



Test Report: (6823)203-0115

Report Date: August 05, 2023

Factory Company Name: PNR Industries Ltd.

Factory Address: Kathali, Bhaluka, Mymensingh, 2240, Bangladesh.

Sampling Method & Description:	I001) Untreated wastewater	Composite	Grey / blue color liquid
	I002) Effluent	Composite	Light reddish color liquid
	I003) Sludge	Composite	Light grey color wet solid
	I004) Leachate	-	Not tested
	I005) Incoming water	-	Not tested

Discharge Type: **Direct Discharge**

On-site ETP / Pretreatment: Yes Homogenization Tank & Holding Time: Yes & Less than 12 hours

Discharge Destination: Government Canal

Permit Validation Date: Not Provided

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

Sludge Parameters: Meet ZDHC Threshold Value

Sample Pick Up Date: July 20, 2023 Sampler Number: C74D106817446

Test Period: July 20, 2023 to August 05, 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 C		
Type of Sludge:	Wet-solid		

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BUREAU VERITAS
 CONSUMER PRODUCTS SERVICES (BANGLADESH) LTD.

Report approved by:

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 DEPUTY SR. MANAGER, RSL OPERATIONS

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Result Summary - ZDHC MRSL 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	ND	NR
Barium	ND	NR
Cadmium	ND	NR
Cobalt	ND	NR
Copper	ND	NR
Lead	ND	NR
Nickel	ND	NR
Selenium	ND	NR
Silver	ND	NR
Total Chromium	D	NR
Zinc	D	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	ND	
PAHs	ND	
Chlorotoluenes	ND	

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 (µg/L)	I002 (µg/L)	I003 [#] (mg/kg)	I004 [#] (mg/L)	I005 (µg/L)	Wastewater (µg/L)	Sludge [#] (mg/kg)	Leachate [#] -
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		NR			
1E) Chlorophenols								
2-chlorophenol	ND	NR	NR	NR	NR	0.5	-	-
3-chlorophenol	ND				NR			
4-chlorophenol	ND				NR			
2,3-dichlorophenol	ND				NR			
2,4-dichlorophenol	ND				NR			
2,5-dichlorophenol	ND				NR			
2,6-dichlorophenol	ND				NR			
3,4-dichlorophenol	ND				NR			
3,5-dichlorophenol	ND				NR			
2,3,4-trichlorophenol	ND				NR			
2,3,5-trichlorophenol	ND				NR			
2,3,6-trichlorophenol	ND				NR			
2,4,5-trichlorophenol	ND				NR			
2,4,6-trichlorophenol	ND				NR			
3,4,5-trichlorophenol	ND				NR			
2,3,5,6-tetrachlorophenol	ND				NR			
2,3,4,6-tetrachlorophenol	ND				NR			
2,3,4,5-tetrachlorophenol	ND				NR			
Pentachlorophenol (PCP)	ND	NR						
1F) N,N-di-methylformamide (DMFa)								
Dimethyl formamide;	ND	NR	NR	NR	NR	1000	-	-
N,N-dimethylformamide (DMFa) ^a								

