TEST REPORT

Technical Report	**(6721)331-0164**	December 10, 2021
Date Received	November 27, 2021	Page 1 of 18

Factory Company Name：	MARAL OVERSEAS LIMITED
Factory Address:	MARAL SAROVAR , KHALBUJURG , DISTRICT-KHARGONE-451660 (M.P.), INDIA
Project No.:	/
Client Reference No.:	/
Sampling Method:	I001) Raw Wastewater – 6 hours - Time – weighted Composite I002) Sludge Sample – Grab
Sample Pick Up Date:	November 25, 2021
Wastewater Discharge to:	ZLD (Zero Liquid Discharge)
On-Site Effluent Treatment Plant (ETP):	YES
Discharge Type:	ZLD (Zero Liquid Discharge)
Off-site ETP name (if applicable):	/
Local Regulation: / Ordinance requirements related to wastewater discharged are followed:	AW-52778
Permit Validation Date:	03/12/2020- 31/03/2022
Parameters Exceeded Local Regulation	N/A
Legal compliance:	N/A
Conventional Parameters Overall Category:	Progressive
Test Period:	November 27, 2021 to December 10, 2021
Sample Description:	I001) Pale Red liquid – Raw Wastewater I002) Brown solid– Sludge Sample
Parameters exceeded holding Time:	N/A
Sampler No:	8F146508870

Bureau Veritas Consumer Products Services (India) Pvt. Ltd.,
C-19, Sec – 7 Noida (U.P.) 201301 PH: 4368283/205

ULR -TC631221000180554P

REMARK

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

PLEASE CONTACT:
FOR ANY TECHNICAL ISSUES: RAMESH KUMAR / SUMANTA KUMAR SWAIN
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FOR ANY INVOICING MATTER: MR. MARTIN SEBASTIAN
E. MAIL: martin.sebastian@bureauveritas.com **PHONE NO:** 0120-4368200

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

* The sampling is agreed with client.

BUREAU VERITAS CONSUMER PRODUCTS SERVICES (INDIA) PVT. LTD.

SIGNATORIES

RAHUL SRIVASTAVA
(Manager – Analytical)

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

Note / Key :

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

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

Note / Key :

- ● – Detected
- o – Not Detected
- N/A – Not Applicable

Objective

The environment samples were tested for below parameters.

1A) Conventional Parameters –Anions -Cyanide for Sludge
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, two environment samples were sampled per factory, including; 1) Raw wastewater and 2) Sludge. 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.). Composite sampling shall be performed for no less than six hours, with no more than one hour between discrete samples. Each discrete sample shall be of equal volume. Wastewater and freshwater samples should, as much as possible, be collected simultaneously, during the time that PU is in normal operation. The sampling shall aim to analyse the snapshot of water quality characteristics of the operating PU. Under no circumstance shall samples be taken during times when the production process is not running or the wastewater is diluted due to heavy rainfall, etc.

Remark :

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

Test Result

ANIONS- Cyanide

Test Method **:** Reference to ISO 6703-1,2, ISO 14403 -1,2, US EPA 335.2, APHA 4500-CN , HJ 484

Tested Item(s)	Result	Unit	Conclusion
I002	<0.01	mg/kg	DATA

Note :

mg/kg = milligram per kilogram

Dry mass (total solids)

Test Method **:** Reference to US EPA 160.3 /209A

Tested Item(s)	Result	Unit	Conclusion
I002	75	%	DATA

% = % by mass

1B) Conventional Parameters – METALS

Heavy Metals	**I001 *(mg/L)***	**I002 *(mg/kg)***
Antimony(Sb) *Foundational Limit: 0.1 mg/L; Progressive Limit: 0.05 mg/L; Aspirational Limit: 0.01 mg/L*	ND (*Aspirational)*	NR
Chromium(Cr), total *Foundational Limit: 0.2 mg/L; Progressive Limit: 0.1 mg/L; Aspirational Limit: 0.05 mg/L*	0.011 (*Aspirational)*	NR
Cobalt(Co) *Foundational Limit:0.05 mg/L; Progressive Limit: 0.02 mg/L; Aspirational Limit: 0.01 mg/L*	ND (*Aspirational)*	NR
Copper(Cu) *Foundational Limit: 1 mg/L; Progressive Limit: 0.5 mg/L; Aspirational Limit: 0.25 mg/L*	0.367 (Progressive*)*	NR
Nickel (Ni) *Foundational Limit:.0.2 mg/L; Progressive Limit: 0.1 mg/L; Aspirational Limit: 0.05 mg/L*	ND (*Aspirational)*	NR
Silver (Ag) *Foundational Limit: 0.1 mg/L; Progressive Limit: 0.05 mg/L; Aspirational Limit: 0.005 mg/L*	ND (*Aspirational)*	NR
Zinc(Zn) *Foundational Limit: 5 mg/L; Progressive Limit: 1 mg/L; Aspirational Limit: 0.5 mg/L*	0.380 (*Aspirational)*	NR
Arsenic (As) *Foundational Limit: 0.05 mg/L; Progressive Limit: 0.01 mg/L; Aspirational Limit: 0.005 mg/L*	ND (*Aspirational)*	ND
Cadmium(Cd) *Foundational Limit: 0.1 mg/L; Progressive Limit: 0.05 mg/L; Aspirational Limit: 0.01 mg/L*	ND (*Aspirational*)	0.14
Lead(Pb) *Foundational Limit:0.1 mg/L; Progressive Limit: 0.05 mg/L; Aspirational Limit: 0.01 mg/l*	ND (*Aspirational*)	1.61
Mercury (Hg) *Foundational Limit: 0.01 mg/L; Progressive Limit: 0.005 mg/L; Aspirational Limit :0.001 mg/L*	ND (*Aspirational*)	ND
Chromium VI(CrVI) *Foundational Limit: 0.05 mg/L; Progressive Limit: 0.005 mg/L; Aspirational Limit: 0.001 mg/L*	ND (*Aspirational*)	ND

Others Priority Chemical Groups

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

Remark：

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

APPENDIX A - Photo of the Sample/ Sampling Location

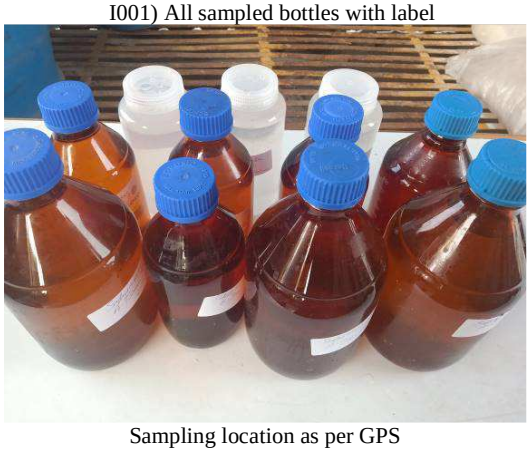
I001) Sampling Point

Sampling location as per GPS
(North 25.3540522, East74.5542485)

