adani
Ports and Logistics

O/C

PCB ID: 37436

APSEZL/EnvCell/2024-25/054

Date: 02.09.2024

To,
Member Secretary
Gujarat Pollution Control Board
Paryavaran Bhavan,
Sector-10-A, Gandhinagar-382010

Dear Sir,

Sub: Environmental Statement for the financial year ending 31st March, 2024 for **M/s Adani Ports and Special Economic Zone Limited (SPM & Pipeline for Crude Oil Terminal)**

Ref: **PCB ID: - 37436, Consent Order No. WH-117830, issued on: 29/03/2022, Valid up to: 26/04/2027**

With reference to the above-mentioned subject and reference, please find enclosed Environmental Statement in Form V prescribed under Rule 14 of the Environment (Protection) Rules 1986, for M/s **Adani Ports and Special Economic Zone Limited (SPM & Pipeline for COT), Mundra, Dist. Kutch - 370421** for the financial year ending 31st March 2024.

Thank you,

Yours faithfully,

For **Adani Ports and Special Economic Zone Limited**

Authorized Signatory

Encl: As above.

5/9/24

Gujarat Pollution Control Board
Head Office
Sector No.-10-A,
Gandhinagar-382010

Copy to: The Regional Officer, Gujarat Pollution Control Board, Gandhidham.

Adani Ports and Special Economic Zone Ltd
Adani House,
PO Box No. 1
Mundra, Kutch 370 421
Gujarat, India
CIN: L63090GJ1998PLC034182

Tel +91 2838 25 5000
Fax +91 2838 25 51110
info@adani.com
www.adani.com

Registered Office: Adani Corporate House, Shantigram, Nr. Vaishno Devi Circle, S.G. Highway, Khodiyar, Ahmedabad – 382421, Gujarat, India

Environment Statement for 2023-24 for M/s Adani Ports & SEZ Limited (SPM & Pipeline for COT)

(PCB ID: 37436)

FORM V
(See Rule 14)

Environmental Statement for the Financial Year ending 31st March 2024

PART – A

(i)	Name and address of the Owner/ Occupier of the Industry Operation or Process	:	Mr. Sujalkumar Shah CEO – Mundra & Tuna Port Adani Ports and SEZ Limited 4th Floor, Adani House, Mundra, Kutch – 370421. Ph No. (02838) 255000
(ii)	Industry Category Primary (STC Code) Secondary (STC Code)	:	Red-Large NA NA
(iii)	Production Capacity	:	SPM and Pipeline for Crude Oil Terminal: 25.0 MMTPA
(iv)	Year of Establishment	:	2005
(v)	Date of last Environment Statement submitted	:	11/09/2023

Environment Statement for 2023-24 for M/s Adani Ports & SEZ Limited (SPM & Pipeline for COT)

(PCB ID: 37436)

PART – B

Water and Raw Material Consumption

(i) Water Consumption

Water Consumption Cu. Mtr./Day	**Average**
Process	Nil
Cooling	Nil
Domestic	1.0 m^3/day

Name of Products	**Process Water Consumption per unit of Product Output**	
	During the current financial year (2022-23)	**During the current financial year (2023-24)**
Single Point Mooring (SPM) for Crude Oil Handling and transporting through pipeline*	--	--

*** Unit does not go under any manufacturing process. The unit involves single point mooring system and pipeline for transporting Crude Oil from SPM to Storage Terminal of IOCL. There is no industrial water consumption for storage and handling.**

(ii) Raw Material Consumption

Name of Raw Material	**Name of Products**	**Consumption of Raw Material per Unit of output**	
		During the current financial year (2022-23)	**During the current financial year (2023-24)**
--	Crude Oil Handling and transporting through pipeline*	6.18 MMT	6.218 MMT

*** Unit does not go under any manufacturing process. Hence there is no any raw material consumption.**

Environment Statement for 2023-24 for M/s Adani Ports & SEZ Limited (SPM & Pipeline for COT)

(PCB ID: 37436)

PART – C

Pollutants discharged to Environment/Unit of Output
(Parameters as specified in consent issued)

Pollutants	Quantity of pollutants discharged (Mass/day)	Concentrations of pollutants in discharges (mass/volume)	Percentage of variation from prescribed standards with reasons
(a) Water	• Nil		
(b) Air	• Nil • Marine water quality monitoring is being done on regular basis. • Refer **Annexure – 1** for marine water quality.		
Particulate Matter (mg/Nm^3)			
Sulphur Dioxide (PPM)			
Nitrogen Oxide (PPM)			

*** There is no wastewater generation and air emission from the said facility.**

PART – D

Hazardous Wastes
(As specified under Hazardous and Other Wastes Management Rules 2016)

Hazardous Wastes	Total Quantity (Kg)	
	During the current financial year (2022-23)	During the current financial year (2023-24)
(a) From Process	--	--
(b) From Pollution Control facilities	--	--

Environment Statement for 2023-24 for M/s Adani Ports & SEZ Limited (SPM & Pipeline for COT)

(PCB ID: 37436)

PART – E

Solid Waste

Solid Waste	Total Quantity Generated (MT/Annum)	
	During the current financial year (2022-23)	During the current financial year (2023-24)
a) From Process (Ash)	Nil	Nil
b) From Pollution Control facilities	-	-
(C-1) Quantity recycled or reutilized within the unit	Details is Attached as **Refer Annexure – 2**	
(C-2) Sold		
(C-3) Disposed		

Note: Above Quantity shown is waste generated / disposed from entire Adani Ports & SEZ Limited.

PART - F

Please specify the characterization (in terms of Composition and quantum) of Hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes:

- Single Point Mooring (SPM) is installed in sea which is approx 6.0 nautical mile away from the sea shore, Entire SPM pipeline is buried underground, total pipeline length is 15.4 km including 8.6 km inside the open sea and 6.8 km on landward side. The operation is taken care in deep sea and there is no any Hazardous Waste generation. The crude from deep sea to the dedicated tank farm of IOCL transported by off-shore and on shore pipelines.

PART – G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.

- Disaster Management plan is in place and implemented and updated on regular basis.
- Oil spill contingency plan is in place to handle Tier 1 level oil spills considering different accident scenarios, and the vulnerable areas are identified and mitigation plan is prepared & updated on regular basis.
- Oil spill mock drills are conducted regularly as per schedule.
- Offshore/Onshore pipeline Cathodic Potential (CP) survey is being done as per schedule.
- Latest Regional Level Pollution Response exercise "SWACHCHH SAMUDRA-NW 2023" was carried out by Indian Coast Guard on 25th November, 2023 at Vadinar, Gujarat. All participants from various Oil Handling Agencies and Stakeholders (IOCL-Jamnagar, APSEZ- Mundra, Nayara Energy LTD VOTL- Vadinar, Reliance Industries LTD- Sikka Jamnagar, Essar Bulk Terminal-Salaya and Coast Guard) were participated in this exercise.

Environment Statement for 2023-24 for M/s Adani Ports & SEZ Limited (SPM & Pipeline for COT)

(PCB ID: 37436)

PART – H

Additional measures /investment/ proposal for environmental protection including abatement of pollution, prevention of pollution.

- Adequate plantation has been done as part of environment protection and abatement of pollution. Organization has dedicated team under the Horticulture department, who takes care of plantation and landscaping for entire APSEZL area and develops Green Zones.
- In entire APSEZ more than 457.99 ha. area is developed as greenbelt with samplings of more than 9.06 Lacs.

PART – I

Any other particulars for improving the quality of environment:

- Monitoring of environmental parameters such as Air, Noise, and wastewater quality being done regular basis through MoEF&CC & NABL recognized laboratory (M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi).
- Awareness program and training on waste management, water conservation, energy conservation for employees & their families, contractors, local community is being conducted on regular basis.
- APSEZ has Environment Cell for environmental management and environmental monitoring.
- APSEZ Budget for environmental management measures (including horticulture) for the FY 2023-24 is to the tune of INR **1536.48** lakh. Out of which, Approx. INR **1366.78** lakh is spent during the year FY 2023-24. Detailed breakup of the expenditures for the FY 2023-24 is attached as **Annexure – 3**.

Date: 02-09-2024

(Signature of a person carrying out an industry, operation or process)
Designation: **Head-Environment Cell**

Environment Statement for 2023-24 for M/s Adani Ports & SEZ Limited (SPM & Pipeline for COT)

(PCB ID: 37436)

ANNEXURE – 2

Waste Disposal Details, APSEZ, Mundra

F.Y. 2023 - 24

Sr. No.	Waste Description	Disposal Method	Unit	Quantity 2022-23	Quantity 2023-24
Non-Hazardous:					
1.	Dry Waste (Recyclable waste- Metal, Wood, paper, plastic etc.)	Recycle (send to reg. recycler)/ Reuse (Used by Org.)	MT	3779.70	3312.775
2.	RDF (Non-Recyclable)	Co-processing at cement plant	MT	544.17	451.28
3.	STP Sludge	Reprocess (Manure)	MT	11.8	3.0
4.	Organic Waste (included food waste)	Reprocess & Recovery Manure/biogas	MT	897.82	959.35
5.	E-Waste	Recycle (send to reg. recycler)	MT	89.86	44.83
Hazardous:					
1.	Used Oil	Recycle (send to reg. recycler)	MT	131.99	204.86

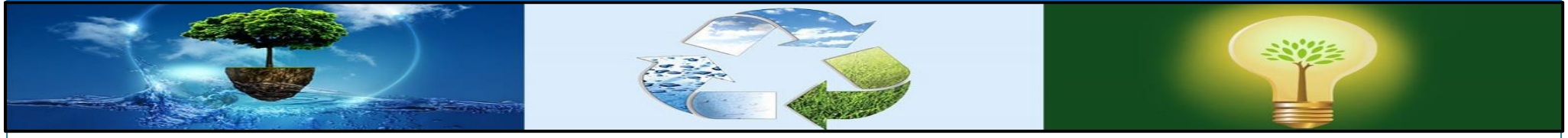
(PCB ID: 37436)

ANNEXURE – 3

Cost of Environmental Protection Measures of APSEZ, Mundra

F.Y. 2023-24

Sr. No.	Activity	Cost incurred (INR in Lacs)	Budgeted Cost (INR in Lacs)
		2023 – 24	2023 – 24
1.	Environmental Study / Audit and Consultancy	22.67	27
2.	Legal & Statutory Expenses	8.60	13
3.	Environmental Monitoring Services	13.37	19.20
4.	Hazardous / Non-Hazardous Waste Management & Disposal	130.11	148.68
5.	Environment Days Celebration and Advertisement / Business development	3.42	11.50
6.	Treatment and Disposal of Bio-Medical Waste	2.28	2.28
7.	Mangrove Plantation, Monitoring & Conservation	15	15.0
8.	Other Horticulture Expenses	904	904
9.	O&M of Sewage Treatment Plant and Effluent Treatment Plant (including STP, ETP of Port & SEZ & Common Effluent Treatment Plant)	186.94	212.9
10.	Expenditure of Environment Dept. (Apart from above head)	80.39	182.92
	Total	**1366.78**	**1536.48**



“Half Yearly Environmental Monitoring Reports “

For,

adani
Ports and Logistics

M/S. ADANI PORTS & SPECIAL ECONOMIC ZONE LTD.

PLOT NO. 169/P, AT - NAVINAL ISLAND, TAL. - MUNDRA, DIST. - KUTCH - 370421.

Monitoring Period: April – 2023 to September - 2023

Submitted By

UniStar
Environment and Research Labs Pvt. Ltd.

UniStar Environment & Research Labs Pvt. Ltd.

White House, Near GIDC Office, Char Rasta, Vapi, Gujarat, India – 396195

UniStar
Environment and Research Labs Pvt. Ltd.

White House
Near G.I.D.C. Office, Char Rasta,
Vapi - 396 195. Gujarat, India.
Phone : +91 260 2433966 / 2425610
Email : response@uerl.in Website : www.uerl.in

MoEF&CC (GOI) Recognized Environmental Laboratory under the EPA-1986 (31.03.2023 to 22.09.2024) | QCI-NABET Accredited EIA & GW Consultant Organization | GPCB Recognized Environmental Auditor (Schedule-II) | ISO 9001 : 2015 Certified Company | ISO 45001 : 2018 Certified Company

MARINE WATER MONITORING SUMMARY REPORT

RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.22	8.06	8.18	8.05	8.06	7.92	7.98	7.91	8.01	7.89	8.05	7.92	IS 3025 (Part11)1983
2.	Temperature	°C	30.2	30	30.3	30.2	30.2	30.1	30	29.9	30	29.9	29.9	29.8	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	118	96	122	114	124	110	118	102	128	110	144	118	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.8	BDL	2.9	BDL	3	BDL	3.1	BDL	3.2	BDL	2.9	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.32	6.02	6.37	5.96	6.3	5.89	6.22	5.82	6.32	6.02	5.95	5.75	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.89	37.18	36.52	37.48	35.84	36.56	35.74	36.33	35.76	36.42	35.24	35.7	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	3.19	2.54	2.98	2.67	2.84	2.59	2.93	2.76	3.71	3.39	3.06	2.9	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.388	0.259	0.422	0.336	0.345	0.3	0.3	0.235	0.348	0.304	0.391	0.37	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.15	2.93	3.45	3.1	2.49	2.06	2.54	2.45	3.42	3.39	3.32	3.26	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	0.73	0.65	0.6	0.47	0.517	BDL	1.16	1.05	1.26	1.16	1.68	1.47	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	6.728	5.729	6.852	6.106	5.675	4.95	5.77	5.445	7.478	7.084	6.771	6.53	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	37050	37640	37156	37890	36860	37422	36430	37106	36524	37156	36630	37102	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	24.07	12.04	27.97	11.99	32.26	16.13	24.31	12.16	28.31	12.13	15.95	7.98	APHA 23rd Ed.,2017, 5220-B

Continue…

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Extended Work Office : G.I.D.C., Dahej-II, Bharuch, Gujarat.
CIN:U73100GJ2007PTC051463

RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A	Phytoplankton														
1.	Chlorophyll	mg/m³	3.01	2.56	2.98	3.22	3.05	2.66	2.36	3.24	3.12	3.02	2.99	3.41	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	0.98	1.03	1.23	1.44	1.56	1.69	1.42	2.14	1.85	1.15	1.47	2.11	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	79	84	84	142	98	178	125	124	99	105	108	120	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Nitzschia*	*Navicula*	*Nitzschia*	*Navicula*	*Rhizosolenia*	*Ceratium*	*Melosira*	*Biddulphia*	*Ceratium*	*Cyclotella*	*Coscinodiscus*	*Nitzschia*	APHA (23rd Ed. 2017)10200 F
			Pinnularia	*Fragillaria*	*Navicula*	*Fragillaria*	*Biddulphia*	*Pinnularia*	*Pinnularia*	*Rhizosolenia*	*Diploneis*	*Pinnularia*	*Diploneis*	*Pinnularia*	
			Odontella	*Thalassiothrix*	*Odontella*	*Thalassiothrix*	*Skeletonema*	*Odontella*	*Skeletonema*	*Coscinodiscus*	*Odentella*	*Skeletonema*	*Rhizosolenia*	*Odontella*	
			Dinophysis	*Grammatophora*	*Dinophysis*	*Grammatophora*	*Thallassiosira*	*Thalassiothrix*	*Rhizosolenia*	*Skeletonema*	*Grammatophora*	*Thallassiosira*	*Dinophysis*	*Dinophysis*	
			Surirella	*Surirella*	*Thallassiosira*	*Surirella*	*Thalassionema*	*Thallassiosira*	*Pleurosigma*	*Thallassiosira*	*Melosira*	*Thalassionema*	*Thalassionema*	*Surirella*	

B	Zooplankton								
1	Abudance(Population)	noX103/ 100 m3	63	33	40	33	33	41	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Decapoda*	*Decapoda*	*Egg(Fish and Shrimps)*	*Crustacean Larvae*	
			Oikoplura	*Oikoplura*	*Copepods*	*Copepods*	*Oikoplura*	*Egg(Fish and Shrimps)*	
			Copepods nauplii	*Copepods nauplii*	*Crustacean Larvae*	*Crustacean Larvae*	*Copepods nauplii*	*Copepods*	
			Crustacean	*Crustacean*	*Crustacean*	*Crustacean*	*Crustacean*	*Crustacean*	
			Bivalve Larvae	*Bivalve Larvae*	*Oikoplura*	*Oikoplura*	*Bivalve Larvae*	*Bivalve Larvae*	
3	Total Biomass	ml/100 m³	15.32	14.25	15.36	16.58	15.86	16.54	

Continue…

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Extended Work Office : G.I.D.C., Dahej-II, Bharuch, Gujarat.
CIN:U73100GJ2007PTC051463

RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
C	Microbiological														
1	Total Bacterial Count	CFU/ml	150		210		278		266		286		254		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	40		52		44		54		68		51		APHA 23rd Ed.2017,9222-B
3	Ecoli	/100ml	30		36		23		36		41		35		IS :15185:2016
4	Enterococcus	/100ml	25		22		19		22		29		20		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

Mr. Nilesh Patel
Sr. Chemist

GUJARAT VAPI.

Mr. Nitin Tandel
Technical Manager

Regd. Office : 215, Royal Arcade, Near G.I.D.C.Office, Char Rasta,Vapi-396 195, Gujarat, India.
Extended Work Office : G.I.D.C., Dahej-II, Bharuch, Gujarat.
CIN:U73100GJ2007PTC051463

RESULTS OF SEDIMENT ANALYSIS [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.51	0.42	0.47	0.46	0.42	0.48	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	544.4	490.8	476.5	480.8	464.5	482.4	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	3.91	4.01	4.11	4.02	3.95	3.97	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	138	114.4	117.2	112.2	115.6	118.2	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	580.1	594.4	612.4	627.1	590.4	606.2	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	3.86	3.92	3.96	3.89	3.85	3.89	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	55.28	48.6	41.2	44.28	45.34	41.38	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	46.35	41.24	36.24	32.64	33.42	36.54	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	110.8	128.5	119.5	124.2	130.5	124.4	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.31	2.42	2.49	2.41	2.34	2.41	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

Continue…

RESULTS OF SEDIMENT ANALYSIS [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D	Benthic Organisms								
1	Macrobenthos	--	*Amphipods*	*Amphipods*	*Polychates*	*Amphipods*	*Gastropods*	*Isopods*	APHA (23rd Ed. 2017)10500 C
			Decapod Larvae	*Sipunculids*	*Gastropods*	*Decapod Larvae*	*Isopods*	*Polychates*	
			Isopods	*Isopods*	*Isopods*	*Isopods*	*Amphipods*	*Sipunculids*	
			Gastropods	*Gastropods*	*Sipunculids*	*Gastropods*	*Sipunculids*	*Amphipods*	
2	MeioBenthos	--	*Turbellarians*	*Decapod Larvae*	Herpectacoids	Foraminiferan	*Polychates*	*Herpectacoids*	
			Herpectacoids	*Herpectacoids*	*Polychates*	*Turbellarians*	*Herpectacoids*	*Decapods Larvae*	
3	Population	no/m²	356	333	368	244	250	333	

GUJARAT ENVIRONMENT & RESEARCH LABS PVT. LTD. * UNISTAR VAPI.

Mr. Nilesh Patel
Sr. Chemist

Mr. Nitin Tandel
Technical Manager

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Email : response@uerl.in Website : www.uerl.in

RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.15	7.91	8.24	8.09	8.16	7.98	8.09	7.96	8.14	7.85	8.11	7.88	IS 3025 (Part11)1983
2.	Temperature	°C	30.1	30.2	30.3	30.2	30.2	30.1	30.1	30	30	29.9	29.8	29.7	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	142	114	128	106	132	110	108	98	142	122	128	106	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.9	BDL	3.1	BDL	2.9	BDL	3.2	BDL	3.3	BDL	2.8	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.22	5.92	6.27	5.86	6.2	5.79	6.12	5.72	6.32	5.81	5.85	5.75	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.94	37.24	36.57	37.62	36.24	37.11	36.12	36.48	36.18	36.52	34.89	35.62	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.97	2.37	3.32	2.8	3.23	2.8	3.45	2.76	3.55	3.06	3.23	2.74	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.259	0.19	0.371	0.267	0.379	0.344	0.431	0.345	0.456	0.413	0.435	0.391	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.49	3.23	4.31	3.79	3.96	2.93	2.84	2.49	3.48	3.39	3.39	3.26	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	0.47	0.43	0.43	BDL	0.56	0.6	1.47	1.37	1.58	1.37	2.11	1.9	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	6.719	5.79	8.001	6.857	7.569	6.074	6.721	5.595	7.486	6.863	7.055	6.391	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36700	36930	37110	37640	36860	37520	36288	37124	36308	37142	36340	37160	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	20.06	8.02	35.96	7.99	40.32	12.1	20.26	8.1	24.26	12.13	19.94	7.98	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A	Phytoplankton														
1.	Chlorophyll	mg/m³	3.12	2.78	2.63	2.89	2.56	3.02	3.02	2.59	3.02	2.84	3.15	3.56	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.54	0.89	0.87	1.36	1.22	2.02	1	1.45	1.4	1.77	1.35	2.47	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	105	63	86	102	102	102	145	86	125	96	120	127	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Odentella*	*Ceratium*	*Biddulphia*	*Ceratium*	*Thallassiosira*	*Surirella*	*Cyclotella*	*Pinnularia*	*Pinnularia*	*Coscinodiscus*	*Thalassiothrix*	*Odentella*	APHA (23rd Ed. 2017)10200 F
			Rhizosolenia	*Diploneis*	*Rhizosolenia*	*Diploneis*	*Melosira*	*Thalassiothrix*	*Pinnularia*	*Dinophysis*	*Thalassionema*	*Diploneis*	*Surirella*	*Rhizosolenia*	
			Coscinodiscus	*Odentella*	*Coscinodiscus*	*Odentella*	*Nitzschia*	*Navicula*	*Skeletonema*	*Rhizosolenia*	*Navicula*	*Rhizosolenia*	*Navicula*	*Coscinodiscus*	
			Grammatophora	*Grammatophora*	*Skeletonema*	*Grammatophora*	*Rhizosolenia*	*Skeletonema*	*Thallassiosira*	*Thallassiosira*	*Thallassiosira*	*Dinophysis*	*Thallassiosira*	*Grammatophora*	
			Thallassiosira	*Melosira*	*Thallassiosira*	*Melosira*	*Pleurosigma*	*Thallassiosira*	*Thalassionema*	*Coscinodiscus*	*Skeletonema*	*Thalassionema*	*Skeletonema*	*Thallassiosira*	

B	Zooplankton														
1	Abudance(Population)	noX103 / 100 m3	45		52		63		60		55		23		APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Crustacean Larvae*		*Crustacean Larvae*		*Egg(Fish and Shrimps)*		*Egg(Fish and Shrimps)*		*Crustacean Larvae*		*Copepods nauplii*		
			Egg(Fish and Shrimps)		*Oikoplura*		*Oikoplura*		*Oikoplura*		*Egg(Fish and Shrimps)*		*Crustacean Larvae*		
			Copepods		*Copepods*		*Copepods nauplii*		*Copepods nauplii*		*Copepods*		*Oikoplura*		
			Crustacean		*Copepods nauplii*		*Crustacean*		*Crustacean*		*Crustacean*		*Bivalve Larvae*		
			Bivalve Larvae		*Bivalve Larvae*		*Bivalve Larvae*		*Bivalve Larvae*		*Bivalve Larvae*		*Oikoplura*		
3	Total Biomass	ml/100 m³	17.41		16.35		17.59		16.88		16.45		14.25		

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RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
C	Microbiological														
1	Total Bacterial Count	CFU/ml	136		180		268		288		186		200		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	43		35		41		31		25		25		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	27		20		22		26		14		27		IS :15185:2016
4	Enterococcus	/100ml	13		11		13		19		10		12		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.59	0.48	0.41	0.44	0.48	0.44	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	538.4	554.2	572.2	580.4	568.5	574.6	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	3.95	4.04	4.12	4.08	4.02	3.98	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	153.4	159.4	155.1	164.2	155.2	159.7	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	602.4	642.2	671.8	694.2	648.6	660.8	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	4.05	4.15	4.12	4.09	4.02	4.08	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	49.21	41.03	40.38	41.21	42.36	41.62	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	41..64	41.15	40.33	41.46	42.62	41.23	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	88.02	102.2	110.4	131.2	134.4	140.6	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.44	2.31	2.24	2.31	2.22	2.09	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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RESULTS OF SEDIMENT ANALYSIS [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D			Benthic Organisms						
1	Macrobenthos	--	*Gastropods*	*Decapod Larvae*	*Amphipods*	*Amphipods*	*Sipunculids*	*Decapods Larvae*	APHA (23rd Ed. 2017)10500 C
			Isopods	Isopods	*Polychates*	*Polychates*	*Decapods Larvae*	Isopods	
			Amphipods	*Amphipods*	*Isopods*	*Isopods*	*Polychates*	*Amphipods*	
			Sipunculids	*Sipunculids*	*Gastropods*	*Gastropods*	*Isopods*	*Sipunculids*	
2	MeioBenthos	--	*Polychates*	*Polychates*	*Decapods Larvae*	*Decapods Larvae*	*Turbellarians*	*Foraminiferan*	
			Herpectacoids	*Turbellarians*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	
3	Population	no/m²	301	268	300	360	264	244	

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RESULTS OF MARINE WATER [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.14	8.01	8.27	8.11	8.21	8.06	8.11	7.96	8.14	7.88	8.16	7.97	IS 3025 (Part11)1983
2.	Temperature	°C	30.1	30	30.3	30.2	30.1	30	30	29.9	30.1	30	29.9	29.8	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	102	94	110	86	96	74	104	88	114	94	102	86	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.1	BDL	3	BDL	2.6	BDL	2.8	BDL	2.9	BDL	2.7	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.02	5.81	6.17	5.76	6.1	5.69	6.02	5.62	6.22	5.92	6.05	5.85	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.29	37.02	36.24	37.19	36.18	36.88	35.94	36.28	35.98	36.42	35.24	35.81	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.63	2.45	3.1	2.67	3.23	2.59	2.67	2.33	2.9	2.58	2.74	2.58	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.345	0.302	0.431	0.397	0.293	0.259	0.325	0.235	0.391	0.37	0.456	0.413	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	2.93	2.8	3.1	2.67	3.97	3.84	2.67	2.58	3.32	3.23	3.42	3.32	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	0.43	BDL	0.82	0.6	0.56	BDL	1.37	1.26	1.26	1.05	1.58	1.47	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	5.905	5.552	6.631	5.737	7.493	6.689	5.665	5.145	6.611	6.18	6.616	6.313	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36200	37120	36820	37622	36210	37330	35860	36540	35910	36572	36080	36640	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	16.05	8.02	31.97	19.98	36.29	24.19	16.21	8.1	20.22	12.13	15.95	7.98	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	3.1	2.45	2.45	2.22	3.2	2.47	2.69	2.98	2.56	2.88	2.57	2.83	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	2.35	0.96	1.65	1.24	1.56	1.44	1.12	1.63	1.32	1.99	1.65	1.52	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	112	124	101	96	140	66	100	88	109	100	147	109	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Pinnularia*	*Pinnularia*	*Pinnularia*	*Pinnularia*	*Dinophysis*	*Rhizosolenia*	*Grammatophora*	*Odentella*	*Melosira*	*Pinnularia*	*Pinnularia*	*Pinnularia*	APHA (23rd Ed. 2017)10200 F
			Biddulphia	*Thalassionema*	*Dinophysis*	*Thalassionema*	*Pinnularia*	*Pinnularia*	*Rhizosolenia*	*Rhizosolenia*	*Pinnularia*	*Biddulphia*	*Biddulphia*	*Biddulphia*	
			Navicula	*Navicula*	*Rhizosolenia*	*Navicula*	*Thalassiothrix*	*Thalassiothrix*	*Nitzschia*	*Coscinodiscus*	*Skeletonema*	*Navicula*	*Navicula*	*Navicula*	
			Thallassiosira	*Thallassiosira*	*Thallassiosira*	*Thallassiosira*	*Grammatophora*	*Grammatophora*	*Thalassionema*	*Grammatophora*	*Rhizosolenia*	*Thallassiosira*	*Thallassiosira*	*Thallassiosira*	
			Skeletonema	*Skeletonema*	*Coscinodiscus*	*Skeletonema*	*Ceratium*	*Ceratium*	*Pleurosigma*	*Thallassiosira*	*Pleurosigma*	*Skeletonema*	*Skeletonema*	*Skeletonema*	

