



TEST REPORT NO : 1001893759

Apr.12,2023

UL ORDER NO : 14750556

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Factory : GMS COMPOSITE KNITTING IND. LTD.
Address : SARDAGONJ, KASHIMPUR, GAZIPUR, BANGLADESH
Contact Person : MD. AL-AMIN
Reference Testing Protocol: ZDHC Wastewater Guidelines Version 2.1

Sampling Date : Apr.2,2023
Laboratory Received Date : Apr.2,2023
Test Date : Apr.2-12,2023
Buyer Name: Self Reference

Reference Sample Handling Method: ZDHC Sampling and Analysis Plan (SAP) Version 2.1

Sampling Time Discharge Water: 10.15am (Approved Single Grab Method)

Sample Collected By: UL VS Bangladesh Ltd.

Sampling Time Sludge: Grab: 10.50am

Sampler accreditation certification number (ZDHC): C74D106817971

Discharge Method: Direct Discharge

Sludge Disposal Pathway: A – Offsite Incineration at >1000°C

Sample Information :

Sample ID	Description	Equivalent Code / Color
001	Untreated Wastewater (ETP-02)	Brown
002	Effluent/Treated Wastewater (ETP-02)	Light Brown
003	Sludge	Grey

For and on behalf of
UL VS Bangladesh Limited

Md. Nur Alam – Lab Technical & Operations Manager

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Test Table	Executive Summary	Result		
		001	002	003
1A-1T	Untreated Wastewater Parameters:			
1A	Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs)	PASS	/	/
1B	Anti- Microbials & Biocides	PASS	/	/
1C	Chlorinated Parafins	PASS	/	/
1D	Chlorobenzenes and Chlorotoluenes	PASS	/	/
1E	Chlorophenols	PASS	/	/
1F	N,N-di-methylformamide (DMFa)	PASS	/	/
1G	Dyes – Carcinogenic or Equivalent Concern	PASS	/	/
1H	Dyes – Disperse (Allergenic)	PASS	/	/
1I	Dyes – Navy Blue Colourant	PASS	/	/
1J	Flame retardants	PASS	/	/
1K	Glycols / Glycol Ethers	PASS	/	/
1L	Halogenated Solvents	PASS	/	/
1M	Organotin Compounds	PASS	/	/
1N	Other/Miscellaneous Chemicals	PASS	/	/
1O	Perfluorinated and Polyfluorinated Chemicals (PFCs)	PASS	/	/
1P	Phthalates – including all other esters of ortho-phthalic acid	PASS	/	/
1Q	Polycyclic Aromatic Hydrocarbons (PAHs)	PASS	/	/
1R	Restricted Aromatic Amines (Cleavable from Azo-colourants)	PASS	/	/
1S	UV Absorbers	PASS	/	/
1T	Volatile Organic Compounds (VOC)	PASS	/	/
2	Metals (Heavy Metals Effluent/ Treated Wastewater Parameters):	/	PASS	/
3	Conventional Parameters and Anions for Effluent/ Treated Wastewater:			
	pH Value	/	PASS	/
	Temperature Deference	/	PASS	/
	E.coli ♦	/	PASS	/
	Colour (436nm, 525nm, 620nm)	/	PASS	/
	Persistent Foam	/	PASS	/
	Wastewater Flowrate	/	See Result	/
	Ammonium-Nitrogen	/	PASS	/
	Absorbable Organic Halogens (AOX)	/	PASS	/
	Biological Oxygen Demand (BOD) (5-day)	/	PASS	/
	Chemical Oxygen Demand (COD)	/	PASS	/
	Dissolved Oxygen (DO)	/	See Result	/
	Oil & Grease	/	PASS	/
	Total Phenols / Phenol Index	/	PASS	/

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	Total Chlorine	/	See Result	/
	Total Dissolved Solids (TDS)	/	See Result	/
	Total Nitrogen	/	PASS	/
	Total Phosphorus	/	PASS	/
	Total Suspended Solids (TSS)	/	PASS	/
	Chloride	/	See Result	/
	Cyanide, total	/	PASS	/
	Sulfate	/	See Result	/
	Sulfide	/	PASS	/
	Sulfite	/	PASS	/
4A	Sludge Disposal Pathways Parameters:			
	Total Metals	/	/	PASS
	Cyanide	/	/	PASS
	pH Value	/	/	See Result
	% Solids (Dry mass)	/	/	See Result
	Paint Filter Test	/	/	See Result
	Fecal Coliform ♦	/	/	See Result
	Alkyphenol (AP) & Alkyphenol ethoxylates (APEOs)	/	/	PASS
	Polycyclic Aromatic Hydrocarbons (PAHs)	/	/	PASS
	Chloro-Toluenes	/	/	PASS

Remark:

1. The results relate only to the samples tested.
2. "ND"=Not Detected, "NA"=Not Applicable,
3. ** = test result(s) will be added later
4. ♦ Marked test was subcontracted to an ISO 17025 accredited laboratory.

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1A-1T) Wastewater Parameters:

(1A) Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs):

Standard Method for Analysis/Testing: 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

Detection Limit: 5 ug/L

Substance name	CAS No.	Reporting limit, µg/L	Result, µg/L (001)
Nonylphenol ethoxylates (NPEO)	9016-45-9, 26027-38-3 37205-87-1, 68412-54-4 127087-87-0	5	ND
Nonylphenol (NP), mixed isomers	104-40-5, 11066-49-2 25154-52-3, 84852-15-3	5	ND
Octylphenol ethoxylates (OPEO)	9002-93-1, 9036-19-5 68987-90-6	5	ND
Octylphenol (OP), mixed isomers	140-66-9, 1806-26-4 27193-28-8	5	ND
Conclusion			PASS
“<” means “less than”; “ND” means “Not detected”; “µg/L” means “microgram per litre”;			

(1B) Anti- Microbials & Biocides:

Standard Method for Analysis/Testing: USEPA 8270E Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC-MS BS EN 12673-1999 an alternative method of solvent extraction and derivatization are included, USEPA 8270E Solvent extraction, followed by GC-MS ISO 14154:2005 An alternate method, without derivatization and determination by LCMS/LCMSMS

Substance name	CAS No.	Detection limit, µg/L	Reporting limit, µg/L	Result, µg/L (001)
o-Phenylphenol (+salts)	90-43-7	100	100	ND
Triclosan	3380-34-5	100	100	ND
Permethrin	Multiple	500	500	ND
Conclusion				PASS
“<” means “less than”; “ND” means “Not detected”; “µg/L” means “microgram per litre”;				

(1C) Chlorinated Paraffins:

Standard Method for Analysis/Testing: Preparation: EPA 3510 Analysis: ISO18219-2:2021 Method for MCCP/SCCP with GC-MS(NCI) or LC-MS/MS

Detection Limit: 5 ug/L

Substance name	CAS No.	Reporting limit, µg/L	Result, µg/L (001)
Medium-chain Chlorinated paraffins (MCCPs) (C14-C17)	85535-85-9	5	ND
Short-chain Chlorinated paraffin (C10 – C13)	85535-84-8	5	ND
Conclusion			PASS
“<” means “less than”; “ND” means “Not detected”; “µg/L” means “microgram per litre”;			

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(1D) Chlorobenzenes and Chlorotoluenes:

Standard Method for Analysis/Testing: USEPA 8260D, 8270E, Purge and Trap, Head Space Dichloromethane extraction followed by GC-MS

Detection Limit: 0.2 ug/L

Substance name	CAS No.	Reporting limit, µg/L	Result, µg/L (001)
1,2-dichlorobenzene	95-50-1	0.2	ND
Other isomers of mono-, di-, tri-, tetra-, penta- and hexa- Chlorobenzene and mono-, di-, tri-, tetra- and penta- chlorotoluene	Multiple	0.2	ND
Conclusion			PASS
“<” means “less than”; “ND” means “Not detected”; “µg/L” means “microgram per litre”;			

(1E) Chlorophenols:

Standard Method for Analysis/Testing: 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

Detection Limit: 0.5 ug/L

Substance name	CAS No.	Reporting limit, µg/L	Result, µg/L (001)
Pentachlorophenols (PCP)	87-86-5	0.5	ND
2,3,4,5-Tetrachlorophenol	4901-51-3	0.5	ND
2,3,4,6-Tetrachlorophenol	58-90-2	0.5	ND
2,3,5,6-tetrachlorophenol	935-95-5	0.5	ND
2,4,6-trichlorophenol	88-06-2	0.5	ND
2,3,4-trichlorophenol	15950-66-0	0.5	ND
2,3,5-trichlorophenol	933-78-8	0.5	ND
2,3,6-trichlorophenol	933-75-5	0.5	ND
2,4,5-trichlorophenol	95-95-4	0.5	ND
3,4,5-trichlorophenol	609-19-8	0.5	ND
2,3-dichlorophenol	576-24-9	0.5	ND
2,4-dichlorophenol	120-83-2	0.5	ND
2,5-dichlorophenol	583-78-8	0.5	ND
2,6-dichlorophenol	87-65-0	0.5	ND
3,4-dichlorophenol	95-77-2	0.5	ND
3,5-dichlorophenol	591-35-5	0.5	ND
2-Chlorophenol	95-57-8	0.5	ND
3-Chlorophenol	108-43-0	0.5	ND
4-Chlorophenol	106-48-9	0.5	ND
Conclusion			PASS
“<” means “less than”; “ND” means “Not detected”; “µg/L” means “microgram per litre”;			

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- (1F) **N,N-di-methylformamide (DMFa):**
Standard Method for Analysis/Testing: EPA 8015, EPA 8270E
Detection Limit: 1000 ug/L

Substance name	CAS No.	Reporting limit, µg/L	Result, µg/L (001)
Dimethyl formamide; N,N-dimethylformamide (DMFa)	68-12-2	1000	ND
Conclusion			PASS
“<” means “less than” ; “ND” means “Not detected” ; “µg/L” means “microgram per litre;			

- (1G) **Dyes – Carcinogenic or Equivalent Concern:**
Standard Method for Analysis/Testing: Liquid extraction, LC-MS
Detection Limit: 500 ug/L

