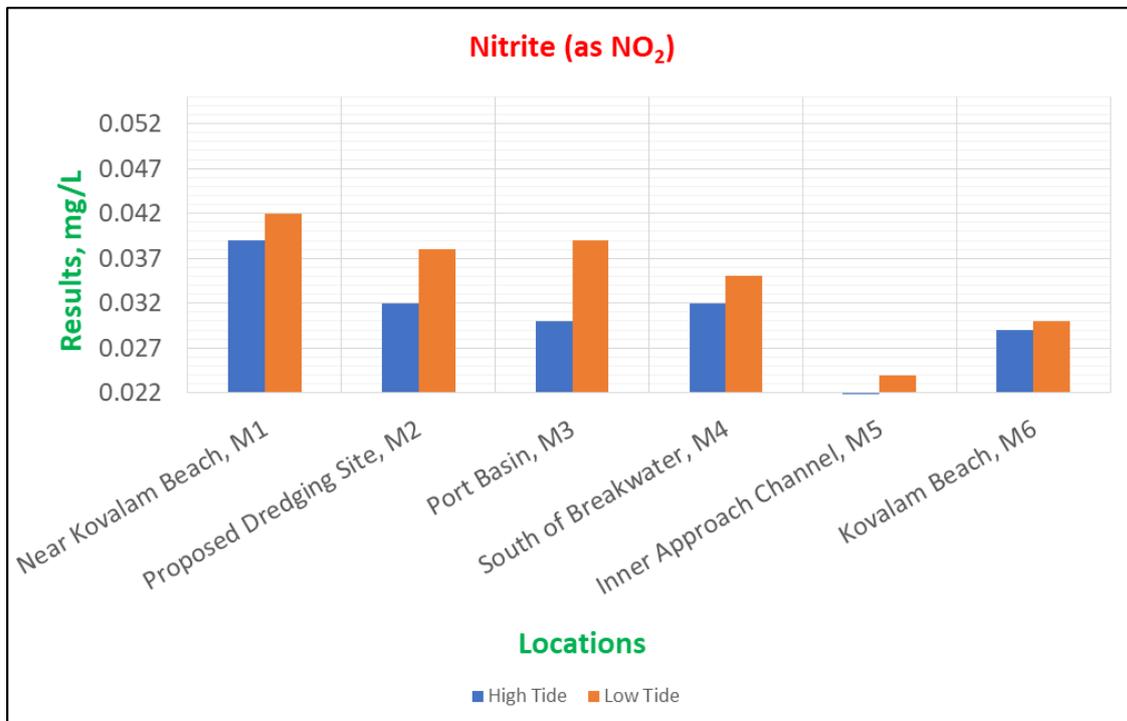
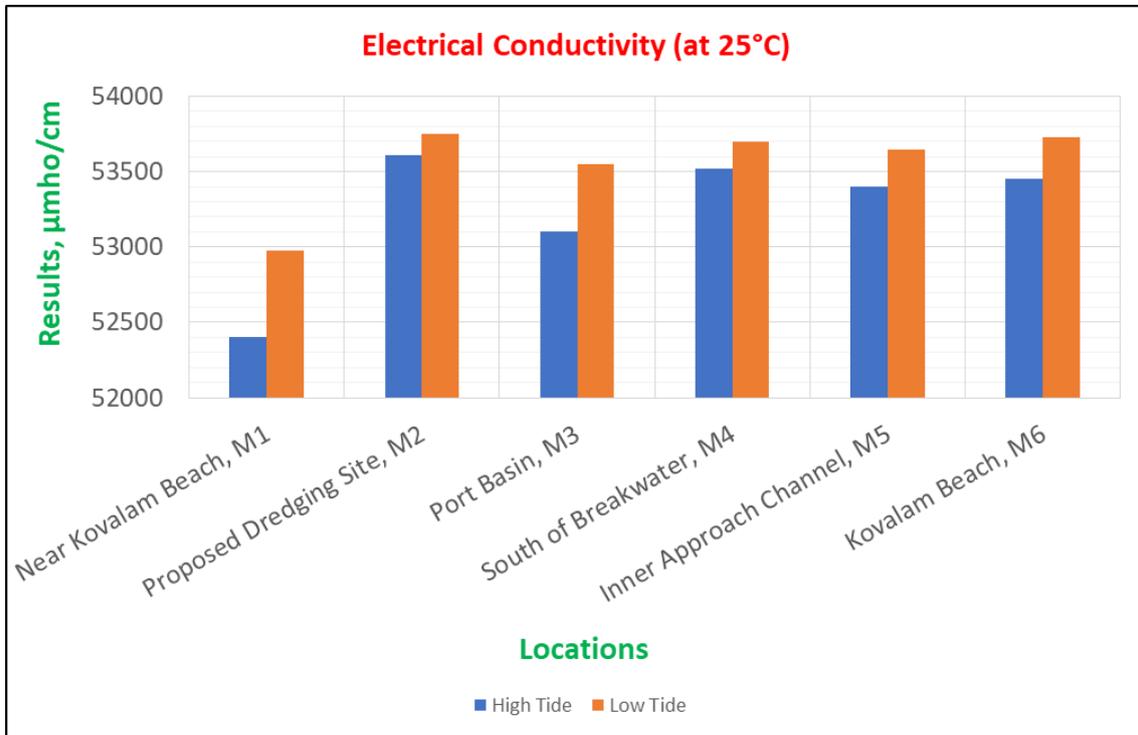
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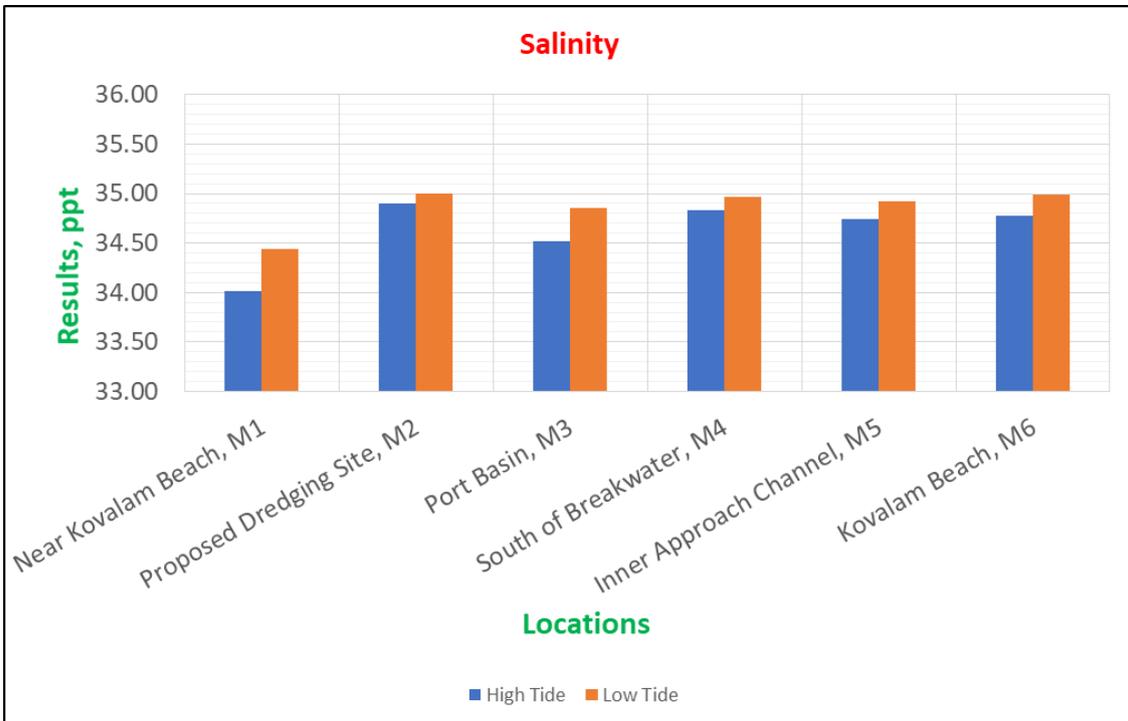
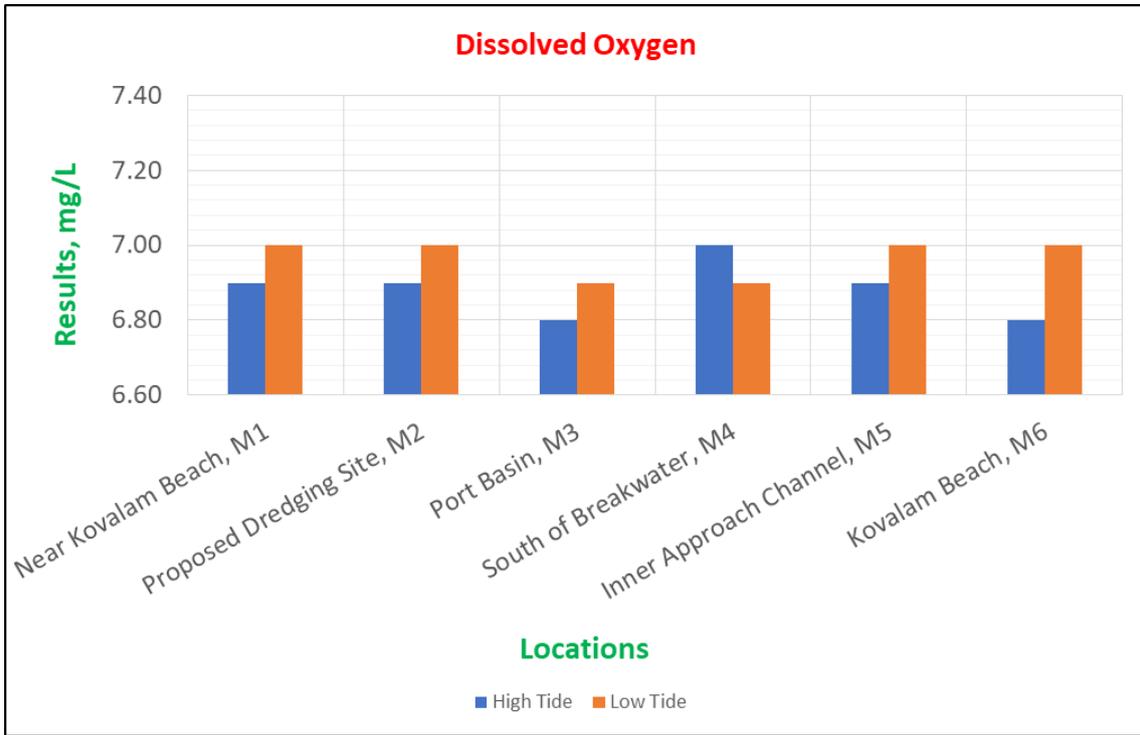
EMR-4.2 Statistical Analysis of Marine Water



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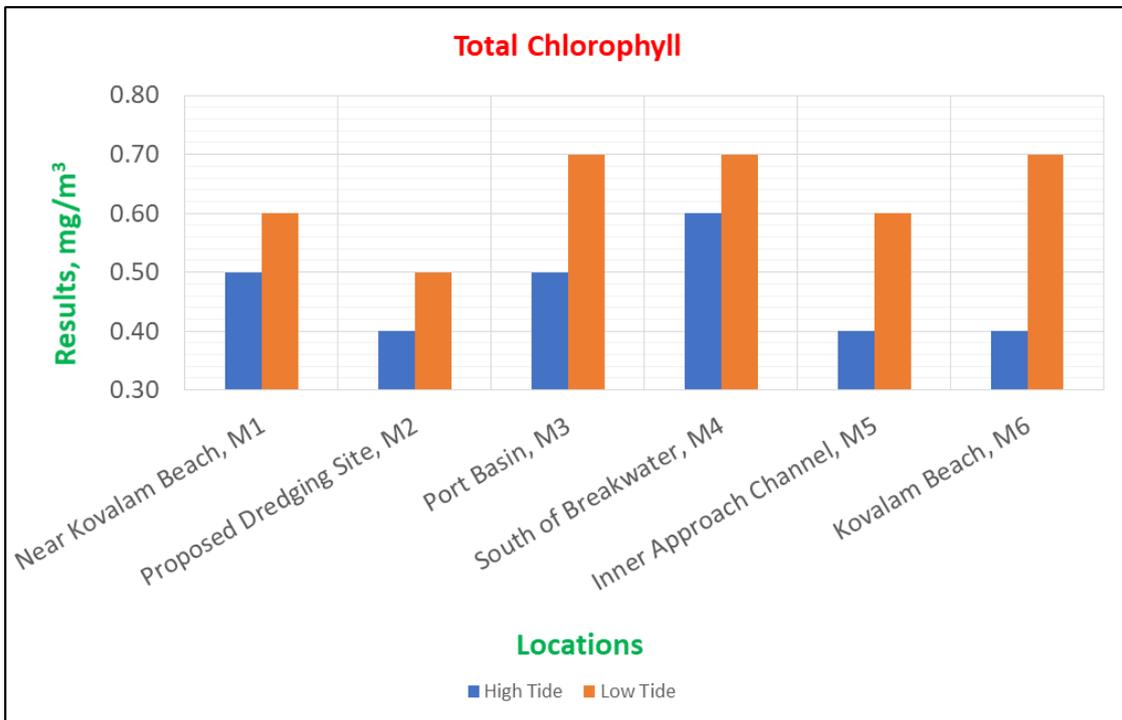
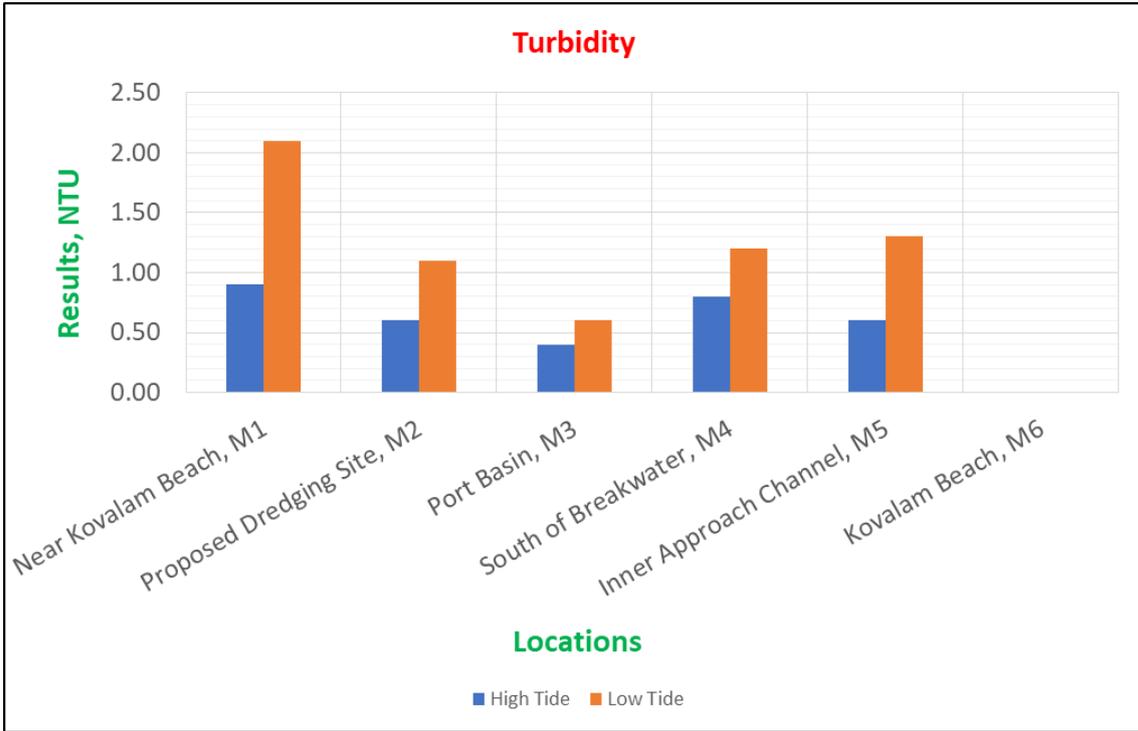


