



Test Report: (6623)108-0566

Report Date: April 28, 2023

Factory Company Name: Jiangsu Lugang Science & Technology Co.,Ltd

Factory Address: Luyuan Industry Area, Tangqiao town, Zhangjiagang City, Jiangsu Province

Sampling Method & Description: I001) Untreated wastewater Composite Dark purple red liquid

Discharge Type: **Indirect Discharge without Pretreatment**

On-site ETP / Pretreatment: <No>

Discharge Destination: Centralized ETP

Off-site / External ETP Name & Address: <Zhang Gaoxin (Zhangjiagang) Environmental Technology Co., Ltd & Tangqiao town, Zhangjiagang City, Jiangsu Province>

Permit Validation Date: Not applicable

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

Sludge Parameters: Not applicable

Sample Pick Up Date: April 18, 2023 Sampler Certification Number: C74D106818234

Test Period: April 18, 2023 to April 28, 2023

Parameter(s) exceeded maximum holding time: Not applicable

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: Not applicable

General enquiry and invoicing:
Mr. Henry Chen
Henry.Chen@bureauveritas.com
(021) 24081953

Technical enquiry:
Mr. Steven Han
Steven-Z.han@bureauveritas.com
(021) 24081838

Report reviewed by:

Amy

Report approved by:

Aten Wu
Technical Support

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



Test Report: (6623)108-0566

Report Date: April 28, 2023

Result Summary - ZDHC MRSL Wastewater Parameters

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

a = Report only for mock leather

Result Summary - ZDHC Heavy Metals Wastewater Parameters

Test Items	Untreated wastewater
Arsenic	Refer to result
Cadmium	Refer to result
Chromium (VI)	Refer to result
Lead	Refer to result
Mercury	Refer to result

Note / Key:

Meet	=	Meet Discharge Criteria
Not Meet	=	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



Test Report: (6623)108-0566

Report Date: April 28, 2023

Test Result - ZDHC MRSL Parameters

Test Parameters	Results of Test Items				Requirements [Textile]		
	I001 (µg/L)	- (µg/L)	- (mg/kg)	- (mg/L)	Wastewater (µg/L)	Sludge (mg/kg)	Leachate [#] (mg/L)
1A) AP and APEOs: including all isomers							
NPEO	ND						
NP, mixed isomers	ND	NR	NR	NR	5	-	-
OPEO	ND						
OP, mixed isomers	ND						
1B) Anti-Microbials & Biocides							
o-Phenylphenol (+salts)	ND	NR	NR	NR	100	-	-
Triclosan	ND						
Permethrin	ND				500		
1C) Chlorinated Parafins							
MCCPs (C14-C17)	ND	NR	NR	NR	5	-	-
SCCPs (C10-C13)	ND						
1D) Chlorobenzenes and Chlorotoluenes							
1,2-dichlorobenzene	ND	NR	NR	NR	0.2	-	-
Other isomers of mono-, di-, tri-, tetra-, penta- and hexa- chlorobenzene	ND						
Other isomers of mon-, di-, tri-, tetra- and penta-chlorotoluene	ND						
1E) Chlorophenols							
2-chlorophenol	ND	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	NR	NR	NR	NR	1000	-	-

a = Report only for mock leather



Test Report: (6623)108-0566

Report Date: April 28, 2023

Test Result - ZDHC MRSL Parameters (continued)

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



Test Report: (6623)108-0566

Report Date: April 28, 2023

Test Result - ZDHC MRSL Parameters (continued)

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

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



Test Report: (6623)108-0566

Report Date: April 28, 2023

Test Result - ZDHC MRSL Parameters (continued)

Test Parameters	Results of Test Items				Requirements [Textile]		
	I001 (µg/L)	- (µg/L)	- (mg/kg)	- (mg/L)	Wastewater (µg/L)	Sludge (mg/kg)	Leachate [#] (mg/L)
1M) Organotin Compounds							
Dipropyltin compounds (DPT)	ND						
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	NR	NR	NR	0.01	-	-
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				500		
Bisphenol A	ND				10		
Thiourea	ND	NR	NR	NR	50	-	-
Quinoline	ND				100		
Borate, zinc salt ^c	ND				100		
Silica (used in sand blasting) ^d	NR				NA		
1O) Perfluorinated and Polyfluorinated Chemicals (PFCs)							
Perfluorooctane sulfonate (PFOS) and related substances, Perfluorooctanoic acid (PFOA)	ND	NR	NR	NR	0.01	-	-
Perfluorooctanoic acid (PFOA) related substances	ND				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						
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	NR	NR	NR	10	-	-
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 boron and zinc individually, not the salt.