I001) Sampling Point Surrounding Environment

Sampling location as per GPS
(North 25.3540522, East74.5542485)

I001) All sampled bottles with label

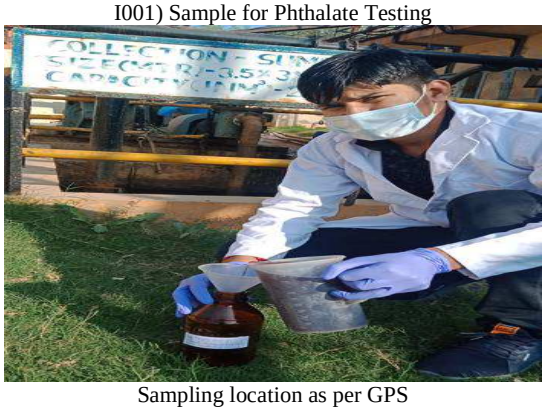


Sampling location as per GPS
(North 25.3540522, East74.5542485)

I001) pH Value

Sampling location as per GPS
(North 25.3540522, East74.5542485)

I001) Sample for Phthalate Testing



Sampling location as per GPS
(North 25.3540522, East74.5542485)

I001) Packaging

Sampling location as per GPS
(North 25.3540522, East74.5542485)

I002) Sampling Point

Sampling location as per GPS
(North 25.3540522, East74.5542485)

I002) Sampling Point Surrounding Environment

Sampling location as per GPS
(North 25.3540522, East74.5542485)

I002) All sampled bottles with label

Sampling location as per GPS
(North 25.3540522, East74.5542485)

I002) Sample for Phthalate Testing

Sampling location as per GPS
(North 25.3540522, East74.5542485)

I002) Packaging

Sampling location as per GPS
(North 25.3540522, East74.5542485)

APPENDIX B

Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg)/(ppm)	
2A. Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers	Nonylphenol NP, mixed isomers	Various (incl. 104-40-5, 11066-49-2, 25154-52-3, 84852-15-3)	5	0.4	NP/OP: ISO 18857-2 (modified dichloromethane extraction) or ASTM D7065 (GC/MS or LC/MS(-MS) OPEO/NPEO: ISO18857-2 or ASTM D7065(LC/MS; GC/MS or LC/MSMS for n=1,2) APEO 1-18
	Octylphenol OP, mixed isomers	Various (incl. 140-66-9, 1806-26-4, 27193-28-8)	5	0.4	
	Octylphenol ethoxylates (OPEO)	Various (incl. 9002-93-1, 9036-19-5, 68987-90-6)	5	0.4	
	Nonylphenol ethoxylates (NPEO)	Various (inc. 9016-45-9, 26027-38-3, 37205-87-1, 68412-54-4, 127087-87-0)	5	0.4	
2B. Chlorobenzenes and Chlorotoluenes	Monochlorobenzene	108-90-7	0.2	0.2	USEPA 8260B,8270D. Dichloromethane extraction followed by GC/MS
	1,2-Dichlorobenzene	95-50-1	0.2	0.2	
	1,3-Dichlorobenzene	541-73-1	0.2	0.2	
	1,4-Dichlorobenzene	106-46-7	0.2	0.2	
	1,2,3-Trichlorobenzene	87-61-6	0.2	0.2	
	1,2,4-Trichlorobenzene	120-82-1	0.2	0.2	
	1,3,5-Trichlorobenzene	108-70-3	0.2	0.2	
	1,2,3,4-Tetrachlorobenzene	634-66-2	0.2	0.2	
	1,2,3,5-Tetraclorobenzene	634-90-2	0.2	0.2	
	1,2,4,5-Tetrachlorobenzene	95-94-3	0.2	0.2	
	Pentachlorobenzene	608-93-5	0.2	0.2	
	Hexachlorobenzene	118-74-1	0.2	0.2	
	2-Chlorotoluene	95-49-8	0.2	0.2	
	3-Chlorotoluene	108-41-8	0.2	0.2	
	4-Chlorotoluene	106-43-4	0.2	0.2	
	2,3-Dichlorotoluene	32768-54-0	0.2	0.2	
	2,4-Dichlorotoluene	95-73-8	0.2	0.2	
	2,5-Dichlorotoluene	19398-61-9	0.2	0.2	
	2,6-Dichlorotoluene	118-69-4	0.2	0.2	
	3,4-Dichlorotoluene	95-75-0	0.2	0.2	
	3,5-Dichlorotoluene	25186-47-4	0.2	0.2	
	2,3,4-Trichlorotoluene	7359-72-0	0.2	0.2	
	2,3,6-Trichlorotoluene	2077-46-5	0.2	0.2	
	2,4,5-Trichlorotoluene	6639-30-1	0.2	0.2	
	2,4,6-Trichlorotoluene	23749-65-7	0.2	0.2	
	3,4,5-Trichlorotoluene	21472-86-6	0.2	0.2	
	2,3,4,5-Tetrachlorotoluene	76057-12-0	0.2	0.2	
	2,3,5,6-Tetrachlorotoluene	29733-70-8	0.2	0.2	
	2,3,4,6-Tetrachlorotoluene	875-40-1	0.2	0.2	
	Pentachlorotoluene	877-11-2	0.2	0.2	
2C. Chlorophenols	2-Chlorophenol	95-57-8	0.5	0.05	USEPA 8270 D Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC/MS
	3-Chlorophenol	108-43-0	0.5	0.05	
	4-Chlorophenol	106-48-9	0.5	0.05	
	2,3-Dichlorophenol	576-24-9	0.5	0.05	
	2,4-Dichlorophenol	120-83-2	0.5	0.05	
	2,5-Dichlorophenol	583-78-8	0.5	0.05	
	2,6-Dichlorophenol	87-65-0	0.5	0.05	
	3,4-Dichlorophenol	95-77-2	0.5	0.05	

Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg) /(ppm)	
	3,5-Dichlorophenol	591-35-5	0.5	0.05	
	2,3,4-Trichlorophenol	15950-66-0	0.5	0.05	
	2,3,5-Trichlorophenol	933-78-8	0.5	0.05	
	2,3,6-Trichlorophenol	933-75-5	0.5	0.05	
	2,4,5-Trichlorophenol	95-95-4	0.5	0.05	
	2,4,6-Trichlorophenol	88-06-2	0.5	0.05	
	3,4,5-Trichlorophenol	609-19-8	0.5	0.05	
	2,3,4,5-Tetrachlorophenol	4901-51-3	0.5	0.05	
	2,3,4,6-Tetrachlorophenol	58-90-2	0.5	0.05	
	2,3,5,6-Tetrachlorophenol	935-95-5	0.5	0.05	
	Pentachlorophenol (PCP)	87-86-5	0.5	0.05	
2D. Dyes - Azo (Forming Restricted Amines)	4,4`-Methylene-bis-(2-chloro-aniline)	101-14-4	0.1	0.2	EN 14362. Reduction step with Sodiumdithionite, solvent extraction, GC/MS or LC/MS
	4,4'-methylenedianiline	101-77-9	0.1	0.2	
	4,4`-Oxydianiline	101-80-4	0.1	0.2	
	4-Chloroaniline	106-47-8	0.1	0.2	
	3,3`-Dimethoxybenzidine	119-90-4	0.1	0.2	
	3,3`-Dimethylbenzidine	119-93-7	0.1	0.2	
	6-methoxy-m-toluidine (p-Cresidine)	120-71-8	0.1	0.2	
	2,4,5-Trimethylaniline	137-17-7	0.1	0.2	
	4,4`-Thiodianiline	139-65-1	0.1	0.2	
	4-Aminoazobenzene	60-09-3	0.1	0.2	
	4-Methoxy-m-phenylenediamine	615-05-4	0.1	0.2	
	4,4`-Methylene-di-o-toluidine	838-88-0	0.1	0.2	
	2,6-Xylidine	87-62-7	0.1	0.2	
	o-Anisidine	90-04-0	0.1	0.2	
	2-Naphthylamine	91-59-8	0.1	0.2	
	3,3`-Dichlorobenzidine	91-94-1	0.1	0.2	
	4-Aminodiphenyl	92-67-1	0.1	0.2	
	Benzidine	92-87-5	0.1	0.2	
	o-Toluidine	95-53-4	0.1	0.2	
	2,4-Xylidine	95-68-1	0.1	0.2	
	4-Chloro-o-toluidine	95-69-2	0.1	0.2	
	4-Methyl-m-phenylenediamine	95-80-7	0.1	0.2	
	o-Aminoazotoluene	97-56-3	0.1	0.2	
	5-nitro-o-toluidine	99-55-8	0.1	0.2	
2E. Dyes-Carcionogenic or Equivalent Concern	C.I. Direct Black 38	1937-37-7	500	10	Liquid Extraction LC/MS
	C.I. Direct Blue 6	2602-46-2	500	10	
	C.I. Acid Red 26	3761-53-3	500	10	
	C.I. Basic Red 9	569-61-9	500	10	
	C.I. Direct Red 28	573-58-0	500	10	
	C.I. Basic Violet 14	632-99-5	500	10	
	C.I. Disperse Blue 1	2475-45-8	500	10	
	C.I. Disperse Blue 3	2475-46-9	500	10	
	C.I. Basic Blue 26 (with Michler's Ketone > 0.1%)	2580-56-5	500	10	
	C.I. Basic Green 4 (malachite green chloride)	569-64-2	500	10	
	C.I. Basic Green 4 (malachite green oxalate)	2437-29-8	500	10	
	C.I. Basic Green 4(malachite green)	10309-95-2	500	10	
	Disperse Orange 11	82-28-0	500	10	
2F. Dyes-disperse	Disperse Yellow 1	119-15-3	50	2	Liquid Extraction

Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg)/(ppm)	
(sensitizing)	Disperse Blue 102	12222-97-8	50	2	LC/MS
	Disperse Blue 106	12223-01-7	50	2	
	Disperse Yellow 39	12236-29-2	50	2	
	Disperse Orange 37/59/76	13301-61-6	50	2	
	Disperse Brown 1	23355-64-8	50	2	
	Disperse Orange 1	2581-69-3	50	2	
	Disperse Yellow 3	2832-40-8	50	2	
	Disperse Red 11	2872-48-2	50	2	
	Disperse Red 1	2872-52-8	50	2	
	Disperse Red 17	3179-89-3	50	2	
	Disperse Blue 7	3179-90-6	50	2	
	Disperse Blue 26	3860-63-7	50	2	
	Disperse Yellow 49	54824-37-2	50	2	
	Disperse Blue 35	12222-75-2	50	2	
	Disperse Blue 124	61951-51-7	50	2	
	Disperse Yellow 9	6373-73-5	50	2	
	Disperse Orange 3	730-40-5	50	2	
	Disperse Blue 35	56524-77-7	50	2	
2G. Flame Retardants	Tris(2-chloroethyl) phosphate (TCEP)	115-96-8	5	1	ISO 22032, USEPA527 and USEPA8321B. Dichloromethane extraction GC/MS or LC/MS(-MS)
	Decabromodiphenyl ether (DecaBDE)	1163-19-5	5	1	
	Tris(2,3-dibromopropyl) phosphate (TRIS/TDBPP)	126-72-7	5	1	
	Pentabromodiphenyl ether (PentaBDE)	32534-81-9	5	1	
	Octabromodiphenyl ether (OctaBDE)	32536-52-0	5	1	
	Bis(2,3-dibromopropyl) phosphate (BIS/BDBPP)	5412-25-9	5	1	
	Tris(aziridinyl)-phosphineoxide (TEPA)	545-55-1	5	1	
	Polybromobiphenyls (PBBs)	59536-65-1	5	1	
	Tetrabromobisphenol A (TBBPA)	79-94-7	5	1	
	Hexabromocyclododecane (HBCDD)	3194-55-6	5	1	
	2,2-Bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0	5	1	
	Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	13674-87-8	5	1	
	Short chain chlorinated paraffins (SCCPs) (C10-C13)	85535-84-8	5	1	
2H. Glycols	Bis(2-methoxyethyl)-ether	111-96-6	50	10	US EPA 8270 Liquid Extraction LC/MS
	2-ethoxyethanol	110-80-5	50	10	
	2-ethoxyethyl acetate	111-15-9	50	10	
	Ethylene glycol dimethyl ether	110-71-4	50	10	
	2-methoxyethanol	109-86-4	50	10	
	2-methoxyethylacetate	110-49-6	50	10	
	2-methoxypropylacetate	70657-70-4	50	10	
	Triethylene glycol dimethyl ether	112-49-2	50	10	
2I. Halogenated Solvents	1,2-Dichloroethane	107-06-2	1	2	USEPA 8260B Headspace GC/MS or Purgeand-Trap-GC/MS
	Methylene Chloride	75-09-2	1	2	
	Trichloroethylene	79-01-6	1	2	

Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg)/(ppm)	
	Tetrachloroethylene	127-18-4	1	2	
2J. Organotin Compounds	Mono-, di- and tri-methyltin derivatives	Multiple	0.01	0.2	ISO 17353 Derivatisation with NaB(C2H5) GC/MS
	Mono-, di- and tri-butyltin derivatives	Multiple	0.01	0.2	
	Mono-, di- and tri-phenyltin derivatives	Multiple	0.01	0.2	
	Mono-, di- and tri-octyltin derivatives	Multiple	0.01	0.2	
	Monomethyltin	Multiple	0.01	0.2	
	Dimethyltin	Multiple	0.01	0.2	
	Trimethyltin	Multiple	0.01	0.2	
	Monobutyltin	Multiple	0.01	0.2	
	Dibutyltin	Multiple	0.01	0.2	
	Tributyltin	Multiple	0.01	0.2	
	Monophenyltin	Multiple	0.01	0.2	
	Diphenyltin	Multiple	0.01	0.2	
	Triphenyltin	Multiple	0.01	0.2	
	Monooctyltin	Multiple	0.01	0.2	
	Dioctyltin	Multiple	0.01	0.2	
	Trioctyltin	Multiple	0.01	0.2	
2K. Perfluorinated and Polyfluorinated Chemicals (PFCs)	Perfluorooctanesulfonic acid (PFOS)	1763-23-1	0.01	0.10	DIN 38407-42 (modified) Ionic PFC: Concentration or direct injection, LC/MS(-MS); Non-ionic PFC (FTOH): derivatisation with acetic anhydride, followed by GC/MS
	Perfluoro-n-octanoic acid (PFOA)	335-67-1	0.01	0.10	
	Perfluorobutanesulfonic acid (PFBS)	29420-49-3, 29420-43-3	0.01	0.10	
	Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	0.01	0.10	
	8:2 FTOH	678-39-7	1	1	
	6:2 FTOH	647-42-7	1	1	
2L. Phthalates (including all other esthers of phthalic acid)	Di-2-ethylhexyl phthalate (DEHP)	117-81-7	10	2	US EPA 8270D, ISO 18856 Dichloromethane extraction GC/MS
	Dimethoxyethyl phthalate (DMEP)	117-82-8	10	2	
	Di-n-octyl phthalate (DNOP)	117-84-0	10	2	
	Di-iso-decyl phthalate (DIDP)	26761-40-0	10	2	
	Di-iso-nonyl phthalate (DINP)	28553-12-0	10	2	
	Di-n-hexyl phthalate (DnHP)	84-75-3	10	2	
	Dibutyl phthalate (DBP)	84-74-2	10	2	
	Butyl benzyl phthalate (BBP)	85-68-7	10	2	
	Dinonyl phthalate (DNP)	84-76-4	10	2	
	Diethyl phthalate (DEP)	84-66-2	10	2	
	Di-n-propyl phthalate (DPRP)	131-16-8	10	2	
	Di-iso-butyl phthalate (DIBP)	84-69-5	10	2	
	Di-cyclohexyl phthalate (DCHP)	84-61-7	10	2	
	Di-iso-octyl phthalate (DIOP)	27554-26-3	10	2	
	1,2-benzenedicarboxylic acid, di-C7-11-branched and linearalkyl esters	68515-42-4	10	2	

Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg) /(ppm)	
	(DHNUP)				
	1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	10	2	
2M. Poly Aromatic Hydrocarbons (PaHs)	Benzo[a]pyrene (BaP)	50-32-8	1	0.2	DIN 38407-39 Solvent extraction GC/MS
	Anthracene	120-12-7	1	0.2	
	Pyrene	129-00-0	1	0.2	
	Benzo[ghi]perylene	191-24-2	1	0.2	
	Benzo[e]pyrene	192-97-2	1	0.2	
	Indeno[1,2,3-cd]pyrene	193-39-5	1	0.2	
	Benzo[j]fluoranthene	205-82-3	1	0.2	
	Benzo[b]fluoranthene	205-99-2	1	0.2	
	Fluoranthene	206-44-0	1	0.2	
	Benzo[k]fluoranthene	207-08-9	1	0.2	
	Acenaphthylene	208-96-8	1	0.2	
	Chrysene	218-01-9	1	0.2	
	Dibenz[a,h]anthracene	53-70-3	1	0.2	
	Benzo[a]anthracene	56-55-3	1	0.2	
	Acenaphthene	83-32-9	1	0.2	
	Phenanthrene	85-01-8	1	0.2	
	Fluorene	86-73-7	1	0.2	
	Naphthalene	91-20-3	1	0.2	
2N. Volatile Organic Compound (VOCs)	Benzene	71-43-2	1	2	ISO 11423-1 Headspace- or Purge-and-Trap-GC/MS
	Xylene	1330-20-7	1	2	
	o-cresol	95-48-7	1	2	
	p-cresol	106-44-5	1	2	
	m-cresol	108-39-4	1	2	
1A. Conventional Parameters	Temperature	—	N/A	N/A	Apply the standard methods that best apply to the region (ISO, EU, US, China), please refer to ZDHC Wastewater Guidelines for more details on the testing method and the levels (Foundational, Progressive, and Aspirational). Cyanide: With reference to APHA 4500 CN—B,C&E and followed by UV analysis
	TSS	—	N/A	N/A	
	COD	—	N/A	N/A	
	Total-N	—	N/A	N/A	
	pH	—	N/A	N/A	
	Color [m^{-1}] (436nm; 525nm; 620nm)	—	N/A	N/A	
	BOD5	—	N/A	N/A	
	Ammonium-N	—	N/A	N/A	
	Total-P	—	N/A	N/A	
	AoX	—	N/A	N/A	
	Oil and Grease	—	N/A	N/A	
	Phenol	—	N/A	N/A	
	Coliform(bacteria/100ml)	—	N/A	N/A	
	Persistent Foam	—	Not visible	Not visible	
	ANIONS				
	Cyanide(CN-)	Various (incl. 57-12-5)	0.02	1	
	Sulfide	—	N/A	N/A	
	Sulfite	—	N/A	N/A	

