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International
Independent Inspection
&
Testing Company

TEST REPORT

Report No.: GCGNZD2100010

ULR No. TC637121000020139P

Dated: 25 Mar 2021

Applicant : **ARVIND Limited**

Contact Person : Mr. Mohit Kumar

Address : PO. Khatraj, Tal. Kalol, Dist. Gandhinagar, 382721, Gujarat, India

Sample : The Submitted sample is Waste Water and Sludge

Date of Sampling : 09 Mar 2021

Sampling Location : ETP Plant

Sample Collected by : Mr. Mohit

Sampling Protocol : In-house (SOP NO.: GC-SOP-ANA-037 based on ISO: 5667)

Sample Quantity : 10 liters (ETP Inlet) ; 1 Kg(Sludge)

Weather Condition : Sunny

Factory Representative : Mr. Mohit Kumar

Type of Industry : Processing House

Sample Received Date : 10 Mar 2021

Type of Discharge : ZLD (As declared by customer)

Type of ETP : Continuous (Chemical treatment)

Type of Sampling : Composite

Sample Description : A: ETP Inlet waste water
B: Sludge

Date of Analysis : 10 Mar 2021 to 25 Mar 2021

For and on behalf of
Geo-Chem Laboratories Pvt. Ltd.

Dr. Shobhit Shrivastav
Lab Manager

Test result is drawn according to the kind and extent tests performed.

Without permission of the tests centre, this report is not permitted to be duplicated in extracts. This report does not entitle to carry any safety mark on this or similar products. This test report represents the test parameters as requested by the customer based on submitted sample only.

Result Summary (MRSL TEST)

Sl. No.	Test Item	A	B	Conclusion
1	Alkyphenol (AP) & Alkyphenol ethoxylates (APEOs)	ND	ND	Pass
2	Chlorobenzenes & Chlorotoluenes	ND	ND	Pass
3	Chlorophenols	ND	ND	Pass
4	Hazardous Dyes-Azo dyes / Amines	ND	ND	Pass
5	Hazardous Dyes-Carcinogenic dyestuff	ND	ND	Pass
6	Hazardous Dyes-Allergenic disperse dyestuff	ND	ND	Pass
7	Flame retardants	ND	ND	Pass
8	Glycols	ND	ND	Pass
9	Halogenated Solvents	ND	ND	Pass
10	Organotin compounds	ND	ND	Pass
11	PFCs (Perfluorocarbon / Polyfluorinated Compounds)	ND	ND	Pass
12	Phthalates	ND	ND	Pass
13	Polycyclic Aromatic Hydrocarbons (PAHs)	ND	ND	Pass
14	VOC	ND	ND	Pass

Remark:

1. ND: Not Detected, D: Detected

Result Summary (Conventional Test)

S. No.	Test Parameter	Inlet water	Sludge	Conclusion	
				ZDHC Discharge Limit	India Discharge Limit
1	Temperature [#]	-	-	-	Not Specified
2	TSS ^{\$}	-	-	-	Pass
3	COD ^{\$}	-	-	-	Pass
4	Total N ^{\$}	-	-	-	Not Specified
5	pH [#]	Refer Result	-	Pass	Pass
6	Colour	-	-	-	Not Specified
7	BOD ^{\$}	-	-	-	Pass
8	Ammonia N ^{\$}	-	-	-	Not Specified
9	Total P ^{\$}	-	-	-	Not Specified
10	O&G ^{\$}	-	-	-	Pass
11	Phenol ^{\$}	-	-	-	Pass
12	Coliform (per 100ml) ^{\$}	-	-	-	Not Specified
13	Persistent foam	-	-	-	NA
14	Cyanide ^{\$}	-	ND	Pass	Not Specified
15	Sulphite ^{\$}	-	-	-	Not Specified
16	Sulphide ^{\$}	-	-	-	Pass
17	Antimony	ND	ND	Pass	Not Specified
18	Total Chromium	ND	ND	Pass	Pass
19	Cobalt	ND	ND	Pass	Not Specified
20	Copper	D	ND	Pass	Not Specified
21	Nickel	ND	ND	Pass	Pass
22	Silver	ND	ND	Pass	Not Specified
23	Zinc	ND	ND	Pass	Not Specified
24	Arsenic	ND	D	Pass	Not Specified
25	Cadmium	ND	ND	Pass	Not Specified
26	Chromium (VI)	ND	ND	Pass	Not Specified
27	Lead	ND	D	Pass	Not Specified
28	Mercury	ND	ND	Pass	Not Specified

Remark:

- Collected sludge sample is showing lead concentration higher than ZDHC specified limit.
- ND: Not Detected, D: Detected, NA: Not Applicable
- # : Result were recorded at the time of sampling
- \$: Test was subcontracted to ISO: 17025 accredited laboratory

