TEST REPORT

Technical Report **(6816)270-0014-R1** November 19, 2016

The report is amended of and superseded the previous report no. (6816)270-0014 dated November 19, 2016

Date Received September 25, 2016
Date Revised: December 30, 2016

Factory Company Name: 5098
Project No.: /
Client Reference No.: /
Sample Type: Wastewater - Time-Weighted Composite Grab Samples*
Sample Pick Up Date: September 25, 2016
Test Period: September 25, 2016 To November 19, 2016

Discharge Option: 1. Direct Discharge (into factory owned ETP)
Sample Description:

I001) Fresh Water
I002) Raw Waste Water
I003) Treated Waste Water
I004) Sludge

REMARK

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

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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.

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Photo of the Sample/ Sampling Location

I001) Fresh Water 	I002) Raw Waste Water 
I003) Treated Waste Water 	I004) Sludge 

Executive Summary

1A) Conventional Parameters	I001	I002	I003	I004
Temperature	N/A		See result in page 5-8	N/A
TSS				
COD				
Total-N				
pH Value				
Color (Pt-Co)				
BOD_5				
Ammonium-N				
Total-P				
AOX				
Oil and Grease				
Phenol				
Coliform				
Foam				
ANIONS - Sulfide				
ANIONS - Sulfite				
1B) Conventional Parameters –METALS	o	N/A	●	

ZDHC MRSL Substances	I001	I002	I003	I004
2A) APs and APEOs	o	o	o	o
2B) Chlorobenzenes and Chlorotoluenes	o	o	o	o
2C) Chlorophenols	o	o	o	o
2D) Azo Dyes	o	o	o	o
2E) Carcinogenic Dyes	o	o	o	o
2F) Disperse Dyes	o	o	o	o
2G) Flame Retardants	o	o	o	o
2H) Glycols	o	o	o	o
2I) Halogenated Solvents	o	o	o	o
2J) Organotin Compounds	o	o	o	o
2K) Perfluorinated and Polyfluorinated	o	●	●	o
2L) Phthalates	o	o	o	o
2M) Poly Aromatic Hydrocarbons	o	o	o	o
2N) Volatile Organic Compounds	o	o	o	o

Note / Key :

- ● – Detected
- o – Not Detected

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 Plan

Basically, three environment samples were sampled per factory, including 1) Fresh Water; 2) Raw Waste Water, and 3) Sludge, for the factory which discharge into a communal ETP (Option 1 – Indirect discharge). And four environment samples were sampled per factory, including 1) Fresh Water; 2) Raw Waste Water, 3) Treated Waste Water, and 4) Sludge for the factory which discharge into factory owned ETP (Option 2 – Direct discharge). Total number of sample collected will be depended on the actual factory facilities and manufacturing processes.

Method of sampling used is time-weighted composite grab samples (agreed with client.). 8-hours time-weighted mixed with grab sample is taken every 1 hour over a period of 8 hours. The sampling time would be carried out during day time, preferably between 10 a.m. to 4 p.m, the factory must operate normally in the am session. The aims to see the snapshot of water quality characteristics of the operating factories. They will not provide any information about the concentrations outside that point in time.

Remark :

- Sampling & Preservation procedure is with reference to below standards:
  1) Standard Methods for the Examination of Water and Wastewater, 21st edition, Method 1060, Collection and Preservation of Samples.
  2) ISO 5667- 1, 3, 10, 13 and 15 Water quality- Sampling - Guidance for the preservation and handling of water samples.
- Field data records are attached in Appendix B.

Test Result

1A) Conventional Parameters

Temperature

Test Method : Measurement by thermometer

Tested Item(s)	Result	Unit	Conclusion
I003	35.4	deg. C	DATA

Note:

deg. C = degree Celsius (°C)

Total Suspended Solids (TSS)

Test Method : Reference to APHA 22nd Edition-2540D & ALPA 2540D

Tested Item(s)	Result	Unit	Conclusion
I003	17	mg/L	DATA

Note:

mg/L = milligram per liter

Chemical Oxygen Demand (COD)

Test Method : Reference to ALPA 5220B & EPA 410.3

Tested Item(s)	Result	Unit	Conclusion
I003	56	mg/L	DATA

Note:

mg/L = milligram per liter

Total Nitrogen (Total-N)

Test Method : Reference to APHA 22nd Edition 2012, 4500 N Org.B

Tested Item(s)	Result	Unit	Conclusion
I003	2.8	mg/L	DATA

Note:

mg/L : milligram per liter
BLQ : Below Limit of Quantification
LOQ : Limit of Quantification

pH Value

Test Method **:** Reference to ALPA 4500-H+B & EPA150.2

-	**Unit**	**Result**
Test Item(s)	-	I003
Parameter	-	-
Temp. of sample	deg. C	23
pH value of sample	-	7.5
Conclusion	-	DATA

Note:

Temp. = Temperature deg. C = degree Celsius (°C)

Color (Pt-Co)

