

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL  
EASTERN ZONE BENCH, KOLKATA  
ORIGINAL APPLICATION NO. 73 OF 2024 / EZ**

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Mantu Das

...Applicant

VERSUS

Odisha of Odisha & Others

...Respondents

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SPCB Odisha, R.No.2

Through

**Sri Dipanjan Ghosh,**  
Advocates for the Respondent No.2  
(State Pollution Control Board, Odisha)  
e-mail: dpnjnghsh0@gmail.com  
Phone No.:9903080977

Kolkata  
Date:

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL  
EASTERN ZONE BENCH, KOLKATA  
ORIGINAL APPLICATION NO. 73 OF 2024 / EZ

07 MAY 2024

Mantu Das ...Applicant

VERSUS

Odisha of Odisha & Others ...Respondents

AFFIDAVIT ON BEHALF OF THE STATE  
POLLUTION CONTROL BOARD, ODISHA,  
RESPONDENT NO.2 IN COMPLIANCE TO  
ORDER DTD.21.03.2024 OF THIS HON'BLE  
TRIBUNAL.

I, Dr. Kailasam Murugesan, IFS, son of late  
Paramasivam Kailasam aged around 56 years, at present  
working as Member Secretary, State Pollution Control Board,  
having my office at Paribesh Bhawan, A/118, Nilakantha  
Nagar, Unit-VIII, P.O. Nayapalli, Bhubaneswar, Dist – Khurda,  
Odisha-751012, do hereby solemnly affirm and state as under:

- 1. That I am the Member Secretary of the Respondent No.2  
Board and, as such, am well-acquainted with the facts



*[Handwritten signature]*



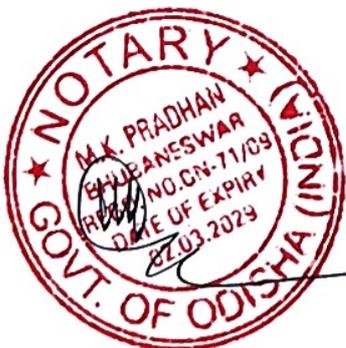
MANJULA KUMAR PRADHAN  
 NOTARY PUBLIC  
 BHUBANESWAR  
 REGD. NO. ON-7112009  
 PH:-9437627119 (M)

and circumstances with the case and competent to swear this affidavit.

2. That this Hon'ble Tribunal suo-motu on a complaint letter submitted by the Applicant alleging severe water pollution leading to kidney related deaths in the Kaliapani area of Jajpur district, Odisha vide their order dtd.21.03.2024 has been pleased to constitute a committee comprising of the following members:

- (i) Senior Scientist, Odisha Pollution Control Board,
- (ii) Senior Scientist, Central Pollution Control Board,
- (iii) Senior Officer, Central Ground Water Board, and
- (iv) Collector & District Magistrate, Jajpur, or his representative not below the rank of Additional District Magistrate.

3. That it is further humbly submitted that the committee has been directed to visit the sites and submit its report on affidavit with reference to the allegations made in the complaint. The Collector & DM, Jajpur has been declared as the Nodal Office for all logistic purpose and the R.No.2 Board has been directed to file the report of the



MANJULA KUMAR PRADHAN  
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 BHUBANESWAR  
 REGD.NO.ON-71/2009  
 PH:-9437627119 (M)

committee on affidavit. In compliance to the direction dtd.21.03.2024, the committee has carried out inspection of the site i.e. 11 nos. of mines in Sukinda Valley on 30.04.2024 to verify the factual aspects in the light of the allegation contained in the complaint. The committee has submitted their report dtd.06.05.2024 along with some observations and recommendations. Copy of the report of the committee along with its annexures is annexed to this affidavit and marked as ANNEXURE – R2/1 Colly.

4. That this affidavit is filed in order to bring the Inspection Report at Annexure-R2/1 Colly on record before the Hon'ble Tribunal in compliance to order dtd.21.03.2024 of the Hon'ble Tribunal.
5. That the Respondent No.2 Board craves the leave of this Hon'ble Tribunal to file further affidavit if necessary for effective adjudication of this case.
6. That the annexure annexed to the present affidavit is true and correct copy of its original.
7. That the contents of the above paragraphs are true and correct to the best of my knowledge, as derived from the



MANJULA KUMAR PRADHAN  
NOTARY PUBLIC  
BHUBANESWAR  
REGD.NO.ON-71/2009  
PH:-9437627119 (M)

*[Handwritten signature]*

official records, and that nothing material has been  
concealed therefrom.

*[Handwritten signature]*

**DEPONENT**  
*Member Secretary*  
State Pollution Control Board  
Odisha, Bhubaneswar

**VERIFICATION:**

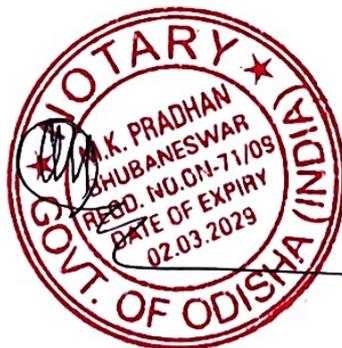
I, the above named deponent, do hereby verify that the  
contents of the above affidavit are true and correct to the best  
of my knowledge, as derived from official records, and that  
nothing material has been concealed therefrom.

Verified at Bhubaneswar on this the 7<sup>th</sup> day of May,  
2024.

**SWORN BEFORE ME**

*[Handwritten signature]*

**DEPONENT**  
*Member Secretary*  
State Pollution Control Board  
Odisha, Bhubaneswar



MANJULA KUMAR PRADHAN  
NOTARY PUBLIC  
BHUBANESWAR  
REGD.NO.ON-71/2009  
PH:-9437627119 (M)

*[Handwritten signature]*

**Joint Inspection report in the matter OA No. 73/2024/EZ- Mantu Das vs. State of Odisha & others**

The Hon'ble NGT has taken up a suo motu case based on the complaint letter submitted by the Applicant Shri Mantu Das alleging severe water pollution leading to the kidney related deaths in the Kaliapani area of Jajpur District, Odisha. The Kaliapani area falls under Sukinda Tehsil & is known for Chromite mining. It was also alleged that 10-15 deaths were reported due to consumption of contaminated ground water having high toxicity arising due to elevated levels of Iron, Chromite, Total Coliform and Fecal Coliform. In connection to this, the Hon'ble NGT in the order dated 21.03.2024 constituted a committee comprising of Senior Scientist of CPCB, Senior Scientist of OSPCB, Senior Officer of CGWB and Collector & District Magistrate, Jajpur, or his representative not below the rank of Additional District Magistrate to conduct the Joint enquiry to verify the allegations mentioned by the petitioner in the aforesaid O.A. The following persons were nominated as the members of the committee.

