UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

Current Report Pursuant

to Section 13 or 15(d) of the

Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): April 24, 2006

HOLOGIC, INC.

(Exact Name of Registrant as Specified in Its Charter)

DELAWARE

(State or Other Jurisdiction of Incorporation)

0-18281 (Commission File Number) 04-2902449 (I.R.S. Employer Identification No.)

35 Crosby Street, Bedford, MA (Address of Principal Executive Offices)

01730 (Zip Code)

(781) 999-7300

(Registrant s Telephone Number, Including Area Code)

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (*see* General Instruction A.2. below):

- " Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- " Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- " Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- " Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

ITEM 1.01 ENTRY INTO A MATERIAL DEFINITIVE AGREEMENT

Merger Agreement

On April 24, 2006, Hologic, Inc. (Hologic) and R2 Technology, Inc. (R2) entered into an Agreement and Plan of Merger (the _Merger Agreement). The Merger Agreement provides for a business combination whereby Hydrogen Acquisition, Inc. (Merger Sub), a Delaware corporation and a wholly owned subsidiary of Hologic, will merge with and into R2 (the _Merger). As a result of the Merger, the separate corporate existence of Merger Sub will cease and R2 will continue as the surviving corporation in the Merger, and as a wholly-owned subsidiary of Hologic.

At the effective time of the Merger, each share of R2 capital stock (other than treasury shares owned by R2) will be converted into the right to receive a portion of the aggregate merger consideration for the transaction. The aggregate merger consideration consists of \$220.0 million (subject to reduction to account for certain indebtedness, expenses and payments made by R2 in connection with the Merger) to be paid by Hologic at the closing (the <u>Merger Consideration</u>). The Merger Consideration is payable entirely in shares of Hologic s common stock (the <u>Merger Shares</u>) based on the average closing price of Hologic s common stock as quoted on the Nasdaq National Market for the ten trading days ending two trading days prior to closing (the <u>Closing Exchange Price</u>). All outstanding R2 stock options will be cancelled at the effective time of the Merger and converted into the right to receive a portion of the Merger Consideration. Outstanding R2 warrants will be cancelled at the effective time of the Merger and a portion of the Merger Consideration will be allocated to eligible holders of such warrants.

Hologic and R2 have made customary representations, warranties and covenants in the Merger Agreement. R2 has, among other things, agreed (i) to conduct its business in the ordinary course of business consistent with past practice during the interim period and not to engage in certain kinds of transactions between the execution of the Merger Agreement and the effective time of the Merger, (ii) to submit the Merger Agreement and the transactions contemplated thereby to R2 s stockholders for approval and adoption as promptly as practicable, (iii) that, subject to certain exceptions, its board of directors will recommend adoption by its stockholders of the Merger Agreement and the Merger, (iv) subject to certain exceptions, not to solicit proposals relating to alternative business combination transactions or participate in discussions or negotiations regarding an alternative business combination transaction, and (v) subject to certain exceptions, not to approve or recommend or propose publicly to approve or recommend, any alternative business combination transaction or enter into any agreement or letter of intent related to an alternative business combination transaction. Hologic has, among other things, agreed (i) to use commercially reasonable efforts to obtain approval from the Commissioner of the California Department of Corporations of the fairness (the Fairness Approval) of the terms and conditions of the Merger and the issuance of the Merger Shares, or, if the Fairness Approval is not granted, file a Registration Statement on Form S-4 to register the Merger Shares with the Securities and Exchange Commission (the Commission), and (ii) to prepare and file a proxy statement with the Securities and Exchange Commission (SEC) to be sent to its stockholders in the event that the stock price of its common stock reaches a price that could reasonably be expected to result in the issuance of a number of Merger Shares that would require Hologic s stockholders to approve the Merger Agreement and the transactions contemplated thereby under applicable law or the rules of the Nasdaq National Market.

