TEST REPORT

Technical Report: **(6822)069-0426** March 28, 2022

Date Received: March 09, 2022

PU No.	8193
Production Unit Name:	S. F. Washing Ltd.
Production Unit Address:	Nayabari, Kanchpur, Sonargaon, Narayangonj, 1430, Bangladesh.
Project No.:	SCM-2022
Client Reference No.:	Not Applicable
Sample Method:	I001) Raw Wastewater – 6 hours Time – weighted Composite I002) Discharged Wastewater – 6 hours Time – weighted Composite
Sample Pick Up Date:	March 09, 2022
Discharge Type:	Direct Discharge
On-Site Effluent Treatment Plant (ETP):	Yes
Wastewater Discharge to:	Local canal
Off-site ETP name (if applicable):	Not Applicable
Off-site ETP address (if applicable):	Not Applicable
Test Period:	March 10, 2022 To March 27, 2022

Sample Description:

I001) Brown / blueish color liquid - Raw Wastewater
I002) Brownish color liquid - Discharged Wastewater

Bureau Veritas
Consumer Products Services (BD) Ltd.
Plot # 130, DEPZ Extension Area
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REMARK

If there are questions or concerns on this report, please contact the following persons:

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Technical enquiry-Chemical	Mr. M. Nur Alam, Mail: nur.alam@bureauveritas.com

This report shown the test result of the auxiliary chemical and/or raw material samples, which collected during particular factory audit. The results of this report shall not be used for any regulatory compliance purposes.

* The sampling is agreed with client.

BUREAU VERITAS
CONSUMER PRODUCTS SERVICES (BANGLADESH) LTD.

MD. RASHEDUL HAQUE
MANAGER, RSL OPERATIONS

Executive Summary

1A) Conventional Parameters	I001	I002
Temperature	N/A	☐
TSS		☐
COD		☐
Total-N		☐
pH Value		☐
Color [m^{-1}] (436nm; 525nm; 620nm)		☐
BOD_5		☐
Ammonium-N		☐
Total-P		☐
AOX		☐
Oil and Grease		☐
Phenol		☐
Coliform		☐
Foam		☐
ANIONS – Cyanide		☐
ANIONS - Sulfide		☐
ANIONS - Sulfite		☐
1B) Conventional Parameters –METALS	☐	☐

Note / Key :

- ☐ – Meet Foundational Limit / Meet discharge license criteria
- ■ – Exceeding Foundational Limit / Exceeding discharge license criteria
- NR – Not Requested / Not required
- N/A – Not Applicable

ZDHC MRSL Substances	I001	I002
2A) APs and APEOs	o	o
2B) Chlorobenzenes and Chlorotoluenes	o	o
2C) Chlorophenols	o	o
2D) Azo Dyes	o	o
2E) Carcinogenic Dyes	o	o
2F) Disperse Dyes	o	o
2G) Flame Retardants	o	o
2H) Glycols	o	o
2I) Halogenated Solvents	o	o
2J) Organotin Compounds	o	o
2K) Perfluorinated and Polyfluorinated Chemicals	o	o
2L) Phthalates	o	o
2M) Poly Aromatic Hydrocarbons	o	o
2N) Volatile Organic Compounds	o	o

Note / Key :

- ● – Detected
- o – Not Detected
- NR – Not Requested / Not required

Objective

The environment samples were tested for below parameters.

1A) Conventional Parameters
1B) Conventional Parameters – METALS
2A) APs and APEOs
2B) Chlorobenzenes and Chlorotoluenes
2C) Chlorophenols
2D) Azo Dyes
2E) Carcinogenic Dyes
2F) Disperse Dyes
2G) Flame Retardants
2H) Glycols
2I) Halogenated Solvents
2J) Organotin Compounds
2K) Perfluorinated and Polyfluorinated Chemicals
2L) Phthalates
2M) Poly Aromatic Hydrocarbons
2N) Volatile Organic Compounds

Sampling Procedure

Total number of sample collected is based on the actual factory facilities and manufacturing processes. Two environment samples were sampled per factory, including I001) Raw Wastewater and I002) Discharged Wastewater.

Method of sampling used is time-weighted composite samples based on the ZDHC Wastewater Guidelines. Composite sampling is performed for no less than six hours, with no more than one hour between discrete samples. Each discrete sample is of equal volume. Wastewater and freshwater samples is, as much as possible, collected simultaneously, during the time that PU is in normal operation. The sampling aims to analyse the snapshot of water quality characteristics of the operating PU. Under no circumstance shall samples be taken during times when the production process is not running or the wastewater is diluted due to heavy rainfall, etc.

Remark :

- Sampling procedure is with reference to below standards:
  1) South Australia EPA Guidelines (June 2007), Regulatory Monitoring and Testing Water and Wastewater Sampling.
  2) Australia EPA (Victoria) Guideline (June 2009), Sampling and Analysis of Waters, Wastewaters, Soils and Wastes.
  3) ISO 5667-3:2003, Water Quality - Sampling - Part 3: Guidance on the Preservation and Handling of Water Samples.
  4) ASTM D3976-92 (Reapproved 2010), Standard Practice for Preparation of Sediment Samples for Chemical Analysis.
- Field on-site photos are attached in Appendix A and field data records are attached in Appendix C.