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MRSL Test Result

1) Alkylphenol (AP) & Alkylphenol ethoxylates (APEOs)					
Test Method: With Reference to ISO 18857-2, ISO 18254-1, followed by LCMS analysis					
Substance name	CAS No.	Reporting limit	Result		ZDHC Discharge Limit
			A (µg/L)	B (mg/kg)	
Nonylphenol (n-nonyl and iso-nonyl)	11066-49-2, 25154-52-3, 104-40-5, 90481-04-2, 84852-15-3	1 µg/L	ND	ND	Water : 5.0 µg/L Sludge :0.4 mg/kg
Octylphenol (n-octyl and iso-octyl)	140-66-9, 27193-28-8, 1806-26-4	1 µg/L	ND	ND	
Nonylphenoethoxylates (NPEO) (n-nonyl and iso-nonyl)	9016-45-9, 26027-38-3, 68412-54-4, 127087-87-0, 37205-87-1	1 µg/L	ND	ND	
Octylphenoethoxylates (OPEO) (n-octyl and iso-octyl)	9002-93-1, 9036-19-5, 68987-90-6	1 µg/L	ND	ND	

Remark: ND: Not Detected, Sludge Detection Limit : 0.2mg/kg

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2) Chlorobenzenes & ChloroToluene					
Test Method: With reference USEPA 8260B & 8270D, Solvent extraction with GCMS analysis					
Substance name	CAS No.	Reporting limit	Result		ZDHC Discharge Limit
			A (µg/L)	B (mg/kg)	
Monochlorobenzene	108-90-7	0.1µg/L	ND	ND	Water : 0.2 µg/L Sludge :0.2 mg/kg
Dichlorobenzenes	-	-	-	-	
1,2-Dichlorobenzene	95-50-1	0.1µg/L	ND	ND	
1,3-Dichlorobenzene	541-73-1	0.1µg/L	ND	ND	
1,4-Dichlorobenzene	106-46-7	0.1µg/L	ND	ND	
Trichlorobenzenes	-	-	-	-	
1,2,3-Trichlorobenzene	87-61-6	0.1µg/L	ND	ND	
1,2,4-Trichlorobenzene	120-82-1	0.1µg/L	ND	ND	
1,3,5-Trichlorobenzene	108-70-3	0.1µg/L	ND	ND	
Tetrachlorobenzene	-	-	-	-	
1,2,3,4-Tetrachlorobenzene	634-66-2	0.1µg/L	ND	ND	
1,2,3,5-Tetrachlorobenzene	634-90-2	0.1µg/L	ND	ND	
1,2,4,5-Tetrachlorobenzene	95-94-3	0.1µg/L	ND	ND	
Pentachlorobenzenes	608-93-5	0.1µg/L	ND	ND	
Hexachlorobenzene	118-74-1	0.1µg/L	ND	ND	
Chlorinated Toluenes (as solvents/biocides, from dyes production, Chemical intermediates, Antifelting)					
Chlorotoluene	Various	0.1µg/L	-	-	
2-Chlorotoluene	95-49-8	0.1µg/L	ND	ND	
3-Chlorotoluene	108-41-8	0.1µg/L	ND	ND	
4-Chlorotoluene	106-43-4	0.1µg/L	ND	ND	
Dichlorotoluene	Various	-	-	-	
2,3-Dichlorotoluene	32768-54-0	0.1µg/L	ND	ND	
2,4-Dichlorotoluene	95-73-8	0.1µg/L	ND	ND	
2,5-Dichlorotoluene	19398-61-9	0.1µg/L	ND	ND	
2,6-Dichlorotoluene	118-69-4	0.1µg/L	ND	ND	
3,4-Dichlorotoluene	95-75-0	0.1µg/L	ND	ND	
3,5-Dichlorotoluene	25186-47-4	0.1µg/L	ND	ND	
Trichlorotoluene	Various	-	-	-	
2,3,6-Trichlorotoluene	2077-46-5	0.1µg/L	ND	ND	
2,4,5-Trichlorotoluene	6639-30-1	0.1µg/L	ND	ND	
2,4,6-Trichlorotoluene	23749-65-7	0.1µg/L	ND	ND	
2,3,4-Trichlorotoluene	7359-72-0	0.1µg/L	ND	ND	
3,4,5-trichlorotouene	2014-83-7	0.1µg/L	ND	ND	
Tetrachlorotoluene	Various	-	-	-	
2,3,4,5- Tetrachlorotoluene	76057-12-0	0.1µg/L	ND	ND	
2,3,5,6- Tetrachlorotoluene	29733-70-8	0.1µg/L	ND	ND	
2,3,4,6- Tetrachlorotoluene	875-40-1	0.1µg/L	ND	ND	
Pentachlorotoluene	877-11-2	0.1µg/L	ND	ND	