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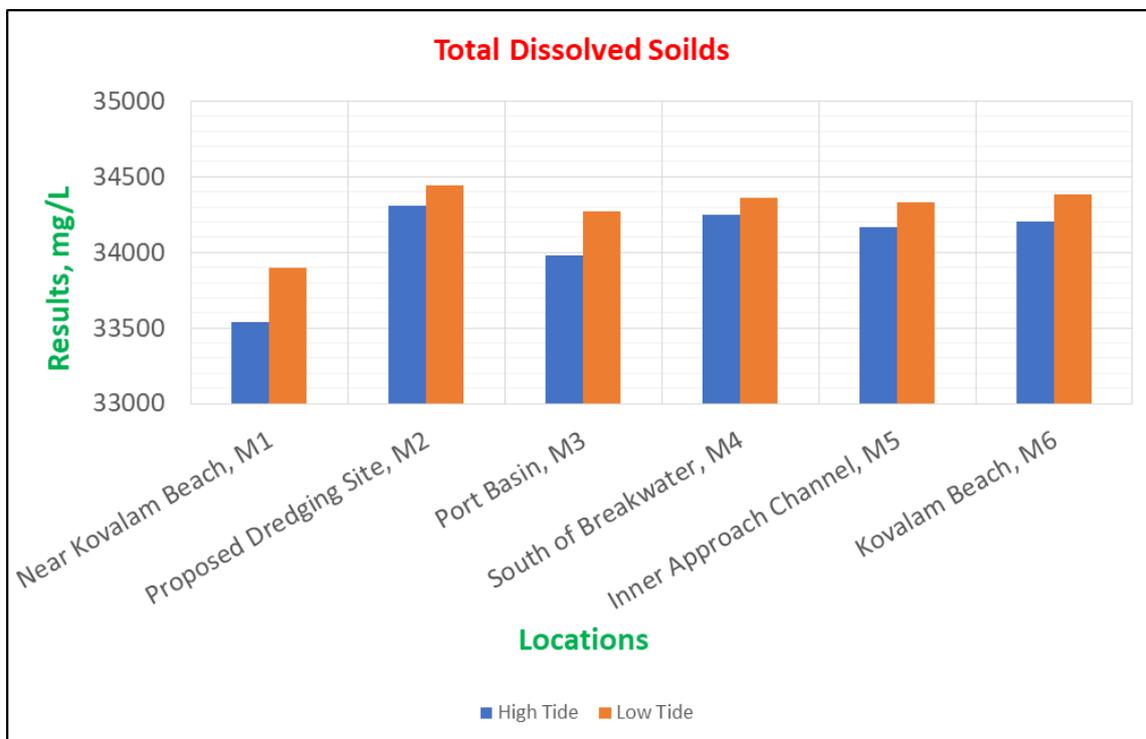


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EMR-4.3
Sediment Analysis Report
Date of Sampling
05-02-2026

Parameter	Unit	Results					
		Near Kovalam Beach (MS1)	Proposed Dredging Site (MS2)	Port Basin (MS3)	South of Break Water (MS4)	Inner Approach Channel (MS5)	Kovalam Beach (MS6)
Texture	-	Sand	Sand	Sandy Loam	Sand	Sand	Sand
Organic Matter	%	0.38	0.40	0.32	0.33	0.28	0.45
Total Phosphorus (as P)	mg/kg	310	452	239	185	245	580
Aluminium (as Al)	mg/kg	1580	1089	2165	1350	550	1865
Chromium (as Cr)	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL
Copper (as Cu)	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL
Iron (as Fe)	mg/kg	7131	2205	4500	2431	1642	1300
Lead (as Pb)	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL
Manganese (as Mn)	mg/kg	2.35	2.40	2.63	2.15	1.42	1.60
Mercury (as Hg)	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL
Zinc (as Zn)	mg/kg	1.85	1.6	1.88	2.01	3.25	2.84
Nickel (as Ni)	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL
Benthic Organism							
Micro Benthic Organism	No./m ²	64862	68951	65782	65894	62117	64782
Macro Benthic Organism	No./m ²	60893	63142	61483	60478	60147	58962
Total	No./m²	125755	132093	127265	126372	122264	123744

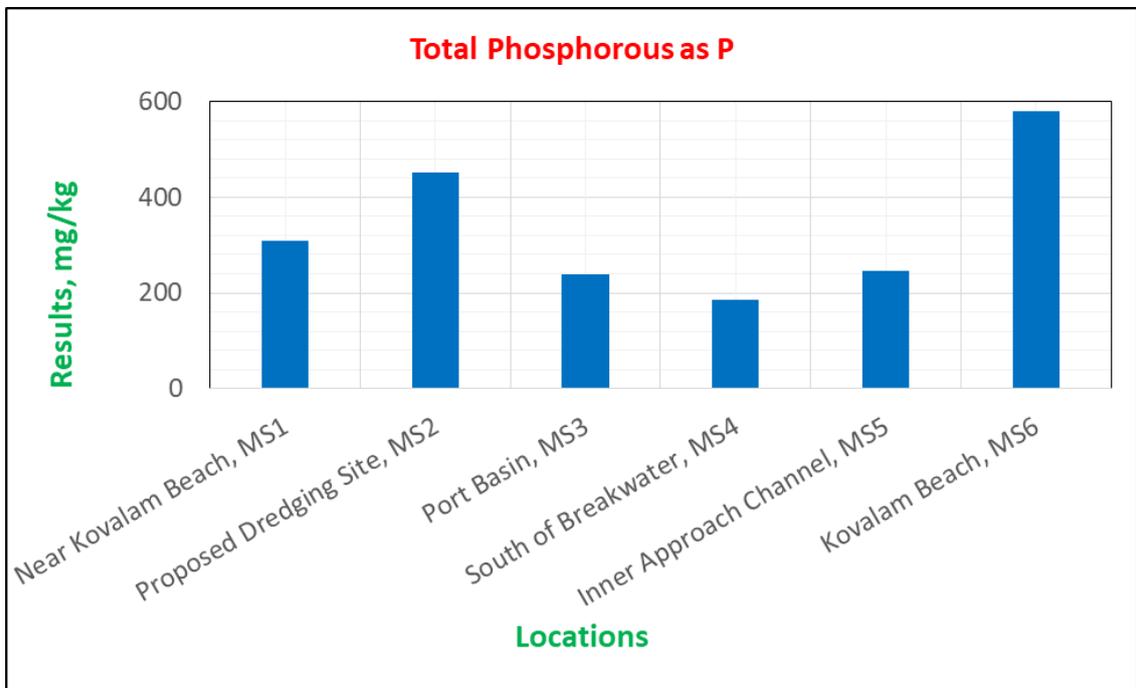
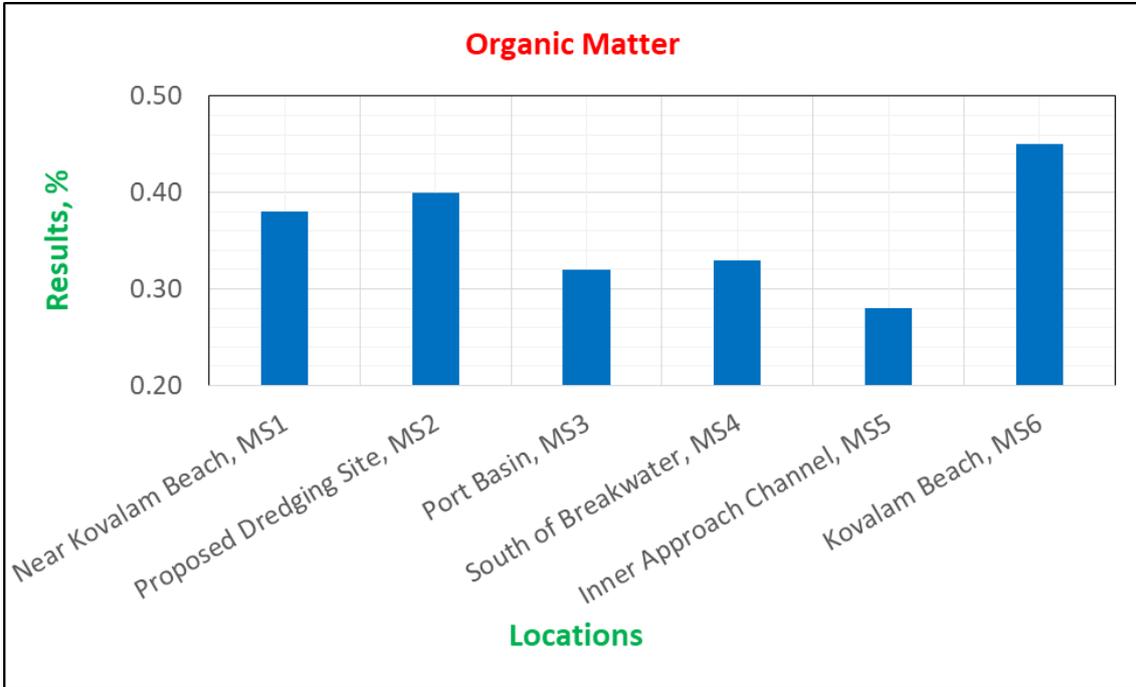
BDL: Below Detectable Limit

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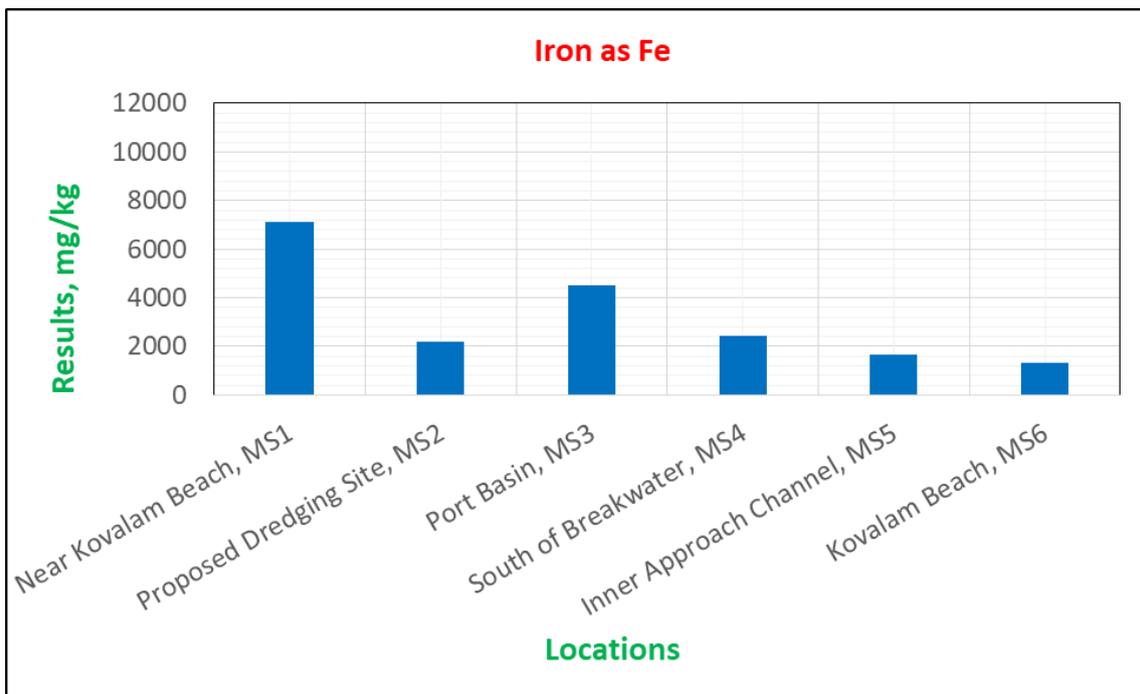
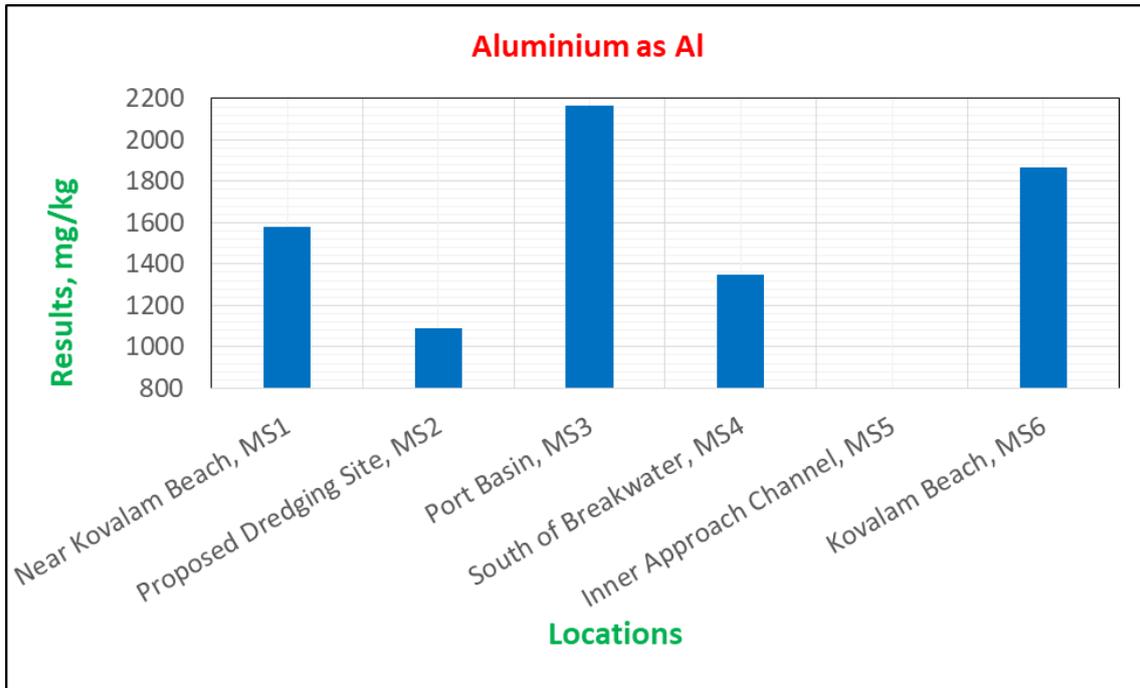
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EMR-4.4

Statistical Analysis of Sediment

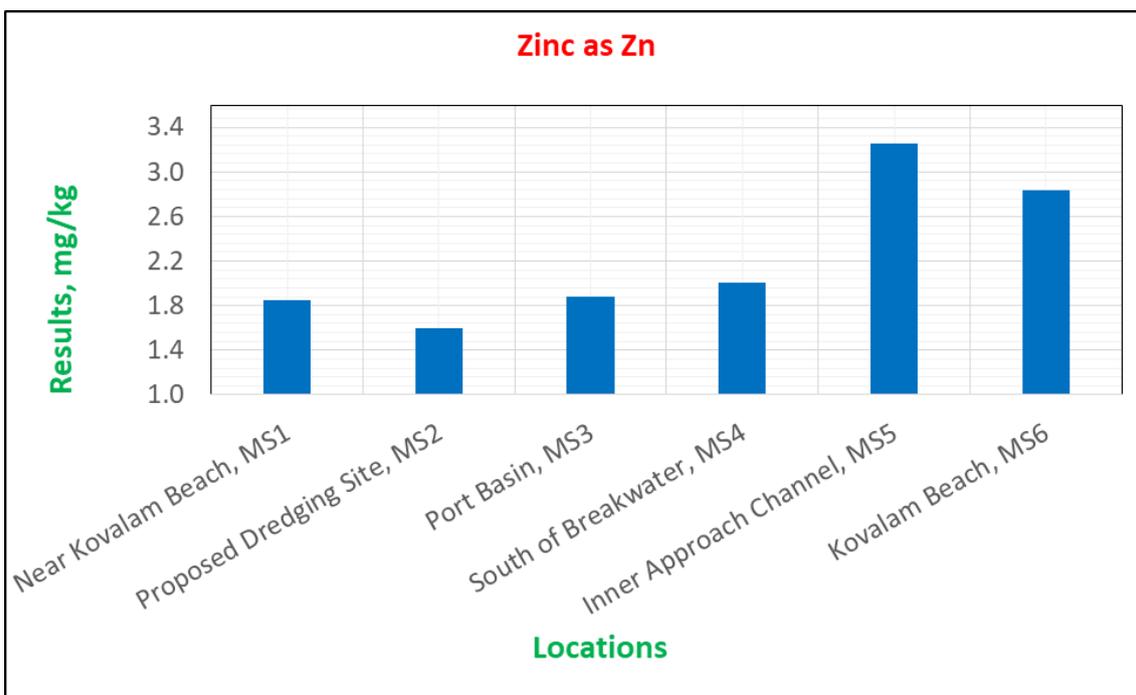
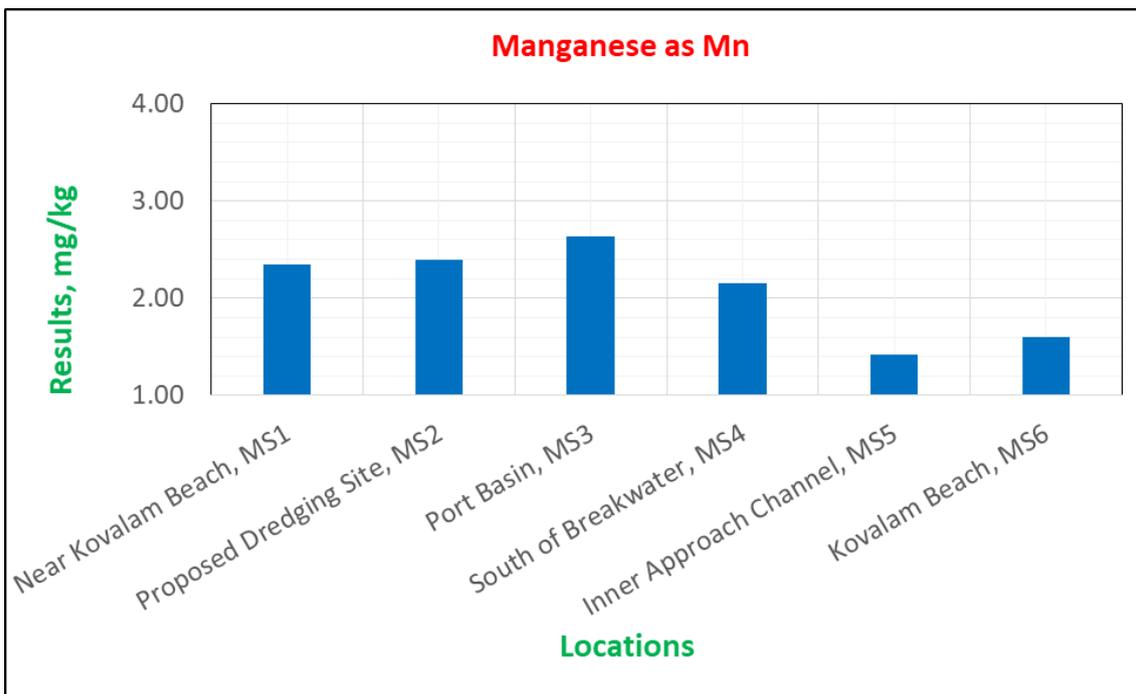