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



Test Report: (6623)108-0566

Report Date: April 28, 2023

Test Result - ZDHC MRSL Parameters (continued)

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



Test Report: (6623)108-0566

Report Date: April 28, 2023

Test Result - ZDHC MRSL Parameters (continued)

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

a = Report only for mock leather



Test Report: (6623)108-0566

Report Date: April 28, 2023

Test Result - ZDHC Heavy Metals, Conventional and Anions Parameters

Test Parameters	Unit			Results of Test Items				Requirements [Textile]		
	Wastewater	Sludge	Leachate	I001	-	-	-	Wastewater	Sludge	
								Discharge Criteria	Sludge Threshold Values	Leachate Limit [#]
ZDHC Heavy Metals										
Arsenic	mg/L	mg/kg	mg/L	ND	NR	NR	NR	Not applicable	-	-
Cadmium	mg/L	mg/kg	mg/L	ND				Not applicable		
Chromium (VI)	mg/L	mg/kg	mg/L	ND				Not applicable		
Lead	mg/L	mg/kg	mg/L	ND				Not applicable		
Mercury	mg/L	mg/kg	mg/L	ND				Not applicable		

#Limit refers to Table 4B in the ZDHC Wastewater Guidelines.



Test Report: (6623)108-0566

Report Date: April 28, 2023

Appendix A - Discharge limit according to regulation / contract limit with CETP

Not applicable



Test Report: (6623)108-0566

Report Date: April 28, 2023

Appendix B - Sample Photos

I001) Sampling point
<N 31°50'44";E 120°37'53" >

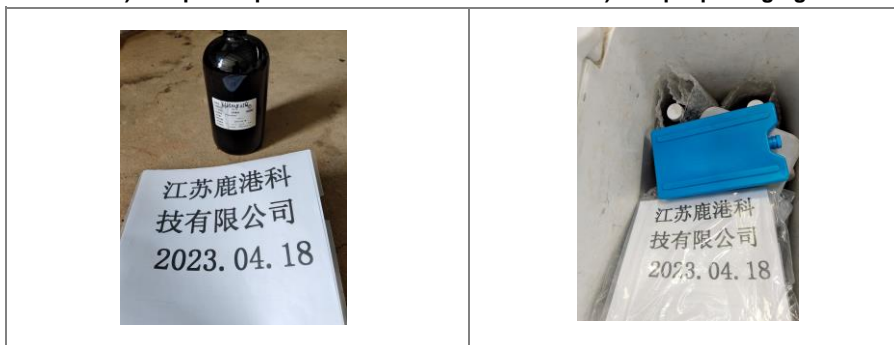
I001) Sampling location surrounding
<N 31°50'44";E 120°37'53" >

I001) Labelled sample bottles



I001) Sample for phthalate test

I001) Sample packaging





Test Report: (6623)108-0566

Report Date: April 28, 2023

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: 66231080566

Client Name: _____

Field Contact Person: 叶凡 Phone No: 18921961889

Project (Facility Name and Address): 江苏康源科技有限公司(张家港市东桥镇康源工业园区)

Sampling Location / Description: 2#污水调节池

Sample Identification: _____

Sample Type: _____
Composite Sample / Grab sample (Please delete as appropriate)

Name of Sampler: 叶凡

Discharge mode: _____
Direct discharge to environment (Specify destination: River, Sea, Stream,) OR Indirect discharge to sewage treatment plant

Date of collection: _____

Factory Type: _____
Dyeing / Printing / Washing / Finishing / Others (please specify): _____