1. Mr. Lankeswar Amata, Additional District Magistrate, Kalinganagar
2. Mr. Pramod Kumar Behera, Senior Environmental Engineer cum Regional Officer, Kalinganagar, representative of OSPCB
3. Mr. Abhijit Pathak, Scientist-D, Central Pollution Control Board, Kolkata
4. Mr. Sinosh P.K., Scientist-B, Central Ground Water Board, Bhubaneswar

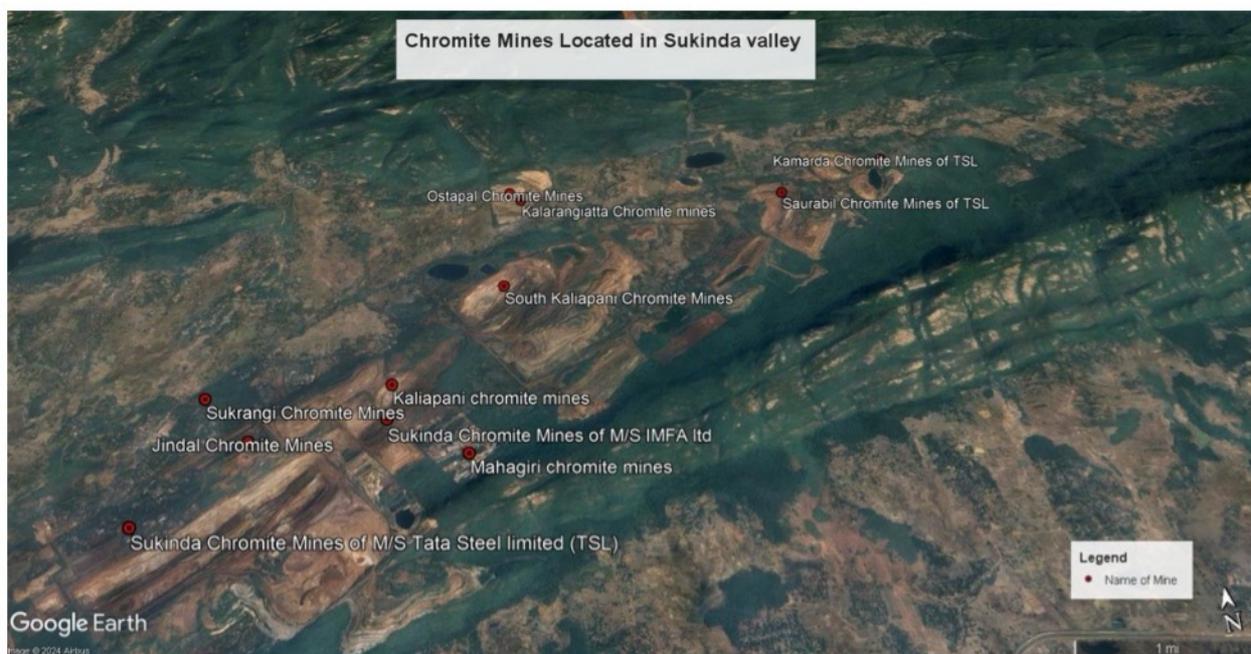
**Health aspects related to excessive consumption of Chromium contaminated water**

According to the research published by International Journal of Environmental Research and Public Health on 28.07.2020, Biological effects of chromium strongly depend on its oxidation state. Cr (III) is an element, nontoxic and poorly absorbed by the human body but Cr (VI) is a toxic form, having probable health impact causing liver and kidney related ailments, internal hemorrhage, and respiratory disorders. It has been characterized as carcinogenic to humans (Group I) by the International Agency for Research on Cancer. Cr (VI) can enter the body through both inhalation and ingestion route. Fortunately, human body has compartments and mechanisms for minimizing Cr (VI) toxicity, through specific reducing activities of body fluids. These mechanisms involve the saliva, gastric juice, intestinal bacteria, blood, liver, epithelial lining fluid, pulmonary alveolar macrophages, peripheral lung parenchyma, and bronchial tree.

All the deleterious health effects of chromium observed in humans are dose, exposure level and duration dependent. Ingesting approx. 2 g of Cr (VI) compound can result in kidney and liver damage after a few days of exposure, while a dose of 2–5 g of a soluble hexavalent chromium compound can be fatal to an adult human.

**Inspection of the site:**

Inspection of 11 nos of mines in the Sukinda valley was conducted on the 30.04.2024 to verify the factual aspects in the light of the allegations contained in the application to submit a report. The inspecting team thoroughly examined the ETP design status, adopted treatment methods and its disposal, installed online monitoring devices and its function along with performance of ETP with respect to removal efficiency of Cr (VI). The samples were collected by the OSPCB at the inlet and outlet of ETP of various operational mines. The Mines located in the Sukinda valley are shown below.



### Fact finding on reported death cases as Alleged:

The allegations stating the death of the 10-15 persons through Kidney related ailments by consumption of contaminated ground water was verified by the office of the Chief District Medical & Public Health Officer, Jajpur. It was found that out of the 9 persons alleged in the O.A., only one was reported to have kidney related disease. The report is attached as **Annexure I**. Also, it is stated in the report that she was suffering from Diabetes from past 10 years and the status of medication is not mentioned in the report. It may not be substantial to verify the actual cause of death and establish a relationship to chromium (VI) contaminated groundwater. Also in addition to that the person is resident of village Bambilo which is situated at an approximately aerial distance of more than 10 km from Sukinda valley, main possible source of Chromium contamination. The extent of transmission of contaminants in ground water is still a matter of further investigation, which is beyond the scope of present committee at present.

It is also pertinent to mention that Sukinda valley is the only deposit of Chromite mineral in India, which is an essential ingredient for steel industries. The deposit of Chromite mineral and it's mining may cause leaching out of Chromium content to the water through weathering, so utmost care should be taken to ensure conversion of toxic form of Chromium to its non-toxic form (Cr III) before it reaches surface water or ground water table. OSPCB has implemented stringent standard for industrial operation and responsibility of treatment of mining seepage and the monsoon runoff collected in mining pit is given to the operating mining industries.

