



Test Report: (9323)251-0934

Report Date: September 21, 2023

Factory Company Name: Kai Ping Panther Textiles Co.,Ltd

Factory Address: No.21, Mei Hua Road, Shui Kou Town, Kai Ping City, Guang Dong Province, China

Sampling Method & Description:	I001) Untreated wastewater	Composite	Blue liquid
	I002) Effluent	Composite	Light yellow liquid
	I003) Sludge	Composite	Grey solid
	I004) Leachate	-	-
	I005) Incoming water	-	-

Discharge Type: **Direct Discharge**

On-site ETP / Pretreatment: Yes Homgenization Tank & Holding Time: Yes, >12hours

Discharge Destination: Nearby river or waterbody - Zhenhaitanjiang

Permit Validation Date: Dec 28, 2023 to Dec 27, 2025

Conventional, Anions & Heavy Metals Overall Category: Foundational ZDHC MRSL Parameters: Not detected

Sludge Parameters: Exceed ZDHC Threshold Value

Sample Pick Up Date: September 11, 2023 Sampler Number: C74D106817263

Test Period: September 11, 2023 to September 21, 2023

Parameter(s) exceeded maximum holding time: Not exceeded

Remark

The results of this report shall not be used for any regulatory compliance purposes.

Type of Process:	Textile	Average total industrial wastewater generated:	Equal or more than 15m3/day
Sludge Disposal Pathway:	Disposal Pathway A		
Type of Sludge:	Anaerobically digested secondary sludge		

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Report approved by:

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Result Summary - ZDHC MRS� Wastewater Parameters

Test Items	Untreated wastewater	Effluent	Incoming water
1A) AP and APEOs	ND	NR	NR
1B) Anti-Microbials & Biocides	ND		NR
1C) Chlorinated Parafins	ND		NR
1D) Chlorobenzenes and Chlorotoluenes	ND		NR
1E) Chlorophenols	ND		NR
1F) DMFa	ND		NR
1G) Dyes - Carcinogenic or Equivalent Concern	ND		NR
1H) Dyes - Disperse (Sensitising)	ND		NR
1I) Dyes - Navy Blue Colourant	ND		NR
1J) Flame Retardants	ND		NR
1K) Glycols / Glycol Ethers	ND		NR
1L) Halogenated Solvents	ND		NR
1M) Organotin Compounds	ND		NR
1N) Other / Miscellaneous Chemicals	ND		NR
1O) PFCs	ND		NR
1P) Phthalates	ND		NR
1Q) PAHs	ND		NR
1R) Restricted Aromatic Amines	ND		NR
1S) UV Absorbers	ND		NR
1T) VOC	ND		NR



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Result Summary - ZDHC Heavy Metals, Conventional and Anions Wastewater Parameters

Test Items	Untreated wastewater	Effluent	Incoming water	
Antimony	NR	Meet	NR	
Chromium (VI)		Meet	NR	
Barium		Refer to result	NR	
Selenium		Refer to result	NR	
Tin		Refer to result	NR	
Arsenic		Meet	NR	
Total Chromium		Meet	NR	
Cobalt		Meet	NR	
Cadmium		Meet	NR	
Copper		Meet	NR	
Lead		Meet	NR	
Nickel		Meet	NR	
Silver		Meet	NR	
Zinc		Meet	NR	
Mercury		Meet	NR	
pH			Meet	NR
Temperature difference			Meet	
E.coli			Meet	
Colour			Meet	
Persistent Foam			Meet	
Wastewater Flowrate			Refer to result	
Ammonium-Nitrogen			Meet	
AOX			Meet	
BOD ₅			Meet	
COD			Meet	
DO			Refer to result	
Oil & Grease			Meet	
Total Phenols / Phenol Index			Meet	
Total Chlorine			Refer to result	
TDS			Refer to result	
Total Nitrogen			Meet	
Total Phosphorus			Meet	
TSS			Meet	
Chloride		Refer to result		
Cyanide, total		Meet		
Sulfate		Refer to result		
Sulfide		Meet		
Sulfite		Meet		



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Result Summary - ZDHC Sludge Parameters

Test Items	Sludge	Leachate
Antimony	ND	NR
Arsenic	D	Refer to result
Barium	Refer to result	NR
Cadmium	ND	NR
Coblat	ND	NR
Copper	ND	NR
Lead	D	Refer to result
Nickel	ND	NR
Selenium	ND	NR
Silver	ND	NR
Total Chromium	ND	NR
Zinc	ND	NR
Chromium (VI)	ND	NR
Mercury	ND	NR
Cyanide	Refer to result	NR
pH	Refer to result	
% Solids	Refer to result	
Paint Filter Test	Refer to result	
Fecal Coliform	Refer to result	
AP and APEOs	Refer to result	
PAHs	Refer to result	
Chlorotoluenes	Refer to result	

Note / Key:

Meet	=	Meet Foundational Limit / Meet Discharge Criteria
Not Meet	=	Exceed Foundational Limit / Exceed Discharge Criteria
NR	=	Not requested / Not required
NA	=	Not applicable
D	=	Detected
ND	=	Not detected
Refer to result	=	Legal parameter(s) and/or parameter(s) requested by factory, please refer to test result



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Test Result - ZDHC MRSL Parameters

Test Parameters	Results of Test Items					Requirements [Textile]		
	I001	I002	I003 [#]	I004 [#]	I005	Wastewater	Sludge [#]	Leachate [#]
	(µg/L)	(µg/L)	(mg/kg)	(mg/L)	(µg/L)	(µg/L)	(mg/kg)	-
1A) AP and APEOs: including all isomers								
NPEO	ND	NR	ND	NR	NR	5	0.4	-
NP, mixed isomers	ND		ND		NR			
OPEO	ND		ND		NR			
OP, mixed isomers	ND		ND		NR			
1B) Anti-Microbials & Biocides								
o-Phenylphenol (+salts)	ND	NR	NR	NR	NR	100	-	-
Triclosan	ND				NR			
Permethrin	ND				NR			
1C) Chlorinated Parafins								
MCCPs (C14-C17)	ND	NR	NR	NR	NR	500	-	-
SCCPs (C10-C13)	ND				NR			
1D) Chlorobenzenes and Chlorotoluenes								
1,2-dichlorobenzene	ND	NR	NR	NR	NR	0.2	-	-
Other isomers of mono-, di-, tri-, tetra-, penta- and hexa- chlorobenzene	ND				NR			
Other isomers of mono-, di-, tri-, tetra- and penta- chlorotoluene	ND		ND					
1E) Chlorophenols								
2-chlorophenol	ND	NR	NR	NR	NR	0.5	-	-
3-chlorophenol	ND							
4-chlorophenol	ND							
2,3-dichlorophenol	ND							
2,4-dichlorophenol	ND							
2,5-dichlorophenol	ND							
2,6-dichlorophenol	ND							
3,4-dichlorophenol	ND							
3,5-dichlorophenol	ND							
2,3,4-trichlorophenol	ND							
2,3,5-trichlorophenol	ND							
2,3,6-trichlorophenol	ND							
2,4,5-trichlorophenol	ND							
2,4,6-trichlorophenol	ND							
3,4,5-trichlorophenol	ND							
2,3,5,6-tetrachlorophenol	ND							
2,3,4,6-tetrachlorophenol	ND							
2,3,4,5-tetrachlorophenol	ND							
Pentachlorophenol (PCP)	ND							
1F) N,N-di-methylformamide (DMFa)								
Dimethyl formamide; N,N-dimethylformamide (DMFa) ^a	ND	NR	NR	NR	NR	1000	-	-

a = Report only for mock leather

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Test Result - ZDHC MRSL Parameters (continued)