Substance name	CAS No.	Reporting limit, µg/L	Result, µg/L (001)
Basic violet 3 with >0.1% of Michler’s Ketone	548-62-9	500	ND
C.I. Acid Red 26	3761-53-3	500	ND
C.I. Acid Violet 49	1694-09-3	500	ND
C.I. Basic Blue 26 (with Michler’s Ketone > 0.1%)	2580-56-5	500	ND
C.I. Basic Green 4 (Malachite Green Chloride)	569-64-2	500	ND
C.I. Basic Green 4 (Malachite Green Oxalate)	2437-29-8	500	ND
C.I. Basic Green 4 (Malachite Green)	10309-95-2	500	ND
C.I. Basic Red 9	569-61-9	500	ND
C.I. Basic Violet 14	632-99-5	500	ND
C.I. Direct Black 38	1937-37-7	500	ND
C.I. Direct Blue 6	2602-46-2	500	ND
C.I. Direct Red 28	573-58-0	500	ND
C.I. Disperse Blue 1	2475-45-8	500	ND
C.I. Disperse Blue 3	2475-46-9	500	ND
Disperse Orange 11	82-28-0	500	ND
Conclusion			PASS
“<” means “less than” ; “ND” means “Not detected” ; “µg/L” means “microgram per litre;			

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(1H) **Dyes – Disperse (Allergenic):**

Standard Method for Analysis/Testing: Liquid extraction, LC-MS

Detection Limit: 50 ug/L

Substance name	CAS No.	Reporting limit, µg/L	Result, µg/L (001)
Disperse Blue 102	12222-97-8	50	ND
Disperse Blue 106	12223-01-7	50	ND
Disperse Blue 124	61951-51-7	50	ND
Disperse Blue 26	3860-63-7	50	ND
Disperse Blue 35	12222-75-2	50	ND
Disperse Blue 35	56524-77-7	50	ND
Disperse Blue 7	3179-90-6	50	ND
Disperse Brown 1	23355-64-8	50	ND
Disperse Orange 1	2581-69-3	50	ND
Disperse Orange 3	730-40-5	50	ND
Disperse Orange 37/59/76	13301-61-6	50	ND
Disperse Red 1	2872-52-8	50	ND
Disperse Red 11	2872-48-2	50	ND
Disperse Red 17	3179-89-3	50	ND
Disperse Yellow 1	119-15-3	50	ND
Disperse Yellow 3	2832-40-8	50	ND
Disperse Yellow 39	12236-29-2	50	ND
Disperse Yellow 49	54824-37-2	50	ND
Disperse Yellow 9	6373-73-5	50	ND
Conclusion			PASS
“<” means “less than” ; “ND” means “Not detected” ; “µg/L” means “microgram per litre;			

(1I) **Dyes – Navy Blue Colourant:**

Standard Method for Analysis/Testing: Liquid extraction, LC-MS

Detection Limit: 500 ug/L

Substance name	CAS No.	Reporting limit, µg/L	Result, µg/L (001)
Component 1: C39H23Cl-CrN7O12S 2Na	118685-33-9	500	ND
Component 2: C46H-30CrN10O20S2 3Na	Not Allocated	500	ND
Conclusion			PASS
“<” means “less than” ; “ND” means “Not detected” ; “µg/L” means “microgram per litre;			

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(1J) Flame retardants:

Standard Method for Analysis/Testing: USEPA 8270E, ISO 22032, USEPA 527 and USEPA 8321B Dichloromethane extraction GC-MS or LC-MS(-MS), determined as total boron via ICP

Substance name	CAS No.	Detection limit, µg/L	Reporting limit, µg/L	Result, µg/L (001)
2,2-bis(bromomethyl)- 1,3-propanediol (BBMP)	3296-90-0	25	25	ND
Bis(2,3-dibromopropyl) phosphate (BIS)	5412-25-9	25	25	ND
Decabromodiphenyl ether (DecaBDE)	1163-19-5	25	25	ND
Hexabromocyclodecane (HBCDD)	3194-55-6	25	25	ND
Octabromodiphenyl ether (OctaBDE)	32536-52-0	25	25	ND
Pentabromodiphenyl ether (PentaBDE)	32534-81-9	25	25	ND
Polybromobiphenyls (PBB)	59536-65-1	25	25	ND
Tetrabromobisphenol A (TBBPA)	79-94-7	25	25	ND
Tris-(2-chloro-1-methylethyl) phosphate (TCPP)	13674-84-5	25	25	ND
Tris(1-aziridinyl)phosphine oxide) (TEPA)	545-55-1	25	25	ND
Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	13674-87-8	25	25	ND
Tris(2-chloroethyl phosphate (TCEP)	115-96-8	25	25	ND
Tris(2,3,-dibromopropyl)- phosphate (TRIS)	126-72-7	25	25	ND
Decabromobiphenyl (DecaBB)	13654-09-6	25	25	ND
Dibromobiphenyls (DiBB)	Multiple	25	25	ND
Octabromobiphenyls (OctaBB)		25	25	ND
Dibromopropylether	21850-44-2	25	25	ND
Heptabromodiphenyl ether (HeptaBDE)	68928-80-3	25	25	ND
Hexabromodiphenyl ether (HexaBDE)	36483-60-0	25	25	ND
Monobromobiphenyls (MonoBB)	Multiple	25	25	ND
Monobromodiphenylethers (MonoBDEs)		25	25	ND
Nonabromobiphenyls (NonaBB)		25	25	ND
Nonabromodiphenyl ether (NonaBDE)	63936-56-1	25	25	ND

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Tetrabromodiphenyl ether (TetraBDE)	40088-47-9	25	25	ND
Tribromodiphenylethers (TriBDEs)	Multiple	25	25	ND
Boric acid	10043-35-3 11113-50-1	100	100	ND
Diboron trioxide	1303-86-2	100	100	ND
Disodium octaborate	12008-41-2	100	100	ND
Disodium tetraborate anhydrous	1303-96-4 1330-43-4	100	100	ND
Tetraboron disodium heptaoxide, hydrate	12267-73-1	100	100	ND
Conclusion				PASS
“<” means “less than”; “ND” means “Not detected”; “µg/L” means “microgram per litre”;				

(1K) Glycols / Glycol Ethers:Standard Method for Analysis/Testing: USEPA 8270E Liquid extraction, LC-MS GC-MS
Detection Limit: 50 µg/L

Substance name	CAS No.	Reporting limit, µg/L	Result, µg/L (001)
2-ethoxyethanol	110-80-5	50	ND
2-ethoxyethyl acetate	111-15-9	50	ND
2-methoxyethanol	109-86-4	50	ND
2-methoxyethylacetate	110-49-6	50	ND
2-methoxypropylacetate	70657-70-4	50	ND
Bis(2-methoxyethyl)-ether	111-96-6	50	ND
Ethylene glycol dimethyl ether	110-71-4	50	ND
Triethylene glycol dimethyl ether	112-49-2	50	ND
Conclusion			PASS
“<” means “less than”; “ND” means “Not detected”; “µg/L” means “microgram per litre”;			

(1L) Halogenated Solvents:Standard Method for Analysis/Testing: USEPA 8260D Headspace GC-MS or Purge and trap GC-MS
Detection Limit: 1 µg/L

Substance name	CAS No.	Reporting limit, µg/L	Result, µg/L (001)
1,2-dichloroethane	107-06-2	1	ND
Methylene chloride	75-09-2	1	ND
Tetrachloroethylene	127-18-4	1	ND
Trichloroethylene	79-01-6	1	ND
Conclusion			PASS
“<” means “less than”; “ND” means “Not detected”; “µg/L” means “microgram per litre”;			

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(1M) Organotin Compounds:Standard Method for Analysis/Testing: ISO 17353 Derivatisation with NaB (C₂H₅)₄ GC-MS/ ISO 17353

Detection Limit: 0.01 ug/L

Substance name	CAS No.	Reporting limit, µg/L	Result, µg/L (001)
Dipropyltin compounds (DPT)	Multiple	0.01	ND
Mono-, di- and tri-butyltin derivatives		0.01	ND
Mono-, di- and tri-methyltin derivatives		0.01	ND
Mono-, di- and tri-octyltin derivatives		0.01	ND
Mono-, di- and tri-phenyltin derivatives		0.01	ND
Tetrabutyltin compounds (TeBT)		0.01	ND
Tripropyltin Compounds (TPT)		0.01	ND
Tetraoctyltin compounds (TeOT)		0.01	ND
Tricyclohexyltin (TCyHT)		0.01	ND
Tetraethyltin Compounds (TeET)		0.01	ND
Conclusion			PASS
“<” means “less than” ; “ND” means “Not detected” ; “µg/L” means “microgram per litre;			

(1N) Other/Miscellaneous Chemicals:

Standard Method for Analysis/Testing: Liquid extraction, LC-MSMS, determined as total boron and total zinc via ICP

Substance name	CAS No.	Detection limit, µg/L	Reporting limit, µg/L	Result, µg/L (001)
AEEA [2-(2-aminoethylamino)ethanol]	111-41-1	500	500	ND
Bisphenol A	80-05-7	10	10	ND
Thiourea	62-56-6	50	50	ND
Quinoline	91-22-5	50	50	ND
Borate, zinc salt	12767-90-7	100	100	ND
Conclusion				PASS
“<” means “less than” ; “ND” means “Not detected” ; “µg/L” means “microgram per litre;				

(1O) Perfluorinated and Polyfluorinated Chemicals (PFCs):

Standard Method for Analysis/Testing: 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

Substance name	CAS No.	Detection limit, µg/L	Reporting limit, µg/L	Result, µg/L (001)
Perfluorooctane sulfonate (PFOS) and related substances	Multiple	0.01	0.01	ND
Perfluorooctanoic acid (PFOA) and related substances		1	1	ND
Conclusion				PASS
“<” means “less than” ; “ND” means “Not detected” ; “µg/L” means “microgram per litre;				

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(1P) Phthalates – including all other esters of ortho-phthalic acid:

Standard Method for Analysis/Testing: USEPA 8270E, ISO 18856 Dichloromethane extraction GC-MS