Remark: ND: Not Detected Sludge Detection Limit : 0.1mg/kg

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3) Chlorophenols					
Test Method: With reference USEPA 8270D, Solvent extraction, followed by GCMS analysis					
Substance name	CAS No.	Reporting limit	Result		ZDHC Discharge Limit
			A (µg/L)	B (mg/kg)	
Monochlorophenols	-	-	-	-	Water : 0.5 µg/L Sludge :0.05 mg/kg
2-Chlorophenol	95-57-8	0.5µg/L	ND	ND	
3-Chlorophenol	108-43-0	0.5µg/L	ND	ND	
4-Chlorophenol	106-48-9	0.5µg/L	ND	ND	
Dichlorophenols (DiCP)	-	-	-	-	
2,3-dichlorophenol	576-24-9	0.5µg/L	ND	ND	
2,4-dichlorophenol	120-83-2	0.5µg/L	ND	ND	
2,5-Dichlorophenol	583-78-8	0.5µg/L	ND	ND	
3,4-dichlorophenol	95-77-2	0.5µg/L	ND	ND	
3,5-dichlorophenol	591-35-5	0.5µg/L	ND	ND	
2,6-Dichlorophenol	87-65-0	0.5µg/L	ND	ND	
Trichlorophenol	-	-	-	-	
2,3,4-Trichlorophenol	15950-66-0	0.5µg/L	ND	ND	
2,3,5-Trichlorophenol	933-78-8	0.5µg/L	ND	ND	
2,3,6-Trichlorophenol	933-75-5	0.5µg/L	ND	ND	
2,4,5-Trichlorophenol	95-95-4	0.5µg/L	ND	ND	
2,4,6-Trichlorophenol	88-06-2		ND	ND	
3,4,5-Trichlorophenol	609-19-8	0.5µg/L	ND	ND	
Tetrachlorophenol	-	-	-	-	
2,3,4,5-Tetrachlorophenol	4901-51-3	0.5µg/L	ND	ND	
2,3,4,6-Tetrachlorophenol	58-90-2	0.5µg/L	ND	ND	
2,3,5,6-Tetrachlorophenol	935-95-5	0.5µg/L	ND	ND	
Pentachlorophenol	87-86-5	0.5µg/L	ND	ND	

Remark: ND: Not Detected, Sludge Detection Limit : 0.05mg/kg

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4) Azo dyes / Amines					
Test Method: With reference to EN 14362-1&3 and followed by GCMS &/or LCMS Analysis					
Substance name	CAS No.	Reporting limit	Result		ZDHC Discharge Limit
			A (µg/L)	B (mg/kg)	
4-Aminodiphenyl	92-67-1	0.1µg/L	ND	ND	Water : 0.1 µg/L Sludge :0.2 mg/kg
Benzidine	92-87-5	0.1µg/L	ND	ND	
4-Chloro-o-toluidine	95-69-2	0.1µg/L	ND	ND	
2-Naphthylamine	91-59-8	0.1µg/L	ND	ND	
o-Aminoazotoluene (C.I. Solvent Yellow 3, C.I. 11160)	97-56-3	0.1µg/L	ND	ND	
2-Amino-4-nitrotoluene	99-55-8	0.1µg/L	ND	ND	
p-Chloroaniline	106-47-8	0.1µg/L	ND	ND	
2,4-Diaminoanisole	615-05-4	0.1µg/L	ND	ND	
4,4'-Diaminodiphenylmethane	101-77-9	0.1µg/L	ND	ND	
3,3'-Dichlorobenzidine	91-94-1	0.1µg/L	ND	ND	
3,3'-Dimethoxybenzidine	119-90-4	0.1µg/L	ND	ND	
3,3'-Dimethylbenzidine	119-93-7	0.1µg/L	ND	ND	
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	0.1µg/L	ND	ND	
p-Cresidine; 6-methoxy-m-toluidine	120-71-8	0.1µg/L	ND	ND	
4,4'-Methylene-bis-(2-chloroaniline)	101-14-4	0.1µg/L	ND	ND	
4,4'-Oxydianiline	101-80-4	0.1µg/L	ND	ND	
4,4'-Thiodianiline	139-65-1	0.1µg/L	ND	ND	
o-Toluidine	95-53-4	0.1µg/L	ND	ND	
2,4-Toluyldiamine	95-80-7	0.1µg/L	ND	ND	
2,4,5-Trimethylaniline	137-17-7	0.1µg/L	ND	ND	
o-Anisidine (2-Methoxyaniline)	90-04-0	0.1µg/L	ND	ND	
C.I. Solvent Yellow 1 (p-Aminoazobenzol (pure))	60-09-3	0.1µg/L	ND	ND	
2,4-Xylidine	95-68-1	0.1µg/L	ND	ND	
2,6-Xylidine	87-62-7	0.1µg/L	ND	ND	

