

Date of sampling	07/05/2024
Reporting Date	11/05/2024

Audit ID	170579	Audit firm	INTERTEK - INDIA
Company name	AARTI INTERNATIONAL LTD.		
Contact person	Mr. Harpreet Singh		
Type of tax - tax ID no	GSTIN - 03AABCA4454C1ZD		
Address	Dyeing & Processing Unit, Village Bhaman Kalan & Harhian, Post Uppal, Kohara Machhiwara Road		
Region state province	Punjab		
Town city / village	Ludhiana		
Zip/Post code	141123		
Country	India		

Type of wastewater discharge				
Type of wastewater discharge:	ZLD			
On-site effluent treatment plant (ETP):	Yes			
Pre - treatment:	Yes			
	Preliminary	Primary	Secondary/Biological	Tertiary
	<input checked="" type="checkbox"/> Screening/ Sieving/Grit Remover	<input type="checkbox"/> Coagulation/Flocculation	<input checked="" type="checkbox"/> Activated sludge process Aerobic reactor	<input type="checkbox"/> Absorption with activated carbon
	<input checked="" type="checkbox"/> Homogenization tank	<input type="checkbox"/> Dissolved air flotation (DAF)	<input type="checkbox"/> Biological Biofilm reactor (MBBR, SAF, RBC...)	<input type="checkbox"/> High rate filtration
	<input checked="" type="checkbox"/> pH correction	<input checked="" type="checkbox"/> Sedimentation tanks or Settler/Clarifier	<input type="checkbox"/> BSequencing batch reactor (SBR)	<input type="checkbox"/> Advanced oxidation techniques (Ozone, Fenton reaction, photo catalytic degradation...)
	<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input checked="" type="checkbox"/> Other	
Description of discharge:	ZLD			
[If direct discharge] ambient temperature of receiving water body (°C):	NA			
Average total industrial wastewater generated (m3/day):	1700 KLD			

Sludge Disposal Pathway	B
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Sampler accreditation certification number (ZDHC):		C74D106817996	
Sample description	Simple	Composite	Comments
(1) Untreated wastewater (BT)	[,Dark Pink, Grab Sample at 02:30] [Sampling location: Latitude 30.90., Longitude 76.13]		
(2) Effluent (AT)	N/A		

(3) Sludge	[Dark Grey, Grab Sample at 02:40] [Sampling location: Latitude 30.90., Longitude 76.13]		[pH -7.9]
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Local Legal Data	
Local Legal Standard name [a]	Punjab Pollution Control Board
Local legal standard no. [a]:	CTOW/Varied/LDH1/2023/20269201
Parameters (ZDHC WWSG V2.1, Table 2-3) exceeded local regulation:	No
Discharge permit provided:	Yes

Internal description – Intertek Lab Issuing Final Test Report	
Sampling laboratory	Intertek India Private Ltd.
Testing laboratory	Intertek India Private Ltd.
Date received sample	07/05/2024
Date and time of the beginning of sampling	07/05/2024, 02:30 PM
Date and time of the end of sampling	07/05/2024, 02:40 PM
Testing period	08/05/2024 to 11/05/2024
Reporting date	11/05/2024
Arrival Temperature at Lab	5.9 °C
Internal codification number	DELC24005051
Reference sample number	DELC24005051
Comments	Sample received in good condition

SOFTLINES WASTEWATER TESTING

TEST REPORT

Number: DELC24005051

Summary of test results		
Wastewater/ MRSL - Test items	Testing period	Sample 1 (untreated)
Alkylphenols (APs) & Alkylphenol ethoxylates (APEOs)	08/05/2024 to 10/05/2024	ND
Anti - Microbials & Biocides	08/05/2024 to 10/05/2024	ND
Chlorinated parafins	08/05/2024 to 10/05/2024	ND
Chlorobenzenes and Chlorotoluenes	08/05/2024 to 10/05/2024	ND
Chlorophenols	08/05/2024 to 10/05/2024	ND
Dimethyl Formamide (DMFa) (*)	08/05/2024 to 10/05/2024	ND
Dyes – Carcinogenic or Equivalent Concern	08/05/2024 to 10/05/2024	ND
Dyes – Disperse (Allergenic)	08/05/2024 to 10/05/2024	ND
Dyes-Navy Blue Colourant	08/05/2024 to 10/05/2024	ND
Flame retardants	08/05/2024 to 10/05/2024	ND
Glycols	08/05/2024 to 10/05/2024	ND
Halogenated solvents	08/05/2024 to 10/05/2024	ND
Organotin compounds	08/05/2024 to 10/05/2024	ND
Other/Miscellaneous Chemicals (^)	08/05/2024 to 10/05/2024	ND
Perfluorinated chemicals (PFCs)	08/05/2024 to 10/05/2024	ND
Phthalates	08/05/2024 to 10/05/2024	ND
Polycyclic aromatic hydrocarbons (PAHs)	08/05/2024 to 10/05/2024	ND
Restricted Aromatic Amines (Cleavable from Azo- colourants) Azo dyes	08/05/2024 to 10/05/2024	ND
UV Absorbers	08/05/2024 to 10/05/2024	ND
Volatile organic compounds (VOCs)	08/05/2024 to 10/05/2024	ND



Wastewater / Heavy metals - Test items	Testing period	Sample 2 (Untreated)		
		Foundational	Progressive	Aspirational
Antimony	N/A	N/A	N/A	N/A
Chromium (VI)	N/A	N/A	N/A	N/A
Barium	N/A	N/A	N/A	N/A
Selenium	N/A	N/A	N/A	N/A
Tin	N/A	N/A	N/A	N/A
Arsenic	N/A	N/A	N/A	N/A
Chromium (total)	N/A	N/A	N/A	N/A
Cobalt	N/A	N/A	N/A	N/A
Cadmium	N/A	N/A	N/A	N/A
Copper	N/A	N/A	N/A	N/A
Lead	N/A	N/A	N/A	N/A
Nickel	N/A	N/A	N/A	N/A
Silver	N/A	N/A	N/A	N/A
Zinc	N/A	N/A	N/A	N/A
Mercury	N/A	N/A	N/A	N/A

Wastewater / Conventional parameters - Test items	Testing period	Sample 2 (effluent)		
		Foundational	Progressive	Aspirational
pH ^[f]	N/A	N/A	N/A	N/A
Temperature difference ^[f]	N/A	N/A	N/A	N/A
E.coli	N/A	N/A	N/A	N/A
Colour	N/A	N/A	N/A	N/A
Persistent foam ^[f]	N/A	N/A	N/A	N/A
Wastewater flowrate ^[f]	N/A	N/A	N/A	N/A
Ammonium-Nitrogen	N/A	N/A	N/A	N/A
AOX	N/A	N/A	N/A	N/A
Biochemical Oxygen Demand (BOD ₅)	N/A	N/A	N/A	N/A
Chemical Oxygen Demand (COD)	N/A	N/A	N/A	N/A
Dissolved Oxygen (DO) ^[f]	N/A	N/A	N/A	N/A
Oil & Grease	N/A	N/A	N/A	N/A
Total Phenols / Phenol Index	N/A	N/A	N/A	N/A
Total Chlorine ^[f]	N/A	N/A	N/A	N/A

SOFTLINES WASTEWATER TESTING

TEST REPORT

Number: DELC24005051

Total Dissolved Solids (TDS)	N/A	N/A	N/A	N/A
Total Nitrogen	N/A	N/A	N/A	N/A
Total Phosphorus	N/A	N/A	N/A	N/A
Total Suspended Solids (TSS)	N/A	N/A	N/A	N/A

Wastewater / Anions - Test items	Testing period	Sample 2 (effluent)		
		Foundational	Progressive	Aspirational
Chloride	N/A	N/A	N/A	N/A
Cyanide, total	N/A	N/A	N/A	N/A
Sulfate	N/A	N/A	N/A	N/A
Sulfide	N/A	N/A	N/A	N/A
Sulfite	N/A	N/A	N/A	N/A

