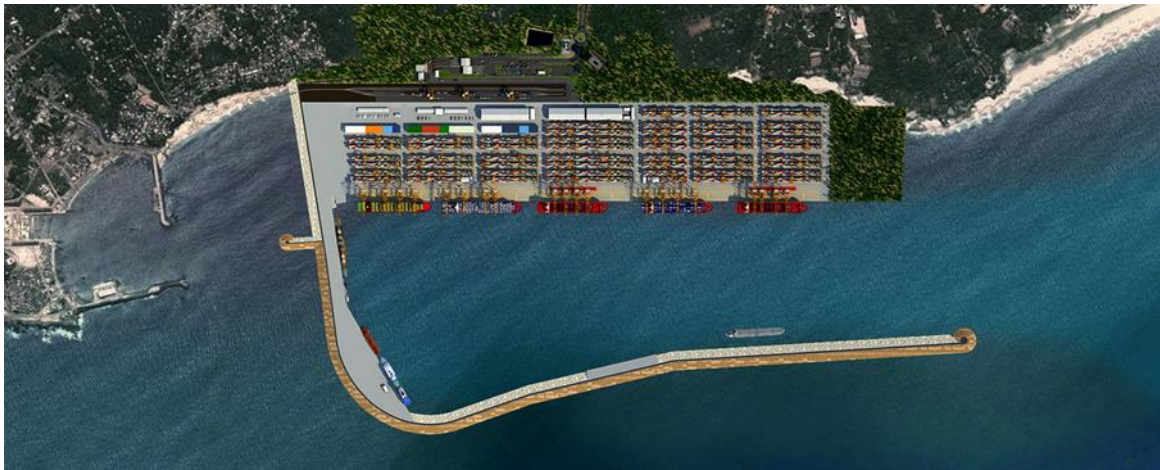


ENVIRONMENT MONITORING REPORT **SEPTEMBER - 2026**



ADANI VIZHINJAM PORT PVT. LTD. **VIZHINJAM, KERALA**

Report No.: SEAAL/EMR-AVPPL-2609

Report Date: 05th October, 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 02.09.2026 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:

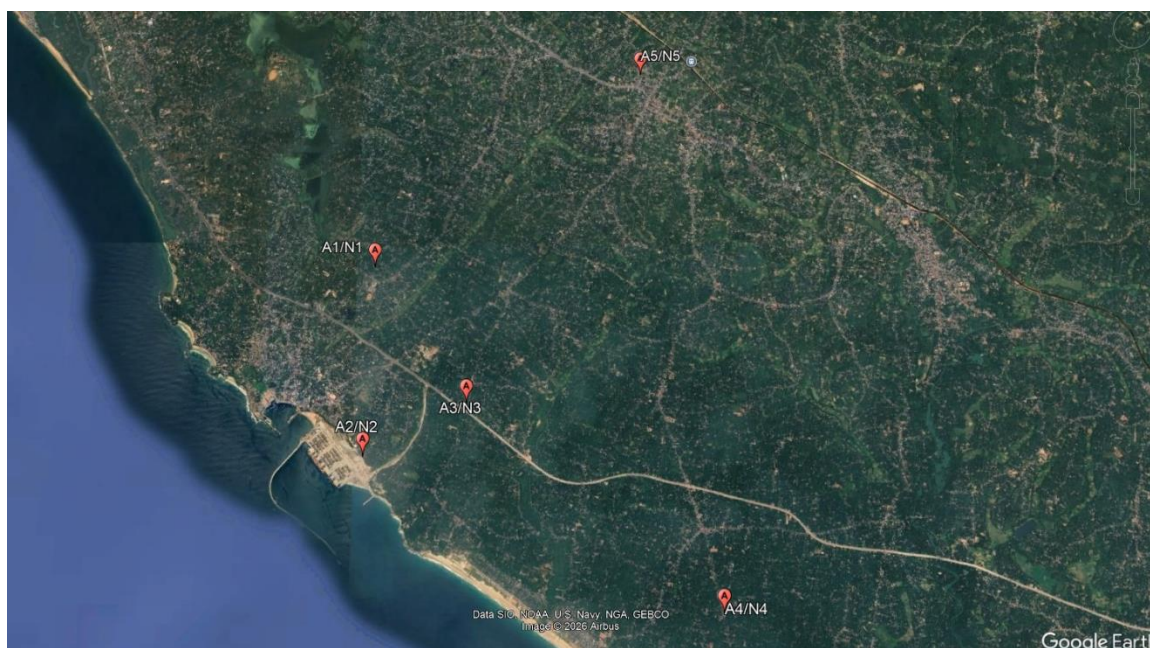
Sl. No.	Matrix	Location Name	Legend	Latitude	Longitude
1.	Ambient Air Quality	Venganoor	A1	8°23'55.10"N	77°00'12.19"E
		Port Site	A2	8°22'13.73"N	77°00'08.39"E
		Proposed Port Estate Area	A3	8°22'41.37"N	77°01'03.17"E
		Chani	A4	8°20'53.49"N	77°03'18.76"E
		Balarampuram	A5	8°25'43.85"N	77°02'38.79"E
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

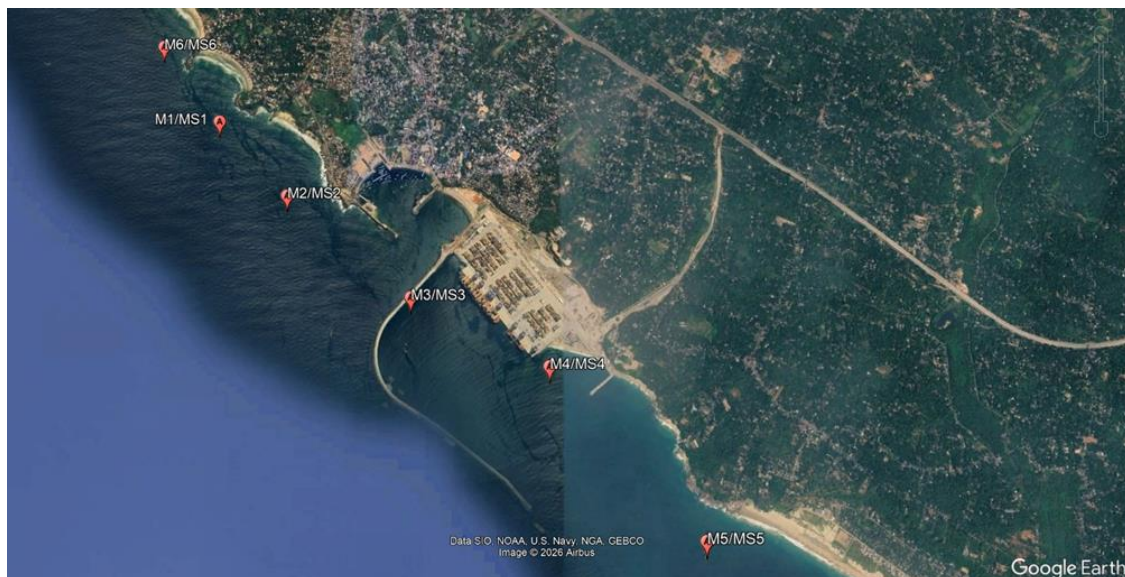
Locations of Ambient Air Quality & Ambient Noise Monitoring



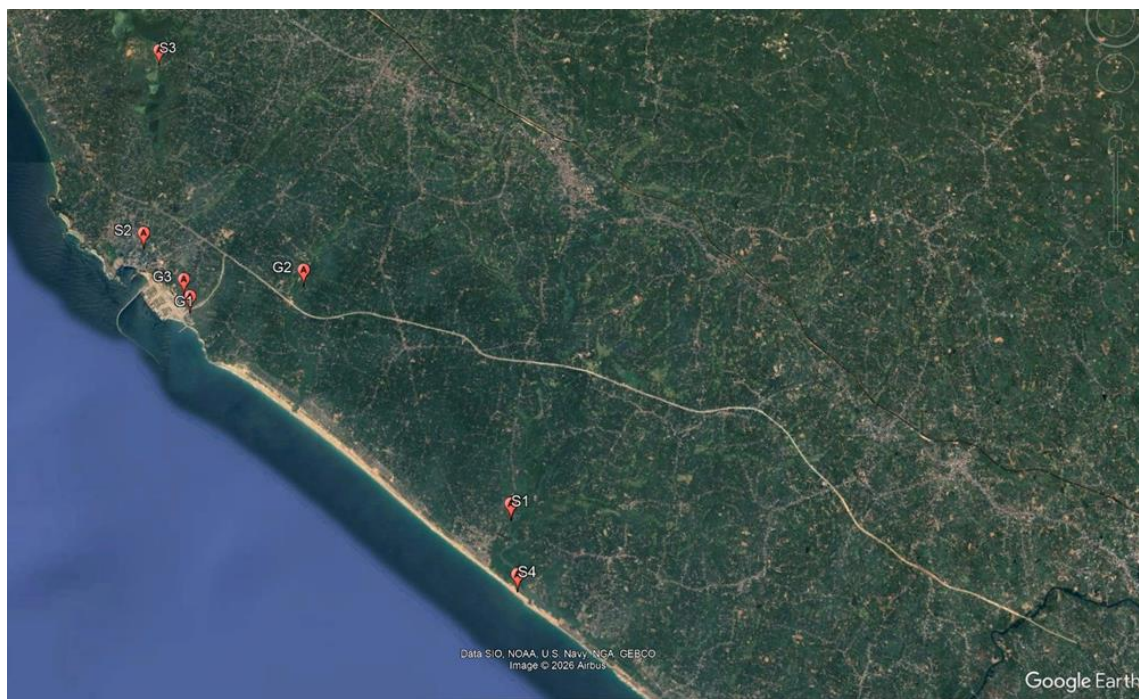
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Marine Water & Marine Sediment Sampling Locations



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 3rd, 7th, 10th, 14th, 17th, 21st, 24th and 28th September 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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Installation for PM_{2.5}



Installation for PM₁₀

Ambient Noise Monitoring carried out at Venganoor, Port Site, Proposed Port Estate Area, Chani and Balarampapuram. 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 except at Chani on 22-09-2026 night time due to extra sound played in loud speaker for CSI Church Sabha Dinam. *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	Balarampapuram	Commercial

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Noise Monitoring @ Venganoor



Noise Monitoring @ Port Site



**Noise Monitoring
@ Proposed Port Estate Area**



Noise Monitoring @ Chani

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



**Marine Water Sampling
 @ South of Break Water**



**Marine Water Sampling
@ Inner Approach Channel**



**Marine Water Sampling
@ Port Basin**

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**



**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.



**Surface Water Sampling
 @ Poovar West Canal**



**Surface Water Sampling
 @ Vellayani Lake**



**Surface Water Sampling
@ Vizhinjam Branch Canal**



**Surface Water Sampling
@ Poovar Estuary**

The detailed results of Environmental monitoring carried out for the month of September 2026 are presented in subsequent sections.

EMR-2
Ambient Air Quality Monitoring Report

Location, Legend	Venganoor, A1
Month, Year	September, 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
03-09-2026	34.5	16.2	4.25	4.98	BDL	BDL
07-09-2026	38.2	18.1	4.26	5.02	BDL	BDL
10-09-2026	34.5	16.3	4.12	4.78	BDL	BDL
14-09-2026	40.2	19.1	4.38	5.12	BDL	BDL
17-09-2026	38.5	18.2	4.25	5.03	BDL	BDL
21-09-2026	40.1	19.1	4.36	5.26	BDL	BDL
24-09-2026	42.5	20.2	4.12	4.87	BDL	BDL
28-09-2026	38.9	18.4	4.22	4.95	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	September, 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
03-09-2026	78.4	38.6	4.48	5.36	BDL	BDL
07-09-2026	72.1	35.4	4.25	4.92	BDL	BDL
10-09-2026	74.6	36.3	4.36	4.85	BDL	BDL
14-09-2026	68.6	33.3	4.42	5.02	BDL	BDL
17-09-2026	78.2	38.1	4.31	4.85	BDL	BDL
21-09-2026	70.4	34.2	4.45	5.23	BDL	BDL
24-09-2026	68.4	33.2	4.10	4.76	BDL	BDL
28-09-2026	75.6	36.8	4.22	4.81	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	September, 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
03-09-2026	40.5	19.2	4.28	4.96	BDL	BDL
07-09-2026	36.7	17.3	4.22	4.86	BDL	BDL
10-09-2026	46.9	22.4	4.34	5.03	BDL	BDL
14-09-2026	52.4	25.2	4.44	5.30	BDL	BDL
17-09-2026	48.1	23.1	4.25	4.75	BDL	BDL
21-09-2026	44.6	21.3	4.26	4.70	BDL	BDL
24-09-2026	42.3	20.1	4.26	4.78	BDL	BDL
28-09-2026	48.6	23.3	4.58	5.39	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	September, 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
03-09-2026	48.5	23.2	4.25	4.89	BDL	BDL
07-09-2026	46.2	22.1	4.36	5.45	BDL	BDL
10-09-2026	42.5	20.2	4.15	4.68	BDL	BDL
14-09-2026	44.6	21.3	4.45	5.15	BDL	BDL
17-09-2026	48.7	23.4	4.65	5.42	BDL	BDL
21-09-2026	50.1	24.1	4.24	4.96	BDL	BDL
24-09-2026	48.6	23.3	4.38	5.46	BDL	BDL
28-09-2026	52.4	25.2	4.26	4.85	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	September, 2026