### Surface water quality with respect to Chromium (VI) in Dhamsala nalla

Dhamsala nalla is the main discharge area of treated effluent of mining industries in Sukinda valley. The analysis report of OSPCB dated 06.04.2024 reveals that the range of Chromium (VI) at nine sampling points was 0.011 to 0.032 mg/L, which is below the permissible limits (0.05 mg/L) – Annexure II.

### Ground water quality with respect to Chromium (VI) in mining area

The allegations stating the elevated levels of Iron, Chromium, Total and Fecal Coliform in groundwater mentioned in O.A. may not be relevant from the present groundwater monitoring performed by the OSPCB in the month of March, 2024 and the reports are attached as **Annexure III**. The reports indicated that the range of total Chromium in groundwater was ranging between 0.015 to 0.117 mg/L. The highest concentration of total chromium was observed at Saruabil mine region which is exceeding the stipulated standard. But the toxic potential could not be assessed as total chromium is containing both Cr (VI) and Cr (III). Further investigation covering more area by concerned agency who deals with groundwater may be recommended.

### Performance of ETP:

The Sample Collected by the OSPCB at the ETP of respective operational mines in Sukinda valley were thoroughly inspected in the laboratory and the results show the presence of hexavalent chromium are within permissible limit. The reports are attached as **Annexure IV**.

### Observations and Recommendations:

1. The Contamination of groundwater in the mining area cannot be ruled out as the Cr (VI) can reach the groundwater through the weathering and percolation. The absence of alternative drinking water source in the Sukinda valley makes the people bound to be dependent on groundwater. Hence, there is a challenge for supply of drinking water to the residents of this area.

It is also learnt that many mine operators are supplying drinking water to local people under their CSR programme. The committee feels that the extraction of groundwater for supplying to the resident without assessing the quality may not be always recommended in this area. Clear understanding about groundwater table / aquifers from where it is being extracted should be ensured, otherwise the water to be supplied should be treated for contaminants if any.

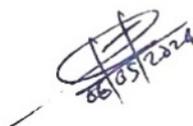
2. The Extent of contamination of groundwater in the different regions of Sukinda valley and surrounding area is matter of further investigation by a competent agency.
3. Committee also noted that the lack of evidence in the petition and subsequent investigation report of medical authority suggests that drawing correlation with contamination of Chromium (VI) and cause of death due to kidney failure may be bias conclusion.
4. Further it may also be noted that iron and coliform concentration above the permissible limit even nowhere related to kidney related disease with fatal consequences.



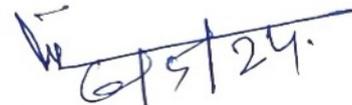
Shri Abhijit Pathak  
Scientist 'D'  
Representative CPCB



Shri Pramod Kumar  
Behera  
Regional Officer, Jajpur  
Representative OSPCB



Shri Sinosh P.K.  
Scientist 'B'  
Representative CGWB



Shri Lankeswar Amata  
ADM, Kalinganagar  
Representative of DM

**OFFICE OF THE CHIEF DISTRICT MEDICAL & PUBLIC HEALTH OFFICER:**  
**JAIPUR**

No. 2816

Dated 24.4.2024

To,

The Deputy Collector, Judicial.  
Jaipur

Sub: - Submission of compliance cum - action taken report in OHRC case No87/2024 filed by Brundaban Das Azad.

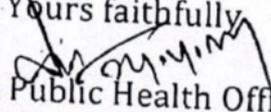
Ref; - Collectorate, Jaipur Letter No.2500/ dated 27.02.2024.

Sir,

I am to inform you that, according to the direction of the Hon'ble OHRC Court of Odisha, vide order dated 19.01.2024 in OHRC No.87/2024 filed by Sri Brundaban Das Azad, one Medical team headed by Dr Ramesh Ch Mallick,ADPHO(DiseaseControl) alongwith Dr Jyotiranjana Rout, Epidemiologist & Sri Dolagovinda Panda,MPHS(M) were visited aforesaid areas of Sukinda Block to enquire the matter on dated 20.04.2024. The team enquired the matter in the field level and submitted the finding report on 24.04.2024. The detail compliance report is enclosed herewith for favour of your kind information and necessary action.

This is for your kind information and necessary action

Yours faithfully,

  
Chief District Medical & Public Health Officer, Jaipur.

**OFFICE OF THE SUPERINTENDENT CHC SUKINDA , JAIPUR**

Letter no 399 Date 16.03.2024

To,

The CDM &PHO

Jajpur

Sub:- Compliance of paper clipping regarding "Masare galani 8 Jibana" published in the SAMBAD odia daily on dated 02-01-2024. Vide letter no-633, dt 19/01/2024.

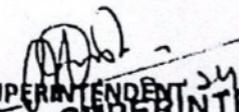
Sir,

I am herewith submitting the Compliance of paper clipping regarding "Masare galani 8 Jibana" published in the SAMBAD odia daily on dated 02-01-2024. Vide letter no-633, dt 19/01/2024" A Team lead by Dr Santanu Ku Mishra MO , Dr. Subhasis Jena with Pabitra Ku Ghadel (MPHS), Rashmiprava Khatua (PHEO) on dated 20/02/2024 to Saruabil, Kuhika and kaliapani area .The details are in below

Sl no	Name	Age	Address	Cause of Death	Date of Death	Place of death
1	Laxmipriya Nayak	73	Bambilo	CKD with Tumour in Uterus	21-12-2023	Home
2	Mangal Marandi	51	Kaliapani	ALD	06-12-2023	Home
3	Laxman Marandi	63	Kaliapani	Fractured leg with septicaemia	06-12-2023	Home
4	Gurucharan Marandi	44	Kaliapani	ALD	10-11-2023	Home
5	Bhakta Mahanta		Khani anchal	Heart disease	18-09-2023	Home
6	Bhajuram dehuri	32	Ostapal	ALD with RTA	17-12-2023	Home
7	Sunil ku saho	42	OMC	Heart disease	09-12-2023	Hospital
8	Chakradhar Pradhan	25	Saruabil	Waiting for PM report	03-12-2023	Home
9	Gobinda Dehuri	61	Saruabil	Senility	03-12-2023	Home

More over our team is regularly doing the health camps at Nagada, saruabil, Chingudipal, Ransol, Kaliapani, area to screen out CKD other diseases and , we are doing IEC activities in these areas regularly .