Sludge / Heavy metals - Test items	Testing period	Sample 3: Sludge (Total)	Sample 3: Sludge (Leachate)
Antimony	08/05/2024 to 10/05/2024	Meet	
Arsenic	08/05/2024 to 10/05/2024	Meet	
Barium	08/05/2024 to 10/05/2024	Meet	
Cadmium	08/05/2024 to 10/05/2024	Meet	
Cobalt	08/05/2024 to 10/05/2024	Meet	
Copper	08/05/2024 to 10/05/2024		Meet
Lead	08/05/2024 to 10/05/2024	Meet	
Nickel	08/05/2024 to 10/05/2024	Meet	
Selenium	08/05/2024 to 10/05/2024	Meet	
Silver	08/05/2024 to 10/05/2024	Meet	
Chromium (total)	08/05/2024 to 10/05/2024	Meet	
Zinc	08/05/2024 to 10/05/2024	Meet	
Chromium VI	08/05/2024 to 10/05/2024	Meet	
Mercury	08/05/2024 to 10/05/2024	Meet	



Sludge / Anion - Test items	Testing period	Sample 3: Sludge
Cyanide	08/05/2024 to 10/05/2024	Report only, refer data

Sludge / Conventional parameters - Test items	Testing period	Sample 3: Sludge
pH	08/05/2024 to 10/05/2024	Meet
% Solids	08/05/2024 to 10/05/2024	Report only, refer data
Paint filter test	08/05/2024 to 10/05/2024	Report only, refer data
Faecal coliform	08/05/2024 to 10/05/2024	Report only, refer data

Sludge / MRSL - Test items	Testing period	Sample 3: Sludge
Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers	08/05/2024 to 10/05/2024	Report only, refer data
Polycyclic Aromatic Hydrocarbons (PAHs)	08/05/2024 to 10/05/2024	Report only, refer data
Chlorotoluenes	08/05/2024 to 10/05/2024	Report only, refer data

Remark (Indicated in each parameter)

ND = Not detected (less than lab reporting limit)

D = Detected

N/A = Not applicable (Out of scope according to ZDHC WWSG v2.1)

NT = Not tested (Did not test according to applicant's request)

(S) = The samples were subcontracted to Intertek [xxxxx] for testing.

(T) = If sample temperature is greater than 8°C and less than 10°C when received from the laboratory.

(TT) = If sample temperature is exceeded 10°C when received from the laboratory.

@ = Maximum holding time exceeded.

(*) = Sample and report for mock leather.

(^) = Borate, zinc salt would report ND when total boron or total zinc less than 100 µg/L.

(†) = On-site test by sampler.

[a] = The local legal standard name and legal standard no. is referenced to discharge permit (or contractual agree by CETP) that provided by applicant.

This report shown the test result of the environment samples of above factory which collected on specific date and time. The results of this report shall not be used for any regulatory compliance purposes.

For and on behalf of

For Intertek India Pvt. Ltd. [Analytical- Gurgaon]



Ravindra Singh, Lab Manager- C&A

Test results

1. Conventional parameters

Wastewater/ Conventional parameters - Test items	Test method (Please refer only to the SM used in the lab)	Limit			Lab Reporting Limit (Please refer to your RL)	Result sample 2 (effluent)	Unit
		Foundational	Progressive	Aspirational			
Temperature	IS 3025 (Part 9) Electrometric method only	35°C	30°C	25°C	N/A	N/A	°C
Temperature difference [°C]	IS 3025 (Part 9) Electrometric method only	Δ+15°C	Δ+10°C	Δ+5°C	N/A	N/A	[f] °C
TSS	IS3025 (Part 17)	50 mg/L	15 mg/L	5 mg/L	1	N/A	mg/L
Chemical Oxygen Demand (COD)	IS 3025 (Part 58)	150 mg/L	80 mg/L	40 mg/L	4	N/A	mg/L
Total-N	IS 3025 (Part 34)	20 mg/L	10 mg/L	5 mg/L	0.5	N/A	mg/L
pH	IS 3025 (Part 11) Electrometric method only	6-9			N/A	N/A	[f] pH
Colour (436 nm ; 525 nm ; 620nm)	ISO 7887-B	7;5;3	5;3;2	2;1;1	N/A	N/A	[m-1]
Biochemical Oxygen Demand (BOD5)	IS 3035 (Part 44)	30 mg/L	15 mg/L	8 mg/L	3	N/A	mg/L
Ammonium- Nitrogen	IS 3025 (Part 34)	10 mg/L	1 mg/L	0.5 mg/L	0.5	N/A	mg/L
Total-P	IS 3025 (Part 31) / IS 3025 (Part 65)	3 mg/L	0.5 mg/L	0.1 mg/L	0.02	N/A	mg/L
AOX	ISO 9562	3 mg/L	0.5 mg/L	0.1 mg/L	0.06	N/A	mg/L
Oil and grease	IS 3025 (Part 39)	10 mg/L	2 mg/L	0.5 mg/L	0.5	N/A	mg/L
Phenol	IS 3025 (Part 43)	0.5 mg/L	0.01 mg/L	0.001 mg/L	0.0005	N/A	mg/L
E. Coli	SM 9221B presumptive, confirm positive with SM9221F or G	126 [MPN/100-ml]			1.8 MPN/100-ml	N/A	[MPN/100- ml]
Foam	Visual	Not visible	Not visible	Not visible	N/A	N/A	[f]



SOFTLINES WASTEWATER TESTING

TEST REPORT

Number: DELC24005051

Cyanide	APHA 4500-CN	0.2 mg/L	0.1 mg/L	0.05 mg/L	0.02	N/A	mg/L
Sulfide	IS 3025 (Part 29)	0.5 mg/L	0.05 mg/L	0.01 mg/L	0.02	N/A	mg/L
Sulphite	SM 4500-SO32-C /	2 mg/L	0.5 mg/L	0.2 mg/L	0.2	N/A	mg/L
Dissolved Oxygen (DO)	EPA 360.1 (Electrometric method only)	Sample and report only	Sample and report only	Sample and report only	0.1	N/A	[f] mg/L
Total Chlorine	EPA 330.5 (Electrometric method only)	Sample and report only	Sample and report only	Sample and report only	0.2	N/A	[f] mg/L
Total Dissolved Solids (TDS)	IS 3025 (Part 16)	Sample and report only	Sample and report only	Sample and report only	1	N/A	mg/L
Chloride	IS 3025 (Part 32)	Sample and report only	Sample and report only	Sample and report only	1	N/A	mg/L
Sulfate	IS 3025 (Part 24)	Sample and report only	Sample and report only	Sample and report only	1	N/A	mg/L
Wastewater Flowrate	N/A	N/A	N/A	N/A	N/A	N/A	[f] m3/day

Δ is the degree above ambient temperature of receiving water body.