Test Parameters	Results of Test Items					Requirements [Textile]		
	I001 (µg/L)	I002 (µg/L)	I003# (mg/kg)	I004# (mg/L)	I005 (µg/L)	Wastewater (µg/L)	Sludge# (mg/kg)	Leachate# -
1G) Dyes - Carcinogenic or Equivalent Concern								
Basic violet 3 with >0.1% of Michler's Ketone	ND				NR	500	-	-
C.I. Acid Red 26	ND				NR			
C.I. Acid Violet 49	ND				NR			
C.I. Basic Blue 26 (with Michler's Ketone >0/1%)	ND				NR			
C.I. Basic Green 4 (Malachite Green Chloride)	ND				NR			
C.I. Basic Green 4 (Malachite Green Oxalate)	ND				NR			
C.I. Basic Green 4 (Malachite Green)	ND				NR			
C.I. Basic Red 9	ND	NR	NR	NR	NR			
C.I. Basic Violet 14	ND				NR			
C.I. Direct Black 38	ND				NR			
C.I. Direct Blue 6	ND				NR			
C.I. Direct Red 28	ND				NR			
C.I. Disperse Blue 1	ND				NR			
C.I. Disperse Blue 3	ND				NR			
Disperse Orange 11	ND				NR			
1H) Dyes - Disperse (Allergenic)								
Disperse Blue 102	ND				NR	50	-	-
Disperse Blue 106	ND				NR			
Disperse Blue 124	ND				NR			
Disperse Blue 26	ND				NR			
Disperse Blue 35 (CAS 12222-75-2)	ND				NR			
Disperse Blue 35 (CAS 56524-77-7)	ND				NR			
Disperse Blue 7	ND				NR			
Disperse Brown 1	ND				NR			
Disperse Orange 1	ND				NR			
Disperse Orange 3	ND	NR	NR	NR	NR			
Disperse Orange 37/59/76	ND				NR			
Disperse Red 1	ND				NR			
Disperse Red 11	ND				NR			
Disperse Red 17	ND				NR			
Disperse Yellow 1	ND				NR			
Disperse Yellow 3	ND				NR			
Disperse Yellow 39	ND				NR			
Disperse Yellow 49	ND				NR			
Disperse Yellow 9	ND				NR			
1I) Dyes - Navy Blue Colourant								
Component 1: C39H23Cl-CrN7O12S 2Na	ND				NR	500	-	-
Component 2: C46H-30CrN10O20S2 3Na	ND	NR	NR	NR	NR			

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Test Result - ZDHC MRSL Parameters (continued)

Test Parameters	Results of Test Items					Requirements [Textile]		
	I001 (µg/L)	I002 (µg/L)	I003 [#] (mg/kg)	I004 [#] (mg/L)	I005 (µg/L)	Wastewater (µg/L)	Sludge [#] (mg/kg)	Leachate [#] -
1J) Flame Retardants								
2,2-bis(bromomethyl)-1,3-propanediol (BBMP)	ND	NR	NR	NR	NR	25	-	-
Dis(2,3-dibromopropyl) phosphate (BIS)	ND				NR			
Decabromophenyl ether (DecaBDE)	ND				NR			
Hexabromocyclodecane (HBCDD)	ND				NR			
Octabromodiphenyl ether (OctaBDE)	ND				NR			
Pentabromodiphenyl ether (PentaBDE)	ND				NR			
Polybromobiphenyls (PBB)	ND				NR			
Tetrabromobisphenol A (TBBPA)	ND				NR			
Tris-(2-chloro-1-methylethyl) phosphate (TCPP)	ND				NR			
Tris(1-aziridinyl)phosphone oxide (TEPA)	ND				NR			
Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	ND				NR			
Tris(2-chloroethyl) phosphate (TCEP)	ND				NR			
Tris(2,3-dibromopropyl) phosphate (TRIS)	ND				NR			
Decabromobiphenyl (DecaBB)	ND				NR			
Dibromobiphenyls (DiBB)	ND				NR			
Octabromobiphenyls (OctaBB)	ND				NR			
Dibromopropylether	ND				NR			
Heptabromodiphenyl ether (HeptaBDE)	ND				NR			
Hexabromodiphenyl ether (HexaBDE)	ND				NR			
Monobromobiphenyls (MonoBB)	ND				NR			
Monobromodiphenylethers (MonoBDEs)	ND				NR			
Nonabromobiphenyls (NonaBB)	ND				NR			
Nonabromodiphenyl ether (NonaBDE)	ND				NR			
Tetrabromodiphenyl ether (TetraBDE)	ND				NR			
Tribromophenylethers (TriBDEs)	ND				NR			
Boric acid ^b	ND				NR	100		
Diboron trioxide ^b	ND				NR			
Disodium octaborate ^b	ND				NR			
Disodium tetraborate anhydrous ^b	ND	NR						
Tetraboron disodium heptaoxide, hydrate ^b	ND	NR						
1K) Glycols / Glycol Ethers								
2-ethoxyethanol	ND	NR	NR	NR	NR	50	-	-
2-ethoxyethyl acetate	ND				NR			
2-methoxyethanol	ND				NR			
2-methoxyethylacetate	ND				NR			
2-methoxypropylacetate	ND				NR			
Bis(2-methoxyethyl)-ether	ND				NR			
Ethylene glycol dimethyl ether	ND				NR			
Triethylene glycol dimethyl ether	ND				NR			
1L) Halogenated Solvents								
1,2-dichloroethane	ND	NR	NR	NR	NR	1	-	-
Methylene chloride	ND				NR			
Tetrachloroethylene	ND				NR			
Trichloroethylene	ND				NR			

b = Limit refers to elemental boron, not the salt.

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Test Result - ZDHC MRSL Parameters (continued)

Test Parameters	Results of Test Items					Requirements [Textile]		
	I001 (µg/L)	I002 (µg/L)	I003 [#] (mg/kg)	I004 [#] (mg/L)	I005 (µg/L)	Wastewater (µg/L)	Sludge [#] (mg/kg)	Leachate [#] -
1M) Organotin Compounds								
Dipropyltin compounds (DPT)	ND	NR	NR	NR	NR	0.01	-	-
Mono, di-, and tri-butyltin derivatives	ND							
Mono, di-, and tri-methyltin derivatives	ND							
Mono, di-, and tri-octyltin derivatives	ND							
Mono, di-, and tri-phenyltin derivatives	ND							
Tetraethyltin compounds (TeBT)	ND							
Tripropyltin compounds (TPT)	ND							
Tetraoctyltin compounds (TeOT)	ND							
Tricyclohexyltin (TCyHT)	ND							
Tetraethyltin compounds (TeET)	ND							
1N) Other / Miscellaneous Chemicals								
AEEA [2-(2-aminoethylamino)ethanol]	ND	NR	NR	NR	NR	500	-	-
Bisphenol A	ND				NR			
Thiourea	ND				NR			
Quinoline	ND				NR			
Borate, zinc salt ^c	ND				NR			
Silica (used in sand blasting) ^d	NR				NR			
1O) Perfluorinated and Polyfluorinated Chemicals (PFCs)								
Perfluorooctane sulfonate (PFOS) and related substances, Perfluorooctanoic acid (PFOA)	ND	NR	NR	NR	NR	0.01	-	-
Perfluorooctanoic acid (PFOA) related substances	ND				NR			
1P) Phthalates - including all other esters of ortho-phthalic acid								
1,2-benzenedicarboxylic acid, di-C6-8 branched and linear alkyl esters, C7-rich (DIHP)	ND	NR	NR	NR	NR	10	-	-
1,2-benzenedicarboxylic acid, di-C7-11 branched and linear alkyl esters (DHNUP)	ND							
Bis(2-methoxyethyl)phthalate (DMEP)	ND							
Butyl benzyl phthalate (BBP)	ND							
Di-cyclohexyl phthalate (DCHP)	ND							
Di-iso-decyl phthalate (DIDP)	ND							
Di-iso-octyl phthalate (DIOP)	ND							
Di-iso-butyl phthalate (DIBP)	ND							
Di-iso-nonyl phthalate (DINP)	ND							
Di-n-hexyl phthalate (DnHP)	ND							
Di-n-octyl phthalate (DNOP)	ND							
Di-n-pentylphthalates	ND							
Di-n-propyl phthalate (DPRP)	ND							
Di(ethylhexyl) phthalate (DEHP)	ND							
Dibutyl phthalate (DBP)	ND							
Diethyl phthalate (DEP)	ND							
Diisopentylphthalates	ND							
Dinonyl phthalate (DNP)	ND							

c = Limit refers to elemental boron and/or zinc, not the salt.

d = Not a ZDHC wastewater parameter, and not required to test this parameter as this is related to sand blasting

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Test Result - ZDHC MRSL Parameters (continued)