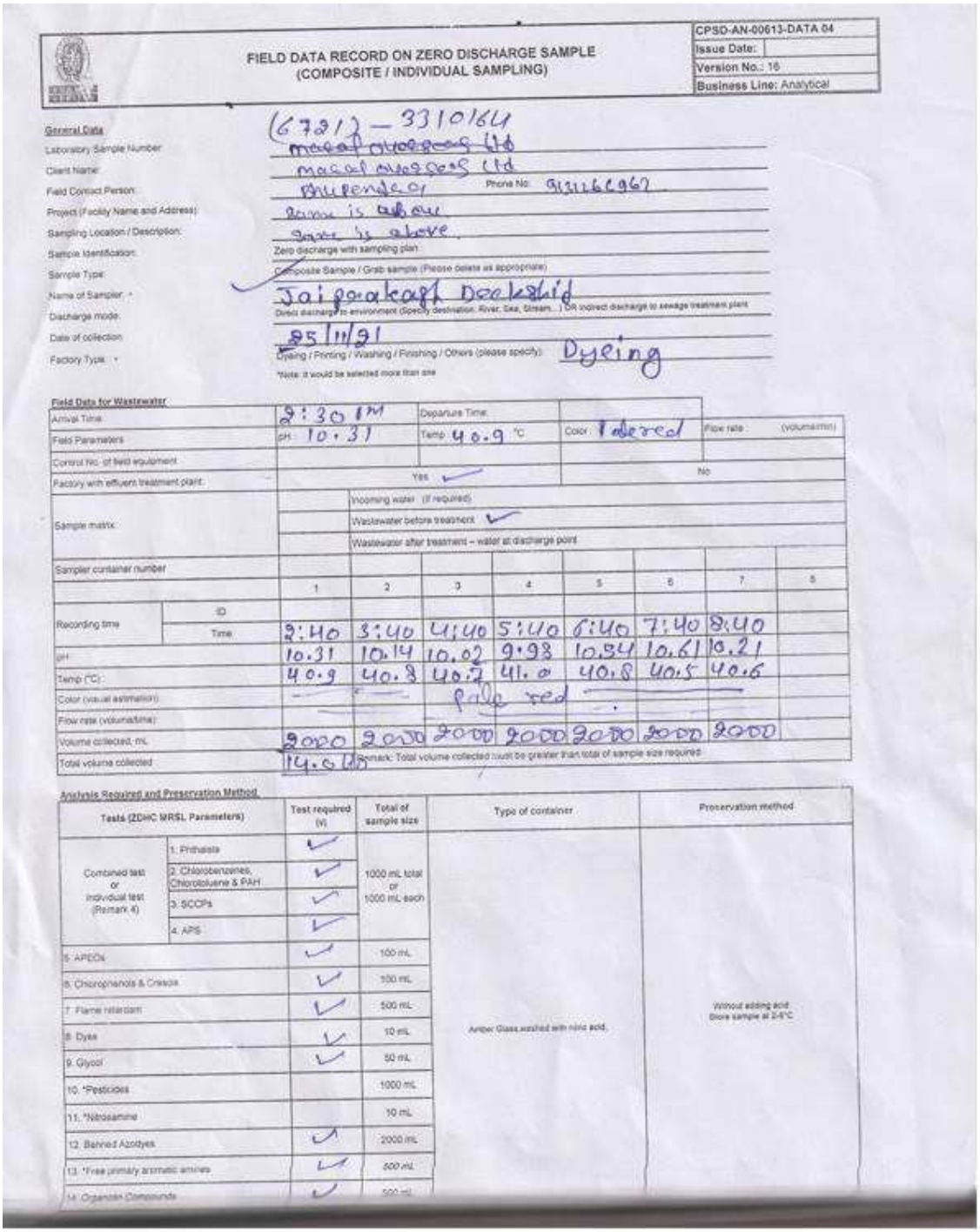
Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (mg/L) / (ppm)	Sludge (mg/kg) / (ppm)	
1B. Conventional Parameters - **METALS**	Antimony(Sb)	7440-36-0	0.001	N/A	Various Acid Digestion with ICP analysis please refer to ZDHC
	Chromium(Cr), total	7440-47-3	0.001	N/A	
	Cobalt(Co)	7440-48-4	0.001	N/A	
	Copper(Cu)	7440-50-8	0.001	N/A	
	Nickel (Ni)	7440-02-0	0.001	N/A	

Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg) /(ppm)	
	Silver (Ag)	7440-22-4	0.001	N/A	Wastewater Guidelines for more details on the testing method and the levels (Foundational, Progressive, and Aspirational). Cr(VI): Various Solvent extraction and derivatisation followed by UV analysis
	Zinc(Zn)	7440-66-6	0.001	N/A	
	Arsenic (As)	7440-38-2	0.001	2	
	Cadmium(Cd)	7440-43-9	0.0001	2	
	Chromium VI(CrVI)	18540-29-9	0.001	2	
	Lead(Pb)	7439-92-1	0.001	2	
	Mercury (Hg)	7439-97-6	0.00005	0.2	
3. Conventional Parameters	Dry mass (total solids)	—	N/A	N/A	US EPA 160.3 / 209A

Note / Key :

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

APPENDIX C – Onsite Field Data Record Sheet



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

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

General Data

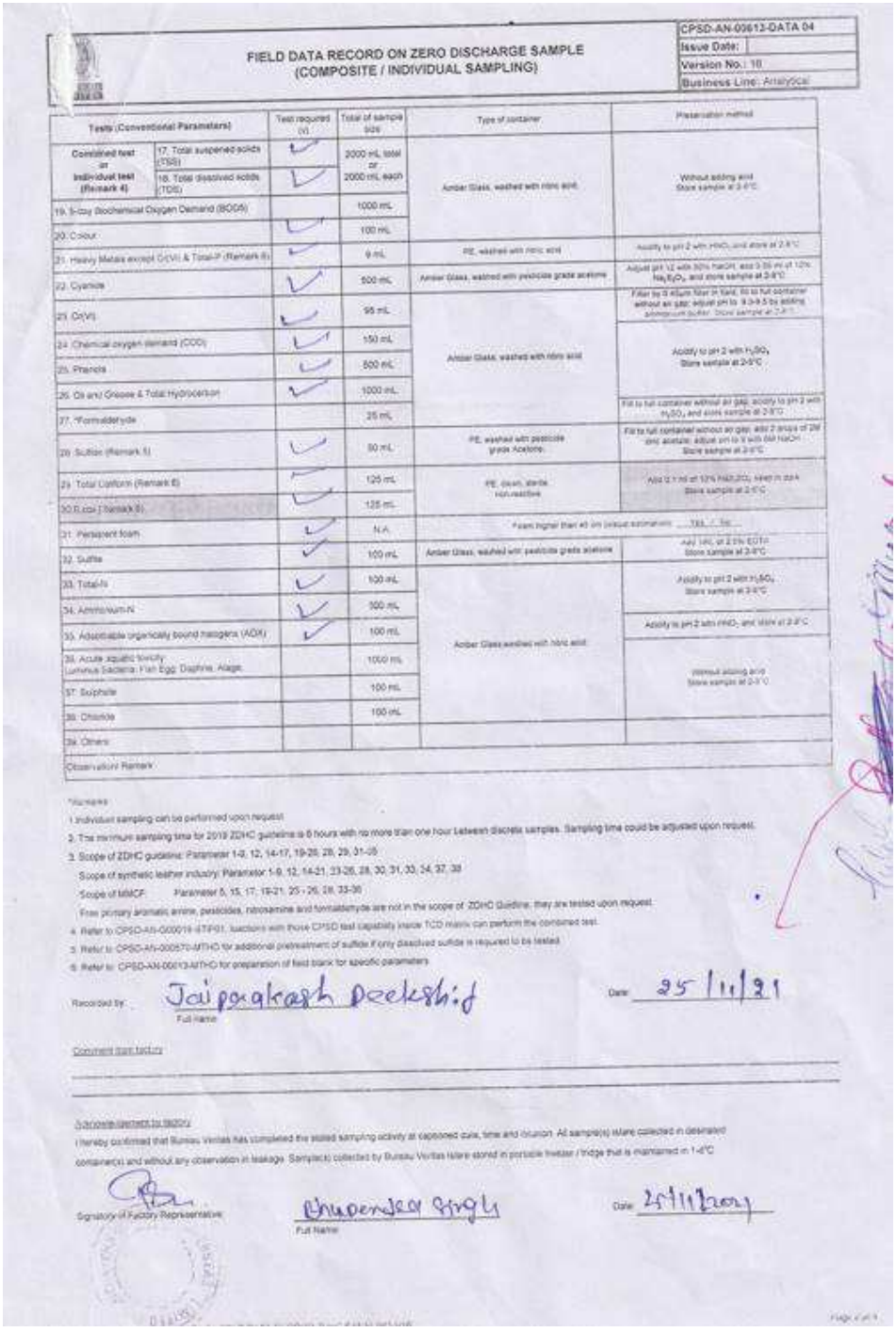
Laboratory Sample Number: (6721) – 3310164
Client Name: macal enterprises ltd
Field Contact Person: Bhupendra ol Phone No: 9312626962
Project (Facility Name and Address): same is above
Sampling Location / Description: same is above.
Sample Identification:
Sample Type: Zero discharge with sampling plan
Name of Sampler: * Composite Sample / Grab sample (Please delete as appropriate)
Discharge mode: Jaigopakash Deokshid
Date of collection: Direct discharge to environment (Specify destination: River, Sea, Stream...) OR Indirect discharge to sewage treatment plant
Factory Type: * 25/11/21
Dyeing / Printing / Washing / Finishing / Others (please specify): Dyeing
*Note: It would be selected more than one