2. Heavy metals

Modified from USEPA 6010C & USEPA 6020A, ISO 18412 EPA (ICP-MS ANALYSIS)

Heavy metals	CAS no.	Limit			Lab Reporting limit (mg/L) (Please refer only to the RL in your lab.)	Result sample 2 (effluent)	Unit
		Foundational	Progressive	Aspirational			
Arsenic (As)	Various	0.05 mg/L	0.01 mg/L	0.005 mg/L	0.005	N/A	mg/L
Cadmium (Cd)	Various	0.1 mg/L	0.05 mg/L	0.01 mg/L	0.01	N/A	mg/L
Mercury (Hg)	Various	0.01 mg/L	0.005 mg/L	0.001 mg/L	0.001	N/A	mg/L
Lead (Pb)	Various	0.1 mg/L	0.05 mg/L	0.01 mg/L	0.01	N/A	mg/L
Antimony (Sb)	Various	0.1 mg/L	0.05 mg/L	0.01 mg/L	0.01	N/A	mg/L
Cobalt (Co)	Various	0.05 mg/L	0.02 mg/L	0.01 mg/L	0.01	N/A	mg/L
Nickel (Ni)	Various	0.2 mg/L	0.1 mg/L	0.05 mg/L	0.05	N/A	mg/L
Silver (Ag)	Various	0.1 mg/L	0.05 mg/L	0.005 mg/L	0.005	N/A	mg/L
Copper (Cu)	Various	1 mg/L	0.5 mg/L	0.25 mg/L	0.25	N/A	mg/L
Zinc (Zn)	Various	5.0 mg/L	1.0 mg/L	0.5 mg/L	0.5	N/A	mg/L
Total Chromium (Cr)	Various	0.2 mg/L	0.1 mg/L	0.05 mg/L	0.05	N/A	mg/L
Chromium VI (Cr VI)	Various	0.05 mg/L	0.005 mg/L	0.001 mg/L	0.001	N/A	mg/L
Barium	Various	Sample and Report only	Sample and Report only	Sample and Report only	0.01	N/A	mg/L
Selenium	Various	Sample and Report only	Sample and Report only	Sample and Report only	0.01	N/A	mg/L
Tin	Various	Sample and Report only	Sample and Report only	Sample and Report only	0.01	N/A	mg/L



3. Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers.

NP/OP: Modified from ASTM D7065-17, ISO 18857-2 (LC-MS-MS ANALYSIS)

OPEO/NPEO (n>2): Modified from ASTM D7065-17, ISO 18857-2 (LC-MS-MS ANALYSIS)

Alkylphenols (APs) & Alkylphenoethoxylates (APEOs)	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
Octylphenol (OP), mixed isomers	140-66-9/ 1806-26-4/ 27193-28-8	5	5	ND	µg/L
Nonylphenol (NP), mixed isomers	104-40-5/ 11066-49-2/ 25154-52-3/ 84852-15-3	5	5	ND	µg/L
Octylphenoethoxylates (OPEOs)	9002-93-1; 9036-19-5; 68987-90-6	5	5	ND	µg/L
Nonylphenoethoxylates (NPEOs)	9016-45-9/26027-38-3/ 37205-87-1/ 68412-54-4/127087-87-0	5	5	ND	µg/L

4. Chlorobenzenes & Chlorotoluenes

Modified from US EPA 8270D & US EPA 8270, (GC-MS ANALYSIS)

Chlorobenzenes & Chlorotoluenes	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
Chlorobenzene	108-90-7	0.2	0.2	ND	µg/L
1,2-Dichlorobenzene	95-50-1	0.2	0.2	ND	µg/L
1,3-Dichlorobenzene	541-73-1	0.2	0.2	ND	µg/L
1,4-Dichlorobenzene	106-46-7	0.2	0.2	ND	µg/L
1,2,3-Trichlorobenzene	87-61-6	0.2	0.2	ND	µg/L
1,2,4-Trichlorobenzene	120-82-1	0.2	0.2	ND	µg/L
1,3,5-Trichlorobenzene	108-70-3	0.2	0.2	ND	µg/L
1,2,3,4-Tetrachlorobenzene	634-66-2	0.2	0.2	ND	µg/L
1,2,3,5-Tetrachlorobenzene	634-90-2	0.2	0.2	ND	µg/L
1,2,4,5-Tetrachlorobenzene	95-94-3	0.2	0.2	ND	µg/L
Pentachlorobenzene	608-93-5	0.2	0.2	ND	µg/L
Hexachlorobenzene	118-74-1	0.2	0.2	ND	µg/L
2-Chlorotoluene	95-49-8	0.2	0.2	ND	µg/L
3-Chlorotoluene	108-41-8	0.2	0.2	ND	µg/L
4-Chlorotoluene	106-43-4	0.2	0.2	ND	µg/L



2,3-Dichlorotoluene	32768-54-0	0.2	0.2	ND	µg/L
2,4-Dichlorotoluene	95-73-8	0.2	0.2	ND	µg/L
2,5-Dichlorotoluene	19398-61-9	0.2	0.2	ND	µg/L
2,6-Dichlorotoluene	118-69-4	0.2	0.2	ND	µg/L
3,4-Dichlorotoluene	95-75-0	0.2	0.2	ND	µg/L
3,5-Dichlorotoluene	25186-47-4	0.2	0.2	ND	µg/L
2,3,4-Trichlorotoluene	7359-72-0	0.2	0.2	ND	µg/L
2,3,6-Trichlorotoluene	2077-46-5	0.2	0.2	ND	µg/L
2,4,5-Trichlorotoluene	6639-30-1	0.2	0.2	ND	µg/L
2,4,6-Trichlorotoluene	23749-65-7	0.2	0.2	ND	µg/L
3,4,5-Trichlorotoluene	21472-86-6	0.2	0.2	ND	µg/L
2,3,4,5-Tetrachlorotoluene	76057-12-0	0.2	0.2	ND	µg/L
2,3,5,6-Tetrachlorotoluene	29733-70-8	0.2	0.2	ND	µg/L
2,3,4,6-Tetrachlorotoluene	875-40-1	0.2	0.2	ND	µg/L
Pentachlorotoluene	877-11-2	0.2	0.2	ND	µg/L

5. Chlorophenols

Modified from USEPA 8270E extraction & derivatization with KOH, acetic anhydride (GC-MS ANALYSIS)

Chlorophenols	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
2-Chlorophenol	95-57-8	0.5	0.5	ND	µg/L
3-Chlorophenol	108-43-0	0.5	0.5	ND	µg/L
4-Chlorophenol	106-48-9	0.5	0.5	ND	µg/L
2,3-Dichlorophenol	576-24-9	0.5	0.5	ND	µg/L
2,4-Dichlorophenol	120-83-2	0.5	0.5	ND	µg/L
2,5-Dichlorophenol	583-78-8	0.5	0.5	ND	µg/L
2,6-Dichlorophenol	87-65-0	0.5	0.5	ND	µg/L



3,4-Dichlorophenol	95-77-2	0.5	0.5	ND	µg/L
3,5-Dichlorophenol	591-35-5	0.5	0.5	ND	µg/L
2,3,4-Trichlorophenol	15950-66-0	0.5	0.5	ND	µg/L
2,3,5-Trichlorophenol	933-78-8	0.5	0.5	ND	µg/L
2,3,6-Trichlorophenol	933-75-5	0.5	0.5	ND	µg/L
2,4,5-Trichlorophenol	95-95-4	0.5	0.5	ND	µg/L
2,4,6-Trichlorophenol	88-06-2	0.5	0.5	ND	µg/L
3,4,5-Trichlorophenol	609-19-8	0.5	0.5	ND	µg/L
2,3,4,5-Tetrachlorophenol	4901-51-3	0.5	0.5	ND	µg/L
2,3,4,6-Tetrachlorophenol	58-90-2	0.5	0.5	ND	µg/L
2,3,5,6-Tetrachlorophenol	935-95-5	0.5	0.5	ND	µg/L
Pentachlorophenol (PCP)	87-86-5	0.5	0.5	ND	µg/L



6. Restricted Aromatic Amines (Cleavable from Azo- colourants)

Modified from ISO 14362-1 and ISO14362-3,Reduction step with sodium dithionite, solvent extraction(GC-MS ANALYSIS)