Test Parameters	Results of Test Items					Requirements [Textile]		
	I001	I002	I003 [#]	I004 [#]	I005	Wastewater	Sludge [#]	Leachate [#]
	(µg/L)	(µg/L)	(mg/kg)	(mg/L)	(µg/L)	(µg/L)	(mg/kg)	-
1Q) Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene	ND		ND		NR			
Acenaphthylene	ND		ND		NR			
Anthracene	ND		ND		NR			
Benzo[a]anthracene	ND		ND		NR			
Benzo[a]pyrene (BaP)	ND		ND		NR			
Benzo[b]fluoranthene	ND		ND		NR			
Benzo[e]pyrene	ND		ND		NR			
Benzo[ghi]perylene	ND		ND		NR			
Benzo[j]fluoranthene	ND	NR	ND	NR	NR	1	0.2	-
Benzo[k]fluoranthene	ND		ND		NR			
Chrysene	ND		ND		NR			
Dibenz[a,h]anthracene	ND		ND		NR			
Fluoranthene	ND		ND		NR			
Fluorene	ND		ND		NR			
Indeno[1,2,3-cd]pyrene	ND		ND		NR			
Naphthalene	ND		ND		NR			
Phenanthrene	ND		ND		NR			
Pyrene	ND		ND		NR			
1R) Restricted Aromatic Amines (Cleavable from Azo-colourants)								
2-naphthylamine	ND				NR			
2-naphthylammoniumacetate	ND				NR			
2,4-xylidine	ND				NR			
2,4,5-trimethylaniline	ND				NR			
2,4,5-trimethylaniline hydrochloride	ND				NR			
2,6-xylidine	ND				NR			
3,3'-dichlorobenzidine	ND				NR			
3,3-dimethoxybenzidine	ND				NR			
3,3-dimethylbenzidine	ND				NR			
4-aminoazobenzene	ND				NR			
4-aminodiphenyl	ND				NR			
4-chloro-o-toluidine	ND				NR			
4-chloro-o-toluidinium chloride	ND				NR			
4-chloroaniline	ND				NR			
4-methoxy-m-phenylene diammonium sulphate; 2,4-diaminoanisole sulphate	ND	NR	NR	NR	NR	0.1	-	-
4-methoxy-m-phenylenediamine	ND				NR			
4-methyl-m-phenylenediamine	ND				NR			
4,4-methylene-bis-(2-chloro-aniline)	ND				NR			
4,4-methylenedi-o-toluidine	ND				NR			
4,4-methylenedianiline	ND				NR			
4,4-oxydianiline	ND				NR			
4,4-thiodianiline	ND				NR			
5-nitro-o-toluidine	ND				NR			
6-methoxy-m-toluidine	ND				NR			
Benzidine	ND				NR			
o-aminoazotoluene	ND				NR			
o-anisidine	ND				NR			
o-toluidine	ND				NR			

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Test Result - ZDHC MRSL Parameters (continued)

Test Parameters	Results of Test Items					Requirements [Textile]		
	I001	I002	I003 [#]	I004 [#]	I005	Wastewater	Sludge [#]	Leachate [#]
	(µg/L)	(µg/L)	(mg/kg)	(mg/L)	(µg/L)	(µg/L)	(mg/kg)	-
1S) UV Absorbers								
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenol (UV-350)	ND	NR	NR	NR	NR	100	-	-
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	ND				NR			
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	ND				NR			
2,4-Di-tert-butyl-6-(5-chlorobenzotriazole-2-yl) phenol (UV-327)	ND				NR			
1T) Volatile Organic Compounds (VOC)								
Benzene	ND	NR	NR	NR	NR	1	-	-
m-cresol	ND				NR			
o-cresol	ND				NR			
p-cresol	ND				NR			
Xylene	ND				NR			
Toluene ^a	ND				NR			

a = Report only for mock leather

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Test Result - ZDHC Heavy Metals Parameters

Test Parameters	Unit			Results of Test Items					Requirements [Textile]				
	Wastewater	Sludge	Leachate	I001	I002	I003#	I004#	I005	Wastewater			Sludge	
									Foundational	Progressive	Aspirational	Discharge Limit	Sludge Threshold Values
ZDHC Heavy Metals													
Antimony	mg/L	mg/kg	mg/L	NR	ND	ND	NR	NR	0.1	0.05	0.01	-	12
Chromium (VI)	mg/L	mg/kg	mg/L		ND	ND	NR	NR	0.05	0.005	0.001	-	50
Barium	mg/L	mg/kg	mg/L		ND	285	NR	NR	Sample & Report			-	700
Selenium	mg/L	mg/kg	mg/L		ND	ND	NR	NR	Sample & Report			-	10
Tin	mg/L	-	-		ND	NR	NR	NR	Sample & Report			-	-
Arsenic	mg/L	mg/kg	mg/L		ND	50.2	<2	NR	0.05	0.01	0.005	-	10
Total Chromium	mg/L	mg/kg	mg/L		ND	ND	NR	NR	0.2	0.1	0.05	-	100
Cobalt	mg/L	mg/kg	mg/L		ND	ND	NR	NR	0.05	0.02	0.01	-	1600
Cadmium	mg/L	mg/kg	mg/L		ND	ND	NR	NR	0.1	0.05	0.01	-	3
Copper	mg/L	mg/kg	mg/L		ND	ND	NR	NR	1	0.5	0.25	-	200
Lead	mg/L	mg/kg	mg/L		ND	21.1	<2	NR	0.1	0.05	0.01	-	10
Nickel	mg/L	mg/kg	mg/L		ND	ND	NR	NR	0.2	0.1	0.05	-	70
Silver	mg/L	mg/kg	mg/L		ND	ND	NR	NR	0.1	0.05	0.005	-	100
Zinc	mg/L	mg/kg	mg/L		ND	ND	NR	NR	5	1	0.5	-	1000
Mercury	mg/L	mg/kg	mg/L		ND	ND	NR	NR	0.01	0.005	0.001	-	1

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Test Result - ZDHC Conventional and Anions Parameters

Test Parameters	Unit			Results of Test Items					Requirements [Textile]				
	Wastewater	Sludge	Leachate	I001	I002	I003#	I004#	I005	Wastewater			Discharge Limit	Sludge Threshold Values
									Foundational	Progressive	Aspirational		
ZDHC Conventional													
pH	pH				7.9	11.88					6 - 9	-	
Temparture difference	Δ °C				3.3					15	10	5	-
E.coli	MPN/100-ml				ND					126			-
Colour (436 nm)	m ⁻¹				<2					7	5	2	-
Colour (525 nm)	m ⁻¹				<1					5	3	1	-
Colour (620 nm)	m ⁻¹				<0.1					3	2	1	-
Persistent Foam	-				Absent					No indication of Persistent Foam			-
Wastewater Flowrate	m ³ /day				2000					-			-
Ammonium-Nitrogen	mg/L				1.52					10	1	0.5	-
AOX	mg/L				2.42					3	0.5	0.1	-
BOD ₅	mg/L				ND	NR				30	15	8	-
COD	mg/L				ND	NR				150	80	40	-
DO	mg/L			NR	4.62		NR	NR		Sample & Report			-
Oil & Grease	mg/L				ND					10	2	0.5	-
Total Phenols / Phenol Index	mg/L				0.0017					0.5	0.01	0.001	-
Total Chlorine	mg/L				0.25					Sample & Report			-
TDS	mg/L				1263								-
Total Nitrogen	mg/L				ND					20	10	5	-
Total Phosphorus	mg/L				ND					3	0.5	0.1	-
TSS	mg/L				12					50	15	5	-
% Solids	-	%				54.59							-
Paint Filter Test	-	-			NR	Pass							-
Fecal Coliform	-	MPN/g				ND							-
ZDHC Anions													
Chloride	mg/L	-	-		206	NR				Sample & Report			-
Cyanide, total	mg/L	mg/kg	-		ND	ND				0.2	0.1	0.05	-
Sulfate	mg/L			NR	215		NR	NR		Sample & Report			-
Sulfide	mg/L				0.02	NR				0.5	0.05	0.01	-
Sulfite	mg/L				ND					2	0.5	0.2	-

#Limit refers to the chosen ZDHC sludge disposal pathway in Table 4 in accordance with the ZDHC Wastewater Guidelines.