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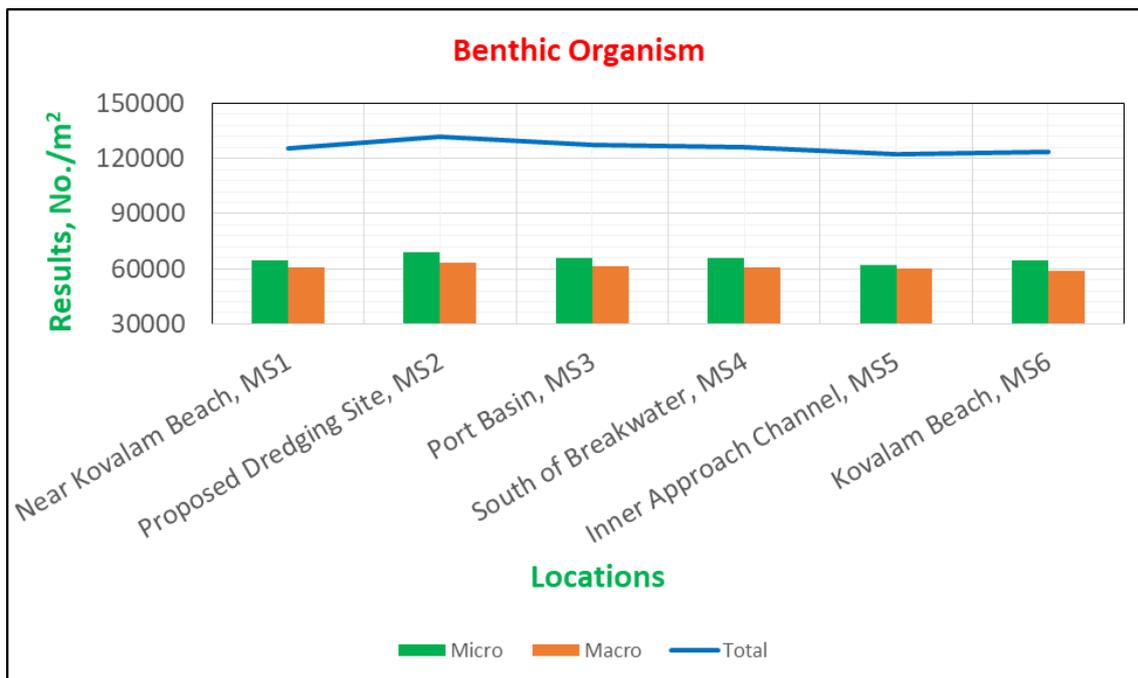
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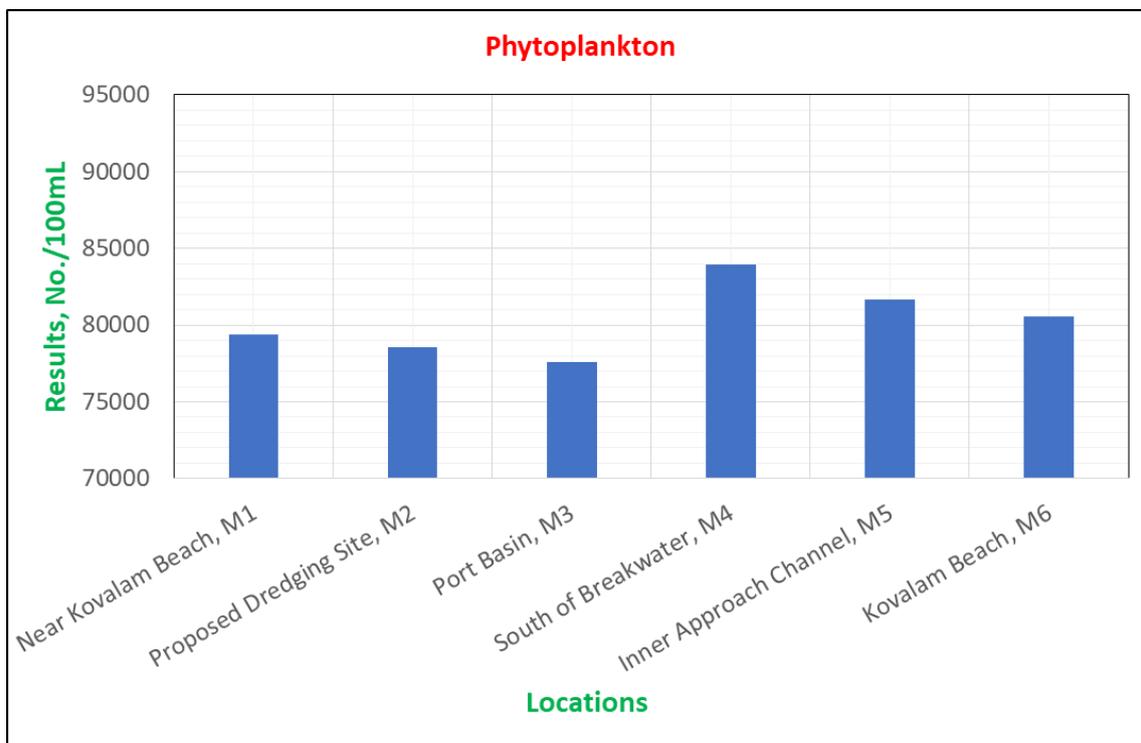
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EMR-4.5 | Phytoplankton Analysis from Marine Water Samples
Date of Sampling 05-02-2026

Parameter	Unit	Results					
		Near Kovalam Beach (M1)	Proposed Dredging Site (M2)	Port Basin (M3)	South of Break Water (M4)	Inner Approach Channel (M5)	Kovalam Beach (M6)
Fragilariaceae	No/100mL	42157	41579	36541	39785	35714	33572
Bacillariophyceae		20054	12145	22146	26148	30145	26846
Cyanophyceae		1624	4982	2016	5215	1485	986
Chlorophyceae		2045	1235	1463	2689	1004	578
<u>Stephanodiscaceae</u>		635	1048	998	1012	652	2786
<u>Merismopediaceae</u>		789	653	815	632	879	978
<u>Selenastraceae</u>		0	0	0	0	0	0
<u>Scenedesmaceae</u>		1825	1542	723	714	963	664
Zygnemataceae		263	457	428	968	1011	105
Chlorellaceae		1589	8625	7112	1245	1978	10265
<u>Micractiniaceae</u>		2114	1897	1035	1078	1599	1457
<u>Chlorococcaceae</u>		1632	1054	1224	1572	1773	600
<u>Desmidiaceae</u>		0	0	0	0	0	0
<u>Hildenbrandiaceae</u>		0	0	0	0	0	0
Microcystaceae		1985	1124	985	598	2015	817
Coscinodiscaceae		1679	1005	1425	800	1487	325
Naviculaceae		984	1244	652	652	968	598
Skeletonemataceae		0	0	0	854	0	0
Total			79375	78590	77563	83962	81673

EMR-4.6 | Statistical Analysis of Phytoplankton
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EMR-4.7	Zooplankton Analysis from Marine Samples
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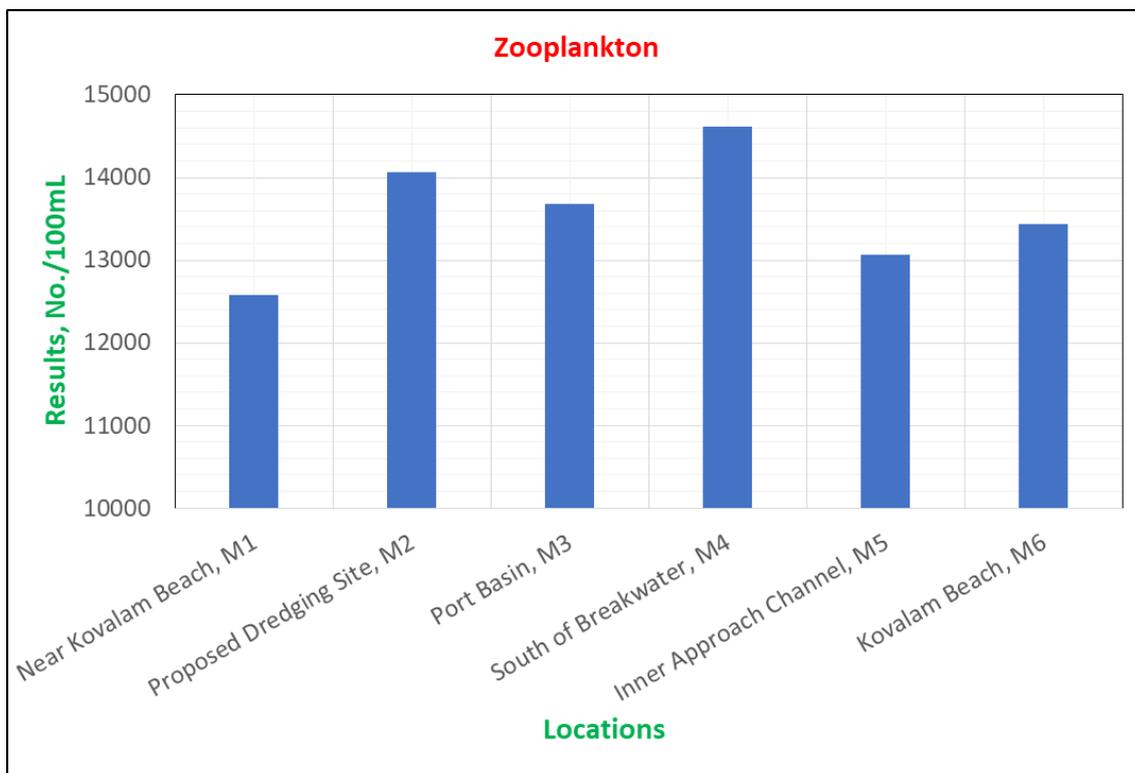
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Date of Sampling	05-02-2026
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Parameter	Unit	Results						
		Near Kovalam Beach (M1)	Proposed Dredging Site (M2)	Port Basin (M3)	South of Break Water (M4)	Inner Approach Channel (M5)	Kovalam Beach (M6)	
Amphipods	No/100mL	612	879	468	526	310	685	
Bivalve larvae		521	636	652	425	598	325	
Copepods		6628	7512	5947	9253	5987	5314	
Decapods		1535	304	862	0	1045	2104	
Gastropods		0	0	0	0	0	0	
Chaetognaths		514	1354	1975	2004	2236	1044	
Polychaetes		0	0	0	0	0	0	
Ciliates		1785	1874	2784	1936	1045	3154	
Lucifer		0	512	0	0	1135	0	
Siphonophore		986	998	987	468	711	810	
Total			12581	14069	13675	14612	13067	13436

EMR-4.8
Statistical Analysis of Zooplankton
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EMR-5
Ground Water Analysis Report
Date of Sampling
06-02-2026

S. No.	Parameters	Unit	Acceptable Limit as per IS 10500: 2012	Results		
				Port Site (Open well) G1	Proposed Port Estate Area (Open well) G2	PAF Area (Open well) G3
Organoleptic & Physical Parameters						
1.	Colour	Hazen Units	Max. 5	1	1	1
2.	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable
3.	pH Value	-	6.5 to 8.5	7.48	7.22	6.63
4.	Turbidity	N.T.U.	Max. 1	BDL	0.4	0.5
5.	Total Dissolved Solids	mg/L	Max. 500	310	350	290
General Parameters concerning substances undesirable in excessive amounts						
6.	Aluminium (as Al)	mg/L	Max. 0.03	BDL	BDL	BDL
7.	Ammonia (as NH ₃ -N)	mg/L	Max.0.5	BDL	BDL	BDL
8.	Anionic Detergents (as MBAS) Calculated as LAS mol.wt. 288.38	mg/L	Max. 0.2	BDL	BDL	BDL
9.	Barium (as Ba)	mg/L	Max. 0.7	BDL	BDL	BDL
10.	Boron (as B)	mg/L	Max. 0.5	BDL	BDL	BDL
11.	Calcium (as Ca)	mg/L	Max. 75	22.1	18.0	14.8
12.	Chloramines (as Cl ₂)	mg/L	Max. 4.0	BDL	BDL	BDL
13.	Chloride (as Cl)	mg/L	Max.250	66.5	108	86.1
14.	Copper (as Cu)	mg/L	Max.0.05	BDL	BDL	BDL
15.	Fluoride (as F)	mg/L	Max. 1	BDL	BDL	BDL
16.	Iron (as Fe)	mg/L	Max.1.0	BDL	BDL	BDL
17.	Magnesium (as Mg)	mg/L	Max. 30	6.39	5.41	4.92
18.	Manganese (as Mn)	mg/L	Max.0.1	BDL	BDL	BDL
19.	Mineral Oil	mg/L	Max.1.0	BDL	BDL	BDL
20.	Nitrate (as NO ₃)	mg/L	Max.45	BDL	BDL	BDL
21.	Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	Max. 0.001	BDL	BDL	BDL
22.	Selenium (as Se)	mg/L	Max. 0.01	BDL	BDL	BDL
23.	Silver (as Ag)	mg/L	Max. 0.1	BDL	BDL	BDL
24.	Sulphate (as SO ₄)	mg/L	Max. 200	20.5	12.0	16.5
25.	Sulphide (as H ₂ S)	mg/L	Max. 0.05	BDL	BDL	BDL
26.	Total Alkalinity (as CaCO ₃)	mg/L	Max.200	60	16.8	12
27.	Total Hardness (as CaCO ₃)	mg/L	Max. 200	80.8	66.7	56.6
28.	Zinc (as Zn)	mg/L	Max. 5	BDL	BDL	BDL
Parameters Concerning Toxic Substances						