a = Report only for mock leather

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



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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)	-
1G) Dyes - Carcinogenic or Equivalent Concern								
Basic violet 3 with >0.1% of Michler's Ketone	ND				NR			
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	500	-	-
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			
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	50	-	-
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	NR	NR	NR	500	-	-
Component 2: C46H30CrN10O20S2 3Na	ND				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			
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	25		
Decabromobiphenyl (DecaBB)	ND				NR			
Dibromobiphenyls (DiBB)	ND	NR	NR	NR	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			
Diboron trioxide ^b	ND				NR			
Disodium octaborate ^b	ND				NR	100		
Disodium tetraborate anhydrous ^b	ND				NR			
Tetraboron disodium heptaoxide, hydrate ^b	ND				NR			
1K) Glycols / Glycol Ethers								
2-ethoxyethanol	ND				NR			
2-ethoxyethyl acetate	ND				NR			
2-methoxyethanol	ND				NR			
2-methoxyethylacetate	ND	NR	NR	NR	NR	50	-	-
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			
Methylene chloride	ND	NR	NR	NR	NR	1	-	-
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	0.01	-	-
Mono, di-, and tri-butyltin derivatives	ND				NR			
Mono, di-, and tri-methyltin derivatives	ND				NR			
Mono, di-, and tri-octyltin derivatives	ND				NR			
Mono, di-, and tri-phenyltin derivatives	ND	NR	NR	NR	NR			
Tetrabutyltin compounds (TeBT)	ND				NR			
Tripropyltin compounds (TPT)	ND				NR			
Tetraoctyltin compounds (TeOT)	ND				NR			
Tricyclohexyltin (TCyHT)	ND				NR			
Tetraethyltin compounds (TeET)	ND				NR			
1N) Other / Miscellaneous Chemicals								
AEEA [2-(2-aminoethylamino)ethanol]	ND				NR	500	-	-
Bisphenol A	ND				NR	10		
Thiourea	ND	NR	NR	NR	NR	50		
Quinoline	ND				NR			
Borate, zinc salt ^c	ND				NR	100		
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	1		
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	10	-	-
1,2-benzenedicarboxylic acid, di-C7-11 branched and linear alkyl esters (DHNUF)	ND				NR			
Bis(2-methoxyethyl)phthalate (DMEP)	ND				NR			
Butyl benzyl phthalate (BBP)	ND				NR			
Di-cyclohexyl phthalate (DCHP)	ND				NR			
Di-iso-decyl phthalate (DIDP)	ND				NR			
Di-iso-octyl phthalate (DIOP)	ND				NR			
Di-iso-butyl phthalate (DIBP)	ND	NR	NR	NR	NR			
Di-iso-nonyl phthalate (DINP)	ND				NR			
Di-n-hexyl phthalate (DnHP)	ND				NR			
Di-n-octyl phthalate (DNOP)	ND				NR			
Di-n-pentylphthalates	ND				NR			
Di-n-propyl phthalate (DPRP)	ND				NR			
Di(ethylhexyl) phthalate (DEHP)	ND				NR			
Dibutyl phthalate (DBP)	ND				NR			
Diethyl phthalate (DEP)	ND				NR			
Diisopentylphthalates	ND				NR			
Dinonyl phthalate (DNP)	ND				NR			

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

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



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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 [#] -
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 (µg/L)	I002 (µg/L)	I003 [#] (mg/kg)	I004 [#] (mg/L)	I005 (µg/L)	Wastewater (µg/L)	Sludge [#] (mg/kg)	Leachate [#] -
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	ND	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	ND	NR	NR	0.05	0.01	0.005	-	10
Total Chromium	mg/L	mg/kg	mg/L		ND	78.1	NR	NR	0.2	0.1	0.05	0.5	100
Cobalt	mg/L	mg/kg	mg/L		ND	ND	NR	NR	0.05	0.02	0.01	0.5	1600
Cadmium	mg/L	mg/kg	mg/L		ND	ND	NR	NR	0.1	0.05	0.01	0.02	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	ND	NR	NR	0.1	0.05	0.01	0.1	10
Nickel	mg/L	mg/kg	mg/L		ND	ND	NR	NR	0.2	0.1	0.05	1	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	570	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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Report Date: August 05, 2023

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			Sludge	
									Foundational	Progressive	Aspirational	Discharge Limit	Sludge Threshold Values
ZDHC Conventional													
pH	pH	-	-	-	7.2	7.6	-	-	-	6 - 9	6-9	-	-
Tempature difference	Δ °C	-	-	-	1.6	-	-	-	-	15	10	5	≤5
E.coli	MPN/100-ml	-	-	-	<1.8	-	-	-	-	126			-
Colour (436 nm)	m ⁻¹	-	-	-	5.5	-	-	-	-	7	5	2	-
Colour (525 nm)	m ⁻¹	-	-	-	3.9	-	-	-	-	5	3	1	-
Colour (620 nm)	m ⁻¹	-	-	-	2.5	-	-	-	-	3	2	1	-
Persistent Foam	-	-	-	-	Absent	-	-	-	-	No indication of Persistent Foam			-
Wastewater Flowrate	m ³ /day	-	-	-	620.22	-	-	-	-	-	-	-	-
Ammonium-Nitrogen	mg/L	-	-	-	ND	-	-	-	-	10	1	0.5	-
AOX	mg/L	-	-	-	0.86	-	-	-	-	3	0.5	0.1	-
BOD ₅	mg/L	-	-	-	20	NR	-	-	-	30	15	8	30
COD	mg/L	-	-	-	77	-	-	-	-	150	80	40	200
DO	mg/L	-	-	NR	5.51	-	NR	NR	-	Sample & Report			-
Oil & Grease	mg/L	-	-	-	2.4	-	-	-	-	10	2	0.5	10
Total Phenols / Phenol Index	mg/L	-	-	-	0.002	-	-	-	-	0.5	0.01	0.001	1
Total Chlorine	mg/L	-	-	-	0.48	-	-	-	-	Sample & Report			-
TDS	mg/L	-	-	-	690	-	-	-	-	Sample & Report			2100
Total Nitrogen	mg/L	-	-	-	11.46	-	-	-	-	20	10	5	-
Total Phosphorus	mg/L	-	-	-	ND	-	-	-	-	3	0.5	0.1	-
TSS	mg/L	-	-	-	32	-	-	-	-	50	15	5	100
% Solids	-	%	-	-	-	72.36	-	-	-	-	-	-	-
Paint Filter Test	-	-	-	-	NR	Pass	-	-	-	-	-	-	-
Fecal Coliform	-	MPN/g	-	-	-	1100	-	-	-	-	-	-	-
ZDHC Anions													
Chloride	mg/L	-	-	-	39.99	NR	-	-	-	Sample & Report			-
Cyanide, total	mg/L	mg/kg	-	-	ND	ND	-	-	-	0.2	0.1	0.05	-
Sulfate	mg/L	-	-	NR	180.96	-	NR	NR	-	Sample & Report			-
Sulfide	mg/L	-	-	-	0.15	NR	-	-	-	0.5	0.05	0.01	2
Sulfite	mg/L	-	-	-	0.5	-	-	-	-	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: Environment Protection Rules 2023 For Dyeing / Washing and Printing [Schedule 5 (2)]