Test Method **:** Reference to APHA 22nd Edition 2120C / EPA-110.2

Tested Item(s)	**Result**	**Unit**	**Conclusion**
I003	101	Pt-Co/CU	DATA

Biochemical Oxygen Demand (BOD_5)

Test Method **:** Reference to APHA 22nd Edition-5210B & ALPA 5210B

Tested Item(s)	**Result**	**Unit**	**Conclusion**
I003	18	mg/L	DATA

Note:

mg/L = milligram per liter

Ammonia Nitrogen

Test Method **:** Reference to APHA 22nd Edition 2012, 4500 NH_3 B.C

Tested Item(s)	**Result**	**Unit**	**Conclusion**
I003	2.8	mg/L	DATA

Note:

mg/L : milligram per liter
BLQ : Below Limit of Quantification
LOQ : Limit of Quantification

Total Phosphorus (Total-P)

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

Tested Item(s)	Result	Unit	Conclusion
I003	0.026	mg/L	DATA

Note:

mg/L = milligram per liter

Adsorbable Organic Halogen (AOX)

Test Method **:** Reference to ISO 9562/ U. S. EPA 1650/ HJ/T 83

Tested Item(s)	Result	Unit	Conclusion
I003	0.54	mg/L	DATA

Note:

mg/L : milligram per liter
BLQ : Below Limit of Quantification
LOQ : Limit of Quantification

Oil and Grease

Test Method **:** Reference to APHA 22nd Edition -5520 B (2012)

Tested Item(s)	Result	Unit	Conclusion
I003	2	mg/L	DATA

Note:

mg/L = milligram per liter

Phenol

Test Method **:** Reference to APHA 22nd Edition 2012, 5530 B.C

Tested Item(s)	Result	Unit	Conclusion
I003	BLQ (LOQ. 0.01)	mg/L	DATA

Note:

mg/L : milligram per liter
BLQ : Below Limit of Quantification
LOQ : Limit of Quantification

Coliform

Test Method : Reference to APHA 22nd Edition 2012, 9221 B

Tested Item(s)	Result	Unit	Conclusion
I003	170	MPN / 100 mL	DATA

Note:

mg/L : milligram per liter
BLQ : Below Limit of Quantification
LOQ : Limit of Quantification

Foam

Test Method : Visual

Tested Item(s)	Result	Unit	Conclusion
I003	No foam	-	DATA

ANIONS - Sulfide

Test Method : Reference to APHA 22nd Edition 2012, 4500 S^2 B

Tested Item(s)	Result	Unit	Conclusion
I003	BLQ (LOQ. 1.0)	mg/L	DATA

Note:

mg/L : milligram per liter
BLQ : Below Limit of Quantification
LOQ : Limit of Quantification

ANIONS - Sulfite

Test Method : Reference to APHA 22nd Edition 2012, 4500 SO_3 B

Tested Item(s)	Result	Unit	Conclusion
I003	BLQ (LOQ. 1.0)	mg/L	DATA

Note:

mg/L : milligram per liter
BLQ : Below Limit of Quantification
LOQ : Limit of Quantification

1B) Conventional Parameters - METALS

Heavy Metals	**I001**	**I003**
Arsenic (As)	ND	ND
Cadmium (Cd)	ND	ND
Mercury (Hg)	ND	ND
Lead (Pb)	ND	3
Antimony (Sb)	ND	168
Cobalt (Co)	ND	1
Nickel (Ni)	ND	ND
Copper (Cu)	ND	4
Zinc (Zn)	ND	42
Chromium (Cr)	ND	6
Chromium VI (Cr VI)	ND	ND
Silver (Ag)	ND	ND

2K) Perfluorinated and Polyfluorinated Chemicals

Perfluorinated and Polyfluorinated Chemicals	**I001**	**I002**	**I003**	**I004**
PFOA	ND	0.02	0.03	ND
PFBS	ND	ND	ND	ND
PFOS	ND	ND	ND	ND
PFHxA	ND	ND	ND	ND
8:2 FTOH	ND	ND	ND	ND
6:2 FTOH	ND	ND	ND	ND

Others Priority Chemical Groups

	I001	I002	I003	I004
2A) APs and APEOs	ND	ND	ND	ND
2B) Chlorobenzenes and Chlorotoluenes	ND	ND	ND	ND
2C) Chlorophenols	ND	ND	ND	ND
2D) Azo Dyes	ND	ND	ND	ND
2E) Carcinogenic Dyes	ND	ND	ND	ND
2F) Disperse Dyes	ND	ND	ND	ND
2G) Flame Retardants	ND	ND	ND	ND
2H) Glycols	ND	ND	ND	ND
2I) Halogenated Solvents	ND	ND	ND	ND
2J) Organotin Compounds	ND	ND	ND	ND
2L) Phthalates	ND	ND	ND	ND
2M) Poly Aromatic Hydrocarbons	ND	ND	ND	ND
2N) Volatile Organic Compounds	ND	ND	ND	ND

Remark：

- Test method, reporting limit and list of chemical are summarized in tables of Appendix A.
- ND = Not detected (Please refer to reporting limit shown in Appendix A.).
- All results are in ppb as unit.
- ppb = part(s) per billion.