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Appendix A - Discharge limit according to regulation / contract limit with CETP**(二) 排放许可限值**

表 10 废水污染物排放

序号	排放口编号	排放口名称	污染物种类	许可排放浓度限值	许可年排放量限值 (t/a)				
					第一年	第二年	第三年	第四年	第五年
主要排放口									
1	DW001	开平奔达纺织有限公司污水排放口	pH 值	6-9mg/L	/	/	/	/	/
2	DW001	开平奔达纺织有限	悬浮物	50mg/L	/	/	/	/	/

序号	排放口编号	排放口名称	污染物种类	许可排放浓度限值	许可年排放量限值 (t/a)				
					第一年	第二年	第三年	第四年	第五年
		公司污水排放口							
3	DW001	开平奔达纺织有限公司污水排放口	总氮 (以 N 计)	15mg/L	/	/	/	/	/
4	DW001	开平奔达纺织有限公司污水排放口	色度	50mg/L	/	/	/	/	/
5	DW001	开平奔达纺织有限公司污水排放口	硫化物	0.5mg/L	/	/	/	/	/
6	DW001	开平奔达纺织有限公司污水排放口	苯胺类	1mg/L	/	/	/	/	/
7	DW001	开平奔达纺织有限公司污水排放口	流量	/mg/L	/	/	/	/	/
8	DW001	开平奔达纺织有限公司污水排放口	化学需氧量	80mg/L	/	/	/	/	/

序号	排放口编号	排放口名称	污染物种类	许可排放浓度限值	许可年排放量限值 (t/a)				
					第一年	第二年	第三年	第四年	第五年
9	DW001	开平奔达纺织有限公司污水排放口	五日生化需氧量	20mg/L	/	/	/	/	/
10	DW001	开平奔达纺织有限公司污水排放口	氨氮 (NH ₃ -N)	10mg/L	/	/	/	/	/
11	DW001	开平奔达纺织有限公司污水排放口	总磷 (以 P 计)	0.5mg/L	/	/	/	/	/



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Appendix B - Sample Photos

I001) Sampling point
N 22° 23' 4", E 112° 42' 52"



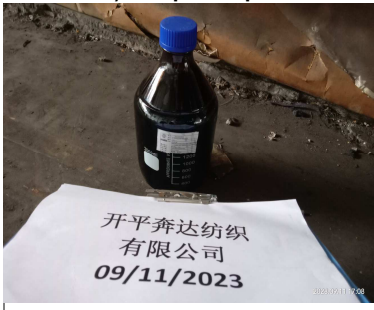
I001) Sampling location surrounding
N 22° 23' 4", E 112° 42' 52"



I001) Labelled sample bottles



I001) Sample for phthalate test



I001) Sample packaging



I002) Sampling point
N 22° 23' 12", E 112° 43' 4"



I002) Sampling location surrounding
N 22° 23' 12", E 112° 43' 4"



I002) Labelled sample bottles



I002) pH measurement



I002) Sample packaging





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Appendix B - Sample Photos (continued)

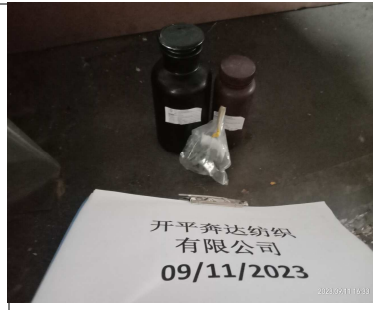
I003) Sampling point
N 22° 23' 9", E 112° 43' 0"



I003) Sampling location surrounding
N 22° 23' 9", E 112° 43' 0"



I003) Labelled sample bottles



I003) Sample packaging



I005) Sampling point

I005) Sampling location surrounding

I005) Labelled sample bottles

Not tested	Not tested	Not tested
------------	------------	------------

I005) pH measurement

I005) Sample packaging

Not tested	Not tested
------------	------------



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Appendix C - On-site Field Data Record Sheet

FIELD DATA RECORD ON ZERO-DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)		CPSD-AN-00613-DATA 04		
		Issue Date:		
		Version No.: 17		
		Business Line: Analytical		
General Data				
Laboratory Sample Number:	93232510934			
Client Name:	#5 港大 18 有 02 23			
Field Contact Person:	陈 J Phone No: 18902888027			
Project (Facility Name and Address):	开平水坑 3 港大 25 21 港			
Sampling Location / Description:	Untreated			
Sample Identification:	Zero discharge with sampling plan			
Sample Type:	Composite Sample / Grab Sample (Please indicate as appropriate)			
Name of Sampler:	MY 陈 J			
Discharge mode:	Direct discharge to environment (Specify destination: River, Sea, Stream,) OR Indirect discharge to sewage treatment plant			
Date of collection:	9/11/2023			
Factory Type:	Dyeing / Printing / Washing / Finishing / Others (please specify): To: 港海江			
*Note: It would be selected more than one				
Field Data for Wastewater				
Arrive Time:	11:00	Departure Time:	17:22	
Field Parameters:	pH: /	Temp: / °C	Color: Blue	
Original No. of field equipment:	No			
Factory with effluent treatment plant:	No			
Sample matrix:	Wastewater before treatment			
	Wastewater after treatment - water at discharge point			
Sample container number:	100			
Recording time:	ID			
	Time	11:08	12:07	
		13:09	14:06	
		15:07	16:06	
		17:05		
pH:		/	/	
Temp (°C):		Blue	Blue	
Color (Visual estimation):		Blue	Blue	
Volume collected (ml):		3000	3000	
Total volume collected (ml):		8		
*Remark: Total volume collected must be greater than total of sample size required				
Analysis Required and Preservation Method				
Tests (ZDHC MRSL Parameters)	Test required (Y)	Total of sample size	Type of container	Preservation method
1. Fibre size	✓			
2. Chlorinated or individual test (Remark 4)	✓	1000 mL each or 1000 mL each	全水 N 22° 23' 4" E 112° 42' 52" Amber Glass washed with nitric acid	Without adding acid store sample at 2-8°C
3. SOCPs	✓			
4. AFS	✓			
5. AFECs	✓	100 mL		
6. Chlorophenols & Cresols	✓	100 mL		
7. Flame Retardants	✓	500 mL		
8. CVs	✓	10 mL		
9. Cryst. Sol.	✓	50 mL		
10. Phthalates	✓	1000 mL		
11. Phthalates	✓	10 mL		
12. Bathed Azodyes	✓	200 mL		
13. Phthalates	✓	500 mL		
14. Organotin Compounds	✓	500 mL		
15. Waxes	✓	1000 mL		
16. BPA	✓	1000 mL		
17. Phthalates	✓	1000 mL		
18. VOC & Halogenated Solvents (Remark 6)	✓	10 mL		Fill to Air container without air gap, add to pH2 with HCl and store sample at 2-8°C
19. PFCA (Remark 6)	✓	2 mL	PE, washed with pesticide grade acetone	Without adding acid store sample at 2-8°C



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Appendix C - On-site Field Data Record Sheet (continued)

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)				CPSD-AN-00613-DATA 04
				Issue Date:
				Version No.: 17
				Business Line: Analytical
Tests (Conventional) Parameters	Test required (Y)	Total of sample size	Type of container	Preservation method
Combined test or Individual test (Remark 4)	20. Total suspended solids (TSS) 21. Total dissolved solids (TDS)	2000 mL, 1000 mL or 2000 mL, each	Amber glass, washed with nitric acid	Without adding acid Store sample at 2-8°C
22. 5-day BOD		1000 mL		
23. Colour		100 mL		
24. Heavy Metals (except Cr(VI) & Total P (Remark 6))		9 mL	PE, washed with nitric acid	Adjust to pH 2 with HNO ₃ and store at 2-8°C
25. Cyanide		500 mL	Amber Glass, washed with pesticide grade acetone	Adjust pH to 12 with 50% NaOH, add 0.05 mL of 10% Na ₂ O ₂ and store sample at 2-8°C
26. Cr(VI)		96 mL		Filter by 0.45µm Whatman filter into 100 mL container without air gaps; adjust pH to 9.0-9.5 by adding acetone in water; store sample at 2-8°C
27. Chemical oxygen demand (COD)		150 mL		
28. Phenols		500 mL	Amber Glass, washed with nitric acid	Adjust to pH 2 with HNO ₃ , store sample at 2-8°C
29. Oil and Grease & Total Hydrocarbon		1000 mL		Fill to full container without air gaps; adjust pH to 2 with HNO ₃ and store sample at 2-8°C
30. Formaldehyde		25 mL		Fill to full container without air gaps; adjust pH to 2 with HNO ₃ and store sample at 2-8°C
31. Sulfide (Remark 5)		90 mL	PE, washed with pesticide grade Acetone	Adjust to pH 2 with HNO ₃ and store sample at 2-8°C
32. Ecol (Remark 6)		125 mL	FE, clean, sterile, non-sterile	Add 0.1 mL of 10% NaOCl; keep in dark; store sample at 2-8°C
33. Mercurian foam		N/A	Foam higher than 45 cm (visual estimation)	Not tested
34. Sulfite		100 mL	Amber Glass, washed with pesticide grade acetone	Add 1 mL of 20% NaOH; store sample at 2-8°C
35. Total N		100 mL		Adjust to pH 2 with HNO ₃ , store sample at 2-8°C
36. Ammonium		500 mL		
37. Adsorbable organically bound halogens (AOX)		100 mL		Adjust to pH 2 with HNO ₃ and store at 2-8°C
38. Acute aquatic toxicity (Daphnia magna, Fish eggs, Daphnia magna)		1000 mL	Amber Glass, washed with nitric acid	Without adding acid Store sample at 2-8°C
39. Sulfate		100 mL		Without adding acid Store sample at 2-8°C
40. Chloride		100 mL		
41. Selenium		200 mL		
42. BOD ₅ (5-day BOD)		1000 mL		
43. Total phosphorus		100 mL		
44. Others				

Remarks:

- Individual sampling can be performed upon request.
- The minimum sampling time for 2019 ZDHC guideline is 6 hours with no more than one hour between discrete samples. Sampling time could be adjusted upon request.
- Some primary aromatic amines, pesticides, nitroamine and formaldehyde are not in the scope of ZDHC Guideline, they are tested upon request.
- Refer to CPSD-AN-00019-SI(PH), locations with those CPSD test capability inside TCD matrix can perform the combined test.
- Refer to CPSD-AN-00070-MTHD for additional pretreatment of sulfide if only dissolved sulfide is required to be tested.
- Refer to CPSD-AN-00613-MTHD for preparation of test blank for specific parameters.