Remark: ND: Not Detected, Sludge Detection Limit : 0.1mg/kg

5) Carcinogenic Dyes					
Test Method: Solvent extraction with LCMS analysis					
Substance name	CAS No.	Reporting limit	Result		ZDHC Discharge Limit
			A (µg/L)	B (mg/kg)	
C.I. Acid Red 26 (C.I. 16150)	3761-53-3	0.1µg/L	ND	ND	Water : 500 µg/L Sludge :10 mg/kg
C.I. Basic Blue 26	2580-56-5	0.1µg/L	ND	ND	
C.I. Basic Red 9 (C.I. 42500)	569-61-9	0.1µg/L	ND	ND	
C.I. Basic Violet 14 (C.I. 42510)	632-99-5	0.1µg/L	ND	ND	
C.I. Direct Black 38 (C.I. 30235)	1937-37-7	0.1µg/L	ND	ND	
C.I. Direct Blue 6 (C.I. 22610)	2602-46-2	0.1µg/L	ND	ND	
C.I. Basic Green 4	569-64-2	0.1µg/L	ND	ND	
C.I. Basic Green 4	2437-29-8	0.1µg/L	ND	ND	
C.I. Basic Green 4	10309-95-2	0.1µg/L	ND	ND	
C.I. Direct Red 28 (C.I. 22120)	573-58-0	0.1µg/L	ND	ND	
C.I. Disperse Blue 1 (C.I. 64500)	2475-45-8	0.1µg/L	ND	ND	
C.I. Disperse Blue 3	2475-46-9	0.1µg/L	ND	ND	
C.I. Disperse Orange 11 (C.I. 60700)	82-28-0	0.1µg/L	ND	ND	
C.I. Disperse Yellow 3	2832-40-8	0.1µg/L	ND	ND	

Remark: ND: Not Detected, Sludge Detection Limit : 0.5mg/kg

6) Allergenic Disperse Dyes					
Test Method: Solvent extraction with LCMS analysis					
Substance name	CAS No.	Reporting limit	Result		ZDHC Discharge Limit
			A (µg/L)	B (mg/kg)	
C.I. Disperse Blue 1 (C.I. 64500)	2475-45-8	0.1µg/L	ND	ND	Water : 50 µg/L Sludge :2 mg/kg
C.I. Disperse Blue 3 (C.I. 61505)	2475-46-9	0.1µg/L	ND	ND	
C.I. Disperse Blue 7 (C.I. 62500)	3179-90-6	0.1µg/L	ND	ND	
C.I. Disperse Blue 26 (C.I. 63305)	3860-63-7	0.1µg/L	ND	ND	
C.I. Disperse Blue 35 (mixture)	12222-75-2	0.1µg/L	ND	ND	
C.I. Disperse Blue 102	12222-97-8	0.1µg/L	ND	ND	
C.I. Disperse Blue 106	12223-01-7	0.1µg/L	ND	ND	
C.I. Disperse Blue 124	61951-51-7	0.1µg/L	ND	ND	
C.I. Disperse Brown 1	23355-64-8	0.1µg/L	ND	ND	
C.I. Disperse Orange 1 (C.I. 11080)	2581-69-3	0.1µg/L	ND	ND	
C.I. Disperse Orange 3 (C.I. 11005)	730-40-5	0.1µg/L	ND	ND	
C.I. Disperse Orange 37 / 59 / 76 (C.I. 11132)	13301-61-6	0.1µg/L	ND	ND	
C.I. Disperse Orange 149	85136-74-9	0.1µg/L	ND	ND	
C.I. Disperse Red 1 (C.I. 11110)	2872-52-8	0.1µg/L	ND	ND	
C.I. Disperse Red 11 (C.I. 62015)	2872-48-2	0.1µg/L	ND	ND	
C.I. Disperse Red 17 (C.I. 11210)	3179-89-3	0.1µg/L	ND	ND	
C.I. Disperse Yellow 1 (C.I. 10345)	119-15-3	0.1µg/L	ND	ND	
C.I. Disperse Yellow 3 (C.I. 11855)	2832-40-8	0.1µg/L	ND	ND	
C.I. Disperse Yellow 9 (C.I. 10375)	6373-73-5	0.1µg/L	ND	ND	
C.I. Disperse Yellow 23 (C.I. 26070)	6250-23-3	0.1µg/L	ND	ND	
C.I. Disperse Yellow 39	12236-29-2	0.1µg/L	ND	ND	
C.I. Disperse Yellow 49	54824-37-2	0.1µg/L	ND	ND	