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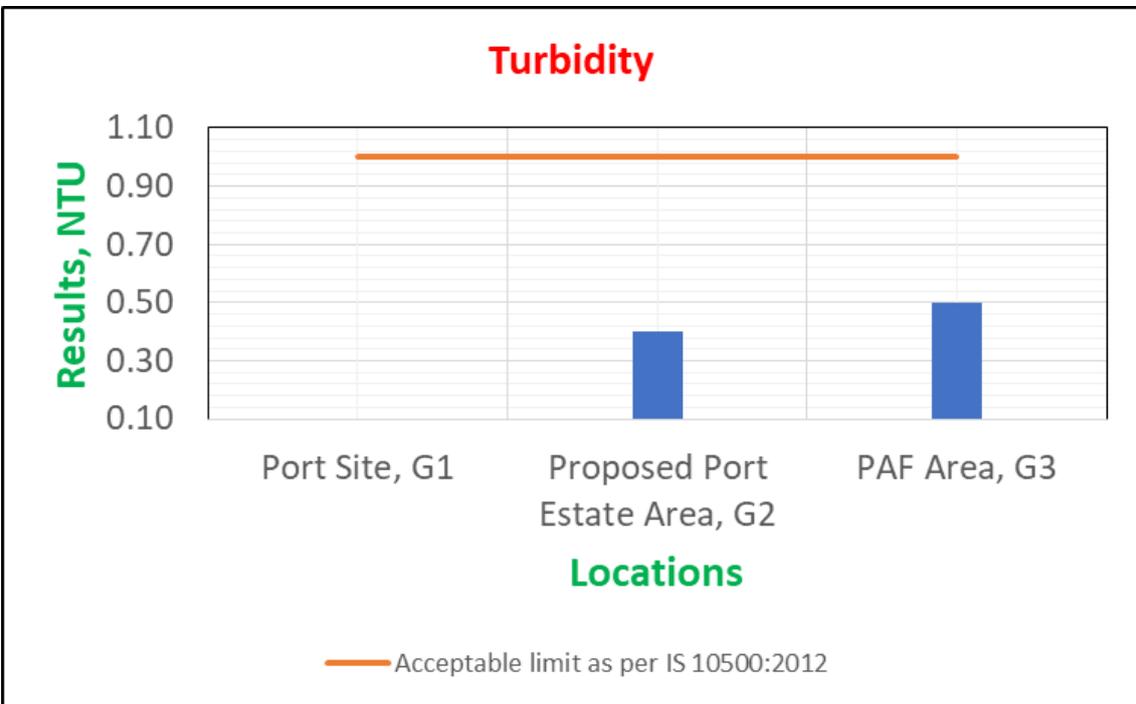
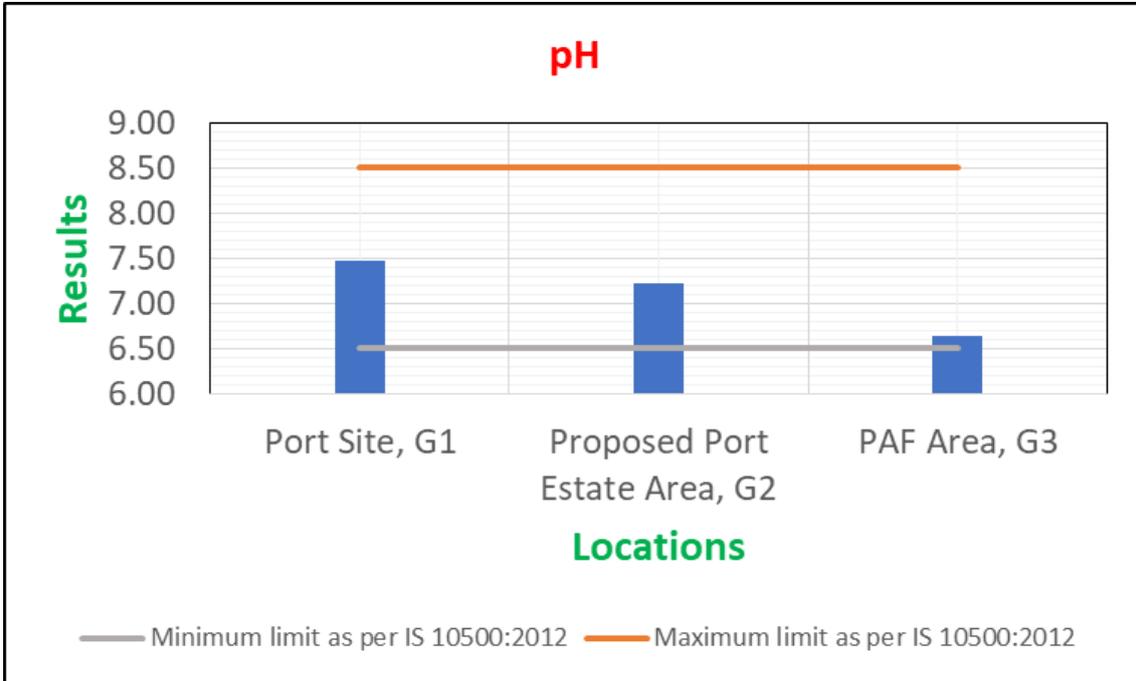
S. No.	Parameters	Unit	Acceptable Limit as per IS 10500: 2012	Results		
				Port Site (Open well) G1	Proposed Port Estate Area (Open well) G2	PAF Area (Open well) G3
29.	Cadmium (as Cd)	mg/L	Max. 0.003	BDL	BDL	BDL
30.	Cyanide (as CN)	mg/L	Max.0.05	BDL	BDL	BDL
31.	Lead (as Pb)	mg/L	Max. 0.01	BDL	BDL	BDL
32.	Mercury (as Hg)	mg/L	Max. 0.001	BDL	BDL	BDL
33.	Molybdenum (as Mo)	mg/L	Max. 0.07	BDL	BDL	BDL
34.	Nickel (as Ni)	mg/L	Max.0.02	BDL	BDL	BDL
35.	Pesticide Residues					
i.	Alachlor	µg/L	20	BDL	BDL	BDL
ii.	Atrazine	µg/L	2	BDL	BDL	BDL
iii.	Aldrin/Dieldrin	µg/L	0.03	BDL	BDL	BDL
iv.	Alpha HCH	µg/L	0.01	BDL	BDL	BDL
v.	Beta HCH	µg/L	0.04	BDL	BDL	BDL
vi.	Butachlor	µg/L	125	BDL	BDL	BDL
vii.	Chlorpyrifos	µg/L	30	BDL	BDL	BDL
viii.	Delta HCH	µg/L	0.04	BDL	BDL	BDL
ix.	2,4D chlorophenoxyacetic acid	µg/L	30	BDL	BDL	BDL
x.	DDT (o,p & p,p- Isomers of DDT, DDE, DDD)	µg/L	1	BDL	BDL	BDL
xi.	Endosulfan (α,β & Sulphate)	µg/L	0.4	BDL	BDL	BDL
xii.	Ethion	µg/L	3	BDL	BDL	BDL
xiii.	γ HCH (Lindane)	µg/L	2	BDL	BDL	BDL
xiv.	Isoproturon	µg/L	9	BDL	BDL	BDL
xv.	Malathion	µg/L	190	BDL	BDL	BDL
xvi.	Methyl Parathion	µg/L	0.3	BDL	BDL	BDL
xvii.	Monocrotophos	µg/L	1	BDL	BDL	BDL
xviii.	Phorate	µg/L	2	BDL	BDL	BDL
36.	Polychlorinated Biphenyls (PCB)	mg/L	Max.0.0005	BDL	BDL	BDL
37.	Polynuclear Aromatic Hydrocarbons (PAH)	mg/L	Max.0.0001	BDL	BDL	BDL
38.	Total Arsenic (as As)	mg/L	Max. 0.01	BDL	BDL	BDL
39.	Total Chromium (as Cr)	mg/L	Max. 0.05	BDL	BDL	BDL
40.	Trihalomethanes					
a)	Bromoform	mg/L	Max. 0.1	BDL	BDL	BDL
b)	Dibromochloromethane	mg/L	Max. 0.1	BDL	BDL	BDL
c)	Bromodichloroethane	mg/L	Max. 0.06	BDL	BDL	BDL
d)	Chloroform	mg/L	Max. 0.2	BDL	BDL	BDL
Bacteriological Analysis						
41.	<i>E. coli</i>	MPN/100 ml	Not Detectable	BDL	BDL	BDL
42.	Total Coliforms	MPN/100 ml	-	BDL	BDL	BDL

BDL: Below Detectable Limit

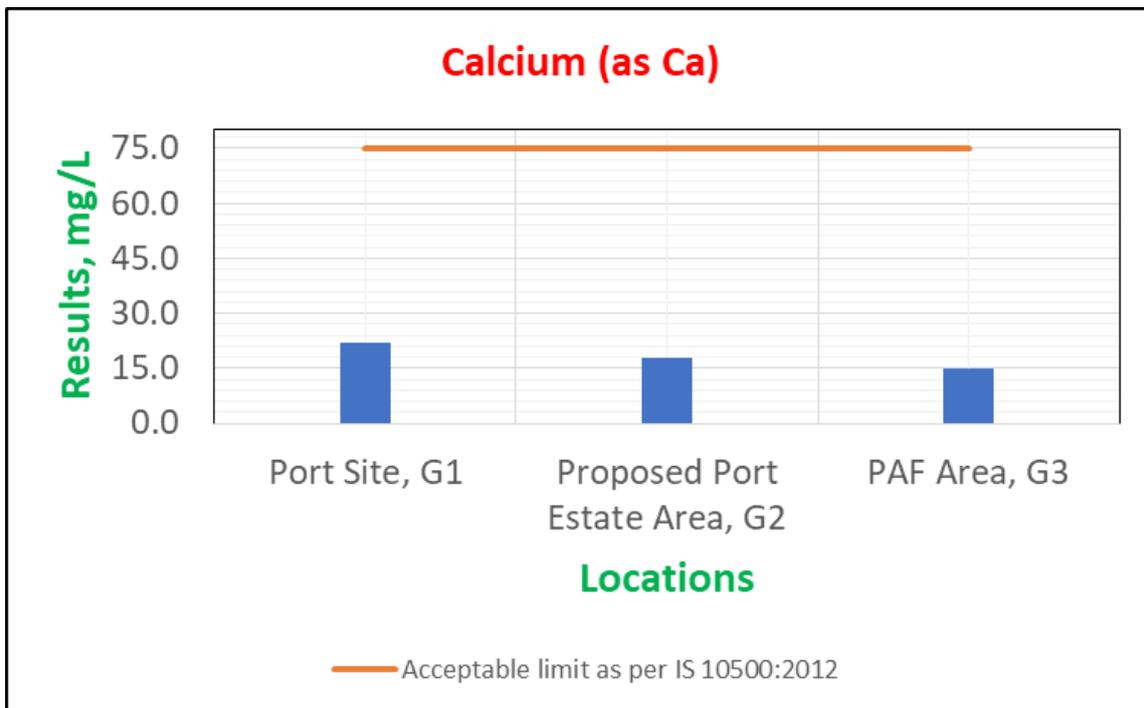
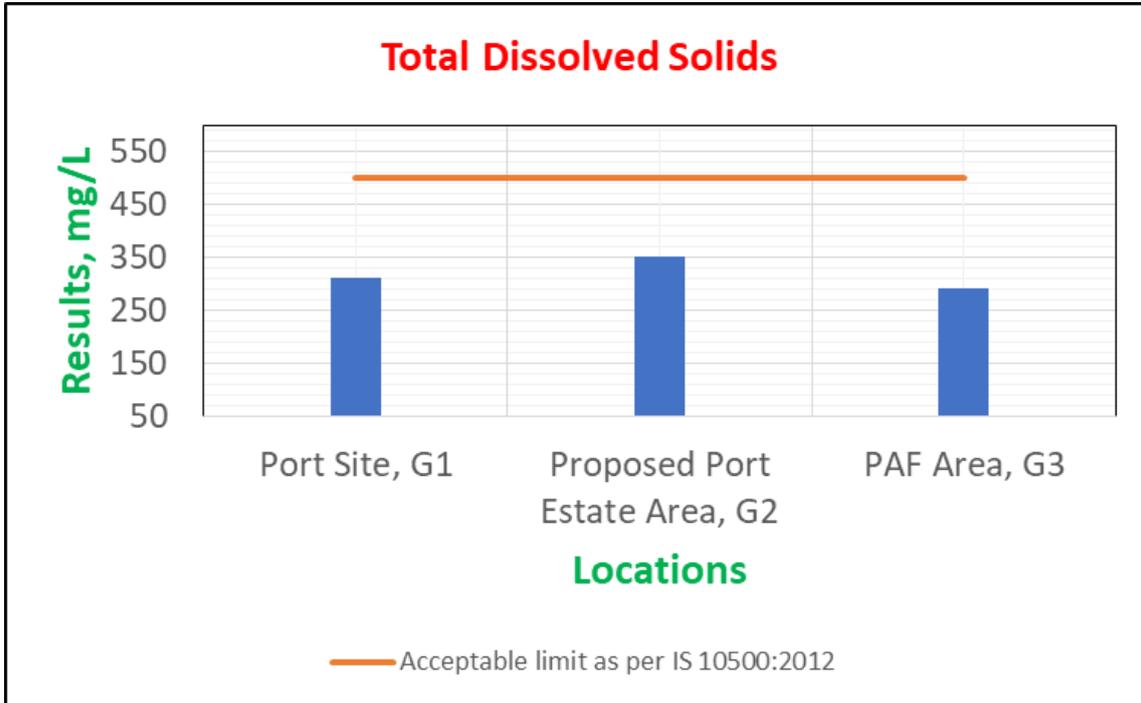
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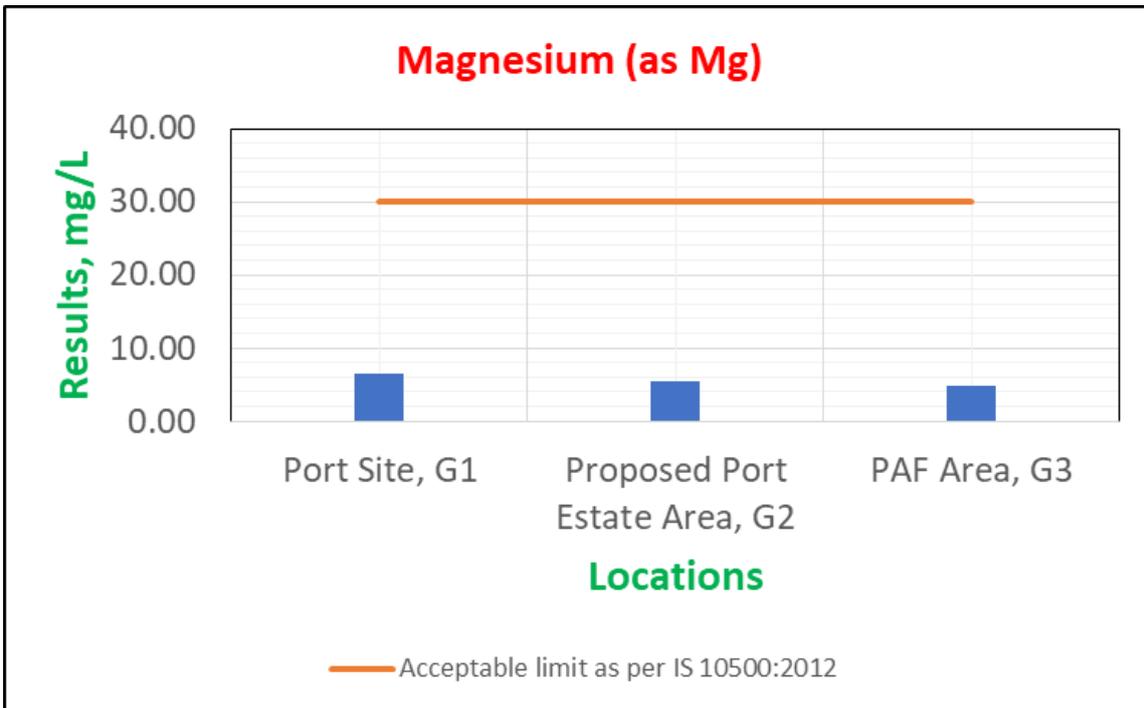
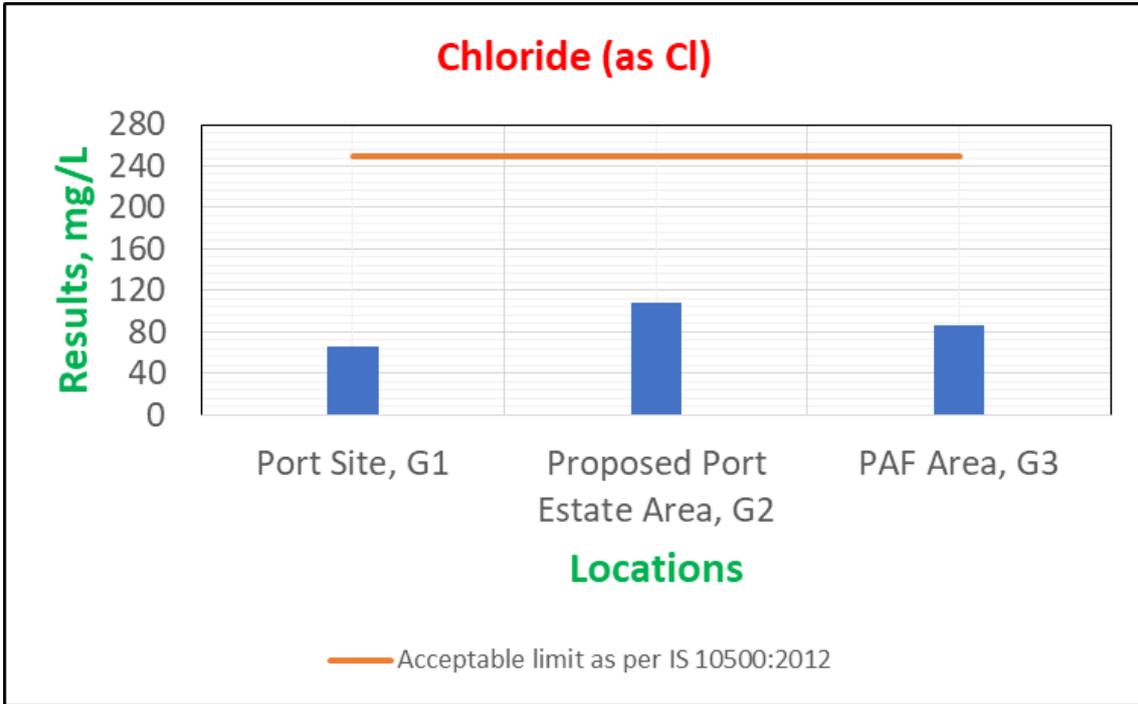
EMR-5.1 Statistical Analysis of Ground Water