Recorded by: *[Signature]* Date: 9/11/2023

Control from factory: *[Signature]*

Addressed/signed by factory:

I hereby confirmed that Bureau Veritas had completed the stated sampling activity at captioned date, site and location. All sample(s) were collected in designated container(s) and without any observation in leakage. Sample(s) collected by Bureau Veritas (to be stored in portable freezer / fridge that is maintained in -14°C).

Signature of Factory Representative: *Jack Lu* Date: 2023.9.11



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Appendix C - On-site Field Data Record Sheet (continued)

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE/INDIVIDUAL SAMPLING)		CPSD-AN-00813-DATA 04																																																																																																					
Issue Date:		Version Number:																																																																																																					
Business Line: Analytical																																																																																																							
General Data Laboratory Sample Number: 93232510934 Client Name: 开平喜达纺织有限公司 Field Contact Person: 王工 Phone No: 1390388127 Project (Facility Name and Address): 开平喜达纺织有限公司 Sampling Location / Description: Effluent Sample Identification: Zero discharge with sampling point Sample Type: Composite Sample / Grab sample (Please delete as appropriate) Name of Sampler: NN 梁佳杰 Discharge mode: Other discharge to environment (Specify destination: River, Sea, Stream...) Or indirect discharge to sewage treatment plant Date of collection: 9/11/2023 Factory Type: Dyeing / Printing / Washing / Finishing / Others (please specify)																																																																																																							
Field Data for Wastewater Arrival Time: 11:00 Departure Time: 11:21 Field Parameters: pH: 7.88 Temp: 30.2 Color: 570 yellow Flow rate: (volume/time) Control No. of field equipment: AN-0587 AN-0200-E24 Factory with effluent treatment plant: No Sample matrix: <input checked="" type="checkbox"/> Incoming water (if required) <input type="checkbox"/> Wastewater before treatment <input checked="" type="checkbox"/> Wastewater after treatment - water at discharge point Sampler container number: 1002 <table border="1"> <thead> <tr> <th>Recording time</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> </tr> </thead> <tbody> <tr> <td>Time</td> <td>12:03</td> <td>12:02</td> <td>13:01</td> <td>14:02</td> <td>15:01</td> <td>16:00</td> <td>17:01</td> <td></td> </tr> <tr> <td>pH</td> <td>7.88</td> <td>7.89</td> <td>7.90</td> <td>7.88</td> <td>7.92</td> <td>7.87</td> <td>7.91</td> <td></td> </tr> <tr> <td>Temp (°C)</td> <td>30.3</td> <td>30.2</td> <td>30.3</td> <td>31.1</td> <td>30.8</td> <td>29.8</td> <td>29.6</td> <td></td> </tr> <tr> <td>Color (visual estimation)</td> <td>570 yellow</td> <td>570 yellow</td> <td>570 yellow</td> <td>570 yellow</td> <td>570 yellow</td> <td>570 yellow</td> <td>570 yellow</td> <td></td> </tr> <tr> <td>Flow rate (volume/time)</td> <td>3000</td> <td>3000</td> <td>3000</td> <td>3000</td> <td>3000</td> <td>3000</td> <td>3000</td> <td></td> </tr> </tbody> </table> Note: Total volume collected must be greater than total of sample size required.				Recording time	1	2	3	4	5	6	7	8	Time	12:03	12:02	13:01	14:02	15:01	16:00	17:01		pH	7.88	7.89	7.90	7.88	7.92	7.87	7.91		Temp (°C)	30.3	30.2	30.3	31.1	30.8	29.8	29.6		Color (visual estimation)	570 yellow	570 yellow	570 yellow	570 yellow	570 yellow	570 yellow	570 yellow		Flow rate (volume/time)	3000	3000	3000	3000	3000	3000	3000																																															
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Analysis Required and Preservation Method <table border="1"> <thead> <tr> <th>Tests (20HC MRSL Parameters)</th> <th>Test required (ml)</th> <th>Total of sample size</th> <th>Type of container</th> <th>Preservation method</th> </tr> </thead> <tbody> <tr> <td>1. Phenolate</td> <td></td> <td></td> <td>100ml</td> <td></td> </tr> <tr> <td>2. Chromium VI & PAH</td> <td></td> <td>1000 ml each</td> <td></td> <td></td> </tr> <tr> <td>3. SOCPs</td> <td></td> <td>100 ml</td> <td></td> <td></td> </tr> <tr> <td>4. APB</td> <td></td> <td>100 ml</td> <td></td> <td></td> </tr> <tr> <td>5. APECs</td> <td></td> <td>500 mL</td> <td></td> <td></td> </tr> <tr> <td>6. Organophosphorus & Cresols</td> <td></td> <td>10 mL</td> <td></td> <td></td> </tr> <tr> <td>7. Phthalate (standard)</td> <td></td> <td>50 mL</td> <td></td> <td></td> </tr> <tr> <td>8. Cyan</td> <td></td> <td>1000 mL</td> <td></td> <td></td> </tr> <tr> <td>9. Chlor</td> <td></td> <td>10 mL</td> <td></td> <td></td> </tr> <tr> <td>10. Phosphate</td> <td></td> <td>50 mL</td> <td></td> <td></td> </tr> <tr> <td>11. Nitrate</td> <td></td> <td>10 mL</td> <td></td> <td></td> </tr> <tr> <td>12. Nitrite</td> <td></td> <td>3000 mL</td> <td></td> <td></td> </tr> <tr> <td>13. Ammonia</td> <td></td> <td>1000 mL</td> <td></td> <td></td> </tr> <tr> <td>14. Organoth Compounds</td> <td></td> <td>600 mL</td> <td></td> <td></td> </tr> <tr> <td>15. Chloride</td> <td></td> <td>10 mL</td> <td></td> <td></td> </tr> <tr> <td>16. EPA</td> <td></td> <td>10 mL</td> <td></td> <td></td> </tr> <tr> <td>17. Cyanide</td> <td></td> <td>10 mL</td> <td></td> <td></td> </tr> <tr> <td>18. VOC & Halogenated Solvents (Remark 6)</td> <td></td> <td>2 mL</td> <td>PE, washed with pesticide grade Acetone</td> <td>Fill to full container without air; pH: acidity to pH 2 with HCl and store sample at 2-8°C</td> </tr> <tr> <td>19. PFCs (Remark 6)</td> <td></td> <td>2 mL</td> <td>PE, washed with pesticide grade Acetone</td> <td>Without adding acid Store sample at 2-8°C</td> </tr> </tbody> </table>				Tests (20HC MRSL Parameters)	Test required (ml)	Total of sample size	Type of container	Preservation method	1. Phenolate			100ml		2. Chromium VI & PAH		1000 ml each			3. SOCPs		100 ml			4. APB		100 ml			5. APECs		500 mL			6. Organophosphorus & Cresols		10 mL			7. Phthalate (standard)		50 mL			8. Cyan		1000 mL			9. Chlor		10 mL			10. Phosphate		50 mL			11. Nitrate		10 mL			12. Nitrite		3000 mL			13. Ammonia		1000 mL			14. Organoth Compounds		600 mL			15. Chloride		10 mL			16. EPA		10 mL			17. Cyanide		10 mL			18. VOC & Halogenated Solvents (Remark 6)		2 mL	PE, washed with pesticide grade Acetone	Fill to full container without air; pH: acidity to pH 2 with HCl and store sample at 2-8°C	19. PFCs (Remark 6)		2 mL	PE, washed with pesticide grade Acetone	Without adding acid Store sample at 2-8°C
Tests (20HC MRSL Parameters)	Test required (ml)	Total of sample size	Type of container	Preservation method																																																																																																			
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Appendix C - On-site Field Data Record Sheet (continued)