SI No.	Test Parameters	unit	Limitation Value of Legal Requirements (ECR)
1	Temperature	°C	≤5
2	TSS	mg/L	100
3	COD	mg/L	200
4	pH	Range	6-9
5	Color	Pt-Co	150
6	BOD5	mg/L	30
7	Oil and Grease	mg/L	10
8	Phenol / Phenol Index	mg/L	1
9	Sulfide	mg/L	2
10	Total Dissolved Solids	mg/L	2100
11	Chromium, total	mg/L	0.5
12	Cobalt	mg/L	0.5
13	Nickel	mg/L	1
14	Cadmium	mg/L	0.02
15	Lead	mg/L	0.1



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Appendix B - Sample Photos

I001) Sampling point

Latitude: 24.379636; Longitude: 90.378625



I001) Sampling location surrounding

Latitude: 24.379636; Longitude: 90.378625



I001) Labelled sample bottles



I001) Sample for phthalate test



I001) Sample packaging



I002) Sampling point

Latitude: 24.379636; Longitude: 90.378625



I002) Sampling location surrounding

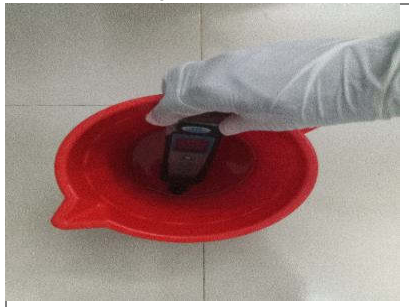
Latitude: 24.379636; Longitude: 90.378625



I002) Labelled sample bottles



I002) pH measurement



I002) Sample packaging





Test Report: (6823)203-0115

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Appendix B - Sample Photos (continued)

I003) Sampling point

Latitude: 24.379636; Longitude: 90.378625



I003) Sampling location surrounding

Latitude: 24.379636; Longitude: 90.378625



I003) Labelled sample bottles



I003) Sample packaging





Test Report: (6823)203-0115

Report Date: August 05, 2023

Appendix C - On-site Field Data Record Sheet

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)		CPSD-AN-00613-DATA 04
General Data		Issue Date:
Laboratory Sample Number:	(6823) 203-0115	Version No.: 18
Client Name:		Business Line: Analytical
Field Contact Person:		
Project (Facility Name and Address):	Md. Nurul Islam, PNR Industries Ltd.	
Sample Identification:	Phone No: 01777-797985	
Sample Type:	Zero discharge with sampling plan	
Discharge mode:	Composite Sample / Grab sample (Please delete as appropriate)	
Date of collection:	20.07.23	
Factory Type:	Direct discharge to environment (Specify destination: River, Sea, Stream...) OR Indirect discharge to sewage treatment plant	
	Dyeing / Printing / Washing / Finishing / Others (please specify):	
	*Note: It would be selected more than one	
Sampling Collection Information		
Sampling Location / Description:	E.T.P = Inlet	
Sampling Device Description/ Owner:		
Sampling mode:	Autosampler/ Manual	
Sampler Information		
Sampler Name/ Email:	Md. Asad Hossain -	
Sampler ZDHC Accredited no.:	C7901068 17996	
ZDHC Composite Sample Code:		

Field Data for Wastewater				
Arrival Time:	11:30	Departure Time:	18:00	
Field Parameters	pH: 6.8	Temp: 32.8 °C	Color: Grey	Flow rate: (volume/min)
Control No. of field equipment				
Factory with effluent treatment plant:	Yes			P
Sample matrix:	<input checked="" type="checkbox"/> Incoming water (if required) <input type="checkbox"/> Wastewater before treatment <input type="checkbox"/> Wastewater after treatment - water at discharge point			
Sampler container number	12	12	12	12
ZDHC Wastewater Flow Device Dimensions				
Measurement (cm)	Meter	Pipe (C)	Flume (U)	Wier (V)
Diameter	NA			
Depth	NA	NA	NA	