Remark: ND: Not Detected, Sludge Detection Limit : 0.5mg/kg

7) Flame retardants					
Test Method: With reference to USEPA 8270, USEPA 527, USEPA 8321B Solvent extraction followed by GC/MS & LCMS analysis					
Substance name	CAS No.	Reporting limit	Result		ZDHC Discharge Limit
			A (µg/L)	B (mg/kg)	
Polybromobiphenyls (PBBs)	59536-65-1	0.05 µg/L	ND	ND	Water : 5.0 µg/L Sludge : 1 mg/kg
Monobromobiphenyls (MonoBB)	Various	0.05 µg/L	ND	ND	
Dibromobiphenyls (DiBB)	Various	0.05 µg/L	ND	ND	
Tribromobiphenyls (TriBB)	Various	0.05 µg/L	ND	ND	
Tetrabromobiphenyls (TetraBB)	Various	0.05 µg/L	ND	ND	
Pentabromobiphenyls (PentaBB)	Various	0.05 µg/L	ND	ND	
Hexabromobiphenyls (HexaBB)	Various	0.05 µg/L	ND	ND	
Heptabromobiphenyls (HeptaBB)	Various	0.05 µg/L	ND	ND	
Octabromobiphenyls (OctaBB)	Various	0.05 µg/L	ND	ND	
Nonabromobiphenyls (NonaBB)	Various	0.05 µg/L	ND	ND	
Decabromobiphenyl (DecaBB)	13654-09-6	0.05 µg/L	ND	ND	
Pentabromodiphenylethers (PentaBDEs)	Various 32534-81-9	0.05 µg/L	ND	ND	
Octabromodiphenylethers (OctaBDEs)	Various 32536-52-0	0.05 µg/L	ND	ND	
Decabromodiphenylether (DecaBDE)	1163-19-5	0.05 µg/L	ND	ND	
Tri-(2,3-dibromopropyl)phosphate (TRIS)	126-72-7	0.5 µg/L	ND	ND	
Tris(2-chlorethyl)phosphate (TCEP)	115-96-8	0.05 µg/L	ND	ND	
Hexabromocyclododecane (HBCDD) and all main diastereomeres identified (alpha-, beta-, gamma-)	3194-55-6 134237-50-6 134237-51-7 134237-52-8 25637-99-4	0.5 µg/L	ND	ND	
3,5,3',5'-Tetrabromo-bisphenol A (TBBPA)	79-94-7	0.5 µg/L	ND	ND	
Tris(1,3-dichlorisopropyl)phosphat (TDCPP)	13674-87-8	0.5 µg/L	ND	ND	
Tris-(aziridiny)-phosphin oxide (TEPA)	545-55-1	0.5 µg/L	ND	ND	
Bis (2,3-dibromopropyl) phosphate	5412-25-9	0.5 µg/L	ND	ND	
Tri-O-tolyl phosphate	78-30-8	0.5 µg/L	ND	ND	
Tris (2-chloro-isopropyl) phosphate	13674-84-5	0.5 µg/L	ND	ND	
Short-chain chlorinated Paraffins (SCCP) (C10-C13)	85535-84-8	2.0 µg/L	ND	ND	

Remark: ND: Not Detected, Sludge Detection Limit : 0.5mg/kg

8) Glycols					
Test Method: USEPA: 8270 followed by analysis in GC-MS & LC-MS					
Substance name	CAS No.	Reporting limit	Result		ZDHC Discharge Limit
			A (µg/L)	B (mg/kg)	
Bis(2-methoxyethyl)-ether	111-96-6	0.1µg/l	ND	ND	Water : 50 µg/L Sludge :10 mg/kg
2-ethoxyethanol	110-80-5	0.1µg/l	ND	ND	
2-ethoxyethyl acetate	111-15-9	0.1µg/l	ND	ND	
Ethylene glycol dimethyl ether	110-71-4	0.1µg/l	ND	ND	
2-methoxyethanol	109-86-4	0.1µg/l	ND	ND	
2-methoxyethylacetate	110-49-6	0.1µg/l	ND	ND	
2-methoxypropyleacetate	70657-70-4	0.1µg/l	ND	ND	
Triethylene glycol dimethyl ether	112-49-2	0.1µg/l	ND	ND	

Remark: ND: Not Detected, Sludge Detection Limit : 0.5mg/kg

9) Halogenated solvents					
Test Method: With reference USEPA 8260B, analysis by GCMS with Headspace					
Substance name	CAS No.	Reporting limit	Result		ZDHC Discharge Limit
			A (µg/L)	B (mg/kg)	
1,2-Dichloromethane	75-09-2	1µg/L	ND	ND	Water : 1.0 µg/L Sludge :2.0 mg/kg
Methylene Chloride	107-06-2	1µg/L	ND	ND	
Trichloroethane	79-01-6	1µg/L	ND	ND	
Tetrachloroethylene	127-18-4	1µg/L	ND	ND	

Remark: ND: Not Detected, Sludge Detection Limit : 1 mg/kg

10) Organotin compounds					
Test Method: With reference to ISO 17353 and followed by GCMS analysis					
Substance name	CAS No.	Reporting limit	Result		ZDHC Discharge Limit
			A (µg/L)	B (mg/kg)	
Monochloromethyltin compound	Various	0.01µg/L	ND	ND	Water : 0.01 µg/L Sludge :0.2 mg/kg
Dichloromethyltin compound	Various	0.01µg/L	ND	ND	
Trichloromethyltin compound	Various	0.01µg/L	ND	ND	
Monobutyltin (MBT)	Various	0.01µg/L	ND	ND	
Dibutyltin (DBT)	Various	0.01µg/L	ND	ND	
Tributyltin (TBT)	Various	0.01µg/L	ND	ND	
Monophenyltin (MPhT)	Various	0.01µg/L	ND	ND	
Diphenyltin (DPhT)	Various	0.01µg/L	ND	ND	
Triphenyltin (TPhT)	Various	0.01µg/L	ND	ND	
Monooctyltin (MOT)	Various	0.01µg/L	ND	ND	
Diocetyltn (DOT)	Various	0.01µg/L	ND	ND	
Triocetyltn (TOT)	Various	0.01µg/L	ND	ND	