*Note: It would be selected more than one

Field Data for Wastewater

Arrival Time:	<u>9:30</u>	Departure Time:	<u>15:30</u>
Field Parameters	pH: _____	Temp: _____ °C	Color: _____
Control No. of field equipment	<u>CA1002M2</u>	<u>CA1002M1</u>	
Factory with effluent treatment plant:	Yes	No	
Sample matrix:	Incoming water (if required)		
	Wastewater before treatment		
Sampler container number	Wastewater after treatment - water at discharge point		
	<u>A2</u>	<u>A2</u>	<u>A2</u>
Recording time	ID	Time	
	<u>A2</u>	<u>A2</u>	<u>A2</u>
pH:	<u>7.68</u>	<u>7.94</u>	<u>7.89</u>
Temp (°C):	<u>21.6</u>	<u>18.8</u>	<u>13.4</u>
Color (visual estimation):	<u>25.2</u>	<u>28.7</u>	<u>29.2</u>
Flow rate (volume/time):	<u>10m³/h</u>		
Volume collected, mL:	<u>270</u>	<u>270</u>	<u>270</u>
Total volume collected	<u>810</u>	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. Phthalate	✓	1000 mL total or 1000 mL each	Amber Glass washed with nitric acid.	Without adding acid Store sample at 2-8°C	
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. Barred 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 and store sample at 2-8°C
19. PFCA (Remark 6)	✓	2 mL			PE, washed with pesticide grade Acetone



Test Report: (6623)108-0566

Report Date: April 28, 2023

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

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 total or 2000 mL each	Amber Glass, washed with nitric acid.	Without adding acid Store sample at 2-8°C
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 and store at 2-8°C
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 ₃ and store sample at 2-8°C
26. Cr(VI)	✓	65 mL		Filter by 0.45µm filter in 145 mL to full container without air gap; adjust pH to 5.0-5.5 by adding ammonium buffer. Store sample at 2-8°C
27. Chemical oxygen demand (COD)		150 mL	Amber Glass, washed with nitric acid	Acidify to pH 2 with H ₂ SO ₄ Store sample at 2-8°C
28. Phenols		500 mL		
29. Oil and Grease & Total Hydrocarbon		1000 mL		
30. *Formaldehyde		25 mL		Fill to full container without air gap; acidify to pH 2 with H ₂ SO ₄ and store sample at 2-8°C
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 Store sample at 2-8°C
32. E.coli (Remark 6)		125 mL	PE, clean, sterile, non-reactive	Add 0.1 ml of 10% Na ₂ SO 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. Sulfite		100 mL	Amber Glass, washed with pesticide grade acetone	Acid 1ml of 2.5% EDTA Store sample at 2-8°C
35. Total-N		100 mL		Acidify to pH 2 with H ₂ SO ₄ Store sample at 2-8°C
36. Ammonium-N		500 mL		Acidify to pH 2 with HNO ₃ and store at 2-8°C
37. Adsorbable organically bound halogens (AOX)		100 mL		Acidify to pH 2 with HNO ₃ and store at 2-8°C
38. Acute aquatic toxicity: Luminescent Bacteria; Fish Egg; Daphne; Algae		1000 mL	Amber Glass, washed with nitric acid	
39. Sulfate		100 mL		Without adding acid Store sample at 2-8°C
40. Chloride		100 mL		
41. Conductivity		100 mL		
42. Dissolved oxygen (DO)		N.A.	measure in field	
43. Total Chlorine		N.A.	measure in field	
44. Others:				

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 1-9, 12, 14-29, 31-37, 39-43
Scope of synthetic leather industry: Parameter 1-9, 12, 14-24, 26-29, 31-33, 35, 36, 38, 39, 40
Scope of MMCF: Parameter 5, 18, 20, 22-24, 26-29, 31, 35-38
Free primary aromatic amine, pesticides, nitrosamine and formaldehyde 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-000570-MTHD for additional pretreatment of sulfide if only dissolved sulfide is required to be tested.
- Refer to CPSD-AN-00613-MTHD for preparation of field blank for specific parameters.