Azo Dyes	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
4,4'-Methylene-bis(2-chloroaniline)	101-14-4	0.1	0.1	ND	µg/L
4,4'-Diaminodiphenylmethane	101-77-9	0.1	0.1	ND	µg/L
4,4'-Oxydianiline	101-80-4	0.1	0.1	ND	µg/L
4-Chloroaniline	106-47-8	0.1	0.1	ND	µg/L
3,3'-Dimethoxybenzidine	119-90-4	0.1	0.1	ND	µg/L
3,3'-Dimethylbenzidine	119-93-7	0.1	0.1	ND	µg/L
p-Cresidine	120-71-8	0.1	0.1	ND	µg/L
2,4,5-Trimethylaniline	137-17-7	0.1	0.1	ND	µg/L
4,4'-Thiodianiline	139-65-1	0.1	0.1	ND	µg/L
4-Aminoazobenzene	60-09-3	0.1	0.1	ND	µg/L
4-methoxy-m-phenylenediamine	615-05-4	0.1	0.1	ND	µg/L
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	0.1	0.1	ND	µg/L
2,6-Xylidine	87-62-7	0.1	0.1	ND	µg/L
o-Anisidine	90-04-0	0.1	0.1	ND	µg/L
2-Naphthylamine	91-59-8	0.1	0.1	ND	µg/L
3,3'-Dichlorobenzidine	91-94-1	0.1	0.1	ND	µg/L
4-Aminobiphenyl	92-67-1	0.1	0.1	ND	µg/L
Benzidine	92-87-5	0.1	0.1	ND	µg/L
o-Toluidine	95-53-4	0.1	0.1	ND	µg/L
2,4-Xylidine	95-68-1	0.1	0.1	ND	µg/L
4-Chloro-o-toluidine	95-69-2	0.1	0.1	ND	µg/L
4-Methyl-m-phenylenediamine	95-80-7	0.1	0.1	ND	µg/L



TEST REPORT

Number: DELC24005051

o-Aminoazotoluene	97-56-3	0.1	0.1	ND	µg/L
5-Nitro-o-toluidine	99-55-8	0.1	0.1	ND	µg/L
2-Naphthylammoniumacetate	553-00-4	0.1	0.1	ND	µg/L
2,4,5-trimethylaniline hydrochloride	21436-97-5	0.1	0.1	ND	µg/L
4-chloro-o-toluidinium chloride	3165-93-3	0.1	0.1	ND	µg/L
4-methoxy-m-phenylene diammonium sulphate; 2,4-diaminoanisole sulphate	39156-41-7	0.1	0.1	ND	µg/L

7. Dyes – Carcinogenic or Equivalent Concern

Modified to Liquid extraction, (LC-MS-MS ANALYSIS)

Carcinogenic dyes	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
C.I. Direct Black 38	1937-37-7	500	500	ND	µg/L
C.I. Direct Blue 6	2602-46-2	500	500	ND	µg/L
C.I. Acid Red 26	3761-53-3	500	500	ND	µg/L
C.I. Basic Red 9	569-61-9	500	500	ND	µg/L
C.I. Direct Red 28	573-58-0	500	500	ND	µg/L
C.I. Basic Violet 14	632-99-5	500	500	ND	µg/L
C.I. Disperse Blue 1	2475-45-8	500	500	ND	µg/L
C.I. Disperse Blue 3	2475-46-9	500	500	ND	µg/L
C.I. Basic Blue 26 (with Michler's Ketone > 0.1%)	2580-56-5	500	500	ND	µg/L
C.I. Basic Green 4 (malachite green chloride)	569-64-2	500	500	ND	µg/L
C.I. Basic Green 4 (malachite green oxalate)	2437-29-8	500	500	ND	µg/L
C.I. Basic Green 4 (malachite green)	10309-95-2	500	500	ND	µg/L
Disperse Orange 11	82-28-0	500	500	ND	µg/L
Basic violet 3 with >0.1% of Michler's Ketone	548-62-9	500	500	ND	µg/L



TEST REPORT

Number: DELC24005051

C.I. Acid Violet 49	1694-09-3	500	500	ND	µg/L
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8. Dyes – Disperse (Allergenic)

Modified to Liquid extraction, (LC-MS-MS ANALYSIS)

Disperse dyes	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
Disperse Yellow 1	119-15-3	50	50	ND	µg/L
Disperse Blue 102	12222-97-8	50	50	ND	µg/L
Disperse Blue 106	12223-01-7	50	50	ND	µg/L
Disperse Yellow 39	12236-29-2	50	50	ND	µg/L
Disperse Orange 37/59/76	13301-61-6	50	50	ND	µg/L
Disperse Brown 1	23355-64-8	50	50	ND	µg/L
Disperse Orange 1	2581-69-3	50	50	ND	µg/L
Disperse Yellow 3	2832-40-8	50	50	ND	µg/L
Disperse Red 11	2872-48-2	50	50	ND	µg/L
Disperse Red 1	2872-52-8	50	50	ND	µg/L
Disperse Red 17	3179-89-3	50	50	ND	µg/L
Disperse Blue 7	3179-90-6	50	50	ND	µg/L
Disperse Blue 26	3860-63-7	50	50	ND	µg/L
Disperse Yellow 49	54824-37-2	50	50	ND	µg/L
Disperse Blue 35	12222-75-2	50	50	ND	µg/L
Disperse Blue 124	61951-51-7	50	50	ND	µg/L
Disperse Yellow 9	6373-73-5	50	50	ND	µg/L
Disperse Orange 3	730-40-5	50	50	ND	µg/L
Disperse Blue 35	56524-77-7	50	50	ND	µg/L

9. Flame retardants

SOFTLINES WASTEWATER TESTING

TEST REPORT

Number: DELC24005051

Other flame retardant substances: Modified from USEPA 8270E, Dichloromethane extraction GC-MS & LC-MS-MS ANALYSIS)
Borate salt: Determined as total Boron via ICP-OES ANALYSIS

Flame retardants	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
Tris(2-chloroethyl) phosphate (TCEP)	115-96-8	25	25	ND	µg/L
Decabromodiphenyl ether (DecaBDE)	1163-19-5	25	25	ND	µg/L
Tris(2,3-dibromopropyl) phosphate (TRIS)	126-72-7	25	25	ND	µg/L
Pentabromodiphenyl ether (PentaBDE)	32534-81-9	25	25	ND	µg/L
Octabromodiphenyl ether (OctaBDE)	32536-52-0	25	25	ND	µg/L
Bis(2,3-dibromopropyl) phosphate	5412-25-9	25	25	ND	µg/L
Tris(1-aziridinyl)phosphine oxide (TEPA)	545-55-1	25	25	ND	µg/L
Polybromobiphenyls (PBBs)	59536-65-1	25	25	ND	µg/L
Tetrabromobisphenol A (TBBPA)	79-94-7	25	25	ND	µg/L
Hexabromocyclododecane (HBCDD)	3194-55-6	25	25	ND	µg/L
2,2-Bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0	25	25	ND	µg/L
Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	13674-87-8	25	25	ND	µg/L
Tris-(2-chloro-1-methylethyl) phosphate (TCPP)	13674-84-5	25	25	ND	µg/L
Decabromobiphenyl (DecaBB)	13654-09-6	25	25	ND	µg/L
Dibromobiphenyls (DiBB)	Various	25	25	ND	µg/L
Octabromobiphenyls (OctaBB)	Various	25	25	ND	µg/L
Dibromopropylether	21850-44-2	25	25	ND	µg/L
Heptabromodiphenyl ether (HeptaBDE)	68928-80-3	25	25	ND	µg/L
Hexabromodiphenyl ether (HexaBDE)	36483-60-0	25	25	ND	µg/L



Monobromobiphenyls (MonoBB)	Various	25	25	ND	µg/L
Monobromodiphenylethers (MonoBDEs)	Various	25	25	ND	µg/L
Nonabromobiphenyls (NonaBB)	Various	25	25	ND	µg/L
Nonabromodiphenyl ether (NonaBDE)	63936-56-1	25	25	ND	µg/L
Tetrabromodiphenyl ether (TetraBDE)	40088-47-9	25	25	ND	µg/L
Tribromodiphenylethers (TriBDEs)	Various	25	25	ND	µg/L
Boric acid**	10043-35-3 / 11113-50-1	100 in Boron	100 in Boron	ND	µg/L
Diboron trioxide**	1303-86-2	100 in Boron	100 in Boron	ND	µg/L
Disodium octaborate**	12008-41-2	100 in Boron	100 in Boron	ND	µg/L
Disodium tetraborate anhydrous**	1303-96-4 / 1330-43-4	100 in Boron	100 in Boron	ND	µg/L
Tetraboron disodium heptaoxide, hydrate**	12267-73-1	100 in Boron	100 in Boron	ND	µg/L