B			Zooplankton												
1	Abudance(Population)	noX103 / 100 m3	39		40		52		50		50		63		APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Crustacean*		*Crustacean*		*Crustacean Larvae*		*Crustacean Larvae*		*Crustacean*		*Copepods*		
			Copepods nauplii		*Egg(Fish and Shrimps)*		*Egg(Fish and Shrimps)*		*Egg(Fish and Shrimps)*		*Copepods nauplii*		*Oikoplura*		
			Crustacean Larvae		*Crustacean Larvae*		*Copepods*		*Copepods*		*Crustacean Larvae*		*Crustacean Larvae*		
			Crustacean		*Crustacean*		*Crustacean*		*Crustacean*		*Crustacean*		*Crustacean*		
			Bivalve Larvae		*Bivalve Larvae*		*Bivalve Larvae*		*Bivalve Larvae*		*Bivalve Larvae*		*Bivalve Larvae*		
3	Total Biomass	ml/100 m³	17.45		15.24		15.78		17.45		15.26		15.69		

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RESULTS OF MARINE WATER [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	200		190		200		198		254		188		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	45		20		31		30		42		25		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	21		16		20		22		31		14		IS :15185:2016
4	Enterococcus	/100ml	16		10		12		8		20		13		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.52	0.54	0.41	0.44	0.52	0.48	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	.582.2	574.5	562.2	574.1	566.6	570.4	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	3.84	3.91	3.95	3.98	4.06	4.01	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	164.2	142.8	129.5	134.8	144.2	138.4	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	614.9	610.4	618.6	604.4	610.2	616.1	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	4.14	4.06	4.09	4.12	4.06	4.09	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	56.32	52.2	48.6	44.61	44.25	41.63	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	36.82	37.14	35.2	36.84	35.54	36.12	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	84.65	91.24	101.2	109.1	111.4	114.9	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.81	2.76	2.65	2.44	2.25	2.39	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

Continue…

RESULTS OF SEDIMENT ANALYSIS [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D	Benthic Organisms								
1	Macrobenthos	--	Sipunculids	*Polychates*	*Sipunculids*	*Gastropods*	*Isopods*	*Polychates*	APHA (23rd Ed. 2017)10500 C
			Decapods Larvae	*Decapods Larvae*	*Polychates*	*Isopods*	*Polychates*	*Gastropods*	
			Amphipods	*Amphipods*	*Gastropods*	*Amphipods*	*Sipunculids*	*Isopods*	
			Isopods	*Isopods*	*Isopods*	*Sipunculids*	*Amphipods*	*Sipunculids*	
2	MeioBenthos	--	*Turbellarians*	*Foraminiferan*	*Herpectacoids*	*Polychates*	*Polychates*	*Herpectacoids*	
			Herpectacoids	*Herpectacoids*	*Foraminiferan*	*Herpectacoids*	*Foraminiferan*	*Polychates*	
3	Population	no/m²	355	355	347	258	368	298	

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RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.21	8.06	8.26	8.09	8.24	8.01	8.16	8.07	8.14	8.02	8.11	7.96	IS 3025 (Part11)1983
2.	Temperature	°C	30.1	30	30.2	30.1	30.1	30	29.9	29.8	30	29.9	29.8.	29.7.	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	128	114	142	118	126	108	112	106	138	116	132	104	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3	BDL	2.9	BDL	3.1	BDL	3.3	BDL	3.4	BDL	2.8	BDL	IS 3025(Part 4)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.32	6.22	6.17	5.86	6.1	5.79	6.02	5.72	6.12	5.81	5.95	5.75	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.67	37.21	35.89	37.44	35.81	36.98	36.14	36.52	36.21	36.64	35.94	36.12	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd.2
8.	Nitrate as NO_3	µmol/L	3.19	2.33	3.71	3.1	3.45	2.8	2.49	2.32	3.39	3.06	3.06	2.74	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.388	0.345	0.517	0.422	0.345	0.276	0.259	0.215	0.326	0.283	0.435	0.391	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.49	3.19	3.45	2.93	3.28	3.1	2.28	2.16	3.53	3.42	3.53	3.39	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	0.56	0.43	0.52	BDL	0.65	BDL	1.68	1.47	1.9	1.68	2.11	1.79	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	7.068	5.865	7.677	6.452	7.075	6.176	5.029	4.695	7.246	6.763	7.025	6.521	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36480	37260	36944	37486	36860	37140	36150	36890	36168	36910	36180	37102	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	28.08	12.04	15.98	7.99	20.16	12.1	28.36	12.16	28.31	12.13	15.95	7.98	APHA 23rd Ed.,2017, 5220-B

Continue…

RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A	Phytoplankton														
1.	Chlorophyll	mg/m³	3.41	2.74	3.02	3.26	2.66	3.26	3	3.26	2.98	3.11	3.25	3.68	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.25	1.45	1.87	1.33	1.74	1.45	1.63	2.03	2.01	1.88	1.44	1.56	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	101	86	142	99	132	99	99	114	120	102	109	156	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Coscinodiscus*	*Melosira*	*Coscinodiscus*	*Melosira*	*Thalassiothrix*	*Coscinodiscus*	*Thalassiothrix*	*Pinnularia*	*Cyclotella*	*Navicula*	*Coscinodiscus*	*Coscinodiscus*	APHA (23rd Ed. 2017)10200 F
			Diploneis	*Pinnularia*	*Surirella*	*Pinnularia*	*Surirella*	*Diploneis*	*Surirella*	*Biddulphia*	*Pinnularia*	*Skeletonema*	*Diploneis*	*Diploneis*	
			Rhizosolenia	*Skeletonema*	*Rhizosolenia*	*Skeletonema*	*Navicula*	*Rhizosolenia*	*Navicula*	*Navicula*	*Skeletonema*	*Rhizosolenia*	*Rhizosolenia*	*Rhizosolenia*	
			Dinophysis	*Rhizosolenia*	*Pinnularia*	*Rhizosolenia*	*Thallassiosira*	*Dinophysis*	*Thallassiosira*	*Thallassiosira*	*Thallassiosira*	*Dinophysis*	*Dinophysis*	*Dinophysis*	
			Thalassionema	*Pleurosigma*	*Thalassionema*	*Pleurosigma*	*Skeletonema*	*Thalassionema*	*Skeletonema*	*Skeletonema*	*Thalassionema*	*Thalassionema*	*Thalassionema*	*Thalassionema*	

B	Zooplankton														
1	Abudance(Population)	noX103 / 100 m3	52		48		44		38		62		48		APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Copepods nauplii*		*Copepods nauplii*		*Egg(Fish and Shrimps)*		*Egg(Fish and Shrimps)*		*Copepods nauplii*		*Egg(Fish and Shrimps)*		
			Crustacean Larvae		*Crustacean Larvae*		*Oikoplura*		*Oikoplura*		*Crustacean Larvae*		*Oikoplura*		
			Oikoplura		*Oikoplura*		*Copepods nauplii*		*Copepods nauplii*		*Oikoplura*		*Copepods nauplii*		
			Bivalve Larvae		*Bivalve Larvae*		*Crustacean*		*Crustacean*		*Bivalve Larvae*		*Crustacean*		
			Oikoplura		*Oikoplura*		*Bivalve Larvae*		*Bivalve Larvae*		*Oikoplura*		*Bivalve Larvae*		
3	Total Biomass	ml/100 m³	15.66		14.26		16.25		18.52		17.32		17.58		

Continue…

RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	152		234		254		240		256		250		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	28		32		47		35		50		48		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	15		21		23		20		35		30		IS :15185:2016
4	Enterococcus	/100ml	10		10		16		12		24		21		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.62	0.54	0.62	0.74	0.62	0.58	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	555.1	574.4	582.7	680	658.5	642.6	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.01	4.12	4.08	4.16	4.05	3.96	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	135	132.4	142.2	137.4	142.2	138.9	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	580.4	594.6	602.2	644	618	621.4	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	3.94	3.89	3.91	3.94	3.84	3.88	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	44.21	41.6	42.2	48.6	44.5	48.32	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	50.54	45.62	41.6	38.9	387.6	38.25	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	74.5	84.2	92.4	102.2	114.2	118.2	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.22	2.38	2.24	2.61	2.51	2.41	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

Continue…

RESULTS OF SEDIMENT ANALYSIS [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D	Benthic Organisms								
1	Macrobenthos	--	*Isopods*	*Amphipods*	*Foraminiferan*	*Sipunculids*	*Foraminiferan*	Foraminiferan	APHA (23rd Ed. 2017)10500 C
			Polychates	*Gastropods*	*Decapods Larvae*	*Decapods Larvae*	*Decapods Larvae*	*Gastropods*	
			Sipunculids	*Sipunculids*	*Amphipods*	*Amphipods*	*Amphipods*	*Isopods*	
			Amphipods	*Amphipods*	*Polychates*	*Isopods*	*Polychates*	*Sipunculids*	
2	MeioBenthos	--	*Polychates*	*Polychates*	*Turbellarians*	*Turbellarians*	Turbellarians	*Herpectacoids*	
			Foraminiferan	*Foraminiferan*	*Foraminiferan*	*Herpectacoids*	*Foraminiferan*	*Polychates*	
3	Population	no/m^2	300	289	387	288	342	360	

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RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.16	7.94	8.08	7.91	7.99	7.91	7.96	7.88	8.12	7.94	8.18	8.05	IS 3025 (Part11)1983
2.	Temperature	°C	30.1	30	30.3	30.2	30.1	30	30	29.9	29.9	28.8	29.8	29.7	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	114	94	130	112	116	76	98	72	108	84	96	76	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.9	BDL	2.8	BDL	2.2	BDL	3.5	BDL	3.2	BDL	2.9	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.32	6.12	6.07	5.65	5.99	5.59	5.92	5.52	6.22	5.81	6.05	5.75	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.85	37.11	35.66	37.62	35.62	37.32	35.68	36.24	35.78	36.46	35.12	35.84	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39)1991, Amd.2
8.	Nitrate as NO_3	µmol/L	2.63	2.46	2.8	2.37	2.5	2.41	2.37	2.16	2.74	2.42	2.9	2.58	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.388	0.302	0.431	0.336	0.448	0.431	0.207	0.189	0.261	0.217	0.326	0.304	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.23	3.1	3.79	2.93	3.36	3.28	2.75	2.62	3.74	3.59	3.59	3.39	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	0.86	0.65	1.16	0.82	BDL	BDL	BDL	BDL	1.16	1.05	1.68	1.47	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	6.248	5.862	7.021	5.636	6.308	6.121	5.327	4.969	6.741	6.227	6.816	6.274	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36650	37100	36990	37668	36670	37450	36310	37108	36324	37164	35940	36720	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	24.07	BDL	23.98	11.99	28.22	16.13	24.31	16.21	28.31	16.18	23.93	11.96	APHA 23rd Ed.,2017, 5220-B

Continue…

RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	2.69	2.36	3.12	2.66	3.62	2.74	3.44	3.06	3.01	3.12	3.47	2.96	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.34	1.85	1.23	1.63	2.01	1.25	1.85	1.98	1.57	1.87	1.63	1.75	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10^3/L	123	140	111	127	156	142	132	133	88	111	100	109	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Pinnularia*	*Cyclotella*	*Rhizosolenia*	*Rhizosolenia*	*Cyclotella*	*Diploneis*	*Navicula*	*Coscinodiscus*	*Grammatophora*	*Pinnularia*	*Diploneis*	*Ceratium*	APHA (23rd Ed. 2017)10200 F
			Biddulphia	*Pinnularia*	*Biddulphia*	*Pinnularia*	*Pinnularia*	*Rhizosolenia*	*Fragillaria*	*Diploneis*	*Rhizosolenia*	*Biddulphia*	*Rhizosolenia*	*Diploneis*	
			Navicula	*Skeletonema*	*Thalassiothrix*	*Melosira*	*Skeletonema*	*Nitzschia*	*Thalassiothrix*	*Rhizosolenia*	*Nitzschia*	*Navicula*	*Nitzschia*	*Odentella*	
			Thallassiosira	*Thallassiosira*	*Thallassiosira*	*Thallassiosira*	*Thallassiosira*	*Thalassiothrix*	*Grammatophora*	*Dinophysis*	*Thalassionema*	*Thallassiosira*	*Cyclotella*	*Grammatophora*	
			Skeletonema	*Thalassionema*	*Coscinodiscus*	*Grammatophora*	*Thalassionema*	*Pleurosigma*	*Surirella*	*Thalassionema*	*Pleurosigma*	*Skeletonema*	*Pleurosigma*	*Melosira*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	51	38	50	41	54	52	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Egg(Fish and Shrimps)*	*Copepods nauplii*	*Oikoplura*	*Oikoplura*	*Crustacean Larvae*	*Crustacean Larvae*	
			Copepods	*Copepods*	*Copepods nauplii*	*Copepods nauplii*	*Egg(Fish and Shrimps)*	*Decapoda*	
			Crustacean Larvae	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Copepods*	*Copepods*	
			Oikoplura	*Oikoplura*	*Crustacean*	*Crustacean*	*Crustacean*	*Crustacean*	
			Bivalve Larvae	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	
3	Total Biomass	ml/100 m³	14.56	13.25	14.25	16.36	15.78	14.6	