APPENDIX A

Conventional parameters

Conventional Parameters	Total-P
Temperature	AOX
TSS	Oil and Grease
COD	Phenol
Total-N	Coliform
pH Value	Foam
Color (Pt-Co)	ANIONS - Sulfide
BOD_5	ANIONS - Sulfite
Ammonium-N	

List of Conventional Parameters – METALS :

No.	**Test Method**	**Reporting Limit**		**Unit**
Others : With reference to acid digestion with ICP analysis. Cr VI : With reference to solvent extraction and derivatisation followed by UV-Vis analysis.		Water:	Cd: 0.1; Hg: 0.05; Each (Others): 1	ppb
		Sludge:	Zn: 4; Hg: 0.02; Each (Others): 1	mg/kg

No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	Arsenic (As)	7440-38-2	7	Nickel (Ni)	7440-02-0
2	Cadmium (Cd)	7440-43-9	8	Copper (Cu)	7440-50-8
3	Mercury (Hg)	7439-97-6	9	Zinc (Zn)	7440-66-6
4	Lead (Pb)	7439-92-1	10	Chromium (Cr)	7440-47-3
5	Antimony (Sb)	7440-36-0	11	Chromium VI (Cr VI)	18540-29-9
6	Cobalt (Co)	7440-48-4	12	Silver (Ag)	7440-22-4

ZDHC MRSL Substances

List of Alkylphenols and Alkylphenol Ethoxylates :

Test Method		Reporting Limit		Unit
Alkylphenols : With reference to ISO 18857-2 (Modified with DCM extraction). Alkylphenol Ethoxylates : With reference to ISO 18857-2. Followed by GC/MS or LC/MS analysis		Water:	Each (OP & NP): 1 Each (OPEOs & NPEOs): 5	ppb
		Sludge:	Each: 0.2	mg/kg

No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	Octylphenol (OP)	Various (140-66-9, 27193-28-8, 1806-26-4, 85771-77-3)	4	Nonylphenol (NP)	Various (25154-52-3, 104-40-5, 84852-15-3, 1173019-62-9 11066-49-2)
2	Octylphenol monoethoxylates (OP1EO)	Various	5	Nonylphenol monoethoxylates (NP1EO)	Various
3	Octylphenolethoxylates, (n=2 to n=16)	Various (9002-93-1, 9036-19-5, 68987-90-6)	6	Nonylphenolethoxylates, (n=2 to n=18)	Various (9016-45-9, 26027-38-3, 127087-87-0, 37205-87-1, 68412-54-4)

List of Chlorobenzenes :

No.	Test Method	Reporting Limit		Unit
With reference to U. S. EPA 8260B and U. S. EPA 8270D. (DCM extraction, followed by GC/MS analysis)		Water:	Each: 0.2	ppb
		Sludge:	1,3-Dichlorobenzene, 1,4-Dichlorobenzene: 0.01 (mix total); 1,2,4,5-Tetrachlorobenzene, 1,2,3,5-Tetrachlorobenzene: 0.01 (mix total); Each: 0.01	mg/kg

No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
Dichlorobenzenes		Various	6	1,3,5-Trichlorobenzene	108-70-3
1	1,2-Dichlorobenzene	95-50-1	Tetrachlorobenzenes		Various
2	1,3-Dichlorobenzene	541-73-1	7	1,2,3,4-Tetrachlorobenzene	634-66-2
3	1,4-Dichlorobenzene	106-46-7	8	1,2,3,5-Tetrachlorobenzene	634-90-2
Trichlorobenzenes		Various	9	1,2,4,5-Tetrachlorobenzene	95-94-3
4	1,2,3-Trichlorobenzene	87-61-6	10	Pentachlorobenzene	608-93-5
5	1,2,4-Trichlorobenzene	120-82-1	11	Hexachlorobenzene	118-74-1

List of Chlorotoluenes :

No.	Test Method	Reporting Limit		Unit
With reference to U. S. EPA 8260B and U. S. EPA 8270D. (DCM extraction, followed by GC/MS analysis)		Water:	Each: 0.2	ppb
		Sludge:	Each: 0.01	mg/kg

No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	2-Chlorotoluene, 3-Chlorotoluene, 4-Chlorotoluene	95-49-8, 108-41-8, 106-43-4	4	2,3,6-Trichlorotoluene	2077-46-5

2	2,3-Dichlorotoluene, 3,4-Dichlorotoluene	32768-54-0, 95-75-0	5	2,4,5-Trichlorotoluene	6639-30-1
3	2,4-Dichlorotoluene, 2,5-Dichlorotoluene, 2,6-Dichlorotoluene	95-73-8, 19398-61-9, 118-69-4	6	Pentachlorotoluene	877-11-2

List of Chlorophenols :

