IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MINNESOTA

OXYGENATOR WATER TECHNOLOGIES, INC. Plaintiff, v. TENNANT COMPANY Defendant.	Civil Action No. 0:20-cv-00358-ECT-HB

TENNANT'S FEBRUARY 11, 2021 SUPPLEMENT TO ITS INVALIDITY CONTENTIONS AND PRIOR ART CHARTS

Pursuant to the Court's Scheduling Order of August 11, 2020, Defendant Tennant Company ("Tennant"), by and through its counsel, Fredrikson & Byron, P.A., hereby provides this Supplement to its Invalidity Contentions and Prior Art Charts with respect to Plaintiff Oxygenator Water Technologies, Inc.'s ("OWT") patents, specifically U.S. Patent No. RE 45,415 ("the '415 patent"), U.S. Patent No. RE 47,092 ("the '092 patent"), and U.S. Patent No. RE 47,665 ("the '665 patent"). This Supplementation relates to U.S. Patent Publication No. 20030042134 to Tremblay, produced by OWT several weeks after the deadline for Tennant's invalidity contentions.

The invalidity contentions contained in this submission are based upon information reasonably and currently available to Tennant. The parties have not exchanged positions regarding claim construction and have not submitted *Markman* claim construction briefs. Tennant reserves the right to supplement or amend these Prior Art Charts as information is discovered or confirmed during fact discovery; information is discovered, confirmed, or provided by a party's consultant or expert after contentions have been served; amendments are made to the pleadings; information is learned from or positions are taken by a party during the exchange of contentions ; information is learned from, or positions are taken by another party during the claim construction process; rulings are made by the Court, such as the Court's Claim Construction Order consistent with a *Markman* hearing; and as otherwise permitted or required under the Federal Rules of Civil Procedure or other applicable Local Rules.

The parties have not provided their proposed claim constructions, and the Court has not made any claim construction ruling in this action. As a result, Tennant makes these Initial Invalidity Contentions in alternatives, and they are not intended to be consistent with each other and/or Tennant's other contentions in this action and should not be otherwise construed. As stated above, Tennant's Initial Invalidity Contentions are not admissions or adoptions as to any particular claim scope or construction. Indeed, Tennant expressly reserves the right to propose alternative constructions to those advocated by OWT, and to contest OWT's proffered claim interpretations. The accompanying Prior Art Charts include application of erroneous constructions that OWT appears to be asserting based upon its Infringement Contentions. Tennant does not assent to those or any other constructions at this time. The prior art Tennant cites and the accompanying Prior Art Charts are being disclosed as Initial Invalidity Contentions, and should be construed as nothing more than that. These documents are not intended to include or otherwise reflect

Tennant's claim construction contentions, which will be disclosed in accordance with the Court's schedule.

IDENTIFICATION OF PRIOR ART

Below is a list of currently known prior art that is contended to anticipate or render obvious claims asserted in the '415 patent, the '092 patent, and/or the '665 patent:

Patent Number or Reference Name	Inventor / Author / Manufacturer/ Reference Shortcut Designation	Date of Issue / Publication / Public Use / Sale
2002/0027070	Oyokota	3/7/2002
2002/0074237	Takesako	6/20/2002
2004/262169	Hying	12/30/2004
3,891,535	Wikey	6/24/1975
3,914,164	Clark	10/21/1975
3,926,753	Lee	12/16/1975
3,926,754	Lee	12/16/1975
3,930,980	De Nora	1/6/1976
3,975,247	Stralser	8/17/1976
3,975,269	Ramirez	8/17/1976
3,984,303	Peters	10/5/1976
4,012,319	Ramirez	3/15/1977
4,039,439	Clark	8/2/1977
4,071,447	Ramirez	1/31/1978
4,085,028	McCallum	4/18/1978
4,179,347	Krause	12/18/1979
4,225,401	Divisek	9/30/1980
4,256,551	Cliff	3/17/1981
4,405,573	Deininger	9/20/1983
4,545,886	De Nora	10/8/1985
4,587,001	Cairns	5/6/1986
4,623,436	Umehara	11/18/1986
4,636,291	Divisek	1/13/1987
4,773,982	Divisek	9/27/1988
4,783,246	Langeland	11/8/1988
4,917,782	Davies	4/17/1990
4,956,061	Dempsey	9/11/1990
5,182,014	Goodman	1/26/1993
5,324,398	Erickson	6/28/1994
5,378,339	Aoki	1/3/1995
5,380,417	Essop	1/10/1995