Continue…

RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	190		216		256		254		178		196		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	36		30		65		70		56		63		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	27		17		41		45		49		42		IS :15185:2016
4	Enterococcus	/100ml	15		10		19		21		29		22		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.61	0.52	0.49	0.46	0.58	0.55	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	537.4	546.3	551.4	542.6	564.2	542.3	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.04	4.11	4.12	4.08	3.92	3.95	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	91.8	102.4	112.1	118.5	127.5	130.2	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	534.1	554.2	560.8	574.2	580.5	602.2	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	4.09	3.98	4.02	3.97	4.08	4.11	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	42.64	44.38	42.31	44.12	45.38	45.31	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	49.06	42.64	43.35	48.64	51.24	48.65	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	88.47	95.34	101.2	104.2	111.6	114.8	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.38	2.44	2.49	2.62	2.54	2.38	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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RESULTS OF SEDIMENT ANALYSIS [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D			Benthic Organisms						
1	Macrobenthos	--	*Amphipods*	*Amphipods*	*Foraminiferan*	*Isopods*	*Foraminiferan*	*Amphipods*	APHA (23rd Ed. 2017)10500 C
			Decapod Larvae	*Decapod Larvae*	*Gastropods*	*Polychates*	*Gastropods*	*Polychates*	
			Isopods	*Isopods*	*Isopods*	*Sipunculids*	*Isopods*	*Isopods*	
			Gastropods	*Gastropods*	*Sipunculids*	*Amphipods*	*Sipunculids*	*Gastropods*	
2	MeioBenthos	--	Foraminiferan	Foraminiferan	Herpectacoids	Polychates	Herpectacoids	*Decapods Larvae*	
			Herpectacoids	*Turbellarians*	*Polychates*	*Foraminiferan*	*Polychates*	*Herpectacoids*	
3	Population	no/m²	320	288	257	308	264	308	

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RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.06	7.86	8.14	7.92	8.03	7.94	7.97	7.93	7.95	7.86	8.07	7.91	IS 3025 (Part11)1983
2.	Temperature	°C	30.2	30.1	30.3	30.2	30	29.9	29.9	29.8	29.9	29.8	29.8	29.7	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	150	122	134	116	124	102	116	104	134	116	128	102	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.8	BDL	3.3	BDL	2.7	BDL	3.8	BDL	3.5	BDL	2.8	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.22	6.02	6.37	5.86	6.3	5.79	6.22	5.72	6.32	5.81	5.95	5.75	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.66	37.06	36.12	37.84	35.89	37.25	35.77	36.25	35.84	36.38	35.31	35.81	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39)1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.54	2.37	2.8	2.67	2.67	2.33	3.36	3.02	4.19	3.55	3.23	2.9	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.345	0.302	0.371	0.336	0.325	0.235	0.632	0.31	0.435	0.37	0.609	0.543	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.32	3.23	4.31	3.45	2.67	2.58	3.84	3.62	3.95	3.69	3.48	3.32	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	1.03	0.86	1.08	0.95	0.91	0.73	1.9	1.68	2.11	1.79	2.42	2.32	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	6.205	5.902	7.481	6.456	5.665	5.145	7.832	6.95	8.575	7.61	7.319	6.763	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	37460	37780	37532	38060	37110	37680	36840	37060	36766	36952	36420	37070	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	20.06	4.01	39.96	19.98	28.22	16.13	20.26	4.05	24.26	12.13	11.96	3.99	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	2.87	2.87	2.26	3	2.55	3.21	3.21	3.65	2.47	3.05	3.02	3.48	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	0.74	1.75	0.74	2.03	1.31	2.14	1.33	2.36	1.09	2.89	1.36	2.59	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10^3/L	121	126	145	117	187	108	150	145	91	158	96	168	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Coscinodiscus*	*Grammatophora*	*Coscinodiscus*	*Grammatophora*	*Coscinodiscus*	*Nitzschia*	*Ceratium*	*Thalassiothrix*	*Ceratium*	*Coscinodiscus*	*Nitzschia*	*Fragillaria*	APHA (23rd Ed. 2017)10200 F
			Diploneis	*Rhizosolenia*	*Diploneis*	*Rhizosolenia*	*Diploneis*	*Grammatophora*	*Diploneis*	*Surirella*	*Diploneis*	*Diploneis*	*Pinnularia*	*Thalassionema*	
			Rhizosolenia	*Nitzschia*	*Rhizosolenia*	*Nitzschia*	*Rhizosolenia*	*Diploneis*	*Odentella*	*Navicula*	*Odentella*	*Rhizosolenia*	*Odontella*	*Navicula*	
			Dinophysis	*Thalassionema*	*Dinophysis*	*Thalassionema*	*Dinophysis*	*Thalassiothrix*	*Grammatophora*	*Thallassiosira*	*Grammatophora*	*Dinophysis*	*Dinophysis*	*Thallassiosira*	
			Thalassionema	*Pleurosigma*	*Skeletonema*	*Pleurosigma*	*Thalassionema*	*Pleurosigma*	*Melosira*	*Skeletonema*	*Melosira*	*Thalassionema*	*Surirella*	*Skeletonema*	
B			Zooplankton												
1	Abudance(Population)	noX103 / 100 m3	40		47		55		50		39		47		APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Oikoplura*		*Oikoplura*		*Decapoda*		*Decapoda*		*Egg(Fish and Shrimps)*		*Nitzschia*		
			Copepods nauplii		*Copepods nauplii*		*Copepods*		*Copepods*		*Oikoplura*		*Pinnularia*		
			Crustacean Larvae		*Crustacean Larvae*		*Crustacean Larvae*		*Crustacean Larvae*		*Copepods nauplii*		*Odontella*		
			Crustacean		*Egg(Fish and Shrimps)*		*Crustacean*		*Crustacean*		*Crustacean*		*Dinophysis*		
			Bivalve Larvae		*Crustacean*		*Oikoplura*		*Oikoplura*		*Bivalve Larvae*		*Surirella*		
3	Total Biomass	ml/100 m³	15.32		16.41		17.45		15.42		16.35		15.68		

Continue…

RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
C			Microbiological												
1	Total Bacterial Count	CFU/ml	180		260		198		202		180		166		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	42		40		52		49		45		40		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	21		31		22		25		20		29		IS :15185:2016
4	Enterococcus	/100ml	20		22		14		19		18		22		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.19	7.86	8.27	8.14	8.24	8.15	8.12	8.02	8.17	8.08	8.24	8.06	IS 3025 (Part11)1983
2.	Temperature	°C	30.1	30.1	30.3	30.2	30.2	30.1	30	29.9	29.9	28.8	29.8	29.7	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	104	122	116	106	112	92	118	94	104	80	94	84	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.5	BDL	3.4	BDL	2.6	BDL	2.9	BDL	3.2	BDL	2.7	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.12	6.02	6.27	5.86	6.2	5.79	6.12	5.72	6.22	5.81	5.95	5.75	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.04	37.06	36.24	37.53	36.32	37.11	36.06	36.47	36.24	36.58	35.61	36.02	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.97	2.37	4.05	3.58	3.23	2.59	3.45	2.8	4.03	3.55	3.06	2.74	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.431	0.302	0.422	0.336	0.413	0.379	0.345	0.276	0.391	0.326	0.456	0.391	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.19	3.23	3.1	2.93	3.66	2.93	3.28	3.1	4.06	3.8	3.39	3.26	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	0.52	0.86	BDL	BDL	0.65	BDL	1.47	1.26	1.68	1.58	2	1.79	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	6.591	5.902	7.572	6.846	7.303	5.899	7.075	6.176	8.481	7.676	6.906	6.391	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36800	37780	37224	38108	36340	37460	36090	36990	35950	36760	36144	36800	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	20.06	4.01	31.97	11.99	44.35	24.19	20.26	4.05	28.31	8.09	7.98	3.99	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	3.25	2.47	3.25	2.55	3.25	2.36	2.36	3.05	2.77	2.48	3.05	2.47	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.12	0.96	1.36	1.01	1.22	1.45	0.85	2.11	1.07	2.18	1.87	1.99	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	104	67	111	112	128	144	80	156	87	79	106	98	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Thalassiothrix*	*Skeletonema*	*Diploneis*	*Nitzschia*	*Pinnularia*	*Odentella*	*Pinnularia*	*Navicula*	*Odentella*	*Pinnularia*	*Odentella*	*Grammatophora*	APHA (23rd Ed. 2017)10200 F
			Surirella	*Grammatophora*	*Melosira*	*Grammatophora*	*Biddulphia*	*Rhizosolenia*	*Thalassionema*	*Skeletonema*	*Rhizosolenia*	*Biddulphia*	*Rhizosolenia*	*Rhizosolenia*	
			Navicula	*Nitzschia*	*Navicula*	*Odentella*	*Navicula*	*Coscinodiscus*	*Navicula*	*Rhizosolenia*	*Coscinodiscus*	*Navicula*	*Coscinodiscus*	*Nitzschia*	
			Thallassiosira	*Thalassiothrix*	*Rhizosolenia*	*Thalassiothrix*	*Thallassiosira*	*Grammatophora*	*Thallassiosira*	*Dinophysis*	*Grammatophora*	*Thallassiosira*	*Grammatophora*	*Thalassionema*	
			Skeletonema	*Pleurosigma*	*Skeletonema*	*Melosira*	*Skeletonema*	*Thallassiosira*	*Skeletonema*	*Thalassionema*	*Thallassiosira*	*Skeletonema*	*Thallassiosira*	*Pleurosigma*	

B			Zooplankton												
1	Abudance(Population)	noX103 / 100 m3	36		51		39		43		41		69		APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Crustacean Larvae*		*Crustacean Larvae*		*Egg(Fish and Shrimps)*		*Egg(Fish and Shrimps)*		*Egg(Fish and Shrimps)*		*Copepods nauplii*		
			Decapoda		*Oikoplura*		*Oikoplura*		*Oikoplura*		*Oikoplura*		*Crustacean Larvae*		
			Copepods		*Copepods*		*Copepods nauplii*		*Copepods nauplii*		*Copepods nauplii*		*Oikoplura*		
			Crustacean		*Crustacean*		*Crustacean*		*Crustacean*		*Crustacean*		*Bivalve Larvae*		
			Bivalve Larvae		*Bivalve Larvae*		*Bivalve Larvae*		*Bivalve Larvae*		*Bivalve Larvae*		*Oikoplura*		
3	Total Biomass	ml/100 m³	16.32		17.36		14.66		17.52		15.86		17.36		

Continue…

RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	262		148		166		268		220		190		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	28		20		35		35		29		31		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	20		8		15		15		16		26		IS :15185:2016
4	Enterococcus	/100ml	12		6		11		11		8		10		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.52	0.57	0.48	0.51	0.46	0.41	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	538	544.2	562.2	546.4	580.3	574.2	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	3.81	3.92	3.96	3.89	3.95	4.03	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	102.2	114.3	116.2	112.4	118.6	122.2	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	564.2	580.4	587.2	604.5	590.4	602.8	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	4.02	3.86	3.89	3.91	3.94	4.06	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	44.61	46.57	39.8	40.24	41.25	42.88	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	43.35	40.36	42.61	44.25	42.6	44.68	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	103.3	105.7	110.4	124.1	138.4	142	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.61	2.56	2.31	2.37	2.44	2.38	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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RESULTS OF SEDIMENT ANALYSIS [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D			Benthic Organisms						
1	Macrobenthos	--	*Sipunculids*	*Decapod Larvae*	*Sipunculids*	*Decapod Larvae*	*Polychates*	*Polychates*	APHA (23rd Ed. 2017)10500 C
			Polychates	*Polychates*	*Polychates*	*Isopods*	*Decapods Larvae*	*Decapods Larvae*	
			Gastropods	*Gastropods*	*Gastropods*	*Amphipods*	*Isopods*	*Isopods*	
			Isopods	*Isopods*	*Isopods*	*Sipunculids*	*Sipunculids*	*Sipunculids*	
2	MeioBenthos	--	*Foraminiferan*	*Foraminiferan*	*Foraminiferan*	*Polychates*	*Herpectacoids*	*Herpectacoids*	
			Polychates	*Turbellarians*	Turbellarians	Turbellarians	Turbellarians	*Turbellarians*	
3	Population	no/m²	260	303	320	358	240	290	

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Mr. Nilesh Patel
Sr. Chemist

Mr. Nitin Tandel
Technical Manager

RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.19	7.98	8.18	7.96	8.17	7.98	8.14	7.97	8.16	8.01	8.17	8.05	IS 3025 (Part11)1983
2.	Temperature	°C	30.2	30.1	30.3	30.2	30.1	30	29.9	29.8	29.8	29.7	29.8	29.7	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	124	108	118	92	106	86	114	88	154	128	142	118	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.4	BDL	3.5	BDL	3.2	BDL	2.7	BDL	3.3	BDL	2.6	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.12	6.02	6.07	5.76	5.99	5.69	5.92	5.62	6.12	5.81	5.85	5.75	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.88	36.3	35.52	37.23	35.49	36.87	36.34	36.88	36.35	36.94	35.41	35.97	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.63	2.37	3.32	2.97	2.84	2.59	2.93	2.76	3.71	3.23	2.9	2.74	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.302	0.19	0.336	0.267	0.474	0.31	0.3	0.235	0.304	0.283	0.37	0.348	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	2.93	2.8	3.1	2.67	2.41	1.89	2.54	2.45	3.59	3.42	3.42	3.23	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	0.47	BDL	0.6	0.52	0.78	BDL	1.79	1.47	2	1.68	2.32	2.11	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	5.862	5.36	6.756	5.907	5.724	4.79	5.77	5.445	7.604	6.933	6.69	6.318	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	37010	37420	37640	38020	37210	37640	36970	37124	36744	37210	36350	36988	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	16.05	8.02	23.98	11.99	36.29	16.13	16.21	8.1	12.13	4.04	11.96	BDL	APHA 23rd Ed.,2017, 5220-B

