

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

CHF SOLUTIONS, INC.
(Exact Name of Registrant as Specified in Its Charter)

Delaware
(State or Other Jurisdiction of
Incorporation or Organization)

68-0533453
(I.R.S. Employer
Identification Number)

12988 Valley View Road
Eden Prairie, Minnesota 55344
(952) 345-4200

(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

Nestor Jaramillo, Jr.
President and Chief Executive Officer
CHF Solutions, Inc.
12988 Valley View Road
Eden Prairie, Minnesota 55344
(952) 345-4200

(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent For Service)

Copies to:

Phillip D. Torrence
Honigman LLP
650 Trade Centre Way, Suite 200
Kalamazoo, MI 49002
Tel: (269) 337-7700
Fax: (269) 337-7703

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box:

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box.

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. 333-224881

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See definition of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer []
Non-accelerated filer [X]

Accelerated Filer []
Smaller reporting company [X]

Emerging growth company [] If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of Securities Act. []

Title Of Each Class Of Securities To Be Registered(1)	Proposed Maximum Aggregate Offering Price	Amount Of Registration Fee(2)
Common Stock, par value \$0.0001 per share	\$ 3,479,499.60	\$ 379.61

CALCULATION OF REGISTRATION FEE

- (1) The registrant previously registered securities with a maximum aggregate offering price of \$30,000,000 on a Registration Statement on Form S-3 (File No. 333-224881), filed on May 11, 2018, and declared effective on May 23, 2018 (the "Prior Registration Statement"). In accordance with Rule 462(b) under the Securities Act of 1933, as amended, (the "Securities Act"), an additional number of securities having a proposed maximum aggregate offering price of \$3,479,499.60 is hereby registered. This amount represents no more than 20% of the maximum aggregate offering price of the unsold securities remaining under the Prior Registration Statement. In no event will the maximum aggregate offering price of all securities issued pursuant to this Registration Statement and the Prior Registration Statement exceed that which was registered under such registration statements.
- (2) The registration fee has been calculated in accordance with Rule 457(o) under the Securities Act.

This Registration Statement shall become effective upon filing with the Securities and Exchange Commission in accordance with Rule 462(b), promulgated under the Securities Act of 1933.

EXPLANATORY NOTE AND INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

This Registration Statement is being filed with the Securities and Exchange Commission (the “Commission”) pursuant to Rule 462(b) of the Securities Act of 1933, as amended (the “Securities Act”). This Registration Statement relates to the Registration Statement on Form S-3 (File No. 333-224881), originally filed with the Commission by CHF Solutions, Inc. (the “Registrant”) on May 11, 2018, and declared effective on May 23, 2018 (the “Prior Registration Statement”). This Registration Statement is being filed for the sole purpose of registering additional securities by a proposed aggregate offering price of \$3,479,499.60, which represents no more than 20% of the maximum aggregate offering price of the unsold securities remaining under the Prior Registration Statement. The contents of the Prior Registration Statement, including each of the documents filed by the Registrant with the Commission and incorporated or deemed to be incorporated by reference therein and all exhibits thereto, are hereby incorporated by reference. The required opinions and consents are listed on the exhibit index hereto and filed herewith.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 16. Exhibits and Financial Statement Schedules.

(a) *Exhibits.* All exhibits filed with or incorporated by reference in the Registration Statement on Form S-3 (SEC File No. 333-224881) are incorporated by reference into, and shall be deemed a part of, this Registration Statement, and the following additional exhibits are filed herewith, as part of this Registration Statement:

Exhibit Number	Description
5.1	Legal Opinion of Honigman LLP.
23.1	Consent of Baker Tilly US, LLP.
23.2	Consent of Honigman LLP (included in the opinion filed as Exhibit 5.1).

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: March 16, 2021

CHF SOLUTIONS, INC.