This is for your kind information and necessary action.

  
SUPERINTENDENT  
SUPERINTENDENT  
CHC SUKINDA, C. SUKINDA

To,

The CDM&PHO  
Jajpur

19

Sub: - Investigation Report on OHRC Case No – 87/2024 filed by Brundaban Das Azad.

Ref: - Your Letter no – 1630 on dated 04.03.2024

Sir,

With reference to the subject cited above, I have visited the Kaliapani, Saruabil & Kuhika under Sukinda Block, Jajpur along with Public Health team on 20.04.2024 to enquire the matter relating to OHRC Case No – 87/2024 filed by Brundaban Das Azad.

Team consisting with: -

1. Dr. Ramesh Chandra Mallick, ADPHO (DC), Jajpur
2. Dr. Jyotiranjana Rout, Epidemiologist, Jajpur
3. Mr. Dolagobinda Panda, MPHS (M), Jajpur

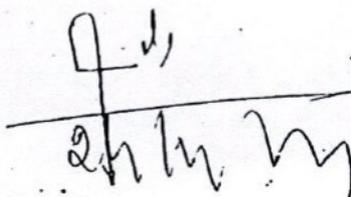
All above members have visited the place and interacted with the villagers about the death of personnel affected with CKD.

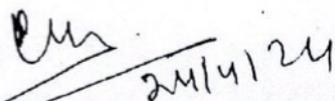
**Details of Death Investigation: -**

1. **Bhakta Mahanta**, aged 59 years/ Male, Kaliapani village was working as a daily labourer at OMC. He was a habitual drinker of traditional liquor. As per the version of his family members, 6 months before his death, he was suffering from weakness & cough and taken medicine from TSRDS Dispensary. Also, sputum was examined at TSRDS which came negative. Then 7 days before death he got admitted at TATA Medica Hospital due to severe weakness with chest pain and died on 18.09.2023. Death may be due to heart diseases. He had no sign & symptoms of CKD related illnesses.
2. **Mangal Majhi**, aged 43 years/ Male, S/O – late Dhuma Majhi, Kaliapani village was working as a daily labourer in mines. He was a habitual drinker of traditional liquor. As per the version of his family members, on 06.12.2023 he fell down in front of his home in drunken status and died on the same day. Death may be due to ALD. He had no sign & symptoms of CKD related illnesses.
3. **Laxman Marandi**, aged 53 years/ Male, S/O – late Sagram Marandi, Kaliapani village was a farmer. As per the family members version, 6 – 7 months before he met with an accident at his home premises, and his hip joint was fractured. Neither he went to the hospital nor his family members accompanied him for treatment, after several times counselled by ASHA. From that day onwards, his movements were restricted, the family members took him for local treatment. Then he died on 06.12.2023 due to fractured leg with septicaemia. He had no sign & symptoms of CKD related illnesses.
4. **Gurucharan Marandi**, aged 44 years/ male, S/O – Late Budhan Marandi, Kaliapani village was a mechanical worker of Ispat mines. He was a habitual drinker of traditional liquor. As per the family members version, he was an obese and hypertensive patient.

- 2 – 3 days before his death, he was suffering from loose motion with blood vomiting and was treated with traditional medicine. He died on 10.11.2023 at home. Death may be due to ALD. He had no sign & symptoms of CKD related illnesses.
5. **Sunil Kumar Sahoo**, aged 42years/ Male, S/O – Late Banamali Sahoo, Bajapur village, Jagatsinghpur District was working as chalan supervisor at OMC Sukarangi, Kaliapani for last 17 years. As per the family members version, he was suffering from Diabetic and hypertensive for last 8 years and treated in AMRI Hospital, Bhubaneswar on monthly basis. On 2022 he was diagnosed with CKD and had dialysis first time in AMRI Hospital. further doctor advises him for restriction of diet & liquid intake and no dialysis is required for this stage. On 09.12.2023 early morning, he was complaining of severe chest pain and family members took him to OMC Hospital and declared received dead. PM had done at Danagadi CHC revealed that, the cause of death was CVD.
  6. **Chakradhar Pradhan**, aged 25 years/ Male, S/O – Late Purusottam Pradhan, Saruabil village was working as a daily labourer. He was a habitual drinker of traditional liquor. As per the family members version, he was not suffering from any kind of illness. On 03.12.2023 morning, he suffered from severe acute abdomen & vomiting, the family members took him to sukinda CHC, where he died during treatment on the same day. PM report revealed that, the cause of death is due to congestive cardiac failure. He had no sign & symptoms of CKD related illnesses.
  7. **Gobinda Dehuri**, aged 68years/ Male, S/O – Late Shyama Dehuri, Saruabil village was working as a daily labourer in OMC. He was a habitual drinker of traditional liquor. As per the family members version, he was not suffering from any kind of illness. 2 – 3 months before his death, he was suffering from severe cough and went to TSRDS for treatment. He died on 03.12.2023 in early morning at Home. Death may be due to senility. He had no sign & symptoms of CKD related illnesses.
  8. **Bhajulal Dehuri**, aged 33 years/ Male, S/O – Late Milu Dehuri, Ostapal village was working as a daily labourer. He was suffering from testicular malignancy since long time and died on 29.12.2023 at home. He had no sign & symptoms of CKD related illnesses.
  9. **Laxmipriya Nayak**, aged 88 years/ Female, Bambilo village was known diabetic patients in the last 10 years. As per the family members version, she had CKD problem last 2 years of her death and died on 20.12.2023 at home.

Yours Faithfully,

  
District Public Health Officer  
Jajpur

  
Addl. Public Health Officer (Disease Control)  
Jajpur

Annexure-121



E-mail : [paribesh1@ospcboard.org](mailto:paribesh1@ospcboard.org)  
Website : [www.ospcboard.org](http://www.ospcboard.org)

**"REGISTERED POST"**



*AEES (SS)*

*24.04.24*

**STATE POLLUTION CONTROL BOARD, ODISHA**  
[FOREST, ENVIRONMENT AND CLIMATE CHANGE DEPARTMENT, GOVERNMENT OF ODISHA]  
Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII,  
Bhubaneswar - 751 012  
(CENTRAL LABORATORY)

No. \_\_\_\_\_ /

VI-SC (LEM) Proj-235 (Vol-II) /24-25

Dt. \_\_\_\_\_

To

**The Chief Environmental Engineer (N)**  
State Pollution Control Board, Odisha,  
Bhubaneswar

Sub: Analysis Reports of water sample of Damsala Nallah in Sukinda area during the month of March-2024.