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CIN:U73100GJ2007PTC051463

RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	3.2	2.41	2.99	3.21	3.06	2.86	2.2	1.66	2.87	2.09	2.98	2.69	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	2.23	2.14	1.45	2.33	1.45	1.34	1.74	0.9	1.84	1.06	1.12	1.45	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10^3/L	100	104	98	58	124	100	109	94	110	63	111	109	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Navicula*	*Ceratium*	*Navicula*	*Ceratium*	*Navicula*	*Skeletonema*	*Rhizosolenia*	*Melosira*	*Skeletonema*	*Coscinodiscus*	*Dinophysis*	*Diploneis*	APHA (23rd Ed. 2017)10200 F
			Skeletonema	*Melosira*	*Skeletonema*	*Melosira*	*Skeletonema*	*Grammatophora*	*Pinnularia*	*Pinnularia*	*Grammatophora*	*Diploneis*	*Pinnularia*	*Rhizosolenia*	
			Rhizosolenia	*Odentella*	*Rhizosolenia*	*Odentella*	*Rhizosolenia*	*Nitzschia*	*Thalassiothrix*	*Skeletonema*	*Nitzschia*	*Rhizosolenia*	*Thalassiothrix*	*Nitzschia*	
			Dinophysis	*Dinophysis*	*Dinophysis*	*Dinophysis*	*Dinophysis*	*Thalassiothrix*	*Grammatophora*	*Thallassiosira*	*Thalassiothrix*	*Dinophysis*	*Grammatophora*	*Cyclotella*	
			Thalassionema	*Pleurosigma*	*Thalassionema*	*Fragillaria*	*Thalassionema*	*Pleurosigma*	*Ceratium*	*Thalassionema*	*Pleurosigma*	*Thalassionema*	*Ceratium*	*Pleurosigma*	

B			Zooplankton												
1	Abudance(Population)	noX103 / 100 m3	47		50		47		39		56		38		APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Decapoda*		*Decapoda*		*Crustacean Larvae*		*Crustacean Larvae*		*Decapoda*		*Egg(Fish and Shrimps)*		
			Copepods		*Egg(Fish and Shrimps)*		*Egg(Fish and Shrimps)*		*Egg(Fish and Shrimps)*		*Copepods*		*Oikoplura*		
			Crustacean Larvae		*Crustacean Larvae*		*Copepods*		*Copepods*		*Crustacean Larvae*		*Copepods nauplii*		
			Crustacean		*Crustacean*		*Crustacean*		*Crustacean*		*Crustacean*		*Crustacean*		
			Oikoplura		*Oikoplura*		*Bivalve Larvae*		*Bivalve Larvae*		*Oikoplura*		*Bivalve Larvae*		
3	Total Biomass	ml/100 m³	14.78		16.52		17.33		18.63		17.42		14.25		

Continue…

RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	190		232		278		254		296		264		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	41		50		44		40		52		44		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	26		22		23		29		32		30		IS :15185:2016
4	Enterococcus	/100ml	21		15		18		15		22		15		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.08	7.81	8.21	8.06	8.18	7.98	8.16	7.96	8.14	8.03	8.18	8.02	IS 3025 (Part11)1983
2.	Temperature	°C	30.2	30.1	30.2	30.1	30.1	30	29.9	29.8	30	29.9	29.9	29.8	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	104	90	116	102	124	104	132	106	118	102	106	84	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.2	BDL	3.6	BDL	3.1	BDL	2.9	BDL	3.4	BDL	2.5	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.02	5.81	6.37	6.07	6.2	5.79	6.22	5.92	6.32	6.02	6.15	5.95	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.74	37.13	36.04	37.23	35.92	36.94	36.21	36.67	36.45	36.88	35.34	35.81	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	3.19	2.97	3.71	3.32	2.59	2.32	2.84	2.59	3.87	3.55	3.06	2.9	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.388	0.302	0.517	0.431	0.56	0.431	0.474	0.31	0.522	0.478	0.652	0.565	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.49	3.19	3.79	3.45	2.49	2.24	2.41	1.89	3.39	3.26	3.32	3.23	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	0.6	0.47	0.43	BDL	0.73	0.86	1.26	1.05	1.47	1.26	1.79	1.58	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	7.068	6.462	8.017	7.201	5.64	4.991	5.724	4.79	7.782	7.288	7.032	6.695	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	37120	37500	37844	38124	37520	38040	37160	37642	36980	37460	36248	36828	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	12.04	BDL	39.96	19.98	28.22	16.13	12.16	BDL	16.18	8.09	15.95	3.99	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	2.21	3.1	3	2.33	2.56	3.05	2.88	2.55	2.12	1.69	2.36	2.34	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.56	0.98	2.01	1.22	1.44	1.78	1.65	1.26	0.94	1.01	1.23	1.56	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10^3/L	102	86	102	88	127	158	152	106	75	102	86	118	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Melosira*	*Biddulphia*	*Melosira*	*Biddulphia*	*Melosira*	*Ceratium*	*Coscinodiscus*	*Thallassiosira*	*Ceratium*	*Coscinodiscus*	*Ceratium*	*Thallassiosira*	APHA (23rd Ed. 2017)10200 F
			Pinnularia	*Fragillaria*	*Dinophysis*	*Fragillaria*	*Dinophysis*	*Pinnularia*	*Diploneis*	*Melosira*	*Pinnularia*	*Surirella*	*Pinnularia*	*Melosira*	
			Skeletonema	*Odontella*	*Skeletonema*	*Ceratium*	*Skeletonema*	*Odontella*	*Rhizosolenia*	*Nitzschia*	*Odontella*	*Rhizosolenia*	*Odontella*	*Nitzschia*	
			Thallassiosira	*Grammatophora*	*Thallassiosira*	*Nitzschia*	*Thallassiosira*	*Thalassiothrix*	*Dinophysis*	*Rhizosolenia*	*Thalassiothrix*	*Pinnularia*	*Thalassiothrix*	*Rhizosolenia*	
			Thalassionema	*Melosira*	*Thalassionema*	*Melosira*	*Thalassionema*	*Thallassiosira*	*Thalassionema*	*Pleurosigma*	*Thallassiosira*	*Thalassionema*	*Thallassiosira*	*Pleurosigma*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	35	43	49	40	40	25	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Decapoda*	*Decapoda*	*Copepods nauplii*	*Copepods nauplii*	*Egg(Fish and Shrimps)*	*Grammatophora*	
			Oikoplura	*Oikoplura*	*Copepods*	*Copepods*	*Crustacean Larvae*	*Rhizosolenia*	
			Crustacean Larvae	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Copepods nauplii*	*Nitzschia*	
			Bivalve Larvae	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Crustacean*	*Thalassionema*	
			Oikoplura	*Crustacean*	*Crustacean*	*Crustacean*	*Bivalve Larvae*	*Pleurosigma*	
3	Total Biomass	ml/100 m³	15.47	14.56	16.22	15.45	16.23	13.65	

Continue…

RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	214		200		144		260		274		202		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	41		32		30		50		44		50		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	25		20		12		29		30		42		IS :15185:2016
4	Enterococcus	/100ml	12		8		10		11		13		19		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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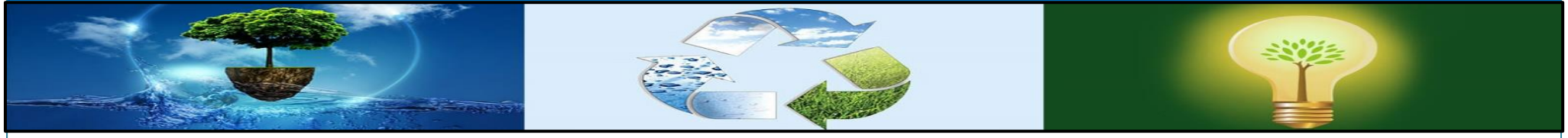

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MARINE WATER MONITORING SUMMARY REPORT

RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.11	7.94	8.21	8.06	8.18	8.12	8.17	8.05	8.12	7.98	8.14	8.02	IS 3025 (Part11)1983
2.	Temperature	°C	29.8	29.7	29.7	29.6	29.6	29.5	29.5	29.4	29.6	29.5	29.7	26.6	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	132	94	144	116	132	108	124	112	132	112	142	124	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.6	BDL	2.5	BDL	2.3	BDL	2.4	BDL	2.9	BDL	3.1	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.08	5.78	6.08	5.88	6.22	5.92	6.17	5.97	6.12	5.92	6.25	6.05	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.84	36.15	36.12	36.38	36.34	36.88	36.32	37.14	36.12	37.18	36.19	37.24	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	3.23	3.06	3.39	3.23	3.06	2.9	2.42	2.26	2.24	2	3.23	2.9	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.348	0.326	0.304	0.261	0.348	0.326	0.261	0.217	0.543	0.5	0.522	0.5	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.74	3.59	4.22	4.11	4.16	4.11	4.06	3.95	3.95	3.8	4.11	4.06	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	1.47	1.26	1.37	1.16	1.16	1.05	1.26	1.05	2.32	2.11	1.58	1.47	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	7.318	6.976	7.914	7.601	7.568	7.336	6.741	6.427	6.733	6.3	7.862	7.46	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	35864	36890	36110	36910	36180	37120	35980	37060	36120	36980	36328	37118	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	32	12	24.29	8.1	28.25	12.11	20.38	4.08	24.1	8	28.03	12.01	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A								Phytoplankton							
1.	Chlorophyll	mg/m³	3.05	2.65	2.36	2.15	2.41	2.36	3.01	2.44	2.66	2.44	3.05	3.25	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	2.1	0.96	1.4	0.86	1.61	1.25	1.79	2	1.79	1.66	2	1.56	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	125	142	111	98	124	100	106	96	120	84	109	90	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Coscinodiscus*	*Odentella*	*Nitzschia*	*Biddulphia*	*Nitzschia*	*Biddulphia*	*Thalassiothrix*	*Dinophysis*	*Thalassiothrix*	*Dinophysis*	*Thalassiothrix*	*Dinophysis*	APHA (23rd Ed. 2017)10200 F
			Diploneis	*Rhizosolenia*	*Diploneis*	*Rhizosolenia*	*Pinnularia*	*Rhizosolenia*	*Surirella*	*Pinnularia*	*Surirella*	*Pinnularia*	*Biddulphia*	*Pinnularia*	
			Rhizosolenia	*Coscinodiscus*	*Rhizosolenia*	*Coscinodiscus*	*Rhizosolenia*	*Coscinodiscus*	*Navicula*	*Thalassiothrix*	*Navicula*	*Thalassiothrix*	*Navicula*	*Thalassiothrix*	
			Dinophysis	*Grammatophora*	*Dinophysis*	*Grammatophora*	*Dinophysis*	*Grammatophora*	*Thallassiosira*	*Grammatophora*	*Nitzschia*	*Grammatophora*	*Nitzschia*	*Grammatophora*	
			Thalassionema	*Thallassiosira*	*Biddulphia*	*Navicula*	*Biddulphia*	*Navicula*	*Skeletonema*	*Ceratium*	*Skeletonema*	*Ceratium*	*Skeletonema*	*Ceratium*	

B						Zooplankton			
1	Abudance(Population)	noX103/ 100 m3	52	50	46	50	41	55	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Crustacean Larvae*	*Oikoplura*	*Oikoplura*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	
			Egg(Fish and Shrimps)	*Pinnularia*	*Pinnularia*	*Oikoplura*	*Oikoplura*	*Oikoplura*	
			Copepods	*Copepods*	*Copepods*	*Copepods nauplii*	*Copepods nauplii*	*Copepods nauplii*	
			Crustacean	*Copepods nauplii*	*Copepods nauplii*	*Crustacean*	*Crustacean*	*Crustacean*	
			Bivalve Larvae	*Thalassionema*	*Thalassionema*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	
3	Total Biomass	ml/100 m³	15.63	14.25	15.44	15.26	14.78	13.69	

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RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
C	Microbiological														
1	Total Bacterial Count	CFU/ml	244		214		230		242		96		102		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	56		44		41		39		10		14		APHA 23rd Ed.2017,9222-B
3	Ecoli	/100ml	32		30		22		19		8		10		IS :15185:2016
4	Enterococcus	/100ml	19		22		14		12		Absent		Absent		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.53	0.46	0.42	0.48	0.44	0.41	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	494.2	510.3	514.8	532.2	542.2	549.3	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.02	3.92	3.96	3.98	4.02	4.06	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	124.9	110.3	115.4	121.2	124.4	130.8	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	627.3	644.8	622.5	618.2	612.4	618.3	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	3.97	4.06	4.09	4.11	4.15	4.08	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	38.62	42.28	42.44	41.08	42.02	41.88	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	37.19	40.25	40.86	41.12	42.11	42.32	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	132.2	124.3	119.2	116.34	112.5	118.2	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.44	2.49	2.44	2.38	2.32	2.36	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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RESULTS OF SEDIMENT ANALYSIS [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D	Benthic Organisms								
1	Macrobenthos	--	*Isopods*	*Isopods*	*Isopods*	*Foraminiferan*	*Foraminiferan*	*Foraminiferan*	APHA (23rd Ed. 2017)10500 C
			Polychates	*Polychates*	*Polychates*	*Decapods Larvae*	*Decapods Larvae*	*Decapods Larvae*	
			Sipunculids	*Sipunculids*	*Sipunculids*	*Amphipods*	*Gastropods*	*Gastropods*	
			Amphipods	*Foraminiferan*	*Foraminiferan*	*Polychates*	*Polychates*	*Polychates*	
2	MeioBenthos	--	*Herpectacoids*	*Gastropods*	Herpectacoids	Turbellarians	*Turbellarians*	*Turbellarians*	
			Decapods Larvae	*Decapods Larvae*	*Decapods Larvae*	*Foraminiferan*	*Foraminiferan*	*Foraminiferan*	
3	Population	no/m²	318	303	347	356	289	368	

