ANAND EXPORTS

Anand Exports

Ref No-AE/MOE/54/23-24

DATE- 02/04/2024

To,
The Director
Ministry Of Environment, Forest and Climate Change
Regional Office (EZ),
A/3, Chandrasekharpur
Bhubaneswar-751023

Sub: Requesting to issue a certified Compliance report of the Status of compliance of the conditions stipulated in the environment clearance (Vide F.No. J-11015/225/2010-IA-II (M) dated 24/09/2012) for the proposed project (Expansion and modification of Ore Beneficiation (COB) Plant from existing 1,000 TPA to 1, 20,000 TPA) of M/s Anand Exports located at District Jajpur, Odisha.

Ref: EC Order No.J-11015/225/2010-IA-II (M) dated 24/09/2012

Respected Sir,
With reference to above subject, we are submitting herewith the half yearly compliance report (Period of **October-2023 to March-2024**) in respect of stipulated prior Environmental Clearance terms and conditions in hard and soft copies in respect of our proposal "Expansion and modification of Ore Beneficiation (COB) Plant from Existing 1,000 TPA to 1, 20,000 TPA" of M/s Anand Exports located at District Jajpur, Odisha.

Now we need a copy of the Certified Compliance Report issued by your good office as per the requirements of MoEF & CC. Considering the same, we hereby request you to undertake a visit of our site & issue us a Certified Compliance Report based on your observation at your earliest convenience.

Thanking You
Anand Exports
Yours faithfully

Authorized Signatory
Anand Exports
Managing Partner

Copy to:

1. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-office Complex, East Arjun Nagar, Delhi-110032.
2. The Chairman, Odisha State Pollution Control Board, Parivesh Bhawan/118, Nilakantha Nagar, Unit-VIII Bhubaneswar-751012.

RECEIVED
09 APR 2024
ODISHA S.P.C. BOARD

9/4/24

428/818, Jaydev Nagar, Near Panthanivas, Bhubaneswar-751002 (Odisha). Ph : (0674) 2430528 / 3092071, Fax 0674-2430528
Plant Site : At- Golagaon, P.O.- Pankapal Shasan, Dist- Jajpur, Ph 9238109434
E-mail : anandexports7979@yahoo.co.in

Compliance on condition for Environmental Clearance for the Ore Beneficiation (COB) Plant of M/s Anand Exports located at District Jajpur, Odisha (Ref: F.No.-J-11015/225/2010-IA.II (M), Government of India, MoEF & CC)

A. SPECIFIC CONDITION:

Sr. No.	Conditions	Compliance
i.	The environment clearance is co-terminus with the mine lease.	Agreed
ii.	The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Orissa and effectively implement all the conditions stipulated therein.	The Consent to Establish has been already obtained from Odisha State Pollution Control Board. Now, Consent to Operate obtained vide letter no. 952/KNG/IND/242 dtd. 27.03.2023. Attached as **Annexure-I.**
iii.	Environmental clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No. 460 of 2004, as may be applicable to this Project	Not Applicable
iv.	The drainage from the plant area should be contained within the plant. No surface run of should be allowed to go outside the plant premises.	Agreed The surface runoff will be collected through this garland drain and will be collected in collection tank followed by ETP consists of flash mixer with chemical dosing (FeSO4 & lime) followed by settling tank for conversion of Hexavalent chromium to trivalent chromium before discharge to outside.
v.	The company shall submit within 3months their policy towards Corporate Environment Responsibility which should inter-alia provide for (i) Standard operating process / process to bring into focus any fringement/ deviation/violation of the environmental or forest norms/conditions, (ii) Hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions and (iii) System of reporting of non- compliances/violations of environmental norms to the Board of Directors of the Company and / or Shareholders or stakeholders.	The Corporate Environmental Responsibility Policy specifically provides for the following: • Standard operating process/procedures to bring into focus any fringement/ deviation/violation of the environmental or forest norms/conditions, • Awareness of environmental and forest legislation throughout the company so that all regulatory requirements are met including conditions/stipulations/norms specified in environment and forest clearance. • Monitoring the implementation of the policy by carrying out periodic compliance audits which are reported to the Board of Directors and, when appropriate, adopting remedial measures. • Ensuring that during the course of their duties all employees act in accordance with the policy so as to appropriately deal with any environmental issues besides complying with all environment clearance conditions and also encouraging suppliers, contractors and

		vendors to do the same. • Giving preference to non-polluting technology, minimizing waste through re-use / recycling and reducing energy consumption • Maintaining transparency in all matters relating to compliance of environmental conditions/stipulations/ norms. • Contributing towards awareness of the local community about the importance of the environment through open communication and appropriate CSR activities.
vi.	Closed Crusher shall only be installed.	Agreed
vii.	The effluent treatment plant shall be provided for treatment of ore.	• The effluents generated from beneficiation process were taken to settling tank. • Tailings were taken to slime pond from where the treated water is recycled and semidried/cake form tailings and taken to the proposed tailing pond in pay loader. • The adopted process involves only physical conversion such as grinding and separation under differentiation gravitational forces method. However, the runoff generated from tailing pond area is treated with Ferrous Sulphate and lime to convert Hexavalent chromium to trivalent chromium before discharge to outside.
viii.	The particulate level shall be monitored for presence of Chromium, if any.	Presence of Chromium is BDL (Below Detection Limit) in Particulate level. The Ambient air Quality analysis report attached as Annexure-V.
ix.	The storage area, both for raw material as also the tailings will be lined with HDPE lining.	Taken care & Implemented.
x.	Water quality both ground water and surface water shall be monitored for any possible leaching taking place. In case, any leaching of Chromium is observed, immediate necessary safeguard measures shall be implemented.	Ground Water Quality analysis Report attached as **Annexure-II**
xi.	Soil quality shall be monitored in and around the plant for chromium content.	Soil Quality Analysis Report attached as **Annexure-III**
xii.	Prior permission for drawl of requisite quantity of ground water for the project shall be obtained from the State Government Water Board/ Central Ground Water Authority.	NOC to be obtained from ground water Authority. Letter for CGWA Clearance vide letter no. 21-4 (365) /SER/CGWA/2011-1503 dated: 12.10.2011.
xiii.	The rainwater harvesting shall be adopted in consultation with the Regional Director, Central Ground Water Board.	Rain water harvesting proposal has already been submitted to the Regional Ground Water Board, Bhubaneswar vide letter no. 21-4 (365) /SER/CGWA/2011-1503dated:12.10.2011. Copy enclosed as **Annexure-IV**
xiv.	As part of ambient air quality monitoring during operational phase of the project, the air	Agreed. AAQ analysis Report attached as **Annexure-V**

	samples shall also be analyzed for their mineralogical composition and records maintained.	
xv.	The water recovery and spill way system shall be so designed that the natural water resources are not affected and that no spill water from the plant goes into the Brahmani river or any other water body.	The water generated is treated for conversion of Cr+6 to Cr+3 before discharge to outside.
xvi.	The filter cake shall be disposed at the earmarked site only, which shall be above highest water table and shall be lined with HOPE lining to prevent any leaching from the filter cake disposal site into groundwater.	The tailings will be disposed in tailing pond in wet cake form after drying in slime pond.
xvii.	Effective safeguard measures such as conditioning of ore with water, regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading point and transfer points. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.	Water sprinklers have been provided at all the potential dust generating source to control fugitive dust emission. AAQ qualities are within the standards.
xviii.	The project authority shall implement suitable water conservation measures to augment ground water resources In the area In consultation with the Regional Director, Central Ground Water Board.	Company has already obtained NOC from CGWA, Bhubaneswar vide letter No. 21-4 (365) /SER/CGWA/2011-1503 dated:12.10.2011.
xix.	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and installing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year- pre-monsoon (April-May), monsoon (August). post- monsoon (November) and winter (January); once in each season)] shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground water Board. If at any stage, it Is observed that the groundwater table is getting depleted due to the mining activity. Necessary corrective measures shall be carried out.	Not Applicable as it is not a Mining Lease.
xx.	The water quality of Brahmani river. Upstream and downstream of the project shall be monitored regularly and records maintained. It shall be ensured that the quality or Water in the Brahmani river is not affected adversely due to this project.	Being followed. Surface Water Quality analysis report is attached as **Annexure-VI.**
xxi.	Greenbelt shall be raised in an area of 1.73 ha in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 1500 - 2000	2000 plants were planted every year. This will also continue in the future expansion.

	plants per ha. Greenbelt shall be developed all along the plant area in a phased manner and shall be completed within first five years.	
xxii.	Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the worker should be drawn and followed accordingly.	All the employees do undergo periodical medical examination (PME) in hospital every five years. However, as per the recent notification, PME of all the employees shall be carried out once in three years for those employees who have reached 45 years of age or more. As of now, no occupational diseases have been reported till date.
xxiii.	The proponent should evolve, if not already having a well laid down Environment Policy approved by its Board of Directors. It should inter-alia prescribe for standard operating process/ procedures to bring into focus any infringement/ deviation/violation of the environmental or forest norms/conditions. Hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions should also be clearly spelt out. Details in this regard should be furnished.	It is being carried out.
xxiv.	Provision shall be made for the housing of construction labor within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	It is being provided in the plant area with all amenities mentioned.

