



खनिज एवं पदार्थ प्रौद्योगिकी संस्थान
INSTITUTE OF MINERALS & MATERIALS TECHNOLOGY

(Formerly Regional Research Laboratory)

वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद

Council of Scientific & Industrial Research

भुवनेश्वर - 751013, ओडिशा, भारत, Bhubaneswar - 751013, Orissa, INDIA

To

RDPD/LT-05/ESD/11/17

Dt 17.11.17

BHARTI WATERS Pvt. Ltd
Aradhana Bhawan
Azadpur Commercial Complex
New Delhi-110033

Sub: Evaluation of Bharti Nano Fluoride Removal Technology by online dosing SKF-281164 (A) & SKF-281164(B)

Dear Sir,

Please find enclosed the test reports (No.LT-05/ESD/11/17/1/85 Dated 17/11/17) of the sample(s) given by you/your organization. Kindly acknowledge the receipt of the report.

Thanking you

Yours sincerely,

(D. Sahoo)

RDPD

वैज्ञानिक, आर.डी.पी.डी./Scientist, R&D Planning
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Institute of Minerals & Materials Technology
भुवनेश्वर-751 013, ओडिशा, (भारत)
Bhubaneswar-751 013, Odisha (India)



सीएसआइआर - खनिज एवं पदार्थ प्रौद्योगिकी संस्थान
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Bhubaneswar - 751013, Odisha, INDIA

TEST REPORT

Date: 17.11.2017

Name & Address of the Party :- BHARTI WATERS Pvt. Ltd
ARADHANA BHAWAN
AZADPUR COMMERCIAL COMPLEX
NEW DELHI 110033

Sample Ref No. :- LT-05/ESD/11/17/1/85

Sample Details :- Evaluation of Bharti Nano Fluoride Removal Technology
By online dosing SKF-281164(A) &SKF-281164(B)

Date of Receiving :- 27.10.2017

Date(s) of Conducting Test :- All working days during 27.10.2017 to 17.11.2017

Date of Completion of Test :- 17.11.2017

Standard / Method Adopted :- BIS methods

Panra Chattopadhyay
17-11-2017

DR. P.CHATTOPADHYAY
SCIENTIST
CSIR-IMMT (GOVT. OF INDIA)
BHUBANESWAR



GOLDEN JUBILEE YEAR

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TEST REPORT

ON ONLINE FLUORIDE REMOVAL UNIT SUBMITTED BY **M/s BHARTI WATERS Pvt Ltd**, ARADHANA BHAWAN, AZADPUR COMMERCIAL COMPLEX, NEW DELHI - 110033, FOR PERFORMANCE TESTING OF THE UNIT AS WELL AS FLUORIDE REMOVAL PROFICIENCY AGAINST FLUORIDE CONTAMINATION OF 5 PPM, 4 PPM, 3 PPM AND 2 PPM IN THE POTABLE WATER MEANT FOR HUMAN CONSUMPTION

THE UNIT WAS TESTED IN THE ABOVE LIGHT AND THE RESULT IS DERIVED AS THUS:-

EVALUATION OF BHARTI NANO FLUORIDE REMOVAL UNIT
(The Unit Received on 27.10.2017)

Each day all parameters were run in triplicate. Test water sample was prepared using standard FLUORIDE solution

Table no-01

Parameter	F, 2 mg/L (ppm), Date: 06.11.2017	
	Before	After
1. FLUORIDE	1.96	0.22
2. TDS, mg/L	102.8	229.8
3. pH	7.05	6.51
4. Chloride, mg/L	17.73	15.9
5. TURBIDITY, NTU	0.18	0.05
6. CONDUCTIVITY, μ S/cm	146	317
7. Calcium, mg/L	10.0	28.0
8. Magnesium, mg/L	6.1	14.9
9. Total hardness, mg/L	40.2	107.2
10. Alkalinity, mg/L	41.9	147.8
11. Acetic acid, mg/L	NIL	NIL
12. Aluminum, μ g/L	<0.5	<0.5