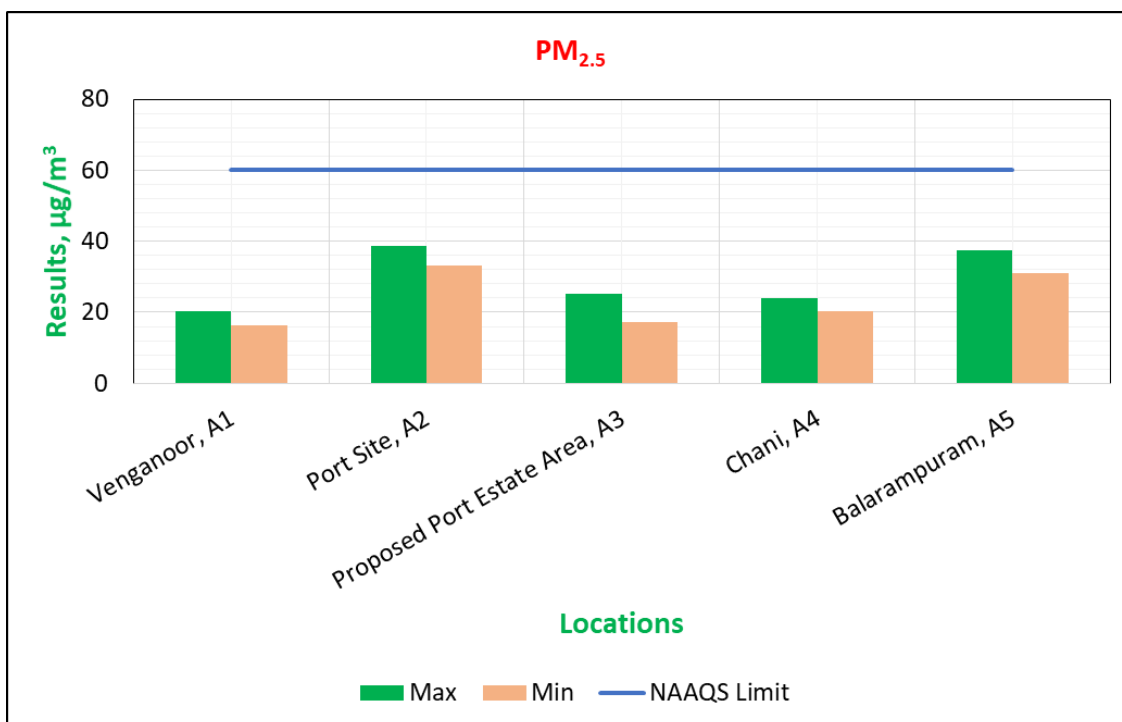
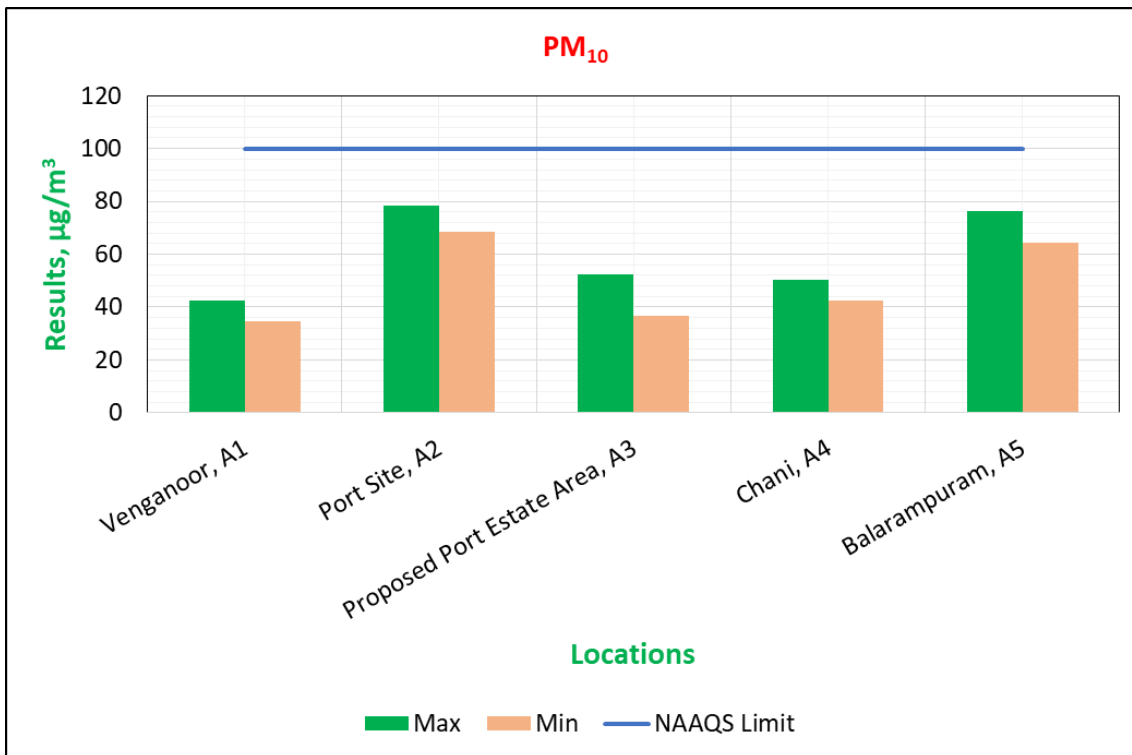
Date of Sampling	Results					
	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO _x µg/m ³	CO mg/m ³	HC ppm
03-09-2026	76.5	37.3	4.48	5.78	BDL	BDL
07-09-2026	70.1	34.1	4.25	5.12	BDL	BDL
10-09-2026	64.2	31.1	4.22	5.09	BDL	BDL
14-09-2026	70.1	34.1	4.28	5.26	BDL	BDL
17-09-2026	68.4	33.2	4.18	4.95	BDL	BDL
21-09-2026	66.3	32.1	4.45	5.64	BDL	BDL
24-09-2026	70.2	34.5	4.20	5.02	BDL	BDL
28-09-2026	63.4	30.7	4.36	5.45	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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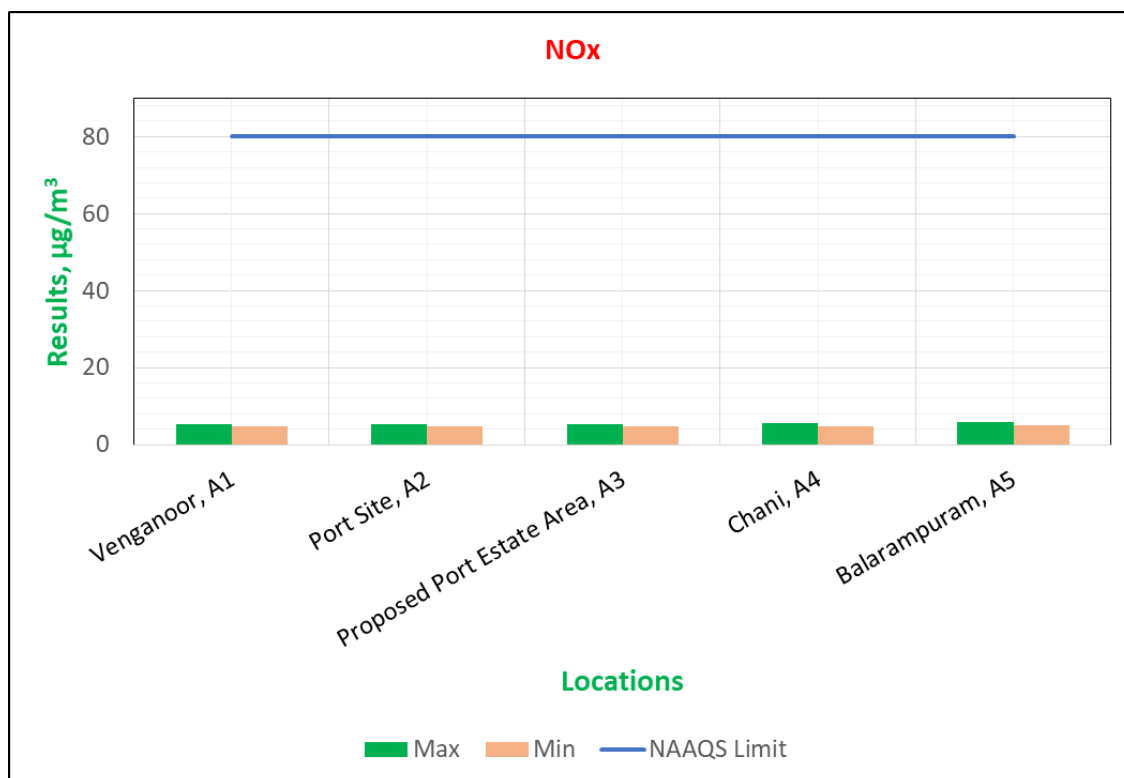
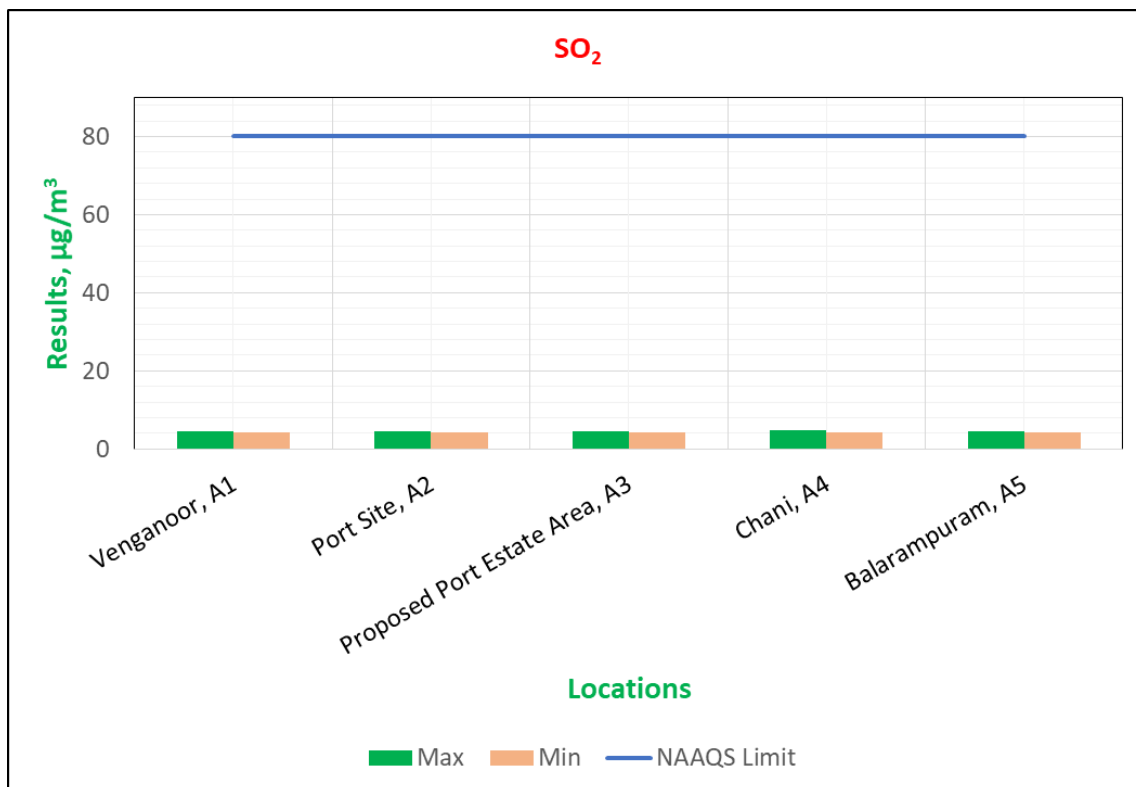
EMR-2.1

Statistical Analysis of Ambient Air Quality



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EMR-3
Ambient Noise Monitoring Report

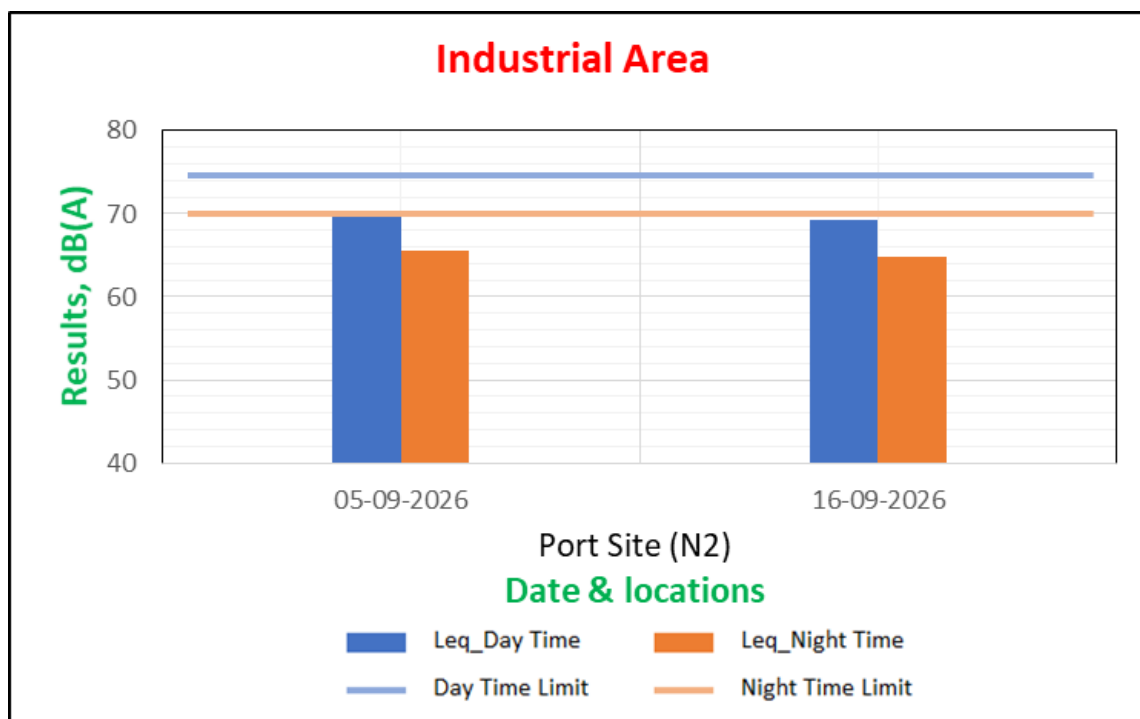
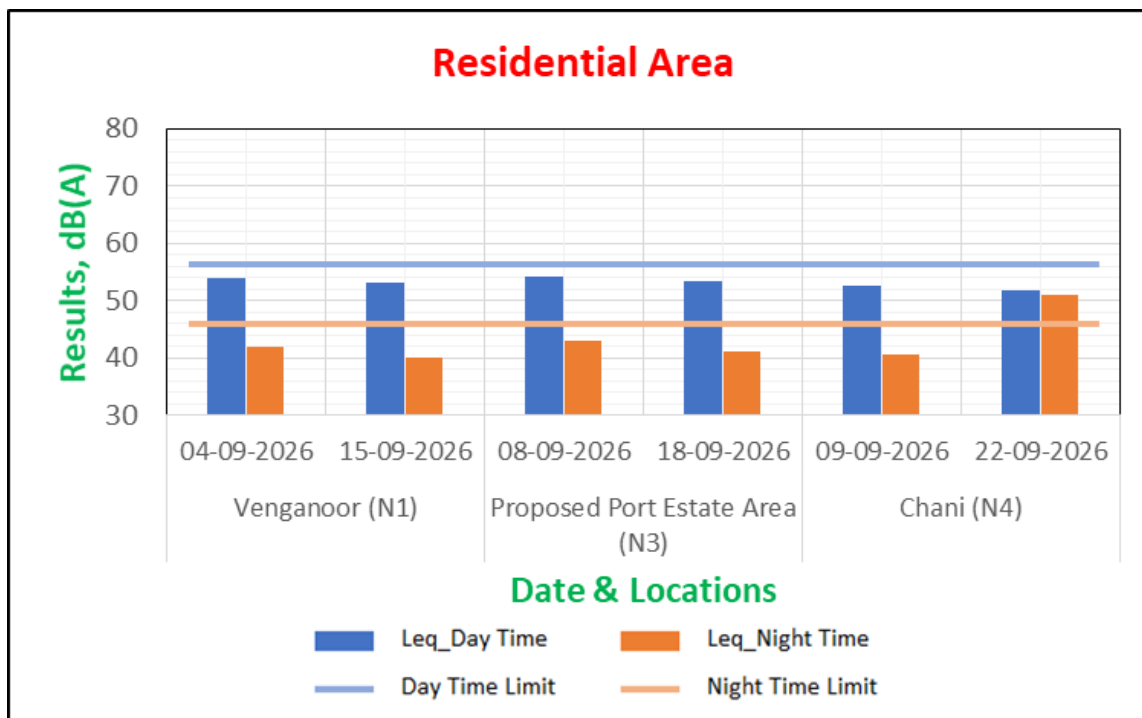
Location & Legend	Date of Sampling	Results (dB(A))					
		L _{max} Day time	L _{max} Night time	L _{min} Day time	L _{min} Night time	L _{eq} Day time	L _{eq} Night time
Venganoor (Residential) N1	04-09-2026	82.1	81.3	33.6	31.4	53.9	41.9
	15-09-2026	81.9	80.4	32.9	31.3	53.1	40.1
Port Site (Industrial) N2	05-09-2026	97.2	89.5	44.1	41.5	70.1	65.5
	16-09-2026	95.7	87.6	40.9	40.1	69.3	64.9
Proposed Port Estate Area (Residential) N3	08-09-2026	83.6	80.5	32.4	32.8	54.2	42.9
	18-09-2026	81.8	77.9	31.5	30.9	53.4	41.2
Chani (Residential) N4	09-09-2026	80.5	76.8	33.1	32.7	52.5	40.6
	22-09-2026	79.5	78.9	31.8	31.6	51.8	50.9
Balarampuram (Commercial) N5	11-09-2026	90.5	83.7	34.1	33.8	62.3	53.4
	25-09-2026	89.5	78.9	32.6	32.8	61.4	52.6
As per the Noise Pollution (Regulation & Control) Rules, 2000 [Rules 3 (1) and 4(1)]							
Area Code	Area Type	Limits in dB (A) L _{eq}					
		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			

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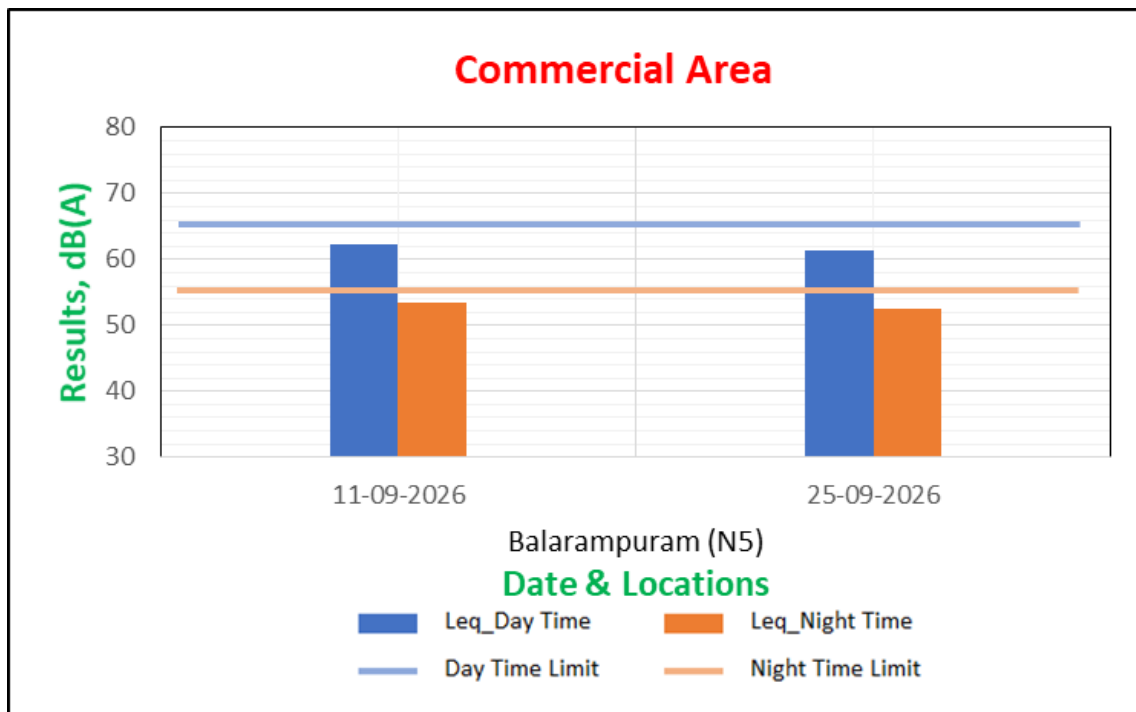
EMR-3.1

Statistical Analysis of Ambient Noise Monitoring



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EMR-4
Marine Ecological Survey
EMR-4.1
Marine Water Analysis Report
Location, Legend
Near Kovalam Beach, M1
Date of Sampling
11-09-2026

Parameter	Unit	Results	
		High Tide (14:20 – 15:50)	Low Tide (10:30 – 12:00)
Temperature	°C	27.9	27.3
Colour	Hazen	1	1
pH Value	-	7.78	7.82
Turbidity	N.T.U.	0.1	0.1
Electrical Conductivity (at 25°C)	µmho/cm	52100	52400
Total Suspended Solids	mg/L	BDL	BDL
Total Dissolved Solids	mg/L	33340	33534
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	0.025	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	33.792	34.011
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			

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Location, Legend	Proposed Dredging Site, M2
Date of Sampling	11-09-2026

Parameter	Unit	Results	
		High Tide (14:20 – 15:50)	Low Tide (10:30 – 12:00)
Temperature	°C	27.5	27.4
Colour	Hazen	1	1
pH Value	-	7.85	7.92
Turbidity	N.T.U.	0.2	0.3
Electrical Conductivity (at 25°C)	µmho/cm	51800	52120
Total Suspended Solids	mg/L	BDL	BDL
Total Dissolved Solids	mg/L	33150	33356
Dissolved Oxygen	mg/L	7	7.1
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	0.027	0.031
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	33.573	33.806
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			

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Location, Legend	Port Basin, M3
Date of Sampling	11-09-2026

Parameter	Unit	Results	
		High Tide (14:20 – 15:50)	Low Tide (10:30 – 12:00)
Temperature	°C	28.1	27.9
Colour	Hazen	1	1
pH Value	-	7.91	7.95
Turbidity	N.T.U.	0.4	0.7
Electrical Conductivity (at 25°C)	µmho/cm	52100	52450
Total Suspended Solids	mg/L	BDL	BDL
Total Dissolved Solids	mg/L	33344	33564
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	0.031	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	33.792	34.048
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			

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Location, Legend	South of Breakwater, M4
Date of Sampling	11-09-2026

Parameter	Unit	Results	
		High Tide (14:20 – 15:50)	Low Tide (10:30 – 12:00)
Temperature	°C	28.1	27.8
Colour	Hazen	1	1
pH Value	-	7.82	7.88
Turbidity	N.T.U.	0.4	0.5
Electrical Conductivity (at 25°C)	µmho/cm	51780	52360
Total Suspended Solids	mg/L	BDL	BDL
Total Dissolved Solids	mg/L	33140	33510
Dissolved Oxygen	mg/L	7.0	7.1
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	0.038
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	33.558	33.982
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			

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Location, Legend	Inner Approach Channel, M5
Date of Sampling	11-09-2026

Parameter	Unit	Results	
		High Tide (14:20 – 15:50)	Low Tide (10:30 – 12:00)
Temperature	°C	27.5	27.4
Colour	Hazen	1	1
pH Value	-	7.89	7.96
Turbidity	N.T.U.	0.5	1.2
Electrical Conductivity (at 25°C)	µmho/cm	52300	52525
Total Suspended Solids	mg/L	BDL	BDL
Total Dissolved Solids	mg/L	33472	33616
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	BDL	0.029
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	33.938	34.102
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			

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Location, Legend	Kovalam Beach, M6
Date of Sampling	11-09-2026