B. General Conditions

Sr. No.	Conditions	Compliance
i.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	Agreed. If any further expansion or modifications in the plant to be carried out with Prior approval from Ministry of Environment and Forests.
ii.	At least four ambient air quality–monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 micron i.e. PM10) and NOx monitoring. Location	Monitoring of the air quality was being conducted twice in a week as per CPCB guide lines. Likewise monitoring is done in buffer zone also. We have done ambient air quality monitoring as per recent Gazette Notification 826(E), dated 16.11.2009. The Ambient air Monitoring Report is attached in Annexure V.
iii.	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in high noise areas, etc. Should be provided with ear plugs/muffs.	To limit exposure of noise level of 85 dBA, due precautions at source and at the receiver end are being taken adequately. Rubber padding, acoustic hoods, silencers is being used to control noise within the plant. DG sets have also been provided with acoustic enclosures to prevent noise propagation.
iv.	Industrial waste water should be properly collected, treated so as to confirm to the	Effluent generated from the industry is being collected in a central sump & treated in the

	standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	ETP for reuse in the plant. And the analysis report for ETP water enclosed as Annexure-VII
v.	Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.	Adequate training & information is being given to personnel working in dusty areas. They are also provided with personal protective equipments (PPEs) such as dust mask.
vi.	Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	Health camp for health check-up of workers done in regular basis. Use of helmet and shoes is compulsory for both workers and visitors within plant premises.
vii.	A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to Head of the Organization.	General Manager of the company is in charged Environmental Department who will report the different issues changed from time to time in the plant area to Head of Organization under supervision of our senior executive of environment management cell made on.
viii.	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar.	The necessary pollution control equipment has been installed and is under regular maintenance for which funds has been earmarked in the annual budget.
ix.	The project authorities should inform to the Regional Office at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	The date of financial closure and final approval of the project has been informed to Regional Office every year.
x.	The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.	Necessary information shall be furnished as and when requested by the Regional Office of Ministry of Environment and Forests.
xi.	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board. The proponent shall upload the status of the compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.	Six monthly reports on the status of compliance report of the stipulated environmental clearance conditions including results of monitored data is submitted to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board.
xii.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad / Municipal Corporation, Urban	Environment Clearance letters were sent to concerned Panchayat, Zila Parishad / Municipal Corporation, Urban Local Body.

	Local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	
xiii.	The State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and the Collector's Office/ Tehsildar's Office for 30 days.	Complied by the State Pollution Control Board.
xiv.	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e- mail.	It is submitted every year. And the receiving copy is annexed as **Annexure- VIII.**
xv.	The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and widely circulated. One of which shall be in the vernacular language of the locality concerned, within 7 days of issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at website of the Ministry of Environment and forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.	Copy of Environmental Clearance has been published in local News and the same was forwarded to the Regional Office of the Ministry located at Bhubaneswar MoEF & CC, New Delhi. And annexed as **Annexure-IX.**

Ref: ENVLAB/24-25/TR-00001 **ANNEXURE-II** **Date: 01.04.2024**

SIX MONTHLY AVERAGES OF GROUND WATER QUALITY ANALYSIS REPORT (OCTOBER-2023 TO MARCH-2024)

1. Name of Client : **M/s Anand Exports, Kalinga Nagar, Jajpur**
2. Sampling Location : **GW1:** Near Main Gate
3. Sample Collected by : VCSPL Representative

Sl. No.	Parameter	Testing Method	Unit	Standard IS - 10500:2012 Amended on 2015 & 2018	Analysis Result						
					OCT-23	NOV-23	DEC-23	JAN-24	FEB-24	MAR-24	Avg
Essential Characteristics											
1	Colour	Visual Comparison Method APHA 23RD Ed,2017 : 2120 B, C	Hazen	5	<5	<5	<5	<5	<5	<5	<5
2	Odour	Threshold Odour Test APHA 23RD Ed,2017 :2150 B	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	Taste	Flavor Threshold Test APHA 23RD Ed,2017 : 2160 C	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	Nephelometric Method APHA 23RD Ed,2017 :2130 B	NTU	1	1.02	0.95	0.79	0.86	0.90	0.88	0.90
5	pH Value at 25^{0}C	pH Meter APHA 23RD Ed,2017 : 4500H^+ B	--	6.5-8.5	7.15	7.02	7.25	7.19	7.21	7.35	7.20
6	Total Hardness (as $CaCO_3$)	EDTA Titrimetric Method APHA 23RD Ed,2017 : 2340 C	mg/l	200	176	167	192	157	163	198	175.5
7	Iron (as Fe)	By AAS Method APHA 23RD Ed,2017 : 3111, B	mg/l	1.0	0.31	0.36	0.29	0.30	0.28	0.30	0.31
8	Chloride (as Cl)	Argentometric Method APHA 23RD Ed,2017 : 4500Cl^- B	mg/l	250	43.5	45.9	42.2	51.9	47.5	46.8	46.30
9	Residual, free Chlorine	Iodometric Method APHA 23RD Ed,2017 : 4500Cl, B	mg/l	0.2	ND	ND	ND	ND	ND	ND	ND
Desirable Characteristics											
10	Dissolved Solids	Gravimetric Method APHA 23RD Ed,2017 : 2540 C	mg/l	500	242	268	271	266	259	252	259.7
11	Calcium (as Ca)	EDTA Titrimetric Method APHA 23RD Ed,2017 : 3500Ca B	mg/l	75	47.6	52.5	47.3	46.5	51.7	50.3	49.32
12	Magnesium (as Mg)	Calculation Method APHA 23RD Ed,2017 : 3500Mg B	mg/l	30	13.9	8.7	18.0	9.9	8.2	17.6	12.72
13	Copper (as Cu)	By AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
14	Manganese (as Mn)	Persulfate Method APHA 23RD Ed,2017: 3500Mn B	mg/l	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
15	Sulphate (as SO_4)	Turbidimetric Method APHA 23RD Ed,2017: 4500 $SO4^{2-}$ E	mg/l	200	22.9	23.3	25.6	29.1	24.7	26.2	25.30
16	Nitrate (as NO_3)	By UV-Screen Method APHA 23RD Ed,2017: 4500 NO_3^- E	mg/l	45	7.6	6.9	7.0	7.2	6.8	7.4	7.15
17	Fluoride (as F)	Distillation followed by Spectophotometric Method APHA 23RD Ed,2017: 4500F^- C	mg/l	1.0	0.16	0.13	0.11	0.14	0.12	0.15	0.14
18	Phenolic Compounds (as C_6H_5OH)	Chloroform Extraction by Colorimetric Method APHA 23RD Ed,2017: 5530 B,D	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
19	Mercury (as Hg)	AAS Method APHA 23RD Ed,2017: 3112 B	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
20	Cadmium (as Cd)	AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
21	Selenium (as Se)	By AAS Method APHA 23RD Ed,2017: 3500 Se C	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
22	Arsenic (as As)	By AAS Method APHA 23RD Ed,2017: 3114 B	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
23	Cyanide (as CN)	Distillation followed by Spectophotometric Method APHA 23RD Ed,2017: 4500 CN^- C,D	mg/l	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Lead (as Pb)	By AAS Method APHA 23RD Ed,2017 3111 B	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
25	Zinc (as Zn)	By AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	5	1.2	1.5	1.1	1.2	1.4	1.0	1.23
27	Chromium (as Cr^{+6})	Diphenyl Carbazide Method APHA 23RD Ed,2017: 3500Cr B	mg/l	--	0.009	0.012	0.011	0.013	0.016	0.015	0.01
29	Alkalinity	Titration Method APHA 23RD Ed,2017:2320 B	mg/l	200	186	174	168	190	184	172	179.0
30	Aluminium as(Al)	AAS Method	mg/l	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

		APHA 23RD Ed,2017: 3111 D									
31	**Boron (as B)**	**Curcumin Method** APHA 23RD Ed,2017: 4500B, B	mg/l	**0.5**	**0.46**	**0.41**	**0.38**	**0.42**	**0.45**	**0.42**	**0.42**
32	**Total Chromium as Cr**	**By AAS Method** APHA 23RD Ed,2017: 3111 B	mg/l	**0.05**	**0.06**	**0.04**	**0.03**	**0.06**	**0.05**	**0.04**	**0.05**
33	**Total Coliform as TC**	**MPN Method** APHA 23RD Ed,2017 : 9221 b	MPN/ 100ml	Shall not be detectable in any 100ml sample	**<1.8**	**<1.8**	**<1.8**	**<1.8**	**<1.8**	**<1.8**	**<1.8**

CL – Colorless, U/O – Unobjectionable, ND – Not detected.