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RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.17	7.94	8.14	7.89	8.16	7.94	8.21	8.08	8.18	8.06	8.15	8.02	IS 3025 (Part11)1983
2.	Temperature	°C	29.7	29.6	29.6	29.5	29.5	29.4	29.4	29.3	29.5	29.4	29.6	29.5	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	136	114	122	108	128	114	134	112	142	118	136	120	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.9	BDL	2.8	BDL	2.5	BDL	2.2	BDL	2.6	BDL	2.8	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	5.88	5.68	5.98	5.78	6.12	5.82	6.17	5.87	6.12	5.82	6.25	5.95	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.24	36.41	35.62	36.55	35.98	36.84	36.22	37.15	36.25	37.18	36.32	37.24	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.9	2.58	3.06	2.74	3.39	3.23	2.74	2.58	2.9	2.58	3.55	3.23	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.413	0.391	0.37	0.348	0.348	0.304	0.326	0.304	0.478	0.435	0.522	0.478	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.59	3.48	3.95	3.8	3.9	3.85	3.85	3.74	3.9	3.74	4.16	4.11	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	1.68	1.58	1.47	1.37	1.37	1.26	1.47	1.37	2.32	2.21	1.9	1.68	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	6.903	6.451	7.38	6.888	7.638	7.384	6.916	6.624	7.278	6.755	8.232	7.818	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36124	36960	36206	36988	36220	37110	36124	37104	36150	37110	36222	37180	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	36	16	32.38	4.05	32.29	16.14	16.3	4.08	20.1	4.1	24.02	12.01	APHA 23rd Ed.,2017, 5220-B

RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A	Phytoplankton														
1.	Chlorophyll	mg/m³	3.15	3.56	3.02	2.88	3.12	3.04	3	2.56	3.21	3.11	2.98	2.69	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	2.31	2.47	2.63	1.96	2.41	2.33	2.22	2.09	2.01	2.44	2.09	2.06	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	108	127	142	102	125	127	120	132	100	125	95	147	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Thalassiothrix*	*Pinnularia*	*Thalassiothrix*	*Pinnularia*	*Dinophysis*	*Pinnularia*	*Navicula*	*Thalassiothrix*	*Surirella*	*Thalassiothrix*	*Surirella*	*Thalassiothrix*	APHA (23rd Ed. 2017)10200 F
			Surirella	*Biddulphia*	*Surirella*	*Biddulphia*	*Surirella*	*Biddulphia*	*Skeletonema*	*Surirella*	*Pinnularia*	*Surirella*	*Pinnularia*	*Surirella*	
			Navicula	*Navicula*	*Navicula*	*Navicula*	*Nitzschia*	*Navicula*	*Rhizosolenia*	*Navicula*	*Rhizosolenia*	*Navicula*	*Melosira*	*Navicula*	
			Thallassiosira	*Rhizosolenia*	*Cyclotella*	*Rhizosolenia*	*Cyclotella*	*Rhizosolenia*	*Dinophysis*	*Thallassiosira*	*Dinophysis*	*Thallassiosira*	*Dinophysis*	*Thallassiosira*	
			Skeletonema	*Skeletonema*	*Skeletonema*	*Thallassiosira*	*Skeletonema*	*Thallassiosira*	*Thalassionema*	*Skeletonema*	*Thalassionema*	*Skeletonema*	*Thalassionema*	*Skeletonema*	

B	Zooplankton								
1	Abudance(Population)	noX103 / 100 m3	44	57	38	41	52	47	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	
			Copepods	*Oikoplura*	*Nitzschia*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	
			Copepods nauplii	*Copepods nauplii*	*Copepods nauplii*	*Copepods*	*Copepods*	*Copepods*	
			Crustacean	*Crustacean*	*Pinnularia*	*Crustacean*	*Crustacean*	*Copepods nauplii*	
			Bivalve Larvae	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	
3	Total Biomass	ml/100 m³	17.36	15.36	13.25	14.13	14.39	15.78	

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RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
C	Microbiological														
1	Total Bacterial Count	CFU/ml	200		188		200		222		144		120		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	42		30		36		40		36		30		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	20		24		21		22		18		12		IS :15185:2016
4	Enterococcus	/100ml	18		10		18		15		Absent		Absent		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.46	0.43	0.48	0.46	0.42	0.44	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	582.2	588.4	546.2	538.4	550.2	561.4	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.07	4.16	4.09	4.02	4.11	4.03	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	162.4	156.8	148.2	142.2	134.5	142.2	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	684.4	702.2	686.5	644.4	652.2	644.5	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	4.02	4.11	4.08	4.03	4.09	4.02	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	40.39	40.88	41.05	42.12	42.84	42.52	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	40.28	40.62	41.12	42.35	42.66	42.15	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	144.8	148.9	152.24	148.6	150.24	149.62	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.18	2.24	2.18	2.24	2.33	2.28	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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RESULTS OF SEDIMENT ANALYSIS [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D			Benthic Organisms						
1	Macrobenthos	--	*Decapods Larvae*	*Polychates*	*Polychates*	*Foraminiferan*	*Foraminiferan*	*Foraminiferan*	APHA (23rd Ed. 2017)10500 C
			Isopods	Isopods	*Isopods*	*Gastropods*	*Gastropods*	Gastropods	
			Amphipods	*Amphipods*	*Gastropods*	*Isopods*	*Isopods*	*Isopods*	
			Sipunculids	*Sipunculids*	*Sipunculids*	*Sipunculids*	*Amphipods*	*Amphipods*	
2	MeioBenthos	--	*Foraminiferan*	*Foraminiferan*	*Decapods Larvae*	*Herpectacoids*	*Sipunculids*	*Sipunculids*	
			Herpectacoids	*Herpectacoids*	*Herpectacoids*	*Polychates*	*Polychates*	*Polychates*	
3	Population	no/m²	256	350	321	308	254	307	

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RESULTS OF MARINE WATER [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.12	8.02	8.18	8.04	8.24	8.11	8.16	7.98	8.12	7.89	8.16	7.99	IS 3025 (Part11)1983
2.	Temperature	°C	29.7	29.6	29.6	29.5	29.5	29.4	29.3	29.2	29.4	29.3	29.5	29.4	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	111	84	118	92	126	98	130	104	136	110	144	120	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.2	BDL	3.1	BDL	2.9	BDL	3.1	BDL	3.3	BDL	3.1	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.18	6.08	5.98	5.88	5.92	5.72	5.97	5.77	5.92	5.72	6.05	5.85	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.78	36.35	36.24	36.68	36.68	37.16	36.74	37.22	36.77	37.28	36.84	37.32	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	3.06	2.74	3.55	3.39	3.23	2.9	3.06	2.9	2.74	2.42	3.06	2.9	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.435	0.391	0.456	0.413	0.391	0.348	0.326	0.304	0.348	0.326	0.391	0.37	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.69	3.48	4.01	3.9	3.74	3.69	3.69	3.59	3.74	3.59	4.06	4.01	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	1.79	1.68	1.58	1.47	1.37	1.26	1.58	1.37	1.47	1.26	1.58	1.37	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	7.185	6.611	8.016	7.703	7.361	6.938	7.076	6.794	6.828	6.336	7.511	7.28	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	35880	36744	35970	36790	36130	36860	36080	36780	36210	37050	36320	37180	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	32	8	28.34	16.19	28.25	16.14	12.03	4.08	16.1	8	20.02	12.01	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	3.11	2.83	3.11	3.04	2.98	3.26	2.45	3.08	2.74	2.56	2.47	2.47	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.65	1.52	1.65	2.01	2.01	2.18	2.06	2.41	1.87	1.45	1.66	1.47	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10^3/L	147	109	147	110	148	135	132	125	154	88	140	98	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Pinnularia*	*Coscinodiscus*	*Pinnularia*	*Coscinodiscus*	*Pinnularia*	*Coscinodiscus*	*Melosira*	*Cyclotella*	*Melosira*	*Cyclotella*	*Melosira*	*Cyclotella*	APHA (23rd Ed. 2017)10200 F
			Biddulphia	*Pinnularia*	*Biddulphia*	*Pinnularia*	*Biddulphia*	*Pinnularia*	*Pinnularia*	*Pinnularia*	*Pinnularia*	*Pinnularia*	*Pinnularia*	*Pinnularia*	
			Navicula	*Rhizosolenia*	*Navicula*	*Rhizosolenia*	*Navicula*	*Rhizosolenia*	*Skeletonema*	*Skeletonema*	*Rhizosolenia*	*Skeletonema*	*Rhizosolenia*	*Skeletonema*	
			Thallassiosira	*Dinophysis*	*Thallassiosira*	*Dinophysis*	*Thallassiosira*	*Dinophysis*	*Thallassiosira*	*Thallassiosira*	*Thallassiosira*	*Thallassiosira*	*Thallassiosira*	*Thallassiosira*	
			Skeletonema	*Thalassionema*	*Skeletonema*	*Thalassionema*	*Skeletonema*	*Thalassionema*	*Thalassionema*	*Thalassionema*	*Thalassionema*	*Thalassionema*	*Thalassionema*	*Thalassionema*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	63	55	50	38	30	65	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Copepods*	*Copepods*	*Rhizosolenia*	*Crustacean*	*Crustacean*	*Crustacean*	
			Copepods nauplii	*Copepods nauplii*	*Crustacean Larvae*	*Copepods nauplii*	*Copepods nauplii*	*Copepods nauplii*	
			Egg(Fish and Shrimps)	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	
			Crustacean	*Pinnularia*	*Oikoplura*	*Crustacean*	*Crustacean*	*Egg(Fish and Shrimps)*	
			Bivalve Larvae	*Bivalve Larvae*	*Thalassionema*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	
3	Total Biomass	ml/100 m³	15.69	16.35	14.23	17.12	15.47	15.47	

Continue…

RESULTS OF MARINE WATER [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	178		164		188		198		132		128		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	33		28		30		42		24		26		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	23		20		24		20		10		20		IS :15185:2016
4	Enterococcus	/100ml	17		12		20		19		Absent		Absent		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.43	0.47	0.46	0.41	0.44	0.45	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	564.2	570.3	580.4	584.6	602.2	612.4	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.08	4.14	4.09	4.13	4.15	4.09	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	124.6	121.2	125.4	132.2	142.2	138.6	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	624.2	633.4	621.2	614.4	618.2	622.5	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	4.12	4.15	4.08	4.01	4.06	4.12	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	44.28	48.2	46.4	44.8	42.9	42.5	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	38.2	40.3	38.5	38.95	40.12	41.08	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	117.4	120.2	118.4	120.2	124.5	132.1	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.44	2.51	2.46	2.38	2.44	2.38	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

Continue…

RESULTS OF SEDIMENT ANALYSIS [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D	Benthic Organisms								
1	Macrobenthos	--	Polychates	*Polychates*	*Amphipods*	*Gastropods*	*Gastropods*	*Decapods Larvae*	APHA (23rd Ed. 2017)10500 C
			Gastropods	*Gastropods*	*Gastropods*	*Isopods*	*Isopods*	*Isopods*	
			Isopods	*Isopods*	*Isopods*	*Amphipods*	*Amphipods*	*Amphipods*	
			Sipunculids	*Sipunculids*	*Sipunculids*	*Sipunculids*	*Sipunculids*	*Sipunculids*	
2	MeioBenthos	--	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Polychates*	*Polychates*	*Foraminiferan*	
			Polychates	*Polychates*	*Polychates*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	
3	Population	no/m²	284	303	247	268	287	296	

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RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.19	8.06	8.24	8.09	8.17	8.12	8.22	8.09	8.19	8.04	8.24	8.05	IS 3025 (Part11)1983
2.	Temperature	°C	29.7	29.6	29.7	29.6	29.5	29.4	29.4	29.3	29.5	29.4	29.6	29.5	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	146	118	134	112	128	110	142	118	136	122	152	128	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.4	BDL	3.2	BDL	3.1	BDL	3	BDL	3.4	BDL	3.2	BDL	IS 3025(Part 4)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.18	5.98	5.88	5.68	6.22	6.12	6.27	6.18	6.22	6.12	6.35	6.25	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.27	36.83	36.54	37.02	36.74	37.19	36.66	37.34	36.84	37.32	38.88	37.34	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd.2
8.	Nitrate as NO_3	µmol/L	2.74	2.42	2.9	2.74	2.74	2.58	3.06	2.9	3.23	3.06	3.06	2.9	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.478	0.435	0.5	0.478	0.478	0.435	0.391	0.37	0.522	0.478	0.478	0.456	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.9	3.74	3.85	3.69	3.8	3.74	4.16	4.11	3.85	3.64	4.01	3.9	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	2.32	2.21	1.79	1.68	1.47	1.37	1.37	1.16	2.53	2.42	2.32	2.11	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	7.118	6.595	7.25	6.908	7.018	6.755	7.611	7.38	7.602	7.178	7.548	7.256	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36220	37120	36290	37140	36330	37210	36228	37120	36340	37150	36460	37240	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	32	20	12.14	4.05	32.29	20.18	20.38	4.08	24.1	8	28.03	12.01	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A	Phytoplankton														
1.	Chlorophyll	mg/m³	3.42	3.55	3.22	2.86	3.08	2.56	2.88	3.04	2.9	3.14	2.36	3.14	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.36	1.35	1.58	1.87	2.33	1.88	1.98	1.56	2.03	1.65	2.69	2	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10^3/L	109	188	110	142	125	139	99	126	108	145	154	88	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Coscinodiscus*	*Surirella*	*Surirella*	*Surirella*	*Coscinodiscus*	*Surirella*	*Thallassiosira*	*Coscinodiscus*	*Thallassiosira*	*Coscinodiscus*	*Thallassiosira*	*Coscinodiscus*	APHA (23rd Ed. 2017)10200 F
			Diploneis	*Biddulphia*	*Diploneis*	*Biddulphia*	*Diploneis*	*Biddulphia*	*Melosira*	*Diploneis*	*Melosira*	*Diploneis*	*Melosira*	*Diploneis*	
			Rhizosolenia	*Navicula*	*Thalassiothrix*	*Coscinodiscus*	*Skeletonema*	*Coscinodiscus*	*Nitzschia*	*Rhizosolenia*	*Nitzschia*	*Rhizosolenia*	*Nitzschia*	*Rhizosolenia*	
			Dinophysis	*Thallassiosira*	*Navicula*	*Thallassiosira*	*Navicula*	*Thallassiosira*	*Rhizosolenia*	*Dinophysis*	*Rhizosolenia*	*Dinophysis*	*Rhizosolenia*	*Dinophysis*	
			Thalassionema	*Skeletonema*	*Thalassionema*	*Skeletonema*	*Thalassionema*	*Skeletonema*	*Pleurosigma*	*Thalassionema*	*Pleurosigma*	*Thalassionema*	*Pleurosigma*	*Thalassionema*	