ZDHC Wastewater Sampling Field Testing QA/ QC								
Parameter	Laboratory control sample (LCS) Known	LCS Measured	Accuracy %					
pH								
Total Chlorine								
ZDHC Wastewater Sample Collection Field Test Measurements								
Sampling Time (Hours)	0	1	2	3	4	5	6	Average (Report with lab data)
Recording time	ID	11:40	12:40	13:40	14:40	15:40	16:40	17:40
Temp (°C):	Wastewater Discharge	32.8	32.9	30.0	32.8	32.6	31.0	32.0
	Receiving Water							32.0
pH:		6.8	7.1	7.9	7.2	8.0	8.2	8.4
Dissolved Oxygen (mg/L):								
Total Chlorine (mg/L):								
Persistent Foam (Yes/ No):								
Wastewater Flow meter (L/min):		34.8	31.9	33.8	29.6	34.0	34.0	30.0
Alternate measured Flow	Depth (cm)							
	Velocity (cm/sec)							
Color (visual estimation):		Grey	Grey	Grey	Grey	Blue	Blue	Blue
Volume collected, mL		12x193	12x193	12x193	12x193	12x193	12x193	12x193
Total volume collected		12012						
Remark: Total volume collected must be greater than total of sample size required								

ID-AN-00613-DATA 04 (FIELD DATA)



Test Report: (6823)203-0115

Report Date: August 05, 2023

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.: 18 Business Line: Analytical
---	--	--

Tests (ZDHC MRSL Parameters)		Test required (Y)	Total of sample size	Type of container	Preservation method (Store sample at 2-8°C)	
Combined test or Individual test (Remark 4)	1. Phthalate	✓	1000 mL total or 1000 mL each	Amber Glass, washed with nitric acid.	Without adding acid	
	2. Chlorobenzenes, Chlorotoluene & PAH	✓				
	3. SCCPs	✓				
	4. APS	✓				
5. APEOs	✓	100 mL				
6. Chlorophenols & Cresols	✓	100 mL				
7. Flame retardant	✓	500 mL				
8. Dyes	✓	10 mL				
9. Glycol	✓	50 mL				
10. *Pesticides	X	1000 mL				
11. *Nitrosamine	X	10 mL				
12. Banned Azodyes	✓	2000 mL				
13. *Free primary aromatic amines	X	500 mL				
14. Organotin Compounds	✓	500 mL				
15. UV absorbers	✓	100				
16. BPA	✓	2				
17. Preservatives	✓	52				
18. VOC & Halogenated Solvents (Remark 5)	✓	10 mL	PE, washed with pesticide grade Acetone			Fill to full container without air gap; acidify to pH 2 with HCl
19. PFCs (Remark 6)	✓	2 mL				

Tests (Conventional Parameters)		Test required (Y)	Total of sample size	Type of container	Preservation method (Store sample at 2-8°C)
Combined test or Individual test (Remark 4)	20. Total suspended solids (TSS)	✓	2000 mL total or 2000 mL each	Amber Glass, washed with nitric acid.	Without adding acid
	21. Total dissolved solids (TDS)				
22. 5-day Biochemical Oxygen Demand (BOD5)		✓	1000 mL		
23. Colour		✓	100 mL		
24. Heavy Metals except Cr(VI) & Total-P (Remark 6)		✓	9 mL	PE, washed with nitric acid	Acidify to pH 2 with HNO ₃
25. Cyanide		X	500 mL	Amber Glass, washed with pesticide grade acetone	Adjust pH 12 with 50% NaOH, add 0.05 ml of 10% Na ₂ S ₂ O ₃
26. Cr(VI)		✓	95 mL	Amber Glass; washed with nitric acid	Filter by 0.45µm filter in field, fill to full container without air gap; adjust pH to 9.0-9.5 by adding ammonium buffer
27. Chemical oxygen demand (COD)		✓	150 mL		Acidify to pH 2 with H ₂ SO ₄
28. Phenols		✓	500 mL		Fill to full container without air gap; acidify to pH 2 with H ₂ SO ₄
29. Oil and Grease & Total Hydrocarbon		✓	1000 mL		Fill to full container without air gap; add 2 drops of 2M zinc acetate, adjust pH to 9 with 6M NaOH
30. *Formaldehyde		✓	25 mL	Amber Glass, washed with pesticide grade acetone	Add 0.1 ml of 10% Na ₂ S ₂ O ₃ , keep in dark
31. Sulfide (Remark 5)		✓	50 mL	PE, washed with pesticide grade Acetone.	Add 1ml of 2.5% EDTA
32. E.coli (Remark 6)		✓	125 mL	PE, clean, sterile, non-reactive	Acidify to pH 2 with H ₂ SO ₄
33. Sulfite		✓	100 mL	Amber Glass, washed with pesticide grade acetone	Acidify to pH 2 with HNO ₃
34. Total-N		✓	100 mL		Without adding acid
35. Ammonium-N		✓	500 mL		
36. Adsorbable organically bound halogens (AOX)		✓	100 mL		
37. Acute aquatic toxicity: Lumines Bacteria, Fish Egg, Daphnia-Atege.		✓	1000 mL	Amber Glass, washed with nitric acid.	Acidify to pH 2 with HNO ₃
38. Sulphate		✓	100 mL		Without adding acid