Test Result

1A) Conventional Parameters

Temperature

Test Method : Measurement by thermometer

Tested Item(s)	Result	Unit	Conclusion
I002	32 (Foundational)	deg. C	DATA

Note:

deg. C = degree Celsius (°C)
Foundational Limit: ▲15 / max. 35°C; Progressive Limit: ▲10 / max. 30°C; Aspirational Limit: ▲5 / max. 25°C

Total Suspended Solids (TSS)

Test Method : Reference to APHA 2540D, GB 11901, ISO 11923

Tested Item(s)	Result	Unit	Conclusion
I002	28 (Foundational)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 50 mg/L; Progressive Limit: 15 mg/L; Aspirational Limit: 5 mg/L

Chemical Oxygen Demand (COD)

Test Method : Reference to APHA 5220B & EPA 410.3, HJ 828

Tested Item(s)	Result	Unit	Conclusion
I002	64 (Progressive)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 150 mg/L; Progressive Limit: 80 mg/L; Aspirational Limit: 40 mg/L

Total Nitrogen (Total-N)

Test Method : Reference to APHA 4500- N-C

Tested Item(s)	Result	Unit	Conclusion
I002	19.8 (Foundational)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 20 mg/L; Progressive Limit: 10 mg/L; Aspirational Limit: 5 mg/L

pH Value

Test Method : Reference to EPA 150.2

-	Unit	Result
Test Item(s)	-	I002
Parameter	-	-
Temp. of sample	deg. C	21.7
pH value of sample	-	7.6 (Comply with ZDHC WWG requirements)
Conclusion	-	DATA

Note:

Temp. = Temperature deg. C = degree Celsius (°C)
Limit: 6 - 9

Color [m^{-1}] (436nm; 525nm; 620nm)

Test Method : Reference to ISO 7887: 2011(E), B

Tested Item(s)	Result	Unit	Conclusion
I002	3.2; 1.9; 1.1 (Progressive)	m^{-1}	DATA

Note:
Foundational Limit: 7;5;3 m^{-1}; Progressive Limit: 5;3;2 m^{-1}; Aspirational Limit: 2;1;1 m^{-1}

Biochemical Oxygen Demand (BOD_5)

Test Method : Reference to APHA 5210B (5 days)

Tested Item(s)	Result	Unit	Conclusion
I002	18 (Foundational)	mg/L	DATA

Note:
mg/L = milligram per liter
Foundational Limit: 30 mg/L; Progressive Limit: 15 mg/L; Aspirational Limit: 5 mg/L

Ammonium Nitrogen

Test Method : Reference to APHA 4500-NH_3 – B & F 22nd Edition 2012

Tested Item(s)	Result	Unit	Conclusion
I002	0.2 (Aspirational)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 10 mg/L; Progressive Limit: 1 mg/L; Aspirational Limit: 0.5 mg/L

Total Phosphorus (Total-P)

Test Method : Reference to APHA 22nd Edition -4500-P.E (2012)

Tested Item(s)	Result	Unit	Conclusion
I002	0.31 (Progressive)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 3 mg/L; Progressive Limit: 0.5 mg/L; Aspirational Limit: 0.1 mg/L

Adsorbable Organic Halogen (AOX)

Test Method : Reference to ISO 9562

Tested Item(s)	Result	Unit	Conclusion
I002	0.34 (Progressive)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 5 mg/L; Progressive Limit: 1 mg/L; Aspirational Limit: 0.1 mg/L

Oil and Grease

Test Method : Reference to EPA 1664B, APHA-5520 B and F

Tested Item(s)	Result	Unit	Conclusion
I002	1.6 (Progressive)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 10 mg/L; Progressive Limit: 2 mg/L; Aspirational Limit: 0.5 mg/L

Phenol

Test Method : Reference to APHA 5530 C

Tested Item(s)	Result	Unit	Conclusion
I002	<0.001 (Aspirational)	mg/L	DATA

Note:

mg/L = milligram per liter

Foundational Limit: 0.5 mg/L; Progressive Limit: 0.01 mg/L; Aspirational Limit: 0.001 mg/L

Coliform

Test Method : Reference to ISO 9308-1: 2014

Tested Item(s)	Result	Unit	Conclusion
I002	113 (Foundational)	Bacteria / 100 mL	DATA

Note:

bacteria/100 mL = bacteria per 100 milliliters
Foundational Limit: 400 / 100 ml; Progressive Limit: 100 / 100 ml; Aspirational Limit: 25 / 100 ml;

Persistent Foam

Test Method : Visual

Tested Item(s)	Result	Unit	Conclusion
I002	No Foam (Comply with ZDHC WWG requirements)	-	DATA

ANIONS - Cyanide

Test Method : Reference to APHA 22nd Edition-4500-CN. C&E (2012), EPA 9010C, 9013 & 9014

Tested Item(s)	Result	Unit	Conclusion
I002	ND (Aspirational)	mg/L	DATA

Note:

mg/L = milligram per liter ND = Not Detected
Foundational Limit: 0.2 mg/L; Progressive Limit: 0.1 mg/L; Aspirational Limit: 0.05 mg/L

ANIONS - Sulfide

Test Method : Reference to APHA 4500-S^{2-}D

Tested Item(s)	Result	Unit	Conclusion
I002	<0.1 (Foundational)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 0.5 mg/L; Progressive Limit: 0.05 mg/L; Aspirational Limit: 0.01 mg/L

ANIONS - Sulfite

Test Method : Reference to EPA 377.1, APHA 4500-SO_3^{2-} (2012)

Tested Item(s)	Result	Unit	Conclusion
I002	0.5 (Progressive)	mg/L	DATA

Note:

mg/L = milligram per liter
Foundational Limit: 2 mg/L; Progressive Limit: 0.5 mg/L; Aspirational Limit: 0.2 mg/L