By: /S/ NESTOR JARAMILLO, JR.
Nestor Jaramillo, Jr.
President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/S/ NESTOR JARAMILLO, JR.</u> Nestor Jaramillo, Jr.	President, Chief Executive Officer and Director (principal executive officer)	March 16, 2021
<u>/S/ CLAUDIA DRAYTON</u> Claudia Drayton	Chief Financial Officer (principal financial and accounting officer)	March 16, 2021
<u>/S/ STEVEN BRANDT</u> Steven Brandt	Director	March 16, 2021
<u>/S/ MARIA ROSA COSTANZO</u> Maria Rosa Costanzo	Director	March 16, 2021
<u>/S/ JOHN L. ERB</u> John L. Erb	Director	March 16, 2021
<u>/S/ JON W. SALVESON</u> Jon W. Salveson	Director	March 16, 2021
<u>/S/ GREGORY D. WALLER</u> Gregory D. Waller	Director	March 16, 2021
<u>/S/ WARREN S. WATSON</u> Warren S. Watson	Director	March 16, 2021

March 16, 2021

CHF Solutions, Inc.
12988 Valley View Road
Eden Prairie, MN 55344**Re: Registration Statement on Form S-3**

Ladies and Gentlemen:

We have acted as counsel to CHF Solutions, Inc., a Delaware corporation (the “*Company*”), in connection with the preparation of the Company’s Registration Statement on Form S-3 (the “*Additional Registration Statement*”) filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended (the “*Securities Act*”), by the Company with the Securities and Exchange Commission (the “*Commission*”) on the date hereof, which is related to, and incorporates by reference, the Company’s registration statement on Form S-3 (File No. 333-224881) filed with the Commission on May 11, 2018, and declared effective on May 23, 2018 (the “*Registration Statement*”). The Additional Registration Statement relates to the registration of the proposed offer and sale by the Company of a proposed maximum offering price of \$3,479,499.60 of shares of the Company’s common stock, par value \$0.0001 per share (the “*Shares*”).

For the purpose of rendering this opinion, we examined originals or copies of such documents as we deemed relevant. In conducting our examination, we assumed, without investigation, the genuineness of all signatures, the correctness of all certificates, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted as certified or photostatic copies, and the authenticity of the originals of such copies, and the accuracy and completeness of all records made available to us by the Company.

Our opinion is limited solely to matters set forth herein. The law covered by the opinions expressed herein is limited to the federal law of the United States and Delaware corporate law.

Based upon our examination of such documents and other matters as we deem relevant, we are of the opinion that the Shares to be offered and sold by the Company under the Additional Registration Statement and the related prospectus and any applicable prospectus supplement(s), including those incorporated by reference, have been duly authorized and, when issued and sold by the Company as described in the Additional Registration Statement, the related prospectus and any applicable prospectus supplement(s), including those incorporated by reference, and in the manner set forth in the Underwriting Agreement dated as of March 17, 2021, between the Company and Ladenburg Thalmann & Co., Inc., as representative of the underwriters named therein, against payment therefor, will be validly issued, fully paid and nonassessable.

We hereby consent to the filing of this opinion as Exhibit 5.1 to the Additional Registration Statement and to the reference to our firm under the caption “Legal Matters” incorporated by reference in the prospectus included or incorporated by reference in the Additional Registration Statement. In giving this consent, we do not admit that we are within the category of persons whose consent is required by Section 7 of the Securities Act or the rules and regulations promulgated thereunder by the Commission.

Very truly yours,

/s/ HONIGMAN LLP

PDT/RZK/CBZ

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-3 of CHF Solutions, Inc. and subsidiaries of our report dated March 5, 2020, relating to the consolidated financial statements of CHF Solutions, Inc. and subsidiaries (the “Company”), (which report expresses an unqualified opinion on the consolidated financial statements for the year ended December 31, 2019 and includes an explanatory paragraph relating to the substantial doubt about the Company’s ability to continue as a going concern as described in Note 1 to the consolidated financial statements), appearing in the Annual Report on Form 10-K of CHF Solutions, Inc. and subsidiaries for the year ended December 31, 2019.

/s/ Baker Tilly US, LLP

Minneapolis, Minnesota
March 16, 2021