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)				CPSD-AN-00613-DATA 04	
				Issue Date:	
				Validation No.:	
				Business Line:	Analytical
Tests (Conventional Parameters)	Test required (Y/N)	Total of sample size	Type of container	Preservation method	
Combined test of individual test (Remark 4)	20. Total suspended solids (TSS) ✓ 21. Total dissolved solids (TDS) ✓	2000 mL total or 2000 mL each	Amber Glass, washed with HNO ₃ acid	Without adding acid Store sample at 2-8°C	
22. 5-day Biochemical Oxygen Demand (BOD ₅)	✓	1000 mL			
23. Colour	✓	100 mL	PE, washed with distilled water	Acidity to pH 2 with HNO ₃ and store at 2-8°C	
24. Heavy Metals except Cr(VI) & Total-P (Remark 6)	✓	9 mL	Amber Glass, washed with pesticide grade acetone	Adjust pH 12 with 50% NaOH, add 0.05 mL of 10% Na ₂ O ₂ , add store sample at 2-8°C	
25. Cyanide	✓	500 mL		Filter by 0.45µm filter in dark, fill to full container without air gap, adjust pH to 10.0-10.5 by adding ammonium buffer, store sample at 2-8°C	
26. Cr(VI)	✓	95 mL			
27. Chemical oxygen demand (COD)	✓	150 mL	Amber Glass, washed with HNO ₃ acid	Acidity to pH 2 with HNO ₃ Store sample at 2-8°C	
28. Phenols	✓	500 mL			
28. Oil and Grease & Total Hydrocarbon	✓	1000 mL		Fill to full container without air gap, acidity to pH 2 with HNO ₃ , and store sample at 2-8°C	
30. Formaldehyde	✓	25 mL			
31. Sulfide (Remark 5)	✓	50 mL	PE, washed with pesticide grade Acetone	Fill to full container without air gap, add 2 drops of 2M zinc acetate, adjust pH to 5 with 6M NaOH. Store sample at 2-8°C	
32. E.coli (Remark 6)	✓	125 mL	PE, clean, sterile, non-reactive	Add 0.5 mL of 10% Na ₂ S ₂ O ₃ . Keep in dark. Store sample at 2-8°C	
33. Persistent foam	✓	N/A		Foam higher than 45 cm (visual estimation): Yes / No	
34. Sulfur	✓	100 mL	Amber Glass, washed with pesticide grade acetone	Add 1mL of 2.5% EDTA. Store sample at 2-8°C	
35. Total-N	✓	100 mL		Acidity to pH 2 with HNO ₃ . Store sample at 2-8°C	
36. Ammonium-N	✓	500 mL		Acidity to pH 2 with HNO ₃ and store at 2-8°C	
37. Adsorbable organically bound halogens (AOX)	✓	100 mL			
38. Acute aquatic toxicity: Lethal to Bacteria, Fish Egg, Daphnia, Algae	✓	1000 mL	Amber Glass, washed with distilled water		
39. Salinity	✓	100 mL		Without adding acid Store sample at 2-8°C	
40. Chlorine	✓	100 mL			
41. Hardness	✓	100 mL			
42. Suspended Solids (SS)	✓	100 mL			
43. Total Chlorine	✓	100 mL			
44. Chlorine Sulfate	✓	100 mL			

Remarks:
 1. Individual sampling can be performed upon request.
 2. The minimum sampling time for ZDHC is 2-5 hours with no more than one hour between discrete samples. Sampling time could be adjusted upon request.
 3. Sampling should be done in a clean area. The sampling area should be clearly marked and secured to prevent unauthorized access.
 4. The primary sampling point (tap/cock, hosepipe and formaldehyde) are not in the scope of ZDHC Guidance. They are tested upon request.
 5. Refer to CPSD-AN-00019-SIP01, Guidance with ZDHC test capability. In low TCD matrix can perform the combined test.
 6. Refer to CPSD-AN-00070-MTH0 for additional preservation of sulfide if only dissolved sulfide is required to be tested.
 7. Refer to CPSD-AN-00019-MTH0 for preservation of water for specific parameters.

Received by: 黃樹榮 Date: 9/11/2023
 Full Name: 黃樹榮
 Contact Number: 04910681263

Authorized Signatory by Industry:
 I hereby confirm that Bureau Veritas has completed the stated sampling activity at captioned date, time and location. All sample(s) were collected in designated container(s) and without any observation of leakage. Sample(s) collected by Bureau Veritas were stored in portable freezer if those that is maintained in 1-6°C

Signature of Factory Representative: Jack Lu Date: 2023.9.11
 Full Name: Jack Lu



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Appendix D - Test methods, reporting limits and CAS numbers

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
1A) AP and APEOs: including all isomers						
Nonylphenol ethoxylates (NPEO)	µg/L	mg/kg	9016-45-9, 26027-38-3, 37205-87-1, 68412-54-4, 127087-87-0	5	0.4	NP/OP: ISO 18857-2 (modified dichloromethane extraction) or ASTM D7065 (GC-MS or LC-MS(-MS)), OPEO/NPEO (n>2): ASTM D7742 ISO 18857-2
Nonylphenol (NP), mixed isomers			104-40-5, 11066-49-2, 25154-52-3, 84852-15-3			
Octylphenol ethoxylates (OPEO)			9002-93-1, 9036-19-5, 68987-90-6			
Octylphenol (OP), mixed isomers			140-66-9, 1806-26-4, 27193-28-8			
1B) Anti-Microbials & Biocides						
o-Phenylphenol (+salts)	µg/L	-	90-43-7	100	-	USEPA 8270E Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC-MS BS EN 12673-1999 USEPA 8270E Solvent extraction followed by GC-MS or ISO 14154:2005 and determination by LCMS/LCMSMS
Triclosan			3380-34-5			
Permethrin			Multiple	500		
1C) Chlorinated Paraffins						
Medium-chain chlorinated paraffins (MCCPs) (C14-C17)	µg/L	-	85535-85-9	500	-	EPA 3510 and analyzed by ISO18219-2:2021 Method for MCCP with GC-MS(NCI) or LC-MS/MS EPA 3510 and analyzed by ISO18219-1:2021, ISO 12010:2019 Methods for SCCP with GC-MS(NCI) or LC-MS/MS
Short-chain chlorinated paraffins (SCCPs) (C10-C13)			85535-84-8	25		
1D) Chlorobenzenes and Chlorotoluenes						
1,2-dichlorobenzene	µg/L	-	95-50-1	0.2	-	USEPA 8260D, 8270E, Purge and Trap, Head Space, Dichloromethane extraction followed by GC-MS
Other isomers of mono-, di, tri-, tetra-, and hexa- chlorobenzene			Multiple			
Other isomers of mono-, di-, tri-, tetra-, and penta- chlorotoluene		mg/kg				
1E) Chlorophenols						
2-chlorophenol	µg/L	-	95-57-8	0.5	-	USEPA 8270E Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC-MS, BS EN 12673-1999 the procedure of solvent extraction and derivatization are included
3-chlorophenol			108-43-0			
4-chlorophenol			106-48-9			
2,3-dichlorophenol			576-24-9			
2,4-dichlorophenol			120-83-2			
2,5-dichlorophenol			583-78-8			
2,6-dichlorophenol			87-65-0			
3,4-dichlorophenol			95-77-2			
3,5-dichlorophenol			591-35-5			
2,3,4-trichlorophenol			15950-66-0			
2,3,5-trichlorophenol			933-78-8			
2,3,6-trichlorophenol			933-75-5			
2,4,5-trichlorophenol			95-95-4			
2,4,6-trichlorophenol			88-06-2			
3,4,5-trichlorophenol			609-19-8			
2,3,5,6-tetrachlorophenol			935-95-5			
2,3,4,6-tetrachlorophenol			58-90-2			
2,3,4,5-tetrachlorophenol	4901-51-3					
Pentachlorophenol (PCP)	87-86-5					
1F) Dimethyl Formamide (DMFa)						
Dimethyl formamide; N,N-dimethylformamide (DMFa) ^a	µg/L	-	68-12-2	1000	-	EPA 8015, EPA 8270E

a = Report only for mock leather



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Appendix D - Test methods, reporting limits and CAS numbers (continued)

