

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
08 August 2024 (08.08.2024)



(10) International Publication Number
WO 2024/163150 A1

(51) International Patent Classification:

B01D 21/00 (2006.01) *E04H 4/00* (2006.01)
C02F 1/00 (2023.01) *E02B 17/00* (2006.01)
E02B 15/00 (2006.01) *E02B 15/04* (2006.01)

(21) International Application Number:

PCT/US2024/011211

(22) International Filing Date:

11 January 2024 (11.01.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/482,875 02 February 2023 (02.02.2023) US

(71) Applicant: **CRYSTAL LAGOONS TECHNOLOGIES, INC.** [US/US]; 1395 Brickell Avenue, Suite 800, Miami, Florida 33131 (US).

(72) Inventor: **FISCHMANN, Fernando**; 1395 Brickell Avenue, suite 800, Miami, Florida 33131 (US).

(74) Agent: **EVANS, Daniel R.** et al.; Merchant & Gould P.C., P.O. Box 2903, Minneapolis, Minnesota 55402-0903 (US).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(54) Title: METHOD FOR CREATING GEOMETRIC FRESHWATER SANITARY AREAS WITHIN LARGE WATER BODIES

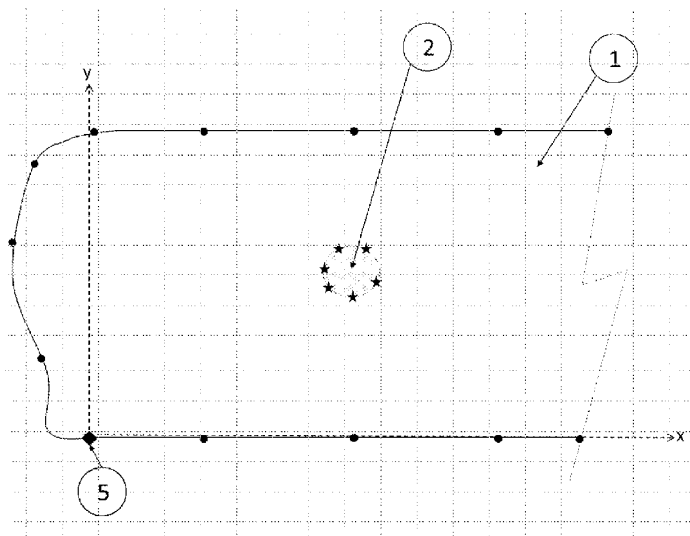


FIGURE 3

(57) Abstract: Geometric freshwater sanitary areas are created within large water bodies without the use of physical barriers to separate the area. A coordinated reference system (CRS) is used for mapping the defined geometric freshwater area in terms of its position; the definition of directional vectors (DVs) for the introduction of freshwater into the geometric freshwater area through inlet elements to achieve a minimum renewal rate of such geometric freshwater area; the application of a Comparative Water Renewal Index (CWRI); and the application of a Homogeneity Index (HI) based on the mixing conditions of the geometric freshwater area and its required homogenous conditions. Utilizing the processes together generate geometric freshwater sanitary areas that are suitable for bathing (direct contact purposes).

[Continued on next page]

WO 2024/163150 A1

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))