1B) Conventional Parameters – METALS

Heavy Metals	**I001** ***(mg/L)***	**I002** ***(mg/L)***
Antimony(Sb) *Foundational Limit: 0.1 mg/L;* *Progressive Limit: 0.05 mg/L;* *Aspirational Limit: 0.01 mg/L*	0.005 (Aspirational)	0.006 (Aspirational)
Chromium(Cr), total *Foundational Limit: 0.2 mg/L;* *Progressive Limit: 0.1 mg/L;* *Aspirational Limit: 0.05 mg/L*	0.008 (Aspirational)	ND (Aspirational)
Cobalt(Co) *Foundational Limit:0.05 mg/L;* *Progressive Limit: 0.02 mg/L;* *Aspirational Limit: 0.01 mg/L*	0.001 (Aspirational)	ND (Aspirational)
Copper(Cu) *Foundational Limit: 1 mg/L;* *Progressive Limit: 0.5 mg/L;* *Aspirational Limit: 0.25 mg/L*	ND (Aspirational)	ND (Aspirational)
Nickel (Ni) *Foundational Limit:.0.2 mg/L;* *Progressive Limit: 0.1 mg/L;* *Aspirational Limit: 0.05 mg/L*	0.002 (Aspirational)	ND (Aspirational)
Silver (Ag) *Foundational Limit: 0.1 mg/L;* *Progressive Limit: 0.05 mg/L;* *Aspirational Limit: 0.005 mg/L*	ND (Aspirational)	ND (Aspirational)
Zinc(Zn) *Foundational Limit: 5 mg/L;* *Progressive Limit: 1 mg/L;* *Aspirational Limit: 0.5 mg/L*	0.011 (Aspirational)	ND (Aspirational)
Arsenic (As) *Foundational Limit: 0.05 mg/L;* *Progressive Limit: 0.01 mg/L;* *Aspirational Limit: 0.005 mg/L*	ND (Aspirational)	ND (Aspirational)
Cadmium(Cd) *Foundational Limit: 0.1 mg/L;* *Progressive Limit: 0.05 mg/L;* *Aspirational Limit: 0.01 mg/L*	ND (Aspirational)	ND (Aspirational)
Lead(Pb) *Foundational Limit:0.1 mg/L;* *Progressive Limit: 0.05 mg/L;* *Aspirational Limit: 0.01 mg/L*	ND (Aspirational)	ND (Aspirational)
Mercury (Hg) *Foundational Limit: 0.01 mg/L;* *Progressive Limit: 0.005 mg/L;* *Aspirational Limit :0.001 mg/L*	ND (Aspirational)	ND (Aspirational)
Chromium VI(CrVI) *Foundational Limit: 0.05 mg/L;* *Progressive Limit: 0.005 mg/L;* *Aspirational Limit: 0.001 mg/L*	ND (Aspirational)	ND (Aspirational)

Others Priority Chemical Groups

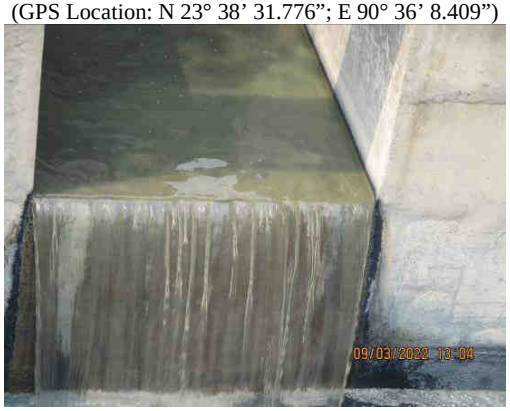
	I001 *(µg/L)*	**I002 *(µg/L)***
2A) APs and APEOs	ND	ND
2B) Chlorobenzenes and Chlorotoluenes	ND	ND
2C) Chlorophenols	ND	ND
2D) Azo Dyes	ND	ND
2E) Carcinogenic Dyes	ND	ND
2F) Disperse Dyes	ND	ND
2G) Flame Retardants	ND	ND
2H) Glycols	ND	ND
2I) Halogenated Solvents	ND	ND
2J) Organotin Compounds	ND	ND
2K) Perfluorinated and Polyfluorinated Chemicals	ND	ND
2L) Phthalates	ND	ND
2M) Poly Aromatic Hydrocarbons	ND	ND
2N) Volatile Organic Compounds	ND	ND

Remark：

- Test method, reporting limit and list of chemical are summarized in tables of Appendix B.
- ND = Not detected (Please refer to reporting limit shown in Appendix B.).
- ppm = part(s) per million; ppb = part(s) per billion.

APPENDIX A - Photo of the Sample/ Sampling Location

I001) Sampling Point
(GPS Location: N 23° 38’ 31.776”; E 90° 36’ 8.409”)



I001) Sampling Point Surrounding Environment
(GPS Location: N 23° 38’ 31.776”; E 90° 36’ 8.409”)

I001) All sampled bottles with label

I001) pH value

I001) Sample for Phthalate Testing

I001) Packaging

I002) Sampling Point (GPS Location: N 23° 38’ 31.776”; E 90° 36’ 8.409”) 	I002) Sampling Point Surrounding Environment (GPS Location: N 23° 38’ 31.776”; E 90° 36’ 8.409”) 
I002) All sampled bottles with label 	I002) pH value 
I002) Sample for Phthalate Testing 	I002) Packaging 

APPENDIX B

Parameters, limits and testing method aligned with the ZDHC Wastewater Guidelines