Detection Limit: 10 ug/L

Substance name	CAS No.	Reporting limit, µg/L	Result, µg/L (001)
1,2-benzenedicarboxylic acid, di-C6-8 branched and linear alkyl esters, C7-rich (DIHP)	71888-89-6 84777-06-0	10	ND
1,2-benzenedicarboxylic acid, di-C7-11 branched and linear alkyl esters (DHNUP)	68515-42-4 68515-50-4	10	ND
Bis(2-methoxyethyl) phthalate (DMEP)	117-82-8	10	ND
Butyl benzyl phthalate (BBP)	85-68-7	10	ND
Di-cyclohexyl phthalate (DCHP)	84-61-7	10	ND
Di-iso-decyl phthalate (DIDP)	26761-40-0	10	ND
Di-iso-octyl phthalate (DIOP)	27554-26-3	10	ND
Di-isobutyl phthalate (DIBP)	84-69-5	10	ND
Di-isononyl phthalate (DINP)	28553-12-0	10	ND
Di-n-hexyl phthalate (DnHP)	84-75-3	10	ND
Di-n-octyl phthalate (DNOP)	117-84-0	10	ND
Di-n-pentylphthalates	131-18-0	10	ND
Di-n-propyl phthalate (DPRP)	131-16-8	10	ND
Di(ethylhexyl) phthalate (DEHP)	117-81-7	10	ND
Dibutyl phthalate (DBP)	84-74-2	10	ND
Diethyl phthalate (DEP)	84-66-2	10	ND
Diisopentylphthalates	605-50-5	10	ND
Dinonyl phthalate (DNP)	84-76-4	10	ND
Conclusion			PASS
“<” means “less than”; “ND” means “Not detected”; “µg/L” means “microgram per litre”;			

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(1Q) Polycyclic Aromatic Hydrocarbons (PAHs):

Standard Method for Analysis/Testing: USEPA 8270E DIN 38407-39 Solvent extraction GC-MS

Detection Limit: 1 ug/L

Substance name	CAS No.	Reporting limit, µg/L	Result, µg/L (001)
Acenaphthene	83-32-9	1	ND
Acenaphthylene	208-96-8	1	ND
Anthracene	120-12-7	1	ND
Benzo[a]anthracene	56-55-3	1	ND
Benzo[a]pyrene (BaP)	50-32-8	1	ND
Benzo[b]fluoranthene	205-99-2	1	ND
Benzo[e]pyrene	192-97-2	1	ND
Benzo[ghi]perylene	191-24-2	1	ND
Benzo[j]fluoranthene	205-82-3	1	ND
Benzo[k]fluoranthene	207-08-9	1	ND
Chrysene	218-01-9	1	ND
Dibenz[a,h]anthracene	53-70-3	1	ND
Fluoranthene	206-44-0	1	ND
Fluorene	86-73-7	1	ND
Indeno[1,2,3-cd]pyrene	193-39-5	1	ND
Naphthalene	91-20-3	1	ND
Phenanthrene	85-01-8	1	ND
Pyrene	129-00-0	1	ND
Conclusion			PASS
“<” means “less than”; “ND” means “Not detected”; “µg/L” means “microgram per litre;			

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(1R) Restricted Aromatic Amines (Cleavable from Azo-colourants):

Standard Method for Analysis/Testing: Reduction step with sodium dithionite, solvent extraction EPA 8270

Detection Limit: 0.1 ug/L

Substance name	CAS No.	Reporting limit, µg/L	Result, µg/L (001)
2-naphthylamine	91-59-8	0.1	ND
2-Naphthylammoniumacetate	553-00-4	0.1	ND
2,4-xylidine	95-68-1	0.1	ND
2,4,5-trimethylaniline	137-17-7	0.1	ND
2,4,5-trimethylaniline hydrochloride	21436-97-5	0.1	ND
2,6-xylidine	87-62-7	0.1	ND
3,3'-dichlorobenzidine	91-94-1	0.1	ND
3,3-dimethoxybenzidine	119-90-4	0.1	ND
3,3-dimethylbenzidine	119-93-7	0.1	ND
4-aminoazobenzene	60-09-3	0.1	ND
4-aminodiphenyl	92-67-1	0.1	ND
4-chloro-o-toluidine	95-69-2	0.1	ND
4-chloro-o-toluidinium chloride	3165-93-3	0.1	ND
4-chloroaniline	106-47-8	0.1	ND
4-methoxy-m-phenylene diammonium sulphate; 2,4-diaminoanisole sulphate	39156-41-7	0.1	ND
4-methoxy-m-phenylenediamine	615-05-4	0.1	ND
4-methyl-m-phenylenediamine	95-80-7	0.1	ND
4,4-methylene-bis-(2-chloro-aniline)	101-14-4	0.1	ND
4,4-methylenedi-o-toluidine	838-88-0	0.1	ND
4,4-methylenedianiline	101-77-9	0.1	ND
4,4-oxydianiline	101-80-4	0.1	ND
4,4-thiodianiline	139-65-1	0.1	ND
5-nitro-o-toluidine	99-55-8	0.1	ND
6-methoxy-m-toluidine	120-71-8	0.1	ND
Benzidine	92-87-5	0.1	ND
o-aminoazotoluene	97-56-3	0.1	ND
o-anisidine	90-04-0	0.1	ND
o-toluidine	95-53-4	0.1	ND
Conclusion			PASS
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(1S) UV Absorbers:

Standard Method for Analysis/Testing: USEPA 8270 ISO 22032, USEPA 527 and USEPA 8321B. Dichloromethane extraction GC-MS or LC-MS(-MS)
Detection Limit: 100 ug/L

Substance name	CAS No.	Reporting limit, µg/L	Result, µg/L (001)
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenol (UV-350)	36437-37-3	100	ND
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	100	ND
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	100	ND
2,4-Di-tert-butyl-6-(5-chlorobenzotriazole-2-yl) phenol (UV-327)	3864-99-1	100	ND
Conclusion			PASS
“<” means “less than” ; “ND” means “Not detected” ; “µg/L” means “microgram per litre;			

(1T) Volatile Organic Compounds (VOC):

Standard Method for Analysis/Testing: ISO 11423-1 Headspace or Purge and trap GC-MS USEPA 8260D Add ISO 20595, EPA 8270 BS EN 12673-1999, HJ 1067 or EPA 8260D or ISO 11423-1

Detection Limit: 1 ug/L

Substance name	CAS No.	Reporting limit, µg/L	Result, µg/L (001)
Benzene	71-43-2	1	ND
m-cresol	108-39-4	1	ND
o-cresol	95-48-7	1	ND
p-cresol	106-44-5	1	ND
Xylene	1330-20-7	1	ND
Toluene	108-88-3	1	ND
Conclusion			PASS
“<” means “less than” ; “ND” means “Not detected” ; “µg/L” means “microgram per litre;			

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(2) Metals (Heavy Metals Wastewater Parameters):

Standard Method for Analysis/Testing: ISO 17294, ISO 18412, USEPA 200.8 USEPA 6010C USEPA 6020A, USEPA 218.6, EPA 200.8-SIM EPA 6020A-SIM EPA 245.1 EPA 245.7

Substance name	CAS No.	Detection limit, mg/L	Result, mg/L (002)	Limit, mg/L	Conclusion
Total Antimony (Sb)	7440-36-0	0.01	ND	Foundational 0.1 Progressive 0.05 Aspirational 0.01	PASS
Hexavalent Chromium (Cr-VI)	18540-29-9	0.001	ND	Foundational 0.05 Progressive 0.005 Aspirational 0.001	
Total Arsenic (As)	7440-38-2	0.005	ND	Foundational 0.05 Progressive 0.01 Aspirational 0.005	
Total Chromium (Cr)	7440-47-3	0.05	ND	Foundational 0.2 Progressive 0.1 Aspirational 0.05	
Total Cobalt (Co)	7440-48-4	0.01	ND	Foundational 0.05 Progressive 0.02 Aspirational 0.01	
Total Cadmium (Cd)	7440-43-9	0.01	ND	Foundational 0.1 Progressive 0.05 Aspirational 0.01	
Total Copper (Cu)	7440-50-8	0.25	ND	Foundational 1.0 Progressive 0.5 Aspirational 0.25	
Total Lead (Pb)	7439-92-1	0.01	ND	Foundational 0.1 Progressive 0.05 Aspirational 0.01	
Total Nickel (Ni)	7440-02-0	0.05	ND	Foundational 0.2 Progressive 0.1 Aspirational 0.05	
Total Silver (Ag)	7440-22-4	0.005	ND	Foundational 0.1 Progressive 0.05 Aspirational 0.005	
Total Zinc (Zn)	7440-66-6	0.5	ND	Foundational 5.0 Progressive 1.0 Aspirational 0.5	
Total Mercury (Hg)	7439-97-6	0.001	ND	Foundational 0.01 Progressive 0.005 Aspirational 0.001	
Total Barium (Ba)	7440-39-3	0.5	ND	/	
Total Selenium (Se)	7782-49-2	0.5	ND	/	
Total Tin (Sn)	7440-31-5	0.5	ND	/	

"<" means "less than" ; "mg/L" means "milligram per litre; .

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(3) Conventional Parameters and Anions:

pH Value:

Standard Method for Analysis/Testing: ISO 10523, USEPA 150.1, SM 4500-H+

Sample ID	Result	Limit	Conclusion
002	7.0	6 - 9	PASS

Temperature difference:

Standard Method for Analysis/Testing: DIN 38 404-4, USEPA 170.1, SM 2550

Sample ID	Detection limit(°C)	Result (°C)		Limit, °C	Conclusion
002	0.1°C	Temperature difference (°C)	2.9	Foundational Δ+15 Progressive Δ+10 Aspirational Δ+5	PASS
		Temperature-Discharge Pipe (°C)	31.6		
		Temperature-Receiving Water (°C)	28.7		
“<” means “less than” ; “°C” Means “Degree Celsius”					

E.coli:

Standard Method for Analysis/Testing: SM 9222D presumptive, confirm positive with SM9222G

Sample ID	Detection limit, MPN/100 ml	Result, MPN/100 ml	Limit, MPN/100 ml	Conclusion
002	10	<10	126 MPN/100 ml	PASS
“<” means “less than” ; “MPN” means “Most Probable Number”				

Colour (436nm, 525nm, 620nm):

Standard Method for Analysis/Testing: ISO 7887-B

Sample ID	Detection limit (m-1)		Result (m-1)	Limit, (m-1)			Conclusion
				Foundation	Progressive	Aspirational	
002	436 nm	0.01	2.75	7	5	2	PASS
	525 nm	0.01	2.90	5	3	1	
	620 nm	0.01	2.12	3	2	1	
“<” means “less than” ;							

Persistent Foam:

Standard Method for Analysis/Testing: Visual Analysis

Sample ID	Result	Limit	Conclusion
002	Absent	Absent	PASS

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Wastewater Flowrate:

In-House with Reference to ZDHC Guideline

Sample ID	Result, m3 per day	Minimum Limit, m3 per day	Conclusion
002	2520	15	DATA
"<" means "less than";			

Ammonium-Nitrogen:

Standard Method for Analysis/Testing: ISO 11732 ISO 7150, USEPA 350.1, USEPA 350.3, SM 4500 NH3 - D, E, F, G, or H

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	0.5	<0.5	Foundational 10 Progressive 1 Aspirational 0.5	PASS
"<" means "less than"; "mg/L" means "milligram per litre";				

Absorbable Organic Halogens (AOX):

Standard Method for Analysis/Testing: ISO 9562, HACH LCK 390

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	0.1	0.13	Foundational 3.0 Progressive 0.5 Aspirational 0.1	PASS
"<" means "less than"; "mg/L" means "milligram per litre";				

Biological Oxygen Demand (BOD) (5-day):

Standard Method for Analysis/Testing: ISO 5815-1, USEPA 405.1, SM 5210-B

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	2	12	Foundational 30 Progressive 15 Aspirational 8	PASS
"<" means "less than"; "mg/L" means "milligram per litre";				

Chemical Oxygen Demand (COD):

Standard Method for Analysis/Testing: ISO 6060e ISO 15705, USEPA 410.4, SM 5220-D

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	5	33	Foundational 150 Progressive 80 Aspirational 40	PASS
"<" means "less than"; "mg/L" means "milligram per litre";				

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Dissolved Oxygen (DO):

Standard Method for Analysis/Testing: ISO 5814, EPA 360.1, SM 4500-O-G

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	1	7.35	/	DATA
"<" means "less than" ; "mg/L" means "milligram per litre"				

Oil & Grease:

Standard Method for Analysis/Testing: ISO 9377-2, SM 5520-B/C, USEPA 1664 revision B

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	0.5	<0.5	Foundational 10.0 Progressive 2.0 Aspirational 0.5	PASS
"<" means "less than" ; "mg/L" means "milligram per litre;"				

Total Phenols / Phenol Index:

Standard Method for Analysis/Testing: ISO 6439, SM 5530-B/C

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	0.001	<0.001	Foundational 0.5 Progressive 0.01 Aspirational 0.001	PASS
"<" means "less than" ; "mg/L" means "milligram per litre;"				

Total Chlorine:

Standard Method for Analysis/Testing: DPD Colorimetric Method with reference ISO 7393-2/EPA 330.5/SM4500-CI G

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	0.1	<0.1	/	DATA
"<" means "less than" ; "mg/L" means "milligram per litre;"				

Total Dissolved Solids (TDS):

Standard Method for Analysis/Testing: SM 2540-C, USEPA 160.1

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	5	677	/	DATA
"<" means "less than" ; "mg/L" means "milligram per litre;"				

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Total Nitrogen:

Standard Method for Analysis/Testing: ISO 11905 - Part 1 ISO 29441, USEPA 351.2 ,SM 4500P-J SM 4500N-B SM 4500N-C

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	5	<5	Foundational 20 Progressive 10 Aspirational 5	PASS

"<" means "less than" ; "mg/L" means "milligram per litre";

Total Phosphorus:

Standard Method for Analysis/Testing: ISO 17294 ISO 11885 ISO 6878, USEPA 365.4 SM 4500P-J USEPA 200.7 USEPA 200.8 USEPA 6010C USEPA 6020A

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	0.1	<0.1	Foundational 3.0 Progressive 0.5 Aspirational 0.1	PASS

"<" means "less than" ; "mg/L" means "milligram per litre";

Total Suspended Solids (TSS):

Standard Method for Analysis/Testing: ISO 11923, USEPA 160.2, SM 2540D

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	5	16	Foundational 50 Progressive 15 Aspirational 5	PASS

"<" means "less than" ; "mg/L" means "milligram per litre";

Chloride:

Standard Method for Analysis/Testing: ISO 10304-1 ISO 15923-1, SM 4110-B SM 4110-C SM 4500-CI D or E USEPA 300

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	10	<10	/	DATA

"<" means "less than" ; "mg/L" means "milligram per litre";

Cyanide, total:

Standard Method for Analysis/Testing: ISO 6703-1,-2,-3, ISO 14403-1,-2, USEPA 335.2, APHA 4500-CN

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	0.05	<0.05	Foundational 0.2 Progressive 0.1 Aspirational 0.05	PASS

"<" means "less than" ; "mg/L" means "milligram per litre";

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Sulfate:

Standard Method for Analysis/Testing: ISO 10304-1 ISO 15923-1, SM 4500 SO₄, E, F, G SM 4100 B, C USEPA 300 USEPA 9038

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	10	<10	/	DATA

"<" means "less than" ; "mg/L" means "milligram per litre;

Sulfide:

Standard Method for Analysis/Testing: ISO 10530, SM 4500-S₂-D, E,G, or I

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	0.01	<0.01	Foundational 0.5 Progressive 0.05 Aspirational 0.01	PASS

"<" means "less than" ; "mg/L" means "milligram per litre;

Sulfite:

Standard Method for Analysis/Testing: ISO 10304-3, SM 4500-SO₃2-C

Sample ID	Detection limit, mg/L	Result, mg/L	Limit, mg/L	Conclusion
002	0.2	1.1	Foundational 2.0 Progressive 0.5 Aspirational 0.2	PASS

"<" means "less than" ; "mg/L" means "milligram per litre;

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(4A) Sludge Disposal Pathways Parameters:

Total Metals:

Standard Method for Analysis/Testing: Preparation: Acid digestion followed by ICP analysis with reference to US EPA 3050, US EPA 6010 D, US EPA 6020 B, US EPA 3060a, US EPA 7196, US EPA 7471 b, US EPA 3051a, US EPA 6020b, USEPA 200.7, USEPA 200.8, USEPA 218.6 USEPA 6010c, USEPA 6020a,Acid Digestion with ICP analysis or For Cr VI, with reference to Colorimetric UV/VIS (EPA 7196) followed by UV analysis.

Substance name	CAS No.	Detection limit, mg/kg	Result, mg/kg (003)	Reporting limit, mg/kg	Conclusion
Total Antimony (Sb)	7440-36-0	2	ND	5	PASS
Total Arsenic (As)	7440-38-2	2	ND	5	
Total Barium (Ba)	7440-39-3	10	ND	200	
Total Cadmium (Cd)	7440-43-9	0.5	ND	1	
Total Cobalt (Co)	7440-48-4	10	ND	400	
Total Copper (Cu)	7440-50-8	10	11	50	
Total Lead (Pb)	7439-92-1	2	ND	5	
Total Nickel (Ni)	7440-02-0	5	ND	20	
Total Selenium (Se)	7782-49-2	2	ND	5	
Total Silver (Ag)	7440-22-4	10	ND	50	
Total Chromium (Cr)	7440-47-3	2	ND	50	
Total Zinc (Zn)	7440-66-6	10	10	400	
# Hexavalent Chromium (Cr-VI)	18540-29-9	2	ND	20	
Total Mercury (Hg)	7439-97-6	0.5	ND	1	

“<” means “less than” ; “ND” means “Not detected” ; “mg/kg” means “milligram per kilogram”
Hexavalent Chromium (Cr-VI) is reported as Total Chromium Content. Hexavalent Chromium (Cr-VI) value will not exceed Total Chromium Content.

Cyanide:

Standard Method for Analysis/Testing: Preparation: CN converted to HCN by reflux-distillation to NaOH Analysis: Colourimetry (EPA 9014), or ISE (EPA 9213), Preparation: USEPA 9013 Analysis: HJ745, EPA 9014 or EPA 9213

Sample ID	Detection limit, mg/kg	Result, mg/kg	Limit, mg/kg	Conclusion
003	1	<1	20	PASS

“<” means “less than” “mg/kg” means “milligram per kilogram”

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pH Value:

Standard Method for Analysis/Testing: Preparation & Analysis: Suspension with Water & ISE/ EPA SW 9045D or HJ962

Sample ID	Result	Limit	Conclusion
003	7.7	/	DATA

% Solids (Dry Mass):

Standard Method for Analysis/Testing: Dry at 105°C/ EPA 160.3, HJ613 at 105°C

Sample ID	Result (%)	Limit, (%)	Conclusion
003	9.75	/	DATA

Paint Filter Test:

Standard Method for Analysis/Testing: EPA SW-846 or EPA 9095B

Sample ID	Result	Limit	Conclusion
003	Absent	/	DATA

Fecal Coliform

Standard Method for Analysis/Testing: Blended suspension, Multiple Tube Fermentation/ EPA 1681

Sample ID	Result (MPN/g)	Limit (MPN/g)	Conclusion
003	0	/	DATA

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Alkyphenol (AP) & Alkyphenol ethoxylates (APEOs)

Standard Method for Analysis/Testing: Modified dichloromethane extraction with mechanical agitation, soxhlet, or ultrasonic, NP/OP, GC-MS, LC-MS, OPEO/NPEO (n>2): GC-MS; LC-MS, OPEO/NPEO (n=1,2), GC-MS, LC-MS/ NP/ OP ISO 18857-2; ASTM D7065 OPEO/NPEO n>2 ISO 18254-1 OPEO/NPEO n=1,2 ISO 18857-2; ASTM D7065

Detection Limit: 0.4 mg/kg

Substance name	CAS No.	Reporting limit, mg/kg	Result, mg/kg (003)
Nonylphenol ethoxylates (NPEO)	9016-45-9, 26027-38-3 37205-87-1, 68412-54-4 127087-87-0	0.4	ND
Nonylphenol (NP), mixed isomers	104-40-5, 11066-49-2 25154-52-3, 84852-15-3	0.4	ND
Octylphenol ethoxylates (OPEO)	9002-93-1, 9036-19-5 68987-90-6	0.4	ND
Octylphenol (OP), mixed isomers	140-66-9, 1806-26-4 27193-28-8	0.4	ND
Conclusion			PASS
“<” means “less than”; “ND” means “Not detected”; “mg/kg” means “milligram per kilogram”			

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Polycyclic Aromatic Hydrocarbons (PAHs)

Standard Method for Analysis/Testing: Preparation: Dichloromethane extraction with mechanical agitation, soxhlet, or ultrasonic ,Clean up: GPC, Analysis: GC-MS/ Preparation: USEPA 3540/3541, soxhlet USEPA 3550, ultrasonic Clean up: USEPA 3650, Analysis: USEPA 827