BDL (Below detection limit) Values :(Cu<0.05 mg/l , Mn<0.005 mg/l, C_6H_5OH<0.001 mg/l, Hg<0.005mg/l, Cd<0.001 mg/l ,Se<0.001 mg/l, As<0.001 mg/l,Pb<0.01 mg/l, Zn<0.05 mg/l, Cr^{+6}<0.05 mg/l, Al<0.001 mg/l , B<0.01 mg/l, NO_3<0.01 mg/l)

Reviewed By

Approved By

Ref: ENVLAB/24-25/TR-00002 **Date: 01.04.2024**

SIX MONTHLY AVERAGES OF GROUND WATER QUALITY ANALYSIS REPORT (OCTOBER-2023 TO MARCH-2024)

1. Name of Client : **M/s Anand Exports, Kalinga Nagar, Jajpur**
2. Sampling Location : **GW2:** Near Staff Quarter Site
3. Sample Collected by : VCSPL Representative

Sl. No.	Parameter	Testing Method	Unit	Standard IS - 10500:2012 Amended on 2015 & 2018	Analysis Result						
					OCT-23	NOV-23	DEC-23	JAN-24	FEB-24	MAR-24	Avg
Essential Characteristics											
1	Colour	Visual Comparison Method APHA 23RD Ed,2017 : 2120 B, C	Hazen	5	<5	<5	<5	<5	<5	<5	<5
2	Odour	Threshold Odour Test APHA 23RD Ed,2017 :2150 B	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	Taste	Flavor Threshold Test APHA 23RD Ed,2017 : 2160 C	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	Nephelometric Method APHA 23RD Ed,2017 :2130 B	NTU	1	0.89	1.09	0.77	1.11	0.89	0.98	0.96
5	pH Value at 25^0C	pH Meter APHA 23RD Ed,2017 : 4500H^+ B	--	6.5-8.5	7.12	7.09	7.21	6.90	7.31	7.19	7.14
6	Total Hardness (as $CaCO_3$)	EDTA Titrimetric Method APHA 23RD Ed,2017 : 2340 C	mg/l	200	145	158	152	144	138	151	148.0
7	Iron (as Fe)	By AAS Method APHA 23RD Ed,2017 : 3111, B	mg/l	1.0	0.23	0.27	0.25	0.28	0.30	0.24	0.26
8	Chloride (as Cl)	Argentometric Method APHA 23RD Ed,2017 : 4500Cl^- B	mg/l	250	36.9	40.8	44.2	46.2	48.5	46.3	43.82
9	Residual, free Chlorine	Iodometric Method APHA 23RD Ed,2017 : 4500Cl, B	mg/l	0.2	ND	ND	ND	ND	ND	ND	ND
Desirable Characteristics											
10	Dissolved Solids	Gravimetric Method APHA 23RD Ed,2017 : 2540 C	mg/l	500	278	296	324	336	310	286	305.0
11	Calcium (as Ca)	EDTA Titrimetric Method APHA 23RD Ed,2017 : 3500Ca B	mg/l	75	44.6	41.9	50.2	52.1	49.6	46.7	47.52
12	Magnesium (as Mg)	Calculation Method APHA 23RD Ed,2017 : 3500Mg B	mg/l	30	8.2	13.0	6.5	3.4	3.4	8.4	7.15
13	Copper (as Cu)	By AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
14	Manganese (as Mn)	Persulfate Method APHA 23RD Ed,2017: 3500Mn B	mg/l	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
15	Sulphate (as SO_4)	Turbidimetric Method APHA 23RD Ed,2017: 4500 $SO4^{2-}$ E	mg/l	200	24.3	21.2	20.7	23.6	21.9	22.5	22.37
16	Nitrate (as NO_3)	By UV-Screen Method APHA 23RD Ed,2017: 4500 NO_3^- E	mg/l	45	5.8	5.2	5.3	5.8	6.2	5.6	5.65
17	Fluoride (as F)	Distillation followed by Spectophotometric Method APHA 23RD Ed,2017: 4500F^- C	mg/l	1.0	0.16	0.19	0.21	0.20	0.17	0.15	0.18
18	Phenolic Compounds (as C_6H_5OH)	Chloroform Extraction by Colorimetric Method APHA 23RD Ed,2017: 5530 B,D	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
19	Mercury (as Hg)	AAS Method APHA 23RD Ed,2017: 3112 B	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
20	Cadmium (as Cd)	AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
21	Selenium (as Se)	By AAS Method APHA 23RD Ed,2017: 3500 Se C	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
22	Arsenic (as As)	By AAS Method APHA 23RD Ed,2017: 3114 B	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
23	Cyanide (as CN)	Distillation followed by Spectophotometric Method APHA 23RD Ed,2017: 4500 CN^- C,D	mg/l	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Lead (as Pb)	By AAS Method APHA 23RD Ed,2017 3111 B	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
25	Zinc (as Zn)	By AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	5	2.3	2.0	2.4	2.2	2.4	2.2	2.25
27	Chromium (as Cr^{+6})	Diphenyl Carbazide Method APHA 23RD Ed,2017: 3500Cr B	mg/l	--	0.015	0.016	0.012	0.010	0.013	0.014	0.01
29	Alkalinity	Titration Method APHA 23RD Ed,2017:2320 B	mg/l	200	231	218	224	210	223	220	221.0

30	**Aluminium as(Al)**	**AAS Method** APHA 23RD Ed,2017: 3111 D	mg/l	**0.03**	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**<0.01**
31	**Boron (as B)**	**Curcumin Method** APHA 23RD Ed,2017: 4500B, B	mg/l	**0.5**	**0.51**	**0.55**	**0.53**	**0.50**	**0.48**	**0.43**	**0.50**
32	**Total Chromium as Cr**	**By AAS Method** APHA 23RD Ed,2017: 3111 B	mg/l	**0.05**	**0.05**	**0.03**	**0.04**	**0.05**	**0.03**	**0.04**	**0.05**
33	**Total Coliform as TC**	**MPN Method** APHA 23RD Ed,2017 : 9221 b	MPN/ 100ml	Shall not be detectable in any 100ml sample	**<1.8**	**<1.8**	**<1.8**	**<1.8**	**<1.8**	**<1.8**	**<1.8**

CL – Colourless, U/O – Unobjectionable, ND – Not detected.

BDL (Below detection limit) Values :(Cu<0.05 mg/l , Mn<0.005 mg/l, C_6H_5OH<0.001 mg/l, Hg<0.005mg/l, Cd<0.001 mg/l ,Se<0.001 mg/l, As<0.001 mg/l,Pb<0.01 mg/l, Zn<0.05 mg/l, Cr^{+6}<0.05 mg/l, Al<0.001 mg/l , B<0.01 mg/l, NO_3<0.01 mg/l)

Reviewed By

Approved By

Ref: ENVLAB/24-25/TR-00003 **Date: 01.04.2024**

SIX MONTHLY AVERAGES OF GROUND WATER QUALITY ANALYSIS REPORT (OCTOBER-2023 TO MARCH-2024)

1. Name of Client : **M/s Anand Exports, Kalinga Nagar, Jajpur**
2. Sampling Location : **GW3: Near Old Office Building Site**
3. Sample Collected by : VCSPL Representative