Group	Substance (analytes)	CAS No.	Detection Limit (µg/L)	Testing method
2A. Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers	Octylphenol OP, mixed isomers	Various (incl. 140-66-9, 1806-26-4, 27193-28-8)	5	NP/OP: ISO 18857-2 (modified dichloromethane extraction) or ASTM D7065 (GC/MS or LC/MS(-MS) OPEO/NPEO (n>2): ISO 18254-1 OPEO/NPEO: ISO18857-2 or ASTM D7065(LC/MS; GC/MS or LC/MSMS for n=1,2)
	Nonylphenol NP	Various (incl. 104-40-5, 11066-49-2, 25154-52-3, 84852-15-3)		
	Octylphenol ethoxylates (OPEO)	Various (incl. 9002-93-1, 9036-19-5, 68987-90-6)		
	Nonylphenol ethoxylates (NPEO)	Various (inc. 9016-45-9, 26027-38-3, 37205-87-1, 68412-54-4, 127087-87-0)		
2B. Chlorobenzenes and Chlorotoluenes	Monochlorobenzene	108-90-7	0.2	USEPA 8260B,8270D. Dichloromethane extraction followed by GC/MS
	1,2-Dichlorobenzene	95-50-1		
	1,3-Dichlorobenzene	541-73-1		
	1,4-Dichlorobenzene	106-46-7		
	1,2,3-Trichlorobenzene	87-61-6		
	1,2,4-Trichlorobenzene	120-82-1		
	1,3,5-Trichlorobenzene	108-70-3		
	1,2,3,4-Tetrachlorobenzene	634-66-2		
	1,2,3,5-Tetraclorobenzene	634-90-2		
	1,2,4,5-Tetrachlorobenzene	95-94-3		
	Pentachlorobenzene	608-93-5		
	Hexachlorobenzene	118-74-1		
	2-Chlorotoluene	95-49-8		
	3-Chlorotoluene	108-41-8		
	4-Chlorotoluene	106-43-4		
	2,3-Dichlorotoluene	32768-54-0		
	2,4-Dichlorotoluene	95-73-8		
	2,5-Dichlorotoluene	19398-61-9		
	2,6-Dichlorotoluene	118-69-4		
	3,4-Dichlorotoluene	95-75-0		
	3,5-Dichlorotoluene	25186-47-4		
	2,3,4-Trichlorotoluene	7359-72-0		
	2,3,6-Trichlorotoluene	2077-46-5		
	2,4,5-Trichlorotoluene	6639-30-1		
	2,4,6-Trichlorotoluene	23749-65-7		
	3,4,5-Trichlorotoluene	21472-86-6		
	2,3,4,5-Tetrachlorotoluene	76057-12-0		
	2,3,5,6-Tetrachlorotoluene	29733-70-8		
	2,3,4,6-Tetrachlorotoluene	875-40-1		
	Pentachlorotoluene	877-11-2		
2C. Chlorophenols	Pentachlorophenol (PCP)	87-86-5	0.5	USEPA 8270 D Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC/MS
	2,3,4,5-Tetrachlorophenol	4901-51-3		
	2,3,4,6-Tetrachlorophenol	58-90-2		
	2,3,5,6-Tetrachlorophenol	935-95-5		
	2,4,6-Trichlorophenol	88-06-2		
	2,3,5-Trichlorophenol	933-78-8		

Group	Substance (analytes)	CAS No.	Detection Limit (µg/L)	Testing method
	2,4,5-Trichlorophenol	95-95-4		ISO 14154:2005
	3,4,5-Trichlorophenol	609-19-8		
	2,3,4-Trichlorophenol	15950-66-0		
	2,3,6-Trichlorophenol	933-75-5		
	2,3-Dichlorophenol	576-24-9		
	3,4-Dichlorophenol	95-77-2		
	2,4-Dichlorophenol	120-83-2		
	2,5-Dichlorophenol	583-78-8		
	2,6-Dichlorophenol	87-65-0		
	3,5-Dichlorophenol	591-35-5		
	2-Chlorophenol	95-57-8		
	3-Chlorophenol	108-43-0		
	4-Chlorophenol	106-48-9		
2D. Dyes - Azo (Forming Restricted Amines)	4-Aminodiphenyl	92-67-1	0.1	EN 14362-1 EN 14362-3 Reduction step with Sodiumdithionite, solvent extraction, GC/MS or LC/MS
	Benzidine	92-87-5		
	4-Chloro-o-toluidine	95-69-2		
	2-Naphthylamine	91-59-8		
	o-Aminoazotoluene	97-56-3		
	5-nitro-o-toluidine	99-55-8		
	4-Chloroaniline	106-47-8		
	4-Methoxy-m-phenylenediamine	615-05-4		
	4,4'-methylenedianiline	101-77-9		
	3,3`-Dichlorobenzidine	91-94-1		
	3,3`-Dimethoxybenzidine	119-90-4		
	3,3`-Dimethylbenzidine	119-93-7		
	4,4`-Methylene-di-o-toluidine	838-88-0		
	6-methoxy-m-toluidine (p-Cresidine)	120-71-8		
	4,4`-Methylene-bis-(2-chloro-aniline)	101-14-4		
	4,4`-Oxydianiline	101-80-4		
	4,4`-Thiodianiline	139-65-1		
	o-Toluidine	95-53-4		
	4-Methyl-m-phenylenediamine	95-80-7		
	2,4,5-Trimethylaniline	137-17-7		
	o-Anisidine	90-04-0		
	4-Aminoazobenzene	60-09-3		
	2,4-Xylidine	95-68-1		
	2,6-Xylidine	87-62-7		
2E. Dyes-Carcionogenic or Equivalent Concern	C.I. Direct Black 38	1937-37-7	500	Liquid Extraction LC/MS
	C.I. Direct Blue 6	2602-46-2		
	C.I. Acid Red 26	3761-53-3		
	C.I. Basic Red 9	569-61-9		
	C.I. Direct Red 28	573-58-0		
	C.I. Basic Violet 14	632-99-5		
	C.I. Disperse Blue 1	2475-45-8		
	C.I. Disperse Blue 3	2475-46-9		
	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		