Detection Limit: 0.2 mg/kg

Substance name	CAS No.	Reporting limit, mg/kg	Result, mg/kg (003)
Benzo[a]pyrene (BaP)	50-32-8	0.2	ND
Anthracene	120-12-7	0.2	ND
Pyrene	129-00-0	0.2	ND
Benzo[ghi]perylene	191-24-2	0.2	ND
Benzo[e]pyrene	192-97-2	0.2	ND
Indeno[1,2,3-cd]pyrene	193-39-5	0.2	ND
Benzo[j]fluoranthene	205-82-3	0.2	ND
Benzo[b]fluoranthene	205-99-2	0.2	ND
Fluoranthene	206-44-0	0.2	ND
Benzo[k]fluoranthene	207-08-9	0.2	ND
Acenaphthylene	208-96-8	0.2	ND
Chrysene	218-01-9	0.2	ND
Dibenz[a,h]anthracene	53-70-3	0.2	ND
Benzo[a]anthracene	56-55-3	0.2	ND
Acenaphthene	83-32-9	0.2	ND
Phenanthrene	85-01-8	0.2	ND
Fluorene	86-73-7	0.2	ND
Naphthalene	91-20-3	0.2	ND
Conclusion			PASS
“<” means “less than” ; “ND” means “Not detected” ; “mg/kg” means “milligram per kilogram”			

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Chloro-Toluenes

Standard Method for Analysis/Testing: Preparation: Dichloromethane extraction with mechanical agitation, soxhlet, or ultrasonic ,Clean up: GPC, Analysis: GC-MS/ Preparation: USEPA 3540/3541, soxhlet USEPA 3550, ultrasonic Clean up: USEPA 3650, Analysis: USEPA 827

Detection Limit: 0.2 mg/kg

Substance name	CAS No.	Reporting limit, mg/kg	Result, mg/kg (003)
Monochlorobenzene	108-90-7	0.2	ND
1,2-Dichlorobenzene	95-50-1	0.2	ND
1,3-Dichlorobenzene	541-73-1	0.2	ND
1,4-Dichlorobenzene	106-46-7	0.2	ND
1,2,3-Trichlorobenzene	87-61-6	0.2	ND
1,2,4-Trichlorobenzene	120-82-1	0.2	ND
1,3,5-Trichlorobenzene	108-70-3	0.2	ND
1,2,3,4-Tetrachlorobenzene	634-66-2	0.2	ND
1,2,3,5-Tetrachlorobenzene	634-90-2	0.2	ND
1,2,4,5-Tetrachlorobenzene	95-94-3	0.2	ND
Pentachlorobenzene	608-93-5	0.2	ND
Hexachlorobenzene	118-74-1	0.2	ND
2-chlorotoluene	95-49-8	0.2	ND
3-chlorotoluene	108-41-8	0.2	ND
4-chlorotoluene	106-43-4	0.2	ND
2,3-dichlorotoluene	32768-54-0	0.2	ND
2,4-dichlorotoluene	95-73-8	0.2	ND
2,5-dichlorotoluene	19398-61-9	0.2	ND
2,6-dichlorotoluene	118-69-4	0.2	ND
3,4-dichlorotoluene	95-75-0	0.2	ND
3,5-dichlorotoluene	25186-47-4	0.2	ND
2,3,4-dichlorotoluene	7359-72-0	0.2	ND
2,3,6-trichlorotoluene	2077-46-5	0.2	ND
2,4,5-trichlorotoluene	6639-30-1	0.2	ND
2,4,6-trichlorotoluene	23749-65-7	0.2	ND
3,4,5-trichlorotoluene	21472-86-6	0.2	ND
2,3,4,5- tetra chlorotoluene	76057-12-0	0.2	ND
2,3,5,6- tetra chlorotoluene	29733-70-8	0.2	ND
2,3,4,6- tetra chlorotoluene	875-40-1	0.2	ND
Pentachlorotoluene	877-11-2	0.2	ND
Conclusion			PASS
“<” means “less than” ; “ND” means “Not detected” ; “mg/kg” means “milligram per kilogram”			

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TEST REPORT NO: 1001893759

Apr.12,2023

UL ORDER NO: 14750556

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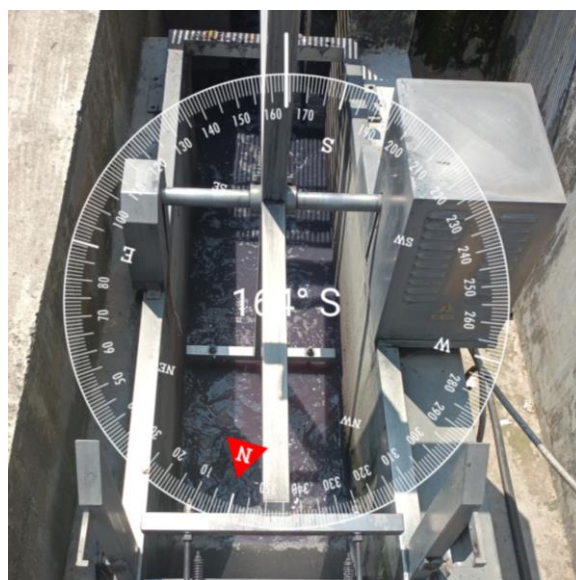
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Untreated Wastewater



Sample Photo(s):

Untreated Wastewater



GPS for this point (if available); Latitude: 23.970493333333334°, Longitude: 90.29880333333334°

Sampling Point Photo(s):

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Effluent/Treated Wastewater



Sample Photo(s):

Effluent/Treated Wastewater



GPS for this point (if available); Latitude: 23.970425°, Longitude: 90.298345°

Sampling Point Photo(s):

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Sludge



Sample Photo(s):

Sludge



GPS for this point (if available); Latitude: 23.970383333333334°, Longitude: 90.29845833333333°

Sampling Point Photo(s):

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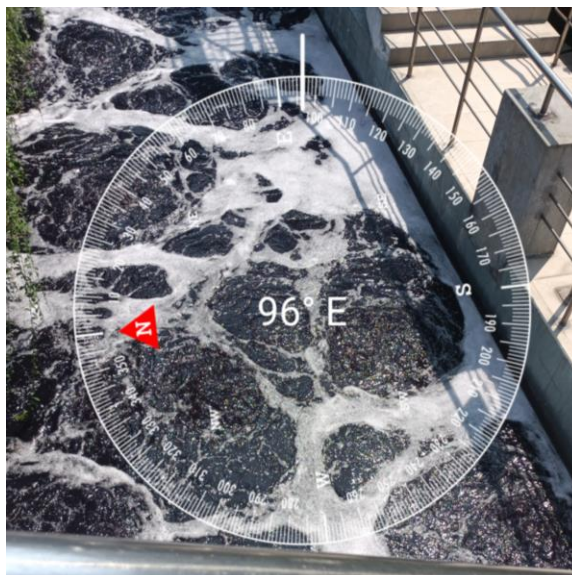
TEST REPORT NO: 1001893759

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Foam Picture at 10.46am, 02 Apr. 2023

GPS for this point (if available); Latitude: 23.97056°, Longitude: 90.29836166666668°



Field Testing Instruments

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ETP-02 1001893759

UL Wastewater Test Request Form

Contact Information: Tel: +88-01730087200, +88-011 30047261, Email: ulcustomerservice@ul.com
Office Address: The Pearl Trade Center | 5th, 14th & 15th Floor | Cha-90/3, Progoti Sharani, North Badda, Dhaka-1206, Bangladesh

Required Service:			
<input checked="" type="checkbox"/> Regular Service (EFDX & ZINC)	<input type="checkbox"/> Regular Service (selective test)	<input type="checkbox"/> Log In Date:	For UL office use only
<input checked="" type="checkbox"/> 15-18 Working Days** - Regular Price	<input type="checkbox"/> 5-7 Working Days** - Regular Price	<input type="checkbox"/> Oracle Order No.:	
<input type="checkbox"/> Express Service (selective test)	<input type="checkbox"/> Emergency Service (selective test)	<input type="checkbox"/> Report No.:	
<input type="checkbox"/> 2 Working Days** - 40% Surcharge	<input type="checkbox"/> 2 Days** - 10% Surcharge	<input type="checkbox"/> Report Due Date:	14750556

Applicant & Report Sending Information		Email address to send Electronic Reports:	
Submitter's Name: M. Amin	Company Name: MMR Composite Testing Ltd. Ltd.	Email 1: chemtest@mmr.com.bd	Email 2: gis-amin@mmr.com
Address: Bangladesh, Kanchanjour, Casuar	Mobile Phone: 8788411075	Email 3: Fatima.khan@ul.com.bd	Email 4:

Sampling Location	Sample Description	Reference	Shipping Information
<input checked="" type="checkbox"/> Cooling Water		<input checked="" type="checkbox"/> Self-Reference	<input type="checkbox"/> Bill to person Name
<input checked="" type="checkbox"/> Wastewater			<input type="checkbox"/> Name: M. Amin
<input type="checkbox"/> Sewer			<input type="checkbox"/> M. Amin & Partners
<input type="checkbox"/> Discharge Water			

General Chemistry			
<input type="checkbox"/> Temperature	<input type="checkbox"/> Total Suspended Solids (TSS)	<input type="checkbox"/> Chemical Oxygen Demand (COD)	<input type="checkbox"/> Total Chloride (ppm)
<input type="checkbox"/> pH Value	<input type="checkbox"/> Biological Oxygen Demand (BOD)	<input type="checkbox"/> Total Nitrogen (ppm)	<input type="checkbox"/> Total Phosphate (ppm)
<input type="checkbox"/> Total Dissolved Solids (TDS)	<input type="checkbox"/> Dissolved Oxygen (DO)	<input type="checkbox"/> Total Hardness (ppm)	<input type="checkbox"/> Chloride Conductivity (ppm)

CIBR Standard Parameter			
<input type="checkbox"/> Temperature	<input type="checkbox"/> Acidity	<input type="checkbox"/> Chloride	<input type="checkbox"/> Lead
<input type="checkbox"/> pH Value	<input type="checkbox"/> Ammonia	<input type="checkbox"/> Chlorine	<input type="checkbox"/> Manganese
<input type="checkbox"/> Total Suspended Solids (TSS)	<input type="checkbox"/> Calcium	<input type="checkbox"/> Chromium	<input type="checkbox"/> Nickel
<input type="checkbox"/> Biological Oxygen Demand (BOD)	<input type="checkbox"/> Cobalt	<input type="checkbox"/> Copper	<input type="checkbox"/> Tin
<input type="checkbox"/> Chemical Oxygen Demand (COD)	<input type="checkbox"/> Cadmium	<input type="checkbox"/> Cyanide	<input type="checkbox"/> Coliforms (100 sections per 100ml)
<input type="checkbox"/> Color (NOM or TSCPT)	<input type="checkbox"/> Chlorine	<input type="checkbox"/> Cyanide	
<input type="checkbox"/> Total Hardness (ppm) of Solids (ppm) as per standard			