Remark: ND: Not Detected, Sludge Detection Limit : 0.1mg/kg

11) Perfluorinated compounds (PFCs)					
Test Method: With reference CEN/TS 15968, USEPA 537, Solvent extraction followed by GCMS or LCMS analysis					
Substance name	CAS No.	Reporting limit	Result		ZDHC Discharge Limit
			A(µg/L)	B (mg/kg)	
Perfluoropentanoic Acid (PFPeA) and salts	2706-90-3	0.01µg/L	ND	ND	Water :0.01 µg/L
Perfluorohexanoic Acid (PFHxA) and salts	307-24-4	0.01µg/L	ND	ND	
Perfluoroheptanoic Acid (PFHpA) and salts	375-85-9	0.01µg/L	ND	ND	Sludge :0.10 mg/kg ionic
HPFHpA, and salts	1546-95-8	0.01µg/L	ND	ND	
Perfluorooctanoic Acid (PFOA) and salts	335-67-1	0.01µg/L	ND	ND	
PF-3,7-DMOA, and salts	172155-07-6	0.01µg/L	ND	ND	
Perfluorononanoic Acid (PFNA) and salts	375-95-1	0.01µg/L	ND	ND	
Perfluorodecanoic Acid (PFDA) and salts	335-76-2	0.01µg/L	ND	ND	
Perfluoroundecanoic Acid (PFUnDA) and salts	2058-94-8	0.01µg/L	ND	ND	
4HPFUnA, and salts	34598-33-9	0.01µg/L	ND	ND	
Perfluorododecanoic Acid (PFDoA) and salts	307-55-1	0.01µg/L	ND	ND	
Perfluorotetradecanoic Acid (PFTeDA) and salts	376-06-7	0.01µg/L	ND	ND	
Perfluorobutansulfonate (PFBS) and salts	375-73-5, 59933-66-3	0.01µg/L	ND	ND	
Perfluorohexansulfonate (PFHxS) and salts	355-46-4	0.01µg/L	ND	ND	
Perfluoroheptansulfonate (PFHpS) and salts	375-92-8	0.01µg/L	ND	ND	
Perfluorooctansulfonate (PFOS) and salts	1763-23-1	0.01µg/L	ND	ND	
1H,1H,2H,2H-PFOS, and salts	27619-97-2	0.01µg/L	ND	ND	
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	0.01µg/L	ND	ND	(For FTOH: ; 1 mg/kg non-ionic)
N-methylperfluoro-1-octanesulfonamide (N-eFOSA)	31506-32-8	0.01µg/L	ND	ND	
N-ethylperfluoro-1-octanesulfonamide (N-EtFOSA)	4151-50-2	0.01µg/L	ND	ND	
1H,1H,2H,2H-perfluoro-1-octanol (6:2 FTOH)	647-42-7	0.01µg/L	ND	ND	
1H,1H,2H,2H-perfluoro-1-decanol (8:2 FTOH)	678-39-7	0.01µg/L	ND	ND	

Remark: ND: Not Detected, Sludge Detection Limit : 0.1mg/kg

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12) Phthalates					
Test Method: With reference to USEPA 8270D, Solvent extraction followed by GC/MS analysis					
Substance name	CAS No.	Reporting limit	Result		ZDHC Discharge Limit (Max µg/L)
			A (µg/L)	B (mg/kg)	
Dibutylphthalate (DBP)	84-74-2	1 µg/L	ND	ND	Water : 10 µg/L Sludge : 2 mg/kg
Di-(2-ethylhexyl)phthalate (DEHP)	117-81-7	1 µg/L	ND	ND	
Benzylbutylphthalate (BBP)	85-68-7	1 µg/L	ND	ND	
Di-iso-nonylphthalate (DINP)	28553-12-0	1 µg/L	ND	ND	
	68515-48-0	1 µg/L	ND	ND	
Di-n-octylphthalate (DNOP)	117-84-0	1 µg/L	ND	ND	
Di-iso-decyl phthalate (DIDP)	26761-40-0	1 µg/L	ND	ND	
	68515-49-1	1 µg/L	ND	ND	
Di-iso-butylphthalate (DIBP)	84-69-5	1 µg/L	ND	ND	
Di-n-hexylphthalate (DnHP)	84-75-3	1 µg/L	ND	ND	
Di-(2-methoxyethyl)phthalate (DMEP)	117-82-8	1 µg/L	ND	ND	
Di-C7-11-branched alkylphthalates (DHNUP)	68515-42-4	1 µg/L	ND	ND	
Di-C6-8-branched alkylphthalates (DIHP)	71888-89-6	1 µg/L	ND	ND	
Di-n-propylphthalate (DPRP)	131-16-8	1 µg/L	ND	ND	
Di-iso-octylphthalate (DIOP)	27554-26-3	1 µg/L	ND	ND	
Dicyclohexylphthalate (DCHP)	84-61-7	1 µg/L	ND	ND	
Diethylphthalate (DEP)	84-66-2	1 µg/L	ND	ND	
Dinonylphthalate (DNP)	84-76-4	1 µg/L	ND	ND	