Group	Substance (analytes)	CAS No.	Detection Limit (µg/L)	Testing method
	Disperse Orange 11	82-28-0		
2F. Dyes-disperse (sensitizing)	Disperse Yellow 1	119-15-3	50	Liquid Extraction LC/MS
	Disperse Blue 102	12222-97-8		
	Disperse Blue 106	12223-01-7		
	Disperse Yellow 39	12236-29-2		
	Disperse Orange 37/59/76	13301-61-6		
	Disperse Brown 1	23355-64-8		
	Disperse Orange 1	2581-69-3		
	Disperse Yellow 3	2832-40-8		
	Disperse Red 11	2872-48-2		
	Disperse Red 1	2872-52-8		
	Disperse Red 17	3179-89-3		
	Disperse Blue 7	3179-90-6		
	Disperse Blue 26	3860-63-7		
	Disperse Yellow 49	54824-37-2		
	Disperse Blue 35	12222-75-2		
	Disperse Blue 124	61951-51-7		
	Disperse Yellow 9	6373-73-5		
	Disperse Orange 3	730-40-5		
	Disperse Blue 35	56524-77-7		
2G. Flame Retardants	Polybromobiphenyls (PBBs)	59536-65-1	5	USEPA 8270 ISO 22032, USEPA 527 and USEPA 8321B. Dichloromethane extraction GC/MS or LC/MS(-MS)
	Pentabromodiphenyl ether (PentaBDE)	32534-81-9		
	Octabromodiphenyl ether (OctaBDE)	32536-52-0		
	Decabromodiphenyl ether (DecaBDE)	1163-19-5		
	Tris(2,3-dibromopropyl) phosphate (TRIS/TDBPP)	126-72-7		
	Tetrabromobisphenol A (TBBPA)	79-94-7		
	Bis(2,3-dibromopropyl) phosphate (BIS/BDBPP)	5412-25-9		
	Hexabromocyclododecane (HBCDD)	3194-55-6		
	2,2-Bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0		
	Tris(aziridinyl)-phosphineoxide (TEPA)	545-55-1		
	Tris(2-chloroethyl) phosphate (TCEP)	115-96-8		
	Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	13674-87-8		
	Short chain chlorinated paraffins (SCCPs) (C10-C13)	85535-84-8		
2H. Glycols	Bis(2-methoxyethyl)-ether	111-96-6	50	US EPA 8270 Liquid Extraction LC/MS GC-MS
	2-ethoxyethanol	110-80-5		
	2-ethoxyethyl acetate	111-15-9		
	Ethylene glycol dimethyl ether	110-71-4		
	2-methoxyethanol	109-86-4		
	2-methoxyethylacetate	110-49-6		
	2-methoxypropylacetate	70657-70-4		
	Triethylene glycol dimethyl ether	112-49-2		
2I. Halogenated Solvents	1,2-Dichloroethane	107-06-2	1	USEPA 8260B Headspace GC/MS or
	Methylene Chloride	75-09-2		

Group	Substance (analytes)	CAS No.	Detection Limit (µg/L)	Testing method
	Trichloroethylene	79-01-6		Purge-and-Trap-GC/MS
	Tetrachloroethylene	127-18-4		
2J. Organotin Compounds	Monobutyltin (MBT)	Multiple	0.01	ISO 17353 Derivatisation with NaB(C2H5) GC/MS
	Dibutyltin (DBT)	Multiple		
	Dioctyltin (DOT)	Multiple		
	Tributyltin (TBT)	Multiple		
	Triphenyltin (TPhT)	Multiple		
	Tricyclohexyltin (TCyT)	Multiple		
	Trioctyltin (TOT)	Multiple		
	Tripropyltin (TPT)	Multiple		
	Monooctyltin (MOT)	Multiple		
	Diphenyltin (DPhT)	Multiple		
	Tetrabutyltin (TeBT)	Multiple		
	Mono-, di- and tri-methyltin derivatives	Various		
	Mono-, di- and tri-butyltin derivatives	Various		
	Mono-, di- and tri-phenyltin derivatives	Various		
	Mono-, di- and tri-octyltin derivatives	Various		
2K. Perfluorinated and Polyfluorinated Chemicals (PFCs)	Perfluoro-n-octanoic acid (PFOA)	335-67-1	0.01	DIN 38407-42 (modified) Ionic PFC: Concentration or direct injection, LC/MS(-MS); Non-ionic PFC (FTOH): derivatisation with acetic anhydride, followed by GC/MS
	Perfluorobutanesulfonic acid (PFBS)	29420-49-3, 29420-43-3		
	Perfluorooctanesulfonic acid (PFOS)	355-46-4 ,432-50-7		
	Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		
	8:2 FTOH	678-39-7	1	
	6:2 FTOH	647-42-7		
2L. Phthalates (including all other esthers of phthalic acid)	Butyl benzyl phthalate (BBP)	85-68-7	10	US EPA 8270D, ISO 18856 Dichloromethane extraction GC/MS
	Dibutyl phthalate (DBP)	84-74-2		
	Di-2-ethylhexyl phthalate (DEHP)	117-81-7		
	Di-n-octyl phthalate (DNOP)	117-84-0		
	Di-iso-nonyl phthalate (DINP)	28553-12-0		
	Di-iso-decyl phthalate (DIDP)	26761-40-0		
	Diethyl phthalate (DEP)	84-66-2		
	Di-n-propyl phthalate (DPRP)	131-16-8		
	Di-iso-butyl phthalate (DIBP)	84-69-5		
	Di-cyclohexyl phthalate (DCHP)	84-61-7		
	Di-n-hexyl phthalate (DnHP)	84-75-3		
	Dinonyl phthalate (DNP)	84-76-4		
	Di-iso-octyl phthalate (DIOP)	27554-26-3		
	Dimethoxyethyl phthalate (DMEP)	117-82-8		
	1,2-benzenedicarboxylic acid, di-C7-11-branched and linearalkyl esters (DHNUP)	68515-42-4		
	1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6		
2M. Poly Aromatic Hydrocarbons (PaHs)	Benzo[a]pyrene (BaP)	50-32-8	1	US EPA 8270 DIN 38407-39 Solvent extraction
	Anthracene	120-12-7		
	Pyrene	129-00-0		