No.	Test Method	Reporting Limit		Unit
With reference to U. S. EPA 8270D. (Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC/MS analysis)		Water:	Each: 0.5	ppb
		Sludge:	2,3,6 & 2,4,5-TCP: 0.025 (mix total); ,4,5 & 2,3,4-TCP: 0.025 (mix total); 3,5 & 2,4 & 2,5 & 2,6-DCP: 0.025 (mix total); Each: 0.025	mg/kg

No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	Pentachlorophenol (PCP)	87-86-5	Dichlorophenol (DiCP)		Various
			10	2,3-Dichlorophenol	576-24-9
2	2,3,4,5-Tetrachlorophenol	4901-51-3	11	3,4-Dichlorophenol	95-77-2
3	2,3,4,6-Tetrachlorophenol	58-90-2	12	2,4-Dichlorophenol	120-83-2
4	2,3,5,6-Tetrachlorophenol	935-95-5	13	2,5-Dichlorophenol	583-78-8
Trichlorophenol (TriCP)		Various	14	2,6-Dichlorophenol	87-65-0
5	2,4,6-Trichlorophenol	88-06-2	15	3,5-Dichlorophenol	591-35-5
6	2,3,5-Trichlorophenol	933-78-8	Mono Chlorophenol (MonoCP)		Various
7	2,4,5-Trichlorophenol	95-95-4	16	2-Chlorophenol	95-57-8
8	3,4,5-Trichlorophenol	609-19-8	17	3-Chlorophenol	108-43-0
9	2,3,4-Trichlorophenol	15950-66-0	18	4-Chlorophenol	106-48-9

List of Aromatic Amines in Azo Colorants :

No.	Test Method	Reporting Limit		Unit
With reference to EN 14362. (Reduction step with sodium dithionite, solvent extraction followed by GC/MS and HPLC Analysis		Water:	Each: 0.1	ppb
		Sludge:	Each: 0.1	mg/kg

No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	4-Aminodiphenyl (Biphenyl-4-ylamine or Xenylamine)	92-67-1	13	4,4`-Methylenedi-o-toluidine (3,3`-Dimethyl-4,4`-diaminodiphenylmethane)	838-88-0
2	Benzidine	92-87-5	14	p-Cresidine (6-Methoxy-m-toluidine)	120-71-8
3	4-Chloro-o-toluidine	95-69-2	15	4,4`-Methylene-bis-(2-chloraniline) (2,2`-Dichloro-4,4`-methylene-dianiline)	101-14-4
4	2-Naphthylamine	91-59-8	16	4,4`-Oxydianiline	101-80-4
5	o-Aminoazotoluene (4-Amino-2`,3-dimethylazobenzne or 4-o-tolyazo-o-toluidine)	97-56-3	17	4,4`-Thiodianiline	139-65-1
6	5-nitro-o-toluidine (2-Amino-4-nitrotoluene)	99-55-8	18	o-Toluidine (2-Aminotoluene)	95-53-4
7	4-Chloroaniline (p-Chloroaniline)	106-47-8	19	4-Methyl-m-phenylenediamine (2,4-Toluenediamine)	95-80-7

8	4-Methoxy-m-phenylenediamine (2,4-Diaminoanisole)	615-05-4	20	2,4,5-Trimethylaniline	137-17-7
9	4,4`-Diaminodiphenylmethane (4,4`-Methylenedianiline)	101-77-9	21	o-Anisidine (2-Methoxyaniline)	90-04-0
10	3,3`-Dichlorobenzidine (3,3`-Dichlorobiphenyl-4,4`-ylenediamine)	91-94-1	22	4-Aminoazobenzene (p-Aminoazobenzene)	60-09-3
11	3,3`-Dimethoxybenzidine (o-Dianisidine)	119-90-4	23	2,4-Xylidine (2,4-dimethylaniline)	95-68-1
12	3,3`-Dimethylbenzidine (4,4`-Bi-o-tolidine)	119-93-7	24	2,6-Xylidine (2,6-dimethylaniline)	87-62-7

List of Carcinogenic Dyes :

No.	**Test Method**		**Reporting Limit**		**Unit**
Liquid extraction followed by LC/MS analysis			Water:	Each: 5000	ppb
			Sludge:	Each: 0.15	mg/kg
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	C.I. Direct Black 38	1937-37-7	7	C.I. Disperse Blue 1	2475-45-8
2	C.I. Direct Blue 6	2602-46-2	8	C.I. Disperse Blue 3	2475-46-9
3	C.I. Acid Red 26	3761-53-3	9	C.I. Basic Blue 26 (with Michler's Ketone > 0.1%)	2580-56-5
4	C.I. Basic Red 9	569-61-9	10	C.I. Basic Green 4 (malachite green chloride), (malachite green oxalate), (malachite green)	569-64-2, 2437-29-8, 10309-95-2
5	C.I. Direct Red 28	573-58-0	11	Disperse Orange 11	82-28-0
6	C.I. Basic Violet 14	632-99-5	-	-	-