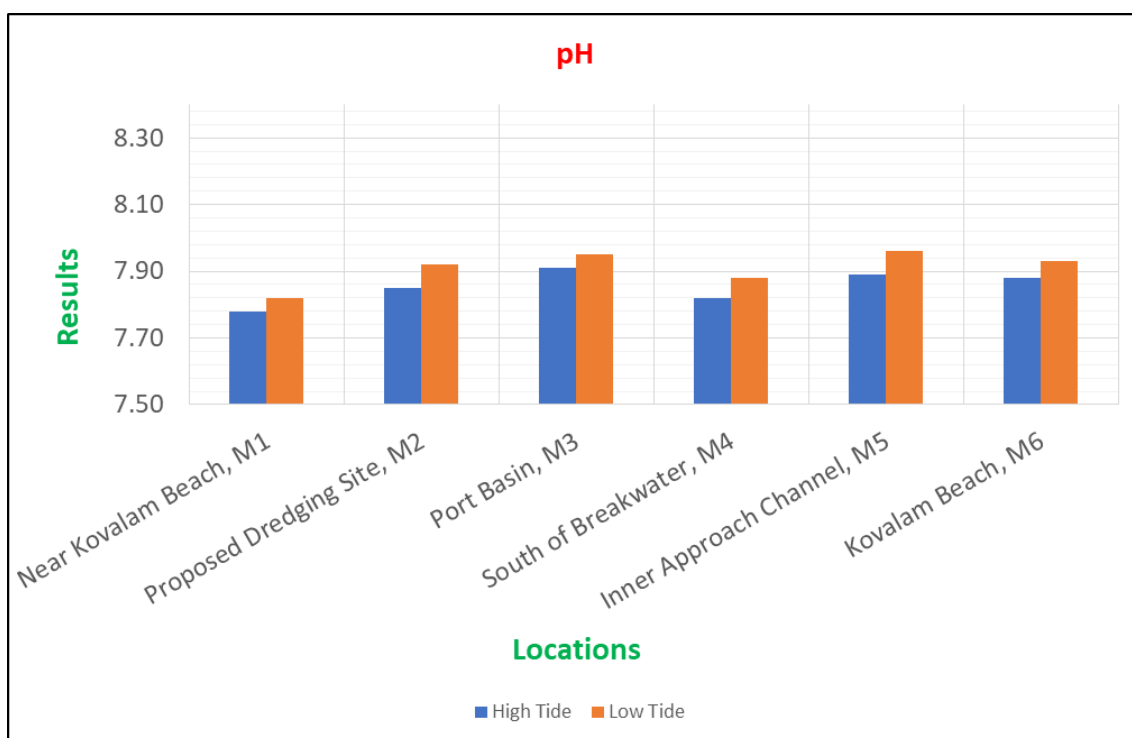
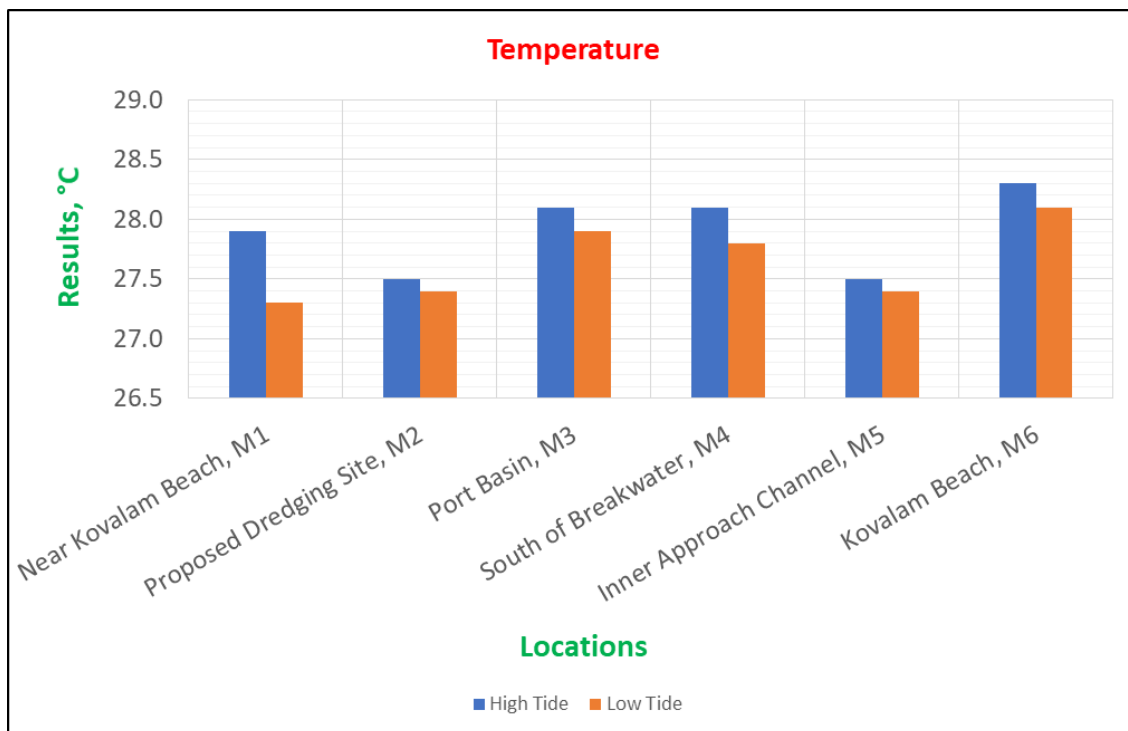
Parameter	Unit	Results	
		High Tide (14:20 – 15:50)	Low Tide (10:30 – 12:00)
Temperature	°C	28.3	28.1
Colour	Hazen	1	1
pH Value	-	7.88	7.93
Turbidity	N.T.U.	BDL	BDL
Electrical Conductivity (at 25°C)	µmho/cm	52160	52350
Total Suspended Solids	mg/L	BDL	BDL
Total Dissolved Solids	mg/L	33382	33504
Dissolved 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	0.028	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	33.836	33.974
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			

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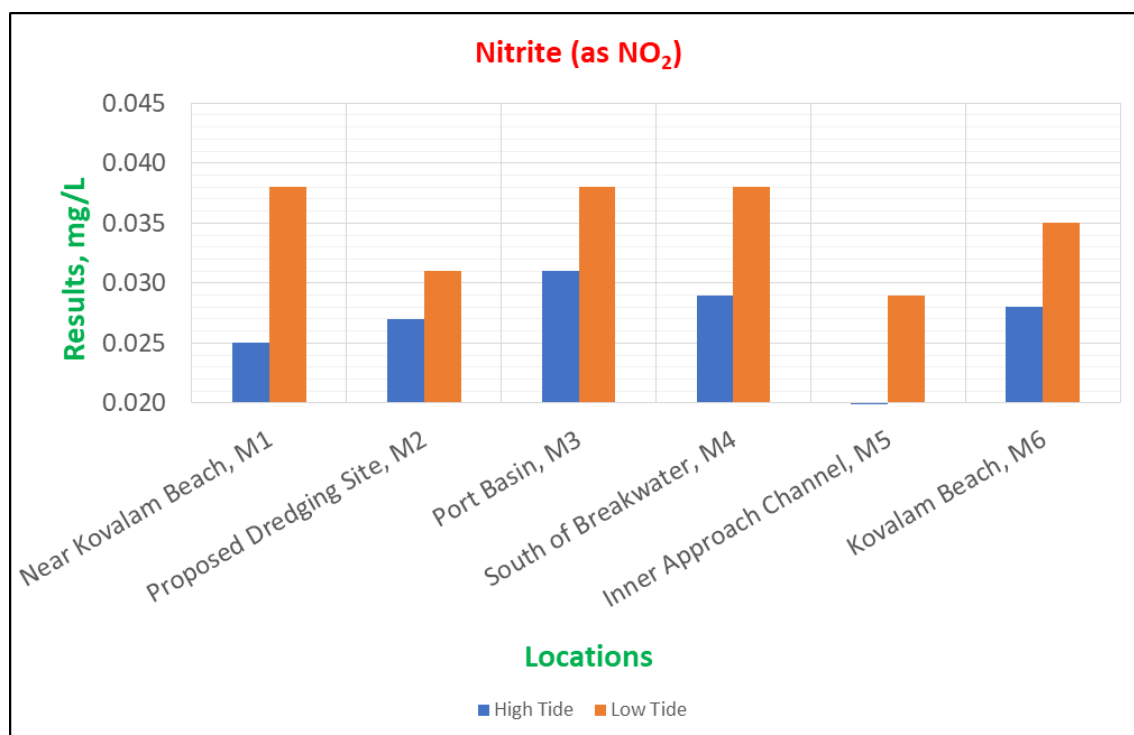
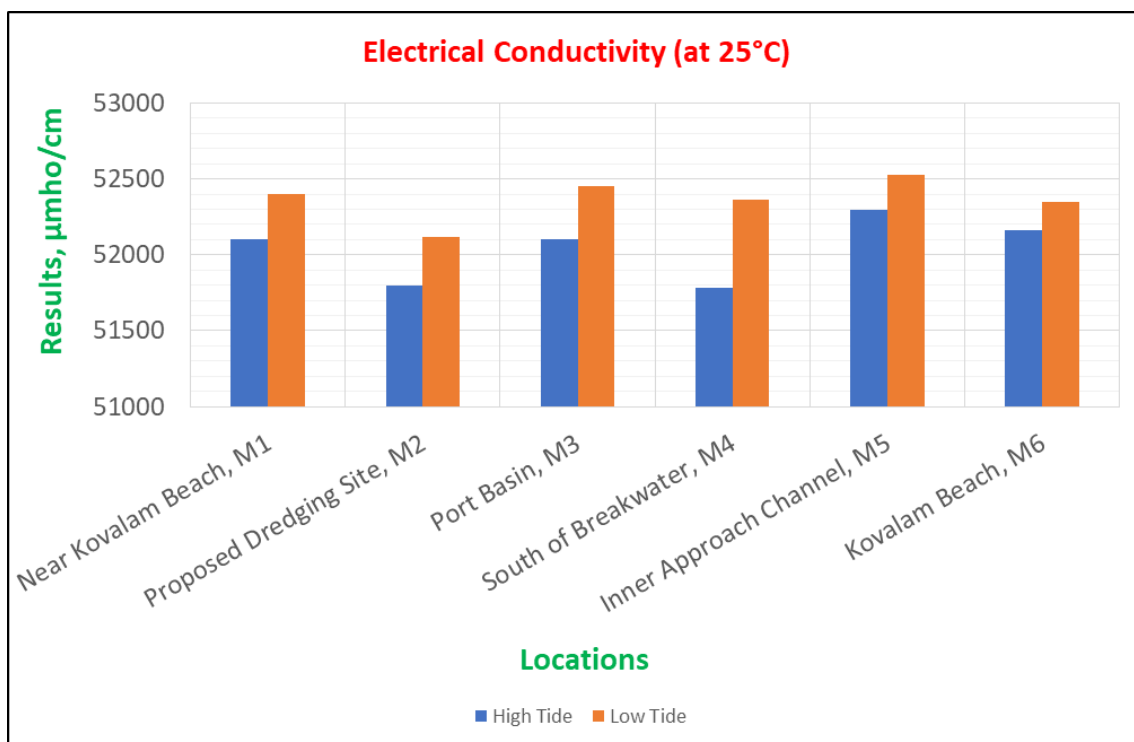
EMR-4.2

Statistical Analysis of Marine Water



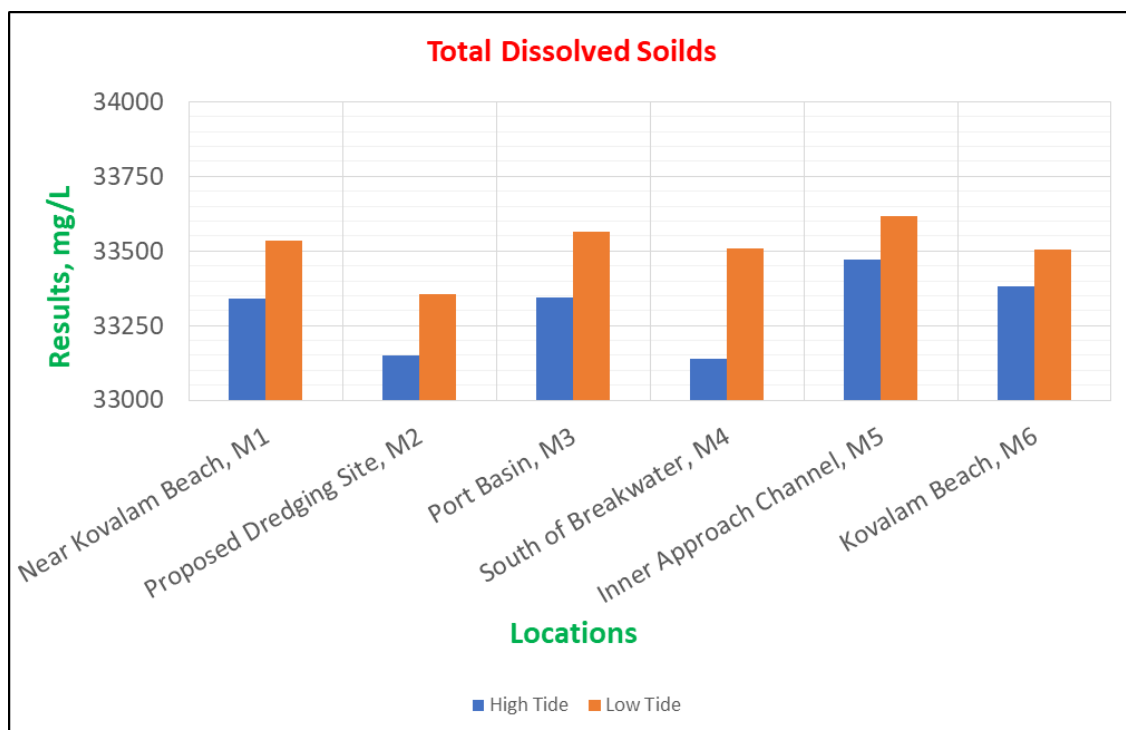
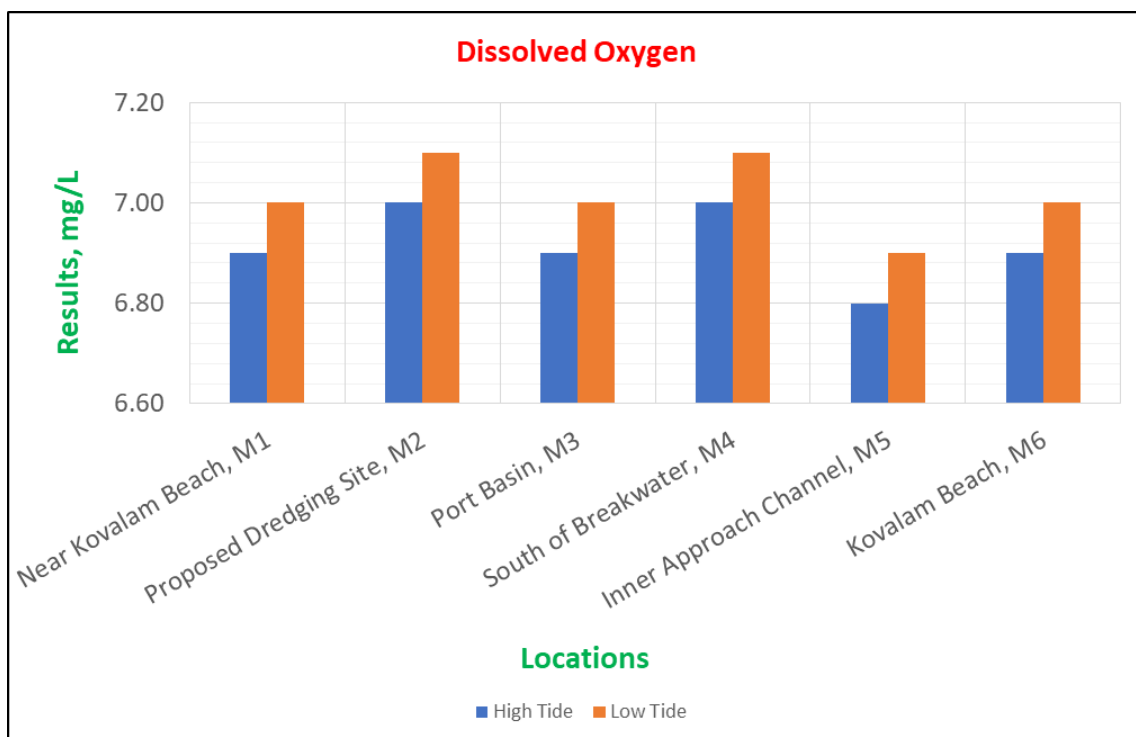
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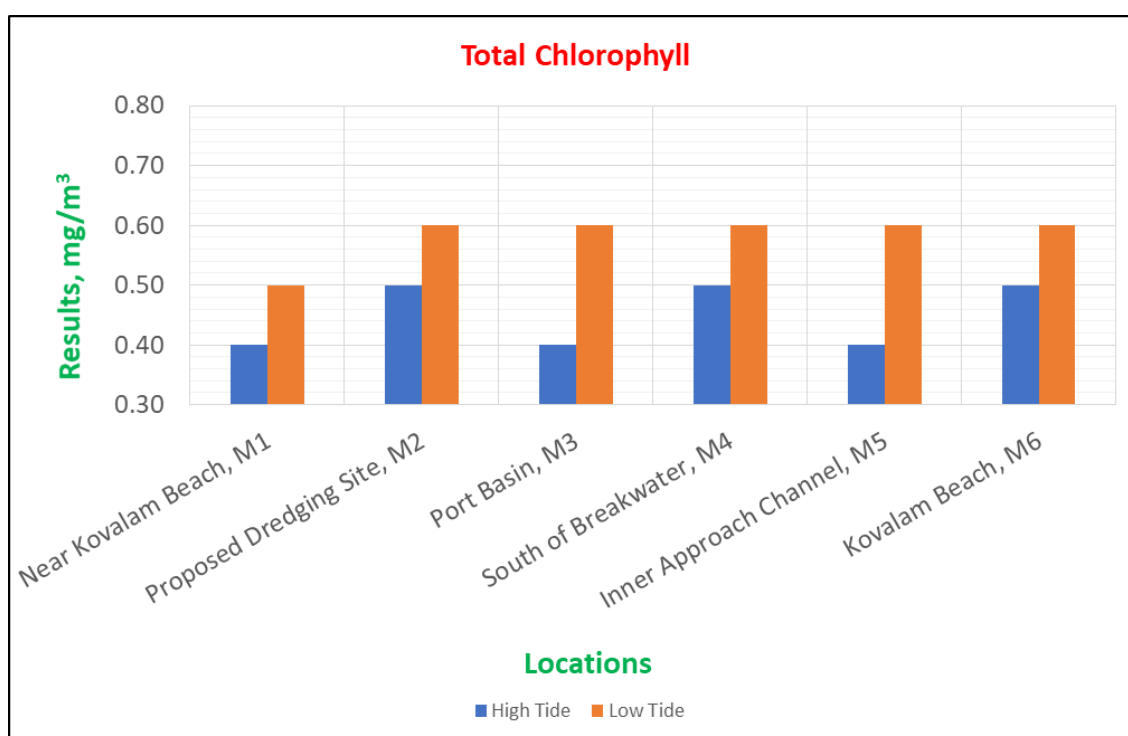
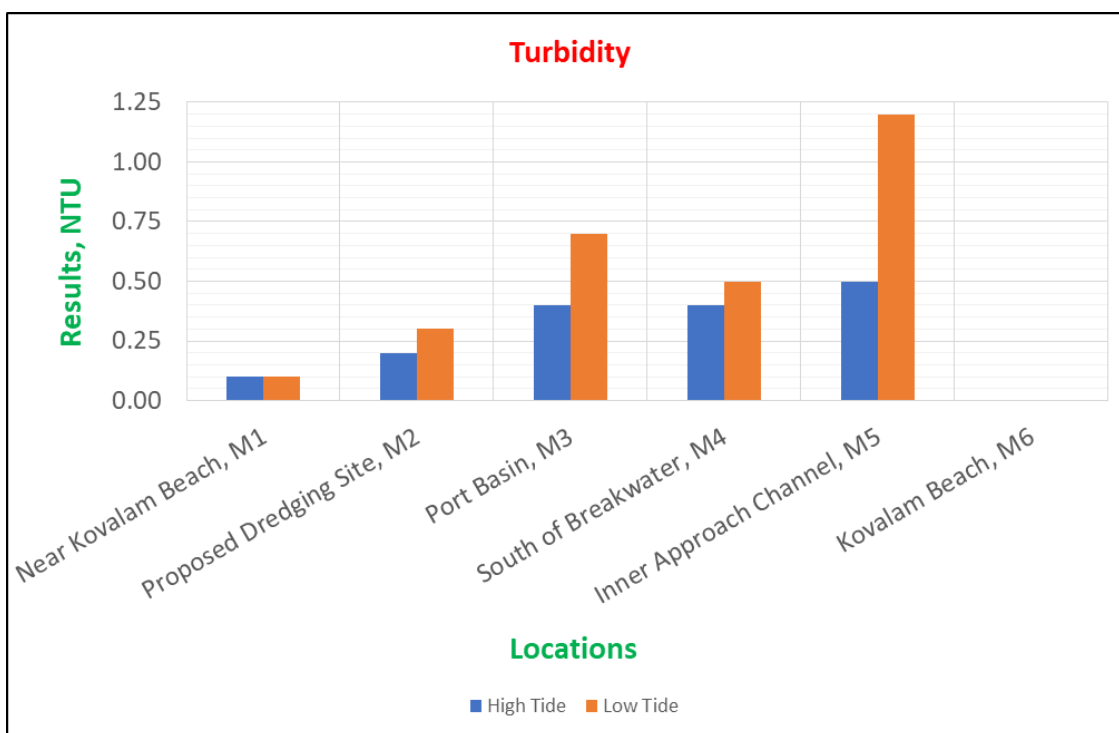
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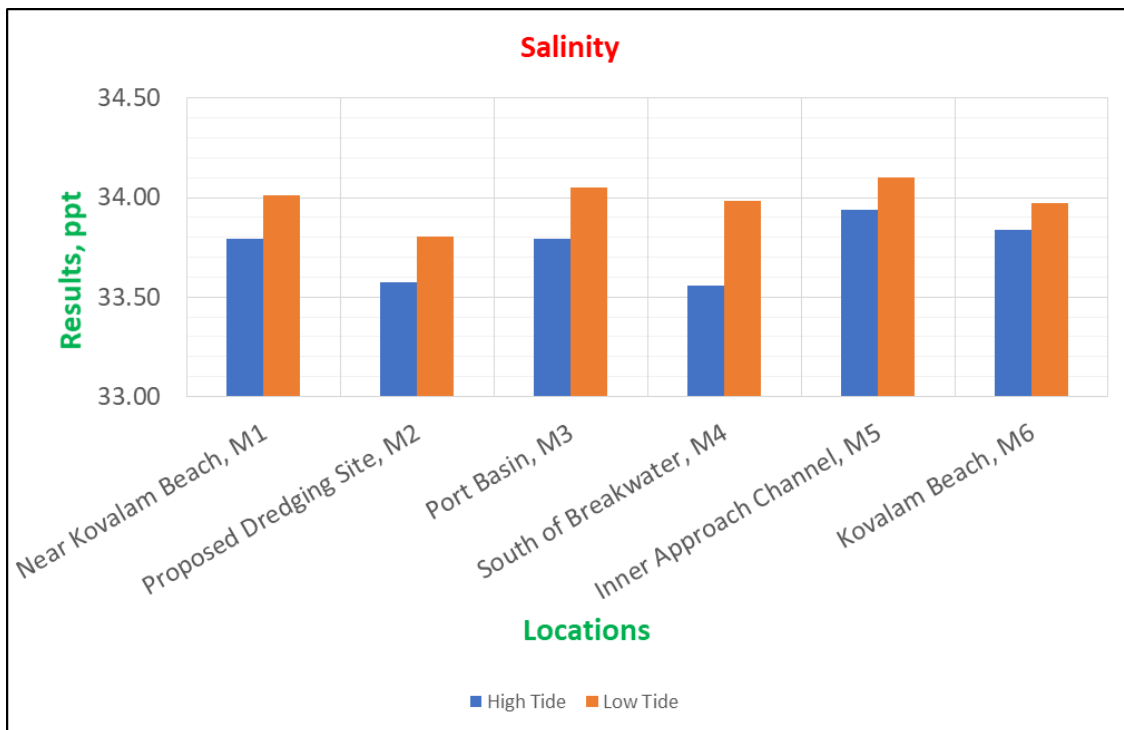
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EMR-4.3
Sediment Analysis Report
Date of Sampling
11-09-2026