Test Report: (6823)203-0115

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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:	
39. Chloride	<input checked="" type="checkbox"/>	100 mL	Version No.: 18
40. Others:	<input checked="" type="checkbox"/>		Business Line: Analytical
Observation/ Remark:			

***Remarks:**

1. Individual sampling can be performed upon request
2. 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.
3. Scope of ZDHC guideline: Parameter 1-9, 12, 14-29, 31-36, 38, 39
 Scope of synthetic leather industry: Parameter 1-9, 12, 14-24, 26-29, 31, 32, 34, 35, 38, 39
 Scope of MMCF: Parameter 5, 18, 20, 22-24, 26-29, 31, 34-37
 Free primary aromatic amine, pesticides, nitrosamine and formaldehyde are not in the scope of ZDHC Guideline, they are tested upon request.
4. Refer to CPSD-AN-G00019-STIP01, locations with those CPSD test capability inside TCD matrix can perform the combined test.
5. Refer to CPSD-AN-000570-MTHD for additional pretreatment of sulfide if only dissolved sulfide is required to be tested.
6. Refer to CPSD-AN-00613-MTHD for preparation of field blank for specific parameters.

Recorded by:

AS
Full name: Md. Asad Hossain.

Date: 20.07.23

Comment from factory:

Acknowledgement by factory

I hereby confirmed that Bureau Veritas has completed the stated sampling activity at captioned date, time and location. All sample(s) is/are collected in designated container(s) and without any observation in leakage. Sample(s) collected by Bureau Veritas is/are stored in portable freezer / fridge that is maintained in 1-6°C

Signature of Factory Representative:

[Signature]
Full Name: Md. Nurul Islam

Date: 20/07/23



Test Report: (6823)203-0115

Report Date: August 05, 2023

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.: 18						
		Business Line: Analytical						
(6823) 203-0115								
General Data								
Laboratory Sample Number:								
Client Name:								
Field Contact Person:	Md. Musul Islam Phone No: 01777-797985							
Project (Facility Name and Address):	PNR Industries Ltd (Kathali, Bhaluka, Mymensingh.)							
Sample Identification:	Zero discharge with sampling plan							
Sample Type:	Composite Sample / Grab sample (Please delete as appropriate)							
Discharge mode:	Direct discharge to environment (Specify destination: River, Sea, Stream...) OR indirect discharge to sewage treatment plant							
Date of collection:	20.07.23 Govt canal							
Factory Type:	Dyeing / Printing / Washing / Finishing / Others (please specify): _____							
<small>*Note: It would be selected more than one</small>								
Sampling Collection Information								
Sampling Location / Description:	E.T.P = Outlet							
Sampling Device Description/ Owner:								
Sampling mode:	Autosampler/ Manual							
Sampler information								
Sampler Name/ Email:	Md. Asad Hossain							
Sampler ZDHC Accredited no.:	2790106217996							
ZDHC Composite Sample Code:								
Field Data for Wastewater								
Arrival Time:	11:30	Departure Time:	18:00					
Field Parameters	pH: 7.0	Temp: 33.4 °C	Color: L. Reddish					
Control No. of field equipment	Flow rate: (volume/min) _____							
Factory with effluent treatment plant:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>							
Sample matrix:	<input type="checkbox"/> incoming water (if required) <input checked="" type="checkbox"/> Wastewater before treatment <input checked="" type="checkbox"/> Wastewater after treatment - water at discharge point							
Sampler container number	12	12	12					
ZDHC Wastewater Flow Device Dimensions								
Measurement (cm)	Meter	Pipe (C)	Flume (U)					
Diameter	NA							
Depth	NA							
ZDHC Wastewater Sampling Field Testing QA/QC								
Parameter	Laboratory control sample (LCS) Known	LCS Measured	Accuracy %					
Total Chlorine								
ZDHC Wastewater Sample Collection Field Test Measurements								
Sampling Time (Hours)	0	1	2	3	4	5	6	Average (Report with lab data)
Recording time	ID							
Temp (°C)	Time	11:45	12:45	13:45	14:45	15:45	15:45	15:45
	Wastewater Discharge	33.2	33.9	33.0	33.9	33.0	33.7	33.2
	Receiving Water	32.0						
pH:		7.0	7.1	7.4	7.0	7.2	7.1	7.1
Dissolved Oxygen (mg/L):		5.58	5.53	5.40	5.46	5.60	5.60	5.90
Total Chlorine (mg/L):		0.5	0.5	0.4	0.6	0.5	0.5	0.4
Persistent Foam (Yes/ No):		NO	NO	NO	NO	NO	NO	N
Wastewater Flow meter (L/min):		31.9	30.6	32.0	33.8	31.0	32.0	32.0
Alternate measured Flow	Depth (cm)							
	Velocity (cm/sec)							
Color (visual estimation):		L. Reddish	L. Reddish	L. Reddish	L. Reddish	L. Reddish	L. Reddish	L. Reddish
Volume collected, mL		12x193	12x193	12x193	12x193	12x193	12x193	12x193
Total volume collected		12012						
				Remark: Total volume collected must be greater than total of sample size required				