Other Parameter			
<input type="checkbox"/> Alkalinity (API and Alkalinity Phosphate (APC))	<input type="checkbox"/> Fluoride and Chlorides	<input type="checkbox"/> Barium	<input type="checkbox"/> Boron
<input type="checkbox"/> Phosphate	<input type="checkbox"/> Chromate (hexavalent and other Cr(VI))	<input type="checkbox"/> Bismuth	<input type="checkbox"/> Bromine
<input type="checkbox"/> Heavy Metals	<input type="checkbox"/> Chromate (hexavalent and other Cr(VI))	<input type="checkbox"/> Cadmium	<input type="checkbox"/> Manganese
<input type="checkbox"/> As (As) / Arsenic	<input type="checkbox"/> Chromate (hexavalent and other Cr(VI))	<input type="checkbox"/> Cobalt	<input type="checkbox"/> Nickel
<input type="checkbox"/> Cyanide (Total)	<input type="checkbox"/> Heavy Metals	<input type="checkbox"/> Chromium	<input type="checkbox"/> Tin
<input type="checkbox"/> Perfluorinated and Polyfluorinated Compounds (PFAS)	<input type="checkbox"/> Perfluorinated and Polyfluorinated Compounds (PFAS)	<input type="checkbox"/> Cyanide	<input type="checkbox"/> Total Chloride (ppm) and Bromide (ppm)

ZINC Parameter GRS Standard Sludge** GEND-TEX			
<input type="checkbox"/> Temperature (°C)	<input type="checkbox"/> Color (at 10 (Nelson, 500, 520nm))	<input type="checkbox"/> Oil and Grease	<input type="checkbox"/> Iron
<input type="checkbox"/> pH	<input type="checkbox"/> BOD	<input type="checkbox"/> Phosphate	<input type="checkbox"/> Lead
<input type="checkbox"/> COD	<input type="checkbox"/> Ammonia	<input type="checkbox"/> Calcium	<input type="checkbox"/> Manganese
<input type="checkbox"/> TSS	<input type="checkbox"/> Chloride	<input type="checkbox"/> Chromium	<input type="checkbox"/> Nickel
<input type="checkbox"/> Soluble	<input type="checkbox"/> Cyanide	<input type="checkbox"/> Cobalt	<input type="checkbox"/> Tin
<input type="checkbox"/> Ammonia**	<input type="checkbox"/> Fluoride	<input type="checkbox"/> Copper	<input type="checkbox"/> Total Chloride (ppm)
<input type="checkbox"/> Chemicals (API)	<input type="checkbox"/> Chlorine	<input type="checkbox"/> Cyanide	<input type="checkbox"/> Total Phosphate (ppm)
<input type="checkbox"/> Chemicals (API and Alkalinity Phosphate (APC))	<input type="checkbox"/> Chlorine	<input type="checkbox"/> Chromium	<input type="checkbox"/> Total Hardness (ppm)
<input type="checkbox"/> Phosphate	<input type="checkbox"/> Chlorine	<input type="checkbox"/> Cobalt	<input type="checkbox"/> Total Nitrogen (ppm)
<input type="checkbox"/> Heavy Metals	<input type="checkbox"/> Chlorine	<input type="checkbox"/> Chromium	<input type="checkbox"/> Total Phosphate (ppm)
<input type="checkbox"/> As (As) / Arsenic	<input type="checkbox"/> Chlorine	<input type="checkbox"/> Cobalt	<input type="checkbox"/> Total Phosphate (ppm)
<input type="checkbox"/> Cyanide (Total)	<input type="checkbox"/> Chlorine	<input type="checkbox"/> Chromium	<input type="checkbox"/> Total Phosphate (ppm)
<input type="checkbox"/> Perfluorinated and Polyfluorinated Compounds (PFAS)	<input type="checkbox"/> Chlorine	<input type="checkbox"/> Cobalt	<input type="checkbox"/> Total Phosphate (ppm)

Grade 3 Water			
<input type="checkbox"/> pH at 20°C	<input type="checkbox"/> Residual Free Chlorine at 10°C	<input type="checkbox"/> Total Hardness	<input type="checkbox"/> Total Chloride
<input type="checkbox"/> Electrical Conductivity (EC)			

Other Tests			
<input type="checkbox"/> Oil	<input type="checkbox"/> H2S	<input type="checkbox"/> Chloride	<input type="checkbox"/> Total Chloride
<input type="checkbox"/> Sludge**	<input type="checkbox"/> H2O2	<input type="checkbox"/> Chloride	<input type="checkbox"/> Total Chloride

Additional Instruction:			
<input type="checkbox"/> Testing & Control Labels as per ISO 17025, 9001 & 14001	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> AS Label	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Name and position of factory representative: **Md. Af. Amin**
 Dy. Manager (E.P.)

Signature: _____

WASTEWATER TEST APPLICATION FORM (10/2017) (1/1)

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ETP-02
UL VS Bangladesh Ltd.
ONSITE ZERO DISCHARGE SAMPLING DATA SHEET

Primary Data
Laboratory Sample Number
Client Name
Plant Contact Person
Facility Name and Address
Name & ID No. of sampler
Date of Collection
Sampling Location
Sampling Identification
Sampling Time
Discharge Mode
Factory Type
Field Data for Wastewater
Field Parameters
Recording Time
Temperature Difference [°C]
Temperature-Challenge Time [°C]
Temperature-Retention Time [°C]
Dissolved Oxygen (DO)
Total Chlorine
Flow Rate (m³/hr)
Flow Rate (m³/day)
Retention Time (min)
Retention Time of the equalization tank, hours
Color
Number of sample Containers
Volume Collected, L
Total Volume Collected, L

Table with 4 columns: Test Name (Conventional Parameters & More), Required Test (X), Required Service Volume (L), Sample Container Pre-treatment Process & Preservation. Rows include: Biochemical Oxygen Demand (BOD), Chloride, Color, Conductivity, TDS, TSS, Sulfate, AP and AP/OC, including all streams, Anti-Microbials & Biocides, Endotoxin Positive, Chloroform and Chloroformates, Chloroform, Dimethyl Formamide (DMF), Dyes - Carboxylic or Equivalent Groups, Dyes - Disperse (Disperse), Dyes - Basic Blue Coloured, Flame Retardants, Glycols / Glycol Ethers, Organic Compounds, Other/Miscellaneous Chemicals, Phthalates - including all (BPA) esters of ortho-phthalic acid, Polycyclic Aromatic Hydrocarbons (PAHs), Restricted Analytical Substances (Detectable from Azo-Substances), UV Absorbance, Perfluorinated and Polyfluorinated Chemicals (PFCA), Halogenated Solvents, Volatile Organic Compounds (VOC), Heavy Metals (all metals except Cr-VI), Cr(VI), Cyanide, Chemical Oxygen Demand (COD), Phenols, Total Nitrogen, Oil & Grease, Dissolved Nitrogen, Total Phosphorus, Halobenzene especially lower halogen(AHX), Solvents, Sulfoxides, Sulfides, F-101.

Remarks:
* The minimum sampling time for BOD guideline is 5-hours with no more than 1 hour between duplicate samples.
* If the retention time of the equalization tank is 10 hours/ more than selected & effluent sampler can be used once and that sample is considered a composite.
Recorded by:
Signature:
Factory Representative Signature:
Date: 2-Apr-23
Date: 3-Apr-23

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ETP-02

UL VS Bangladesh Ltd.

ONSITE ZERO DISCHARGE SAMPLING DATA SHEET

Primary Data

Laboratory Sample Number	000 Composite (industrial effluent)
Client Name	000 Composite (industrial effluent)
Field Contact Person	Mr. A. Khan / 01700011100
Facility Name and Address	000 Composite (industrial effluent), Tangayon, Kachibour, Gopur
Name & ZINC ID of Sampler	Mr. Shaheer Khan / 017000017011 on behalf of UL VS Bangladesh Ltd
Date of Collection	3 Apr 23
Sampling Location	Discharge water after Treatment/Wastewater at discharge point
Sampling Identification	ZDFC Wastewater and Sludge Laboratory Sampling and Analysis Plan (ZDFC) Version 2.1
Sample Type	Composite Sampling
Discharge Media	Direct discharge to environment - Local Canal
Industry Type	Dyeing/Printing/Finishing/Textile/Other (Please specify)

Field Data for Wastewater

Field with afloat treatment plant (if Yes, N)	YES
Sample Matrix (if Yes, N)	Wastewater After Treatment - Wastewater at discharge point
Field Parameters	1, 2, 3, 4, 5, 6
Sampling Time	10:15 am
Temperature (°C)	27.0
Temperature-Discharge Pipe (°C)	27.6
Temperature-Receiving Water (°C)	28.2
Dissolved Oxygen (DO)	2.05
Total Chlorine	0.02
Flow Rate (liters/minute)	10.5
Flow Rate (liters/day)	179
Retention time of the equalization tank, hours	2.5
Retention Time (Volume/Flow Rate) (Please specify)	179
Number of sample Containers	3 (0.5L) 3 (1.0L) 3 (0.25L) 1 (0.5L)
Volume Collected (L)	1.5 (0.5L + 0.5L + 0.5L) 3 (1.0L + 0.5L) 0.75 (0.25L + 0.25L + 0.25L) 0.5 (0.5L)
Total Volume (Liters)	18.0

Wastewater Sample Containers and Preservatives

Test Name (Conventional Parameters & MRSL)	Required Test (R)	Required Sample Volume (ml)	Sample Container Pre-treatment Process & Preservation
Biochemical Oxygen Demand (BOD5)	1	1000	1. Amber glass cleaned with Nitric acid, rinsed thoroughly with distilled water and dried before use, keep cool between 2°C to 8°C (2, N, 2 Bottle)
Chloride, Color, Conductivity, TDS, TSS, Sulfate	1	1000	
AP and APECS including all Ions	1	1000	
Amo. Nitrite & Nitrate	1	1000	
Chromate	1	1000	
Chlorides and Chloramines	1	1000	
Chlorophyll	1	1000	
Dissolved Formic acid (DFA)	1	1000	
Dyes - Carcinogenic or Equivalent Concern	1	1000	
Dyes - (Others) (Azo dyes)	1	1000	
Dyes - Heavy Metal Colours	1	1000	
Fluoride	1	1000	
Organic Compounds	1	1000	
Other Miscellaneous Chemicals	1	1000	
Phthalates - including all other isomers of ortho-phthalic acid	1	1000	
Polycyclic Aromatic Hydrocarbons (PAHs)	1	1000	
Residual Acetic Acid (Residual from Acetic Acid)	1	1000	
UV Absorbance	1	1000	
Perfluorinated and Polyfluorinated Chemicals (PFCA)	1	1000	
Halogenated Solvents	1	1000	
Volatile Organic Compounds (VOC)	1	1000	
Heavy Metals (All metals except Cr(VI))	1	1000	
Cyanide	1	1000	
Visible	1	1000	
Chemical Oxygen Demand (COD)	1	1000	
Phenols	1	1000	
Total Nitrogen	1	1000	
Oil & Grease	1	1000	
Aromatic Nitrogen	1	1000	
Total Phosphorus	1	1000	
Subtractable organically bound halogen (SOB)	1	1000	
Sulfide	1	1000	
Sulfate	1	1000	
Total	1	1000	

Remarks

The minimum sampling time for ZDFC guideline is 0 hour with no more than 1 hour between discrete samples.
 If the retention time of the equalization tank is 12 hours/ more than retention & effluent samples can be collected and that sample is considered a composite.