Remark: ND: Not Detected, Sludge Detection Limit : 1 mg/kg

13) Polycyclic Aromatic Hydrocarbons (PAHs)					
Test Method: With reference USEPA 8270, Solvent extraction with GCMS analysis					
Substance name	CAS No.	Reporting limit	Result		ZDHC Discharge Limit (Max µg/L)
			A (µg/L)	B (mg/kg)	
Acenaphthene	83-32-9	1µg/L	ND	ND	Water : 1.0 µg/L Sludge :0.2 mg/kg
Acenaphthylene	208-96-8	1µg/L	ND	ND	
Anthracene	120-12-7	1µg/L	ND	ND	
Benza[a]anthracene	56-55-3	1µg/L	ND	ND	
Benzo[a]pyrene	50-32-8	1µg/L	ND	ND	
Benzo[b]fluoranthene	205-99-2	1µg/L	ND	ND	
Benzo[ghi]perylene	191-24-2	1µg/L	ND	ND	
Benzo[k]fluoranthene	207-08-9	1µg/L	ND	ND	
Chrysene	218-01-9	1µg/L	ND	ND	
Dibenzo[a,h]anthracene	53-70-3	1µg/L	ND	ND	
Fluoranthene	206-44-0	1µg/L	ND	ND	
Fluorene	86-73-7	1µg/L	ND	ND	
Indeno[1,2,3-cd]pyrene	193-39-5	1µg/L	ND	ND	
Naphthalene	91-20-3	1µg/L	ND	ND	
Phenanthrene	85-01-8	1µg/L	ND	ND	
Pyrene	129-00-0	1µg/L	ND	ND	
Benzo[e]pyrene	192-97-2	1µg/L	ND	ND	
Benzo[j]fluoranthene	205-82-3	1µg/L	ND	ND	

Remark: ND: Not Detected, Sludge Detection Limit : 0.2mg/kg

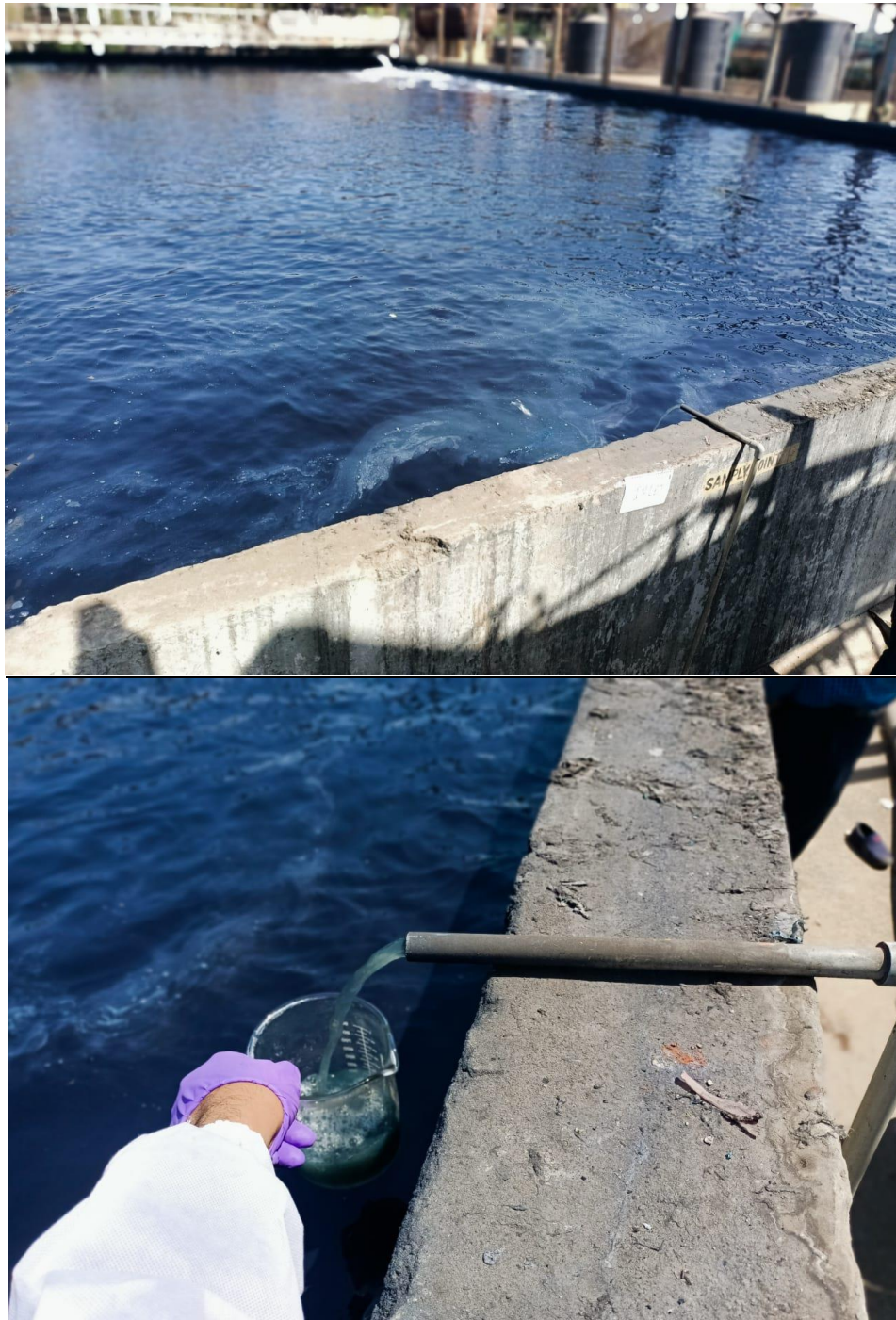
14) VOC					
Test Method: With reference USEPA 8260, analysis by GCMS with Headspace					
Substance name	CAS No.	Reporting limit	Result (µg/L)		ZDHC Discharge Limit (Max µg/L)
			A (µg/L)	B (mg/kg)	
Benzene	71-43-2	1µg/L	ND	ND	Water : 1.0 µg/L Sludge :2.0mg/kg
Xylene	1330-20-7	1µg/L	ND	ND	
o-Cresol	95-48-8	1µg/L	ND	ND	
m-Cresol	106-44-5	1µg/L	ND	ND	
p-Cresol	108-39-4	1µg/L	ND	ND	