B	Zooplankton								
1	Abudance(Population)	noX103 / 100 m3	48	63	49	50	36	40	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Oikoplura*	*Oikoplura*	*Copepods nauplii*	*Copepods nauplii*	*Copepods nauplii*	*Copepods nauplii*	
			Copepods nauplii	*Rhizosolenia*	*Rhizosolenia*	*Crustacean Larvae*	*Crustacean Larvae*	*Egg(Fish and Shrimps)*	
			Crustacean Larvae	*Crustacean Larvae*	*Egg(Fish and Shrimps)*	*Oikoplura*	*Oikoplura*	*Oikoplura*	
			Crustacean	*Crustacean*	*Crustacean*	*Bivalve Larvae*	*Bivalve Larvae*	*Copepods nauplii*	
			Bivalve Larvae	*Bivalve Larvae*	*Bivalve Larvae*	*Oikoplura*	*Oikoplura*	*Oikoplura*	
3	Total Biomass	ml/100 m³	17.58	16.55	16.25	15.26	14.25	14.23	

Continue…

RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	258		248		280		258		90		88		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	44		46		62		56		30		42		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	24		32		35		29		14		18		IS :15185:2016
4	Enterococcus	/100ml	14		21		23		15		Absent		Absent		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.52	0.49	0.44	0.48	0.52	0.49	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	648.1	640.2	610.5	612.2	625.4	611.1	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.01	4.08	4.11	4.08	4.12	4.09	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	142.7	146.4	138.5	132.5	135.2	141.3	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	604.5	610.2	594.5	580.5	594.2	602.4	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	4.06	4.12	4.15	4.1	4.12	4.05	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	52.37	54.36	55.08	49.38	50.12	49.54	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	42.24	44.28	44.62	42.33	44.25	44.63	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	122.3	126.4	124.2	122.4	136.4	130.1	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.64	2.71	2.64	2.58	2.45	2.36	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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Continue…

RESULTS OF SEDIMENT ANALYSIS [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D	Benthic Organisms								
1	Macrobenthos	--	*Foraminiferan*	*Amphipods*	*Amphipods*	*Sipunculids*	*Sipunculids*	Sipunculids	APHA (23rd Ed. 2017)10500 C
			Gastropods	*Gastropods*	*Gastropods*	*Decapods Larvae*	*Decapods Larvae*	*Decapods Larvae*	
			Isopods	*Isopods*	*Isopods*	*Polychates*	*Polychates*	*Polychates*	
			Sipunculids	*Sipunculids*	*Turbellarians*	*Isopods*	*Isopods*	*Foraminiferan*	
2	MeioBenthos	--	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Turbellarians*	Gastropods	*Gastropods*	
			Polychates	*Turbellarians*	*Decapods Larvae*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	
3	Population	no/m^2	322	341	288	304	308	300	

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RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.15	8.01	8.12	8.05	8.18	8.08	8.18	8.01	8.24	8.06	8.15	8.01	IS 3025 (Part11)1983
2.	Temperature	°C	29.7	29.6	29.6	29.5	29.5	29.4	29.3	29.2	29.4	29.3	29.5	29.4	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	104	82	124	98	142	122	134	108	138	112	126	108	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.8	BDL	3.1	BDL	3.5	BDL	3.4	BDL	3.2	BDL	2.9	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.08	5.88	6.18	5.78	6.22	6.02	6.27	6.07	6.22	6.02	6.35	6.15	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.18	36.71	36.46	37.12	36.65	37.33	36.84	37.28	36.74	37.25	36.79	37.31	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39)1991, Amd.2
8.	Nitrate as NO_3	µmol/L	2.58	2.42	3.23	3.06	3.06	2.74	2.9	2.74	3.39	3.23	3.71	3.55	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.348	0.326	0.37	0.348	0.413	0.37	0.391	0.37	0.348	0.326	0.391	0.37	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.48	3.32	3.9	3.8	4.01	3.95	4.32	4.22	3.74	3.59	4.06	3.85	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	1.9	1.68	1.79	1.58	1.68	1.58	1.79	1.68	1.47	1.26	1.68	1.47	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	6.408	6.066	7.5	7.208	7.483	7.06	7.611	7.33	7.478	7.146	8.161	7.77	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36233	37080	36274	37112	36320	37140	36120	37060	36140	37100	36186	37260	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	40	28	20.24	8.1	24.22	20.18	20.38	8.15	24.1	12.1	28.03	16.02	APHA 23rd Ed.,2017, 5220-B

Continue…

RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	3.47	2.96	3.45	2.68	2.36	2.76	3.05	3.14	3.14	3.1	3.14	3.09	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.63	1.75	2.14	2.07	1.23	1.66	1.68	2.03	2.11	2.66	2.45	1.22	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10^3/L	100	109	152	132	110	157	105	106	1422	141	110	109	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Diploneis*	*Navicula*	*Diploneis*	*Navicula*	*Navicula*	*Navicula*	*Navicula*	*Pinnularia*	*Navicula*	*Pinnularia*	*Navicula*	*Pinnularia*	APHA (23rd Ed. 2017)10200 F
			Rhizosolenia	*Skeletonema*	*Rhizosolenia*	*Skeletonema*	*Biddulphia*	*Skeletonema*	*Biddulphia*	*Biddulphia*	*Biddulphia*	*Biddulphia*	*Biddulphia*	*Rhizosolenia*	
			Nitzschia	*Rhizosolenia*	*Nitzschia*	*Rhizosolenia*	*Nitzschia*	*Rhizosolenia*	*Nitzschia*	*Navicula*	*Nitzschia*	*Navicula*	*Odontella*	*Dinophysis*	
			Cyclotella	*Dinophysis*	*Cyclotella*	*Biddulphia*	*Cyclotella*	*Biddulphia*	*Cyclotella*	*Thallassiosira*	*Cyclotella*	*Thallassiosira*	*Cyclotella*	*Coscinodiscus*	
			Pleurosigma	*Thalassionema*	*Pleurosigma*	*Thalassionema*	*Pleurosigma*	*Thalassionema*	*Pleurosigma*	*Skeletonema*	*Pleurosigma*	*Skeletonema*	*Pleurosigma*	*Skeletonema*	

B			Zooplankton												
1	Abudance(Population)	noX103 / 100 m3	52		44		36		44		48		41		APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Copepods nauplii*		*Nitzschia*		*Nitzschia*		*Crustacean Larvae*		*Crustacean Larvae*		*Crustacean Larvae*		
			Crustacean Larvae		*Crustacean Larvae*		*Crustacean Larvae*		*Egg(Fish and Shrimps)*		*Egg(Fish and Shrimps)*		*Egg(Fish and Shrimps)*		
			Oikoplura		*Oikoplura*		*Oikoplura*		*Copepods*		*Copepods*		*Copepods nauplii*		
			Bivalve Larvae		*Bivalve Larvae*		*Bivalve Larvae*		*Crustacean*		*Crustacean*		*Crustacean*		
			Oikoplura		*Oikoplura*		*Oikoplura*		*Bivalve Larvae*		*Bivalve Larvae*		*Bivalve Larvae*		
3	Total Biomass	ml/100 m³	14.6		13.52		14.23		14.52		15.36		14.68		

Continue…

RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	286		256		242		244		140		140		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	50		38		33		42		28		28		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	28		25		26		31		15		16		IS :15185:2016
4	Enterococcus	/100ml	14		14		21		25		4		Absent		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.57	0.53	0.48	0.45	0.48	0.52	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	562.4	570.5	765.2	738.6	744.1	721.4	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.04	4.13	4.11	4.04	4.08	4.11	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	138.2	136.2	130.5	134.6	142.2	136.5	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	627.8	633.2	624.4	621.5	626.4	618.2	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	4.09	4.12	4.08	3.98	4.12	3.96	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	46.97	48.23	46.85	46.12	45.98	45.36	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	42.38	44.28	45.21	45.58	45.96	45.82	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	118.2	123.4	119.6	119	124.1	118.2	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.41	2.46	2.35	2.27	2.24	2.11	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

Continue…

RESULTS OF SEDIMENT ANALYSIS [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D			Benthic Organisms						
1	Macrobenthos	--	*Amphipods*	*Amphipods*	*Amphipods*	*Isopods*	*Isopods*	*Isopods*	APHA (23rd Ed. 2017)10500 C
			Polychates	*Sipunculids*	*Polychates*	*Polychates*	*Polychates*	*Gastropods*	
			Isopods	*Isopods*	*Isopods*	*Sipunculids*	*Sipunculids*	*Sipunculids*	
			Gastropods	*Gastropods*	*Gastropods*	*Amphipods*	*Amphipods*	*Amphipods*	
2	MeioBenthos	--	Decapods Larvae	Decapods Larvae	Foraminiferan	Polychates	Herpectacoids	*Herpectacoids*	
			Herpectacoids	*Gastropods*	*Herpectacoids*	*Foraminiferan*	*Foraminiferan*	*Polychates*	
3	Population	no/m²	336	247	256	264	298	302	

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RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.17	7.99	8.21	7.96	8.24	8.12	8.19	8.02	8.14	7.88	8.09	7.91	IS 3025 (Part11)1983
2.	Temperature	°C	29.7	29.6	29.6	29.5	29.5	29.4	29.3	29.2	29.4	29.3	29.5	29.4	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	112	88	128	104	110	94	124	110	130	114	124	98	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.3	BDL	3.5	BDL	3.4	BDL	3.2	BDL	3.1	BDL	3.3	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	5.98	5.78	6.08	5.78	6.12	5.92	6.07	5.97	6.02	5.92	6.15	6.05	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.29	36.64	36.41	36.98	36.52	37.17	36.44	37.25	36.35	37.18	36.41	37.22	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39)1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.9	2.74	3.06	2.58	3.55	3.23	3.39	3.06	3.23	2.9	3.39	3.06	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.522	0.478	0.435	0.413	0.456	0.435	0.435	0.413	0.435	0.391	0.478	0.435	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.85	3.64	4.11	3.95	4.06	3.95	3.95	3.85	3.69	3.48	3.95	3.85	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	2.53	2.42	2.11	2	1.9	1.79	1.58	1.47	1.79	1.68	2.11	1.9	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	7.272	6.858	7.605	6.943	8.066	7.615	7.775	7.323	7.355	6.771	7.818	7.345	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36122	37148	36180	37180	36240	37210	36124	37180	36220	37090	36340	37230	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	28	8	36.43	16.19	36.32	24.22	16.3	4.08	20.1	8	24.02	12.01	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	2.98	3.35	3.08	3.35	3.25	3.65	3.12	2.88	2.96	3	3.09	2.49	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.36	2.47	2	1.78	2.44	2.44	2.14	2.04	2.14	1.25	2.19	1.78	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	106	160	108	158	156	137	128	100	120	96	87	121	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Nitzschia*	*Thalassiothrix*	*Nitzschia*	*Rhizosolenia*	*Nitzschia*	*Rhizosolenia*	*Diploneis*	*Coscinodiscus*	*Diploneis*	*Coscinodiscus*	*Diploneis*	*Coscinodiscus*	APHA (23rd Ed. 2017)10200 F
			Pinnularia	*Surirella*	*Pinnularia*	*Surirella*	*Odontella*	*Surirella*	*Rhizosolenia*	*Diploneis*	*Rhizosolenia*	*Diploneis*	*Rhizosolenia*	*Diploneis*	
			Odontella	*Navicula*	*Dinophysis*	*Navicula*	*Dinophysis*	*Navicula*	*Nitzschia*	*Rhizosolenia*	*Nitzschia*	*Rhizosolenia*	*Nitzschia*	*Rhizosolenia*	
			Dinophysis	*Thallassiosira*	*Pleurosigma*	*Thalassionema*	*Pleurosigma*	*Thalassionema*	*Thalassiothrix*	*Dinophysis*	*Thalassiothrix*	*Dinophysis*	*Thalassiothrix*	*Dinophysis*	
			Surirella	*Skeletonema*	*Surirella*	*Skeletonema*	*Cyclotella*	*Skeletonema*	*Pleurosigma*	*Thalassionema*	*Pleurosigma*	*Thalassionema*	*Cyclotella*	*Thalassionema*	

B			Zooplankton												
1	Abudance(Population)	noX103 / 100 m3	50		48		53		41		25		38		APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Nitzschia*		*Nitzschia*		*Egg(Fish and Shrimps)*		*Egg(Fish and Shrimps)*		*Egg(Fish and Shrimps)*		*Egg(Fish and Shrimps)*		
			Pinnularia		*Pinnularia*		*Coscinodiscus*		*Oikoplura*		*Oikoplura*		*Oikoplura*		
			Odontella		*Odontella*		*Odontella*		*Copepods nauplii*		*Copepods nauplii*		*Copepods nauplii*		
			Dinophysis		*Dinophysis*		*Dinophysis*		*Crustacean*		*Crustacean*		*Crustacean*		
			Surirella		*Surirella*		*Bivalve Larvae*		*Bivalve Larvae*		*Bivalve Larvae*		*Bivalve Larvae*		
3	Total Biomass	ml/100 m³	16.33		16.25		17.35		16.23		13.56		16.58		