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
1G) Dyes - Carcinogenic or Equivalent Concern						
Basic Violet 3 with >0.1% of Michler's Ketone	µg/L	-	548-62-9	500	-	Liquid extraction, LC-MS
C.I. Acid Red 26			3761-53-3			
C.I. Acid Violet 49			1694-09-3			
C.I. Basic Blue 26 (with Michler's Ketone > 0.1%)			2580-56-5			
C.I. Basic Green 4 (Malachite Green Chloride)			569-64-2			
C.I. Basic Green 4 (Malachite Green Oxalate)			2437-29-8			
C.I. Basic Green 4 (Malachite Green)			10309-95-2			
C.I. Basic Red 9			569-61-9			
C.I. Basic Violet 14			632-99-5			
C.I. Direct Black 38			1937-37-7			
C.I. Direct Blue 6			2602-46-2			
C.I. Direct Red 28			573-58-0			
C.I. Disperse Blue 1			2475-45-8			
C.I. Disperse Blue 3			2475-46-9			
Disperse Orange 11	82-28-0					
1H) Dyes - Disperse (Allergenic)						
Disperse Blue 102	µg/L	-	12222-97-8	50	-	Liquid extraction, LC-MS
Disperse Blue 106			12223-01-7			
Disperse Blue 124			61951-51-7			
Disperse Blue 26			3860-63-7			
Disperse Blue 35			12222-75-2			
Disperse Blue 7			56524-77-7			
Disperse Brown 1			3179-90-6			
Disperse Orange 1			23355-64-8			
Disperse Orange 3			2581-69-3			
Disperse Orange 37/59/76			730-40-5			
Disperse Red 1			13301-61-6			
Disperse Red 11			2872-52-8			
Disperse Red 17			2872-48-2			
Disperse Yellow 1			3179-89-3			
Disperse Yellow 3			119-15-3			
Disperse Yellow 39			2832-40-8			
Disperse Yellow 49			12236-29-2			
Disperse Yellow 9	54824-37-2					
Disperse Yellow 9	6373-73-5					
1I) Dyes - Navy Blue Colourant						
Component 1: C39H23Cl-CrN7O12S 2Na	µg/L	-	118685-33-9	500	-	Liquid extraction, LC-MS
Component 2: C46H-30CrN10O20S2 3Na			Not Allocated			



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Appendix D - Test methods, reporting limits and CAS numbers (continued)

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
1J) Flame Retardants						
Z,Z-bis(bromomethyl)-1,3-propanediol (BRMP)	µg/L	-	3296-90-0	25	-	USEPA 8270E, ISO 22032, USEPA 527 and USEPA 8321B Dichloromethane extraction GC-MS or LC-MS(-MS)
Bis(2,3-dibromopropyl) phosphate (BIS)			5412-25-9			
Decabromodiphenyl ether (DecaBDE)			1163-19-5			
Hexabromocyclodecane (HBCDD)			3194-55-6			
Octabromodiphenyl ether (OctaBDE)			32536-52-0			
Pentabromodiphenyl ether (PentaBDE)			32534-81-9			
Polybromobiphenyls (PBB)			59536-65-1			
Tetrabromobisphenol A (TBBPA)			79-94-7			
Tris(2-chloroethyl)phosphite (TCEP)			13674-84-5			
Tris(1-aziridinyl)phosphine oxide (TEPA)			545-55-1			
Tris(1,3-dichloro-isopropyl)phosphate (TDCP)			13674-87-8			
Tris(2-chloroethyl)phosphate (TCEP)			115-96-8			
Tris(2,3-dibromopropyl)-phosphate (TRIS)			126-72-7			
Decabromobiphenyl (DecaBB)			13654-09-6			
Dibromobiphenyls (DiBB)			Multiple			
Octabromobiphenyls (OctaBB)			21850-44-2			
Dibromopropylether			68928-80-3			
Heptabromodiphenyl ether (HeptaBDE)			36483-60-0			
Hexabromodiphenyl ether (HexaBDE)			Multiple			
Monobromobiphenyls (MonoBB)			Multiple			
Monobromodiphenylethers (MonoBDEs)			63936-56-1			
Nonabromobiphenyls (NonaBB)			40088-47-9			
Nonabromodiphenyl ether (NonaBDE)			Multiple			
Tetrabromodiphenyl ether (TetraBDE)			10043-35-3, 11113-50-1			
Tribromodiphenylethers (TriBDEs)			1303-86-2			
Boric acid ^b			12008-41-2			
Diboron trioxide ^b			1303-96-4, 1330-43-4			
Disodium octaborate ^b	12267-73-1					
Disodium tetraborate anhydrous ^b						
Tetraboron disodium heptaoxide, hydrate ^b						
1K) Glycols / Glycol Ethers						
2-ethoxyethanol	µg/L	-	110-80-5	50	-	USEPA 8270E Liquid extraction, LC-MS GC-MS
2-ethoxyethyl acetate			111-15-9			
2-methoxyethanol			109-86-4			
2-methoxyethylacetate			110-49-6			
2-methoxypropylacetate			70657-70-4			
Bis(2-methoxyethyl)-ether			111-96-6			
Ethylene glycol dimethyl ether			110-71-4			
Triethylene glycol dimethyl ether			112-49-2			
1L) Halogenated Solvents						
1,2-dichloroethane	µg/L	-	107-06-2	1	-	USEPA 8260D Headspace GC-MS or Purge and trap GC-MS
Methylene chloride			75-09-2			
Tetrachloroethylene			127-18-4			
Trichloroethylene			79-01-6			

b = Limit refer to elemental boron, not the salt.



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Appendix D - Test methods, reporting limits and CAS numbers (continued)

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
1M) Organotin Compounds						
Dipropyltin compounds (DPT)	µg/L	-	Multiple	0.01	-	ISO 17353 Derivatisation with NaB (C ₂ H ₅) ₄ GC-MS
Mono-, di- and tri-butyltin derivatives						
Mono-, di- and tri-methyltin derivatives						
Mono-, di- and tri-octyltin derivatives						
Mono-, di- and tri-phenyltin derivatives						
Tetraethyltin compounds (TeBT)						
Tripropyltin Compounds (TPT)						
Tetraoctyltin compounds (TeOT)						
Tricyclohexyltin (TCyHT)						
Tetraethyltin Compounds (TeET)						
1N) Other/Miscellaneous Chemicals						
AEEA [2-(2-aminoethylamino)ethanol]	µg/L	-	111-41-1	500	-	Liquid extraction, LC-MSMS
Bisphenol A			80-05-7	10		
Thiourea			62-56-6	50		Liquid extraction, LC-MS
Quinoline			91-22-5	50		
Borate, zinc salt ^c			12767-90-7	100		Determine as total boron and total zinc via ICP
Silica (Used in sand blasting) ^d			14464-46-1	NA		Not a ZDHC Wastewater parameter
1O) Perfluorinated and Polyfluorinated Chemicals (PFCs)						
Perfluorooctane sulfonate (PFOS) and related substances, Perfluorooctanoic acid (PFOA)	µg/L	-	Multiple	0.01	-	PFCs: EPA 537:2020 FTOH: BS EN 12673-1999, EPA 8270 PFCs: LC-MSMS FTOH: GC-MS Derivatisation with acetic anhydride followed by GC-MS
Perfluorooctanoic acid (PFOA) related substances				1		
1P) Phthalates - including all other esters of ortho-phthalic acid						
1,2-benzenedicarboxylic acid, di-C ₆ -8 branched and linear alkyl esters, C ₇ -rich (DIHP)	µg/L	-	71888-89-6, 84777-06-0	10	-	USEPA 8270E, ISO 18856 Dichloromethane extraction GC-MS
1,2-benzenedicarboxylic acid, di-C ₇ -11 branched and linear alkyl esters (DHNUP)			68515-42-4, 68515-50-4			
Bis(2-methoxyethyl)phthalate (DMEP)			117-82-8			
Butyl benzyl phthalate (BBP)			85-68-7			
Di-cyclohexyl phthalate (DCHP)			84-61-7			
Di-iso-decyl phthalate (DIDP)			26761-40-0			
Di-iso-octyl phthalate (DIOP)			27554-26-3			
Di-iso-butyl phthalate (DIBP)			84-69-5			
Di-iso-nonyl phthalate (DINP)			28553-12-0			
Di-n-hexyl phthalate (DnHP)			84-75-3			
Di-n-octyl phthalate (DNOP)			117-84-0			
Di-n-pentylphthalates			131-18-0			
Di-n-propyl phthalate (DPRP)			131-16-8			
Di(ethylhexyl) phthalate (DEHP)			117-81-7			
Dibutyl phthalate (DBP)			84-74-2			
Diethyl phthalate (DEP)			84-66-2			
Diisopentylphthalates			605-50-5			
Dinonyl phthalate (DNP)			84-76-4			

c = Limit refers to elemental boron and/or zinc, not the salt.