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	%	0.35	0.28	0.25	0.38	0.26	0.24
Total Phosphorus (as P)	mg/kg	125	188	345	210	145	289
Aluminium (as Al)	mg/kg	1210	1263	1659	1201	580	1268
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	5864	1658	4262	2015	1136	1184
Lead (as Pb)	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL
Manganese (as Mn)	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL
Mercury (as Hg)	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL
Zinc (as Zn)	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL
Nickel (as Ni)	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL
Benthic Organism							
Micro Benthic Organism	No./m ²	69784	64196	68795	64725	67145	65782
Macro Benthic Organism	No./m ²	66472	59845	64578	61053	64152	61789
Total	No./m²	136256	124041	133373	125778	131297	127571

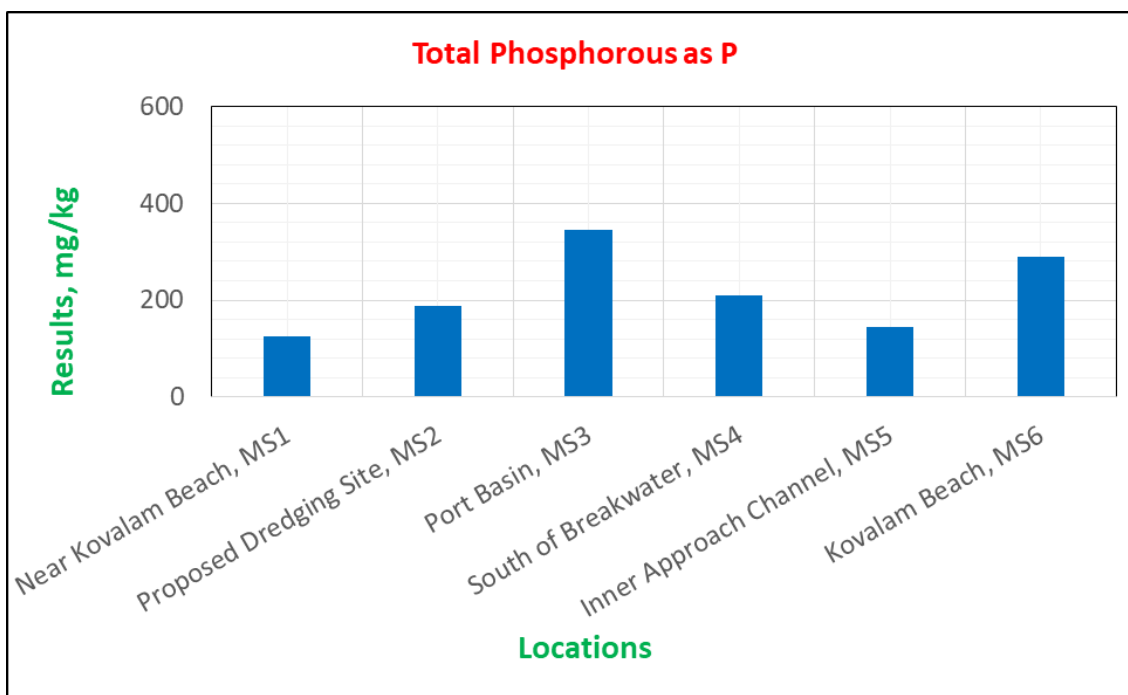
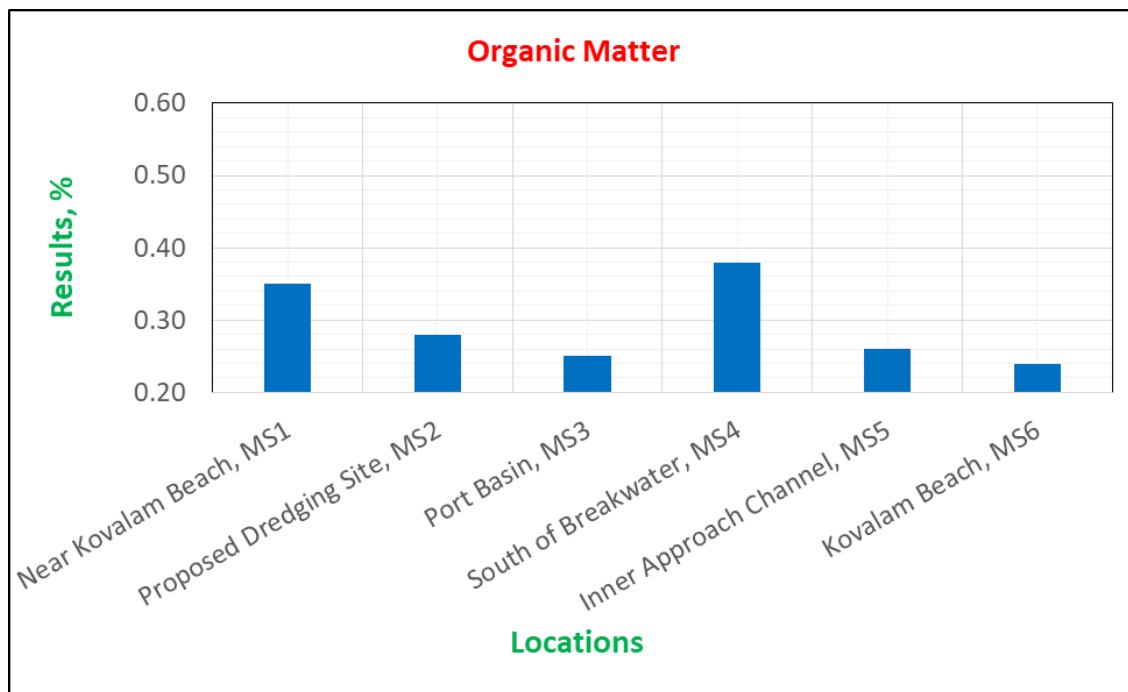
BDL: Below Detectable Limit

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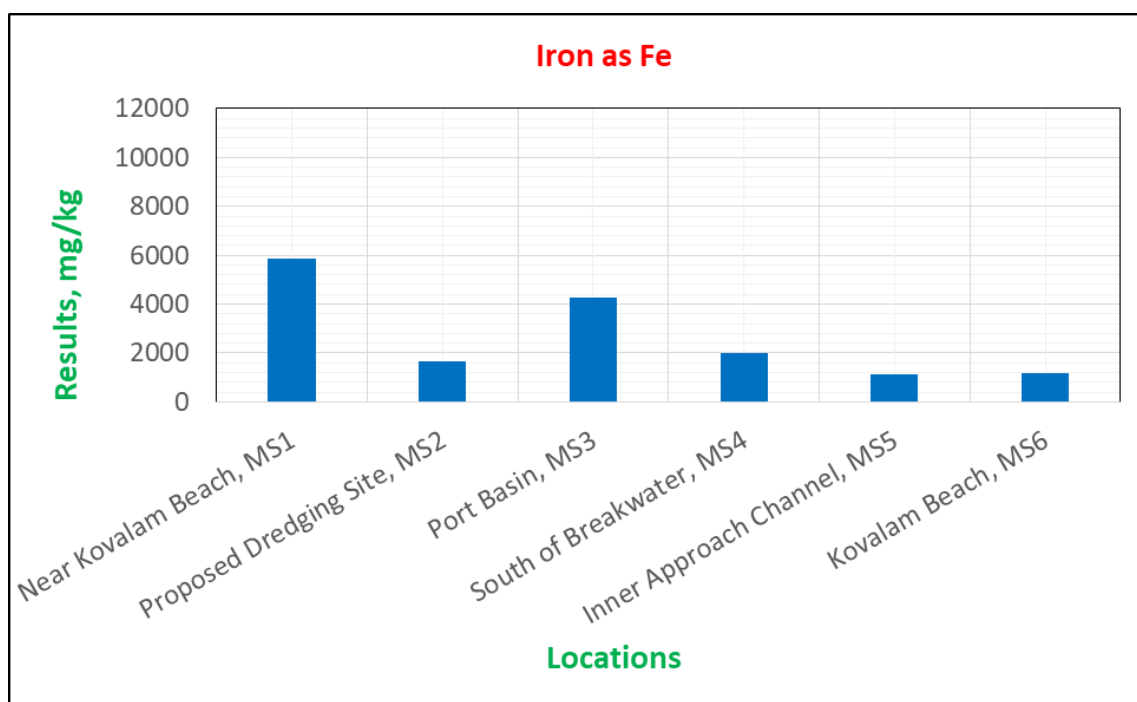
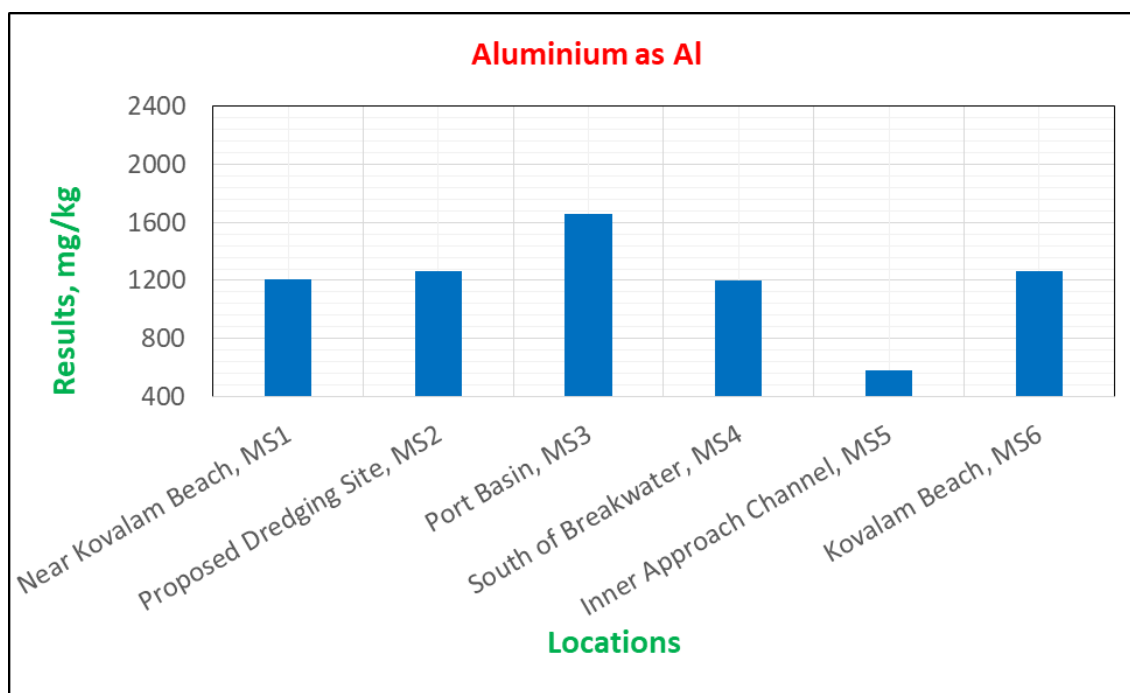
EMR-4.4