Sir,

Analysis report with respect to pH, hexavalent chromium, and total chromium at nine locations on Damsala nallah during the months of March -2024 is enclosed for kind information. As per NABL guideline, analysis report for pH, hexavalent chromium (Scope Parameter) has been given in Report No. OS/361/04/2024. and Total Chromium (Non-scope parameter) has been given in Report No. OS/362/04/2024.

During March 2024, water quality of Damsala nallah with respect to hexavalent chromium is observed within limit of 0.05 mg/l for Class 'C' inland surface water bodies (IS 2296 - 1982) at all monitoring locations.

Yours faithfully,

Encl: As above

Chief Env. Scientist

Memo No. 5502 / dt. 09.04.2024 /

Copy forwarded to Regional Officer, State Pollution Control Board, Odisha, At- Dhabalgiri (In front of OMC Guest House), Po- Ferro Chrome Project, Dist-Jajpur-755020 along with a copy of the Test Report for kind information and necessary action.

Encl: As above

*U. Mallik*  
Chief Env. Scientist

Central Laboratory Address: Plot No. B-59/2 & 59/3, Chandaka Industrial Estate, Patia,  
Bhubaneswar - 751 024 E-mail: [centrallab@ospcboard.org](mailto:centrallab@ospcboard.org)



**CENTRAL LABORATORY  
STATE POLLUTION CONTROL BOARD, ODISHA**

Plot No. B-59/2 & 59/3, Chandaka Industrial Estate, Patia,  
Bhubaneswar - 751 024

E-mail: [centrallab@ospcbboard.org](mailto:centrallab@ospcbboard.org)



Page 1 of 2

**TEST REPORT**

1. ULR No. : TC127402400000190F
- 2 (i). Report No. : OS/361/04/2024
- 3 (i). Date of issue : 06.04.2024
- 2(ii). Amendment No : ---
- 3(ii). Amendment Date : ---
4. Sample Submitted By : Sri Tapandev Panisamanta, Field Asst.,  
(Name and address) Central Laboratory, SPCB, Odisha, Patia, Bhubaneswar
5. Reference Letter No. : Tour Programme No.2546 dt. 27.02.2024
6. Date of sample receipt : 21.03.2024
7. Sample Description :

(i) **Discipline : Chemical Testing**  
(Biological Testing,  
Chemical testing)

(ii) **Group : Water**  
(Water/ Pollution and Environment  
/ Atmospheric Pollution/ Soil and  
Hazardous Waste)

(iii) **Sub Group : Surface water**  
(Surface water/ Ground water/ Drinking water /  
Wastewater / Effluent/ Ambient Air / Stack/ Soil and  
Hazardous Waste)

8. Analysis Starting Date-Analysis Completion Date : 21.03.2024 – 05.04.2024
9. If uncertainty is desired by Customer : No
10. Analysis Results :

(Attach separate sheet if necessary)

Sl. No.	Parameter, Unit	Standards/ Regulatory Limits *	Test Method	Damsala Nallah		
				Others/Mar-24/ SW/470	Others/Mar-24/ SW/471	Others/Mar-24/ SW/472
				Damsala at Kansa (U/s of Sukinda mining area)	Damsala at Tailangi (D/s of confluence with nallah from Daitari hill range)	Damsala at the U/s of mining point of Jindal and Balasore Alloys and backside of OMC prospecting colony
				<b>Results</b>		
1.	pH	6.5 – 8.5	4500-H <sup>+</sup> -B, APHA, 23 <sup>rd</sup> Edn., 2017	7.3	7.4	7.5
2.	Hexavalent Chromium (Cr <sup>6+</sup> ), mg/L	0.05	3500-Cr-B, APHA, 23 <sup>rd</sup> Edn., 2017	0.011	0.015	0.019

	Others/Mar-24/ SW/473	Others/Mar-24/ SW/474	Others/Mar-24/ SW/475	Others/Mar-24/ SW/476	Others/Mar-24/ SW/477	Others/Mar-24/ SW/478
	Damsala at the backside of OMC Labour colony	Damsala near intake well of TISCO	Damsala at the U/s of MIP reservoir	Damsala at Minor Irrigation Project	Damsala at the D/s of MIP at Majhisahi	Damsala at Dayanabili (before confluence with river Ramiala)
	<b>Results</b>					
pH	7.8	7.7	7.6	7.5	7.4	7.4
Hexavalent Chromium (Cr <sup>6+</sup> ), mg/L	0.023	0.027	0.032	0.025	0.017	0.013

\* Tolerance limit for inland surface water subject to pollution (IS : 2296-1982), for Class 'C'  
(Drinking source with conventional treatment and disinfection)

(Cont.)

11. Deviation from Test Method , if any :
12. If Sampling Conducted by the Central Laboratory, Yes/ No. - Yes  
If Yes,
- (a) Date of Sampling : 20.03.2024 (b) Method Used\* : Grab sampling (1060 B, APHA, 23<sup>rd</sup> Edn., 2017)
- (c) Name of Sampler with Designation : Sri Tapandev Panisamanta, Field Asst.

-----End of Test Report-----

*Usharani Patnaik*  
06.4.2024  
Authorised Signatory  
(Water/Wastewater)

(Dr. (Mrs) Usharani Patnaik, Addl. Chief Env. Scientist)

*N. Mallick*  
Board Analyst  
(Mr. Niranjan Mallick, Chief Env. Scientist)

(Mr. Niranjan Mallick, Chief Env. Scientist)

**Note :**

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Head Office: State Pollution Control Board, Odisha, Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII, Bhubaneswar - 751 012, FAX : 2562822/2560955  
TEL : 2564033/2563294 EPABX : 2561909/2562847, E-mail : [paribesh1@ospboard.org](mailto:paribesh1@ospboard.org) Website : [www.ospboard.org](http://www.ospboard.org)



11. Deviation from Test Method , if any :

12. If Sampling Conducted by the Central Laboratory, Yes/ No. - Yes  
If Yes,

- (a) Date of Sampling : 20.03.2024      (b) Method Used\* : Grab sampling (1060 B, APHA, 23<sup>rd</sup> Edn., 2017)  
(c) Name of Sampler with Designation : Sri Tapandev Panisamanta, Field Asst.