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RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	186		200		202		260		86		96		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	33		41		36		46		12		27		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	30		31		24		36		5		14		IS :15185:2016
4	Enterococcus	/100ml	21		19		22		23		Absent		Absent		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.21	8.04	8.18	8.08	8.16	8.06	8.09	7.96	7.99	7.86	8.06	7.88	IS 3025 (Part11)1983
2.	Temperature	°C	29.7	29.6	29.6	29.5	29.5	29.4	29.4	29.3	29.5	29.4	29.6	29.5	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	102	78	112	84	98	84	106	88	112	90	122	98	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.4	BDL	3.1	BDL	3.4	BDL	3.1	BDL	3.3	BDL	2.8	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	5.98	5.88	5.88	5.68	6.02	5.82	6.07	5.87	6.02	5.82	6.15	5.95	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.02	36.76	36.27	36.88	36.44	37.09	36.38	37.24	36.22	37.14	36.38	37.09	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	3.23	2.9	3.39	3.06	3.71	3.39	3.55	3.23	3.23	3.06	3.55	3.06	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.543	0.5	0.522	0.478	0.478	0.456	0.456	0.435	0.435	0.391	0.543	0.478	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.95	3.8	4.16	4.01	4.11	4.06	3.74	3.64	3.85	3.64	4.06	3.95	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	2.32	2.11	2.21	2	2.11	1.9	2.21	2	2.53	2.32	2.32	2.21	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	7.723	7.2	8.072	7.548	8.298	7.906	7.746	7.305	7.515	7.091	8.153	7.488	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36268	37350	36302	37410	36380	34500	36410	37320	36540	37410	36610	37540	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	24	12	28.34	8.1	32.29	28.25	20.38	12.23	24.1	16.1	28.03	20.02	APHA 23rd Ed.,2017, 5220-B

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CIN:U73100GJ2007PTC051463

RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	2.68	2.47	2.36	2.85	2.3	2.88	2.95	3.04	2.36	3.01	3	3.01	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	0.99	2.03	1.06	1.88	2.03	1.78	2.36	1.55	1.88	1.63	1.88	1.36	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10^3/L	78	156	86	145	97	148	100	85	123	96	106	106	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Odentella*	*Cyclotella*	*Odentella*	*Cyclotella*	*Odentella*	*Cyclotella*	*Nitzschia*	*Diploneis*	*Nitzschia*	*Diploneis*	*Nitzschia*	*Diploneis*	APHA (23rd Ed. 2017)10200 F
			Rhizosolenia	*Pinnularia*	*Rhizosolenia*	*Pinnularia*	*Rhizosolenia*	*Pinnularia*	*Grammatophora*	*Rhizosolenia*	*Grammatophora*	*Rhizosolenia*	*Grammatophora*	*Rhizosolenia*	
			Coscinodiscus	*Skeletonema*	*Coscinodiscus*	*Skeletonema*	*Coscinodiscus*	*Skeletonema*	*Diploneis*	*Nitzschia*	*Diploneis*	*Nitzschia*	*Diploneis*	*Nitzschia*	
			Grammatophora	*Thallassiosira*	*Grammatophora*	*Thallassiosira*	*Grammatophora*	*Thallassiosira*	*Thalassiothrix*	*Cyclotella*	*Thalassiothrix*	*Cyclotella*	*Thalassiothrix*	*Grammatophora*	
			Thallassiosira	*Thalassionema*	*Thallassiosira*	*Thalassionema*	*Thallassiosira*	*Thalassionema*	*Pleurosigma*	*Pleurosigma*	*Pleurosigma*	*Pleurosigma*	*Pleurosigma*	*Pleurosigma*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	41	52	60	49	49	49	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Coscinodiscus*	*Coscinodiscus*	*Odontella*	*Oikoplura*	*Oikoplura*	*Oikoplura*	
			Diploneis	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Copepods nauplii*	*Copepods nauplii*	*Egg(Fish and Shrimps)*	
			Rhizosolenia	*Rhizosolenia*	*Rhizosolenia*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	
			Dinophysis	*Bivalve Larvae*	*Bivalve Larvae*	*Crustacean*	*Crustacean*	*Crustacean*	
			Thalassionema	*Thalassionema*	*Thalassionema*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	
3	Total Biomass	ml/100 m³	16.45	15.44	17.68	15.44	15.44	14.78	

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RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	202		274		250		266		98		98		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	30		39		35		32		20		14		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	22		30		26		27		14		10		IS :15185:2016
4	Enterococcus	/100ml	17		18		20		16		10		8		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.43	0.42	0.46	0.41	0.42	0.43	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	580.4	594.2	580.3	582.8	580.5	574.2	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.11	4.16	4.11	4.15	4.16	4.12	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	134.1	128.5	122.6	121.2	120.4	116.2	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	621.2	630.4	624.2	618.4	620.5	624.2	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	4.14	4.12	4.08	4.02	4.11	4.02	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	46.92	42.85	42.22	41.23	42.35	41.86	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	47.79	46.57	45.88	45.27	45.39	45.21	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	122.2	114.2	119.4	112.2	114.5	110.6	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.41	2.32	2.18	2.1	2.3	2.41	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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RESULTS OF SEDIMENT ANALYSIS [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D			Benthic Organisms						
1	Macrobenthos	--	*Polychates*	*Gastropods*	*Gastropods*	*Polychates*	*Polychates*	*Polychates*	APHA (23rd Ed. 2017)10500 C
			Decapods Larvae	*Decapods Larvae*	*Decapods Larvae*	*Amphipods*	*Amphipods*	*Amphipods*	
			Isopods	*Isopods*	*Isopods*	*Isopods*	*Isopods*	*Sipunculids*	
			Sipunculids	*Sipunculids*	*Sipunculids*	*Sipunculids*	*Herpectacoids*	*Herpectacoids*	
2	MeioBenthos	--	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Foraminiferan*	*Foraminiferan*	*Foraminiferan*	
			Turbellarians	*Turbellarians*	Turbellarians	Turbellarians	Turbellarians	*Turbellarians*	
3	Population	no/m²	240	307	335	333	300	366	

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CIN:U73100GJ2007PTC051463

RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.16	8.02	8.19	8.06	8.22	8.1	8.14	7.99	8.12	7.86	8.18	8.02	IS 3025 (Part11)1983
2.	Temperature	°C	29.7	29.6	29.7	29.6	29.6	29.5	29.3	29.2	29.4	29.3	29.5	29.4	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	134	106	126	114	122	110	118	106	124	108	138	112	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.2	BDL	2.9	BDL	2.6	BDL	2.8	BDL	2.9	BDL	2.8	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	5.88	5.68	6.18	6.08	6.02	5.92	6.07	5.97	6.02	5.92	6.15	6.05	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.89	37.06	36.21	37.14	36.39	37.31	36.44	37.38	36.33	37.32	36.31	37.18	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	3.39	3.23	3.55	3.23	3.39	3.06	3.55	3.23	2.74	2.42	2.9	2.58	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.435	0.391	0.413	0.391	0.5	0.478	0.522	0.478	0.609	0.543	0.609	0.522	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.85	3.64	4.22	4.06	4.27	4.22	4.43	4.32	3.74	3.53	4.27	4.16	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	2.53	2.32	2.32	2.21	2.21	2.11	2	1.79	2.11	1.9	2.32	2.11	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	7.675	7.261	8.183	7.681	8.16	7.758	8.502	8.028	7.089	6.493	7.779	7.262	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36210	37132	36340	37150	36400	37210	36104	36940	36220	37124	36310	37220	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	28	8	20.24	8.1	28.25	24.22	16.3	8.15	20.1	12.1	24.02	16.02	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	3.05	3.07	2.36	2.85	3.68	3.54	3.06	3.11	3.09	2.63	2.98	2.5	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.11	1.88	1.06	1.88	2.57	2.67	2.47	2.44	2.55	1.45	1.55	1.87	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10^3/L	109	134	86	145	187	174	148	64	122	117	122	114	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Dinophysis*	*Navicula*	*Odontella*	*Cyclotella*	*Cyclotella*	*Surirella*	*Odontella*	*Nitzschia*	*Odontella*	*Nitzschia*	*Odontella*	*Nitzschia*	APHA (23rd Ed. 2017)10200 F
			Pinnularia	*Skeletonema*	*Rhizosolenia*	*Pinnularia*	*Pinnularia*	*Skeletonema*	*Rhizosolenia*	*Pinnularia*	*Rhizosolenia*	*Pinnularia*	*Rhizosolenia*	*Pinnularia*	
			Thalassiothrix	*Rhizosolenia*	*Coscinodiscus*	*Skeletonema*	*Thalassiothrix*	*Rhizosolenia*	*Coscinodiscus*	*Odontella*	*Coscinodiscus*	*Odontella*	*Coscinodiscus*	*Odontella*	
			Grammatophora	*Dinophysis*	*Grammatophora*	*Thallassiosira*	*Rhizosolenia*	*Cyclotella*	*Grammatophora*	*Dinophysis*	*Grammatophora*	*Dinophysis*	*Pleurosigma*	*Dinophysis*	
			Ceratium	*Thalassionema*	*Thallassiosira*	*Thalassionema*	*Ceratium*	*Thalassionema*	*Thallassiosira*	*Surirella*	*Thallassiosira*	*Surirella*	*Thallassiosira*	*Surirella*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	40	60	42	51	51	43	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Diploneis*	*Diploneis*	*Diploneis*	*Decapoda*	*Decapoda*	*Decapoda*	
			Rhizosolenia	*Rhizosolenia*	*Rhizosolenia*	*Copepods*	*Copepods*	*Oikoplura*	
			Nitzschia	*Nitzschia*	*Nitzschia*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	
			Thalassiothrix	*Coscinodiscus*	*Coscinodiscus*	*Crustacean*	*Crustacean*	*Bivalve Larvae*	
			Pleurosigma	*Pleurosigma*	*Pleurosigma*	*Oikoplura*	*Oikoplura*	*Oikoplura*	
3	Total Biomass	ml/100 m³	15.47	17.45	15.24	16.02	16.02	15.23	

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RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	222		221		222		212		212		222		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	40		39		28		33		33		40		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	33		30		26		28		28		30		IS :15185:2016
4	Enterococcus	/100ml	24		16		14		21		21		18		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.16	7.94	8.12	7.88	8.19	7.98	8.24	8.08	8.19	8.04	8.14	7.98	IS 3025 (Part11)1983
2.	Temperature	°C	29.8	29.7	29.7	29.6	29.6	29.5	29.4	29.2	29.5	29.3	29.6	29.4	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	118	98	132	110	124	108	116	102	112	108	134	120	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.7	BDL	3.4	BDL	2.8	BDL	3.1	BDL	3.4	BDL	3.1	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.18	5.78	6.18	5.98	5.92	5.82	5.97	5.87	5.92	5.82	6.05	5.95	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	36.08	36.74	36.22	36.97	36.34	37.11	36.48	37.38	36.44	37.32	36.48	37.35	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	3.23	2.9	3.39	3.06	3.23	3.06	3.39	3.06	2.9	2.74	3.23	2.9	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.609	0.543	0.565	0.522	0.522	0.5	0.5	0.456	0.522	0.478	0.565	0.543	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.74	3.53	4.27	4.16	4.01	3.95	4.22	4.06	3.85	3.64	4.32	4.22	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	2.11	1.9	2	1.79	2.32	2.21	1.68	1.58	2.53	2.42	2.32	2.11	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	7.579	6.973	8.225	7.742	7.762	7.51	8.11	7.576	7.272	6.858	8.115	7.663	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36138	37122	36210	37140	36270	37180	36120	37090	36324	37210	36410	37390	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	24	12	36.43	16.19	24.22	20.18	8.15	4.08	12.1	8	16.02	12.01	APHA 23rd Ed.,2017, 5220-B

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CIN:U73100GJ2007PTC051463

RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	2.22	3.26	2.35	3	2.58	2.98	2.58	3.07	2.64	3.07	2.58	2.87	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	0.85	1.63	1.05	1.77	1.44	2.06	2	2.63	1.74	2.4	1.09	1.44	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10^3/L	90	145	101	123	129	152	162	111	135	102	74	124	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Ceratium*	*Melosira*	*Ceratium*	*Rhizosolenia*	*Surirella*	*Rhizosolenia*	*Skeletonema*	*Odontella*	*Skeletonema*	*Odontella*	*Skeletonema*	*Odontella*	APHA (23rd Ed. 2017)10200 F
			Pinnularia	*Dinophysis*	*Pinnularia*	*Dinophysis*	*Pinnularia*	*Dinophysis*	*Grammatophora*	*Rhizosolenia*	*Grammatophora*	*Rhizosolenia*	*Grammatophora*	*Rhizosolenia*	
			Odontella	*Skeletonema*	*Odontella*	*Skeletonema*	*Grammatophora*	*Skeletonema*	*Nitzschia*	*Coscinodiscus*	*Nitzschia*	*Coscinodiscus*	*Nitzschia*	*Coscinodiscus*	
			Thalassiothrix	*Thallassiosira*	*Thalassiothrix*	*Thallassiosira*	*Thalassiothrix*	*Thallassiosira*	*Thalassiothrix*	*Grammatophora*	*Thalassiothrix*	*Grammatophora*	*Coscinodiscus*	*Pinnularia*	
			Thallassiosira	*Thalassionema*	*Thallassiosira*	*Melosira*	*Rhizosolenia*	*Melosira*	*Pleurosigma*	*Thallassiosira*	*Pleurosigma*	*Thallassiosira*	*Pleurosigma*	*Thallassiosira*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	39	41	55	49	49	32	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Nitzschia*	*Nitzschia*	*Nitzschia*	*Copepods*	*Copepods*	*Copepods*	
			Grammatophora	*Grammatophora*	*Grammatophora*	*Oikoplura*	*Oikoplura*	*Oikoplura*	
			Diploneis	*Diploneis*	*Egg(Fish and Shrimps)*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	
			Thalassiothrix	*Thalassiothrix*	*Thalassiothrix*	*Crustacean*	*Crustacean*	*Crustacean*	
			Pleurosigma	*Pleurosigma*	*Pleurosigma*	*Bivalve Larvae*	*Bivalve Larvae*	*Egg(Fish and Shrimps)*	
3	Total Biomass	ml/100 m³	14.56	15.15	16.23	15.23	15.23	14.56	

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SR. NO.	TEST PARAMETERS	UNIT	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	202		240		256		288		288		248		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	50		50		44		43		43		52		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	42		33		32		36		36		41		IS :15185:2016
4	Enterococcus	/100ml	19		21		17		26		26		31		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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