d = Not required to test this parameter as this is related to sand blasting



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Appendix D - Test methods, reporting limits and CAS numbers (continued)

Test Parameters	Unit		CAS No.	LOQ		Test methods				
	Wastewater	Sludge		Wastewater	Sludge					
1Q) Polycyclic Aromatic Hydrocarbons (PAHs)										
Acenaphthene	µg/L	mg/kg	83-32-9	1	0.2	USEPA 8270E DIN 38407-39 Solvent extraction GC-MS				
Acenaphthylene			208-96-8							
Anthracene			120-12-7							
Benzo[a]anthracene			56-55-3							
Benzo[a]pyrene (BaP)			50-32-8							
Benzo[b]fluoranthene			205-99-2							
Benzo[e]pyrene			192-97-2							
Benzo[ghi]perylene			191-24-2							
Benzo[j]fluoranthene			205-82-3							
Benzo[k]fluoranthene			207-08-9							
Chrysene			218-01-9							
Dibenz[a,h]anthracene			53-70-3							
Fluoranthene			206-44-0							
Fluorene			86-73-7							
Indeno[1,2,3-cd]pyrene			193-39-5							
Naphthalene			91-20-3							
Phenanthrene	85-01-8									
Pyrene	129-00-0									
1R) Restricted Aromatic Amines (Cleavable from Azo-colourants)										
2-naphthylamine	µg/L	-	91-59-8	0.1	-	Reduction step with sodium dithionite, solvent extraction EPA 8270				
2-naphthylammoniumacetate			553-00-4							
2,4-xylidine			95-68-1							
2,4,5-trimethylaniline			137-17-7							
2,4,5-trimethylaniline hydrochloride			21436-97-5							
2,6-xylidine			87-62-7							
3,3'-dichlorobenzidine			91-94-1							
3,3-dimethoxybenzidine			119-90-4							
4-aminoazobenzene			60-09-3							
4-aminodiphenyl			92-67-1							
4-chloro-o-toluidine			95-69-2							
4-chloro-o-toluidinium chloride			3165-93-3							
4-chloroaniline			106-47-8							
4-methoxy-m-phenylene diammonium sulphate;			39156-41-7							
2,4-diaminoanisole sulphate			615-05-4							
4-methoxy-m-phenylenediamine			95-80-7							
4-methyl-m-phenylenediamine			101-14-4							
4,4-methylene-bis-(2-chloro-aniline)			838-88-0							
4,4-methylenedi-o-toluidine			101-77-9							
4,4-methylenedianiline			101-80-4							
4,4-thiodianiline			139-65-1							
5-nitro-o-toluidine			99-55-8							
6-methoxy-m-toluidine			120-71-8							
Benzidine			92-87-5							
o-aminoazotoluene			97-56-3							
o-anisidine			90-04-0							
o-toluidine			95-53-4							
Reduction step with sodium dithionite, solvent extraction EPA 8270E and ISO 14362-1 GC/MS and LC/MS/MS										



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Appendix D - Test methods, reporting limits and CAS numbers (continued)

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
1S) UV Absorbers						
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenol (UV-350)	µg/L	-	36437-37-3	100	-	USEPA 8270 ISO 22032, USEPA 527 and USEPA 8321B. Dichloromethane extraction GC-MS or LC-MS(-MS)
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)			25973-55-1			
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)			3846-71-7			
2,4-Di-tert-butyl-6-(5-chlorobenzotriazole-2-yl) phenol (UV-327)			3864-99-1			
1T) Volatile Organic Compounds (VOC)						
Benzene	µg/L	-	71-43-2	1	-	ISO 11423-1 Headspace or Purge and trap GC-MS USEPA 8260D Add ISO 20595 Static headspace for determination of VOC ISO 11423-1 Headspace or Purge and trap GC-MS EPA 8270 BS EN 12673-1999 ISO 11423-1 Headspace or Purge and trap GC-MS USEPA 8260D HJ 1067 or EPA 8260D or ISO 11423-1
m-cresol			108-39-4			
o-cresol			95-48-7			
p-cresol			106-44-5			
Xylene			1330-20-7			
Toluene ^a	108-88-3					

a = Report only for mock leather



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Appendix D - Test methods, reporting limits and CAS numbers (continued)

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater & Leachate	Sludge		Wastewater	Sludge	
Heavy Metals						
Antimony	mg/L	mg/kg	7440-36-0	0.01	5	With reference to EPA 3015A, 6020A, 200.8, 6020B, 3051A and ISO 17294-2 and analyzed by ICP-MS With reference to EPA 1311 and HJ/T 300 for leachate
Chromium (VI)			18540-29-9	0.001	20	
Barium			7440-39-3	1	200	
Selenium			7782-49-2	1	5	
Tin			7440-31-5	1	-	
Arsenic			7440-38-2	0.005	5	
Total Chromium			7440-47-3	0.05	50	
Cobalt			7440-48-4	0.01	400	
Cadmium			7440-43-9	0.01	1	
Copper			7440-50-8	0.25	50	
Lead			7439-92-1	0.01	5	
Nickel			7440-02-0	0.05	20	
Silver			7440-22-4	0.005	50	
Zinc			7440-66-6	0.5	400	
Mercury			7439-97-6	0.001	1	
Conventional						
pH	pH	pH		6 - 9		With reference to ISO 10523, EPA 150.2, APHA 4500-H+
Temperature difference	°C			-		USEPA 170.1 or GB/T 13195
E.coli	MPN/100-ml			126		-
Colour	m ⁻¹			2;1;1		ISO 7887 (Method A and B)
Persistent Foam	-			-		-
Wastewater Flowrate	m ³ /day			-		-
Ammonium-Nitrogen	mg/L			0.5		ISO 11732, ISO 7150, USEPA 350.1, APHA 4500 NH ³ -N, HJ 535 or HJ 536
AOX	mg/L			0.1		ISO 9562, EN ISO 9563, USEPA 1650, HJ.T 83-2001
Biochemical Oxygen Demand 5-days concentration (BOD ₅)	mg/L			8		ISO 5815-1 & -2, EN1899-1, USEPA 405.1, APHA 5210B or HJ 505
Chemical Oxygen Demand (COD)	mg/L	-		40	-	ISO 6060, USEPA 410.4, APHA 5220D or GB/T 11914
Dissolved Oxygen (DO)	mg/L			-		ISO 5814, EPA 360.1 or HJ 506
Oil & Grease	mg/L			0.5		ISO 9377-2, USEPA 1664 or HJ 637
Total Phenols / Phenol Index	mg/L			0.001		ISO 14402, APHA 5530B, C, D or HJ 503
Total Chlorine	mg/L			0.1		ISO 7393-2, EPA 330.5 or HJ 586
Total Dissolved Solids (TDS)	mg/L			5		APHA 2540C, GB/T 5750.4
Total Nitrogen	mg/L			5		ISO 5663, ISO 29411, USEPA 351.2, APHA 4500P-J, APHA 4500N-C/ HJ 636 or GB 11891
Total Phosphorus	mg/L			0.1		ISO 11885, ISO 6878, USEPA 365.4, APHA 4500P-J or GB/T 11893
Total Suspended Solids (TSS)	mg/L			5		ISO 11923, USEPA 160.2, APHA 2540D or GB/T 11901
% Solids	-	%		-	-	USEPA 160.3, HJ 613
Paint Filter Test	-	-		-	-	EPA SW-846 or EPA 9095B
Fecal Coliform	-	bacteria/100m		-	-	EPA 1681



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Appendix D - Test methods, reporting limits and CAS numbers (continued)

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater & Leachate	Sludge		Wastewater	Sludge	
Anions						
Chloride	mg/L	-	-	-	-	ISO 10304-1, ISO 15923-1, USEPA 300, HJ 84-2016, IS 3025 (part 32)
Cyanide, total		mg/kg		0.05	20	ISO 6703-1 & 2, ISO 14403-1 & 2, USEPA 335.2, APAH 4500-CN or HJ 484
Sulfate		-		-	-	ISO 10304-1, ISO 15923-1, USEPA 300, HJ 84-2016, IS 3025 (part 24)
Sulfide		-		0.01	-	ISO 10530, SM 4500-S2-D, E, G or I, GB/T 16489 or IS 3025 (part 29), HJ 1226-2021
Sulfite		-		0.2	-	ISO 10304-3, SM 4500-SO32-C or HJ 84-2016

END OF REPORT