-----End of Test Report-----

*Usharani Patnaik*  
06.4.2024  
Authorised Signatory  
(Water/Wastewater)

(Dr. (Mrs) Usharani Patnaik, Addl. Chief Env. Scientist)

*N. Mallick*  
6/4/24  
Board Analyst  
(Mr. Niranjan Mallick, Chief Env. Scientist)

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 E-mail : [paribesh1@ospboard.org](mailto:paribesh1@ospboard.org)  
 Website : [www.ospboard.org](http://www.ospboard.org)



## STATE POLLUTION CONTROL BOARD, ODISHA

[DEPARTMENT OF FOREST, ENVIRONMENT & CLIMATE CHANGE, GOVERNMENT OF ODISHA]

Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII,

Bhubaneswar - 751 012

(CENTRAL LABORATORY)

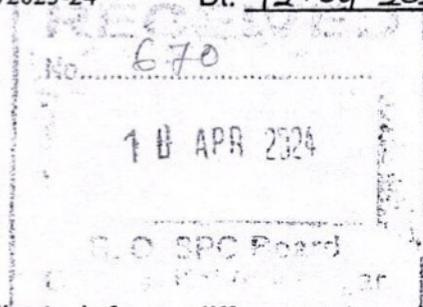
No. 5659 /

VI-SC (LEM) Misc 38/2023-24

DI. 12.04.2024 /

To

The Regional Officer,  
 State Pollution Control Board, Odisha,  
 Kalinga Nagar



Sub : Test Reports of ground water samples collected from different tube wells of the Sukinda Chromite Valley and surface water samples collected from Damsala river, Jajpur - reg.

Ref : Your Letter No. 757 /Lab - 07 dt.06.03.2024

Sir,

With reference to the above cited letter, please find enclosed herewith the test reports of ground water & surface water samples submitted to the Central Laboratory on dt.07.03.2024 by your office, collected from different tube wells of the Sukinda Chromite Valley and Damsala river, Jajpur.

Encl : (i) OS/363/04/2024 (For NABL Scope parameter)  
 (ii) OS/364/04/2024 (For NABL Non-scope parameter)  
 (iii) OS/365/04/2024 (For NABL Scope parameter)

Yours faithfully,

*[Handwritten Signature]*  
 Chief Env. Scientist (Lab.)



# CENTRAL LABORATORY STATE POLLUTION CONTROL BOARD, ODISHA

Plot No. B-59/2 & 59/3, Chandaka Industrial Estate, Patia,  
Bhubaneswar - 751 024

E-mail: [centrallab@ospceboard.org](mailto:centrallab@ospceboard.org)



## TEST REPORT

Page 1 of 2

1. ULR No. : TC127402400000208F
- 2 (i). Report No. : OS/363/04/2024
- 2(ii). Amendment No : ---
- 3 (i) Date : 12.04.2024
- 3(ii) Amendment Date : ---
4. Sample Submitted By : Sri R.R. Pradhan, Field Asst.,  
(Name and address) Regional Office, SPCB, Odisha, Kalinga Nagar
5. Reference Letter No. : 757 / Lab - 07 dt.06.03.2024
6. Date of sample receipt : 07.03.2024
7. Sample Description :
 

(i) Discipline : Chemical Testing (Biological Testing, Chemical testing)	(ii) Group : Water (Water/ Pollution and Environment / Atmospheric Pollution/ Soil and Hazardous Waste)	(iii) Sub Group : Ground water (Surface water/ Ground water/ Drinking water / Wastewater/ Effluent/ Ambient Air/ Stack/ Soil and Hazardous Waste)
--	--	--
8. Analysis Starting Date-Analysis Completion Date : 07.03.2024 – 02.04.2024
9. If uncertainty is desired by Customer : No
10. Analysis Results :

(Attach separate sheet if necessary)

Sl. No.	Parameter, Unit	Standards/ Regulatory Limits*		Test Method	Samples collected from different tube wells (Ground Water) of the Sukinda Chromite Valley			
		(Applicable for Sl. No. Others/Mar -24/ GW/396 to Others/Mar-24/GW/399)			Others/ Mar - 24/ GW/396	Others/ Mar - 24/ GW/397	Others/ Mar - 24/ GW/398	Others/ Mar - 24/ GW/399
		Requirement (Acceptable limit)	permissible limit in the absence of alternate source		Tube well, Kamarda, Sukinda, Jajpur	Tube well, Saruabil, Sukinda, Jajpur	Tube well, Kaliapani Sukinda, Jajpur	Tube well, M/s Tata Steel Ltd., Sukinda, Jajpur
					<b>Results</b>			
1.	pH	6.5-8.5	No relaxation	4500-H <sup>+</sup> -B, APHA, 23 <sup>rd</sup> Edn., 2017	7.3	7.2	7.1	6.9
2.	Turbidity (Turb), NTU	1	5	2130 B, APHA, 23 <sup>rd</sup> Edn., 2017	8.1	1.3	2.2	2.6
3.	Total Dissolved Solids (TDS), mg/L	500	2000	2540 C, APHA, 23 <sup>rd</sup> Edn., 2017	240.0	220.0	192.0	228.0
4.	Total Alkalinity as CaCO <sub>3</sub> (T. Alka), mg/L	200	600	2320 B, APHA, 23 <sup>rd</sup> Edn., 2017	148.0	108.0	112.0	100.0
5.	Total Hardness as CaCO <sub>3</sub> (TH), mg/L	200	600	2340 C, APHA, 23 <sup>rd</sup> Edn., 2017	140.0	120.0	128.0	124.0
6.	Calcium (as Ca), mg/L	75	200	3500-Ca -B, APHA, 23 <sup>rd</sup> Edn., 2017	35.27	35.27	30.46	32.06
7.	Magnesium (as Mg), mg/L	30	100	3500-Mg -B, APHA, 23 <sup>rd</sup> Edn., 2017	12.64	7.78	12.64	10.69
8.	Chloride (Cl), mg/L	250	1000	4500 Cl <sup>-</sup> B, APHA, 23 <sup>rd</sup> Edn., 2017	22.0	26.0	24.0	30.0