Sl. No.	Parameter	Testing Method	Unit	Standard IS -10500:2012 Amended on 2015 & 2018	Analysis Result						
					OCT-23	NOV-23	DEC-23	JAN-24	FEB-24	MAR-24	Avg
Essential Characteristics											
1	Colour	Visual Comparison Method APHA 23RD Ed,2017 : 2120 B, C	Hazen	5	<5	<5	<5	<5	<5	<5	<5
2	Odour	Threshold Odour Test APHA 23RD Ed,2017 :2150 B	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	Taste	Flavor Threshold Test APHA 23RD Ed,2017 : 2160 C	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	Nephelometric Method APHA 23RD Ed,2017 :2130 B	NTU	1	1.1	1.5	1.2	0.9	1.1	1.3	1.18
5	pH Value at 25^{0}C	pH Meter APHA 23RD Ed,2017 : 4500H^+ B	--	6.5-8.5	6.99	7.08	6.89	7.12	7.18	7.11	7.06
6	Total Hardness (as $CaCO_3$)	EDTA Titrimetric Method APHA 23RD Ed,2017 : 2340 C	mg/l	200	128	132	125	129	116	120	125.0
7	Iron (as Fe)	By AAS Method APHA 23RD Ed,2017 : 3111, B	mg/l	1.0	0.17	0.21	0.16	0.20	0.24	0.22	0.20
8	Chloride (as Cl)	Argentometric Method APHA 23RD Ed,2017 : 4500Cl^- B	mg/l	250	37.6	38.1	36.6	33.7	32.8	33.8	35.43
9	Residual, free Chlorine	Iodometric Method APHA 23RD Ed,2017 : 4500Cl, B	mg/l	0.2	ND	ND	ND	ND	ND	ND	ND
Desirable Characteristics											
10	Dissolved Solids	Gravimetric Method APHA 23RD Ed,2017 : 2540 C	mg/l	500	258	231	236	240	236	228	238.2
11	Calcium (as Ca)	EDTA Titrimetric Method APHA 23RD Ed,2017 : 3500Ca B	mg/l	75	33.2	35.1	30.9	32.4	30.6	31.8	32.3
12	Magnesium (as Mg)	Calculation Method APHA 23RD Ed,2017 : 3500Mg B	mg/l	30	11.0	10.8	11.6	11.7	9.6	9.9	10.8
13	Copper (as Cu)	By AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
14	Manganese (as Mn)	Persulfate Method APHA 23RD Ed,2017: 3500Mn B	mg/l	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
15	Sulphate (as SO4)	Turbidimetric Method APHA 23RD Ed,2017: 4500 $SO4^{2-}$ E	mg/l	200	13.1	12.7	15.6	11.7	13.3	14.2	13.43
16	Nitrate (as NO3)	By UV-Screen Method APHA 23RD Ed,2017: 4500 NO_3^- E	mg/l	45	5.4	6.0	5.2	4.8	5.1	5.0	5.25
17	Fluoride (as F)	Distillation followed by Spectophotometric Method APHA 23RD Ed,2017: 4500F^- C	mg/l	1.0	0.14	0.11	0.14	0.13	0.12	0.13	0.13
18	Phenolic Compounds (as C6H5OH)	Chloroform Extraction by Colorimetric Method APHA 23RD Ed,2017: 5530 B,D	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
19	Mercury (as Hg)	AAS Method APHA 23RD Ed,2017: 3112 B	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
20	Cadmium (as Cd)	AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
21	Selenium (as Se)	By AAS Method APHA 23RD Ed,2017: 3500 Se C	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
22	Arsenic (as As)	By AAS Method APHA 23RD Ed,2017: 3114 B	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
23	Cyanide (as CN)	Distillation followed by Spectophotometric Method APHA 23RD Ed,2017: 4500 CN^- C,D	mg/l	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Lead (as Pb)	By AAS Method APHA 23RD Ed,2017 3111 B	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
25	Zinc (as Zn)	By AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	5	1.4	1.2	1.0	1.4	1.3	1.2	1.25
27	Chromium (as Cr+6)	Diphenyl Carbazide Method APHA 23RD Ed,2017: 3500Cr B	mg/l	--	0.013	0.015	0.011	0.013	0.012	0.015	0.01
29	Alkalinity	Titration Method	mg/l	200	160	152	158	146	140	142	149.7

		APHA 23RD Ed,2017:2320 B									
30	**Aluminium as(Al)**	**AAS Method** APHA 23RD Ed,2017: 3111 D	mg/l	**0.03**	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**<0.01**
31	**Boron (as B)**	**Curcumin Method** APHA 23RD Ed,2017: 4500B, B	mg/l	**0.5**	**0.34**	**0.30**	**0.33**	**0.29**	**0.32**	**0.27**	**0.31**
32	**Total Chromium as Cr**	**By AAS Method** APHA 23RD Ed,2017: 3111 B	mg/l	**0.05**	**0.04**	**0.06**	**0.05**	**0.03**	**0.05**	**0.04**	**0.05**
33	**Total Coliform as TC**	**MPN Method** APHA 23RD Ed,2017 : 9221 b	MPN/ 100ml	Shall not be detectable in any 100ml sample	**<1.8**	**<1.8**	**<1.8**	**<1.8**	**<1.8**	**<1.8**	**<1.8**

CL – Colourless, U/O – Unobjectionable, ND – Not detected.

BDL (Below detection limit) Values :(Cu<0.05 mg/l , Mn<0.005 mg/l, C_6H_5OH<0.001 mg/l, Hg<0.005mg/l, Cd<0.001 mg/l ,Se<0.001 mg/l, As<0.001 mg/l,Pb<0.01 mg/l, Zn<0.05 mg/l, Cr^{+6}<0.05 mg/l, Al<0.001 mg/l , B<0.01 mg/l, NO_3<0.01 mg/l)

Reviewed By

Approved By

Ref: ENVLAB/24-25/TR-00004 **ANNEXURE-III** **Date: 01.04.2024**

SIX MONTHLY AVERAGES OF SOIL QUALITY ANALYSIS REPORT

(OCTOBER-2023 TO MARCH-2024)

1. Name of Industry : **M/s Anand Exports, Kalinga Nagar , Jajpur**
2. Sampling Location : **S1: Soil From Main Gate Left Site**
3. Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Name of the Parameters	Unit	Testing Method	Analysis Result						
				OCT-23	NOV-23	DEC-23	JAN-24	FEB-24	MAR-24	AVG
1	Colour	--	--	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown
2	Type of Soil	--	--	Acidic	Acidic	Acidic	Acidic	Acidic	Acidic	Acidic
3	pH at 250C	--	IS 2720 (P-26) 1987, RA 2016	6.75	6.61	6.50	6.65	6.70	6.69	6.65
4	Soil Texture	%	Methods of Soil Analyses Black 1965American Society of Agronomy USA	Sandy Loam	Sandy Loam	Loam	Sandy Loam	Loam	Loam	---
5	Bulk Density	gm/cc	USDA 1954 , RA 2010	1.34	1.28	1.50	1.42	2.11	2.60	1.7
6	Moisture content	%	IS 2720 (Part-2) 1973, RA 2015	6.4	5.0	8.0	6.2	6.6	8.3	6.8
7	Chloride as Cl	%	USDA 1954,RA 2010, Page 133	9.5	8.0	7.9	8.8	8.2	7.8	8.4
8	Sulphate as SO4	mg/kg	IS 2720 (P-27)1977 RA 2015	31.6	28.5	33.7	30.5	34.6	33.2	32.0
9	Available Potassium as K	mg/kg	Method of Analysis of Soil by HLS.Tandon	1.45	1.50	2.41	1.63	2.32	2.57	1.98
10	Phosphrous as P	mg/kg	Method of Analysis of Soil by HLS.Tandon	3.8	4.2	4.9	4.2	4.9	4.0	4.3
11	Iron as Fe	mg/kg	EPA 3050B, 7000B Rev 02, 1996	10628	10470	10623	11092	11102	11255	10861.7
12	Total Chromium as Cr	mg/kg	EPA 3050B, 7000B Rev 02, 1996	10.2	6.4	7.0	8.2	9.4	8.1	8.22
13	Organic Carbon	%	Method of Analysis of Soil by HLS.Tandon	1.31	1.25	1.52	1.44	1.65	1.60	1.5
13	Organic Matter	%	Method of Analysis of Soil by HLS.Tandon	2.35	2.20	3.57	2.40	3.54	3.41	2.91
14	Available Nitrogen as N	mg/kg	Method of Analysis of Soil by HLS.Tandon	0.25	0.30	0.54	0.43	0.46	0.38	0.39
15	Electrical Conductivity	µS/cm	IS:14767:2000 (RA 2016)	168.5	174.2	188.6	160.6	182.9	178.4	175.5
16	Silica as SiO2	mg/kg	Method of Analysis of Soil by HLS.Tandon	14.5	13.3	11.7	12.6	13.9	11.5	12.9

Prepared By: **Verified By:**

Ref: ENVLAB/24-25/TR-00005 **Date: 01.04.2024**

SIX MONTHLY AVERAGES OF SOIL QUALITY ANALYSIS REPORT (OCTOBER-2023 TO MARCH-2024)

