

February 8, 2011

VIA EDGAR AND FACSIMILE

Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, D.C. 20549—1004

Attention: Russell Mancuso, Branch Chief
Joseph McCann, Division of Corporation Finance
Mary Beth Breslin, Senior Attorney
Brian Cascio, Accounting Branch Chief
Martin James, Senior Assistant Chief Accountant
Jeanne Bennett, Division of Corporation Finance

**Re: Fluidigm Corporation
Registration Statement on Form S-1 (File No. 333-170965)
Form 8-A (File No. 001-34180)**

Acceleration Request

**Requested Date: February 9, 2011
Requested Time: 5:00 P.M. Eastern Time**

Ladies and Gentlemen:

Pursuant to Rule 461 under the Securities Act of 1933, as amended, and Rule 12d1-2 of the Securities Exchange Act of 1934, as amended, Fluidigm Corporation (the “**Company**”) hereby requests that the above-referenced Registration Statement on Form S-1 (File No. 333-170965) (the “**Registration Statement**”) be declared effective at the “Requested Date” and “Requested Time” set forth above or at such later time as the Company or its counsel may orally request via telephone call to the staff (the “**Staff**”) of the Division of Corporation Finance of the Securities and Exchange Commission (the “**Commission**”) (the “**Registration Statement Acceleration Request**”). In connection with the Registration Statement Acceleration Request, the Company hereby requests that the above referenced Form 8-A (File No. 001-34180) also be declared effective at the “Requested Date” and “Requested Time” set forth above or at such later time as the Company or its counsel may orally request via telephone call to the staff. Once the Registration Statement has been declared effective, please orally confirm that event with our counsel, Wilson Sonsini Goodrich & Rosati, P.C., by calling Asaf Kharal at (650) 320-4557.

In connection with the acceleration request, the Company hereby acknowledges that:

- should the Commission or the Staff, acting pursuant to delegated authority, declare the Registration Statement on Form S-1 effective, it does not foreclose the Commission from taking any action with respect to the Registration Statement on Form S-1;
- the action of the Commission or the Staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the Company from its full responsibility for the adequacy and accuracy of the disclosure in the Registration Statement on Form S-1; and
- the Company may not assert Staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

[Signature page follows]

Sincerely,

Fluidigm Corporation

By: /s/ William M. Smith

William M. Smith

Vice President, Legal Affairs, General
Counsel and Secretary

cc: David J. Segre, Esq.
Robert F. Kornegay, Esq.
Asaf H. Kharal, Esq.
Wilson Sonsini Goodrich & Rosati, P.C.

B. Shayne Kennedy, Esq.
Latham & Watkins LLP