Field Data for Wastewater

Arrival Time: 2:30 PM	Departure Time:						
Field Parameters: pH: 10.31	Temp: 40.9 °C	Color: Reddish	Flow rate: (volume/min)				
Control No. of field equipment:							
Factory with effluent treatment plant: Yes ✓		No					
Sample matrix: Incoming water (if required)							
Wastewater before treatment ✓							
Wastewater after treatment – water at discharge point							
Sampler container number	1	2	3	4	5	6	7	8
Recording time: ID								
Recording time: Time	2:40	3:40	4:40	5:40	6:40	7:40	8:40	
pH	10.31	10.14	10.02	9.98	10.34	10.61	10.21	
Temp (°C)	40.9	40.8	40.7	41.0	40.8	40.5	40.6	
Color (visual estimation)			pale red					
Flow rate (volume/time)								
Volume collected, mL	2000	2000	2000	2000	2000	2000	2000	
Total volume collected: 14.0 Lit Remark: Total volume collected must be greater than total of sample size required								

Analysis Required and Preservation Method

Tests (ZDHC MRSL Parameters)		Test required (√)	Total of sample size	Type of container	Preservation method
Combined test or individual test (Remark 4)	1. Phthalate	✓	1000 mL total or 1000 mL each	Amber Glass washed with nano acid.	Without adding acid Store sample at 2-6°C
	2. Chlorobenzenes, Chlorotoluene & PAH	✓			
	3. SCCPs	✓			
	4. APS	✓			
5. APEOs		✓	100 mL		
6. Chlorophenols & Cresols		✓	100 mL		
7. Flame retardant		✓	500 mL		
8. Dyes		✓	10 mL		
9. Glycol		✓	50 mL		
10. *Pesticides			1000 mL		
11. *Nitrosamine			10 mL		
12. Banned Azodyes		✓	2000 mL		
13. *Free primary aromatic amines		✓	500 mL		
14. Organotin Compounds		✓	500 mL		



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

CPSD-AN-03613-DATA 04
Issue Date:
Version No.: 10
Business Line: Analytical

Tests (Conventional Parameters)		Test required (√)	Total of sample size	Type of container	Preservation method
Combined test or Individual test (Remark 4)	17. Total suspened solids (TSS)	✓	2000 mL total or 2000 mL each	Amber Glass, washed with nitric acid	Without adding acid Store sample at 2-8°C
	18. Total dissolved solids (TDS)	✓			
19. 5-day Biochemical Oxygen Demand (BOD5)			1000 mL		
20. Colour		✓	100 mL		
21. Heavy Metals except Cr(VI) & Total-P (Remark 8)		✓	9 mL	PE, washed with nitric acid	Acidify to pH 2 with HNO_3 and store at 2-8°C
22. Cyanide		✓	500 mL	Amber Glass, washed with pesticide grade acetone	Adjust pH >12 with 50% NaOH, add 0.06 mL of 12% $Na_2S_2O_3$, and store sample at 2-8°C
23. Cr(VI)		✓	95 mL	Amber Glass, washed with nitric acid	Filter by 0.45μm filter in field, fill to full container without air gap; adjust pH to 9.3-9.5 by adding ammonium buffer. Store sample at 2-8°C
24. Chemical oxygen demand (COD)		✓	150 mL		Acidify to pH 2 with H_2SO_4 Store sample at 2-8°C
25. Phenols		✓	500 mL		
26. Oil and Grease & Total Hydrocarbon		✓	1000 mL		
27. *Formaldehyde			25 mL		Fill to full container without air gap, acidify to pH 2 with H_2SO_4 and store sample at 2-8°C
29. Sulfide (Remark 5)		✓	50 mL	PE, washed with pesticide grade Acetone	Fill to full container without air gap; add 2 drops of 2M zinc acetate; adjust pH to 9 with 6M NaOH Store sample at 2-8°C
29. Total Coliform (Remark 6)		✓	125 mL	PE, clean, sterile non-reactive	Add 0.1 ml of 10% $Na_2S_2O_3$, keep in ice Store sample at 2-8°C
30. E.coli (Remark 6)		✓	125 mL		
31. Persistent foam		✓	N.A.	Foam higher than 40 cm (visual estimation) YES / NO	
32. Sulfite		✓	100 mL	Amber Glass, washed with pesticide grade acetone	Add 1mL of 2.5% EDTA Store sample at 2-8°C
33. Total-N		✓	100 mL	Amber Glass washed with nitric acid	Acidify to pH 2 with H_2SO_4 Store sample at 2-8°C
34. Ammonium-N		✓	500 mL		
35. Adsorbable organically bound halogens (AOX)		✓	100 mL		Acidify to pH 2 with HNO_3, and store at 2-8°C
36. Acute aquatic toxicity Luminus bacteria, Fish Egg, Daphnia, Algae			1000 mL		Without adding acid Store sample at 2-8°C
37. Sulphate			100 mL		
38. Chloride			100 mL		
39. Others					
Observation/ Remark					