Each party s obligation to consummate the Merger is subject to a number of conditions, including (i) the approval of R2 s stockholders, (ii) the absence of any law, order or injunction prohibiting the consummation of the Merger or the transactions contemplated by the Merger Agreement, (iii) the approval of Hologic s stockholders if required by the rules of the Nasdaq National Market based on the number of Merger Shares to be issued, (iv) the expiration or termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act, (v) each party s representations and warranties to the other being complete and correct (without regard to any materiality qualifiers in such representations and warranties) as of the date of closing, except where the failure to be so true and correct could not reasonably be expected to have or give rise to a material adverse effect on the applicable party, (vi) each party shall have performed and complied in all material respects with its covenants and (vii) other customary conditions. In addition, Hologic s obligation to consummate the Merger is subject to there being no material adverse effect on R2 s business since the date of the Merger Agreement, and each party s obligation to consummate the Merger is subject to receipt of the Fairness Approval or Hologic s Registration Statement on Form S-4 being declared effective by the Commission.

The Merger Agreement contains certain termination rights for both Hologic and R2, and further provides that, upon termination of the Merger Agreement under certain circumstances, R2 may be obligated to pay Hologic up to \$2.5 million in respect of Hologic s transaction expenses, or a termination fee of \$8.36 million depending on the circumstances.

The Board of Directors of Hologic and R2 have approved the Merger Agreement and the Merger.

Voting Agreement

Concurrently with entering into the Merger Agreement, Hologic entered into a voting agreement with stockholders of R2 representing approximately 30% of the outstanding voting power entitled to vote to approve the Merger Agreement and the Merger. The agreement provides that these R2 stockholders will vote their shares to approve and adopt the Merger Agreement, the Merger and all other agreements and actions in connection therewith, and will vote against (i) any proposal or offer for a merger, consolidation, business combination, tender offer, sale of substantial assets, sale of shares of capital stock or similar transactions involving R2 or any of its subsidiaries, other than the transactions contemplated by the Merger Agreement, (ii) any reorganization, recapitalization, liquidation, winding up of R2 or any other extraordinary transaction involving R2, or (iii) any corporate action the consummation of which would frustrate the purposes, or prevent or delay the consummation, of the Merger or the transactions contemplated by the Merger Agreement. The Voting Agreement terminates on the earlier of (i) the effective time of the Merger, (ii) the termination of the Merger Agreement in accordance with its terms and (iii) the date on which Hologic provides written notice of termination to the stockholders who have executed the voting agreements.

Additional Information About the Merger

The parties anticipate that the issuance of the Hologic shares of common stock in the Merger will be exempt from registration pursuant to the receipt of the Fairness Approval from the Commissioner of the California Department of Corporations after a hearing held pursuant to Section 25142 of the California Corporations Code. However, if such Fairness Approval is not granted, Hologic has agreed to file a registration statement on Form S-4 with the Commission to register those securities. If such registration statement on Form S-4 is filed it will contain a prospectus and other relevant documents concerning the acquisition. If filed, investors are urged to read the prospectus and any other relevant documents, when they become available, because they would contain important information about Hologic, R2 and the acquisition. If filed, investors would be able to obtain the documents free of charge at the Commission s web site, http://www.sec.gov. In addition, documents filed with the Commission by Hologic can be obtained at http://www.sec.gov or by contacting Hologic at the following address and telephone number: 35 Crosby Drive, Bedford, MA 01730, (781) 999-7300. Investors are urged to read the information statement/prospectus and any other relevant documents when they become available.

ITEM 9.01 FINANCIAL STATEMENTS AND EXHIBITS.

(d) Exhibits.

The following Exhibits are filed as part of this report:

EXHIBIT NO. DESCRIPTION

99.1 Press Release issued by Hologic on April 24, 2006

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized.

Dated: April 24, 2006 HOLOGIC, INC.

By: /s/ Glenn P. Muir Glenn P. Muir Chief Financial Officer, Executive

Vice President, Finance and Treasurer

EXHIBIT INDEX

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