Group	Substance (analytes)	CAS No.	Detection Limit (µg/L)	Testing method
	Benzo[ghi]perylene	191-24-2		GC/MS
	Benzo[e]pyrene	192-97-2		
	Indeno[1,2,3-cd]pyrene	193-39-5		
	Benzo[j]fluoranthene	205-82-3		
	Benzo[b]fluoranthene	205-99-2		
	Fluoranthene	206-44-0		
	Benzo[k]fluoranthene	207-08-9		
	Acenaphthylene	208-96-8		
	Chrysene	218-01-9		
	Dibenz[a,h]anthracene	53-70-3		
	Benzo[a]anthracene	56-55-3		
	Acenaphthene	83-32-9		
	Phenanthrene	85-01-8		
	Fluorene	86-73-7		
	Naphthalene	91-20-3		
2N. Volatile Organic Compound (VOCs)	Benzene	71-43-2	1	ISO 11423-1 Headspace- or Purge-and-Trap-GC/MS US EPA 8260
	Xylene	1330-20-7		
	o-cresol	95-48-7		
	p-cresol	106-44-5		
	m-cresol	108-39-4		

Group	Parameter/substance	CAS No.	Limits (**mg**/L) or otherwise specified			Testing method
			A	**P**	**F**	
1A. Conventional Parameters (sum parameters)	Temperature	–	▲5/ max. 25ºC	▲10/ max. 30ºC	▲15/ max. 35ºC	Apply the standard methods that best apply to the region (ISO, EU, US, China), please refer to ZDHC Wastewater Guidelines for more details on the testing method
	TSS	–	5	15	50	
	COD	–	40	80	150	
	Total-N	–	5	10	20	
	pH	–	6 - 9			
	Color [m-1] (436nm; 525nm; 620nm)	–	2;1;1	5;3;2	7;5;3	
	BOD5	–	5	15	30	
	Ammonium-N	–	0.5	1	10	
	Total-P	–	0.1	0.5	3	
	AoX	–	0.1	1	5	
	Oil and Grease	–	0.5	2	10	
	Phenol	–	0.001	0.01	0.5	
	Coliform(bacteria/100ml)	–	25/100 ml	100/100 ml	400/100 ml	
	Persistent Foam	–	No foam/ Dissipating/ Persistent			
	ANIONS					
	Cyanide(CN-)	Various (incl. 57-12-5)	0.05	0.1	0.2	
	Sulfide	–	0.01	0.05	0.5	
	Sulfite	–	0.2	0.5	2	

Group	Parameter/substance	CAS No.	Detection Limit (mg/L)/ (ppm)	Limits (**mg**/L)			Testing method
				A	**P**	**F**	
1B. Conventional Parameters - **METALS**	Cadmium(Cd)	7440-43-9	0.0001	0.01	0.05	0.1	Apply the standard methods that best apply to the region (ISO, EU, US, China), please refer to ZDHC Wastewater Guidelines for more details on the testing method
	Lead(Pb)	7439-92-1	0.001	0.01	0.05	0.1	
	Mercury (Hg)	7439-97-6	0.00005	0.001	0.005	0.01	
	Silver (Ag)	7440-22-4	0.001	0.005	0.05	0.1	
	Cobalt(Co)	7440-48-4	0.001	0.01	0.02	0.05	
	Nickel (Ni)	7440-02-0	0.001	0.05	0.1	0.2	
	Antimony(Sb)	7440-36-0	0.001	0.01	0.05	0.1	
	Arsenic (As)	7440-38-2	0.001	0.005	0.01	0.05	

Group	Substance (analytes)	CAS No.		Detection Limit (µg/L)			Testing method
	Copper(Cu)	7440-50-8	0.001	0.25	0.5	1	
	Zinc(Zn)	7440-66-6	0.001	0.5	1	5	
	Chromium(Cr), total	7440-47-3	0.001	0.05	0.1	0.2	
	Chromium VI(CrVI)	18540-29-9	0.001	0.001	0.005	0.05	

A: Aspirational P: Progressive F: Foundational

Note / Key :

ppm = part(s) per million; ppb = part(s) per billion
U. S. EPA = United States Environmental Protection Agency
APHA = American Public Health Association

Remark: The report [(6822)069-0426] was sub-contracted to India (Testtex India Laboratories Pvt. Ltd) for Coliform & Total-N & AOX Tests.