Statistical Analysis of Sediment



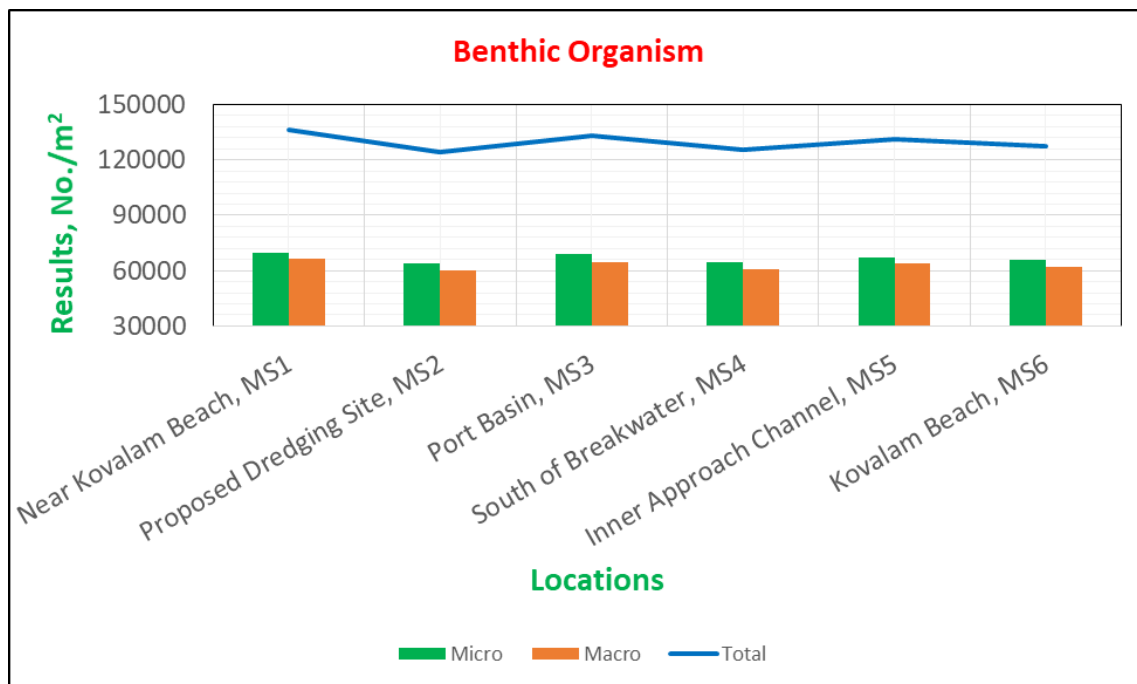
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EMR-4.5	Phytoplankton Analysis from Marine Water Samples
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Date of Sampling	11-09-2026
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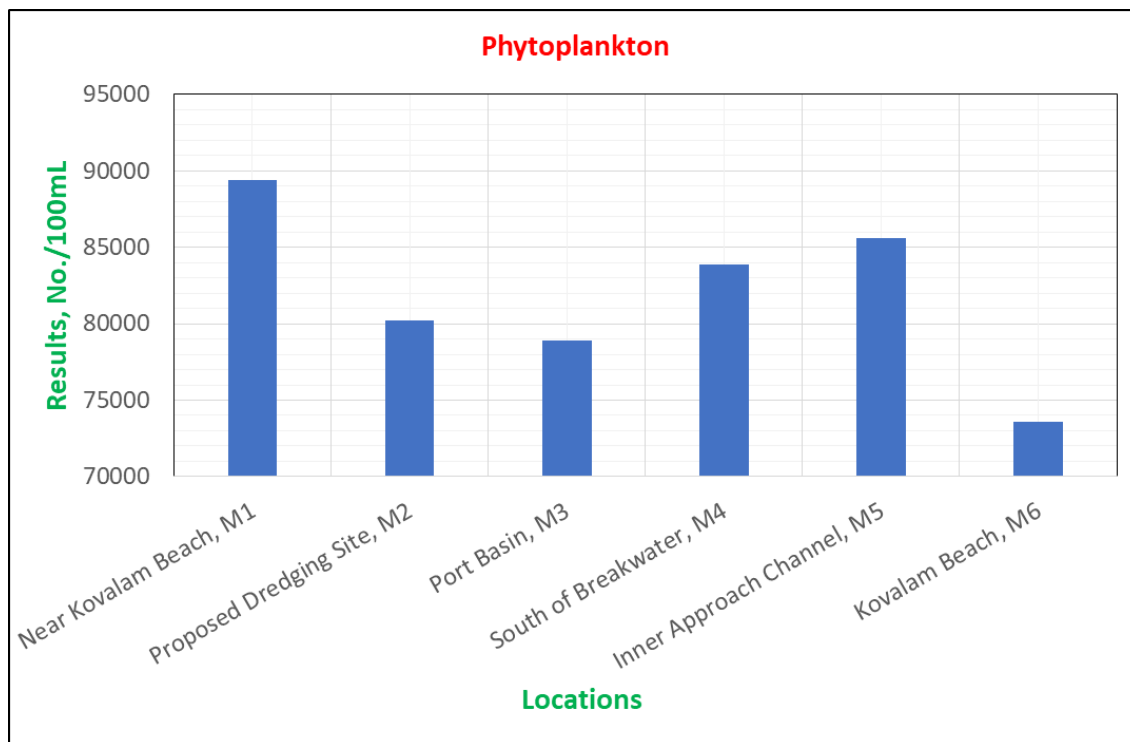
Parameter	Unit	Results					
		Near Kovalam Beach (M1)	Proposed Dredging Site (M2)	Port Basin (M3)	South of Break Water (M4)	Inner Approach Channel (M5)	Kovalam Beach (M6)
Fragilariaceae	No/100mL	44568	36175	38574	39744	36498	35987
Bacillariophyceae		25698	9875	17425	20145	25864	18954
Cyanophyceae		1358	7214	4089	6124	1354	987
Chlorophyceae		677	4586	1325	4878	3897	856
Stephanodiscaceae		1158	978	985	4354	874	2014
Merismopediaceae		2178	1025	1440	2059	775	1008
Selenastraceae		0	0	0	0	0	0
Scenedesmaceae		1045	1256	1078	526	826	625
Zygnemataceae		311	1359	658	987	1477	715
Chlorellaceae		1978	9638	6728	790	1509	8657
Micractiniaceae		3451	2169	754	1124	1632	1089
Chlorococcaceae		1687	1968	1022	789	2459	725
Desmidiaceae		0	0	0	0	0	0
Hildenbrandiaceae		0	0	0	0	0	0
Microcystaceae		1608	1456	987	365	1651	389
Coscinodiscaceae		1798	1470	856	904	5854	568
Naviculaceae		1879	1024	2987	879	934	978
Skeletonemataceae		0	0	0	194	0	0
Total		89394	80193	78908	83862	85604	73552

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EMR-4.6

Statistical Analysis of Phytoplankton



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EMR-4.7	Zooplankton Analysis from Marine Samples
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Date of Sampling	11-09-2026
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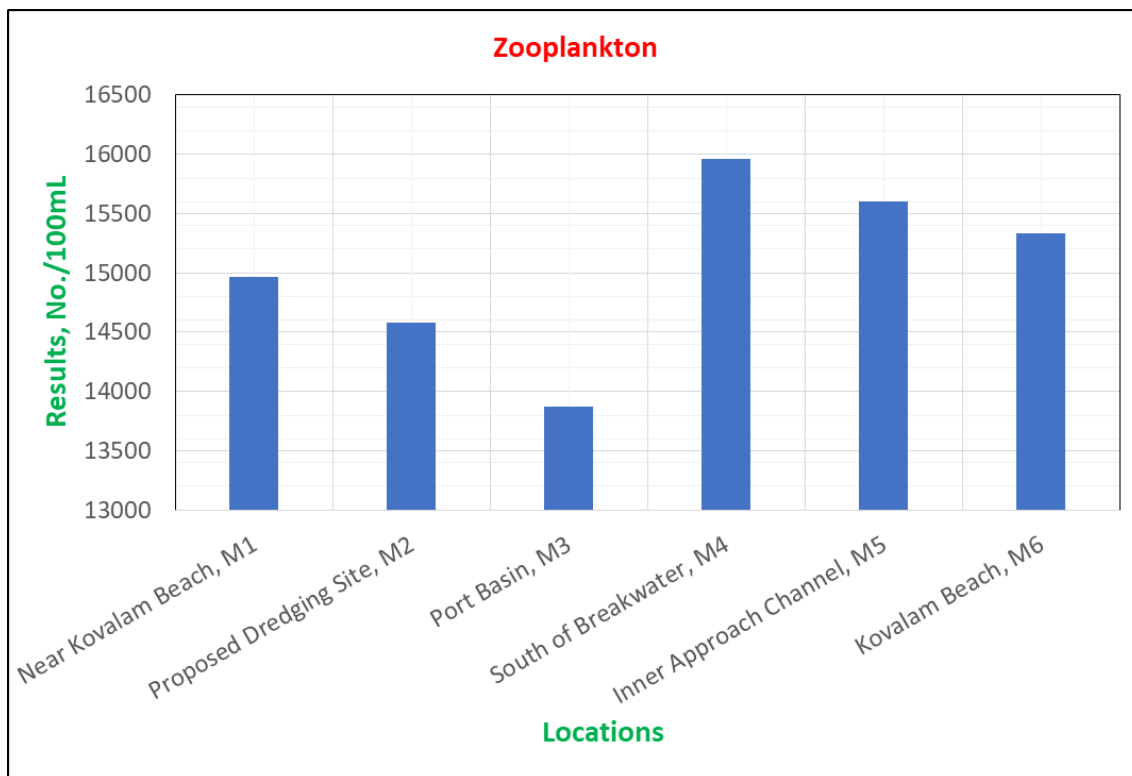
Parameter	Unit	Results					
		Near Kovalam Beach (M1)	Proposed Dredging Site (M2)	Port Basin (M3)	South of Break Water (M4)	Inner Approach Channel (M5)	Kovalam Beach (M6)
Amphipods	No/100mL	428	546	542	325	856	978
Bivalve larvae		775	715	400	889	796	904
Copepods		6975	7496	6124	8647	5314	5015
Decapods		2156	928	798	0	2963	2145
Gastropods		0	0	0	0	0	0
Chaetognaths		1055	1189	1759	1751	1245	1045
Polychaetes		0	0	0	0	0	0
Ciliates		1987	1647	2956	2648	1457	3658
Lucifer		0	1074	0	0	1268	0
Siphonophore		1592	987	1296	1698	1700	1589
Total		14968	14582	13875	15958	15599	15334

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EMR-4.8

Statistical Analysis of Zooplankton



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EMR-5
Ground Water Analysis Report
Date of Sampling
09-09-2026

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	7.22	7.18	6.88
4.	Turbidity	N.T.U.	Max. 1	BDL	BDL	0.8
5.	Total Dissolved Solids	mg/L	Max. 500	258	310	245
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	15.6	18.9	13.1
12.	Chloramines (as Cl ₂)	mg/L	Max. 4.0	BDL	BDL	BDL
13.	Chloride (as Cl)	mg/L	Max.250	47.0	80.2	52.8
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	4.92	5.41	3.44
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	12.4	4.80	10.2
25.	Sulphide (as H ₂ S)	mg/L	Max. 0.05	BDL	BDL	BDL
26.	Total Alkalinity (as CaCO ₃)	mg/L	Max.200	39.4	30.7	17.5
27.	Total Hardness (as CaCO ₃)	mg/L	Max. 200	58.6	68.7	46.5
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

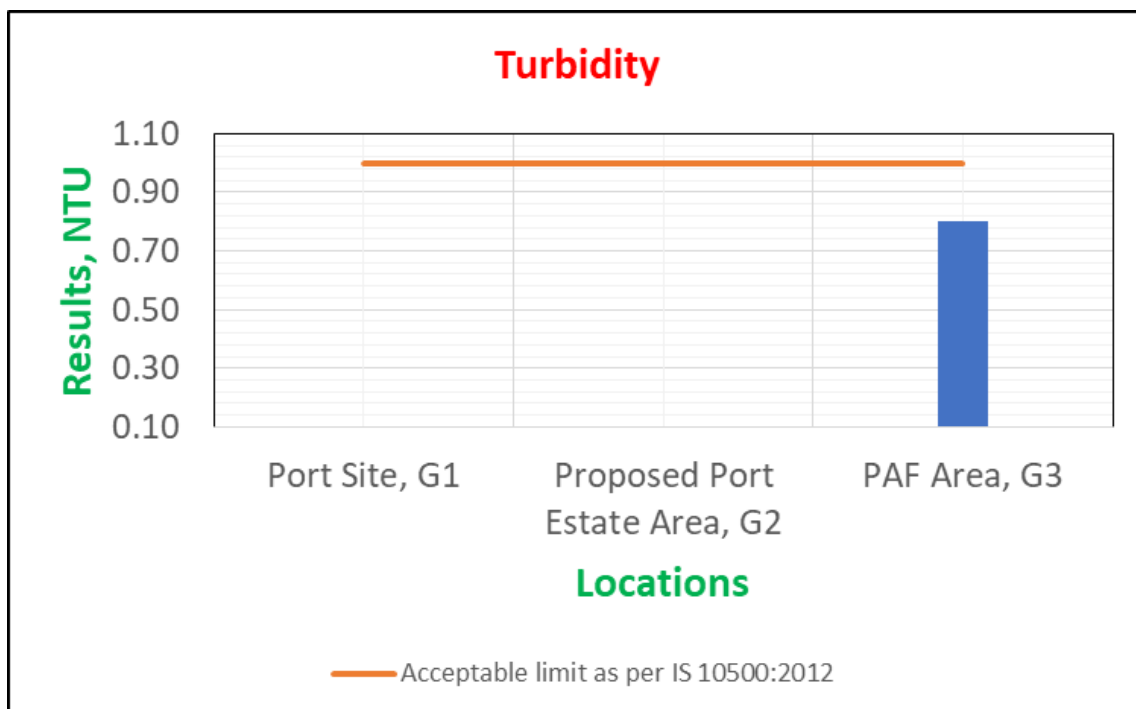
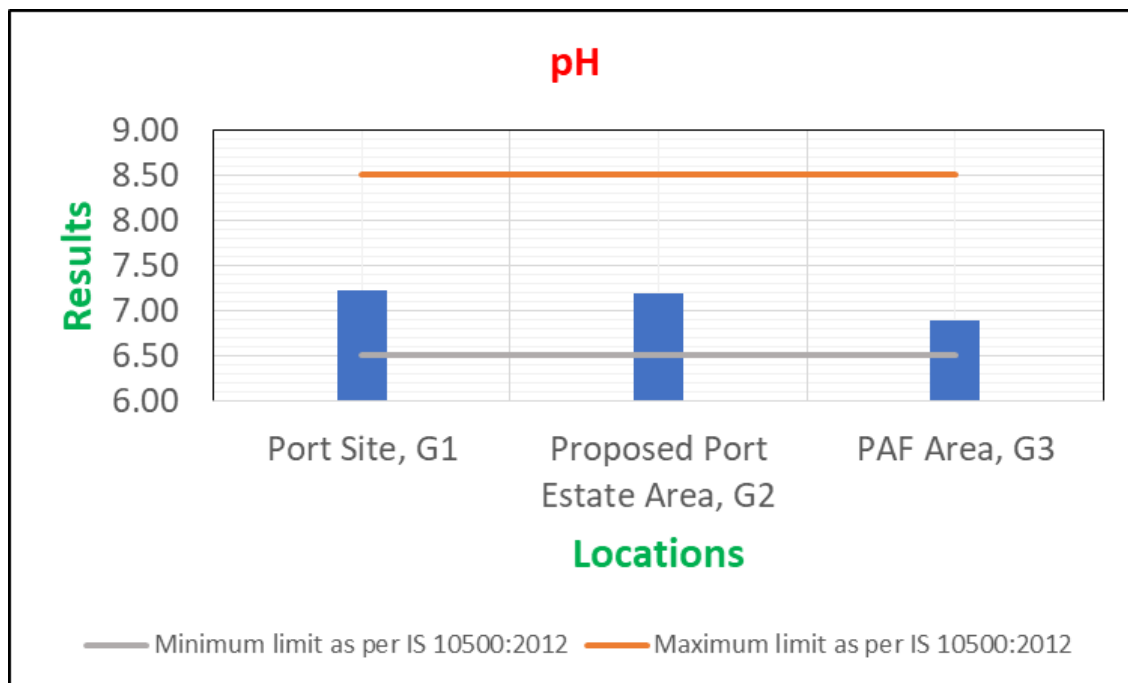
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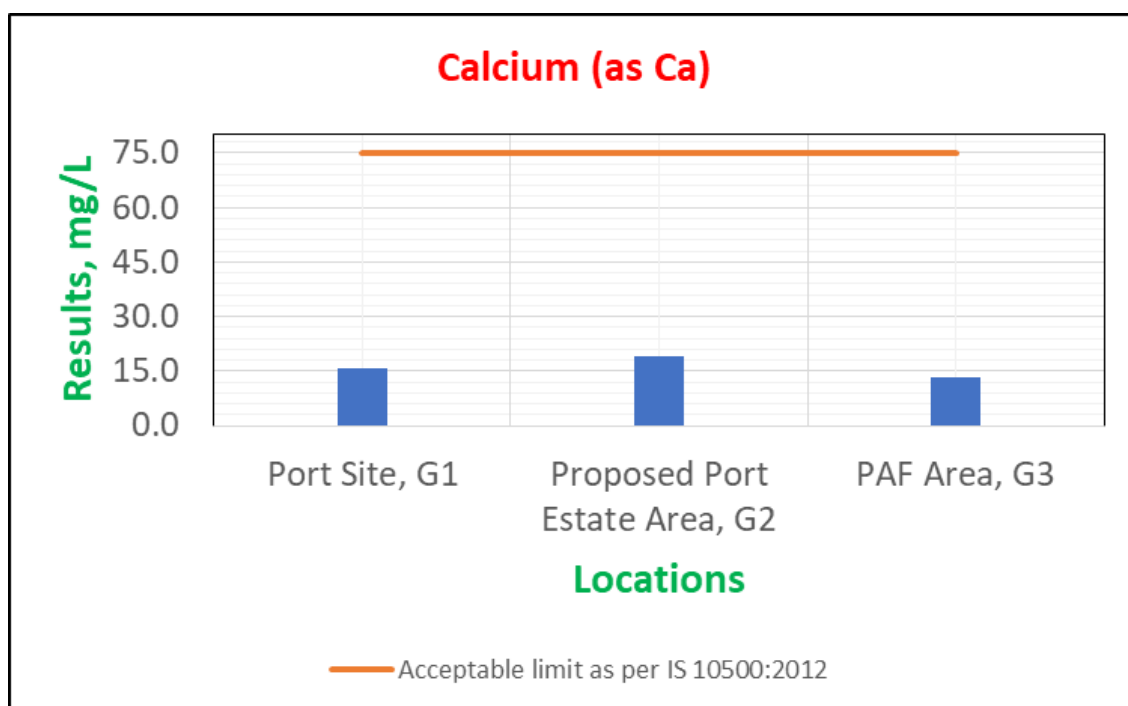
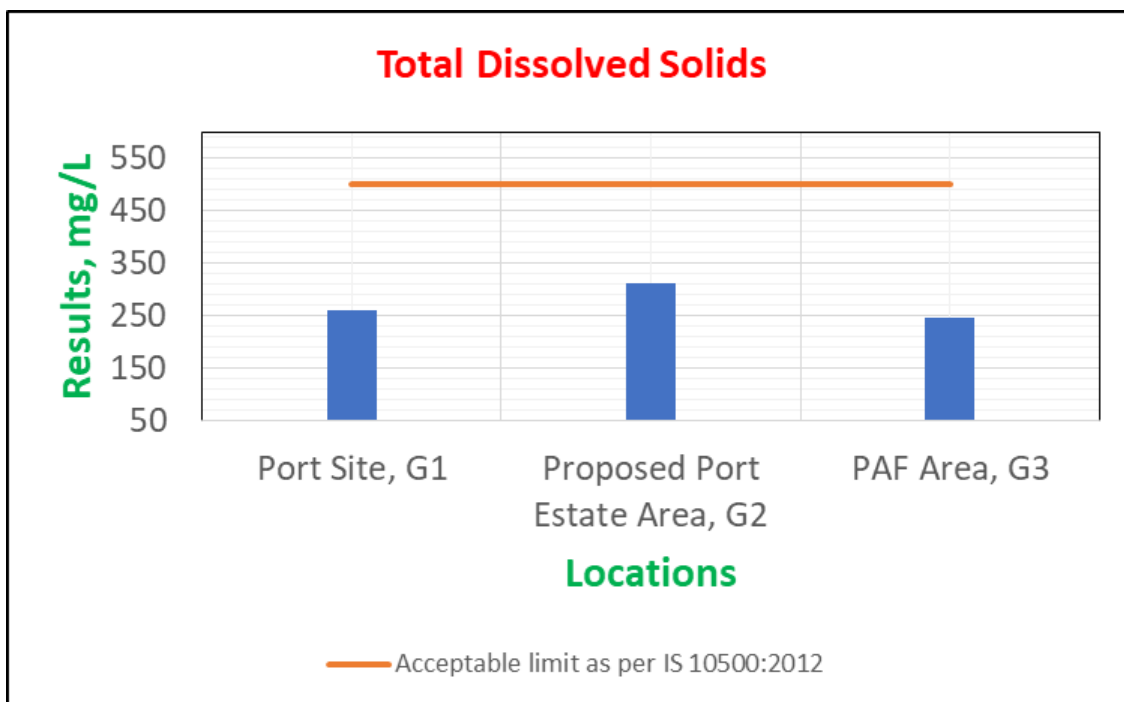
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Statistical Analysis of Ground Water