List of Disperse Dyes :

No.	**Test Method**		**Reporting Limit**		**Unit**
Liquid extraction followed by LC/MS analysis			Water:	Each: 5000	ppb
			Sludge:	Each: 0.15	mg/kg
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	Disperse Yellow 1	119-15-3	11	Disperse Red 17	3179-89-3
2	Disperse Blue 102	12222-97-8	12	Disperse Blue 7	3179-90-6
3	Disperse Blue 106	12223-01-7	13	Disperse Blue 26	3860-63-7
4	Disperse Yellow 39	12236-29-2	14	Disperse Yellow 49	54824-37-2
5	Disperse Orange 37/59/76	13301-61-6	15	Disperse Blue 35	12222-75-2
6	Disperse Brown 1	23355-64-8	16	Disperse Blue 124	61951-51-7
7	Disperse Orange 1	2581-69-3	17	Disperse Yellow 9	6373-73-5
8	Disperse Yellow 3	2832-40-8	18	Disperse Orange 3	730-40-5
9	Disperse Red 11	2872-48-2	19	Disperse Blue 35	56524-77-7
10	Disperse Red 1	2872-52-8	-	-	-

List of Flame Retardants :

No.	**Test Method**	**Reporting Limit**		**Unit**
With reference to ISO 22032, U. S. EPA 527 and U. S. EPA 8321B. (DCM extraction, followed by GC/MS analysis or LC/MS analysis)		Water:	Each (PBBs & PBDEs): 0.05; Each (Others): 0.5; SCCP: 5	ppb
		Sludge:	PBBs & PBDEs: 0.03 (in total); TCEP & TCPP: 0.05;	mg/kg

				BIS/BDBPP, TRIS/TDBPP, HBCDD, TBBPA, BBMP, TDCPP: 0.25; Others Each: 0.03	
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
Polybromobiphenyls (PBBs)		59536-65-1	12	Octabromodiphenyl ether (OctaBDE)	32536-52-0
1	Monobromobiphenyl (MonoBB)	-	13	Decabromodiphenyl ether (DecaBDE)	1163-19-5
2	Dibromobiphenyl (DiBB)	-	14	Tris(2,3-dibromopropyl) phosphate (TRIS/TDBPP)	126-72-7
3	Tribromobiphenyl (TriBB)	-	15	Tetrabromobisphenol A (TBBPA)	79-94-7
4	Tetrabromobiphenyl (TetraBB)	-	16	Bis(2,3-dibromopropyl) phosphate (BIS/BDBPP)	5412-25-9
5	Pentabromobiphenyl (PentaBB)	-	17	Hexabromocyclododecane (HBCDD)	3194-55-6
6	Hexabromobiphenyl (HexaBB)	-	18	2,2-Bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0
7	Heptabromobiphenyl (HeptaBB)	-	19	Tris(aziridinyl)-phosphineoxide (TEPA)	545-55-1
8	Octabromobiphenyl (OctaBB)	-	20	Tris(2-chloroethyl) phosphate (TCEP)	115-96-8
9	Nonabromobiphenyl (NonaBB)	-	21	Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	13674-87-8
10	Decabromobipheny (DecaBB)	13654-09-6	22	Short chain chlorinated paraffins (SCCPs)	85535-84-8
11	Pentabromodiphenyl ether (PentaBDE)	32534-81-9	-		

List of Glycols :

No.	**Test Method**		**Reporting Limit**		**Unit**
With reference to U. S. EPA 8270. (Liquid extraction followed by LC/MS analysis)			Water:	Each: 5000	ppb
			Sludge:	Each: 0.5	mg/kg
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	Bis(2-methoxyethyl)-ether	111-96-6	5	2-Methoxyethanol	109-86-4
2	2-Ethoxyethanol	110-80-5	6	2-Methoxyethylacetate	110-49-6
3	2-Ethoxyethyl acetate	111-15-9	7	2-Methoxypropylacetate	70657-70-4
4	Ethylene glycol dimethyl ether	110-71-4	8	Triethylene glycol dimethyl ether	112-49-2

List of Halogenated Solvents :

No.	**Test Method**		**Reporting Limit**		**Unit**
With reference to U. S. EPA 8260B. (Headspace GC-MS analysis or Purge-and Trap GC/MS analysis)			Water:	Each: 1	ppb
			Sludge:	Each: 0.3	mg/kg
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	1,2-Dichloroethane	107-06-2	3	Trichloroethylene	79-01-6
2	Methylene Chloride	75-09-2	4	Tetrachloroethylene	127-18-4

List of Organotin Compounds :

