

RelyOn Nutec Denmark A/S
Uglviggårdsvej 3
6705 Esbjerg Ø
Att.: Rene Petersen

Report code: AR-21-CA-21087751-01
Batch code: EUDKVE-21087751
Client code: CA0000723
Received on: 10.08.2021

Analytical Report

Sample type: Waste water
Sampling Point: RelyOn Nutec - Spildevand - / 20001561
Sampler: Eurofins Miljø Vand A/S SVT
Sampling: 10.08.2021 . 13:20
Test period: 10.08.2021 - 25.08.2021

Sample description:

Lab sample No.:	835-2014-80210314	Unit	LOQ	Method	^{m)} Urel (%)
Inhibition of nitrification					
Dilution	200	ml/l		Preparation	
Inhibition of nitrification 1 conc/std sludge	< 20	%	20	DS/EN ISO 9509:2006 mod.	25
Sludge used for Inhibition of nitrification					
Sludge from a specific treatment plan				*	
Organic Assembly Parameters					
Oil	0.24	mg/l	0.1	DS/R 209 mod. Spectrophotometry (IR)	15
Aromatic hydrocarbons					
Benzene	< 0.02	µg/l	0.02	ISO 11423-2:1997 mod. GC-MS	20
Toluene	0.020	µg/l	0.02	ISO 11423-2:1997 mod. GC-MS	15
Ethylbenzene	< 0.02	µg/l	0.02	ISO 11423-2:1997 mod. GC-MS	20
Xylene (ortho-)	< 0.02	µg/l	0.02	ISO 11423-2:1997 mod. GC-MS	15
Xylene (meta-, para-)	< 0.02	µg/l	0.02	ISO 11423-2:1997 mod. GC-MS	15
Sum of xylenes	#	µg/l		ISO 11423-2:1997 mod. GC-MS	20
BTEX (sum)	0.020	µg/l		ISO 11423-2:1997 mod. GC-MS	20
PAH-compounds					
Acenaphthene	< 0.01	µg/l	0.01	M 0250 GC-MS	30
Fluorene	0.024	µg/l	0.01	M 0250 GC-MS	30
Phenanthrene	0.014	µg/l	0.01	M 0250 GC-MS	30
Fluoranthene	0.072	µg/l	0.01	M 0250 GC-MS	30
Pyrene	0.14	µg/l	0.01	M 0250 GC-MS	30
Benzo[b+j+k]fluoranthene	0.033	µg/l	0.01	M 0250 GC-MS	30
Benzo(a)pyrene	0.016	µg/l	0.01	M 0250 GC-MS	30
Indeno(1,2,3-cd)pyrene	0.021	µg/l	0.01	M 0250 GC-MS	30
Benzo(g,h,i)perylene	0.032	µg/l	0.01	M 0250 GC-MS	30
PAH, all	0.35	µg/l		M 0250 GC-MS	
Dioxins					
2,3,7,8-TetraCDD	< 0.655	pg/l	0.72	Internal GC-MS/MS	A
1,2,3,7,8-PentaCDD	< 0.873	pg/l	0.96	Internal GC-MS/MS	A
1,2,3,4,7,8-HexaCDD	< 1.75	pg/l	1.9	Internal GC-MS/MS	A
1,2,3,6,7,8-HexaCDD	< 1.75	pg/l	1.9	Internal GC-MS/MS	A
1,2,3,7,8,9-HexaCDD	< 1.75	pg/l	1.9	Internal GC-MS/MS	A

Legend:

<: less than
>: greater than
#: none of the parameters are detected
LOQ Limit of quantification

*) : Not included in the accreditation
n.d: not detected
NM: non-measurable
m): subcontractors

Urel (%): The expanded relative measurement uncertainty, with a coverage factor 2. For results at the level of detection limit the uncertainty might be higher than reported.

m): Uncertainties of microbiological parameters are given as a logarithmical standard deviation

The test results relate only to the items tested.

