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VOLATILE ORGANIC CHEMICALS REDUCTION TEST REPORT

Report # 12-147-1 (Tyent Ultra Filtration System)
Report Date: 05/23/2012
Customer Name: Tyent USA
Site Address: 137 Hurfville Crosskeys, Sewell NJ 08080
Date Sampled: 05/18/2012

EXECUTIVE SUMMARY

A Tyent Ultra Filtration System was tested for reduction of Volatile Organic Compounds (VOC's) following the procedures of the NSF/ANSI Standard 53, section 7.2.1. The filter reduced the VOC's to levels below the limits set forth by the NSF Standard 53. Passed.

INTRODUCTION

A Tyent Ultra Filtration System was tested for reduction of VOC's at high pH following the procedures of the NSF/ANSI Standard 53, section 7.2.1. The filter was challenged with water prepared at the VOC's concentrations set forth in the NSF Standard 53; the filtration system reduced the VOC's tested. The filtration system conforms to all the VOC's reduction testing set forth by the NSF/ANSI Standard 53. Passed.

REAGENTS, MATERIALS, AND LAB EQUIPMENT

HP 5890/5972 GC/MS system with ChemStation data system.
Restek VMS GC column 60m, 0.25mm ID, 0.25um film.
Restek VOC Megamix standard solution, catalog # 30603.
Hanna TDS meter Combo pH & EC.
DI water ASTM reagent type 3.
Sodium Chloride.
Tyent Ultra Filtration System
- 1st Filter Serial # Oct.21.2011
- 2nd Filter Serial # May.18.2011

Electric Pump (Flow Pressure 60 PSI).

PROCEDURE

Connected the feeding chemical electric pump to a Tyent Ultra Filtration System, flushed about 1 gallon of tap water through the filter. Prepared 10 gallons of influent water with VOC's at concentrations set forth by the NSF Standard 53; Table 2 summarized the Influent water properties. Pumped 10 gallons of Influent water through the filter system at a flow pressure of less than 125 PSI. Collected the effluent water and analyzed the filtered water for VOC's using EPA 524.2 method of analysis. The results are summarized in Table 1 below.

RESULTS

Table 1
Volatile Organic Chemicals Concentrations
Tyent Ultra Filtration System

Test Parameter	Influent Water Concentration	Effluent Water Ultra Filter System	Maximum Effluent Concentration
Benzene	0.015 mg/L	<0.0005 mg/L	0.005 mg/L
Carbon tetrachloride	0.015 mg/L	<0.0005 mg/L	0.005 mg/L
Chlorobenzene	2.1 mg/L	<0.0005 mg/L	0.1 mg/L
1,2-Dibromo-3-chloropropane	0.015 mg/L	<0.0001 mg/L	0.0002 mg/L
1,2-Dichlorobenzene	1.8 mg/L	<0.0005 mg/L	0.6 mg/L
1,4-Dichlorobenzene	0.2 mg/L	<0.0005 mg/L	0.075 mg/L
1,2-Dichloroethane	0.015 mg/L	<0.0005 mg/L	0.005 mg/L
1,1-Dichloroethene	0.015 mg/L	<0.0005 mg/L	0.007 mg/L
cis-1,2-Dichloroethene	1.4 mg/L	<0.0005 mg/L	0.07 mg/L
trans-1,2-Dichloroethene	2.1 mg/L	<0.0005 mg/L	0.1 mg/L
1,2-Dichloropropane	0.015 mg/L	<0.0005 mg/L	0.005 mg/L
Ethylbenzene	2.1 mg/L	<0.0005 mg/L	0.7 mg/L
Ethylene Bromide	0.002 mg/L	<0.00005 mg/L	0.00005 mg/L
Methyl-t-butyl ether	0.015 mg/L	<0.0005 mg/L	0.005 mg/L
Styrene	2.0 mg/L	<0.0005 mg/L	0.1 mg/L
Tetrachloroethene	0.015 mg/L	<0.0005 mg/L	0.005 mg/L
Toluene	3.1 mg/L	<0.0005 mg/L	1 mg/L
1,2,4-Trichlorobenzene	0.2 mg/L	<0.0005 mg/L	0.07 mg/L
1,1,1-Trichloroethane	0.6 mg/L	<0.0005 mg/L	0.2 mg/L
Trichloroethene	0.3 mg/L	<0.0005 mg/L	0.005 mg/L
Xylenes	30 mg/L	<0.0005 mg/L	10 mg/L
TTHM's	0.5 mg/L	<0.0005 mg/L	0.08 mg/L

Table 2
Influent Water Properties

Parameter	Reduction Test Water	Target
pH	7.45	7.00 to 8.00
Temperature	21.5 °C	20 ± 2.5°C
TDS	350 mg/L	200 to 500 mg/L
TOC	≥1.0 mg/L	≥1.0 mg/L
Turbidity	0.45 NTU	< 1 NTU
Flow Pressure	60 PSI	20 to 125 PSI

CONCLUSION

The Tyent Ultra Filtration System reduced the VOC's in the water to levels below the NSF acceptable limits. The Filter system met the requirements for the NSF/ANSI Standard 53 VOC's reduction section 7.2.1. Total volume tested: 10 gallons.

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