Recorded by: 左黎明 Date: 2023.4.18

Comment from factory: A2600mg N31.50'44' E 120° 37' 53"

Acknowledgement by factory

I hereby confirmed that Bureau Veritas has completed the stated sampling activity at specified 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 a suitable refrigerator that is maintained in 1-8°C

Signatory of Factory Representative: 左黎明 Date: 2023.4.18

Test Report: 6623108-0566Report Date: April 28, 2023**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			
1C) Chlorinated Paraffins						
Medium-chain chlorinated paraffins (MCCPs) (C14-C17)	µg/L	-	85535-85-9	5	-	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			
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				
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



Test Report: (6623)108-0566

Report Date: April 28, 2023

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			
			56524-77-7			
Disperse Blue 7			3179-90-6			
Disperse Brown 1			23355-64-8			
Disperse Orange 1			2581-69-3			
Disperse Orange 3			730-40-5			
Disperse Orange 37/59/76			13301-61-6			
Disperse Red 1			2872-52-8			
Disperse Red 11			2872-48-2			
Disperse Red 17			3179-89-3			
Disperse Yellow 1			119-15-3			
Disperse Yellow 3			2832-40-8			
Disperse Yellow 39			12236-29-2			
Disperse Yellow 49			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			



Test Report: (6623)108-0566

Report Date: April 28, 2023

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 (BBMP)			3296-90-0			
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-dichloroisopropyl)phosphate (TDCP)			13674-87-8			
Tris(2-chloroethyl)phosphate (TCEP)			115-96-8	25		USEPA 8270E, ISO 22032, USEPA 527 and USEPA 8321B Dichloromethane extraction GC-MS or LC-MS(-MS)
Tris(2,3-dibromopropyl)-phosphate (TRIS)			126-72-7			
Decabromobiphenyl (DecaBB)	µg/L	-	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			
Diboron trioxide ^b			1303-86-2			
Disodium octaborate ^b			12008-41-2	100		
Disodium tetraborate anhydrous ^b			1303-96-4, 1330-43-4			
Tetraboron disodium heptaoxide, hydrate ^b			12267-73-1			Determined as total boron via ICP

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



Test Report: (6623)108-0566

Report Date: April 28, 2023

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

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
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			
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						
Tetrabutyltin 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		

c = Limit refer to boron and zinc individually, not the salt.

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



Test Report: (6623)108-0566

Report Date: April 28, 2023

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

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
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					
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			



Test Report: (6623)108-0566

Report Date: April 28, 2023

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

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
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; 2,4-diaminoanisole sulphate			39156-41-7			Reduction step with sodium dithionite, solvent extraction EPA 8270E and ISO 14362-1 GC/MS and LC/MS/MS
4-methoxy-m-phenylenediamine			615-05-4			
4-methyl-m-phenylenediamine			95-80-7			
4,4'-methylene-bis-(2-chloro-aniline)			101-14-4			
4,4'-methylenedi-o-toluidine			838-88-0			
4,4'-methylenedianiline			101-77-9			
4,4'-oxydianiline			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					
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 in wastewater
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



Test Report: (6623)108-0566

Report Date: April 28, 2023

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

Test Parameters	Unit		CAS No.	LOQ			Test methods
	Wastewater & Leachate	Sludge		Wastewater	Sludge	Leachate	
Heavy Metals							
Antimony	mg/L	mg/kg	7440-36-0	0.01	5	0.01	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 HJT 300 for leachate
Chromium (VI)			18540-29-9	0.001	20	0.001	
Barium			7440-39-3	1	200	1	
Selenium			7782-49-2	1	5	1	
Tin			7440-31-5	1	-	1	
Arsenic			7440-38-2	0.005	5	0.005	
Total Chromium			7440-47-3	0.05	50	0.05	
Cobalt			7440-48-4	0.01	400	0.01	
Cadmium			7440-43-9	0.01	1	0.01	
Copper			7440-50-8	0.25	50	0.25	
Lead			7439-92-1	0.01	5	0.01	
Nickel			7440-02-0	0.05	20	0.05	
Silver			7440-22-4	0.005	50	0.005	
Zinc			7440-66-6	0.5	400	0.5	
Mercury			7439-97-6	0.001	1	0.001	
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
Paint Filter Test	-	-					EPA SW-846 or EPA 9095B
Fecal Coliform	-	MPN/g					EPA 1681



Test Report: (6623)108-0566

Report Date: April 28, 2023

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

Test Parameters	Unit		CAS No.	LOQ			Test methods
	Wastewater & Leachate	Sludge		Wastewater	Sludge	Leachate	
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)
Sulfite		-		0.2	-	-	ISO 10304-3, SM 4500-SO32-C or HJ 84-2016

END OF REPORT