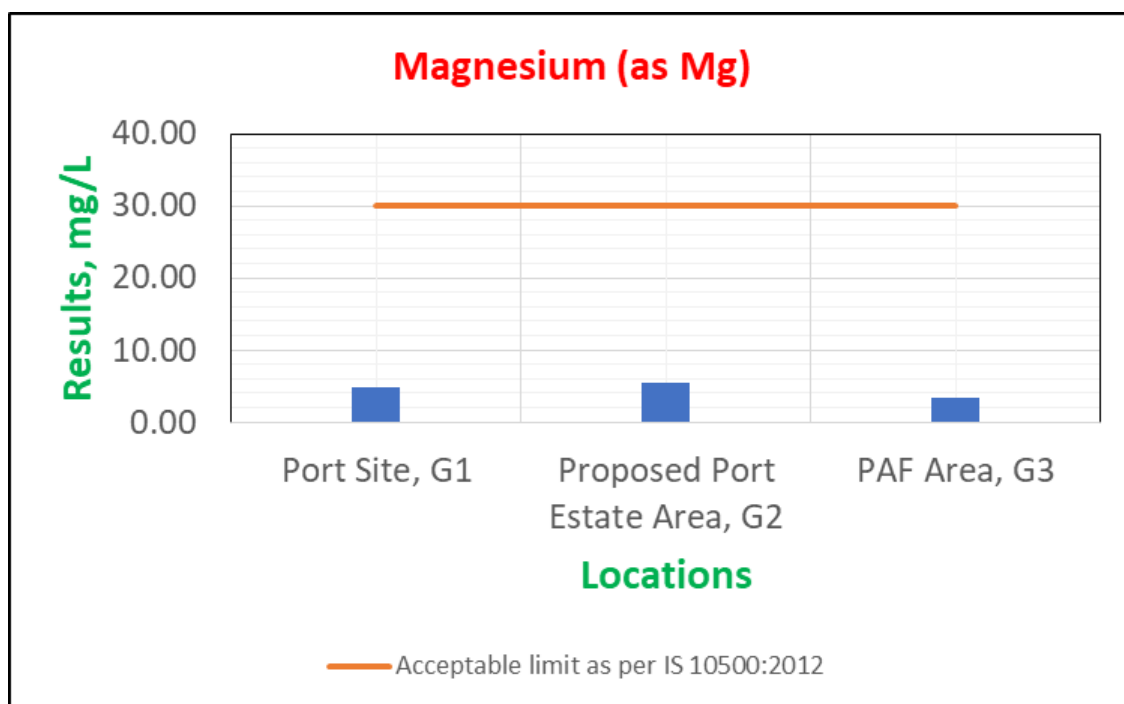
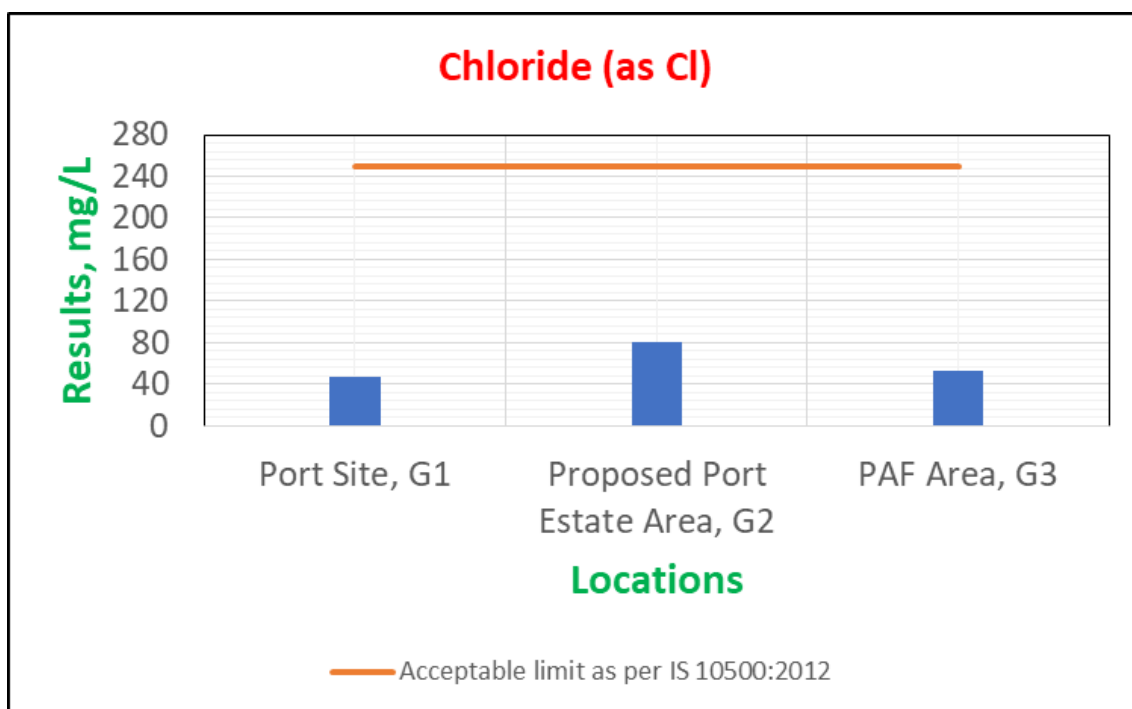
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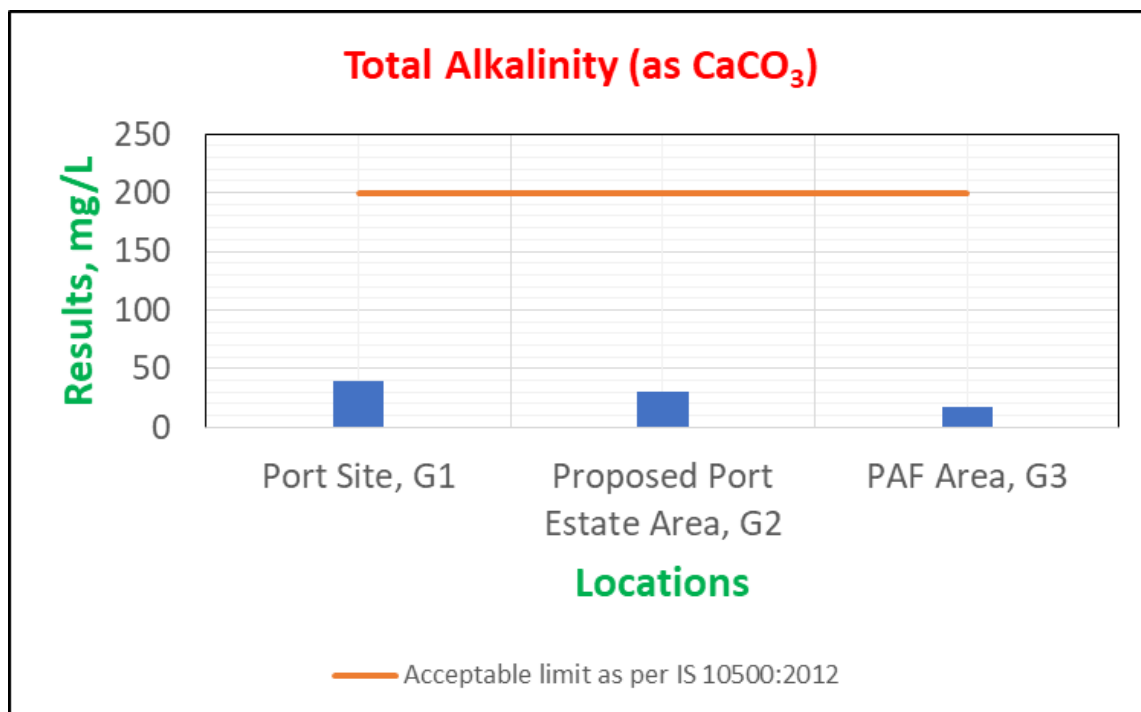
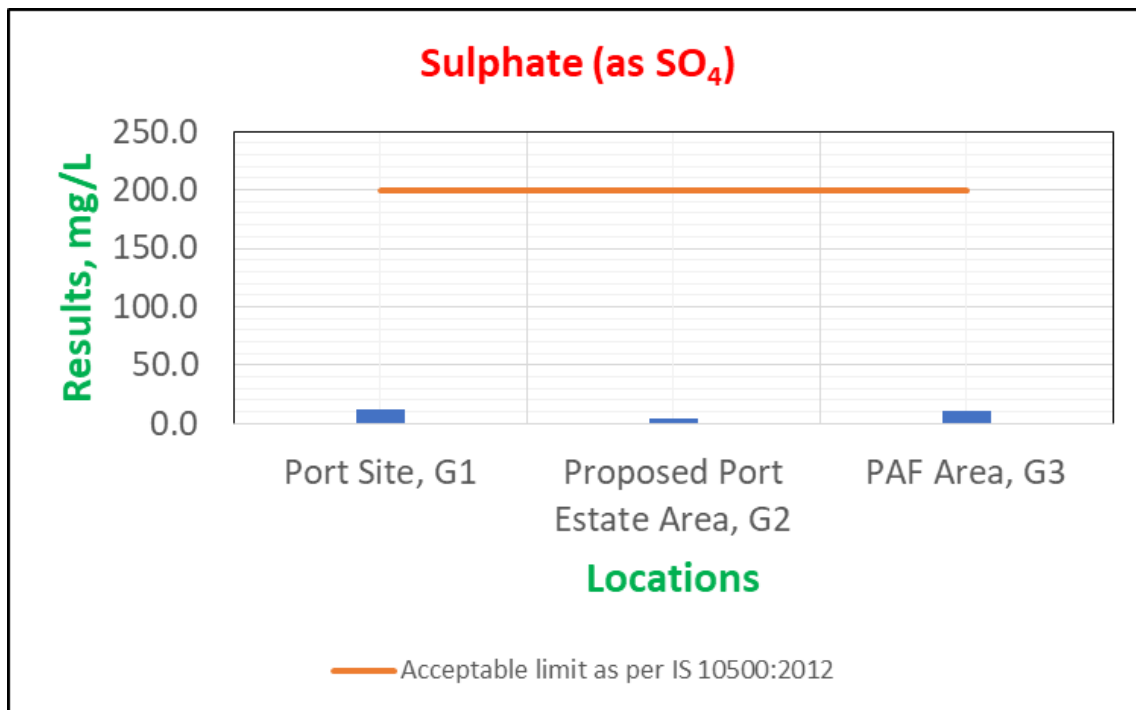
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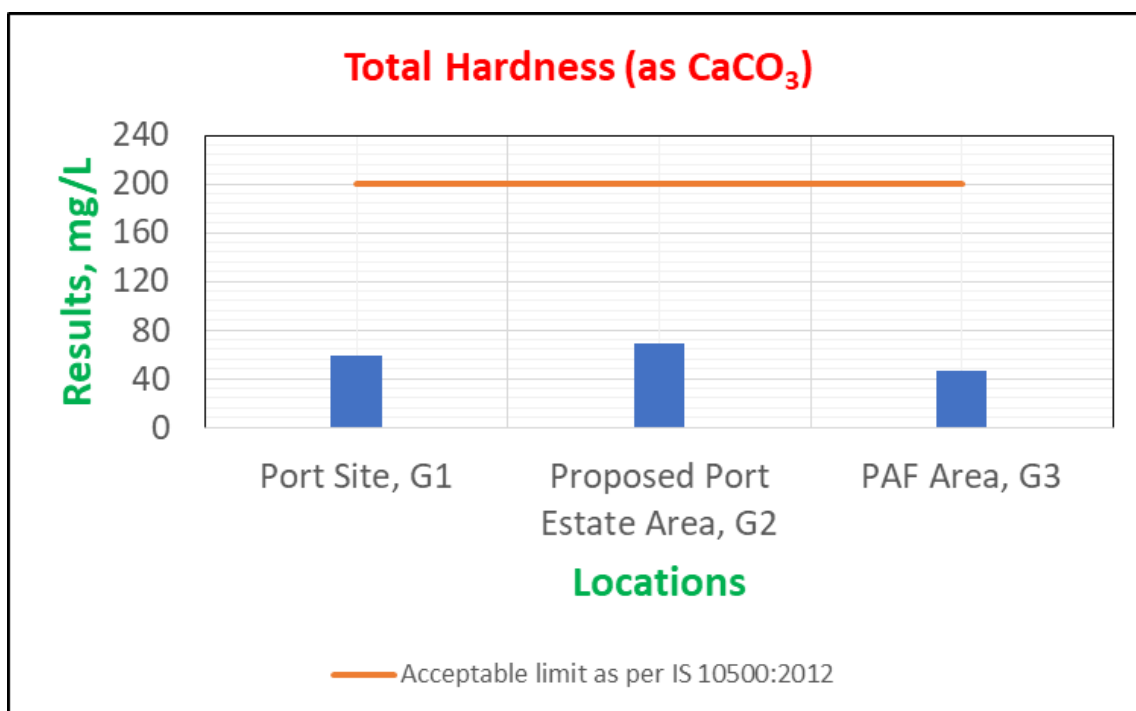
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EMR-6	Surface Water Analysis Report
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Date of Sampling	09-09-2026
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S. No.	Parameters	Unit	Results			
			Poovar West Canal S1	Vizhinjam Branch Canal 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	-	7.34	7.26	7.32	7.36
4.	Turbidity	N.T.U.	1	0.2	0.4	0.1
5.	Electrical Conductivity (at 25°C)	µmho/cm	1224	286	390	4890
6.	Total Dissolved Solids	mg/L	782	184	214	3130
Chemical Parameters						
7.	Dissolved Oxygen	mg/L	7	7.1	6.9	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	1.35
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	58.2	18.0	19.7	85
15.	Chloride (as Cl)	mg/L	125	43.1	72.4	440
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	0.52	0.42	BDL	0.38
19.	Magnesium (as Mg)	mg/L	16.7	4.92	5.90	25.1
20.	Manganese (as Mn)	mg/L	BDL	BDL	BDL	BDL
21.	Mineral Oil	mg/L	BDL	BDL	BDL	BDL
22.	Nitrate (as NO3)	mg/L	BDL	BDL	BDL	BDL
23.	Phenolic Compounds (as C6H5OH)	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 SO4)	mg/L	24.5	12.8	3.40	205
27.	Total Phosphate (as PO4)	mg/L	BDL	BDL	BDL	BDL
28.	Total Alkalinity (as CaCO3)	mg/L	30.7	21.9	39.4	56.9
29.	Total Hardness (as CaCO3)	mg/L	212	64.6	72.7	313
30.	Calcium Hardness (as CaCO3)	mg/L	143	44.4	48.5	210

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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	80.1	19.2	36.2	280
33.	Potassium (as K)	mg/L	14.5	2.48	3.15	17.4
34.	Sodium Adsorption Ratio	-	2.379	1.033	1.836	6.843
35.	Salinity	ppt	0.598	0.137	0.183	2.574
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

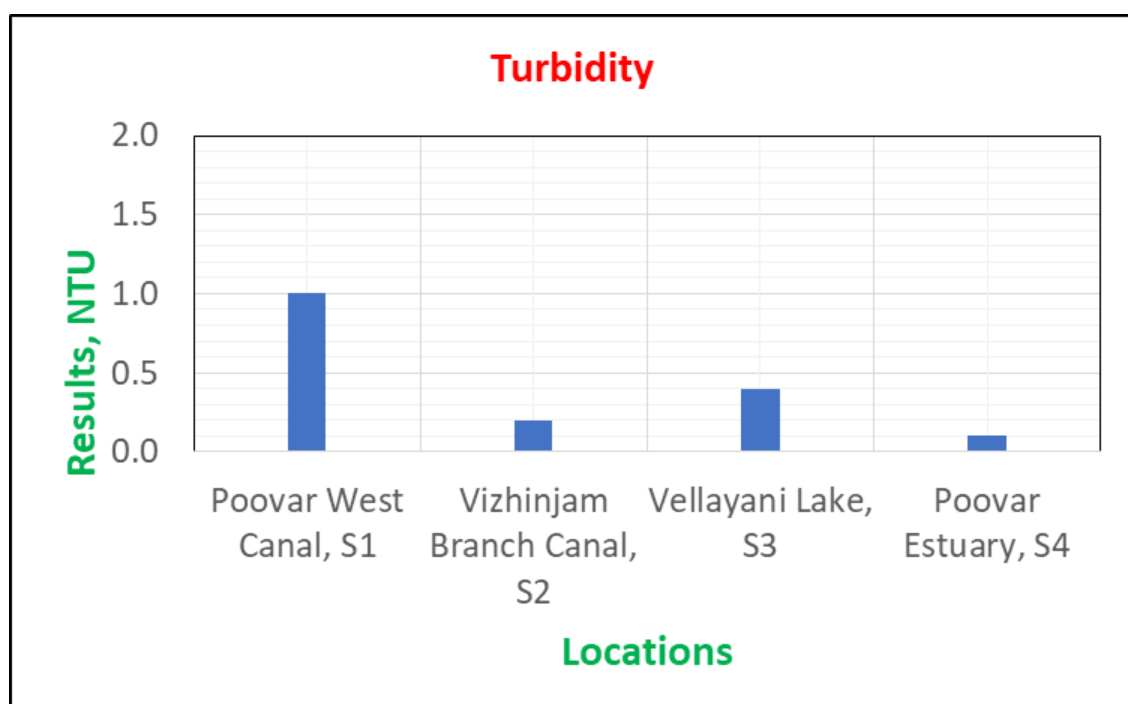
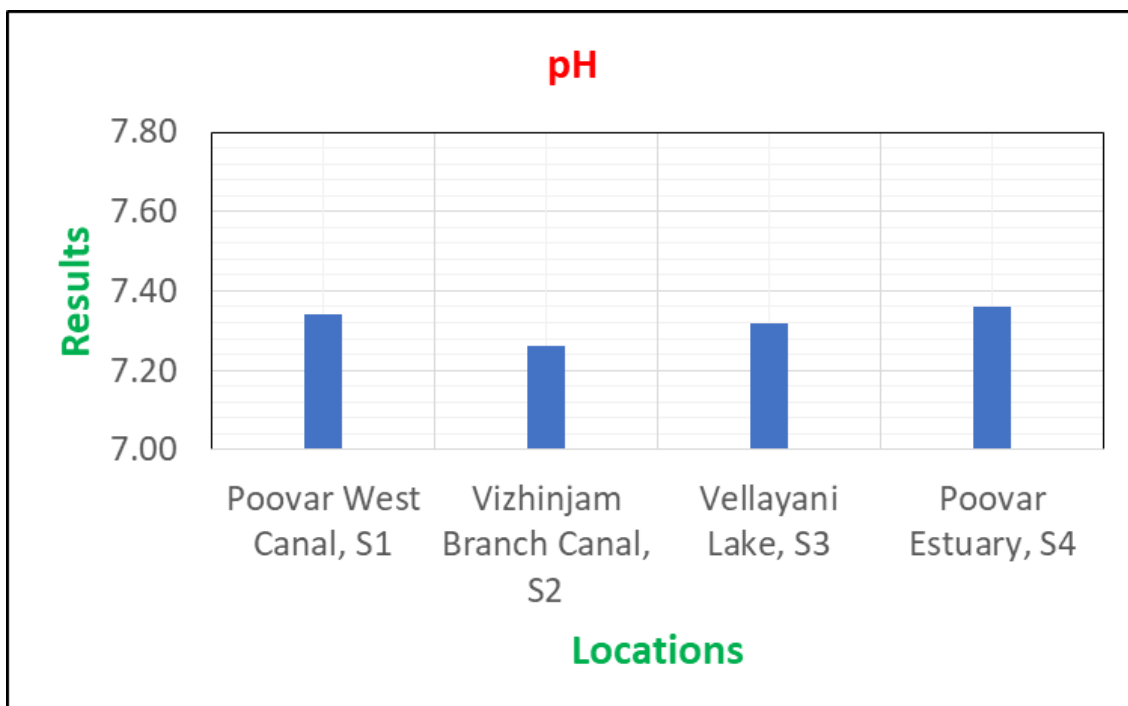
BDL: Below Detectable Limit