** Report total boron directly, no conversion from Boron salt.

10. Glycols

Modified from USEPA 8270E (GC-MS ANALYSIS)

Glycols	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
Bis(2-methoxyethyl)-ether	111-96-6	50	50	ND	µg/L
2-ethoxyethanol	110-80-5	50	50	ND	µg/L
2-ethoxyethyl acetate	111-15-9	50	50	ND	µg/L
Ethylene glycol dimethyl ether	110-71-4	50	50	ND	µg/L
2-methoxyethanol	109-86-4	50	50	ND	µg/L
2-methoxyethylacetate	110-49-6	50	50	ND	µg/L
2-methoxypropylacetate	70657-70-4	50	50	ND	µg/L
Triethylene glycol dimethyl ether	112-49-2	50	50	ND	µg/L

11. Halogenated solvents

Modified from USEPA 8260 (Headspace GC-MS ANALYSIS)

Chlorinated solvents	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
1,2-Dichloroethane	107-06-2	1	1	ND	µg/L
Methylene chloride	75-09-2	1	1	ND	µg/L
Trichloroethene	79-01-6	1	1	ND	µg/L
Tetrachloroethene	127-18-4	1	1	ND	µg/L

12. Organotin compoundsModified from ISO 17353 Derivatization with NaB (C₂H₅) (GC-MS ANALYSIS)

Organotin compounds	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
Mono-, di-and tri-methyltin derivatives	Various	0.01	0.01	ND	µg/L
Mono-, di-and tri-butyltin derivatives	Various	0.01	0.01	ND	µg/L
Mono-, di-and tri-phenyltin derivatives	Various	0.01	0.01	ND	µg/L
Mono-, di-and tri-octyltin derivatives	Various	0.01	0.01	ND	µg/L
Tricyclohexyltin (TCyHT)	Various	0.01	0.01	ND	µg/L
Dipropyltin compounds (DPT)	Various	0.01	0.01	ND	µg/L
Tetrabutyltin compounds (TeBT)	Various	0.01	0.01	ND	µg/L
Tripropyltin Compounds (TPT)	Various	0.01	0.01	ND	µg/L



TEST REPORT

Number: DELC24005051

Tetraoctyltin compounds (TeOT)	Various	0.01	0.01	ND	µg/L
Tetraethyltin Compounds (TeET)	Various	0.01	0.01	ND	µg/L

13. Phthalates

Modified from USEPA 8270E, Dichloromethane extraction (GC-MS ANALYSIS)

Phthalates	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
Di-2-ethylhexyl phthalate (DEHP)	117-81-7	10	10	ND	µg/L
Dimethoxyethyl phthalate (DMEP)	117-82-8	10	10	ND	µg/L
Di-n-octyl phthalate (DNOP)	117-84-0	10	10	ND	µg/L
Di-iso-decyl phthalate (DIDP)	26761-40-0/68515-49-1	10	10	ND	µg/L
Di-iso-nonyl phthalate (DINP)	28553-12-0/68515-48-0	10	10	ND	µg/L
Di-n-hexyl phthalate (DnHP)	84-75-3	10	10	ND	µg/L
Dibutyl phthalate (DBP)	84-74-2	10	10	ND	µg/L
Butyl benzyl phthalate (BBP)	85-68-7	10	10	ND	µg/L
Diethyl phthalate (DEP)	84-66-2	10	10	ND	µg/L
Di-n-propyl phthalate (DPRP)	131-16-8	10	10	ND	µg/L
Di-iso-butyl phthalate (DIBP)	84-69-5	10	10	ND	µg/L
Di-cyclohexyl phthalate (DCHP)	84-61-7	10	10	ND	µg/L
Di-iso-octyl phthalate (DIOP)	27554-26-3	10	10	ND	µg/L
1,2-benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4	10	10	ND	µg/L
1,2-benzenedicarboxylic acid, di-C6-11-branched alkyl esters, C7-rich (DIHP)	71888-89-6	10	10	ND	µg/L
Di-n-pentylphthalates	131-18-0	10	10	ND	µg/L
Diisopentylphthalates	605-50-5	10	10	ND	µg/L
Dinonyl phthalate (DNP)	84-76-4	10	10	ND	µg/L



14. Perfluorinated chemicals (PFCs)

PFCs: Modified from EPA 8270, LC-MS-MS ANALYSIS

FTOH: Modified from EPA 8270, LC-MS-MS ANALYSIS

Perfluorinated chemicals (PFCs)	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
Perfluoro-octanoic acid (PFOA)	335-67-1	0.01	0.01	ND	µg/L
Perfluoro-octane-sulfonic acid (L-PFOS)	1763-23-1	0.01	0.01	ND	µg/L
Perfluoro-octane-sulfon-amide (PFOSA)	754-91-6	0.01	0.01	ND	µg/L
N-Methyl-perfluoro-octane-sulfon-amide (N-Me-FOSA)	31506-32-8	0.01	0.01	ND	µg/L
N-Ethyl-perfluoro-octane-sulfon-amide (N-Et-FOSA)	4151-50-2	0.01	0.01	ND	µg/L
N-Methyl-perfluoro-octane-sulfon-amido-ethanol (N-Me-FOSE alcohol)	24448-09-7	0.01	0.01	ND	µg/L
N-Ethyl-Perfluoro-octane-sulfon-amido-ethanol (N-Et-FOSE alcohol)	1691-99-2	0.01	0.01	ND	µg/L
1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	39108-34-4	1	1	ND	µg/L
2-Perfluorooctylethanol (8:2 FTOH)	678-39-7	1	1	ND	µg/L
1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA)	27905-45-9	1	1	ND	µg/L
1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA)	1996-88-9	1	1	ND	µg/L
Methyl perfluorooctanoate (Me-PFOA)	376-27-2	1	1	ND	µg/L
Ethyl perfluorooctanoate Et-PFOA	3108-24-5	1	1	ND	µg/L

15. Polycyclic aromatic hydrocarbons (PAHs)

Modified from USEPA 8270E Solvent extraction (GC-MS ANALYSIS)

Polycyclic aromatic hydrocarbons (PAHs)	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
Benzo(a)pyrene (BaP)	50-32-8	1	1	ND	µg/L
Anthracene	120-12-7	1	1	ND	µg/L
Pyrene	129-00-0	1	1	ND	µg/L
Benzo(ghi)perylene	191-24-2	1	1	ND	µg/L
Benzo(e)pyrene	192-97-2	1	1	ND	µg/L
Indeno (1,2,3-cd)pyrene	193-39-5	1	1	ND	µg/L
Benzo(j)fluoranthene	205-82-3	1	1	ND	µg/L
Benzo(b)fluoranthene	205-99-2	1	1	ND	µg/L
Fluoranthene	206-44-0	1	1	ND	µg/L
Benzo(k)fluoranthene	207-08-09	1	1	ND	µg/L



Acenaphthylene	208-96-8	1	1	ND	µg/L
Chrysene	218-01-9	1	1	ND	µg/L
Dibenz(a,h)anthracene	53-70-3	1	1	ND	µg/L
Benzo(a)anthracene	56-55-3	1	1	ND	µg/L
Acenaphthene	83-32-9	1	1	ND	µg/L
Phenanthrene	85-01-8	1	1	ND	µg/L
Fluorene	86-73-7	1	1	ND	µg/L
Naphthalene	91-20-3	1	1	ND	µg/L

16. Volatile organic compounds (VOCs)

Modified from USEPA 8260D Headspace GC-MS-ANALYSIS

Volatile organic compounds (VOCs)	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
Benzene	71-43-2	1	1	ND	µg/L
Xylene	1330-20-7	1	1	ND	µg/L
o-cresol	95-48-7	1	1	ND	µg/L
p-cresol	106-44-5	1	1	ND	µg/L
m-cresol	108-39-4	1	1	ND	µg/L
Toluene*	108-88-3	1	1	ND	µg/L

(*) = Sample and report for mock leather.