Pankaj Chattopadhyay
17.11.2017

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Table no-02

Parameter	F, 3 mg/L (ppm), Date: 07.11.2017	
	Before	After
1. FLUORIDE	3.04	0.25
2. TDS, mg/L	99.1	233.5
3. pH	7.14	6.59
4. Chloride, mg/L	17.7	15.9
5. TURBIDITY, NTU	0.14	0.05
6. CONDUCTIVITY, μ S/cm	152	325
7. Calcium, mg/L	10.0	28.0
8. Magnesium, mg/L	6.1	14.9
9. Total hardness, mg/L	40.2	107.2
10. Alkalinity, mg/L	48.8	142.8
11. Acetic acid, mg/L	NIL	NIL
12. Aluminum, μ g/L	<0.5	<0.5

Table no-03

Parameter	F, 4 mg/L (ppm), Date: 09.11.2017	
	Before	After
1. FLUORIDE	3.91	0.28
2. TDS, mg/L	103.8	235.4
3. pH	7.47	6.73
4. Chloride, mg/L	19.5	15.9
5. TURBIDITY, NTU	0.20	0.05
6. CONDUCTIVITY, μ S/cm	159	335
7. Calcium, mg/L	12.0	28.0
8. Magnesium, mg/L	6.7	16.1
9. Total hardness, mg/L	43.2	109.5
10. Alkalinity, mg/L	53.6	151.9
11. Acetic acid, mg/L	NIL	NIL
12. Aluminum, μ g/L	<0.5	<0.5

P. Chattopadhyay
17.11.2017

DR. P. CHATTOPADHYAY
SCIENTIST

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Table no-04

Parameter	F, 5 mg/L (ppm), Date: 10.11.2017	
	Before	After
1. FLUORIDE	5.05	0.31
2. TDS, mg/L	109.2	247.9
3. pH	7.38	6.78
4. Chloride, mg/L	19.6	15.9
5. TURBIDITY, NTU	0.17	0.05
6. CONDUCTIVITY, μ S/cm	165	348
7. Calcium, mg/L	12.0	28.0
8. Magnesium, mg/L	6.7	16.1
9. Total hardness, mg/L	43.2	109.5
10. Alkalinity, mg/L	61.0	153.8
11. Acetic acid, mg/L	NIL	NIL
12. Aluminum, μ g/L	<0.5	<0.5

PERFORMANCE OF THE UNIT:-

WHILE OPERATING THE UNIT FOR SEVERAL DAYS, THE HANDLING MECHANISM WORKED VERY FINE AND APPEARED TO BE STURDY.

ADOPTABILITY: THE UNIT IS SUCH THAT IT CAN BE HOOKED TO BOTH SMALL AND MEDIUM DEFLUORIDATION REQUIREMENTS INCLUDING HANDPUMP. RESULTS OBTAINED ARE MEETING THE SPECIFICATION OF BUREAU OF INDIAN STANDARD (BIS), IS: 10500-2012.

NO REGENERATION IS REQUIRED AND NO BACKWASH NEEDED FOR FLUORIDE REMOVAL. ONLY DOSING OF BHARTI NANOSKF-281164 CHEMICAL TECHNOLOGY MEETING ALL REQUIREMENTS. TEST

THE TESTING WAS CARRIED OUT AS PER THE BIS METHODS.

Panna Chatterjee
17.11.2017

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Observations:

- Fluoride and pH pass test within the permissible limit as per BIS 10500-2012 set for drinking water by Bureau of Indian Standard
- All materials were received in good condition and packing of the materials have been found to be safe enough to carry to the field
- The systems are efficient in fluoride removal from source. Very easy operation and practically maintenance free.
- The system as submitted to us is approved for drinking water application

Standard methods were followed for all the parameters as shown in the Table using "Titrisol Grade" standard chemicals from Merck, Germany.

Turbidity: ECTN100IR PORTABLE TURBIDITY METER (EUTECH INSTRUMENTS) WAS USED FOR CROSS CHECK.

CONCLUSION: FLUORIDE REMOVAL ATTACHMENT / PLANT PASSES THE QUALITY AS CLAIMED BY THE PARTY

Signature

Dr. Partha Chattopadhyay

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Partha Chattopadhyay
17.11.2017

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