No.	**Test Method**	**Reporting Limit**		**Unit**
With reference to ISO 17353. (Solvent extraction, derivatisation		Water:	Each: 0.01	ppb

with $NaB(C_2H_5)$ followed by GC/MS analysis)				Sludge:	Each: 0.01	mg/kg
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**		**CAS-No.**
Mono-, di- and tri-methyltin derivatives		Various	Mono-, di- and tri-phenyltin derivatives			Various
1	Monomethyltin (MMT)		9	Monophenyltin (MPhT)		
2	Dimethyltin (DMT)		10	Diphenyltin (DPhT)		
3	Trimethyltin (TMT)		11	Triphenyltin (TPhT)		
Mono-, di- and tri-butyltin derivatives		Various	Mono-, di- and tri-octyltin derivatives			Various
4	Monobutyltin (MBT)		12	Monooctyltin (MOT)		
5	Dibutyltin (DBT)		13	Dioctyltin (DOT)		
6	Tributyltin (TBT)		14	Trioctyltin (TOT)		
7	Tricyclohexyltin (TCyT)	Various	15	Tetrabutyltin (TeBT)		1461-25-2
8	Tripropyltin (TPT)	Various	-	-		-

List of Perfluorinated and Polyfluorinated Chemicals :

No.	**Test Method**		**Reporting Limit**		**Unit**
With reference to DIN 38407-42 (modified) Ionic PFC : Concentration or direct injection followed by LC/MS/MS analysis; Non-ionic PFC (FTOH) : derivatisation with acetic anhydride, followed by GC/MS analysis			Water:	Each: 0.01; Each (FOTH): 1	ppb
			Sludge:	Each: 1; Each (FOTH): 10	mg/kg
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	Perfluoro-n-octanoic acid (PFOA)	335-67-1, 335-95-5	4	Perfluoro-n-hexanoic acid (PFHxA)	307-24-4
2	Perfluorobutanesulfonic acid (PFBS)	375-73-5, 29420-49-3, 29420-43-3	5	8:2 FTOH	678-39-7
3	Perfluorooctanesulfonic acid (PFOS)	1763-23-1, 432-50-7	6	6:2 FTOH	647-42-7

List of Phthalates :

No.	**Test Method**		**Reporting Limit**		**Unit**
With reference to U. S. EPA 8270D or ISO 18846. (DCM extraction, followed by GC/MS analysis or LC/MS analysis)			Water:	Each: 1	ppb
			Sludge:	Each: 0.3	mg/kg
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	Butyl benzyl phthalate (BBP)	85-68-7	9	Di-iso-butyl phthalate (DIBP)	84-69-5
2	Dibutyl phthalate (DBP)	84-74-2	10	Di-cyclohexyl phthalate (DCHP)	84-61-7
3	Di-2-ethylhexyl phthalate (DEHP)	117-81-7	11	Di-n-hexyl phthalate (DnHP)	84-75-3
4	Di-n-octyl phthalate (DNOP)	117-84-0	12	Dinonyl phthalate (DNP)	84-76-4
5	Di-iso-nonyl phthalate (DINP)	28553-12-0 & 68515-48-0	13	Di-iso-octyl phthalate (DIOP)	27554-26-3
6	Di-iso-decyl phthalate (DIDP)	26761-40-0 & 68515-49-1	14	Dimethoxyethyl phthalate (DMEP)	117-82-8
7	Diethyl phthalate (DEP)	84-66-2	15	1,2-benzenedicarboxylic acid, di-C7-11-branched and linearalkyl esters (DHNUP)	68515-42-4
8	Di-n-propyl phthalate (DPRP)	131-16-8	16	1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6

List of Poly Aromatic Hydrocarbons :

No.	Test Method			Reporting Limit		Unit
With reference to DIN 38407-39. (Solvent extraction, followed by GC/MS analysis)				Water:	Each: 1	ppb
				Sludge:	Each: 0.1	mg/kg
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**		**CAS-No.**
1	Benzo[a]pyrene (BaP)	50-32-8	10	Benzo[k]fluoranthene		207-08-9
2	Anthracene	120-12-7	11	Acenaphthylene		208-96-8
3	Pyrene	129-00-0	12	Chrysene		218-01-9
4	Benzo[ghi]perylene	191-24-2	13	Dibenz[a,h]anthracene		53-70-3
5	Benzo[e]pyrene	192-97-2	14	Benzo[a]anthracene		56-55-3
6	Indeno[1,2,3-cd]pyrene	193-39-5	15	Acenaphthene		83-32-9
7	Benzo[j]fluoranthene	205-82-3	16	Phenanthrene		85-01-8
8	Benzo[b]fluoranthene	205-99-2	17	Fluorene		86-73-7
9	Fluoranthene	206-44-0	18	Naphthalene		91-20-3

List of Volatile Organic Compounds :						
No.	**Test Method**			**Reporting Limit**		**Unit**
With reference to ISO 11423-1. (Headspace GC-MS analysis or Purge-and Trap GC/MS analysis)				Water:	Each: 1	ppb
				Sludge:	Each: 0.3	mg/kg
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**		**CAS-No.**
1	Benzene	71-43-2	4	p-cresol		106-44-5
2	Xylene	1330-20-7	5	m-cresol		108-39-4
3	o-cresol	95-48-7	-	-		-

Note / Key :

ppb = part(s) per billion

Comment 1: The report [(6816)270-0014] is sub-contracted to BVCPS (Germany) For Perfluorinated Chemicals, Brominated and Chlorinated Flame Retardants, Other Flame Retardants, Halogenated Solvents, Glycols, Other Vocs & AOX Test.