17. Anti - Microbials & Biocides

OPP, Triclosan: Modified from USEPA 8270E, Extraction & derivatization with KOH, acetic anhydride (GC-MS Analysis)

Permethrin: Modified from USEPA 8270E, (GC-MS ANALYSIS)

Anti - Microbials & Biocides	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
o-Phenylphenol (+salts)	90-43-7	100	100	ND	µg/L
Triclosan	3380-34-5	100	100	ND	µg/L
Permethrin	Multiple	500	500	ND	µg/L



18. Chlorinated paraffins

For MCCP: Modified from ISO18219-2:2021 (GC-MS-NCI ANALYSIS)

For SCCP: Modified from ISO 18219-1:2021 (GC-MS-NCI ANALYSIS)

Chlorinated paraffins	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
Short-chain Chlorinated paraffin (C10 – C13)	85535-84-8	25	25	ND	µg/L
Medium-chain Chlorinated paraffins (MCCPs) (C14-C17)	85535-85-9	500	500	ND	µg/L

19. Dimethyl Formamide (DMFa) (*)

Modified from EPA 8270E (GC-MS ANALYSIS)

N,N-di-methylformamide (DMFa)	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
Dimethyl formamide; N,N-dimethylformamide	68-12-2	1000	1000	ND	µg/L

(*) = Sample and report for mock leather.

20. Dyes-Navy Blue Colourant

Modified to Liquid extraction, (LC-MS-MS ANALYSIS)

Dyes-Navy Blue Colourant	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
Component 1: C39H23Cl-CrN7O12S 2Na	118685-33-9	500	500	ND	µg/L
Component 2: C46H-30CrN10O20S2 3Na	Not Allocated	500	500	ND	µg/L

21. Other/Miscellaneous Chemicals (^)

Others: Modified to Liquid extraction, (LC-MS-MS ANALYSIS)

Borate salt: Determined as total Boron via ICP-OES ANALYSIS

Other/Miscellaneous Chemicals	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
AEEA [2-(2-aminoethylamino)ethanol]	111-41-1	500	500	ND	µg/L
Bisphenol A	80-05-7	10	10	ND	µg/L
Thiourea	62-56-6	50	50	ND	µg/L
Quinoline	91-22-5	50	50	ND	µg/L
Borate, zinc salt (^^)	12767-90-7	100 in Boron & 100 in Zinc	100 in Boron & 100 in Zinc	Boron: ND Zinc: ND	µg/L

^^ = Report total boron & total zinc individually, and no conversion from boron / zinc salt.

22. UV Absorbers

Modified from USEPA 8270, Dichloromethane extraction (GC-MS ANALYSIS)

UV Absorbers	CAS no.	Lab Reporting limit (µg/L)	ZDHC Reporting limit (µg/L)	Result Sample 1 (Untreated wastewater)	Unit
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenol(UV-350)	36437-37-3	100	100	ND	µg/L
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	100	100	ND	µg/L
2-benzotriazol-2-yl-4,6-di-tertbutylphenol	3846-71-7	100	100	ND	µg/L
2,4-Di-tert-butyl-6-(5-chlorobenzotriazole-2-yl) phenol (UV-327)	3864-99-1	100	100	ND	µg/L

23. Sludge Parameters – Step 1 - Metals

Other heavy metals: Modified from EPA 3050 (ICP-MS ANALYSIS)

Chromium VI: : Modified from USEPA 3060a (LC-ICP-MS ANALYSIS)

Mercury: : Modified from EPA 7471 b EPA 3051a (ICP-ANALYSIS)

Sludge Parameters – Step 1 - Metals	ZDHC reporting limit (Dry weight) (mg/kg)	Lab reporting limit (Dry weight) (mg/kg)	Result Sample 3 (Sludge - Dry weight)	Unit
Antimony	5	5	ND	mg/kg
Arsenic	5	5	ND	mg/kg
Barium	200	200	ND	mg/kg
Cadmium	1	1	ND	mg/kg
Cobalt	400	400	ND	mg/kg
Copper	50	50	231.7	mg/kg
Lead	5	5	ND	mg/kg
Nickel	20	20	ND	mg/kg
Selenium	5	5	ND	mg/kg
Silver	50	50	ND	mg/kg
Total Chromium	50	50	ND	mg/kg
Zinc	400	400	ND	mg/kg
Chromium (VI)	20	20	ND	mg/kg
Mercury	1	1	ND	mg/kg



24. Sludge Parameters – Step 1 - Anions

Modified from USEPA 9013, USEPA 9014, USEPA 9213, HJ745 with Colorimetry analysis.

Sludge Parameters – Step 1 - Anions	ZDHC reporting limit (Dry weight) (mg/kg)	Lab reporting limit (Dry weight) (mg/kg)	Result Sample 3 (Sludge - Dry weight)	Unit
Cyanide	20	20	ND	mg/kg

25. Sludge Parameters - Step 1 – Conventional

Sludge Parameters – Step 1 - Conventional	Test method	Lab reporting limit (Dry weight) (mg/kg)	Result Sample 3 (Sludge - Dry weight)	Unit
pH	USEPA SW 9045D	N/A	7.9	N/A
% Solids	USEPA 160.3	N/A	40.21	%
Paint Filter Test	USEPA 9095B	N/A	Pass	N/A
Fecal Coliform	USEPA 1681	1.8	17	MPN/g

26. Sludge Parameters - Step 1 - MRSL - Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers.

Modified from ASTM D7065-17, ISO 18857-2 (LC-MS-MS ANALYSIS)

Sludge Parameters - Step 1 - MRSL - Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers	CAS no.	ZDHC reporting limit (Dry weight) (mg/kg)	Lab reporting limit (Dry weight) (mg/kg)	Result Sample 3 (Sludge - Dry weight)	Unit
Nonylphenol ethoxylates (NPEO)	9016-45-9; 26027-38-3; 37205-87-1; 68412-54-4; 127087-87-0	0.4	0.4	ND	mg/kg
Nonylphenol (NP), mixed isomers	104-40-5; 11066-49-2; 25154-52-3; 84852-15-3	0.4	0.4	ND	mg/kg
Octylphenol ethoxylates (OPEO)	9002-93-1; 9036-19-5; 68987-90-6	0.4	0.4	ND	mg/kg
Octylphenol (OP), mixed isomers	140-66-9; 1806-26-4; 27193-28-8	0.4	0.4	ND	mg/kg

SOFTLINES WASTEWATER TESTING

TEST REPORT

Number: DELC24005051

27. Sludge Parameters - Step 1 - MRSL - Polycyclic Aromatic Hydrocarbons (PAHs)

Modified from USEPA 8270E Solvent extraction (GC-MS ANALYSIS)

Sludge Parameters - Step 1 - MRSL - Polycyclic Aromatic Hydrocarbons (PAHs)	CAS no.	Lab reporting limit (Dry weight) (mg/kg)	ZDHC reporting limit (Dry weight) (mg/kg)	Result Sample 3 (Sludge - Dry weight)	Unit
Acenaphthene	83-32-9	0.2	0.2	ND	mg/kg
Acenaphthylene	208-96-8	0.2	0.2	ND	mg/kg
Anthracene	120-12-7	0.2	0.2	ND	mg/kg
Benzo[a]anthracene	56-55-3	0.2	0.2	ND	mg/kg
Benzo[a]pyrene (BaP)	50-32-8	0.2	0.2	ND	mg/kg
Benzo[b]fluoranthene	205-99-2	0.2	0.2	ND	mg/kg
Benzo[e]pyrene	192-97-2	0.2	0.2	ND	mg/kg
Benzo[ghi]perylene	191-24-2	0.2	0.2	ND	mg/kg
Benzo[j]fluoranthene	205-82-3	0.2	0.2	ND	mg/kg
Benzo[k]fluoranthene	207-08-9	0.2	0.2	ND	mg/kg
Chrysene	218-01-9	0.2	0.2	ND	mg/kg
Dibenz[a,h]anthracene	53-70-3	0.2	0.2	ND	mg/kg
Fluoranthene	206-44-0	0.2	0.2	ND	mg/kg
Fluorene	86-73-7	0.2	0.2	ND	mg/kg
Indeno[1,2,3-cd]pyrene	193-39-5	0.2	0.2	ND	mg/kg
Naphthalene	91-20-3	0.2	0.2	ND	mg/kg
Phenanthrene	85-01-8	0.2	0.2	ND	mg/kg
Pyrene	129-00-0	0.2	0.2	ND	mg/kg