5,439,576	Schoeberl	8/8/1995
5,589,053	Moran	12/31/1996
5,705,049	Harrison	1/6/1998
5,759,390	Essop	6/2/1998
5,902,465	Pang	5/11/1999
5,958,242	Fennell	9/28/1999
6,187,169	Gernon	2/13/2001
6,251,259	Satoh	6/26/2001
6,328,898	Akiyama	12/11/2001
6,342,150	Sale	1/29/2002
6,689,262	Senkiw	2/10/2004
7,396,441	Senkiw	7/8/2008
7,670,495	Senkiw	3/2/2010
20030042134	Tremblay	3/6/2003
EP0004191A2	LaBarre	9/19/1979
EP0723936B1	Sano	7/31/1996
EP1043408A2	Goosey	10/11/2000
EP1111095A1	Koganezawa	6/27/2001
FR2008606A1	F.B. Bayer Akt.	1/23/1970
GB1522188 A	Swift & Co.	8/23/1978
GB1490220A	PPG Industries, Inc.	10/26/1977
GB1498355A	Westinghouse Electric Corp.	1/18/1978
GB601579A	Dubilier Condenser Co.	5/7/1948
WO01/89997	Vagnes	11/29/2001
WO96/40591	Herbst	12/19/1996

(1) GLEMBOTSKII, V.A., MAMAKOV, A.A., SOROKINA, V.N. (1973), *Size of gas bubbles forming during electroflotation*. Elektronnaya Obrabotka Materialov 5, 66–68. 1973 ("Electrolytic technique is one of the methods for producing fine dispersed gas bubbles. Electrolytic water decomposition process produces very fine bubbles of hydrogen and oxygen," first two sentences of second paragraph. (all graphs and data show substantial amounts of oxygen bubbles with sizes less than 50 microns);

(2) BURNS, S.E., YIACOUMI, S. and TSOURIS, C. (1997), *Application of Digital Image Analysis for Size Distribution Measurement of Microbubbles*, Imaging Technologies: Techniques and Civil Engineering Applications Engineering Foundation, Davos, Switzerland, May 25-30, 1997; Microbubble Generation for Environmental and Industrial Separations, Separation and Purification Technology 11, 221–232. ("…the majority of the bubbles produced have diameters smaller than 50 µm…," paragraph bridging pages 5 and 6); ("Average oxygen and hydrogen bubble diameters measured in the experiments range from 17.1 to 37.9 µm, which is consistent with the size of bubbles produced on stainless steel and platinum electrodes," last sentence of results paragraph);

(3) WENDT, H. and KREYSA, G. (1999), *Electrochemical Engineering: Science and Technology in Chemical and Other Industries*, Springer-Verlag Berlin Heidelberg, ISBN 3-540-64386-9 (hardcover), ("…radii of electrochemically evolved gas bubbles are usually relatively small (5-50 µm…"), page 103, Section 5.4.7;

(4) HAN, M.Y., PARK, Y.H., and YU, T.J. (2002), *Development of a New Method of Measuring Bubble Size*, Water Science and Technology: Water Supply Vol 2 No 2 pp 77–83 ("In EF, hydrogen and oxygen bubbles are generated when current is applied to the solution through metal electrodes. The average size range is reported to be around 20–40 µm…"), second to last full paragraph of page 77, last sentence.

(5) WENDT, H and HOFFMAN, H. (1985), *Cermet Diaphargms and Integrated Electrode-Diaphragm Units for Advanced Alkaline Water Electrolysis*, Inst. F. Chem Technologie TH.

(6) WEDERSHOVEN, H.M.S., DE JONGE, R.M., SILLEN, C.W.M.P, AND VAN STRALEN, S.J.D (1981), *Behaviour of Oxygen Bubbles During Alkaline Water Electrolysis*, Int. J. Heat Mass Transfer, Vol. 25, No. 8, pp. 1239-1243.

(7) VERHAART, H.F.A., DE JONGE, R.M., VAN STRALEN, S.J.D. (1979), *Growth Rate of Gas Bubble During Electrolysis in Supersaturated Liquid*, Int. J. Heat Mass Transfer, Vol. 23, pp. 293-299.

(8) SPEARS, J.R., WANG, B., WU, X., PRCEVSKI, P, JIANG, A.J., SPANTA, A.D., CRILLY, R.J., BRERETON, G.J. (1997), *A Highly O2-Supersaturated Infusate for Regional Correction of Hypoxemia and production of Hyperoxemia*, American Heart Association, 96:4385-4391.

(9) HARGROVE, M., HARGROVE, M. (1999), *Aquariums for Dummies*, IDG Books Worldwide, Inc. 10-11, 24, 54. (referred to herein as "AFD")

(10) BURNS, S.E., YIACOUMI, S., TSOURIS, C. (1997), *Microbubble Generation for Environmental and Insdustrial Separations*, Separation and Purification Technology 11(1997) 221-232.

(11) EDSALL, D.A., SMITH, C.E. (1990), *Performance of Rainbow Trout and Sanke River Cutthroat Trout Reared in Oxygen-Supersaturated Water*, Aquaculture, 90:3-4 pp. 251-259.

(12) KHOSLA, N.K., VENKATACHALAM, S. (1991), *Pulsed Electrogeneration of Bubbles for Electroflotation*, Journal of Applied Electrochemistry, 21 (1991) 986-990.

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