Recorded by: *Signature* Mr. Shaheer Khan / 017000017011 Date: 3 Apr 23

Facility Representative Signature: *Signature* Full name: *Signature* Date: 3 Apr 23

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TEST REPORT NO: 1001893759

Apr.12,2023

UL ORDER NO: 14750556

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ETP-02



UL VS Bangladesh Ltd.

ONSITE ZERO DISCHARGE SAMPLING DATA SHEET

Primary Data:

Laboratory Sample Number	
Client Name	UMS Composite Building Ltd. Ltd
Field Contact Person	MD. RAJIB / 01888111375
Facility Name and Address	UMS Composite Building Ltd. (M. Saadpur, Khatimpur, Gazipur
Name & ID# of Samples	MD. Shaheen Alam (174510617971) on behalf of UL VS Bangladesh Ltd
Date of Collection	2 Apr 23
Sampling Location	Sludge Sampling Point
Sampling Identification	ZDHC Wastewater and Sludge Laboratory Sampling and Analysis Plan (SAP) Version 3.2
Sample Type	Composite Sampling
Discharge Mode	Direct discharge to environment - Canal
Factory Type	Dyeing/Printing/Washing/Finishing/Post-treatment/Other (Please specify)

Field Data for Wastewater	Actual Time: 3:00 AM	Location: Sludge	Departure Time: 11:30 AM
Facility with effluent treatment plant (If Yes, #)	Yes		
Sample Matrix (If Yes, #)	X	Sludge	

Field Parameters	1	2	3	4	5	6
Recording Time	10:15 AM					
Sludge Type			Slud			
Color			Grey			
Number of sample Containers	6 (30)	2 (30)				
Volume Collected, L	6 x 1.1 = 6.6	2 x 0.5 = 1				
Total Volume (collected, L)						

ZDHC Defined Seven Sludge Disposal Pathways:

Put of means against factory's has been using current sludge disposal pathways with Sludge reference documents

<input checked="" type="checkbox"/> ZDHC Disposal Pathway A - Offsite incineration at >=1000°C	Sludge Reference Documents (X)
<input type="checkbox"/> ZDHC Disposal Pathway B - Landfill with Significant Control Measures	X
<input type="checkbox"/> ZDHC Disposal Pathway C - Building Products Processed at >=1000°C	
<input type="checkbox"/> ZDHC Disposal Pathway D - Landfill with Limited Control Measures	
<input type="checkbox"/> ZDHC Disposal Pathway E - Offsite incineration and Building Products Processed at <=1000°C	
<input type="checkbox"/> ZDHC Disposal Pathway F - Landfill with No Control Measures	
<input type="checkbox"/> ZDHC Disposal Pathway G - Land Application	

Wastewater Sample Containers and Preservatives

Tests Name (Conventional Parameters & MRN)	Required Test (X)	Required Sample Volume (ml)	Sample Container Pre-treatment Process & Preservation
AP and APDC (including all bases)	X	3000	1. P, cleaned with Nitric acid, rinsed thoroughly with distilled water and dried before use, 2.000% Na2SO3 (w/w), keep cool between 2°C to 8°C (15, 3 bottles)
Chlorides	X	3000	1. P, cleaned with Nitric acid, Pre-add 4.5ml of 2M HClO4, keep cool between 2°C to 8°C
Polycyclic Aromatic Hydrocarbons (PAHs)	X	3000	1. P, cleaned with Nitric acid, Pre-add 4.5ml of 2M HClO4, keep cool between 2°C to 8°C
Heavy Metals (All metals except Cr 6)	X	3000	1. P, cleaned with Nitric acid, Pre-add 4.5ml of 2M HClO4, keep cool between 2°C to 8°C
CO2	X	500	1. P, Washes with peroxide grade Acetic, keep cool between 2°C to 8°C
Cyanide	X	1800	1. P, Washes with peroxide grade Acetic, NaOH = 11 g/l (approx 3 ml) 10% NaOH, keep cool between 2°C to 8°C
% Solids	X	1800	1. P, Cleaned with distilled water and dried before use, keep cool between 2°C to 8°C
PAHs (Total)	X	1800	1. P, Cleaned with distilled water and dried before use, keep cool between 2°C to 8°C
Fixed Carbon	X	1800	1. P, Cleaned, sterile, non-reactive, 2.1 ml of 10% Sodium Thiosulfate keep in the dark and cool between 2°C and 8°C

Remarks:

- For solid sludge samples (cake, powder, etc), adding a chemical preservative is generally not useful since the preservative does not usually penetrate the sludge matrix.
- Preservation is achieved by keeping the temperature between 2°C and 8°C.
- When collecting samples, fill the containers to 1/2 full to enable expansion of samples and provide room for gases that may be produced.
- The minimum sampling time for ZDHC guideline is 4 hours with no more than 1 hour between discrete samples.

Recorded by: MD. Shaheen Alam (174510617971)
 Signature: *Shaheen*
 Date: 2-Apr-23

Factory Representative Signature: *AS*
 Signature: *AS*
 Date: 2-Apr-23

***** End of Report *****

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UL VS Terms and Conditions

All services are governed by the following Terms and Conditions.