SOFTLINES WASTEWATER TESTING

TEST REPORT

Number: DELC24005051

28. Sludge Parameters - Step 1 - MRSL – Chlorotoluenes

Modified from US EPA 8270D & US EPA 8270, (GC-MS ANALYSIS)

Sludge Parameters - Step 1 - MRSL – Chlorotoluenes	CAS no.	ZDHC reporting limit (Dry weight) (mg/kg)	Lab reporting limit (Dry weight) (mg/kg)	Result Sample 3 (Sludge - Dry weight)	Unit
2-Chlorotoluene	95-49-8	0.2	0.2	ND	mg/kg
3-Chlorotoluene	108-41-8	0.2	0.2	ND	mg/kg
4-Chlorotoluene	106-43-4	0.2	0.2	ND	mg/kg
2,3-Dichlorotoluene	32768-54-0	0.2	0.2	ND	mg/kg
2,4-Dichlorotoluene	95-73-8	0.2	0.2	ND	mg/kg
2,5-Dichlorotoluene	19398-61-9	0.2	0.2	ND	mg/kg
2,6-Dichlorotoluene	118-69-4	0.2	0.2	ND	mg/kg
3,4-Dichlorotoluene	95-75-0	0.2	0.2	ND	mg/kg
3,5-Dichlorotoluene	25186-47-4	0.2	0.2	ND	mg/kg
2,3,4-Trichlorotoluene	7359-72-0	0.2	0.2	ND	mg/kg
2,3,6-Trichlorotoluene	2077-46-5	0.2	0.2	ND	mg/kg
2,4,5-Trichlorotoluene	6639-30-1	0.2	0.2	ND	mg/kg
2,4,6-Trichlorotoluene	23749-65-7	0.2	0.2	ND	mg/kg
3,4,5-Trichlorotoluene	21472-86-6	0.2	0.2	ND	mg/kg
2,3,4,5-Tetrachlorotoluene	76057-12-0	0.2	0.2	ND	mg/kg
2,3,5,6-Tetrachlorotoluene	29733-70-8	0.2	0.2	ND	mg/kg
2,3,4,6-Tetrachlorotoluene	875-40-1	0.2	0.2	ND	mg/kg
Pentachlorotoluene	877-11-2	0.2	0.2	ND	mg/kg

29. Sludge Parameters - Step 2 – Metals



SOFTLINES WASTEWATER TESTING

TEST REPORT

Number: DELC24005051

Other heavy metals: Modified from EPA 3050 (ICP-MS ANALYSIS)
Chromium VI: : Modified from USEPA 3060a (LC-ICP-MS ANALYSIS)
Mercury: : Modified from EPA 7471 b EPA 3051a (ICP-ANALYSIS)

Sludge Parameters - Step 2 – Metals	Lab Reporting limit (mg/L)	Result Sample 3 (Sludge)	Unit
Antimony	0.6	N/A	mg/L
Arsenic	0.5	N/A	mg/L
Barium	35	N/A	mg/L
Cadmium	0.15	N/A	mg/L
Cobalt	80	N/A	mg/L
Copper	10	ND	mg/L
Lead	0.5	N/A	mg/L
Nickel	3.5	N/A	mg/L
Selenium	0.5	N/A	mg/L
Silver	5	N/A	mg/L
Total Chromium	5	N/A	mg/L
Zinc	50	N/A	mg/L
Chromium (VI)	2.5	N/A	mg/L
Mercury	0.05	N/A	mg/L



Appendix 1: Reference to ZDHC WWSG v2.1 Table 4B

Parameters	Total metals and anions threshold values (mg/kg)	Disposal pathways						
		A and B (Leachate result in mg/L)	C	D	E	F	G	G
		(Leachate result in mg/L)	(Leachate result in mg/L)	(Leachate result in mg/L)	(Leachate result in mg/L)	(Leachate result in mg/L)	(Leachate result in mg/L)	(Total metals limit in mg/kg)
Arsenic	10	Report only if required to test	5	2.75	0.5	0.5	0.5	75
Cadmium	3		1	0.58	0.15	0.15	0.15	85
Total Chromium	100		15	10	5	5	5	3000
Lead	10		5	2.75	0.5	0.5	0.5	840
Antimony	12		15	7.8	0.6	0.6	0.6	Sample and report only
Barium	700		100	67.5	35	35	35	
Cobalt	1600		80	80	80	80	80	4300
Copper	200		25	17.5	10	10	10	
Nickel	70		20	11.75	3.5	3.5	3.5	420
Selenium	10		1	0.75	0.5	0.5	0.5	100
Silver	100		5	5	5	5	5	Sample and report only
Zinc	1000		250	150	50	50	50	7500
Chromium VI	50		5	3.75	2.5	2.5	2.5	50
Mercury	1		0.2	0.125	0.05	0.05	0.05	57

Appendix 2: reference to ZDHC WWSG v2.1 Table 4C

Parameters	Disposal pathways						
	A and B	C	D	E	F	G	
pH	Sample and report only	5 – 11 s.u.	5 – 11 s.u.	5 – 11 s.u.	6.5 – 9 s.u.	6.5 – 9 s.u.	
% Solids		Sample and report only	Sample and report only	Sample and report only	Sample and report only	Sample and report only	
Fecal Coliform							< 1000 (MPN/g)
Paint Filter Test		Pass Paint filter test					Sample and report only
Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers		< 0.4 mg/kg					
Polycyclic Aromatic Hydrocarbons (PAHs)		< 0.2 mg/kg					
Chlorotoluenes							

Appendix 2: reference to ZDHC WWSG v2.1 Table 4D

Parameters	Disposal pathways					
	A and B	C	D	E	F	G
Cyanide	Report only if required to test	100 mg/kg	85 mg/kg	70 mg/kg	70 mg/kg	70 mg/kg

Photo of sampling points:



Photo of wastewater before treatment (untreated)

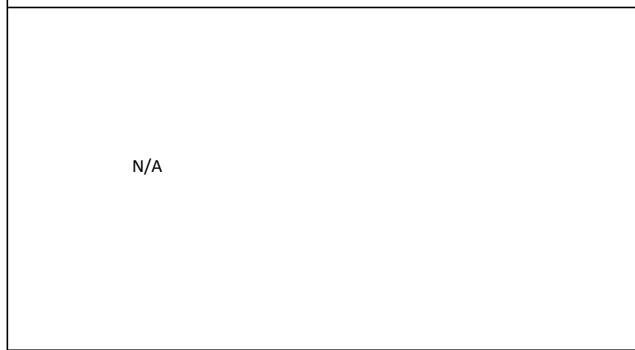


Photo of effluent

Photo of sludge

Photo of samples:



Photo of untreated wastewater

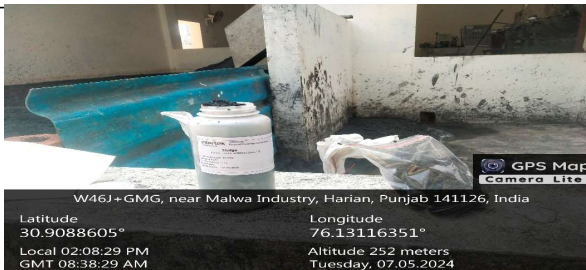


Photo of effluent

Photo of sludge



SAMPLING PROTOCOL (PAGE 1 OF 3)

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Sampling Protocol for Wastewater and Sludge acc. ZDHC SAP 2.1 incl. Apdx. E

Facility Name: **AARTI International Pvt**

Address and Contact: **Dyeing & Processing Unit, village Bhaman Kalan & Harshim, Post Uppal, Kahang Machhiwara Road**

Facility type (tick all applicable):
 Dyeing and Finishing
 Fabric Mill
 Laundry, Washing and Finishing
 Natural Leather processing
 Printing
 Synthetic Leather processing

Date of sampling: **07/05/24**

Sample General ID (if applicable):

Discharge description:
 direct discharge
 indirect discharge
 Zero Liquid Discharge (ZLD)
 MMCF
 with pre-treatment
 without treatment
 with own ETP
 discharge to: **Recycling**

Weather conditions:
 on sampling day: **Sunny**
 on day before: **Sunny**

Fill in all above information as applicable.