ID-AN-00613-DATA 04-FIELD DATA RECORD ZDHC SAMPLING-V13



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

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">CPSD-AN-00613-DATA 04</td> </tr> <tr> <td>Issue Date:</td> <td></td> </tr> <tr> <td>Version No.:</td> <td>18</td> </tr> <tr> <td>Business Line:</td> <td>Analytical</td> </tr> </table>	CPSD-AN-00613-DATA 04		Issue Date:		Version No.:	18	Business Line:	Analytical
CPSD-AN-00613-DATA 04									
Issue Date:									
Version No.:	18								
Business Line:	Analytical								

Analysis Required and Preservation Method

Tests (ZDHC MRSLS Parameters)		Test required (v)	Total of sample size	Type of container	Preservation method (Store sample at 2-8°C)		
Combined test or Individual test (Remark 4)	1. Phthalate	/	1000 mL total or 1000 mL each	Amber Glass, washed with nitric acid.	Without adding acid		
	2. Chlorobenzenes, Chlorotoluene & PAH						
	3. SCCPs						
	4. APS						
5. APEOs		100 mL					
6. Chlorophenols & Cresols		100 mL					
7. Flame retardant		500 mL					
8. Dyes		10 mL					
9. Glycol		50 mL					
10. *Pesticides		1000 mL					
11. *Nitrosamine		10 mL					
12. Banned Azodyes		2000 mL					
13. *Free primary aromatic amines		500 mL					
14. Organotin Compounds		500 mL					
15. UV absorbers		100					
16. BPA		2					
17. Preservatives		52					
18. VOC & Halogenated Solvents (Remark 6)		10 mL					Fill to full container without air gap; acidify to pH 2 with HCl
19. PFCs (Remark 6)		2 mL				PE, washed with pesticide grade Acetone	Without adding acid

Tests (Conventional Parameters)		Test required (v)	Total of sample size	Type of container	Preservation method (Store sample at 2-8°C)
Combined test or Individual test (Remark 4)	20. Total suspended solids (TSS)	✓	2000 mL total or 2000 mL each	Amber Glass, washed with nitric acid,	Without adding acid
	21. Total dissolved solids (TDS)	✓			
22. 5-day Biochemical Oxygen Demand (BOD5)		✓	1000 mL		
23. Colour		✓	100 mL		
24. Heavy Metals except Cr(VI) & Total-P (Remark 6)		✓	9 mL	PE, washed with nitric acid	Acidify to pH 2 with HNO ₃
25. Cyanide		✓	500 mL	Amber Glass, washed with pesticide grade acetone	Adjust pH 12 with 50% NaOH, add 0.05 ml of 10% Na ₂ S ₂ O ₅
26. Cr(VI)		✓	95 mL		
27. Chemical oxygen demand (COD)		✓	150 mL	Amber Glass; washed with nitric acid	Filter by 0.45µm filter in field, fill to full container without air gap; adjust pH to 9.0-9.5 by adding ammonium buffer
28. Phenols		✓	500 mL		Acidify to pH 2 with H ₂ SO ₄
29. Oil and Grease & Total Hydrocarbon		✓	1000 mL		Fill to full container without air gap; acidify to pH 2 with H ₂ SO ₄
30. *Formaldehyde		X	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 9 with 6M NaOH
32. E.coli (Remark 6)		✓	125 mL	PE, clean, sterile, non-reactive	Add 0.1 ml of 10% Na ₂ S ₂ O ₅ keep in dark
33. Sulfite		✓	100 mL	Amber Glass, washed with pesticide grade acetone	Add 1mL of 2.5% EDTA
34. Total-N		✓	100 mL		
35. Ammonium-N		✓	500 mL		Acidify to pH 2 with H ₂ SO ₄
36. Adsorbable organically bound halogens (AOX)		✓	100 mL		Acidify to pH 2 with HNO ₃
37. Acute aquatic toxicity: <i>Luminus Bacteria</i> ; Fish-Egg; Daphnia; Algae;		X	1000 mL	Amber Glass; washed with nitric acid	
38. Sulphate		✓	100 mL		Without adding acid