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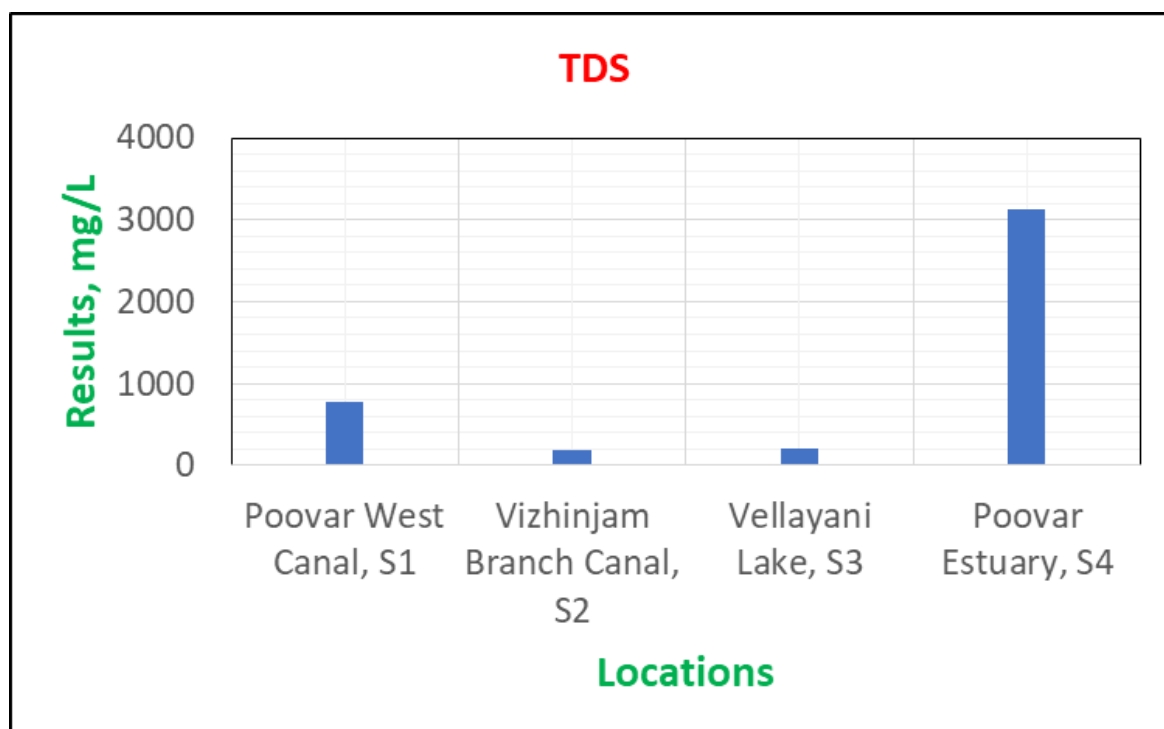
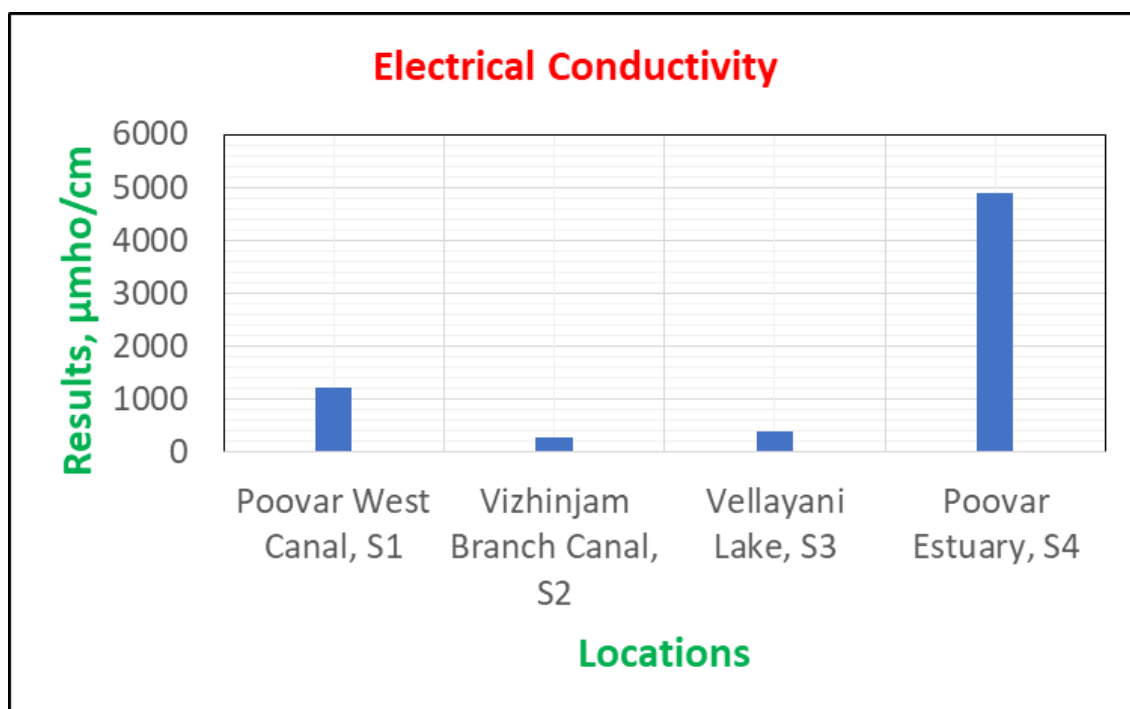
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Statistical Analysis of Surface Water