1. Name of Industry : **M/s Anand Exports, Kalinga Nagar , Jajpur**
2. Sampling Location : **S2:** Soil From Near Staff Quarter Site
3. Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Name of the Parameters	Unit	Testing Method	Analysis Result						
				OCT-23	NOV-23	DEC-23	JAN-24	FEB-24	MAR-24	AVG
1	Colour	--	--	Brown	Brown	Brown	Brown	Brown	Brown	Brown
2	Type of Soil	--	--	Basic	Basic	Basic	Basic	Basic	Basic	Basic
3	pH at 250C	--	IS 2720 (P-26) 1987, RA 2016	6.85	6.57	6.60	6.89	6.81	6.77	6.75
4	Soil Texture	%	Methods of Soil Analyses Black 1965American Society of Agronomy USA	Sandy Loam	Loam	Loam	Sandy Loam	Loam	Loam	Loam
5	Bulk Density	gm/cc	USDA 1954 , RA 2010	1.33	1.40	2.19	1.26	2.50	2.57	1.9
6	Moisture content	%	IS 2720 (Part-2) 1973, RA 2015	6.1	7.2	7.0	6.9	7.8	8.5	7.3
7	Chloride as Cl	%	USDA 1954,RA 2010, Page 133	8.2	7.0	6.5	7.4	6.3	7.2	7.1
8	Sulphate as SO4	mg/kg	IS 2720 (P-27)1977 RA 2015	36.5	30.2	32.4	34.9	29.8	30.3	32.4
9	Available Potassium as K	mg/kg	Method of Analysis of Soil by HLS.Tandon	1.40	1.25	1.31	1.44	1.37	1.32	1.35
10	Phosphrous as P	mg/kg	Method of Analysis of Soil by HLS.Tandon	4.5	4.1	5.7	5.3	5.0	4.8	4.9
11	Iron as Fe	mg/kg	EPA 3050B, 7000B Rev 02, 1996	10711	9896	10063	10158	9847	10075	10125.0
12	Total Chromium as Cr	mg/kg	EPA 3050B, 7000B Rev 02, 1996	6.0	8.1	6.5	8.9	8.5	7.7	7.62
13	Organic Carbon	%	Method of Analysis of Soil by HLS.Tandon	1.29	2.21	2.40	2.03	3.64	2.27	2.3
14	Organic Matter	%	Method of Analysis of Soil by HLS.Tandon	2.28	4.36	4.11	2.35	4.12	3.27	3.42
15	Available Nitrogen as N	mg/kg	Method of Analysis of Soil by HLS.Tandon	1.31	1.26	1.20	0.86	1.45	1.21	1.22
16	Electrical Conductivity	µS/cm	IS:14767:2000 (RA 2016)	162.8	180.2	177.4	166.8	180.8	174.6	173.8
17	Silica as SiO2	mg/kg	Method of Analysis of Soil by HLS.Tandon	14.3	10.5	11.0	12.2	10.4	12.5	11.8

Prepared By: **Verified By:**

Ref: ENVLAB/24-25/TR-00006 **Date: 01.04.2024**

SIX MONTHLY AVERAGES OF SOIL QUALITY ANALYSIS REPORT (OCTOBER-2023 TO MARCH-2024)

1. Name of Industry : **M/s Anand Exports, Kalinga Nagar , Jajpur**
2. Sampling Location : **S3:** Soil From Old Office Building site
3. Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Name of the Parameters	Unit	Testing Method	Analysis Result						
				OCT-23	NOV-23	DEC-23	JAN-24	FEB-24	MAR-24	AVG
1	Colour	--	--	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown
2	Type of Soil	--	--	Basic	Basic	Basic	Basic	Basic	Basic	Basic
3	pH at 250C	--	IS 2720 (P-26) 1987, RA 2016	6.78	6.61	6.84	6.75	6.89	6.75	6.77
4	Soil Texture	%	Methods of Soil Analyses Black 1965American Society of Agronomy USA	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Loam	Loam	Sandy Loam
5	Bulk Density	gm/cc	USDA 1954 , RA 2010	4.32	3.65	4.02	2.48	1.89	2.51	3.15
6	Moisture content	%	IS 2720 (Part-2) 1973, RA 2015	7.3	9.0	7.8	5.9	6.3	6.2	7.1
7	Chloride as Cl	%	USDA 1954,RA 2010, Page 133	9.2	10.4	8.8	8.2	7.9	8.0	8.8
8	Sulphate as SO4	mg/kg	IS 2720 (P-27)1977 RA 2015	38.5	34.1	30.2	28.9	33.7	36.4	33.6
9	Available Potassium as K	mg/kg	Method of Analysis of Soil by HLS.Tandon	1.85	1.76	1.50	1.47	1.63	1.54	1.63
10	Phosphrous as P	mg/kg	Method of Analysis of Soil by HLS.Tandon	6.0	5.1	4.6	5.5	4.9	5.0	5.2
11	Iron as Fe	mg/kg	EPA 3050B, 7000B Rev 02, 1996	9763	9978	9661	9358	9715	10128	9767.2
12	Total Chromium as Cr	mg/kg	EPA 3050B, 7000B Rev 02, 1996	8.9	6.7	7.0	7.3	9.1	6.9	7.65
13	Organic Carbon	%	Method of Analysis of Soil by HLS.Tandon	1.35	1.49	1.20	1.28	1.32	1.63	1.4
14	Organic Matter	%	Method of Analysis of Soil by HLS.Tandon	3.63	3.57	2.76	2.82	3.24	4.08	3.35
15	Available Nitrogen as N	mg/kg	Method of Analysis of Soil by HLS.Tandon	0.28	0.33	0.21	0.20	0.32	0.30	0.27
16	Electrical Conductivity	µS/cm	IS:14767:2000 (RA 2016)	167.8	172.6	152.5	148.7	180.2	186.5	168.1
17	Silica as SiO2	mg/kg	Method of Analysis of Soil by HLS.Tandon	9.2	7.0	7.8	12.6	10.4	10.2	9.5

Prepared By: VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Verified By: P. Pati VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Ref: ENVLAB/24-25/TR-00007 **Date: 01.04.2024**

SIX MONTHLY AVERAGES OF SOIL QUALITY ANALYSIS REPORT (OCTOBER-2023 TO MARCH-2024)

1. Name of Industry : **M/s Anand Exports, Kalinga Nagar , Jajpur**
2. Sampling Location : **S4:** Soil From Near Crusher Site
3. Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Name of the Parameters	Unit	Testing Method	Analysis Result						
				OCT-23	NOV-23	DEC-23	JAN-24	FEB-24	MAR-24	AVG
1	Colour	--	--	Brown	Brown	Reddish Brown	Reddish Brown	Brown	Reddish Brown	Reddish Brown
2	Type of Soil	--	--	Acidic	Acidic	Acidic	Acidic	Acidic	Acidic	Acidic
3	pH at 250C	--	IS 2720 (P-26) 1987, RA 2016	7.02	6.61	6.78	6.55	6.62	6.70	6.71
4	Soil Texture	%	Methods of Soil Analyses Black 1965American Society of Agronomy USA	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam
5	Bulk Density	gm/cc	USDA 1954 , RA 2010	1.26	1.31	1.38	1.22	1.40	2.02	1.43
6	Moisture content	%	IS 2720 (Part-2) 1973, RA 2015	6.5	5.8	7.0	6.7	7.2	6.6	6.6
7	Chloride as Cl	%	USDA 1954,RA 2010, Page 133	8.6	7.4	7.2	6.9	8.0	9.4	7.9
8	Sulphate as SO4	mg/kg	IS 2720 (P-27)1977 RA 2015	29.8	30.2	28.6	30.4	32.8	30.2	30.3
9	Available Potassium as K	mg/kg	Method of Analysis of Soil by HLS.Tandon	1.42	1.40	1.38	1.42	1.33	1.44	1.40
10	Phosphrous as P	mg/kg	Method of Analysis of Soil by HLS.Tandon	4.9	5.0	3.9	4.4	4.9	5.2	4.7
11	Iron as Fe	mg/kg	EPA 3050B, 7000B Rev 02, 1996	10243	10608	10021	10042	10218	10226	10226.3
12	Organic Carbon	%	Method of Analysis of Soil by HLS.Tandon	1.32	1.49	1.30	1.35	1.50	1.52	1.4
13	Total Chromium as Cr	mg/kg	EPA 3050B, 7000B Rev 02, 1996	8.2	7.6	6.8	5.7	6.0	6.5	6.80
14	Organic Matter	%	Method of Analysis of Soil by HLS.Tandon	2.28	2.34	1.72	1.52	2.30	2.36	2.09
15	Available Nitrogen as N	mg/kg	Method of Analysis of Soil by HLS.Tandon	0.34	0.41	0.26	0.32	0.38	0.40	0.35
16	Electrical Conductivity	µS/cm	IS:14767:2000 (RA 2016)	174.6	181.6	164.2	157.6	182.5	179.6	173.4
17	Silica as SiO2	mg/kg	Method of Analysis of Soil by HLS.Tandon	9.2	8.6	10.1	10.4	8.6	7.9	9.1