Sl. No.	Parameter, Unit	Standards/ Regulatory Limits*		Test Method	Samples collected from different tube wells (Ground Water) of the Sukinda Chromite Valley			
		Requirement (Acceptable limit)	permissible limit in the absence of alternate source		Others/ Mar - 24/ GW/396	Others/ Mar - 24/ GW/397	Others/ Mar - 24/ GW/398	Others/ Mar - 24/ GW/399
					Tube well, Kamarda, Sukinda, Jajpur	Tube well, Saruabil, Sukinda, Jajpur	Tube well, Kaliapani Sukinda, Jajpur	Tube well, M/s Tata Steel Ltd., Sukinda, Jajpur
<b>Results</b>								
9.	Fluoride (F) mg/L	1.0	1.5	4500-F-C, APHA, 23 <sup>rd</sup> Edn., 2017	0.16	0.16	0.15	0.14
10.	Sulphate (SO <sub>4</sub> <sup>2-</sup> ), mg/L	200	400	4500-SO <sub>4</sub> <sup>2-</sup> -E, APHA, 23 <sup>rd</sup> Edn., 2017	14.18	15.36	16.73	15.82
11.	Ammonical Nitrogen as N (NH <sub>3</sub> -N), mg/L	0.5	No relaxation	4500-NH <sub>3</sub> -B followed by 4500-NH <sub>3</sub> -C, APHA, 23 <sup>rd</sup> Edn., 2017	<0.4	<0.4	<0.4	<0.4
12.	Nitrate (as NO <sub>3</sub> ), mg/L	45	No relaxation	4500 - NO <sub>3</sub> <sup>-</sup> -E, APHA, 23 <sup>rd</sup> Edn., 2017	2.89	3.57	2.94	3.92
13.	Iron (Fe), mg/L	1.0	No relaxation	3500 Fe - B, APHA, 23 <sup>rd</sup> Edn., 2017	1.058	0.360	1.121	0.722
14.	Boron (B), mg/L	0.5	2.4	4500 B-B, APHA, 23 <sup>rd</sup> Edn., 2017	0.148	0.171	0.185	0.194

\* Drinking water specification, IS 10500: 2012 and its amendment no-1, June, 2015 & no-2 September, 2018

11. Deviation from Test Method, if any :  
 12. If Sampling Conducted by the Central Laboratory, Yes/ No. - No  
 If Yes,  
 (a) Date of Sampling : (b) Method Used\* :  
 (c) Name of Sampler with Designation :

-----End of Test Report-----

*Usharani*  
12-4-2024

Authorised Signatory  
(Water/wastewater)

(Dr. (Mrs) Usharani Patnaik, Addl. Chief Env. Scientist)

*N. Mallick*  
24/4/24

Board Analyst

(Mr. Niranjan Mallick, Chief Env. Scientist)

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 TEL: 2564033/2563294 EPABX: 2561909/2562847, E-mail: [paribesh1@ospboard.org](mailto:paribesh1@ospboard.org) Website: [www.ospboard.org](http://www.ospboard.org)



**CENTRAL LABORATORY  
STATE POLLUTION CONTROL BOARD, ODISHA**

Plot No. B-59/2 & 59/3, Chandaka Industrial Estate, Patia,  
Bhubaneswar - 751 024

E-mail: [centrallab@ospcboard.org](mailto:centrallab@ospcboard.org)

**TEST REPORT**

Page 1 of 2

1. ULR No. : -----
- 2 (i). Report No. : OS/364/04/2024
- 3 (i) Date : 12.04.2024
4. Sample Submitted By : Sri R.R. Pradhan, Field Asst.,  
(Name and address) Regional Office, SPCB, Odisha, Kalinga Nagar
5. Reference Letter No. : 757 / Lab - 07 dt.06.03.2024
6. Date of sample receipt : 07.03.2024
7. Sample Description :
- (i) Discipline : Chemical Testing and Biological Testing (Biological Testing, Chemical testing)
- (ii) Group : Water (Water/ Pollution and Environment / Atmospheric Pollution/ Soil and Hazardous Waste)
- (iii) Sub Group : Ground water (Surface water/ Ground water/ Drinking water / Wastewater/ Effluent/ Ambient Air/ Stack/ Soil and Hazardous Waste)
8. Analysis Starting Date-Analysis Completion Date : 07.03.2024 – 02.04.2024
9. If uncertainty is desired by Customer : No
10. Analysis Results :  
(Attach separate sheet if necessary)

Sl. No.	Parameter, Unit	Standards/ Regulatory Limits *		Test Method	Samples collected from different tube wells (Ground Water) of the Sukinda Chromite Valley			
		(Applicable for Sl. No. Others/ Mar - 24/ GW/396 & Others/ Mar - 24/ GW/399)			Others/ Mar - 24/ GW/396	Others/ Mar - 24/ GW/397	Others/ Mar - 24/ GW/398	Others/ Mar - 24/ GW/399
		Requirement (Acceptable limit)	Permissible limit in the absence of alternate source		Tube well, Kamarda, Sukinda, Jajpur	Tube well, Saruabil, Sukinda, Jajpur	Tube well, Kaliapani Sukinda, Jajpur	Tube well, M/s Tata Steel Ltd., Sukinda, Jajpur
					<b>Results</b>			
1.	Total Chromium (T. Cr), mg/L	0.05	No relaxation	3030 G followed by 3500 Cr-B, APHA, 23 <sup>rd</sup> Edn., 2017	0.017	0.117	0.019	0.015
2.	Phenolic compound as Phenol (mg/L)	0.001	0.002	5530 B followed by C or D, APHA, 23 <sup>rd</sup> Edn., 2017	< 0.001	< 0.001	< 0.001	< 0.001
3.	Cyanide (mg/L)	0.05	No relaxation	4500-CN -C & 4500-CN -F, APHA, 23 <sup>rd</sup> Edn., 2017	0.021	0.020	0.018	0.016
4.	Mercury (Hg), mg/L	0.001	No relaxation	3112 B, APHA, 23 <sup>rd</sup> Edn., 2017	0.00062	0.00077	0.00062	0.00092
5.	Total Coliform (TC), MPN/100 ml	Shall not be detectable in any 100 ml sample		9221-B, APHA, 23 <sup>rd</sup> Edn., 2017	<1.8	<1.8	<1.8	<1.8
6.	Fecal Coliform (FC), MPN/100 ml			9221-E, APHA, 23 <sup>rd</sup> Edn., 2017	<1.8	<1.8	<1.8	<1.8

