

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

SCHEDULE 13G

UNDER THE SECURITIES EXCHANGE ACT OF 1934

(AMENDMENT NO.)*

Fluidigm Corporation
(Name of Issuer)

Common Stock
(Title of Class of Securities)

34385P108
(CUSIP Number)

12/31/2011
(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)
- Rule 13d-1(c)
- Rule 13d-1(d)

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, SEE the NOTES).

CUSIP No. 34385P108

| | |
|-----|---|
| 1. | Names of Reporting Persons I.R.S. Identification No. of above persons (entities only). The TCW Group, Inc., on behalf of the TCW Business Unit |
| 2. | Check the Appropriate Box if a Member of a Group (See Instructions) <div style="text-align: right;">(a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/></div> |
| 3. | SEC Use Only |
| 4. | Citizenship or Place of Organization Nevada corporation |
| 5. | Sole Voting Power -0- |
| 6. | Shared Voting Power 936,680 |
| 7. | Sole Dispositive Power -0- |
| 8. | Shared Dispositive Power 1,166,895 |
| 9. | Aggregate Amount Beneficially Owned by Each Reporting Person 1,166,895 |
| 10. | Check box if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) <input type="checkbox"/> |

| | |
|-----|--|
| 11. | Percent of Class Represented by Amount in Row (9) 5.8% (see response to Item 4) |
| 12. | Type of Reporting Person (See Instructions) HC/CO |

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Item 1(a). Name of Issuer:

Fluidigm Corporation

Item 1(b). Address of Issuer's Principal Executive Offices:

7000 Shoreline Court
Suite 100
South San Francisco, CA 94080

Item 2(a). Name of Persons Filing:

Item 2(b). Address of Principal Business Office, or if None, Residence:

Item 2(c). Citizenship:

The TCW Group, Inc., on behalf of the TCW Business Unit
865 South Figueroa Street
Los Angeles, CA 90017
(Nevada Corporation)

Item 2(d). Title of Class of Securities:

Common Stock

Item 2(e). CUSIP Number:

34385P108

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Item 3. If This Statement Is Filed Pursuant to Sections 240.13d-1(b), or 240.13d-2(b) or (c), Check Whether the Person Filing is a:

- (a) Broker or dealer registered under Section 15 of the Exchange Act (15 U.S.C. 78o).
- (b) Bank as defined in Section 3(a)(6) of the Act (15 U.S.C. 78c).
- (c) Insurance company as defined in Section 3(a)(19) of the Exchange Act (15 U.S.C. 78c).
- (d) Investment company registered under Section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8).
- (e) An investment adviser in accordance with §240.13d-1(b)(1)(ii)(E).
- (f) An employee benefit plan or endowment fund in accordance with §240.13d-1(b)(1)(ii)(F).
- (g) A parent holding company or control person in accordance with §240.13d-1(b)(1)(ii)(G).

(SEE Item 7)

The TCW Group, Inc., on behalf of the TCW Business Unit

- (h) A savings association as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813);
- (i) A church plan that is excluded from the definition of an investment company under Section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3);
- (j) A non-U.S. institution in accordance with §240.13d-1(b)(1)(ii)(J);
- (k) Group, in accordance with §240.13d-1(b)(1)(ii)(K).

If filing as a non-U.S. institution in accordance with §240.13d-1(b)(1)(ii)(J), please specify the type of institution:

If this statement is filed pursuant to Rule 13d-1(c), check this box.

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Item 4. Ownership**

The TCW Group, Inc., on behalf of the Business Unit ***

(a) Amount beneficially owned: 1,166,895

(b) Percent of class: 5.8%

(c) Number of shares as to which such person has:

- (i) Sole power to vote or to direct the vote: none.
- (ii) Shared power to vote or to direct the vote: 936,680
- (iii) Sole power to dispose or to direct the disposition of: none.
- (iv) Shared power to dispose or to direct the disposition of: 1,166,895

** The filing of this Schedule 13G shall not be construed as an admission that the reporting person or any of its affiliates is, for the purposes of Section 13(d) or 13(g) of the Securities Exchange Act of 1934, the beneficial owner of any securities covered by this Schedule 13G. In addition, the filing of this Schedule 13G shall not be construed as an admission that the reporting person or any of its affiliates is the beneficial owner of any securities covered by this Schedule 13G for any other purposes than Section 13(d) of the Securities Exchange Act of 1934.

*** See Exhibit A

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Item 5. Ownership of Five Percent or Less of a Class.

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following o.

Item 6. Ownership of More than Five Percent on Behalf of Another Person.

Various persons other than as described in Item 4 have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the Common Stock of Fluidigm Corporation.

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company.

SEE Exhibit A.

Item 8. Identification and Classification of Members of the Group.

Not applicable. SEE Exhibit A.

Item 9. Notice of Dissolution of Group.

Not applicable.

Item 10. Certification.

Because this statement is filed pursuant to Rule 13d-1(b), the following certification is included:

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were acquired in the ordinary course of business and were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

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SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated this 9th day of February, 2012.

The TCW Group, Inc., on behalf of the
TCW Business Unit

By: /s/ Linda D. Barker
Linda D. Barker
Authorized Signatory

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EXHIBIT A

RELEVANT SUBSIDIARIES OF PARENT HOLDING COMPANY

PART A: TCW ENTITIES

PARENT HOLDING COMPANY:

The TCW Group, Inc.

RELEVANT SUBSIDIARIES THAT ARE PERSONS DESCRIBED IN RULE 13d-1(b):

- (i) Trust Company of the West, a California corporation and a bank as defined in Section 3(a)(6) of the Securities Exchange Act of 1934.
- (ii) TCW Asset Management Company, a California corporation and an Investment Adviser registered under Section 203 of the Investment Advisers Act of 1940.
- (iii) TCW Investment Management Company, a California corporation and an Investment Adviser registered under Section 203 of the Investment Advisers Act of 1940.

This Schedule 13G is being filed by the TCW Group, Inc., a Nevada corporation (“TCW”), on behalf of itself and its direct and indirect subsidiaries, which collectively constitute The TCW Group, Inc. business unit (the “TCW Business Unit” or the “Reporting Person”). The TCW Business Unit is primarily engaged in the provision of investment management services.

As of July 6, 2001, the ultimate parent company of TCW is Societe Generale, S.A., a corporation formed under the laws of France (“SG”). The principal business of SG is acting as a holding company for a global financial services group, which includes certain distinct specialized business units that are independently operated, including the TCW Business Unit.

SG, for purpose of the federal securities laws, may be deemed ultimately to control TCW and the TCW Business Unit. SG, its executive officers and directors, and its direct and indirect subsidiaries (including all business units except the TCW Business Unit), may beneficially own shares of the securities of the issuer to which this schedule relates (the “Shares”) and such shares are not reported in this statement. In accordance with Securities and Exchange Commission (“SEC”) Release No. 34-39538 (January 12, 1998), and due to the separate management and independent operation of its business units, SG disclaims beneficial ownership of Shares beneficially owned by the Reporting Person. The Reporting Person disclaims beneficial ownership of Shares beneficially owned by SG and any of SG’s other business units.