ID-AN-00613-DATA 04-FIELD DATA RECORD ZDHC SAMPLING-V18





Test Report: (6823)203-0115

Report Date: August 05, 2023

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.: 18 Business Line: Analytical	
		39. Chloride <input checked="" type="checkbox"/> 100 mL	40. Others: <input checked="" type="checkbox"/>
Observation/ Remark: _____			

***Remarks:**

1. Individual sampling can be performed upon request
2. 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.
3. Scope of ZDHC guideline: Parameter 1-9, 12, 14-29, 31-36, 38, 39
 Scope of synthetic leather industry: Parameter 1-9, 12, 14-24, 26-29, 31, 32, 34, 35, 38, 39
 Scope of MMCF: Parameter 5, 18, 20, 22-24, 28-29, 31, 34-37
 Free primary aromatic amine, pesticides, nitrosamine and formaldehyde are not in the scope of ZDHC Guideline, they are tested upon request.
4. Refer to CPSD-AN-G00019-STIP01, locations with those CPSD test capability inside TCD matrix can perform the combined test.
5. Refer to CPSD-AN-000570-MTHD for additional pretreatment of sulfide if only dissolved sulfide is required to be tested.
6. Refer to CPSD-AN-00613-MTHD for preparation of field blank for specific parameters.

Recorded by: AA Date: 20.07.23
 Full name: Md. Asad Hosain

Comment from factory: _____

Acknowledgment by factory

I hereby confirmed that Bureau Veritas has completed the stated sampling activity at captioned date, time and location. All sample(s) is/are collected in designated container(s) and without any observation in leakage. Sample(s) collected by Bureau Veritas is/are stored in portable freezer / fridge that is maintained in 1-6°C

Signature of Factory Representative: [Signature]

Md. Nurul Islam
 Full Name:

Date: 20/07/23





Test Report: (6823)203-0115

Report Date: August 05, 2023

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.: 18 Business Line: Analytical
---	--

Field Data for Sludae

Arrival Time:	17:30	Departure Time:	18:50
Field Parameters	pH: _____	Temp: _____ °C	Flow rate (volume/time) / sludge flux (weight/time): _____
Control No. of field equipment _____			

Recording time	Sampling Time (Hours)							Average (Report with lab data)	
	ID	0	1	2	3	4	5		6
pH:									
Temp (°C):									
Flow rate (volume/time) / sludge flux (weight/time)									
Volume collected, mL									
Total volume collected									

Remark: Total volume collected must be greater than total of sample size required

Analysis Required and Preservation Method

Factory with effluent treatment plant	✓ Yes		No	
Sample matrix	Sludge in clarifier (sedimentation tank)			
Sampler container number	13:30			
Recording time	18:30			
Tests (MRLS Parameter)	Test required (V)	Total of sample size	Type of container	Preservation method (Store sample at 2-8°C)
1. Phthalate	X	10g total or 10g each	Amber Glass, washed with nitric acid	Add 0.2 mL of 10% Na ₂ S ₂ O ₃ (0.008% W/W)
2. Chlorobenzenes, Chlorotoluene & PAHs	✓			
3. SCCPs	X			
4. APS	✓			
5. APEOs	✓	20 g		
6. Flame retardant	✓	10 g		
7. Dyes	✓	10 g		
8. Glycols	✓	100 g		
9. *Pesticides	✓	20g		
10. Banned Azodyes	✓	20 g		
11. *Free primary aromatic amines	✓	10 g		
12. Chlorophenols & Cresols	✓	20 g		
13. Organotin Compounds	✓	10 g		
14. VOC & Halogenated Solvents (Remark 5)	✓	10 g		
15. PFCs (Remark 5)	✓	10 g		

Tests (Conventional Parameters)	Test required (V)	Total of sample size	Type of container	Preservation method (Store sample at 2-8°C)
16. Heavy Metals except Cr(VI) (Remark 5)	✓	0.2 g	PE, wash with nitric acid	Acidify to -pH 2 with HNO ₃
17. Cr(VI)	✓	2.5 g	Amber Glass, wash with nitric acid	Fill to full container without any air gap and acid add
18. Adsorbable organically bound halogens (AOX)	✓	1 g		
19. Extractable organohalides (EOX)	✓	20 g		
20. Total organic carbon (TOC)	✓	20 g		
21. Cyanide	✓	50 g	Amber Glass, wash with pesticide grade acetone	Adjust pH to 12-13 with 50% NaOH
22. Faecal Coliform	✓	20 g	PE, clean, sterile, non-reactive	Add 0.1 ml of 10% Na ₂ S ₂ O ₃ , keep in dark