\* Drinking water specification, IS 10500: 2012

11. Deviation from Test Method , if any :
12. If Sampling Conducted by the Central Laboratory, Yes/ No. - No  
If Yes,
- (a) Date of Sampling : (b) Method Used\* :
- (c) Name of Sampler with Designation :

-----End of Test Report-----

*Nattarash*  
12/04/2024

Authorised Signatory  
(Biological)

(Mrs. Nishiprava Pattanaik, AES)

*Patnaik*  
12.4.2024

Authorised Signatory  
(Water/wastewater)

(Dr.(Mrs)Usharani Patnaik, Addl. Chief Env. Scientist)

*M. Mallick*  
12/04/2024

Board Analyst

(Mr. Niranjan Mallick, Chief Env. Scientist)

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**STATE POLLUTION CONTROL BOARD, ODISHA**

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**TEST REPORT**

Page 1 of 1

1. ULR No. : TC127402400000209F
- 2 (i). Report No. : OS/365/04/2024
- 3 (i) Date : 12.04.2024
4. Sample Submitted By : Sri R.R. Prádhan, Field Asst.,  
(Name and address) Regional Office, SPCB, Odisha, Jharsuguda
5. Reference Letter No. : 757 / Lab - 07 dt.06.03.2024
6. Date of sample receipt : 07.03.2024
7. Sample Description :
 

(i) Discipline : Chemical Testing (Biological Testing, Chemical testing)	(ii) Group : Water (Water/ Pollution and Environment / Atmospheric Pollution/ Soil and Hazardous Waste)	(iii) Sub Group : Surface water (Surface water/ Ground water/ Drinking water / Wastewater/ Effluent/ Ambient Air/ Stack/ Soil and Hazardous Waste)
--	--	---
8. Analysis Starting Date-Analysis Completion Date : 07.03.2024 -02.04.2024
9. If uncertainty is desired by Customer : No
10. Analysis Results :  
(Attach separate sheet if necessary)

Sl. No.	Parameter, Unit	Standards/ Regulatory Limits *	Test Method	Samples collected from Damsala river	
				Others/ Mar - 24/ SW/400	Others/ Mar - 24/ SW/401
		(IS : 2296-1982)		Damsal at Saruabil ( Infront of Tailangi Chromite Mines of M/s IDC Ltd.)	Damsala at Kaliapani (M/s Tata Steel intake point)
<b>Results</b>					
1.	pH	6.5-8.5	4500-H <sup>-</sup> -B, APHA, 23 <sup>rd</sup> Edn., 2017	7.1	7.2
2.	Total Suspended Solids (TSS), mg/L	-	2540 D, APHA, 23 <sup>rd</sup> Edn., 2017	16.0	11.0
3.	Hexavalent Chromium (Cr <sup>6+</sup> ), mg/L	0.05	3500-Cr-B, APHA, 23 <sup>rd</sup> Edn., 2017	0.034	0.013

\* Tolerance limit for inland surface water subject to pollution (IS : 2296-1982), for Class 'C'  
(Drinking source with conventional treatment and disinfection) , Applicable for Sl. No. Others/ Mar -24/SW/400 & Others/ Mar -24/SW/401

11. Deviation from Test Method , if any :
  12. If Sampling Conducted by the Central Laboratory, Yes/ No. - No  
If Yes,
- (a) Date of Sampling : \_\_\_\_\_ (b) Method Used\* : \_\_\_\_\_
- (c) Name of Sampler with Designation : \_\_\_\_\_

-----End of Test Report-----

*Usharani*  
12.4.2024

Authorised Signatory  
(Water/wastewater)

(Dr. (Mrs)Usharani Patnaik, Addl. Chief Env. Scientist)

*Niranjan Mallick*  
Board Analyst

(Mr. Niranjan Mallick, Chief Env. Scientist)

Note :

(i) The results stated above relate only to the items tested.



**REGIONAL OFFICE, KALINGA NAGAR**  
**STATE POLLUTION CONTROL BOARD, ODISHA**  
[DEPARTMENT OF FOREST & ENVIRONMENT, GOVERNMENT OF ODISHA]  
AT: Dhabalagiri (Infront of OMC Guest House), POST: Ferro Chrome Project,  
DIST: Jajpur – 755020, Odisha, india

**(Analysis Report)**

Lab. Ref. No.: WW / I / 24 / 04 - 65

Date: 01.05.2024

Name and Address of the Industry / Source : Different operating mines of Sukinda Valley,  
Sukinda, Dist: Jajpur

Date of Sampling : 30<sup>th</sup> April, 2024

Sample collected and submitted by : Er. P. K. Behera, RO,  
Er. M. Behera, DEE,  
Sri S. Sahu, AES  
Sri S. S. Dwibedi, JLA  
Sri J. K. Sahoo, Lab. Attendant

Date of Submission of Sample : 30.04.2024

Sl. No.	Sources of Sampling / Location	Parameters		
		pH	TSS (mg/l)	Cr <sup>6+</sup> (mg/l)
01	ETP outlet of Kamarda Chromite Mines of M/s. Tata Steel Ltd.	8.76	64.0	0.029
02	ETP outlet of Saruabil Chromite Mines of M/s. Tata Steel Ltd.	8.17	38.0	0.042
03	ETP outlet (D-Quarry) of South Kaliapani Chromite Mines of M/s. OMC Ltd.	8.62	71.0	0.039
04	ETP outlet of Sukinda Mines Chromite of M/s. IMFA Ltd.	8.42	23.0	0.013
05	ETP outlet of Kaliapani Chromite Mines of M/s. Balasore Alloys Ltd.	8.70	85.0	0.036
06	ETP outlet of Sukinda Chromite Mines of M/s. Tata Steel Ltd.	8.06	16.0	0.006
<b>Standards</b>		<b>5.5 - 9.0</b>	<b>100</b>	<b>0.05</b>

Sample Analysed by:

S. Dwibedi JLA      H. S. Sahoo AES

Regional Officer