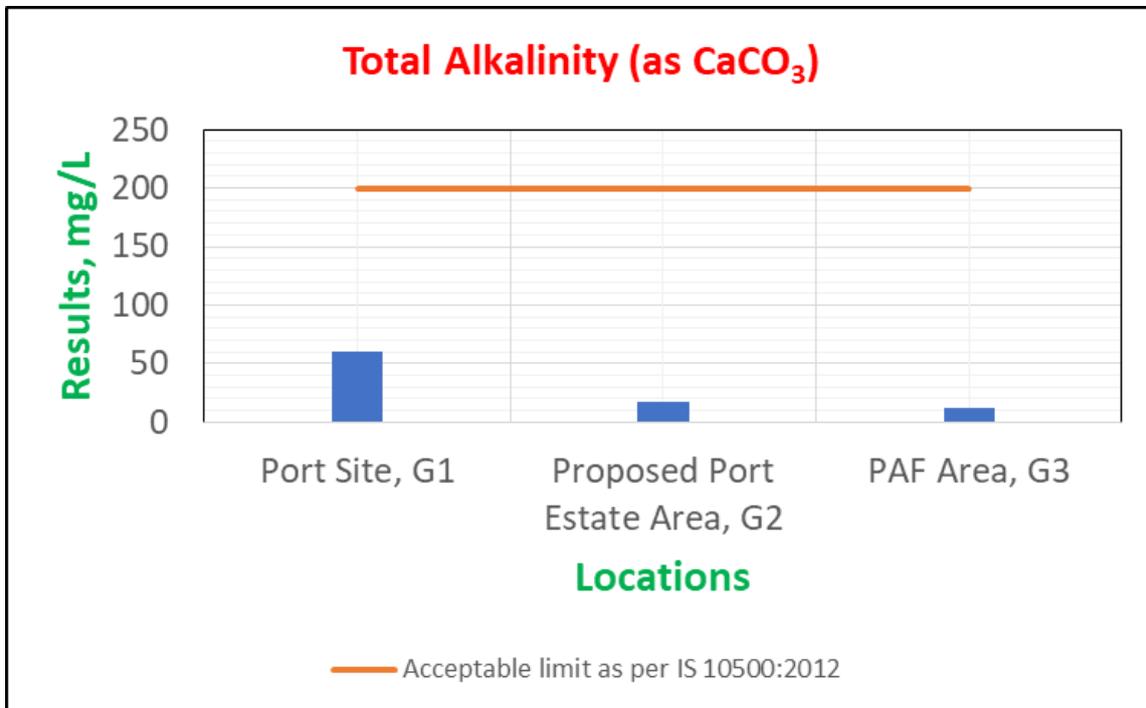
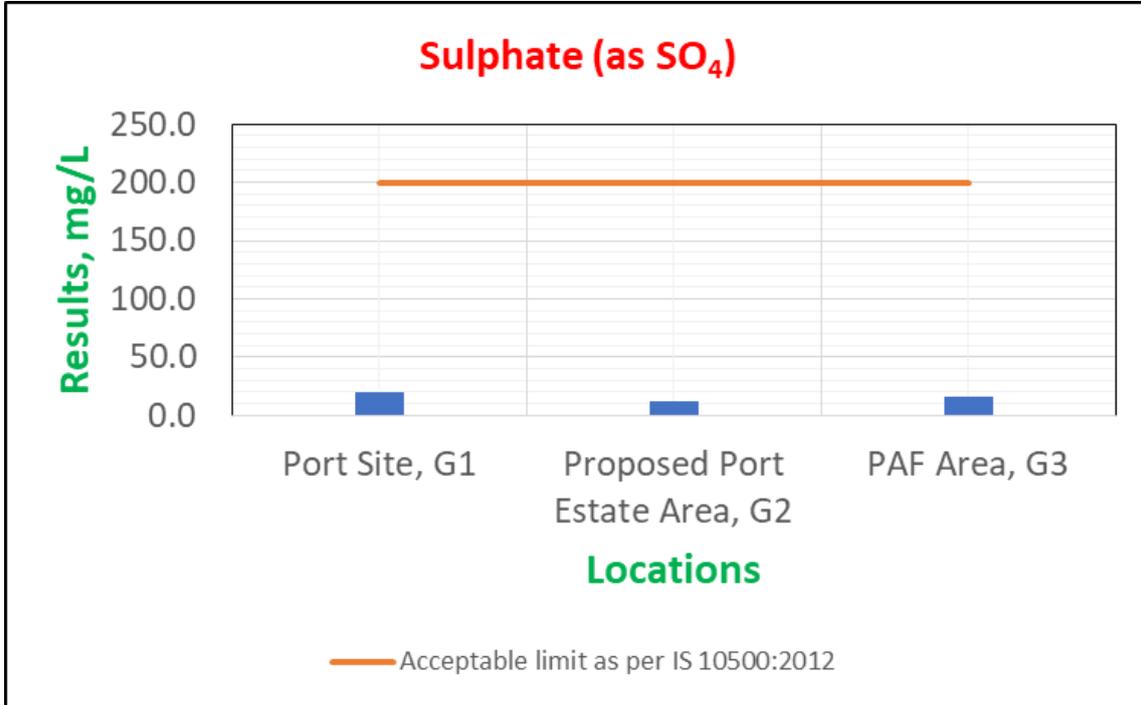
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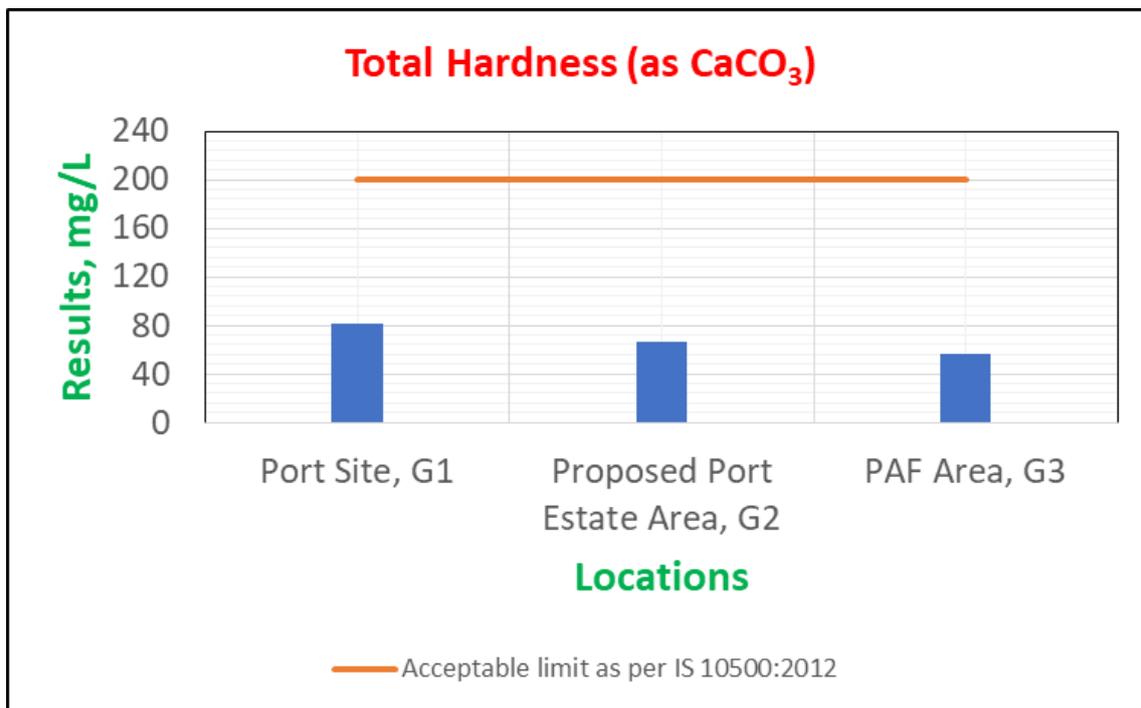
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EMR-6	Surface Water Analysis Report
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Date of Sampling	06-02-2026
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S. No.	Parameters	Unit	Results			
			Poovar West Canal S1	Vizhinjam Branch Canal S2	Vellayani Lake S3	Poovar Estuary S4
Physical Parameters						
1.	Colour	Hazen Units	1	1	1	1
2.	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable
3.	pH Value	-	7.33	7.62	7.15	7.01
4.	Turbidity	N.T.U.	3.2	1.8	0.6	1.5
5.	Electrical Conductivity (at 25°C)	µmho/cm	1290	210	305	4856
6.	Total Dissolved Solids	mg/L	825	130	195	3100
Chemical Parameters						
7.	Dissolved Oxygen	mg/L	6.9	7.0	7.0	6.9
8.	Biochemical Oxygen Demand (3 days, 27°C)	mg/L	BDL	BDL	BDL	BDL
9.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL
10.	Free Ammonia	mg/L	BDL	BDL	BDL	1.46
11.	Anionic Detergents (as MBAS) Calculated as LAS mol.wt. 288.38	mg/L	BDL	BDL	BDL	BDL
12.	Barium (as Ba)	mg/L	BDL	BDL	BDL	BDL
13.	Boron (as B)	mg/L	BDL	BDL	BDL	BDL
14.	Calcium (as Ca)	mg/L	64.0	8.20	10.7	61.5
15.	Chloride (as Cl)	mg/L	147	27.4	48.9	519
16.	Copper (as Cu)	mg/L	BDL	BDL	BDL	BDL
17.	Fluoride (as F)	mg/L	BDL	BDL	BDL	BDL
18.	Iron (as Fe)	mg/L	0.68	0.52	BDL	0.78
19.	Magnesium (as Mg)	mg/L	20.7	2.95	3.44	49.2
20.	Manganese (as Mn)	mg/L	BDL	BDL	BDL	BDL
21.	Mineral Oil	mg/L	BDL	BDL	BDL	BDL
22.	Nitrate (as NO ₃)	mg/L	BDL	BDL	BDL	BDL
23.	Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	BDL	BDL	BDL	BDL
24.	Selenium (as Se)	mg/L	BDL	BDL	BDL	BDL
25.	Silver (as Ag)	mg/L	BDL	BDL	BDL	BDL
26.	Sulphate (as SO ₄)	mg/L	18.5	10.1	5.63	160
27.	Total Phosphate (as PO ₄)	mg/L	BDL	BDL	BDL	BDL
28.	Total Alkalinity (as CaCO ₃)	mg/L	21.6	28.8	31.2	38.4
29.	Total Hardness (as CaCO ₃)	mg/L	232	32.3	44.4	354
30.	Calcium Hardness (as CaCO ₃)	mg/L	158	20.2	26.3	152

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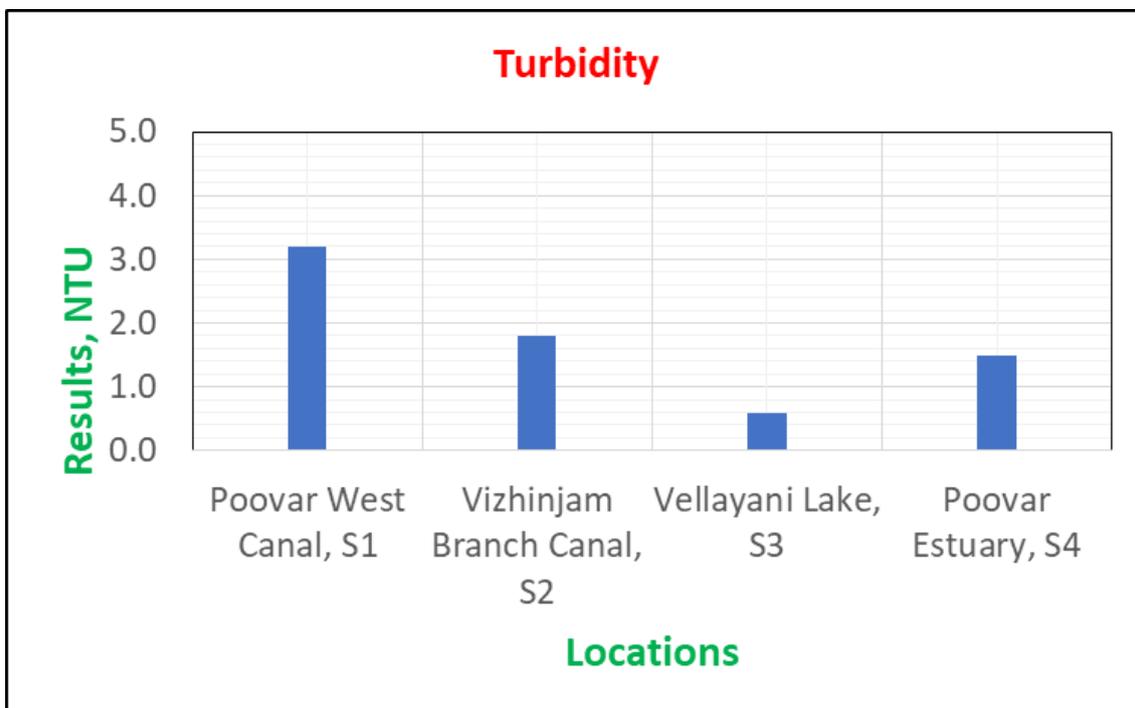
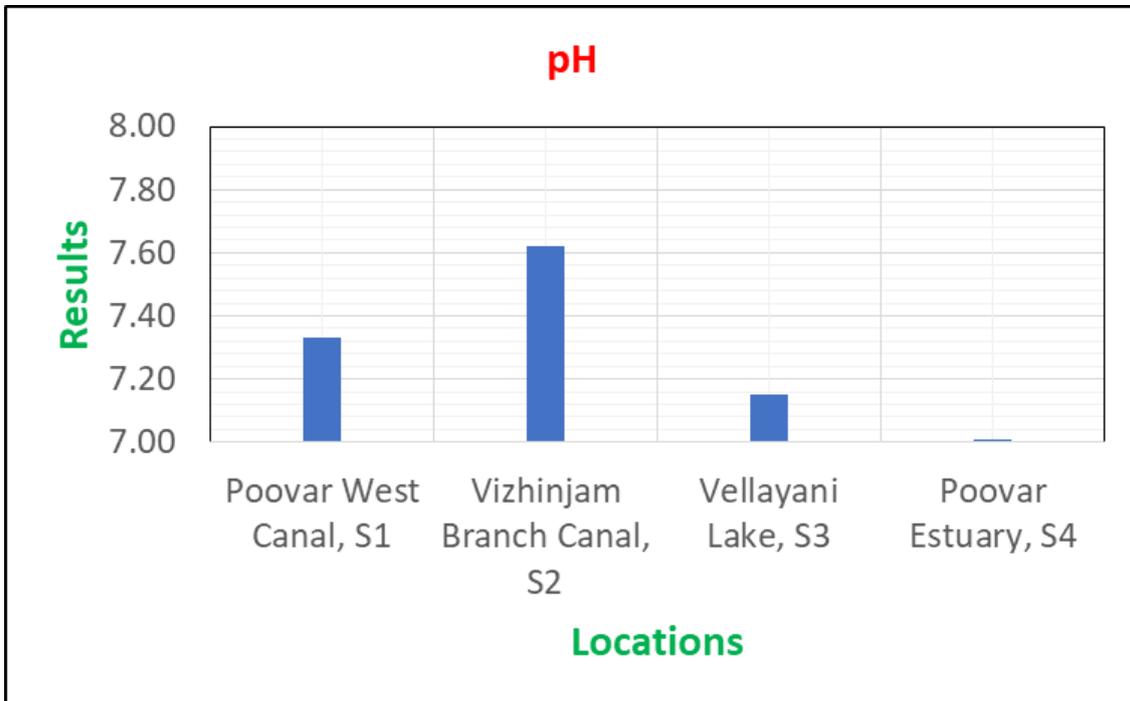
S. No.	Parameters	Unit	Results			
			Poovar West Canal S1	Vizhinjam Branch Canal S2	Vellayani Lake S3	Poovar Estuary S4
31.	Zinc (as Zn)	mg/L	BDL	BDL	BDL	BDL
32.	Sodium (as Na)	mg/L	88.6	10.0	28.5	215
33.	Potassium (as K)	mg/L	9.95	2.11	3.70	17.5
34.	Sodium Adsorption Ratio	-	2.460	0.761	1.937	4.953
35.	Salinity	ppt	0.632	0.101	0.145	2.555
36.	Cadmium (as Cd)	mg/L	BDL	BDL	BDL	BDL
37.	Cyanide (as CN)	mg/L	BDL	BDL	BDL	BDL
38.	Lead (as Pb)	mg/L	BDL	BDL	BDL	BDL
39.	Mercury (as Hg)	mg/L	BDL	BDL	BDL	BDL
40.	Pesticide Residues					
i.	Alachlor	µg/L	BDL	BDL	BDL	BDL
ii.	Atrazine	µg/L	BDL	BDL	BDL	BDL
iii.	Aldrin/Dieldrin	µg/L	BDL	BDL	BDL	BDL
iv.	Alpha HCH	µg/L	BDL	BDL	BDL	BDL
v.	Beta HCH	µg/L	BDL	BDL	BDL	BDL
vi.	Butachlor	µg/L	BDL	BDL	BDL	BDL
vii.	Chlorpyrifos	µg/L	BDL	BDL	BDL	BDL
viii.	Delta HCH	µg/L	BDL	BDL	BDL	BDL
ix.	2,4D chlorophenoxyacetic acid	µg/L	BDL	BDL	BDL	BDL
x.	DDT (o,p & p,p- Isomers of DDT, DDE, DDD)	µg/L	BDL	BDL	BDL	BDL
xi.	Endosulfan (α,β & Sulphate)	µg/L	BDL	BDL	BDL	BDL
xii.	Ethion	µg/L	BDL	BDL	BDL	BDL
xiii.	γ HCH (Lindane)	µg/L	BDL	BDL	BDL	BDL
xiv.	Isoproturon	µg/L	BDL	BDL	BDL	BDL
xv.	Malathion	µg/L	BDL	BDL	BDL	BDL
xvi.	Methyl Parathion	µg/L	BDL	BDL	BDL	BDL
xvii.	Monocrotophos	µg/L	BDL	BDL	BDL	BDL
xviii.	Phorate	µg/L	BDL	BDL	BDL	BDL
41.	Polynuclear Aromatic Hydrocarbons (PAH)	mg/L	BDL	BDL	BDL	BDL
42.	Total Arsenic (as As)	mg/L	BDL	BDL	BDL	BDL
43.	Total Chromium (as Cr)	mg/L	BDL	BDL	BDL	BDL
Biological Analysis						
44.	Total Coliforms	MPN/100 ml	BDL	BDL	BDL	BDL
45.	Faecal Coliforms	MPN/100 ml	BDL	BDL	BDL	BDL