Prepared By: **Verified By:**

Ref: ENVLAB/24-25/TR-00008 **ANNEXURE-V** **Date: 01.04.2024**

SIX MONTHLY AVERAGE OF AMBIENT AIR QUALITY MONITORING REPORT (OCTOBER-2023 TO MARCH-2024) CORE ZONE

1. Name of Industry : **M/s. Anand Exports, Kalinga Nagar , Jajpur**
2. Sampling Location : **AAQMS-1** : Near Old Office Building Site
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler.
4. Sample collected by : VCSPL representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	Cr ($\mu g/m^3$)
OCT-23	56.8	31.5	4.6	11.2	10.8	0.25	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NOV-23	60.3	32.3	5.1	10.9	10.3	0.26	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DEC-23	61.2	31.7	5.5	10.4	10.1	0.31	BDL	BDL	BDL	BDL	BDL	BDL	BDL
JAN-24	62.5	34.6	5.2	11.6	10.9	0.29	BDL	BDL	BDL	BDL	BDL	BDL	BDL
FEB-24	64.3	35.2	5.6	12.4	11.2	0.34	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MAR-24	61.9	32.9	5	11.3	10.5	0.32	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	180	4	400	5	1	20	1	6	--
Monthly Average	61.2	33.0	5.2	11.3	10.6	0.30	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Testing method	Gravimetric	Gravimetric	Improved West and Geake method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indophenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	AAS method after sampling

BDL Values: ***SO2***< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$,O_3<4 $\mu g/m^3$, CO-<0.1 mg/m^3, NH_3 <20 $\mu g/m^3$, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Ni<0.01 ng/m^3 , Pb<0.00 $\mu g/m^3$, As < 0.001 ng/m^3, Cr <0.005 $\mu g/m^3$

Reviewed by: **Approved by:**

Ref: ENVLAB/24-25/TR-00009 **Date: 01.04.2024**

SIX MONTHLY AVERAGE OF AMBIENT AIR QUALITY MONITORING REPORT (OCTOBER-2023 TO MARCH-2024) CORE ZONE

1. Name of Industry : **M/s. Anand Exports, Kalinga Nagar , Jajpur**
2. Sampling Location : **AAQMS-2** : Near Washing Plant
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler.
4. Sample collected by : VCSPL representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	Cr ($\mu g/m^3$)
OCT-23	57.9	30.5	6.2	14.5	11.4	0.35	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NOV-23	59.6	31.9	8.5	15.2	13.6	0.46	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DEC-23	63.6	32.7	7.9	15.7	12.9	0.51	BDL	BDL	BDL	BDL	BDL	BDL	BDL
JAN-24	68.9	34.6	8	16.1	12.8	0.43	BDL	BDL	BDL	BDL	BDL	BDL	BDL
FEB-24	64.3	33.5	7.7	15.9	14.2	0.55	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MAR-24	63.7	34.2	7.6	15.3	13.8	0.48	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	180	4	400	5	1	20	1	6	--
Monthly Average	63.0	32.9	7.7	15.5	13.1	0.46	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Testing method	Gravimetric	Gravimetric	Improved West and Geake method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indophenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	AAS method after sampling

BDL Values: ***SO2*** $< 4\ \mu g/m^3$, $NO_X < 9\ \mu g/m^3$, $O_3 < 4\ \mu g/m^3$, CO-<0.1 mg/m^3, $NH_3 < 20\ \mu g/m^3$, $C_6H_6 < 0.001\ \mu g/m^3$, BaP<0.002 ng/m^3, Ni<0.01 ng/m^3, Pb<0.001 $\mu g/m^3$, As < 0.001 ng/m^3, Cr <0.005 $\mu g/m^3$

Reviewed by: **Approved by:**

Ref: ENVLAB/24-25/TR-00010 **Date: 01.04.2024**

SIX MONTHLY AVERAGE OF AMBIENT AIR QUALITY MONITORING REPORT (OCTOBER-2023 TO MARCH-2024) BUFFER ZONE

1. Name of Industry : **M/s. Anand Exports, Kalinga Nagar , Jajpur**
2. Sampling Location : **AAQMS-1** : Near Staff Quarter Site
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler.
4. Sample collected by : VCSPL representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	Cr ($\mu g/m^3$)
OCT-23	56.3	31.5	5.5	16.3	7.9	0.54	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NOV-23	60.9	32.9	6.2	17.5	8.9	0.62	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DEC-23	62.5	34.6	5.9	18.4	9.5	0.59	BDL	BDL	BDL	BDL	BDL	BDL	BDL
JAN-24	64.5	35.2	6.8	17.9	7.6	0.67	BDL	BDL	BDL	BDL	BDL	BDL	BDL
FEB-24	62.3	34.2	6.6	17.2	9.2	0.64	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MAR-24	61.9	33.1	5.7	16.8	8.4	0.60	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	180	4	400	5	1	20	1	6	--
Monthly Average	61.4	33.6	6.1	17.4	8.6	0.61	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Testing method	Gravimetric	Gravimetric	Improved West and Geake method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indophenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	AAS method after sampling

BDL Values: ***SO2***$< 4\ \mu g/m^3$, $NO_X < 9\ \mu g/m^3$, $O_3 < 4\ \mu g/m^3$, CO-<0.1 mg/m^3, $NH_3 < 20\ \mu g/m^3$, $C_6H_6 < 0.001\ \mu g/m^3$, BaP<0.002 ng/m^3, Ni<0.01 ng/m^3, Pb<0.001 $\mu g/m^3$, As < 0.001 ng/m^3, Cr <0.005 $\mu g/m^3$

Reviewed by: **Approved by:** P. Pati

Ref: ENVLAB/24-25/TR-00011 **Date: 01.04.2024**

SIX MONTHLY AVERAGE OF AMBIENT AIR QUALITY MONITORING REPORT (OCTOBER-2023 TO MARCH-2024) BUFFER ZONE

1. Name of Industry : **M/s. Anand Exports, Kalinga Nagar , Jajpur**
2. Sampling Location : **AAQMS-2** : Near Main Gate Site
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler.
4. Sample collected by : VCSPL representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	Cr ($\mu g/m^3$)
OCT-23	52.9	29.5	5.1	13.5	9.3	0.38	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NOV-23	56.4	31.2	6.8	14.6	9.7	0.42	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DEC-23	58.1	32.5	6.2	14.9	8.9	0.49	BDL	BDL	BDL	BDL	BDL	BDL	BDL
JAN-24	56.3	34.2	5.9	15.7	8.7	0.51	BDL	BDL	BDL	BDL	BDL	BDL	BDL
FEB-24	57.7	32.6	5.4	14.6	9.5	0.46	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MAR-24	58.3	31.9	6	15.1	10.1	0.52	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	180	4	400	5	1	20	1	6	--
Monthly Average	56.6	32.0	5.9	14.7	9.4	0.46	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Testing method	Gravimetric	Gravimetric	Improved West and Geake method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indophenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	AAS method after sampling

BDL Values: ***SO2***< 4 $\mu g/m^3$, NO_X< 9 $\mu g/m^3$,O_3<4 $\mu g/m^3$, CO-<0.1 mg/m^3, NH_3 <20 $\mu g/m^3$, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Ni<0.01 ng/m^3 , Pb<0.001 $\mu g/m^3$, As < 0.001 ng/m^3, Cr <0.005 $\mu g/m^3$