Sample Type and Details (see also page 2)

Effluent Discharge: direct or indirect
 Enter sampling time(s) for Sample Details (page 2), and measure field parameters.
 Facility has WWTP
 Plant is in operating condition
 with Equalisation Tank (EQT) present:
 Hydraulic Retention Time (HRT): **7.12** h
 (= Volume of tank [m³] / Flow rate [m³/h])
 If HRT > 12h, grab sampling from EQT is allowed.

Pre-treated WW without sludge
 Untreated WW
 with Equalisation Tank (EQT) present:
 HRT: h (= Volume of tank [m³] / Flow rate [m³/h])
 If HRT > 12h, grab sampling from EQT is allowed
 Incoming Water
 MMCF

Sludge with below disposal pathway*):
 A >1000 °C offsite incineration
 B Landfill with significant control
 C Building products processed >1000 °C
 D Landfill with limited control
 E Incineration / Building products processed <1000 °C
 age of sludge : days / weeks
 F Landfill with no control
 G Land application
 *) if supplier cannot provide information, pathway "F" shall be assumed.

Sludge volume generated: **7 tun/day** m³/h OL/sec other unit (specify): per facility info measured estimated

Process Chemical liquid solid (powder/granulate/pieces)
 from running process from warehouse/storage

Untreated:	1	2	3	4	5	6	7	or Grab (HRT>12h):
Effluent (indirect) 1):	1	2	3	4	5	6	7	or Grab (HRT>12h):
Incoming: 2)	1	2	3	4	5	6	7	or Grab 2) (HRT>12h):
Sludge (liquid):	1	2	3	4	5	6	7	Solid sludge:

1) for direct discharge, see p. 2
 2) take grab sample for tap water, river water, and industrial treated river water without EQT; recycled water from EQT <12h must be composite.

Picture ID (or Date & Time / Interval):

GPS coordinates of sampling points:

Incoming W.: Lat.: ON OS Long.: OE OW
 Untreated WW: Lat.: ON OS **30.90840727°** Long.: OE OW **76.13063482°**
 Effluent: Lat.: ON OS Long.: OE OW
 Sludge: Lat.: ON OS **30.90887734°** Long.: OE OW **76.13118944°**

DELC24005051

A Not Provided
Reg - 3 Regular
INDITEX



Reviewed by
Molte
8/5/24



SAMPLING PROTOCOL (PAGE 2 OF 3)

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Sample Details ²⁾ Field parameters usually are only required for direct discharge. If client requests also for indirect discharge, use below fields.

Composite Sample Grab Sample (only allowed from EOT of Effluent with HRT>12h) (enter data in column for Averaged Readings and in field at right) Volume of aliquot(s): _____ mL

Time of discrete effluent sample **	1	2	3	4	5	6	7	Averaged Readings or Grab Sample readings:
pH:								
Temp. WW discharge of receiving water	°C	°C	°C	°C	°C	°C	°C	°C
Flow rate:	L/s	L/s	L/s	L/s	L/s	L/s	L/s	m ³ /d avg.
Dissolved Oxygen:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Chlorine:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Persistent foam:	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	

** time when discrete sample for composite was taken. Use comment field if number of samples is greater than seven, or if above fields are otherwise not sufficient.
Note: 1.0 m³/h = 0.27 L/s; 1.0 L/s = 86.4 m³/d; 1 m³/h = 0.042 m³/d; multiply the flow rate in m³/h by the daily operation time of the ETP to get flow rate in m³/d;

Sampling procedure: automated sampling with beaker/bowl other: _____

Wastewater Flow Data (Effluent/Discharge)

System: Flow meter (in facility) Pipe (O) Flume (U) Wier (V)

Diameter [cm] _____

Water Depth [cm] _____

Flow Speed [cm/sec] _____

General Field Parameters and Sensory Data (enter as far as applicable)

Type	T ambient air [°C]	Odour	Colour	Foaming	Floating matter
Incoming				<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
Untreated		Yes	DK Pink	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
Effluent				<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
Sludge		Yes	DK grey		

Field Testing QA/QC

Parameter	Lab Control Sample target value	Lab Control Sample measured value	Accuracy [%]
pH			
Total Chlorine			

Other observations: _____

Additional notes (e.g., alternatively measured flow and readings, abbreviations used, etc): _____



SAMPLING PROTOCOL (PAGE 3 OF 3)

intertek ZDHC Monitoring

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ZDHC Wastewater Sampling - Facility Confirmation

The Wastewater samples have been collected under the facility's normal production scale and wastewater flow rate. The sampler listed below was on-site and collected the samples.

Sampling person (name & email address):

Facility Name:

Arunish Kumar Arundhanika
intertek.com

Vishal Pal

Sampler's ZDHC accreditation no.:

Facility's Representative name:

C74D106817996

Numal Singh

Sampler's Signature:

Facility's Representative Signature/Stamp:

Arunish Kumar
07/05/24

7/5/24

For AARTI INTERNATIONAL LTD.
(D) 24005051
Auth. Signature



Document on sludge disposal or licensed third-party waste contractor for sludge disposal.



PUNJAB POLLUTION CONTROL BOARD
Zonal Office-1, E-648-B, Focal Point, Phase-5, Ludhiana
Website:- www.ppcb.gov.in



LIFE
Lifestyle for
Environment

Office Dispatch No : _____ Registered/Speed Post _____ Date: _____
Industry Registration ID : R16LDH14086410 _____ Application No : 20588164

To,
Vinayak Mittal
Ludhiana
Ludhiana, Ludhiana-141010

Subject: Renewal of Authorization for operating a facility for 'Generation, Storage, Disposal.' of Hazardous Wastes as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.

Vinayak Mittal of Aarti international ltd(dyeing and process unit) is hereby granted an authorisation based on the enclosed signed inspection report for Generation, Storage, Disposal, on the premises situated at Village harhian and village bhaman kalan, Samrala, Ludhiana i-141010

1. Particulars of Authorization granted to the Industry

Authorization No	HWM/renew/LDH1/2023/20588164
Previous Authorization No	15129195
Date of issue :	20/06/2023
Date of expiry :	19/06/2024
Previous Authorization Date of Issue :	18/10/2021
Previous Authorization Date of Expiry :	31/03/2023
Authorization Type :	renew

2. Particulars of the Industry

Name & Designation of the Applicant	Vinayak Mittal, (Director)
Address of Industrial premises	Aarti international ltd(dyeing and process unit), Village harhian and village bhaman kalan, Samrala, Ludhiana i-141010
Capital Investment of the Industry	27101.0 lakhs
Category of Industry	Red
Type of Industry	Yarn and textile processing involving sourcing, bleaching, dyeing..... emission generating process
Scale of the Industry	Large
Office District	Ludhiana i

"This is computer generated document from OCMMS by PPCB"
Aarti international ltd(dyeing and process unit), Village harhian and village bhaman kalan, Samrala, Ludhiana i-141010
Page 1

End of report

This report is made solely on the basis of your instructions and/or information and materials supplied. Results refer only to samples received in the lab. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct.