- 1. Verification Services.** The UL Contracting Party ("we", "us", or "our" as the context requires) will perform commercial testing, verification, audit, assessment, inspection, and/or other services ("Services") in accordance with your instructions as described in this order, scope of work, project proposal, quotation, or order acknowledgment ("Quotation"). The Services will be limited to an assessment of your samples' conformity to requirements, specifications, and/or protocols you have established ("Your Requirements"), and do not express any opinion regarding the bulk from which the samples were drawn. The Services do not involve any assessment or evaluation to independent safety standards, and we and our affiliates have no responsibility to make any independent safety assessment of any samples.
- 2. Retailer Programs.** If you request us to test compliance with retailer, carrier or other third party program ("Retailer") by requesting Services under the Retailer's program, you consent to our disclosure of all associated information, materials, and deliverables to such Retailer and acknowledge that, notwithstanding any terms to the contrary in these Service Terms, the ownership of the deliverables for the Services will be in accordance with the Retailer's program.
- 3. Payment Terms.** You will pay, without set off, our fees and related expenses in accordance with the Quotation including the cost of all taxes, wire or transfer fees, duties, and other fiscal charges which become due on the quoted price and will indemnify us from and against liabilities, incurred as a result of failure to pay any such sums when they become due. We may charge interest at 1% per month (12% per year), or the maximum legal rate if less than 1.0% per month, from the due date until paid fully. You agree to pay reasonable collection costs, including attorneys' fees, if necessary, in the event of late or non-payment.
- 4. Your Requirements.** You are responsible for establishing or selecting all Your Requirements that we will use in performing the Services. We may provide you with assistance in developing Your Requirements that meet your needs, however, in all cases you must review and approve Your Requirements to be used in performing the Services.
- 5. Estimated Schedule and Price.** Any time schedule and pricing terms set forth in this Quotation are estimates only and subject to change upon reasonable notice from us depending upon the specific project.
- 6. On-Site Investigations.** If we perform Services on site at your facilities, or at the facilities of other parties as directed by you; you will ensure that our representatives have safe, secure, and free access to the facilities. Our access will not be conditioned upon the execution of any agreement, waiver, or release. If our representatives are prevented from performing or completing any Services for any reason beyond our reasonable control, we will not be responsible for the nonperformance, and you may be charged for any actual expenses we incur and fees for Services performed.
- 7. Deliverables.** We will provide you with a report outlining: (i) your instructions and request for Services accepted by us, (ii) Your Requirements used in providing the Services, (iii) the Services performed, and (iv) the results of those Services. We are under no obligation to refer to or report on any facts or circumstances which are outside your specific instructions received and accepted by us.
- 8. Our Findings.** We do not guarantee that our opinions or findings will be recognized or accepted by third parties.
- 9. Use of Names and Marks.** Except as otherwise authorized by us in writing, you will not use our name, abbreviation, symbols, marks, or the name of any of our subsidiaries, affiliates, or parent on any goods or their containers or packaging, or in connection with any advertising, promotions, or otherwise.
- 10. Cancellation Fees.** If you cancel or change a Quotation: (i) for an inspection after 3:00 PM of the working day before the scheduled inspection date, we will charge you the Quotation price plus any travel costs incurred before the cancellation; (ii) for testing after we receive the sample(s) at the testing facility, we will charge you cancellation fees according to the amount of actual work performed with a minimum cancellation fee of \$100 USD; or (iii) for a scheduled audit date, you will be responsible for all incurred non-refundable travel costs associate with that audit. Any change or cancellation of an audit that occurs within 7 days of the scheduled audit will be charged a \$600 USD fee in addition to any incurred travel costs.
- 11. No Warranty.** NO REPRESENTATION, WARRANTY, OR GUARANTEE, EXPRESS OR IMPLIED, IS INCLUDED IN THESE TERMS AND CONDITIONS, OR IN ANY QUOTATION, REPORT, OR OTHER DOCUMENT PROVIDED UNDER THESE TERMS AND CONDITIONS INCLUDING, BUT NOT LIMITED TO: (i) ANY "IMPLIED WARRANTY OF MERCHANTABILITY" OR "FITNESS FOR A PARTICULAR PURPOSE", (ii) NON-INFRINGEMENT, AND (iii) THAT THE WEB SERVICES (AS DEFINED BELOW) WILL BE UNINTERRUPTED, TIMELY, SECURE, OR ERROR-FREE.
- 12. Your Information.** You represent and warrant that all information and data provided to us by you, or on your behalf, is complete and accurate and may be relied upon to provide Services. In addition, you represent and warrant that all of Your Information is owned or licensed by you, and does not infringe on the intellectual property rights of any third party. If any information or data provided to us by you or on your behalf is either incomplete or inaccurate, we will not be liable in any manner for any deficiencies in the Services.
- 13. Ownership of Work Product.** You will own the test reports or other materials provided to you pursuant to any Quotation. We may retain a copy of the test reports and other materials for our archives and for creating reports for you and third parties, as required by you.
- 14. Web Services.** We may provide you with certain website tools and related services, including the ability to order services online through a website (collectively, the "Web Services"). The Web Services are provided to you as a convenience and are provided on an "as is, as available" basis. By using the Web Services, you acknowledge and agree that no data or content transmitted over our networks, the Internet, or wirelessly, or through or in connection with the Web Services, is guaranteed to be secure or free from unauthorized intrusion, and that data stored by us, our affiliates, or our service providers may be deleted, modified, or damaged. You acknowledge that if you wish to protect your transmission of data or files to us, it is your responsibility to use a secure encrypted connection to communicate with and use the Web Services. Your use of the Web Services is at your sole risk and is subject to any terms of use applicable to such Web Services. Web Services are included in the definition of Services above.
- 15. Confidentiality.** We will not disclose your information obtained in confidence ("Confidential Information") to third parties, except our subsidiaries, affiliates, or subcontractors, without your prior written authorization. Confidential Information will not include information: (a) already known to us, (b) publicly available, (c) subsequently acquired by us from other sources without a breach of these Terms and Conditions, (d) disclosure that is necessary to perform the Services, (e) required to be produced by law or government order, or accreditation authority, or (f) related to a product bearing a UL Mark that should be disclosed to us or our affiliates pursuant to another agreement with you.
- 16. Samples.** If we require sample examination, you will ship samples to us at your expense. Upon completion of testing, the samples will be destroyed, unless other arrangements are made for return of the samples at your expense. You acknowledge that testing and sample preparation may damage or destroy the sample(s), for which we will not be liable.
- 17. LIMITATION OF LIABILITY.** OUR LIABILITY FOR ANY CLAIMS FOR LOSS, DAMAGE, OR EXPENSE OF ANY NATURE AND HOWSOEVER ARISING FOR ANY BREACH OF CONTRACT AND/OR ANY FAILURE TO EXERCISE APPROPRIATE SKILL AND CARE BY US WILL UNDER NO CIRCUMSTANCE EXCEED THE FEES RECEIVED FOR THE SPECIFIC SERVICES WHICH GIVE RISE TO SUCH CLAIMS. UNDER NO CIRCUMSTANCE WILL WE HAVE ANY LIABILITY FOR ANY CLAIMS FOR INDIRECT, CONSEQUENTIAL, INCIDENTAL, SPECIAL, EXEMPLARY, OR PUNITIVE DAMAGES OF ANY NATURE WHATSOEVER, INCLUDING BUT NOT LIMITED TO: LOSS OF PROFITS, GOODWILL, USE, DATA, FUTURE BUSINESS, OR PRODUCTION; CANCELLATION OF CONTRACTS ENTERED INTO BY YOU; OR OTHER INTANGIBLE LOSSES (EVEN IF WE HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES). UNDER NO CIRCUMSTANCE WILL WE BE LIABLE TO YOU FOR ANY CLAIMS FOR LOSS, DAMAGE, OR EXPENSE UNLESS SUCH CLAIM IS BROUGHT UNDER SECTION 24 (DISPUTES) WITHIN TWELVE MONTHS AFTER THE DATE OF THE PERFORMANCE BY US OF THE SERVICES WHICH GIVE RISE TO THE CLAIM OR, IN THE EVENT OF ANY ALLEGED NON-PERFORMANCE, WITHIN TWELVE MONTHS OF THE DATE WHEN SUCH SERVICES SHOULD HAVE BEEN COMPLETED.
- 18. Indemnification.** You will defend, hold harmless, and indemnify us and our officers, directors, trustees, employees, agents, or subcontractors against all claims made by any third party for loss, damage, or expense arising out of these Terms and Conditions, including without limitation, the performance or non-performance of any Services or the Web Services.
- 19. Waiver.** Any failure by a party to insist upon the performance of any section of these Terms and Conditions will not constitute a waiver of any rights under these Terms and Conditions or future performance of that section.
- 20. No Third Party Beneficiaries.** The parties intend that no provisions of these Terms and Conditions will in any way bind or benefit any third party or the public at large and that no third party will have any rights or cause of action under these Terms and Conditions. In particular, in the event Singapore law governs these Terms and Conditions pursuant to Section 23 (Governing Law), a person or entity who is not a party to these Terms and Conditions will have no right under the Contracts (Rights of Third Parties) Act (Chapter 53B) to enforce any term of these Terms and Conditions, regardless of whether such person or entity has been identified by name, as a member of a class, or as answering a particular description.
- 21. No Assignment.** Neither party may assign any of its rights or obligations under these Terms and Conditions to any other person without the other party's written authorization. However, we may, upon written notice, assign our rights and obligations under these Terms and Conditions to any of our affiliates or subsidiaries.
- 22. Subcontracting.** We may use subcontractors for certain testing or other Services. All subcontractors will meet our current qualification requirements and will comply with our requirements for confidentiality, conflicts of interest, and ethical standards.
- 23. Termination and Notice.** These Terms and Conditions will continue in effect until terminated by either party upon thirty days written notice or, in the event of your breach of these Terms and Conditions, immediately upon receipt of written notice to you. You will pay those fees and expenses incurred by us prior to termination. Notice to either party may be made by hand delivery, courier service, mail, facsimile, or e-mail transmission at the receiving party's designated principal place of business. Notice to us must be sent both to: UL Verification Services Pte. Ltd, Attn: President, 1 Maritime Square, Harbour Front Centre, #11-03, Singapore 099253 with a copy to UL LLC, Attn.: General Counsel at 333 Pingsten Road, Northbrook, Illinois 60062. Notice will be effective upon receipt.
- 24. Governing Law:** These Terms and Conditions will be governed and interpreted by the laws of the State of Illinois, United States of America, except if: (i) UL Contracting Party's principal place of business is Asia, Australia, or New Zealand, then Singapore law, and (ii) UL Contracting Party's principal place of business is Europe, then Swiss law, without reference to the applicable jurisdiction's choice of law principles.
- 25. Disputes.** Any dispute or disagreement, other than nonpayment of fees, relating to these Terms and Conditions or the Services, will be settled by confidential, binding arbitration administered by the International Centre for Dispute Resolution of the American Arbitration Association ("AAA") pursuant to the AAA Commercial Arbitration Rules and the Procedures for Large, Complex Commercial Disputes. The arbitration venue will be Chicago, Illinois, except if: (i) UL Contracting Party's principal place of business is in Europe, the venue will be Geneva, Switzerland, and (ii) UL Contracting Party's principal place of business is in Asia, Australia, or New Zealand, the venue will be Singapore, Republic of Singapore. The arbitration will be conducted before a panel of three (3) arbitrators. The arbitration panel will be selected as follows: the parties will request a list of ten (10) arbitrators drawn from the AAA's panel of commercial arbitrators (who are experienced in and familiar with the AAA's Procedures for Large, Complex Commercial Disputes). From this list, both parties will each choose one arbitrator. After they have been notified of their panel selection, the two (2) arbitrators will agree on a third arbitrator from the list of ten (10), who will be the chair of the panel, and the panel will be final. The decision of the majority of the arbitrators will be the panel's decision. The arbitrators will not have the authority to add, change, or disregard any term of these Terms and Conditions to award incidental, consequential, or punitive damages (including, but not limited to, loss of use, unjust enrichment, and/or lost profits), or exceed the remedies provided by the limitation of liability of these Terms and Conditions. The panel's decision will be binding and judgment on the arbitration award may be entered by a court of competent jurisdiction. Arbitration will be the final remedy for any dispute between the parties arising out of these Terms and Conditions, provided, however, that nothing herein will prevent either party from seeking a court order for injunctive relief (in addition to other remedies) to stop or prevent misuse or misappropriation of its marks, confidential or proprietary information, or infringement of its intellectual property, in a court of law. All arbitrations will be conducted in English.
- 26. Severability.** If any section of these Terms and Conditions is held invalid, void, or unenforceable for any reason that section will be severed, and all other sections of these Terms and Conditions will remain valid to the extent permissible under law.
- 27. Modifications.** These Terms and Conditions are the entire and complete agreement between the parties and supersede any other communications, representations, or agreements with respect to its subject matter. Under no circumstances will any preprinted, additional, or different terms and conditions on your requests for quotation, purchase orders, invoices, sales or marketing materials, emails, any acceptance communications, or other business documents apply to any Services or Quotation or bind us in any manner. Modifications that have not been made by us or that have not been accepted by us in a written or emailed confirmation from us are not accepted by us, and commencement of performance will not signify acceptance by us of any such modifications. Any such modifications are excluded from our agreement, and such modifications will not be a binding agreement on us.
- 28. Order of Precedence.** Except for conflicts with Section 2 (Payment Terms), Section 4 (Estimated Schedule and Price) and Section 9 (Cancellation Fees), these Terms and Conditions will take precedence over any conflicting terms in any Quotation.
- 29. Electronic Signature.** These Terms and Conditions may be executed and delivered by facsimile, PDF, or by means of other electronic signature. Our electronic, digital, or hard copies of these Terms and Conditions, your acceptance, and Quotations as signed, or otherwise accepted, by you will be the true, complete, valid, authentic, and enforceable copies of these documents. You agree that you will not contest the admissibility or enforceability of our copies in a court or any proceeding arising out of such documents.
- 30. Force Majeure.** Neither party will be liable for any failure or delay in the performance of its obligations due to fire, flood, earthquake, elements of nature, or acts of God, acts of war, terrorism, riots, civil disorder, rebellions, or other similar cause beyond the reasonable control of the party affected, provided such default or delay: (i) could not have been prevented by reasonable precautions; (ii) cannot reasonably be circumvented; (iii) and the party hindered or delayed immediately notifies the other party describing the circumstance causing delay.