Reviewed by: **Approved by:** P. Pati

Ref: ENVLAB/24-25/TR-00012 **Date: 01.04.2024**

SIX MONTHLY AVERAGE OF AMBIENT AIR QUALITY MONITORING REPORT (OCTOBER-2023 TO MARCH-2024) BUFFER ZONE

1. Name of Industry : **M/s. Anand Exports, Kalinga Nagar , Jajpur**
2. Sampling Location : **AAQMS-3** : Near Crusher Site
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler.
4. Sample collected by : VCSPL representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	Cr ($\mu g/m^3$)
OCT-23	55.9	31.5	5.9	16.2	9.0	0.54	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NOV-23	57.4	32.6	6.0	17.8	8.9	0.51	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DEC-23	53.6	29.8	5.8	16.9	9.3	0.56	BDL	BDL	BDL	BDL	BDL	BDL	BDL
JAN-24	60.4	33.5	6.3	18.1	9.7	0.54	BDL	BDL	BDL	BDL	BDL	BDL	BDL
FEB-24	57.5	32.6	6.1	17.9	8.8	0.58	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MAR-24	60.6	34.1	6.0	16.5	9.2	0.52	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	180	4	400	5	1	20	1	6	--
Monthly Average	57.6	32.4	6.0	17.2	9.2	0.54	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Testing method	Gravimetric	Gravimetric	Improved West and Geake method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	AAS method after sampling

BDL Values: ***SO2*** $< 4\ \mu g/m^3$, $NO_X < 9\ \mu g/m^3$, $O_3 < 4\ \mu g/m^3$, CO-$<0.1\ mg/m^3$, $NH_3 < 20\ \mu g/m^3$, $C_6H_6 < 0.001\ \mu g/m^3$, BaP$<0.002\ ng/m^3$, Ni$<0.01\ ng/m^3$, Pb$<0.001\ \mu g/m^3$, As $< 0.001\ ng/m^3$, Cr $<0.005\ \mu g/m^3$

Reviewed by: **Approved by:**

Ref: ENVLAB/24-25/TR-00013 **ANNEXURE-VII** **Date: 01.04.2024**

SIX MONTHLY AVERAGES OF SURFACE WATER QUALITY ANALYSIS REPORT (OCTOBER-2023 TO MARCH-2024)

1. Name of Industry : **M/s Anand Exports , Kalinga Nagar , Jajpur**
2. Sampling location : **SW1:** Brahmani River Upstream
3. Sample Collected By : VCSPL representative in presence of Client's representative

Sl No.	Parameter	Testing Methods	Unit	Standards as per IS-2296:1992 Class –'C'	Analysis Results						
					OCT-23	NOV-23	DEC-23	JAN-24	FEB-24	MAR-24	Averages
1	Colour	Visual Comparison Method APHA 23RD Ed,2017 : 2120 B, C	Hazen	300	10	<15	10	<10	<10	<10	<10
2	pH at 25^{0}C	pH Meter APHA 23RD Ed,2017 4500H$^+$ B	--	6.0-9.0	7.42	7.58	7.51	7.39	7.45	7.50	7.48
3	Dissolved Oxygen (min)	Modified Winkler Method APHA 23RD Ed,2017 : 4500 O$^-$ C	mg/l	4.0	6.2	6.0	7.6	7.0	6.4	6.8	6.67
4	Turbidity	Nephelometric Method APHA 23RD Ed,2017: 2130 B	NTU	--	4.5	5.2	4.9	5.5	6.2	5.6	5.32
5	Chloride (max)	Titrimetric Method APHA 23RD Ed,2017: 4500Cl$^-$ B	mg/l	600	22.5	28.1	30.3	26.1	28.6	24.4	26.7
6	Total Dissolved Solids	Gravimetric Method APHA 23RD Ed,2017: 2540 C	mg/l	1500	130	142	128	132	130	140	134
7	Oil & Grease (max)	Gravimetric Method (Solvent Extraction) APHA 23RD Ed,2017:5520-B	mg/l	--	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)
8	BOD (3) days at 27^{0}C (max)	Oxygen Depletion Method IS 3025(P-44) : 1993 RA 2003	mg/l	3.0	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)
9	Chemical Oxygen Demand (COD)	Open Reflux Method APHA 23RD Ed,2017: 5220 C	mg/l	--	BDL(<4)	BDL(<4)	BDL(<4)	BDL(<4)	BDL(<4)	BDL(<4)	BDL(<4)
10	Arsenic as As	By AAS Method APHA 23RD Ed,2017: 3114 B	mg/l	0.2	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)
11	Lead as Pb	By AAS Method APHA 23RD Ed,2017 3111 B	mg/l	0.1	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
12	Cadmium as Cd (max)	By AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	0.01	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
13	Hexa Chromium as Cr^{+6}	Diphenyl Carbazide Method APHA 23RD Ed,2017: 3500Cr B	mg/l	0.05	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
14	Copper as Cu (max)	By AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	1.5	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)
15	Zinc as Zn(max)	By AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	15	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)	BD L(<0.03)	BD L(<0.03)
16	Selenium as Se (max)	By AAS Method APHA 23RD Ed,2017: 3500 Se C	mg/l	0.05	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)
17	Cyanide as CN (max)	Distillation followed by Spectophotometric Method APHA 23RD Ed,2017: 4500 CN$^-$ C,D	mg/l	0.05	BDL (<0.01)	BD L(<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
18	Fluoride as F (max)	Distillation followed by Spectrophotometric Method APHA 23RD Ed,2017: 4500F$^-$ C	mg/l	1.5	0.25	0.21	0.23	0.19	0.22	0.23	0.22
19	Sulphates (SO_4) (max)	Turbidimetric Method APHA 23RD Ed,2017: 4500 SO_4^{2-} E	mg/l	400	15.2	14.6	15.0	14.8	14.4	13.9	14.7
20	Phenolic Compounds as C_6H_5OH (max)	Chloroform extraction by Colorimetric Method APHA 23RD Ed,2017: 5530 B,D	mg/l	0.005	BDL (<0.001)	BDL (<0.001)	BDL <0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)
21	Iron as Fe (max)	By AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	0.5	0.32	0.30	0.41	0.39	0.33	0.36	0.35
22	Total Chromium as Cr	By AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	0.05	0.06	0.04	0.04	0.03	0.06	0.04	0.05
23	Nitrate as NO_3 (max)	By UV-Screen Method APHA 23RD Ed,2017: 4500 NO_3^- E	mg/l	50	2.3	3.1	2.8	3.0	2.9	3.3	2.90
	Total Coli form	By Multiple Tube Fermentation Technique APHA 23RD Ed,2017: 9221 B	MPN/ 100 ml	5000	1400	1360	1440	1280	1380	1260	1353

Reviewed By **Approved By**

Ref: ENVLAB/24-25/TR-00014 **Date: 01.04.2024**

SIX MONTHLY AVERAGES OF SURFACE WATER QUALITY ANALYSIS REPORT (OCTOBER-2023 TO MARCH-2024)

1. Name of Industry : **M/s Anand Exports, Kalinga Nagar, Jajpur**
2. Sampling location : **SW2: Brahmani River Downstream**
3. Sample Collected By : VCSPL representative in presence of Client's representative

Sl. No.	Parameter	Testing Methods	Unit	Standards as per IS-2296:1992 Class –'C'	Analysis Result						
					OCT-23	NOV-23	DEC-23	JAN-24	FEB-24	MAR-24	Averages
1	Colour	Visual Comparison Method APHA 23RD Ed,2017 : 2120 B, C	Hazen	300	15	10	10	10	15	10	11.7
2	pH at 250C	pH Meter APHA 23RD Ed,2017 4500H+ B	--	6.0-9.0	7.71	7.52	7.66	7.60	7.76	7.59	7.64
3	Dissolved Oxygen (min)	Modified Winkler Method APHA 23RD Ed,2017 : 4500 O· C	mg/l	4.0	5.4	4.9	6.1	5.5	6.3	5.8	5.67
4	Turbidity	Nephelometric Method APHA 23RD Ed,2017: 2130 B	NTU	--	5.0	4.7	4.4	4.9	5.5	5.2	4.95
5	Chloride (max)	Titrimetric Method APHA 23RD Ed,2017: 4500Cl· B	mg/l	600	24.2	23.8	23.9	25.2	24.8	23.6	24.3
6	Total Dissolved Solids	Gravimetric Method APHA 23RD Ed,2017: 2540 C	mg/l	1500	210	206	198	202	212	182	202
7	Oil & Grease (max)	Gravimetric Method (Solvent Extraction) APHA 23RD Ed,2017:5520-B	mg/l	--	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)
8	BOD (3) days at 270C (max)	Oxygen Depletion Method IS 3025(P-44) : 1993 RA 2003	mg/l	3.0	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)
9	Chemical Oxygen Demand (COD)	Open Reflux Method APHA 23RD Ed,2017: 5220 C	mg/l	--	BDL(<4)	BDL(<4)	BDL(<4)	BDL(<4)	BDL(<4)	BDL(<4)	BDL(<4)
10	Arsenic as As	By AAS Method APHA 23RD Ed,2017: 3114 B	mg/l	0.2	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)
11	Lead as Pb	By AAS Method APHA 23RD Ed,2017 3111 B	mg/l	0.1	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
12	Cadmium as Cd (max)	By AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	0.01	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
13	Hexa Chromium as Cr+6	Diphenyl Carbazide Method APHA 23RD Ed,2017: 3500Cr B	mg/l	0.05	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
14	Copper as Cu (max)	By AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	1.5	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)
15	Zinc as Zn(max)	By AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	15	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)
16	Selenium as Se (max)	By AAS Method APHA 23RD Ed,2017: 3500 Se C	mg/l	0.05	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)
17	Cyanide as CN (max)	Distillation followed by Spectophotometric Method APHA 23RD Ed,2017: 4500 CN· C,D	mg/l	0.05	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
18	Fluoride as F (max)	Distillation followed by Spectrophotometric Method APHA 23RD Ed,2017: 4500F- C	mg/l	1.5	0.53	0.48	0.51	0.50	0.55	0.49	0.51
19	Sulphates (SO4) (max)	Turbidimetric Method APHA 23RD Ed,2017: 4500 SO_4^{2-} E	mg/l	400	53.2	49.6	50.5	50.1	46.5	49.8	50.0
20	Phenolic Compounds as C6H5OH (max)	Chloroform extraction by Colorimetric Method APHA 23RD Ed,2017: 5530 B,D	mg/l	0.005	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)
21	Iron as Fe (max)	By AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	0.5	0.40	0.44	0.38	0.45	0.51	0.50	0.45
22	Total Chromium as Cr	By AAS Method APHA 23RD Ed,2017: 3111 B	mg/l	0.04	0.05	0.05	0.05	0.04	0.04	0.05	0.05
23	Nitrate as NO3 (max)	By UV-Screen Method APHA 23RD Ed,2017: 4500 NO_3^- E	mg/l	50	18.2	20.1	17.9	18.8	19.1	19.5	18.93
24	Total Coli form	By Multiple Tube Fermentation Technique APHA 23RD Ed,2017: 9221 B	MPN/ 100 ml	5000	1360	1220	1330	1440	1250	1360	1335