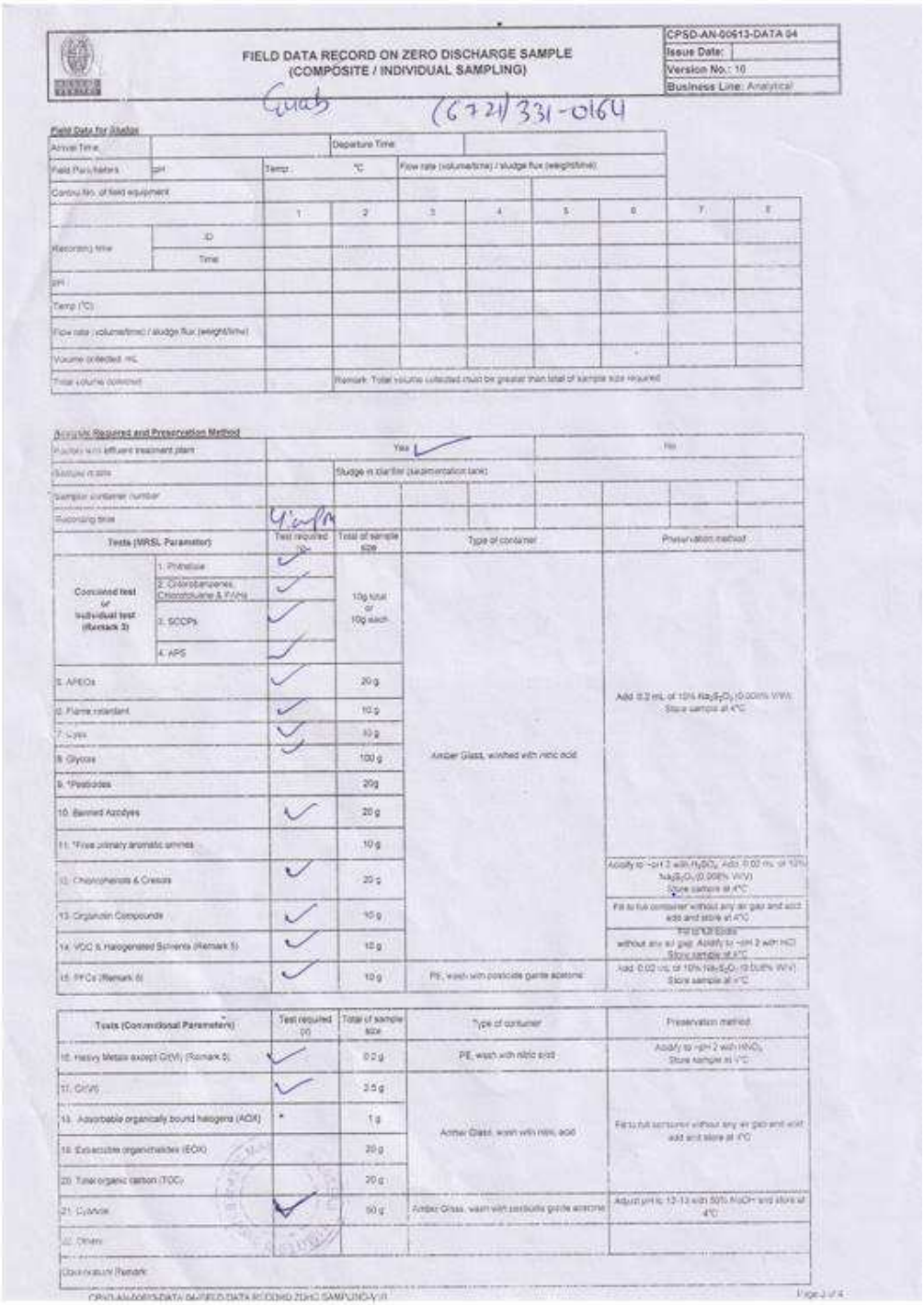
*Remarks
1. Individual sampling can be performed upon request
2. The minimum sampling time for 2019 ZDHC guideline is 6 hours with no more than one hour between discrete samples. Sampling time could be adjusted upon request.
3. Scope of ZDHC guideline: Parameter 1-9, 12, 14-17, 19-26, 28, 29, 31-35
Scope of synthetic leather industry: Parameter 1-9, 12, 14-21, 23-26, 28, 30, 31, 33, 34, 37, 38
Scope of MMCF: Parameter 5, 15, 17, 19-21, 25 - 26, 28, 33-36
Free primary aromatic amine, pesticides, nitrosamine and formaldehyde are not in the scope of ZDHC Guideline, they are tested upon request.
4. Refer to CPSD-AN-000019-ETP01, laactions with those CPSD test capability inside TCD matrix can perform the combined test
5. Refer to CPSD-AN-000570-MTHD for additional pretreatment of sulfide if only dissolved sulfide is required to be tested
6. Refer to CPSD-AN-00613-MTHD for preparation of field blank for specific parameters

Recorded by: Jaiprakash Deekshit (Full name) Date: 25/11/21

Comment from factory:

To be completed by factory
I hereby confirmed that Bureau Veritas has completed the stated sampling activity at captioned date, time and location. All sample(s) is/are collected in designated containers and without any observation in leakage. Sample(s) collected by Bureau Veritas is/are stored in portable freezer / fridge that is maintained in 1-4°C

Signatory of Factory Representative: Bhupendra Singh (Full Name) Date: 25/11/2021



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

CPSD-AN-00513-DATA 04
Issue Date:
Version No.: 10
Business Line: Analytical

Grab

(6721)331-0164

Field Data for Grabs

Arrival Time:			Departure Time:						
Field Parameters	pH		Temp.	°C	Flow rate (volume/time) / sludge flux (weight/time)				
Conductivity of field equipment									
		1	2	3	4	5	6	7	8
Recording time	ID								
	Time								
pH									
Temp (°C)									
Flow rate (volume/time) / sludge flux (weight/time)									
Volume collected: mL									
Total volume collected		Remark: Total volume collected must be greater than total of sample size required							

Analysis Required and Preservation Method

Position with effluent treatment plant		Yes ✓				No			
Position in pits		Sludge in clarifier (sedimentation tank)							
Sampler container number									
Receiving time		4:50PM							