BDL: Below Detectable Limit

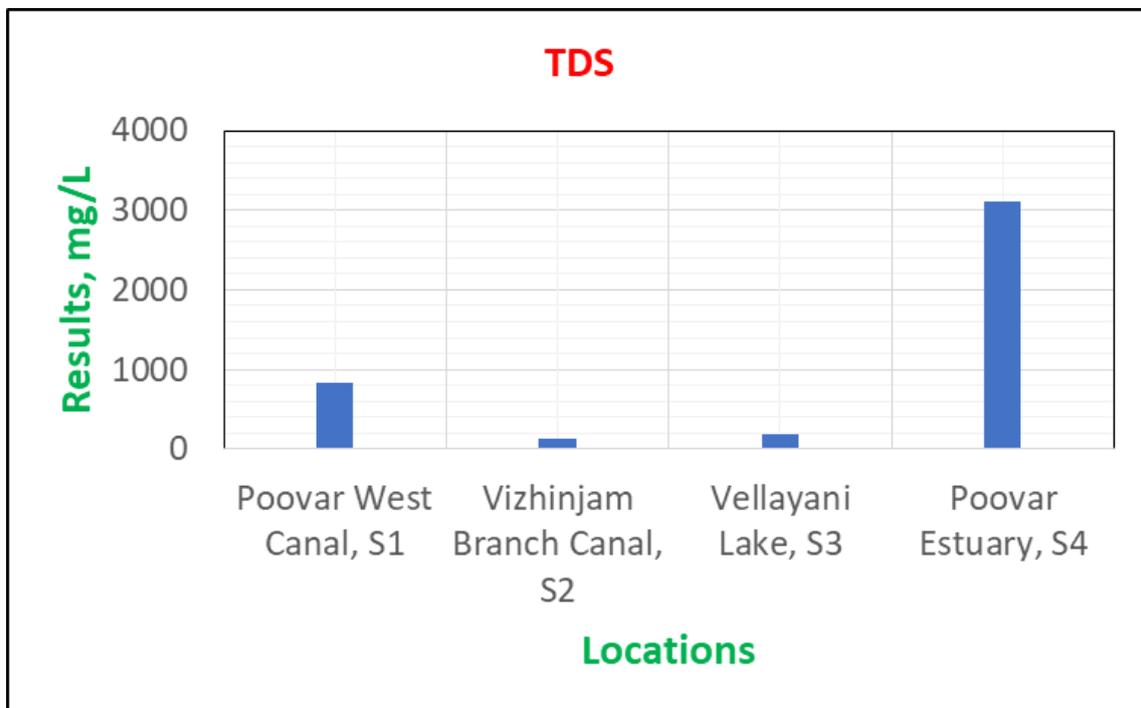
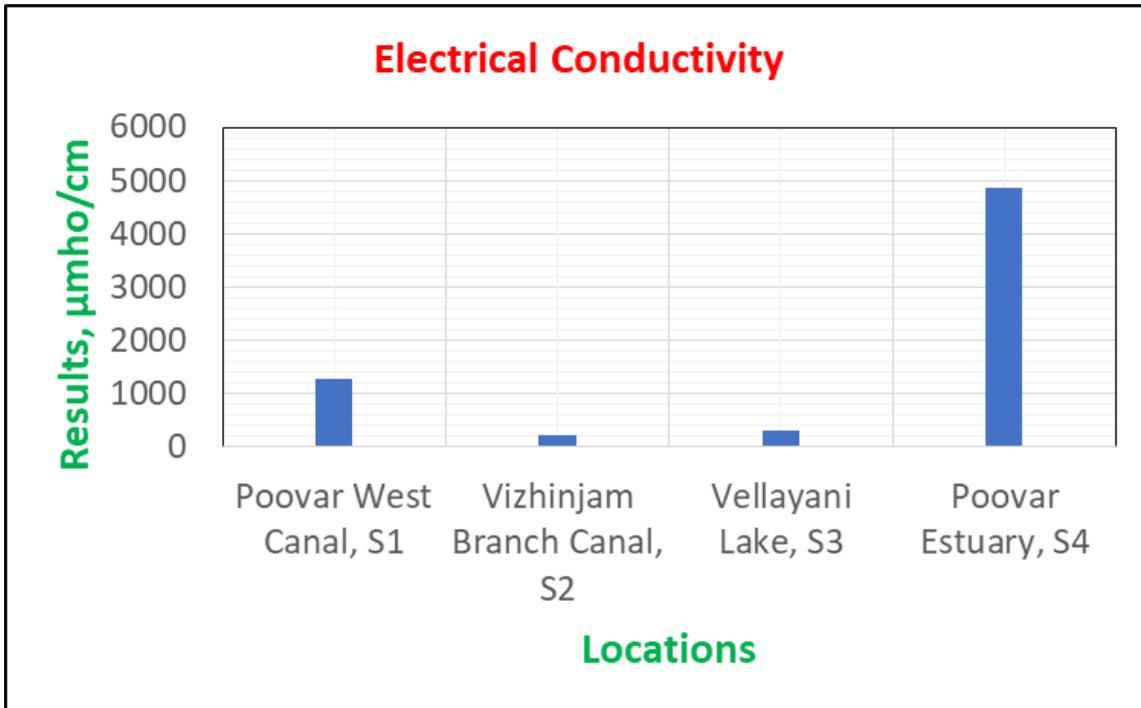
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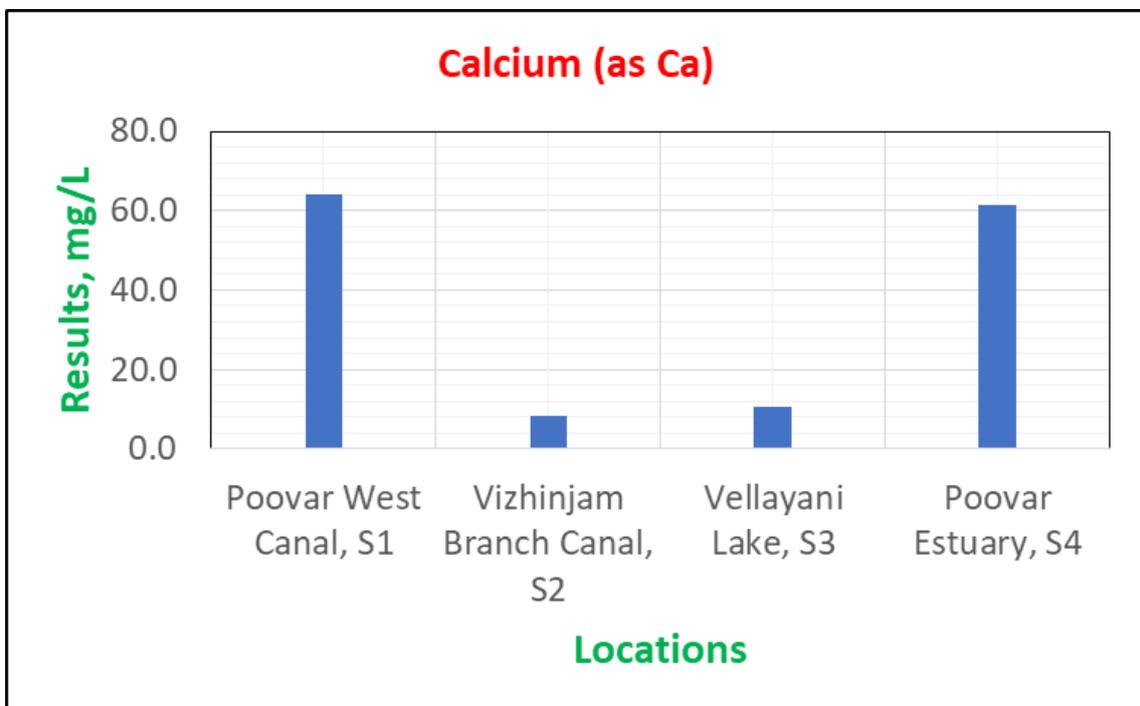
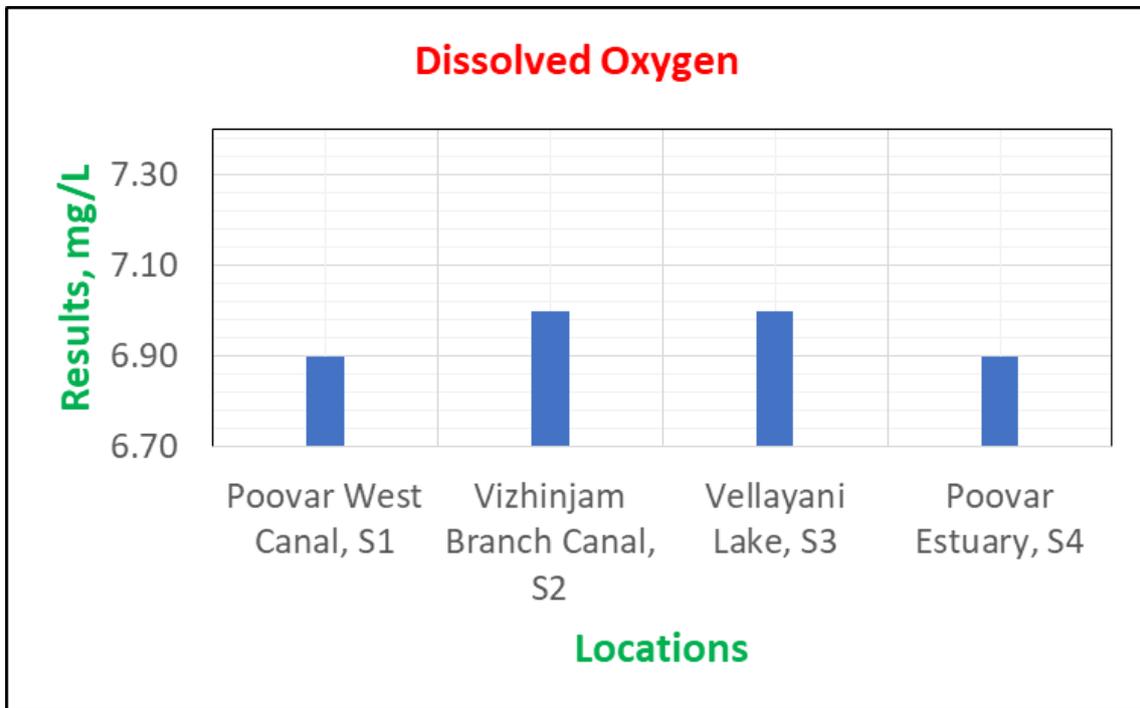
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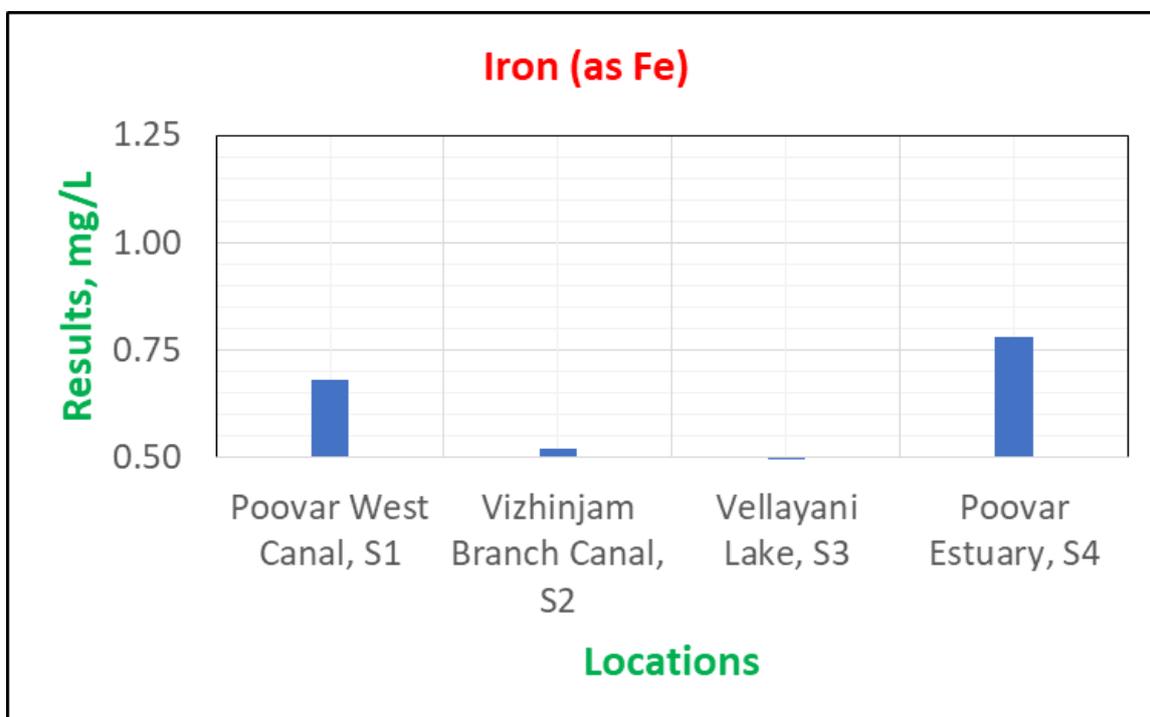
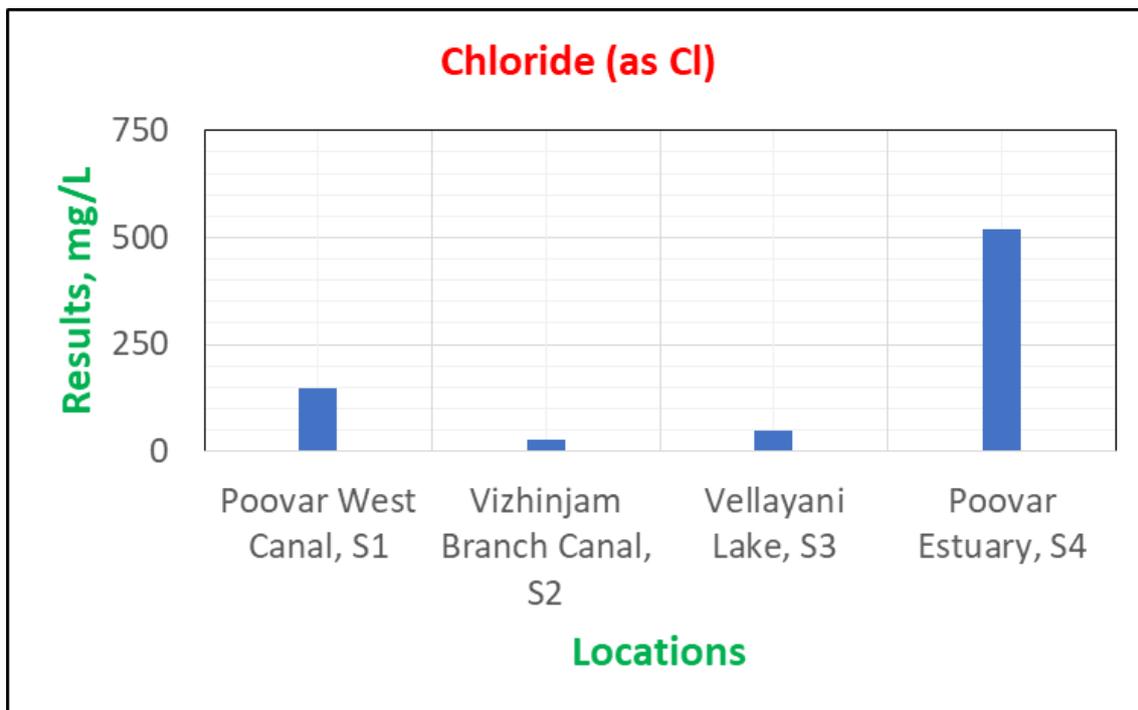
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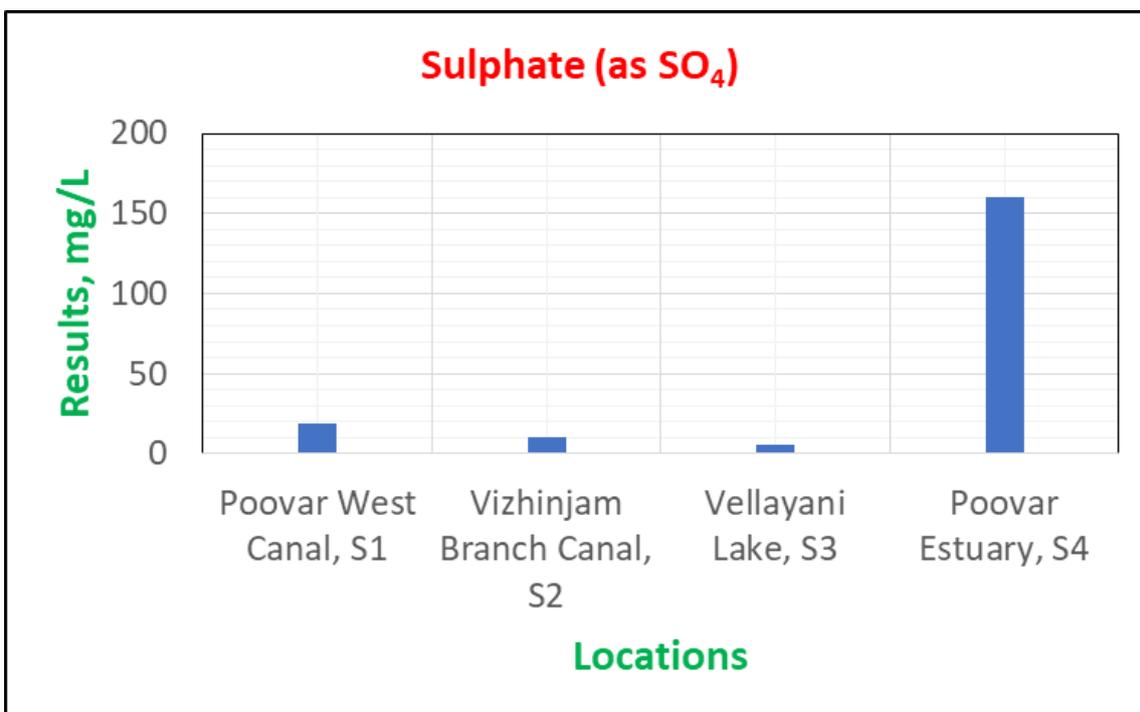
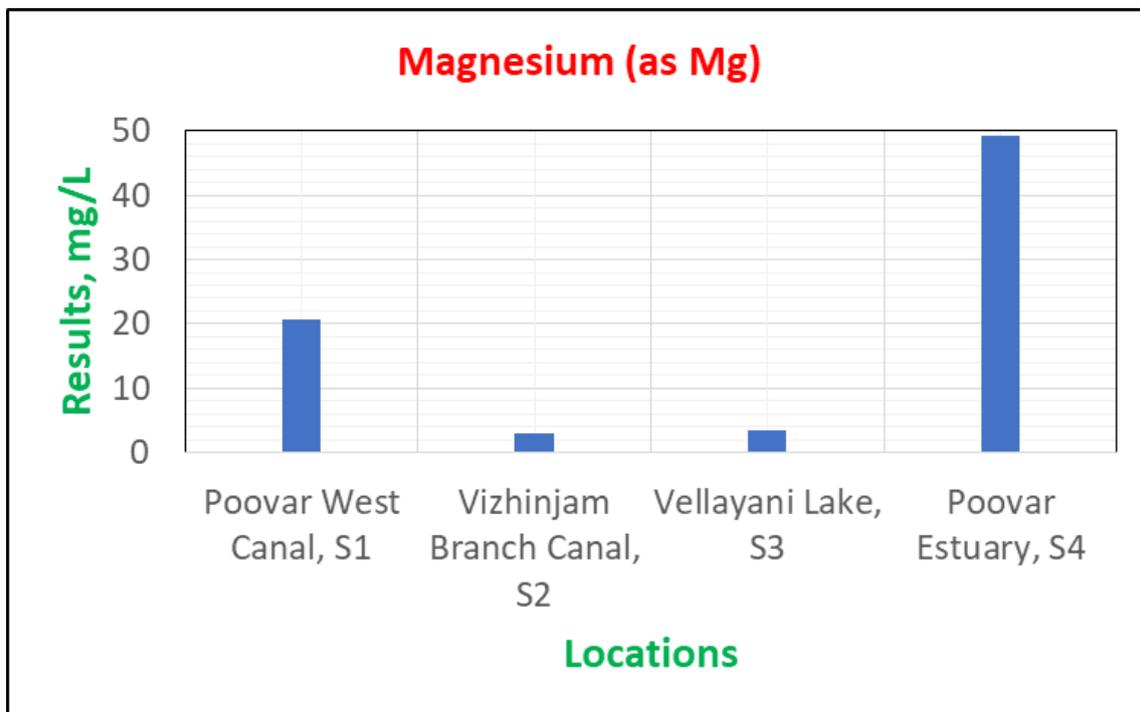