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1,2,3,4,6,7,8-HeptaCDD	< 1.49	pg/l	1.6	Internal GC-MS/MS	A
OctaCDD	< 10.5	pg/l	12	Internal GC-MS/MS	A
2,3,7,8-TetraCDF	< 1.16	pg/l	1.3	Internal GC-MS/MS	A
1,2,3,7,8-PentaCDF	< 1.56	pg/l	1.7	Internal GC-MS/MS	A
2,3,4,7,8-PentaCDF	< 1.56	pg/l	1.7	Internal GC-MS/MS	A
1,2,3,4,7,8-HexaCDF	< 1.45	pg/l	1.6	Internal GC-MS/MS	A
1,2,3,6,7,8-HexaCDF	< 1.45	pg/l	1.6	Internal GC-MS/MS	A
1,2,3,7,8,9-HexaCDF	< 1.45	pg/l	1.6	Internal GC-MS/MS	A
2,3,4,6,7,8-HexaCDF	< 1.45	pg/l	1.6	Internal GC-MS/MS	A
1,2,3,4,6,7,8-HeptaCDF	2.71	pg/l	1.5	Internal GC-MS/MS	A
1,2,3,4,7,8,9-HeptaCDF	< 1.38	pg/l	1.5	Internal GC-MS/MS	A
OctaCDF	24.5	pg/l	3.2	Internal GC-MS/MS	A
WHO(2005)-PCDD/F TEQ (lower-bound)	0.0345	pg/l		Internal GC-MS/MS	A
WHO(2005)-PCDD/F TEQ (upper-bound)	3.33	pg/l	3.6	Internal GC-MS/MS	A
I-TEQ (NATO/CCMS) (lower-bound)	0.0516	pg/l		Internal GC-MS/MS	A
I-TEQ (NATO/CCMS) (upper-bound)	3.26	pg/l		Internal GC-MS/MS	A
PFAS-compounds					
PFBA (Perfluorobutanoic acid)	0.30	µg/l	0.001	* DIN38407-42, UNEP Chemicals Branch 2015 mod. LC-MS/MS	B 40
PFBS (Perfluorobutanesulfonic acid)	0.014	µg/l	0.001	* DIN38407-42, UNEP Chemicals Branch 2015 mod. LC-MS/MS	B 40
PFPeA (Perfluoropentanoic acid)	1.3	µg/l	0.001	* DIN38407-42, UNEP Chemicals Branch 2015 mod. LC-MS/MS	B 40
PFHxA (Perfluorohexanoic acid)	1.5	µg/l	0.001	* DIN38407-42, UNEP Chemicals Branch 2015 mod. LC-MS/MS	B 40
PFHxS (Perfluorohexanesulfonic acid)	0.26	µg/l	0.001	* DIN38407-42, UNEP Chemicals Branch 2015 mod. LC-MS/MS	B 40
PFHpA (Perfluoroheptanoic acid)	0.40	µg/l	0.001	* DIN38407-42, UNEP Chemicals Branch 2015 mod. LC-MS/MS	B 40
PFOA (Perfluorooctanoic acid)	0.17	µg/l	0.001	* DIN38407-42, UNEP Chemicals Branch 2015 mod. LC-MS/MS	B 40
PFOS (Perfluorooctanesulfonic acid)	1.5	µg/l	0.001	* DIN38407-42, UNEP Chemicals Branch 2015 mod. LC-MS/MS	B 40
6:2 FTS (Fluorotelomer sulfonate)	12	µg/l	0.001	* DIN38407-42, UNEP Chemicals Branch 2015 mod. LC-MS/MS	B 40

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PFOSA (Perfluorooctanesulfonamide)	<0.010	µg/l	0.001	* DIN38407-42, UNEP Chemicals Branch 2015 mod. LC-MS/MS	B 40
PFNA (Perfluorononanoic acid)	0.028	µg/l	0.001	* DIN38407-42, UNEP Chemicals Branch 2015 mod. LC-MS/MS	B 40
PFDA (Perfluorodecanoic acid)	0.013	µg/l	0.001	* DIN38407-42, UNEP Chemicals Branch 2015 mod. LC-MS/MS	B 40
Sum of PFAS	17	µg/l	0	* DIN38407-42, UNEP Chemicals Branch 2015 mod. LC-MS/MS	B

Information from sampler

Sampling method	Spot test		ISO 5667-10:1992:2007	C
Water temperature	17.3	°C	ISO 5667-10:1992:2007	C
pH	7.1	pH	DS/EN ISO 10523	C

Subcontractors:

A: Eurofins GfA Lab Service GmbH (Hamburg) (DIN EN ISO/IEC 17025:2018 Dakks D-PL-14629-01-00)
B: Eurofins Food & Feed Testing Sweden (Lidköping)
C: Eurofins Environment Water A/S (DS EN ISO/IEC 17025 DANAK 555)

835-2014-80210314 Sample comment:

The detection limit has been increased due to high levels of PFASs in the sample.
As a standard routine, all samples for total hydrocarbons on FID and/or hydrocarbons on GC-MS are decanted before analysis.
Sum of xylenes is the sum of the results for Ethylbenzene,
m + p-Xylene and o-Xylene.

Batch comments:

Water amount: 108,649 m3/day = 1,25 l/s

Copy to:

DIN Forsyning Spildevand A/S, Kopimodtager, spildevand, Ulvsundvej 1, 6715 Esbjerg N
Esbjerg Kommune, miljo@esbjergkommune.dk, Torvegade 74, 6700 Esbjerg

25.08.2021

Customer center
Tel 70224231
iww@eurofins.dk

Lotte Marianne Faber
Lotte Marianne Faber
Customer Advyser

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