Remark: ND: Not Detected, Sludge Detection Limit : 1 mg/kg

CONVENTIONAL PARAMETERS

S. No.	Test Details	Test Method	Reporting Limit	Test Result		India Discharge Limit	ZDHC Discharge Limit(water)	ZDHC Discharge Limit(sludge)
				A (mg/L)	B (mg/kg)			
1	Temperature	USEPA 170.1	1°C	47 °C	-	Not specified	Δ15/ Max 35	-
2	TSS	APHA/SM 2540D	5mg/l	-	-	100mg/l	50mg/l	-
3	COD	APHA/SM 5220D	10mg/l	-	-	250mg/l	150mg/l	-
4	Total N	APHA 4500N-C	5mg/l	-	-	Not specified	20mg/l	-
5	pH	USEPA 150.1	0 – 14	6.1	-	5.5 to 8.5	6.0 to 9.0	-
6	Colour [M ⁻¹] (436nm, 525, 620nm)	ISO 7887 Method B	0.01	-	-	150Hz	436nm: 7 525nm: 5 620nm: 3	-
7	BOD (5D/20°C)	APHA/SM 5210B	5.0mg/l	-	-	30	30mg/l	-
8	Ammonia N	APHA/SM 4500 NH3-N	5.0mg/l	-	-	Not specified	10mg/l	-
9	Total P	APHA/SM 4500P-J	1mg/l	-	-	Not specified	3mg/l	-
10	O&G	ISO 9377-2 &4	2mg/l	-	-	10mg/l	10mg/l	-
11	Phenol	APHA 5530 B, C & D	0.001mg/l	-	-	1.0 mg/l	0.5mg/l	-
12	Coliform (per 100ml)	USEPA 9132	10cfu	-	-	Not specified	400	-
13	Persistent foam	Visual	Not Applicable	-	-	Not specified	No visual	-
14	Cyanide	APHA 4500-CN	0.01mg/l	-	ND	Not specified	0.2mg/l	1.0mg/kg
15	Sulphite	USEPA 377.1	1.0mg/l	-	-	Not specified	2mg/l	-
16	Sulphide	APHA/SM 4500-S2-D	0.1mg/l	-	-	2.0 mg/l	0.5mg/l	-
17	Antimony	APHA/ SM 3030D, E Followed by analysis in ICP-MS	0.01mg/l	<0.01	-	Not specified	0.1mg/l	-
18	Total Chromium		0.01mg/l	< 0.01	-	2.0 mg/l	0.2mg/l	-
19	Cobalt		0.01mg/l	<0.01	-	Not specified	0.05mg/l	-
20	Copper		0.01mg/l	0.3	-	Not specified	1.0mg/l	-
21	Nickel		0.01mg/l	<0.01	-	2.0 mg/l	0.2mg/l	-
22	Silver		0.01mg/l	<0.01	-	Not specified	0.1mg/l	-
23	Zinc		0.1mg/l	<0.1	-	Not specified	5.0mg/l	-
24	Arsenic		0.005mg/l	<0.005	0.88	Not specified	0.05mg/l	2 mg/kg
25	Cadmium		0.01mg/l	<0.01	<0.1	Not specified	0.1mg/l	2 mg/kg
26	Chromium (VI)	USEPA 218.6	0.01mg/l	<0.01	<0.005	Not specified	0.05mg/l	2 mg/kg
27	Lead	APHA/ SM 3030D, E Followed by analysis in ICP-MS	0.01mg/l	<0.01	1.78	Not specified	0.1mg/l	2 mg/kg
28	Mercury		0.005mg/l	<0.005	<0.2	Not specified	0.01mg/l	0.2 mg/kg

Sample





End of the Test Report