
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 Earliest Event Reported
August 12, 2010

Environmental Tectonics Corporation

(Exact name of registrant as specified in its charter)

Pennsylvania

(State or other jurisdiction of incorporation of organization)

1-10655

(Commission File Number)

23-1714256

(IRS Employer Identification Number)

County Line Industrial Park
Southampton, Pennsylvania

(Address of principal executive offices)

18966

(Zip Code)

Registrant's telephone number, including area code (215) 355-9100

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

- 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))
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Item 1.01. Entry into a Material Definitive Agreement.

On August 10, 2010, Environmental Tectonics Corporation (“ETC” or the “Company”) entered into an agreement (“Stock Repurchase Agreement”) with H.F. Lenfest to repurchase and retire 500 shares of Series E Preferred Stock currently owned by Lenfest. The repurchase price is the stated price of \$1,000.00 per share, or \$500,000.00 in the aggregate. Following this repurchase, Lenfest will hold 22,241 shares of Series E Preferred Stock. The Series E Preferred Stock provides for a dividend equal to ten percent (10%) per year and is convertible into shares of the Company’s common stock at a conversion price equal to \$2.00 per common share.

Lenfest is a member of ETC’s Board of Directors and a significant shareholder of the Company. As Lenfest is a related party, as defined by SEC regulations, ETC’s Audit Committee comprised of independent directors approved the terms and conditions of the Stock Repurchase Agreement.

Incorporation by Reference

The foregoing description of the Stock Repurchase Agreement is qualified in its entirety by reference to such Agreement. A copy of the Stock Repurchase Agreement is filed as Exhibit 9.01 and is incorporated herein by reference.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

The following exhibit is filed herewith:

9.01 Stock Repurchase Agreement.

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.

ENVIRONMENTAL TECTONICS CORPORATION
Registrant

Date: August 12, 2010

By: /s/ Duane D. Deaner
Duane D. Deaner
Chief Financial Officer

STOCK REPURCHASE AGREEMENT

This Stock Repurchase Agreement (the "Agreement") is entered into as of this 10th day of August, 2010, by and between Environmental Tectonics Corporation, a Pennsylvania corporation, with its principal place of business at 125 James Way, Southampton, Pennsylvania 18966 (the "Company"), and H.F. Lenfest, an individual residing in the Commonwealth of Pennsylvania, with offices at 200 Barr Harbor Drive, Suite 450, Conshohocken, Pennsylvania 19428 ("Lenfest").

BACKGROUND

Lenfest owns Series E Preferred Stock of the Company, \$0.05 par value per share, with a stated value of one thousand dollars (\$1,000.00) per share, and by this Agreement the Company is repurchasing and retiring 500 shares of Series E Preferred Stock upon the terms and subject to the conditions set forth in this Agreement.

AGREEMENT

NOW, THEREFORE, Lenfest and the Company agree as follows:

1. Repurchase and Retirement of 500 Shares of Series E Preferred Stock. On the terms and subject to the conditions set forth in this Agreement, the Company agrees to purchase from Lenfest and Lenfest agrees to sell, transfer, convey and deliver to the Company five hundred (500) shares of Series E Preferred Stock of the Company (the "Shares") at the stated price of one thousand dollars (\$1,000.00) per share.
 2. Payment for the Shares. The total purchase price for the Shares shall be five hundred thousand dollars (\$500,000) (the "Purchase Price"). Upon receipt of the Purchase Price, Lenfest irrevocably appoints any officer of the Company as his attorney to retire the Shares on the books of the Company, and to reissue any certificates necessary to evidence his ownership of the Series E Preferred Stock of the Company.
 3. Lenfest represents and warrants that he is the owner of record of all right, title and interest, free and clear of all liens, in and to the Shares.
 4. Lenfest represents and warrants that he has the power and authority to execute and deliver this Agreement and to consummate the transaction contemplated hereby.
 5. The Company represents and warrants that the Company is a corporation, duly organized, validly existing, and in good standing under the laws of the Commonwealth of Pennsylvania.
 6. The Company represents and warrants that it has received approval from the Board of Directors of the Company to consummate the transaction contemplated hereby, and that the person signing this Agreement has the power and authority to execute and deliver this Agreement.
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7. The Company represents and warrants that this Agreement and all other instruments or documents executed by the Company in connection herewith have been duly executed by the Company, and constitute a legal, valid and binding obligation of the Company, enforceable in accordance with their respective terms.

8. Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective permitted successors and assigns.

9. Entire Agreement, Amendment. This Agreement constitutes the entire agreement between the Company and Lenfest with respect to the transaction contemplated hereby, supersedes all prior or contemporaneous negotiations, communications, discussions and correspondence concerning the subject matter hereof, and may be amended or modified only with the written consent of the Company and Lenfest.

10. Severability. If any provision of this Agreement shall be prohibited by or invalid under applicable law, such provision shall be ineffective only to the extent of such prohibition or invalidity without invalidating the remainder of such provision or any remaining provisions of this Agreement.

11. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania.

12. Counterparts. This Agreement may be executed in separate counterparts, either of which, when so executed, shall be deemed to be an original and both of which, when taken together, shall constitute but one and the same agreement.

WITH THE INTENT TO BE LEGALLY BOUND HEREBY, the above terms and conditions are hereby agreed to and accepted as of the day and year first written above.

ENVIRONMENTAL TECTONICS CORPORATION

/s/ Duane D. Deaner

By: Duane D. Deaner

Title: Chief Financial Officer

H. F. LENFEST

/s/ H.F. Lenfest

By: H. F. Lenfest