Tests (WRSL Parameter)		Test required (✓)	Total of sample size	Type of container	Preservation method
Concluded test or Individual test (Remark 3)	1. Phthalate	✓	10g total or 10g each	Amber Glass, washed with nitric acid	Add 0.2 mL of 10% $Na_2S_2O_3$ (0.00% W/V) Store sample at 4°C
	2. Chlorobenzenes, Chlorotoluene & PCNs	✓			
	3. SCCPs	✓			
	4. APS	✓			
5. APEOs		✓	20 g		
6. Flame retardant		✓	10 g		
7. Lipids		✓	10 g		
8. Glycols		✓	100 g		
9. *Pesticides			20g		
10. Banned Azodyes		✓	20 g		
11. *Free primary aromatic amines			10 g		
12. Chlorophenols & Cresols		✓	20 g		Acidify to ~pH 2 with H_2SO_4. Add 0.02 mL of 10% $Na_2S_2O_3$ (0.00% W/V) Store sample at 4°C
13. Organotin Compounds		✓	10 g		Fill to full container without any air gap and acid add and store at 4°C
14. VOC & Halogenated Solvents (Remark 5)		✓	10 g		Fill to full container without any air gap. Acidify to ~pH 2 with HCl Store sample at 4°C
15. PFCs (Remark 6)		✓	10 g	PE, wash with pesticide grade acetone	Add 0.02 mL of 10% $Na_2S_2O_3$ (0.00% W/V) Store sample at 4°C

Tests (Conventional Parameters)	Test required (✓)	Total of sample size	Type of container	Preservation method
16. Heavy Metals except Cr(VI) (Remark 5)	✓	0.2 g	PE, wash with nitric acid	Acidify to ~pH 2 with HNO_3 Store sample at 4°C
17. Cr(VI)	✓	2.5 g	Amber Glass, wash with nitric acid	Fill to full container without any air gap and acid add and store at 4°C
18. Adsorbable organically bound halogens (AOX)	*	1 g		
19. Extractable organohalides (EOX)		20 g		
20. Total organic carbon (TOC)		20 g		
21. Cyanide	✓	50 g	Amber Glass, wash with pesticide grade acetone	Adjust pH to 12-13 with 50% NaOH and store at 4°C
22. Others				
Discrepancy Remark:				

CPSD-AN-00513-DATA 04-FIELD DATA RECORD ZERO SAMPLING-V.10

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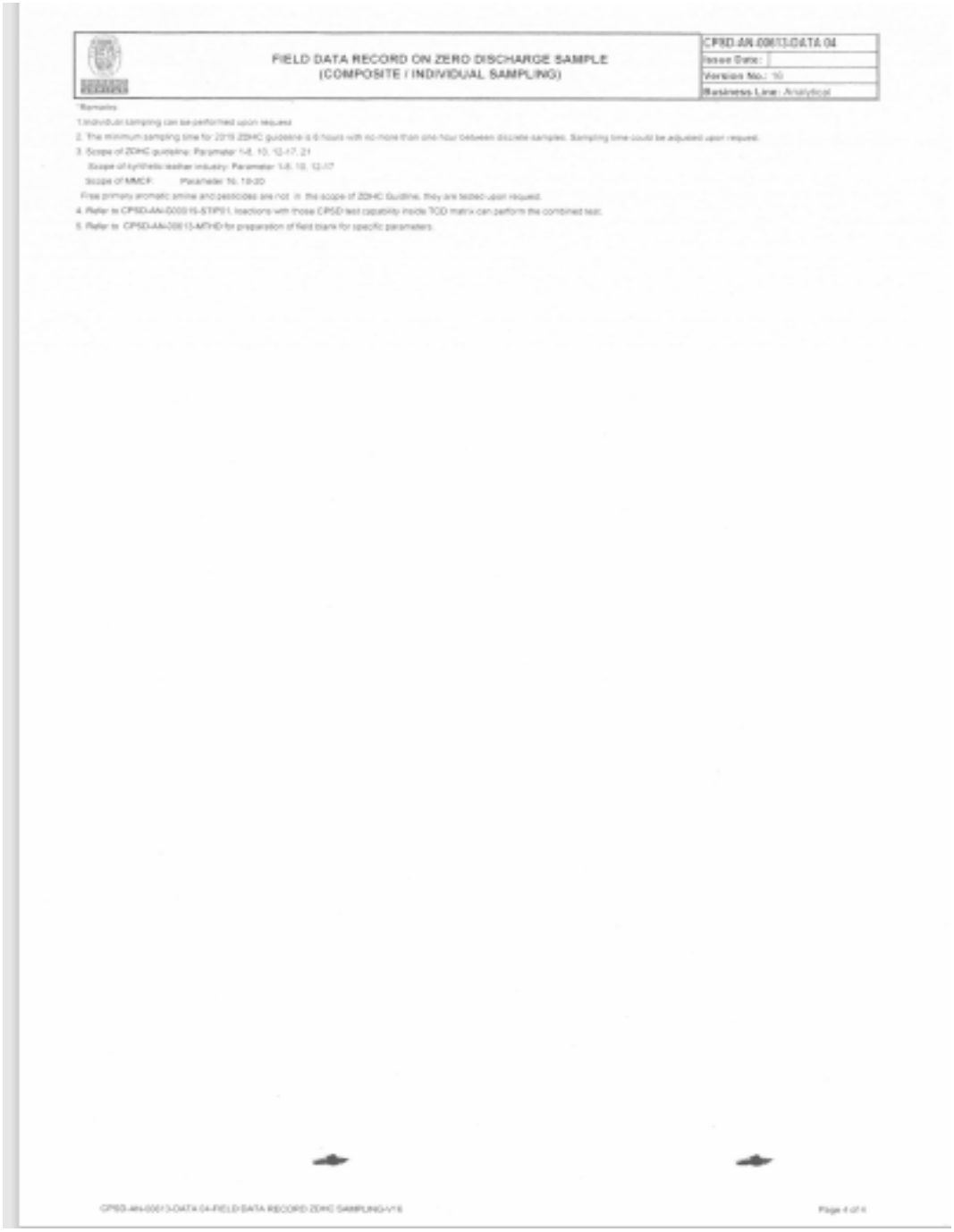

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE
(COMPOSITE / INDIVIDUAL SAMPLING)

CPSD-AN-00613-DATA 04
Issue Date:
Version No.: 10
Business Line : Analytical

*Remarks
1.Individual sampling can be performed upon request
2. The minimum sampling time for 2019 ZDHC guideline is 6 hours with no more than one hour between discrete samples. Sampling time could be adjusted upon request.
3. Scope of ZDHC guideline: Parameter 1-8, 10, 12-17, 21
Scope of synthetic leather industry: Parameter 1-8, 10, 12-17
Scope of MMCF: Parameter 10, 19-20
Free primary aromatic amine and pesticides are not in the scope of ZDHC Guidline, they are tested upon request.
4. Refer to CPSD-AN-00019-STP01, Inactions with those CPSD test capability inside TCID matrix can perform the combined test.
5. Refer to CPSD-AN-00613-MTHD for preparation of field blank for specific parameters.

CPSD-AN-00613-DATA 04-FIELD DATA RECORD ZDHC SAMPLING-V10

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APPENDIX D – Limitation Value of Legal Requirements

N/A