ID-AN-00613-DATA 04



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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	
23. % Solids	✓	20 g	Amber Glass, wash with nitric acid	Issue Date:	
24. Paint Filter Test	✓	20 g		Acidify to -pH 2 with HNO ₃	Version No.: 18
25. Others	X			Business Line: Analytical	
Observation Remark:					

- 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.
 - Scope of ZDHC guideline: Parameter 1, 2, 4, 5, 16-17, 21-24
 Scope of synthetic leather industry: Parameter 1-8, 10, 12-17
 Scope of MMCF: Parameter 16, 18-20
 Free primary aromatic amine and pesticides are not in the scope of ZDHC Guideline, they are tested upon request.
 - Refer to CPSD-AN-G00019-STIP01, locations with those CPSD test capability inside TCD matrix can perform the combined test.
 - Refer to CPSD-AN-00613-MTHD for preparation of field blank for specific parameters.

ZDHC Wastewater Sampling - Facility Confirmation
 The Wastewater samples have been collected under the facilities' normal production scale and wastewater flow rate. The sampler listed below was on-site and collected the samples.

Facility Name: POR Industries Ltd
 Facility Representative Name: Md. Nurul Islam
 Facility Representative Signature and stamp: [Signature]
 Sampler's Name: Md. Asad Hosain
 Sampler's ZDHC Accreditation: CZAD10617996
 Sampler's Signature: [Signature]





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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
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
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-, penta-, and hexa- chlorobenzene			Multiple			
Other isomers of mono-, di-, tri-, tetra-, and penta- chlorotoluene			mg/kg	0.2		
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: C ₃₉ H ₂₃ Cl-CrN ₇ O ₁₂ S ₂ Na	µg/L	-	118685-33-9	500	-	Liquid extraction, LC-MS
Component 2: C ₄₆ H ₃₀ CrN ₁₀ O ₂₀ S ₂ 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									
2,2-bis(bromomethyl)-1,3-propanediol (BBMD)	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-chloro-1-methylethyl)phosphate (TCPP)			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)			Multiple						
Dibromopropylether			21850-44-2						
Heptabromodiphenyl ether (HeptaBDE)			68928-80-3						
Hexabromodiphenyl ether (HexaBDE)			36483-60-0						
Monobromobiphenyls (MonoBB)			Multiple						
Monobromodiphenylethers (MonoBDEs)			Multiple						
Nonabromobiphenyls (NonaBB)			Multiple						
Nonabromodiphenyl ether (NonaBDE)			63936-56-1						
Tetrabromodiphenyl ether (TetraBDE)			40088-47-9						
Tribromodiphenylethers (TriBDEs)			Multiple						
Boric acid ^b			10043-35-3, 11113-50-1				100	-	Determined as total boron via ICP
Diboron trioxide ^b			1303-86-2						
Disodium octaborate ^b			12008-41-2						
Disodium tetraborate anhydrous ^b	1303-96-4, 1330-43-4								
Tetraboron disodium heptaoxide, hydrate ^b	12267-73-1								
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 (C2H5)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 (TeET)						
Tripolytin Compounds (TPT)						
Tetraoctyltin compounds (TeOT)						
Tricyclohexyltin (TCyHT)						
Tetraethyltin Compounds (TeET)						
1N) Other/Miscellaneous Chemicals						
AEAA [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-C6-8 branched and linear alkyl esters, C7-rich (DIHP)	µg/L	-	71888-89-6, 84777-06-0	10	-	USEPA 8270E, ISO 18856 Dichloromethane extraction GC-MS
1,2-benzenedicarboxylic acid, di-C7-11 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-oxydianiline			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 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						
Chromium (VI)	mg/L	mg/kg	18540-29-9	0.001	20	With reference to ISO 18412 / USEPA 218.6
Antimony			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
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		APHA 23rd Edition 2017: 9221 G
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 ² -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	-	MPN/g		-		EPA Method 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

Remark-1: The report [(6823)203-0115] is sub-contracted to India (Testtex India Laboratories Pvt. Ltd.) for AOX & T-Nitrogen test.

Remark-2: The report [(6823)203-0115] is sub-contracted to Sri Lanka (BVCPS Lanka PVT. Ltd.) for E. coli & Fecal Coliform tests.

END OF REPORT