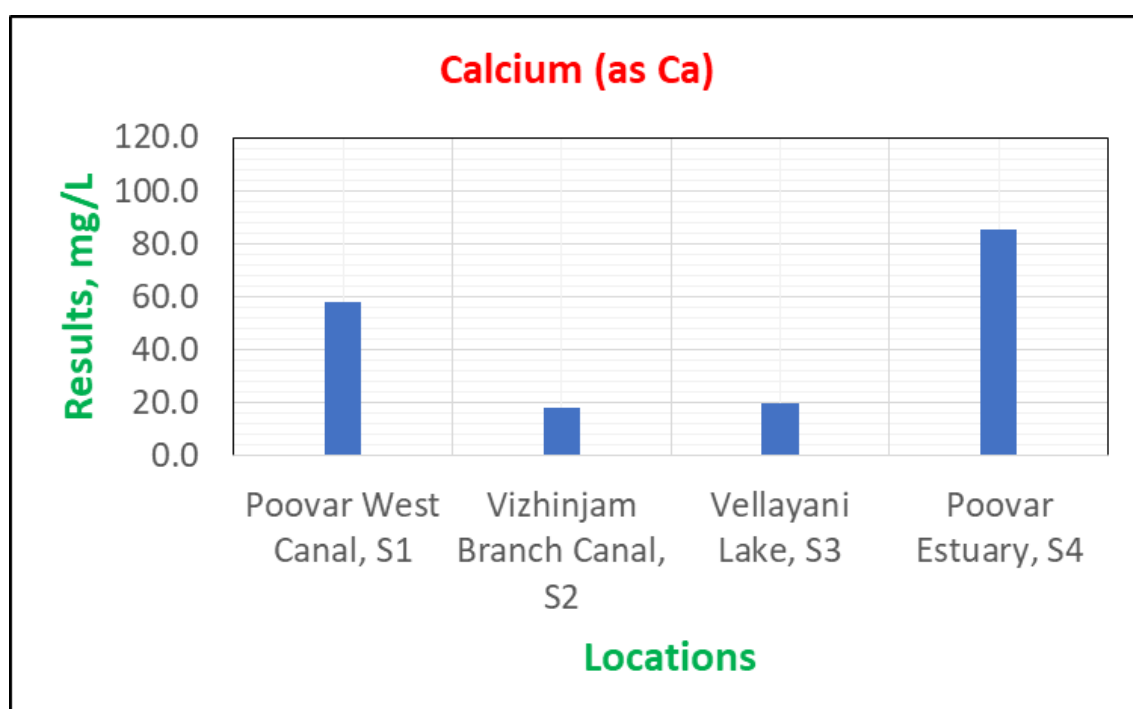
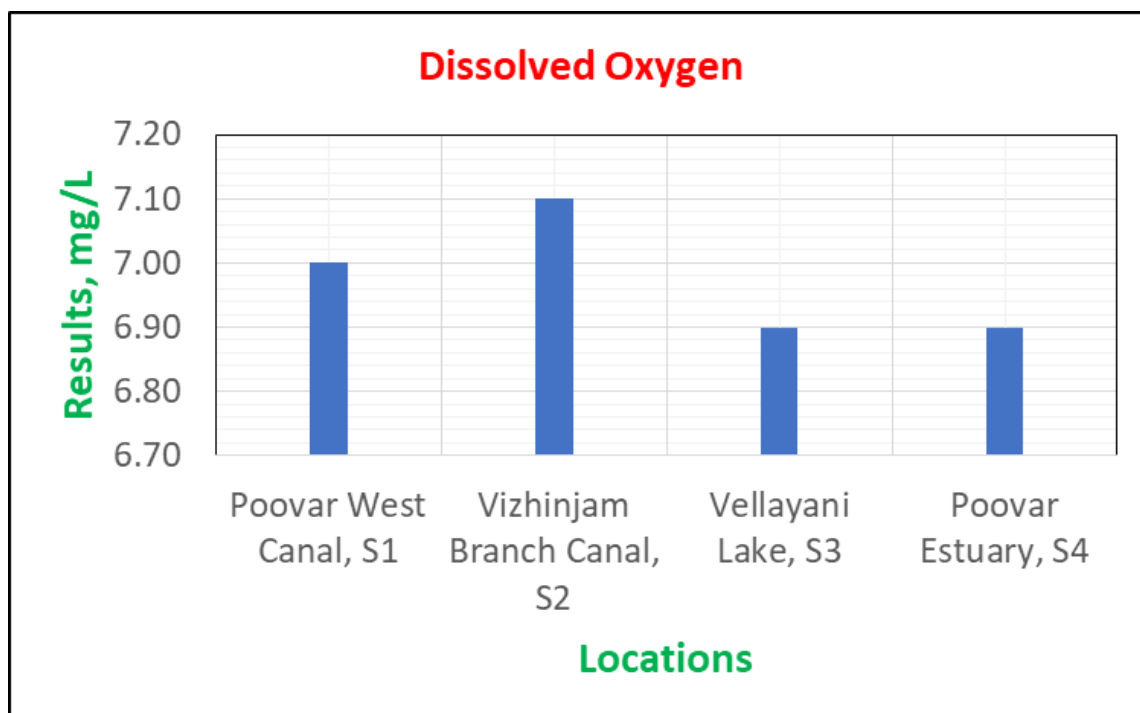
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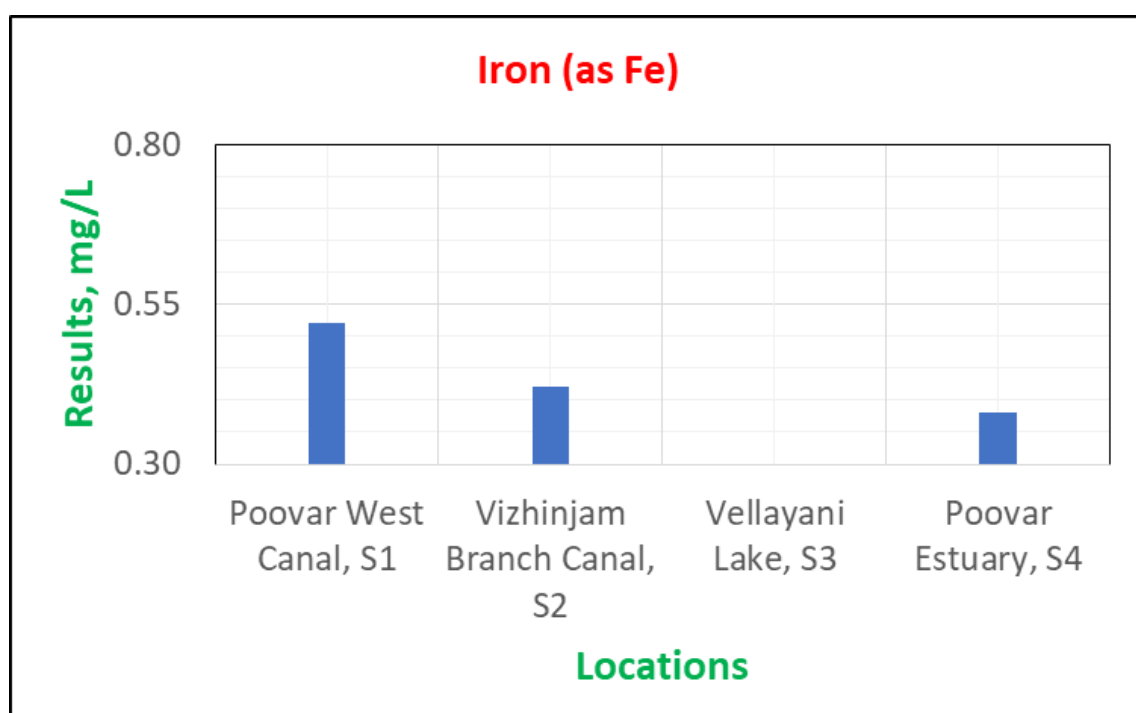
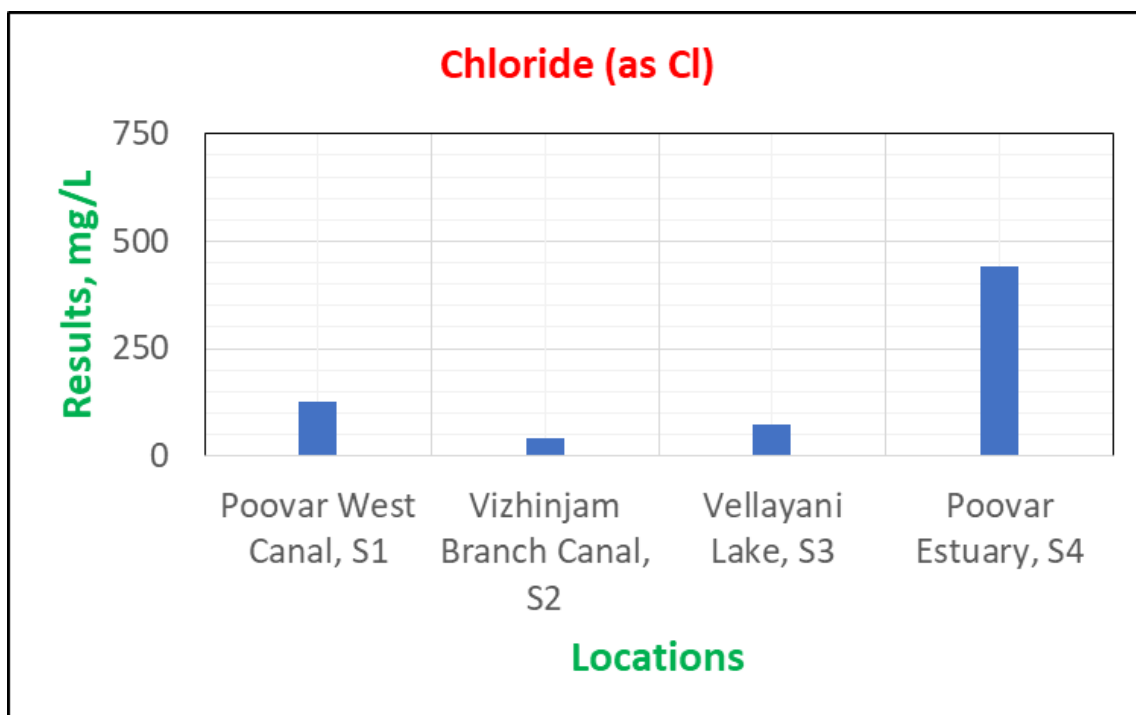
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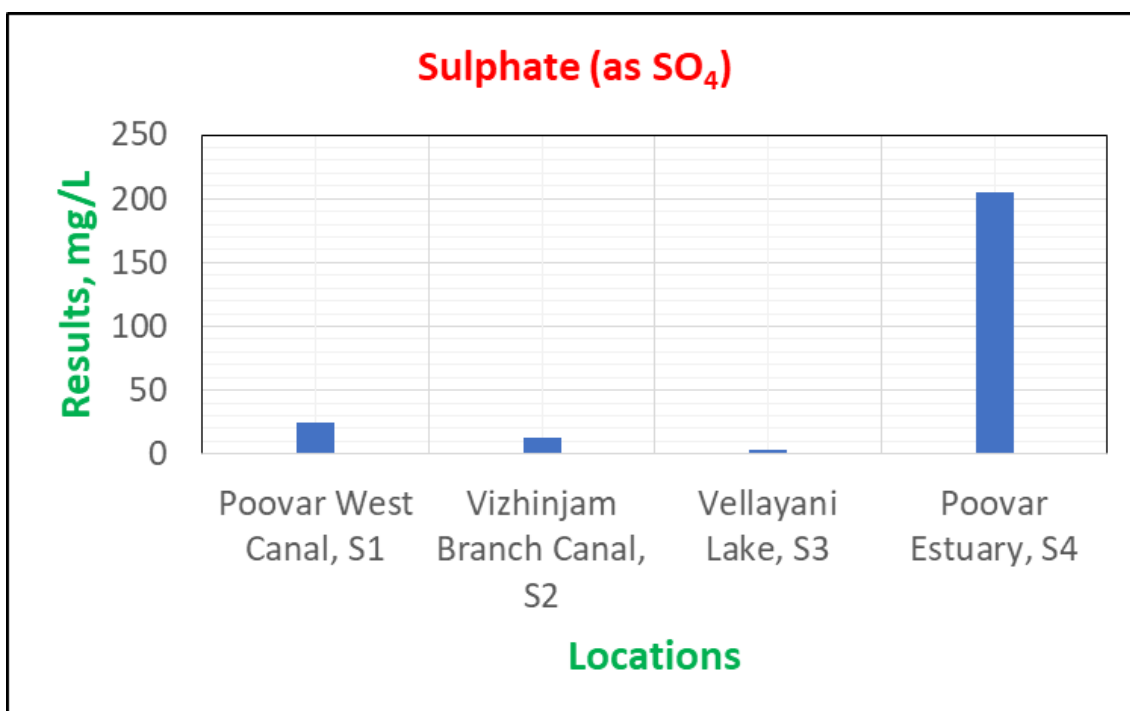
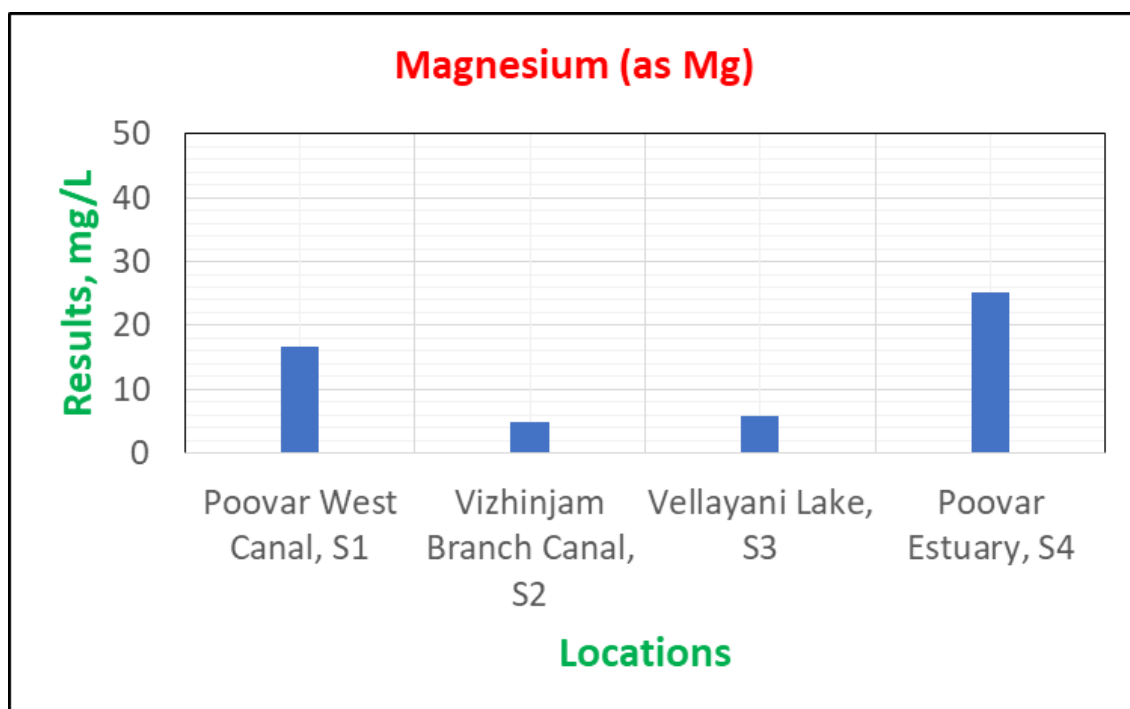
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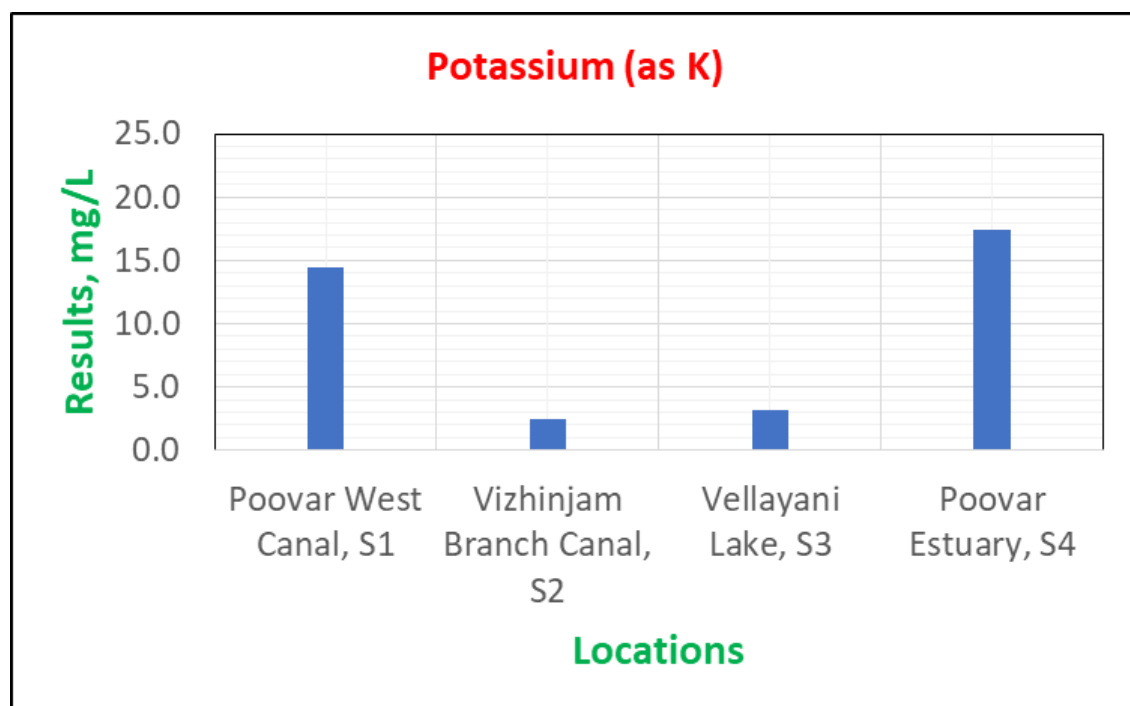
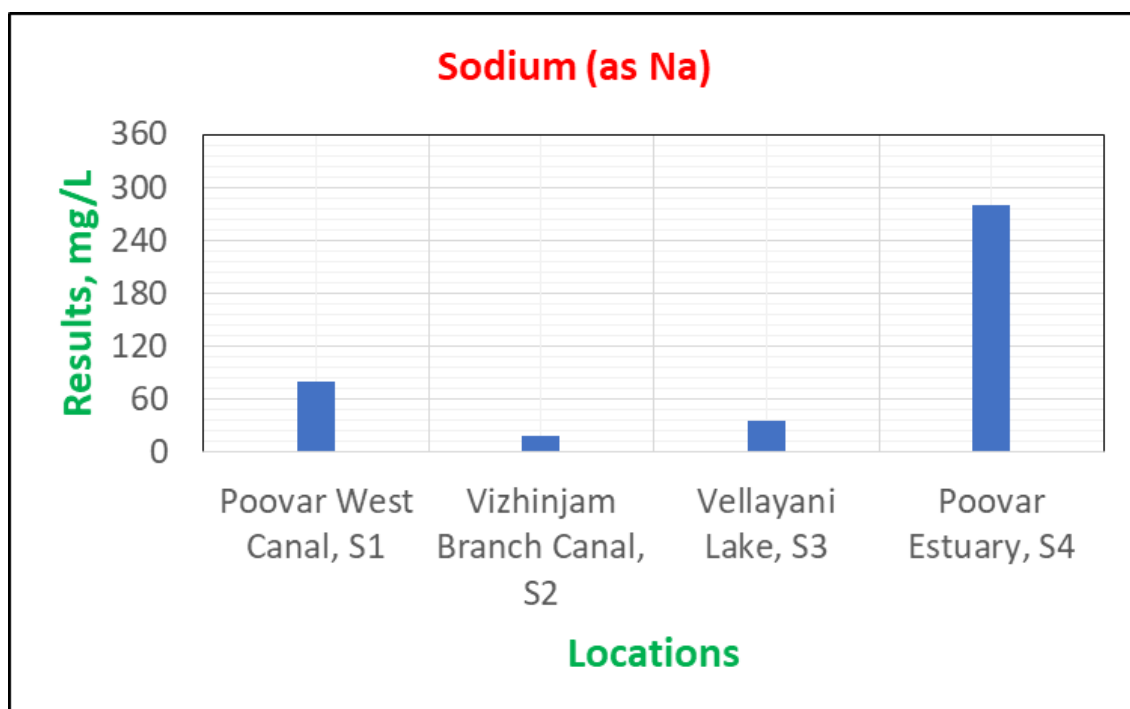
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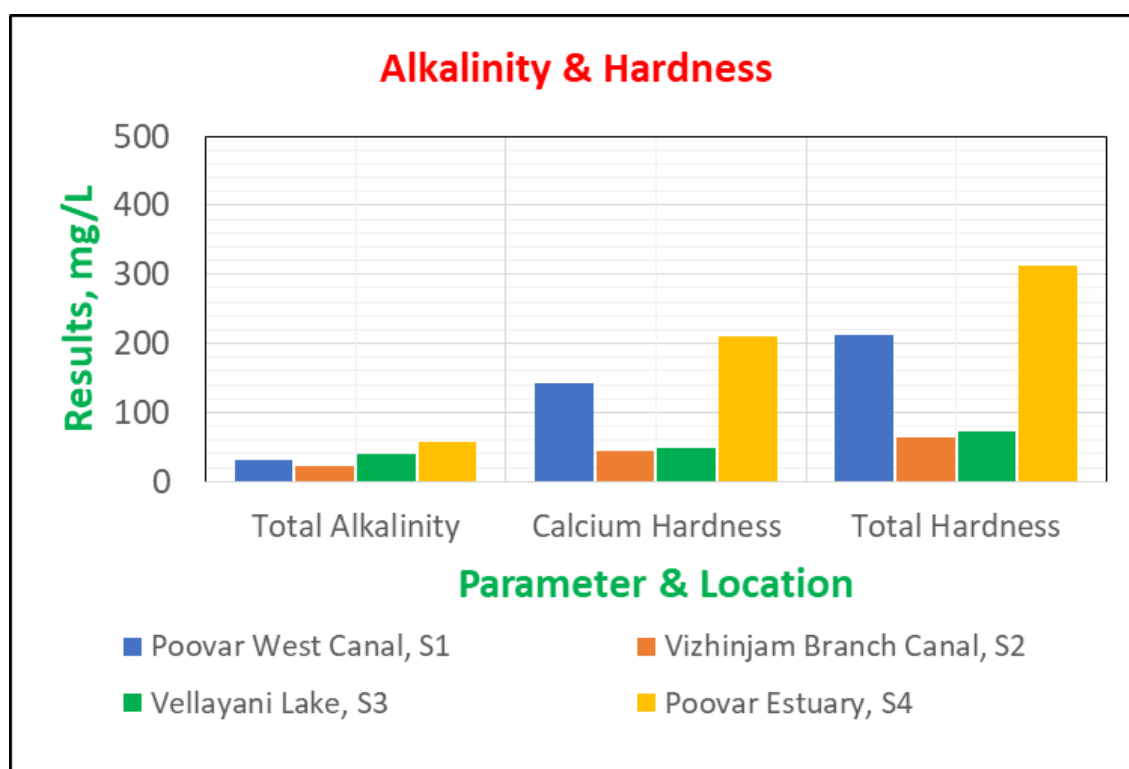
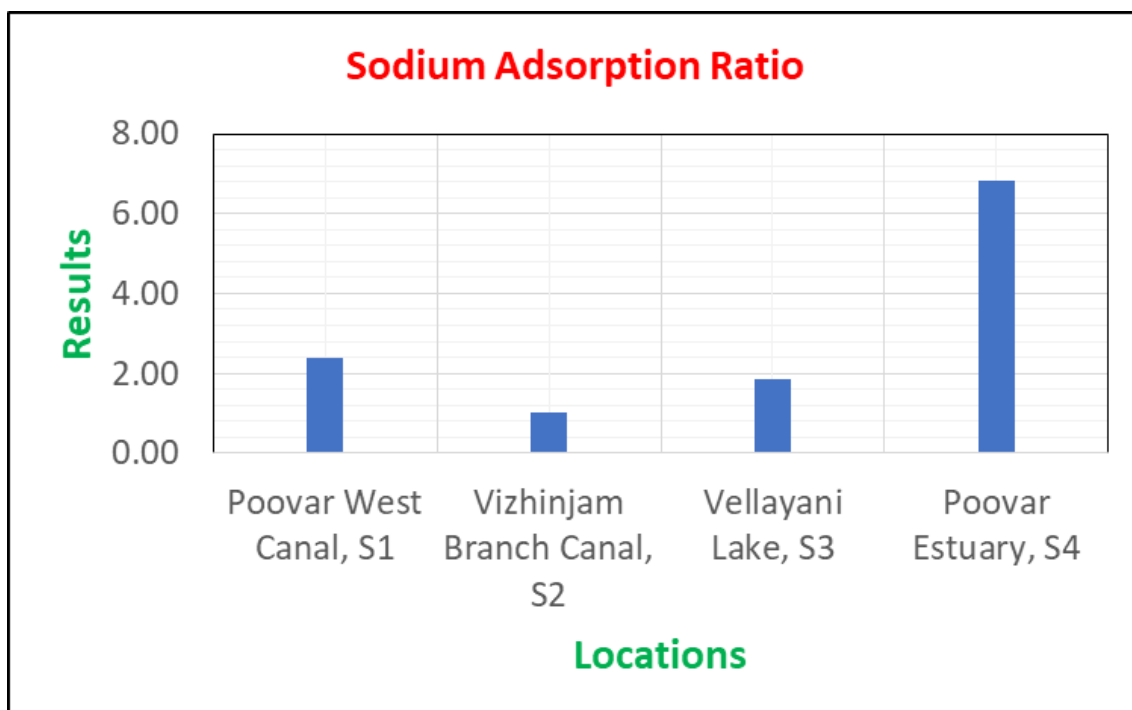
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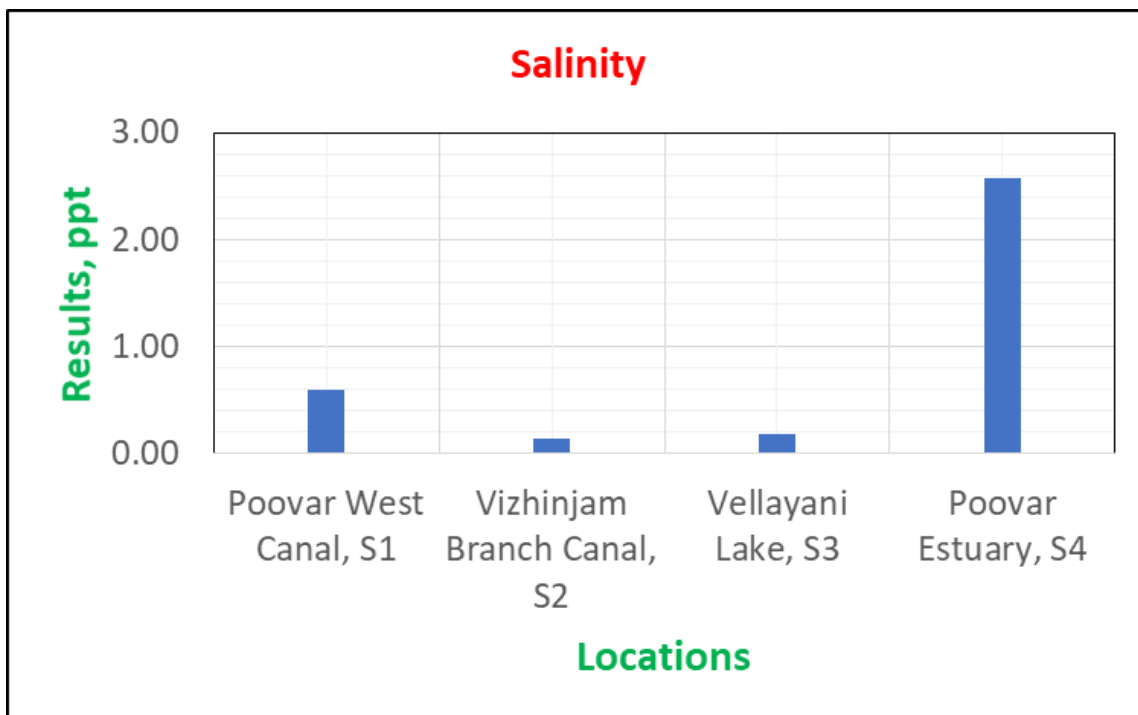
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EMR-7
List of Parameters, Detection Limits and Methodology of Analysis

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

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Sr. No.	Parameter	Unit	Detection Limit	Method Reference
31.	Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	0.01	IS 3025 (Part 43/Sec 1): 2022
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

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Sr. No.	Parameter	Unit	Detection Limit	Method Reference
xviii.	Phorate	µg/L	0.005	SEAAL/INS/SOP/7.2/03
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

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Sr. No.	Parameter	Unit	Detection Limit	Method Reference
21.	Faecal Coliforms	MPN / 100ml	2	IS 1622: 1981
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	1	SEAAL/CHL/SOP/7.2/12
4.	Aluminium (as Al)	mg/kg	0.25	SEAAL/CHL/SOP/7.2/19
5.	Chromium (as Cr)	mg/kg	0.25	SEAAL/CHL/SOP/7.2/19
6.	Copper (as Cu)	mg/kg	0.25	SEAAL/CHL/SOP/7.2/19
7.	Iron (as Fe)	mg/kg	0.25	SEAAL/CHL/SOP/7.2/19
8.	Lead (as Pb)	mg/kg	0.25	SEAAL/CHL/SOP/7.2/19
9.	Manganese (as Mn)	mg/kg	0.25	SEAAL/CHL/SOP/7.2/19
10.	Mercury (as Hg)	mg/kg	0.25	SEAAL/CHL/SOP/7.2/19
11.	Zinc (as Zn)	mg/kg	0.25	SEAAL/CHL/SOP/7.2/19
12.	Nickel (as Ni)	mg/kg	0.25	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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