Comment 2: The report [(6816)270-0014] is sub-contracted to BVCPS (Chennai, India) For Phenol, Ammonium-N, Total-N, ANIONS – Sulfide, ANIONS – Sulfite & Coliform Test.

APPENDIX B

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE FOR 11 PRIOPRITY CHEMICALS (COMPOSITE SAMPLING)

General Data

Laboratory Sample Number	**(6816)270-0014**
Client Name	Jack Wolfskin
Field Contact Person	Mr. Md. Abdus Salam Phone No: 01755-696593
Project (Facility Name and Address)	5098
Sampling Location / Description	Fresh Water
Sample Identification	Zero discharge with sampling plan
Sample Type	Time-Weighted Composite Grab Samples*
Name of Sampler	Md. Robel Awal
Discharge mode	Direct discharge to environment (Specify destination: Canel)
Date and time collected	25/09/2016 (11.00 am, 12.00 pm, 1.00 pm, 2.00 pm, 3.00 pm, 4.00 pm, 5.00 pm, 6.00 pm)
Factory Type	Dyeing/Printing/Washing/Finishing/Other (please specify) Dyeing Dyeing/Washing *Note: It would be selected more than one

Field Data for wastewater

Field Parameters	pH : 6.6, 6.7, 6.7, 6.7, 6.7, 6.6, 6.6, 6.5	Temp : 27.9, 27.8, 27.8, 27.1, 27.3, 27.2, 27.1, 27.6 °C	Color : Colorless
Control No. of field equipment			

Analysis Required and Preservation Method

Factory with effluent treatment plant		Yes				
		Fresh Water				
Sampler container number						
Recording time						
Volume collected, mL						
Total volume collected		Remark: Total volumn collected must be greater than total of sample size required				

Tests	Test required	Total of sample size	Type of container	Preservation method
1. Phthalate		500 mL	Amber Glass,wash with nitric acid, rinse thoroughly with distillated water and dry before use	Without adding acid Store sample at 4°C
2. Brominated and chlorinated Flame retardant		500 mL		
3. Banned Azodyes		500 mL		
4. Organotin Compounds		500 mL		
5. SCCPs		500 mL		
6. Navy Blue		10 mL		
7. Dyes		500 mL		
8. Flame retardant		500 mL		
9. Free primary aromatic amines		500 mL		
10. Chlorobenzenes		500 mL	Amber Glass, wash with nitric acid; Pre-add 6.5 mL of 2M HCl	Acidify to ~pH 2 with HCl and store sample at 4°C
11. Chlorophenols		500 mL		
12. APEOs/APs		500 mL		
13. Chlorinated Solvents		500 mL		Fill to full bottle without air; acidify to ~pH 2 with HCl and store sample at 4°C
14. Heavy Metals except CrVI		500 mL	Amber Glass, wash with nitric acid, pre-add 6.5mL of 2M HNO3	Acidify to pH 2 with HNO_3 and store at 4°C
15. CrVI		500 mL	Amber Glass, wash with pesticide grade acetone	Fill to full bottle without air nor adding acid and store sample at 4°C
16. PFCs		500 mL	PE, wash with pesticide grade Acetone;	Without adding acid Store sample at 4°C
17. Cyanide		500 mL	Amber Glass, wash with pesticide grade	Adjust pH 12 with 50% NaOH and store at 4°C

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE FOR 11 PRIOPRITY CHEMICALS (COMPOSITE SAMPLING)

General Data

Laboratory Sample Number	**(6816)270-0014**
Client Name	Jack Wolfskin
Field Contact Person	Mr. Md. Abdus Salam Phone No: 01755-696593
Project (Facility Name and Address)	5098
Sampling Location / Description	Raw Waste Water
Sample Identification	Zero discharge with sampling plan
Sample Type	Time-Weighted Composite Grab Samples*
Name of Sampler	Md. Robel Awal
Discharge mode	Direct discharge to environment (Specify destination: Canel)
Date and time collected	25/09/2016 (11.20 am, 12.10 pm, 1.20 pm, 2.20 pm, 3.20 pm, 4.10 pm, 5.10 pm, 6.10 pm)
Factory Type	Dyeing/Printing/Washing/Finishing/Other (please specify) Dyeing Dyeing/Washing *Note: It would be selected more than one

Field Data for wastewater

Field Parameters	pH : 11.5, 11.0, 11.4, 11.3, 11.1, 11.4, 11.0, 11.3	Temp : 46.0, 46.0, 49.4, 46.5, 46.4, 46.2, 46.3, 46.9 °C	Color : Ash
Control No. of field equipment			