Reviewed By **Approved By**

Ref: ENVLAB/24-25/TR-00015 **ANNEXURE-VII** **Date: 01.04.2024**

SIX MONTHLY AVERAGES OF WASTE WATER QUALITY ANALYSIS REPORT (OCTOBER-2023 TO MARCH-2024)

1. Name of Industry : **M/s Anand Exports , Kalinga Nagar , Jajpur**
2. Sampling location : **WW1:** Effluent Treatment Plant (ETP)
3. Sample Collected By : VCSPL representative

Sl. No.	Parameters	Testing Methods	Unit	Standards (In land Surface water)	Analysis Results						
					OCT-23	NOV-23	DEC-23	JAN-24	FEB-24	MAR-24	Average
1	Colour	Visual Comparison Method APHA 2120 B; 23rd Edition, 2017	Hazen	Colourless	15	15	10	<10	<10	5	10
2	Odour	Threshold Odour Method APHA 2150 B; 23rd Edition, 2017	--	Odourless	pungent smell	pungent smell	pungent smell	pungent smell	pungent smell	pungent smell	pungent smell
3	pH at 250C	pH Meter APHA 4500 H+B; 23rd Edition, 2017	--	5.5-9.0	7.62	7.75	7.80	7.68	7.70	7.56	7.7
4	Total Suspended Solids	Gravimetric Method APHA 2540 D; 23rd Edition, 2017	mg/l	100	40.0	34.0	38.0	41.0	36.0	33.0	37.0
5	Copper as Cu	By AAS Method APHA 3111 B; 23rd Edition, 2017	mg/l	3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6	Fluoride as F	Distillation followed by Spectophotometric Method APHA 4500 F- C,D; 23rd Edition, 2017	mg/l	2	0.35	0.30	0.34	0.29	0.31	0.29	0.31
7	Total Residual Chlorine	Iodometric Method APHA 23RD Ed,2017 : 4500Cl, B	mg/l	1	ND	ND	ND	ND	ND	ND	ND
8	Iron as Fe	By AAS Method APHA 3111 B; 23rd Edition, 2017	mg/l	3	0.44	0.37	0.40	0.31	0.35	0.33	0.37
9	Manganese as Mn	By AAS Method APHA 3111 B; 23rd Edition, 2017	mg/l	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
10	Nitrate as NO3	By UV-Screen Method APHA 4500 NO3- B; 23rd Edition, 2017	mg/l	10	7.45	7.19	6.77	6.91	7.35	7.29	7.16
11	Phenolic Compounds as C6H5OH	Distillation Followed by Spectophotometric Method APHA 5530-B, D; 23rd Edition, 2017	mg/l	1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
12	Selenium as Se	By AAS Method APHA 3500 Se C; 23rd Edition, 2017	mg/l	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
13	Cadmium as Cd	By AAS Method APHA 3111 B; 23rd Edition, 2017	mg/l	2.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
14	Cyanide as CN	Distillation Followed by Spectophotometric Method APHA 4500 –CN-C,E; 23rd Edition, 2017	mg/l	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
15	Lead as Pb	By AAS Method APHA 3111 B; 23rd Edition, 2017	mg/l	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
16	Mercury as Hg	By AAS Method APHA 3112 B; 23rd Edition, 2017	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
17	Nickel as Ni	By AAS Method APHA 3111 B; 23rd Edition, 2017	mg/l	3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Arsenic as As	By AAS Method APHA 3114 B; 23rd Edition, 2017	mg/l	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
19	Total Chromium as Cr	By AAS Method APHA 3111 B; 23rd Edition, 2017	mg/l	2	0.31	0.25	0.22	0.26	0.25	0.24	0.26
20	Zinc as Zn	By AAS Method APHA 3111 B; 23rd Edition, 2017	mg/l	5	0.031	0.026	0.030	0.033	0.032	0.029	0.030
21	Hexavalent Chromium as Cr+6	By AAS Method APHA 3500 Cr B; 23rd Edition, 2017	mg/l	0.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
22	Vanadium as V	By AAS Method APHA 3500 V; 23rd Edition, 2017	mg/l	0.2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Temperature	By Thermometer APHA 2550 B; 23rd Edition, 2017	^{o}C	Shall not exceed 50C above the receiving water temperature	24.6	26.7	25.7	28.6	27.9	30.5	27.3
24	Dissolved Oxygen	Modified Winkler Method APHA 4500 O. C; 23rd Edition, 2017	mg/l	--	6.2	6.6	5.8	6.0	5.4	5.6	5.9
25	Biochemical Oxygen	Oxygen Depletion Method IS 3025 (Part 44):2003	mg/l	30	4.4	4.1	3.9	4.2	3.6	4.0	4.0

	Demand as BOD										
26	Chemical Oxygen Demand as COD	Open Reflux Method APHA 5220 B; 23rd Edition, 2017	mg/l	250	20.0	18.0	14.0	17.0	15.0	16.0	16.7
27	Oil & Grease	Gravimetric Method (Solvent Extraction) APHA 5520 B; 23rd Edition, 2017	mg/l	10	3.2	3.5	4.0	3.8	4.0	4.2	3.8
28	Ammonical Nitrogen as N	By TKN Method APHA 4500-NH3 C; 23rd Edition, 2017	mg/l	50	2.2	2.7	2.5	3.0	2.8	2.5	2.6
29	Total Kjeldahl Nitrogen as N	By TKN Method APHA 4500-Norg C; 23rd Edition, 2017	mg/l	100	3.5	4.2	3.9	4.7	4.0	4.4	4.1
30	Sulphide as S	By Methylene Blue Method APHA 4500-S D; 23rd Edition, 2017	mg/l	2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
31	Free Ammonia as NH3	By Calculation	mg/l	10	4.2	5.0	4.9	5.2	5.0	5.4	5.0
32	Particulate Size of Suspended Solids	Gravimetric Method APHA 2540 D; 23rd Edition, 2017	µ	Shall pass 850 micron IS Sieve	<850	<850	<850	<850	<850	<850	<850
33	Bio-assay Test	Evaluating Acute Toxicity IS 6582 (P-2) 2008	%	90% survival of fish after 96 hours in 100% effluent	98% Survival of Fish after 96 Hrs in 100% Effluent	98% Survival of Fish after 96 Hrs in 100% Effluent	98% Survival of Fish after 96 Hrs in 100% Effluent	98% Survival of Fish after 96 Hrs in 100% Effluent	98% Survival of Fish after 96 Hrs in 100% Effluent	98% Survival of Fish after 96 Hrs in 100% Effluent	98% Survival of Fish after 96 Hrs in 100% Effluent

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