APPENDIX C – Onsite Field Data Record Sheet

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)	CPSD-AN-00613-DATA 04
	Issue Date:
	Version No.: 16
	Business Line: Analytical

General Data

Laboratory Sample Number:	(6822)069-0426
Client Name:	
Field Contact Person:	Md. Rakibul Islam Phone No: 01771-810000
Project (Facility Name and Address):	S.F. Washing Ltd (Nayabari, Kanchpur, Sonargaon, Narayangonj)
Sampling Location / Description:	E.T.P = Inlet
Sample Identification:	Zero discharge with sampling plan
Sample Type:	Composite Sample / Grab sample (Please delete as appropriate)
Name of Sampler:	Md. Asad Hosain
Discharge mode:	Direct discharge to environment (Specify destination: River, Sea, Stream...) OR Indirect discharge to sewage treatment plant
Date of collection:	09.03.22
Factory Type:	Dyeing / Printing / Washing / Finishing / Others (please specify):

*Note: It would be selected more than one

Field Data for Wastewater

Arrival Time:	10:50	Departure Time:						
Field Parameters:	pH: 7.4	Temp: 34.0 °C	Color: Brown.	Flow rate: (volume/min)				
Control No. of field equipment:								
Factory with effluent treatment plant:	✓ Yes		No					
Sample matrix:		Incoming water (If required)						
	✓	Wastewater before treatment						
		Wastewater after treatment – water at discharge point						
Sampler container number:	12	12	12	12	12	12		
	1	2	3	4	5	6	7	8
Recording time – ID								
Recording time – Time	11:00	12:00	13:00	14:00	15:00	16:00		
pH	7.4	7.6	6.9	6.9	7.1	7.4		
Temp (°C)	34.0	34.6	35.6	34.4	35.6	36.0		
Color (visual estimation)	Brown	Brown	Bluesh	Bluesh	Blue	Bluesh.		
Flow rate (volume/time)	57.9	70.0	66.0	62.4	68.9	69.4		
Volume collected, mL	12x167	12x167	12x167	12x167	12x167	12x167		
Total volume collected	12024	Remark: Total volume collected must be greater than total of sample size required						

Analysis Required and Preservation Method

Tests (ZDHC MRSL Parameters)		Test required (√)	Total of sample size	Type of container	Preservation method
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 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. Banned Azodyes		✓	2000 mL		
13. *Free primary aromatic amines		✗	500 mL		
14. Organotin Compounds		✓	500 mL		
15. VOC & Halogenated Solvents (Remark 6)		✓	10 mL		Fil to full container without air gap, acidify to pH 2 with HCl and store sample at 2-8°C
16. PFCs (Remark 6)		✓	2 mL	PE, washed with pesticide grade Acetone	Without adding acid Store sample at 2-8°C

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FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)

CPSD-AN-00613-DATA 04	
Issue Date:	
Version No.: 16	
Business Line: Analytical	

Tests (Conventional Parameters)		Test required (√)	Total of sample size	Type of container	Preservation method
Combined test or Individual test (Remark 4)	17. Total suspaned solids (TSS)		2000 mL total or 2000 mL each	Amber Glass, washed with nitric acid;	Without adding acid Store sample at 2-8°C
	18. Total dissolved solids (TDS)				
19. 5-day Biochemical Oxygen Demand (BOD5)			1000 mL		
20. Colour			100 mL		
21. 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
22. Cyanide		√	500 mL	Amber Glass, washed with pesticide grade acetone	Adjust pH 12 with 50% NaOH, add 0.05 ml of 10% $Na_2S_2O_3$, and store sample at 2-8°C
23. 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. Store sample at 2-8°C
24. Chemical oxygen demand (COD)			150 mL		Acidify to pH 2 with H_2SO_4 Store sample at 2-8°C
25. Phenols			500 mL		
26. Oil and Grease & Total Hydrocarbon			1000 mL		
27. *Formaldehyde			25 mL		Fill to full container without air gap; acidify to pH 2 with H_2SO_4 and store sample at 2-8°C
28. 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
29. Total Coliform (Remark 6)			125 mL	PE, clean, sterile, non-reactive	Add 0.1 ml of 10% $Na_2S_2O_3$,keep in dark Store sample at 2-8°C
30.E.coli (Remark 6)			125 mL		
31. Persistent foam			N.A.	Foam higher than 45 cm (visual estimation): Yes / No	
32. Sulfite			100 mL	Amber Glass, washed with pesticide grade acetone	Add 1mL of 2.5% EDTA Store sample at 2-8°C
33. Total-N			100 mL	Amber Glass,washed with nitric acid;	Acidify to pH 2 with H_2SO_4 Store sample at 2-8°C
34. Ammonium-N			500 mL		
35. Adsorbable organically bound halogens (AOX)			100 mL		Acidify to pH 2 with HNO_3 and store at 2-8°C
36. Acute aquatic toxicity: Luminus Bacteria; Fish Egg; Daphne; Alage;			1000 mL		Without adding acid Store sample at 2-8°C
37. Sulphate			100 mL		
38. Chloride			100 mL		
39. Others:					
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, 14-17, 19-26, 28, 29, 31-35
   Scope of synthetic leather industry: Parameter 1-9, 12, 14-21, 23-26, 28, 30, 31, 33, 34, 37, 38
   Scope of MMCF: Parameter 5, 15, 17, 19-21, 23 - 26, 28, 33-36
   Free primary aromatic amine, pesticides, nitrosamine and formaldehyde are not in the scope of ZDHC Guidline, they are tested upon request.
4. Refer to CPSD-AN-G00019-STIP01, loactions 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: Full name: Md. Asad Hosain. Date: 09.03.22

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 desinated 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