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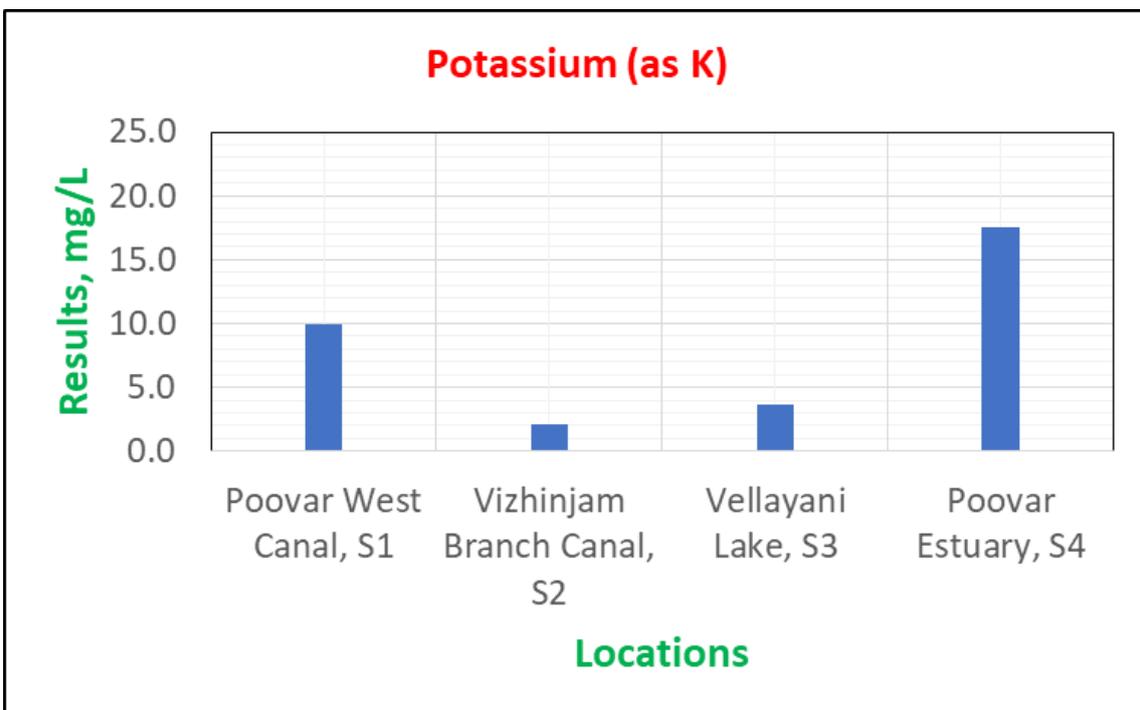
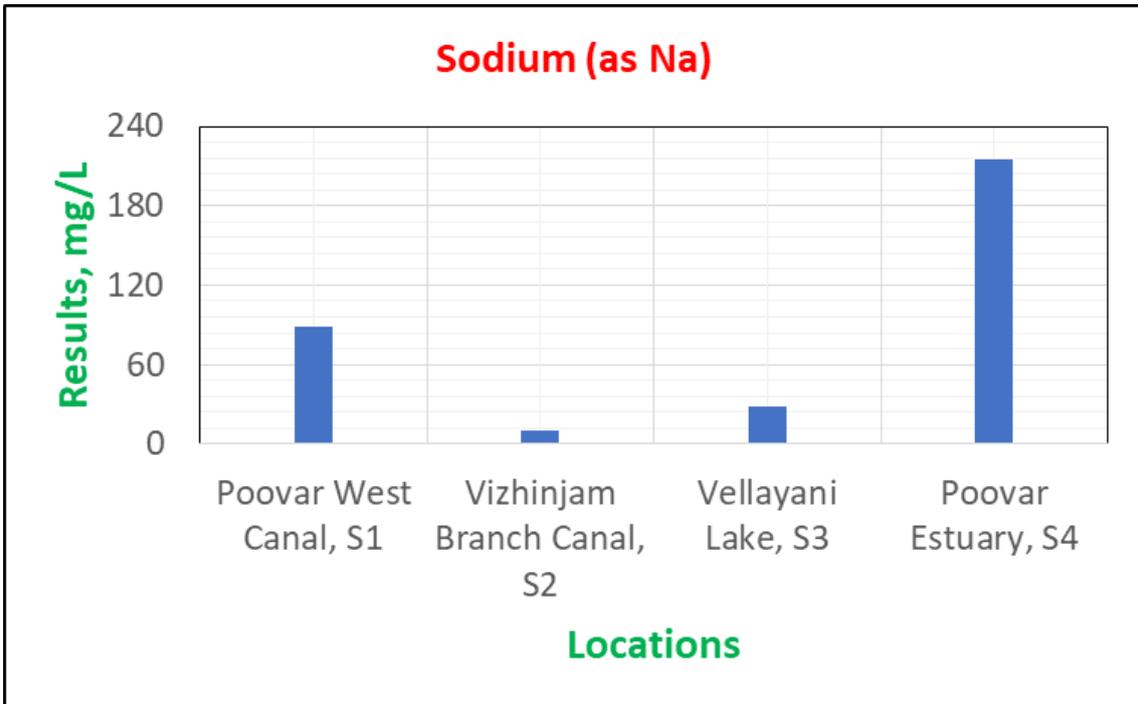
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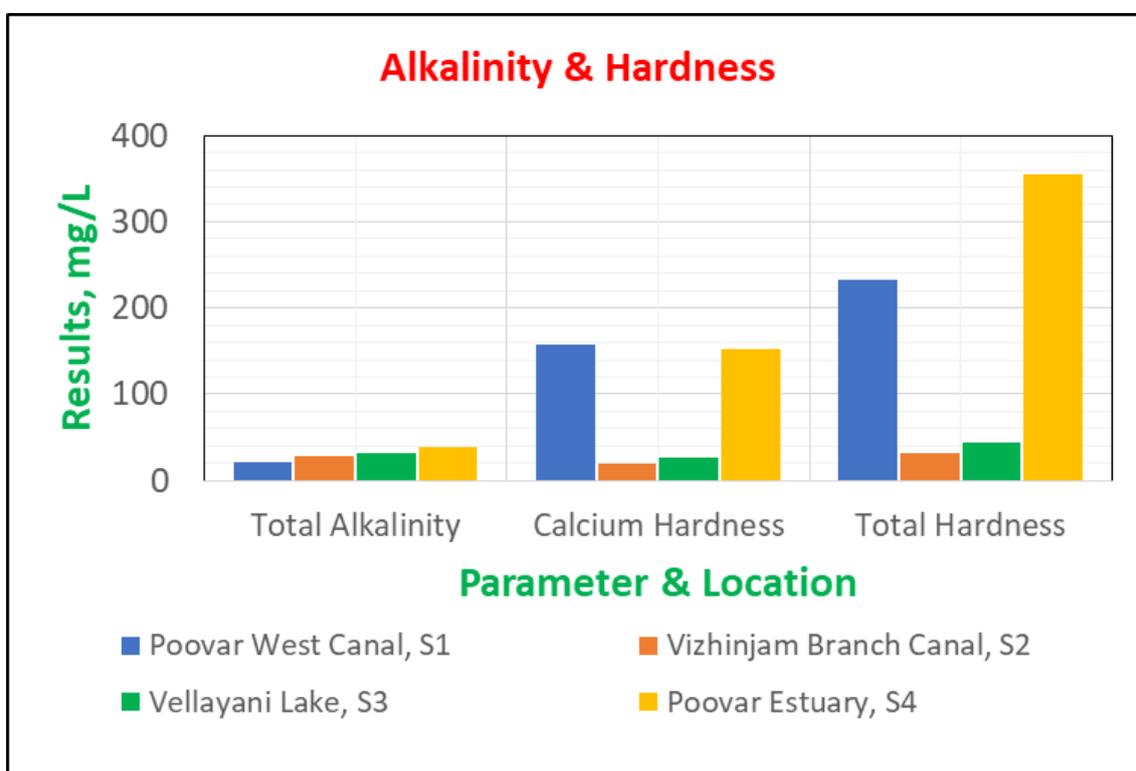
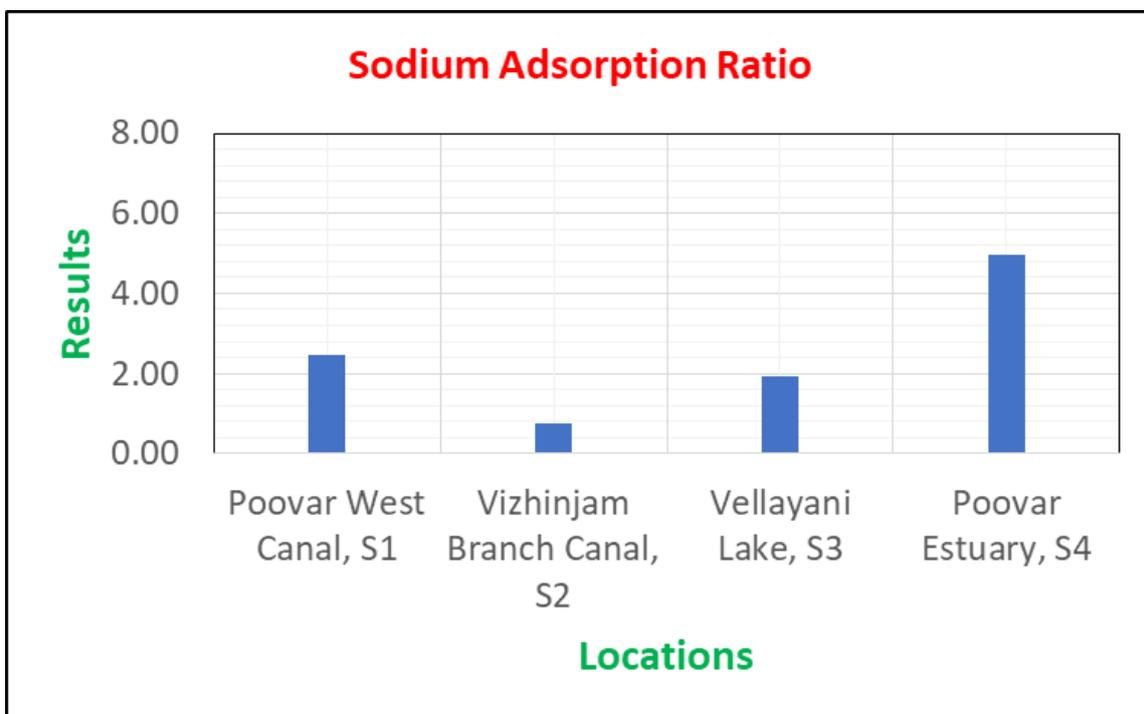
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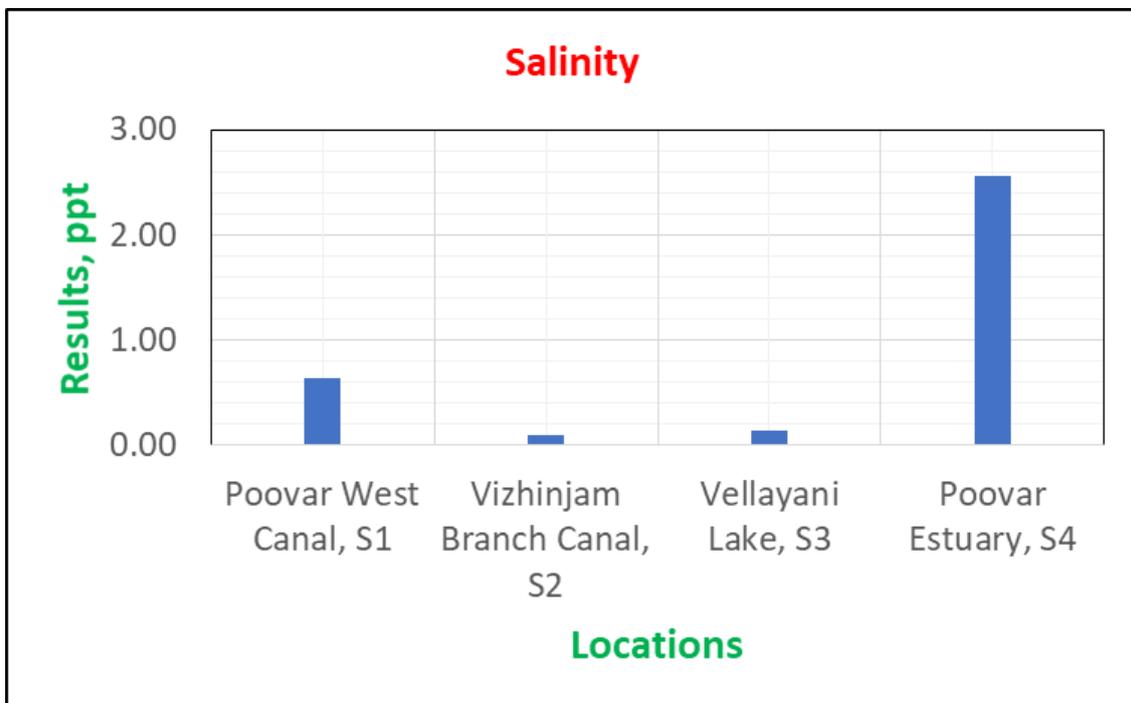
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EMR-7
List of Parameters, Detection Limits and Methodology of Analysis