Analysis Required and Preservation Method

Factory with effluent treatment plant			Yes			
		Raw Waste Water				
Sampler container number						
Recording time						
Volume collected, mL						
Total volume collected		Remark: Total volumn collected must be greater than total of sample size required				

Tests	Test required	Total of sample size	Type of container	Preservation method
1. Phthalate		500 mL	Amber Glass,wash with nitric acid, rinse thoroughly with distillated water and dry before use	Without adding acid Store sample at 4°C
2. Brominated and chlorinated Flame retardant		500 mL		
3. Banned Azodyes		500 mL		
4. Organotin Compounds		500 mL		
5. SCCPs		500 mL		
6. Navy Blue		10 mL		
7. Dyes		500 mL		
8. Flame retardant		500 mL		
9. Free primary aromatic amines		500 mL		
10. Chlorobenzenes		500 mL	Amber Glass, wash with nitric acid; Pre-add 6.5 mL of 2M HCl	Acidify to ~pH 2 with HCl and store sample at 4°C
11. Chlorophenols		500 mL		
12. APEOs/APs		500 mL		
13. Chlorinated Solvents		500 mL		Fill to full bottle without air; acidify to ~pH 2 with HCl and store sample at 4°C
14. Heavy Metals except CrVI		500 mL	Amber Glass, wash with nitric acid, pre-add 6.5mL of 2M HNO3	Acidify to pH 2 with HNO_3 and store at 4°C
15. CrVI		500 mL	Amber Glass, wash with pesticide grade acetone	Fill to full bottle without air nor adding acid and store sample at 4°C
16. PFCs		500 mL	PE, wash with pesticide grade Acetone;	Without adding acid Store sample at 4°C
17. Cyanide		500 mL	Amber Glass, wash with pesticide grade acetone	Adjust pH 12 with 50% NaOH and store at 4°C

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE FOR 11 PRIOPRITY CHEMICALS (COMPOSITE SAMPLING)

General Data

Laboratory Sample Number	(6816)270-0014
Client Name	Jack Wolfskin
Field Contact Person	Mr. Md. Abdus Salam Phone No: 01755-696593
Project (Facility Name and Address)	5098
Sampling Location / Description	Treated Waste Water
Sample Identification	Zero discharge with sampling plan
Sample Type	Time-Weighted Composite Grab Samples*
Name of Sampler	Md. Robel Awal
Discharge mode	Direct discharge to environment (Specify destination: Canel)
Date and time collected	25/09/2016 (11.30 am, 12.30 pm, 1.30 pm, 2.20 pm, 3.20 pm, 4.20 pm, 5.30 pm, 6.30 pm)
Factory Type	Dyeing/Printing/Washing/Finishing/Other (please specify) Dyeing Dyeing/Washing

*Note: It would be selected more than one

Field Data for wastewater

Field Parameters	pH : 7.7, 7.8, 7.7, 7.7, 7.7, 7.7, 7.4, 7.3	Temp : 36.0, 36.7, 37.0, 36.8, 36.0, 36.7, 35.4, 34.9 °C	Color : Colorless
Control No. of field equipment			

Analysis Required and Preservation Method

Factory with effluent treatment plant	Yes					
Sample matrix		Treated Waste Water – water at discharge point				
Sampler container number						
Recording time						
Volume collected, mL						
Total volume collected		Remark: Total volumn collected must be greater than total of sample size required				

Tests	Test required	Total of sample size	Type of container	Preservation method
1. Phthalate		500 mL	Amber Glass,wash with nitric acid, rinse thoroughly with distillated water and dry before use	Without adding acid Store sample at 4°C
2. Brominated and chlorinated Flame retardant		500 mL		
3. Banned Azodyes		500 mL		
4. Organotin Compounds		500 mL		
5. SCCPs		500 mL		
6. Navy Blue		10 mL		
7. Dyes		500 mL		
8. Flame retardant		500 mL		
9. Free primary aromatic amines		500 mL		
10. Chlorobenzenes		500 mL	Amber Glass, wash with nitric acid; Pre-add 6.5 mL of 2M HCl	Acidify to ~pH 2 with HCl and store sample at 4°C
11. Chlorophenols		500 mL		
12. APEOs/APs		500 mL		
13. Chlorinated Solvents		500 mL		Fill to full bottle without air; acidify to ~pH 2 with HCl and store sample at 4°C
14. Heavy Metals except CrVI		500 mL	Amber Glass, wash with nitric acid, pre-add 6.5mL of 2M HNO3	Acidify to pH 2 with HNO_3 and store at 4°C
15. CrVI		500 mL	Amber Glass, wash with pesticide grade acetone	Fill to full bottle without air nor adding acid and store sample at 4°C
16. PFCs		500 mL	PE, wash with pesticide grade Acetone;	Without adding acid Store sample at 4°C
17. Cyanide		500 mL	Amber Glass, wash with pesticide grade acetone	Adjust pH 12 with 50% NaOH and store at 4°C

AMENDMENT DETAILS

No.	Changes
1	Reporting template updated.