Signatory of Factory Representative: Md. Rakibul Islam Date: 09.03.22

	FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)	CPSD-AN-00613-DATA 04 Issue Date: Version No.: 16 Business Line: Analytical

General Data

Laboratory Sample Number:	(6822) 069-0426
Client Name:	
Field Contact Person:	Md. Rakibul Islam Phone No: 0177/-810000
Project (Facility Name and Address):	S. Fwashing Ltd (Nayabari, kanchpur, Sonargaon, Narayangonj
Sampling Location / Description:	E.T.P - Outlet
Sample Identification:	Zero discharge with sampling plan
Sample Type:	Composite Sample / Grab sample (Please delete as appropriate)
Name of Sampler:	Md. Asad Hosain.
Discharge mode:	Direct discharge to environment (Specify destination: River, Sea, Stream...) OR Indirect discharge to sewage treatment plant
Date of collection:	09.03.22 Local Canal
Factory Type:	Dyeing / Printing / Washing / Finishing / Others (please specify):

*Note: It would be selected more than one

Field Data for Wastewater

[No Foam]

Arrival Time:	10:50	Departure Time:						
Field Parameters	pH: 7.0	Temp: 31.0 °C		Color: Brownish		Flow rate: (volume/min)		
Control No. of field equipment:								
Factory with effluent treatment plant:	✓ Yes				No			
Sample matrix:		Incoming water (If required)						
		Wastewater before treatment						
	✓	Wastewater after treatment – water at discharge point						
Sampler container number	29	29	29	29	29	29		
	1	2	3	4	5	6	7	8
Recording time: ID								
Recording time: Time	11:00	12:00	13:00	14:00	15:00	16:00		
pH:	7.0	7.2	7.9	6.8	7.9	7.9		
Temp (°C):	31.0	31.9	32.0	32.9	32.9	32.8		
Color (visual estimation):	Brownish	Brownish	Brownish	Brownish	Brownish	Brownish		
Flow rate (volume/time):	57.6	59.2	62.6	60.9	69.0	59.9		
Volume collected, mL:	29x167	29x167	29x167	29x167	29x167	29x167		
Total volume collected:	29098	Remark: Total volume collected must be greater than total of sample size required.						

Analysis Required and Preservation Method

Tests (ZDHC MRSL Parameters)		Test required (√)	Total of sample size	Type of container	Preservation method
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 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		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. 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
16. PFCs (Remark 6)		✓	2 mL	PE, washed with pesticide grade Acetone	Without adding acid Store sample at 2-8°C

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)	CPSD-AN-00613-DATA 04
	Issue Date:
	Version No.: 16
	Business Line: Analytical

Tests (Conventional Parameters)		Test required (√)	Total of sample size	Type of container	Preservation method
Combined test or Individual test (Remark 4)	17. Total suspened solids (TSS)	√	2000 mL total or 2000 mL each	Amber Glass, washed with nitric acid;	Without adding acid Store sample at 2-8°C
	18. Total dissolved solids (TDS)	X			
19. 5-day Biochemical Oxygen Demand (BOD5)		√	1000 mL		
20. Colour		√	100 mL		
21. 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
22. Cyanide		√	500 mL	Amber Glass, washed with pesticide grade acetone	Adjust pH 12 with 50% NaOH, add 0.05 ml of 10% $Na_2S_2O_3$, and store sample at 2-8°C
23. 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. Store sample at 2-8°C
24. Chemical oxygen demand (COD)		√	150 mL		Acidify to pH 2 with H_2SO_4 Store sample at 2-8°C
25. Phenols		√	500 mL		
26. Oil and Grease & ~~Total Hydrocarbon~~		√	1000 mL		
27. *Formaldehyde		X	25 mL		Fill to full container without air gap; acidify to pH 2 with H_2SO_4 and store sample at 2-8°C
28. 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
29. Total Coliform (Remark 6)		√	125 mL	PE, clean, sterile, non-reactive	Add 0.1 ml of 10% $Na_2S_2O_3$, keep in dark Store sample at 2-8°C
30.E.coli (Remark 6)		X	125 mL		
31. Persistent foam		√	N.A.	Foam higher than 45 cm (visual estimation): Yes / No	
32. Sulfite		√	100 mL	Amber Glass, washed with pesticide grade acetone	Add 1mL of 2.5% EDTA Store sample at 2-8°C
33. Total-N		√	100 mL	Amber Glass;washed with nitric acid;	Acidify to pH 2 with H_2SO_4 Store sample at 2-8°C
34. Ammonium-N		√	500 mL		
35. Adsorbable organically bound halogens (AOX)		√	100 mL		Acidify to pH 2 with HNO_3 and store at 2-8°C
36. Acute aquatic toxicity: Luminus Bacteria; Fish Egg; Daphne; Alage;			1000 mL		Without adding acid Store sample at 2-8°C
37. Sulphate			100 mL		
38. Chloride			100 mL		
39. Others					
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, 14-17, 19-26, 28, 29, 31-35
   Scope of synthetic leather industry: Parameter 1-9, 12, 14-21, 23-26, 28, 30, 31, 33, 34, 37, 38
   Scope of MMCF: Parameter 5, 15, 17, 19-21, 23 - 26, 28, 33-36
   Free primary aromatic amine, pesticides, nitrosamine and formaldehyde are not in the scope of ZDHC Guidline, they are tested upon request.
4. Refer to CPSD-AN-G00019-STIP01, loactions 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: _____ Date: 09.03.22

Full name: Md. Asadhoscin.

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 desinated 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 1-5°C.

Signatory of Factory Representative: Md. Rakibul Islam Date: 09.03.22

END