Sr. No.	Parameter	Unit	Detection Limit	Method Reference
Ambient Air Analysis				
1.	Particulate Matter (size less than 10 µm) or PM ₁₀	µg/m ³	5.0	IS 5182 (Part 23):2006
2.	Particulate Matter (size less than 2.5 µm) or PM _{2.5}	µg/m ³	2.0	IS 5182 (Part 24):2019
3.	Sulphur Dioxide (SO ₂)	µg/m ³	4.0	IS 5182 (Part 2/Sec 1):2023
4.	Nitrogen Dioxide (NO ₂)	µg/m ³	4.0	IS 5182 (Part 6):2006
5.	Carbon Monoxide (CO)	mg/m ³	0.1	IS 5182 (Part 10):1999
6.	Hydrocarbon (HC)	ppm	1.0	SEAAL/CHL/SOP/7.3/30
Surface and Ground Water Analysis				
7.	Colour	Hazen Units	1	IS 3025 (Part 4): 2021
8.	Odour	-	--	IS 3025 (Part 5): 2018
9.	pH Value	-	2	IS 3025 (Part 11): 2022
10.	Turbidity	N.T.U.	0.1	IS 3025 (Part 10):2023
11.	Electrical Conductivity (at 25°C)	µs/cm	1.0	IS 3025 (Part 14): 2013
12.	Total Dissolved Solids	mg/L	5	IS 3025 (Part 16): 2023
13.	Dissolved Oxygen	mg/L	0.2	IS 3025 (Part 38) : 2025
14.	Biochemical Oxygen Demand (3 days, 27°C)	mg/L	2	IS 3025 (Part 44) : 2023
15.	Oil & Grease	mg/L	1	IS 3025 Part 39: 2021
16.	Aluminium (as Al)	mg/L	0.2	IS 3025 Part 55:2003
17.	Ammonia (as NH ₃ - N)	mg/L	0.1	SEAAL/CHL/SOP/7.2/28
18.	Anionic Detergents (as MBAS) Calculated as LAS mol.wt. 288.38	mg/L	0.1	IS 3025 (Part 68): 2019
19.	Barium (as Ba)	mg/L	0.5	IS 3025 (Part 65):2025
20.	Boron (as B)	mg/L	0.2	IS 3025 (Part 65):2025
21.	Calcium (as Ca)	mg/L	1	IS 3025 (Part 40):2024
22.	Chloramines (as Cl ₂)	mg/L	1	APHA (24th Edn) 4500-Cl G : 2023
23.	Chloride (as Cl)	mg/L	1	IS 3025 (Part 32):2025
24.	Copper (as Cu)	mg/L	0.05	IS 3025 (Part 65):2025
25.	Fluoride (as F)	mg/L	0.1	IS 3025 (Part 60/Sec 1): 2023
26.	Iron (as Fe)	mg/L	0.1	IS 3025 (Part 65):2025
27.	Magnesium (as Mg)	mg/L	1	IS 3025 (Part 46):2023
28.	Manganese (as Mn)	mg/L	0.05	IS 3025 (Part 65):2025
29.	Mineral Oil	mg/L	0.50	IS 3025 (Part 39):2021
30.	Nitrate (as NO ₃)	mg/L	1	IS 3025 (Part 34/Sec 1): 2023
31.	Phenolic Compounds	mg/L	0.01	IS 3025 (Part 43/Sec 1): 2022

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Sr. No.	Parameter	Unit	Detection Limit	Method Reference
	(as C ₆ H ₅ OH)			
32.	Selenium (as Se)	mg/L	0.002	IS 3025 (Part 65):2025
33.	Silver (as Ag)	mg/L	0.1	IS 3025 (Part 65):2025
34.	Sulphate (as SO ₄)	mg/L	1	IS 3025 (Part 24/Sec 1): 2022
35.	Sulphide (as H ₂ S)	mg/L	0.01	IS 3025 (Part 29): 2022
36.	Total Phosphate (as PO ₄)	mg/L	0.1	IS 3025 (Part 31/Sec 1): 2022
37.	Total Alkalinity (as CaCO ₃)	mg/L	1	IS 3025 (Part 23): 2023
38.	Total Hardness (as CaCO ₃)	mg/L	1	IS 3025 (Part 21): 2009
39.	Calcium Hardness (as CaCO ₃)	mg/L	1	IS 3025 (Part 40): 2024
40.	Zinc (as Zn)	mg/L	0.025	IS 3025 (Part 65):2025
41.	Sodium (as Na)	mg/L	1	IS 3025 (Part 45) : 2024
42.	Potassium (as K)	mg/L	0.5	IS 3025 (Part 45) : 2024
43.	Sodium Absorption Ratio	-	0.1	IS 11624 : 2019
44.	Cadmium (as Cd)	mg/L	0.03	IS 3025 (Part 65):2025
45.	Cyanide (as CN)	mg/L	0.01	APHA (24th Edn) 4500 CN-C,E: 2023
46.	Lead (as Pb)	mg/L	0.2	IS 3025 (Part 65):2025
47.	Mercury (as Hg)	mg/L	0.002	IS 3025 (Part 65):2025
48.	Molybdenum (as Mo)	mg/L	0.25	IS 3025 (Part 65):2025
49.	Nickel (as Ni)	mg/L	0.1	IS 3025 (Part 65):2025
50.	Pesticide Residues			
i.	Alachlor	µg/L	0.005	SEAAL/INS/SOP/7.2/03
ii.	Atrazine	µg/L	0.005	SEAAL/INS/SOP/7.2/03
iii.	Aldrin/Dieldrin	µg/L	0.005	SEAAL/INS/SOP/7.2/03
iv.	Alpha HCH	µg/L	0.005	SEAAL/INS/SOP/7.2/03
v.	Beta HCH	µg/L	0.005	SEAAL/INS/SOP/7.2/03
vi.	Butachlor	µg/L	0.005	SEAAL/INS/SOP/7.2/03
vii.	Chlorpyrifos	µg/L	0.005	SEAAL/INS/SOP/7.2/03
viii.	Delta HCH	µg/L	0.005	SEAAL/INS/SOP/7.2/03
ix.	2,4D chlorophenoxyacetic acid	µg/L	0.005	SEAAL/INS/SOP/7.2/03
x.	DDT (o,p & p,p- Isomers of DDT, DDE, DDD)	µg/L	0.005	SEAAL/INS/SOP/7.2/03
xi.	Endosulfan (α, β & Sulphate)	µg/L	0.005	SEAAL/INS/SOP/7.2/03
xii.	Ethion	µg/L	0.005	SEAAL/INS/SOP/7.2/03
xiii.	γ HCH (Lindane)	µg/L	0.005	SEAAL/INS/SOP/7.2/03
xiv.	Isoproturon	µg/L	0.005	SEAAL/INS/SOP/7.2/03
xv.	Malathion	µg/L	0.005	SEAAL/INS/SOP/7.2/03
xvi.	Methyl Parathion	µg/L	0.005	SEAAL/INS/SOP/7.2/03
xvii.	Monocrotophos	µg/L	0.005	SEAAL/INS/SOP/7.2/03
xviii.	Phorate	µg/L	0.005	SEAAL/INS/SOP/7.2/03

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Sr. No.	Parameter	Unit	Detection Limit	Method Reference
51.	Polychlorinated Biphenyls (PCB)	mg/L	0.000005	SEAAL/INS/SOP/7.2/04
52.	Polynuclear Aromatic Hydrocarbons (PAH)	mg/L	0.000005	SEAAL/INS/SOP/7.2/05
53.	Total Arsenic (as As)	mg/L	0.002	IS 3025(Part 37) : 2022
54.	Total Chromium (as Cr)	mg/L	0.4	IS 3025 Part 52 :2003
55.	Volatile organic Compounds			
a)	Bromoform	mg/L	0.005	SEAAL/INS/SOP/7.2/02
b)	Dibromochloromethane	mg/L	0.005	SEAAL/INS/SOP/7.2/02
c)	Bromodichloroethane	mg/L	0.005	SEAAL/INS/SOP/7.2/02
d)	Chloroform	mg/L	0.005	SEAAL/INS/SOP/7.2/02
56.	<i>E.coli</i>	MPN/100 ml	2	IS 1622: 1981
57.	Total Coliforms	MPN/100 ml	2	IS 1622: 1981
58.	Faecal Coliforms	MPN/100 ml	2	IS 1622: 1981
Marine Water Analysis				
1.	Temperature	°C	15	IS 3025 (Part 9):2023
2.	pH Value	-	2	IS 3025 (Part 11): 2022
3.	Turbidity	N.T.U.	0.1	IS 3025 (Part 10) : 2023
4.	Electrical Conductivity (at 25°C)	µmhos/cm	10	IS 3025 Part 14: 2013
5.	Total Suspended Solids	mg/L	5	IS 3025 (Part 17): 2022
6.	Total Dissolved Solids	mg/L	10	IS 3025 (Part 16): 2023
7.	Dissolved Oxygen	mg/L	0.2	IS 3025 Part 38 : 2025
8.	Biochemical Oxygen Demand (3 days, 27°C)	mg/L	2	IS 3025 (Part 44): 2023
9.	Floating Materials – Oil, Grease and Scum (Including Petroleum Products)	mg/L	1	IS 3025 Part 39: 2021
10.	Nitrite (as NO ₂)	mg/L	0.02	IS 3025 (Part 34/Sec 1): 2023
11.	Nitrate (as NO ₃)	mg/L	1	IS 3025 (Part 34/Sec 1): 2023
12.	Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	0.01	IS 3025 (Part 43/Sec 1): 2022
13.	Ammonical Nitrogen (as NH ₃ -N)	mg/L	1	IS 3025 (Part 34/Sec 1): 2023
14.	Total Nitrogen (as N)	mg/L	1	SEAAL/CHL/SOP/7.2/28
15.	Total Phosphorous (as P)	mg/L	0.01	IS 3025 (Part 31/Sec 1): 2022
16.	Reactive Phosphorous	mg/L	0.01	IS 3025 (Part 31/Sec 1): 2022
17.	Polycyclic Aromatic Hydrocarbon	mg/L	0.000005	SEAAL/INS/SOP/7.2/05
18.	Salinity	ppt	0.0036	APHA (24th Edn) 2520 - B: 2023
19.	Total Chlorophyll	mg/m ³	0.1	APHA 24th Edn:10200. H
20.	Total Coliforms	MPN/100 ml	2	IS 1622: 1981
21.	Faecal Coliforms	MPN /100ml	2	IS 1622: 1981

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Sr. No.	Parameter	Unit	Detection Limit	Method Reference
22.	Phytoplanktons	No./100ml	--	APHA 24th Edn:10200. F
23.	Zooplanktons	No./100ml	--	APHA 24th Edn:10200. G
Sediment Analysis				
1.	Texture	-	--	SEAAL/CHL/SOP/7.2/21
2.	Organic Matter	%	0.1	IS 2720 (Part 22) :1972
3.	Total Phosphorus (as P)	mg/kg	10	SEAAL/CHL/SOP/7.2/12
4.	Aluminium (as Al)	mg/kg	5	SEAAL/CHL/SOP/7.2/19
5.	Chromium (as Cr)	mg/kg	5	SEAAL/CHL/SOP/7.2/19
6.	Copper (as Cu)	mg/kg	1.5	SEAAL/CHL/SOP/7.2/19
7.	Iron (as Fe)	mg/kg	2.5	SEAAL/CHL/SOP/7.2/19
8.	Lead (as Pb)	mg/kg	5	SEAAL/CHL/SOP/7.2/19
9.	Manganese (as Mn)	mg/kg	1.5	SEAAL/CHL/SOP/7.2/19
10.	Mercury (as Hg)	mg/kg	0.10	SEAAL/CHL/SOP/7.2/19
11.	Zinc (as Zn)	mg/kg	1	SEAAL/CHL/SOP/7.2/19
12.	Nickel (as Ni)	mg/kg	2.5	SEAAL/CHL/SOP/7.2/19
13.	Benthic Organism	No./m ²	1	APHA 24th Edn:10750. B
BDL: Below Detectable Limit; LOD: Limit of Detection				

End of Report

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