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

SCHEDULE 13G

Under the Securities Exchange Act of 1934
(Amendment No. ___)

Environmental Tectonics Corporation

(Name of Issuer)

Common Stock, par value \$.05 per share

(Title of Class of Securities)

294092-10-1

(CUSIP Number)

December 31, 2004*

(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 filing person served as a member of the board of directors of Environmental Tectonics Corporation (the "Company") from 1974 until July 2005. The filing person from time to time has acquired shares of the common stock of the Company and, as of December 31, 2004, beneficially owned greater than five percent of the outstanding shares of common stock of the Company. To the best of his knowledge and belief, the filing person has never acquired greater than two percent of the outstanding shares of common stock of the Company during any period of 12 consecutive months. The filing person is not able, without unreasonable time and expense, to determine the year in which he became the beneficial owner of more than five percent of the outstanding shares of common stock of the Company.

1. Name of Reporting Person: I.R.S. Identification Nos. of above persons (entities only):
Pete L. Stephens

2. Check the Appropriate Box if a Member of a Group:
(a)
(b)

3. SEC Use Only:

4. Citizenship or Place of Organization:
United States

5. Sole Voting Power:
394,230

Number of
Shares

6. Shared Voting Power:
299,270

Beneficially
Owned by

Each Reporting
Person With

7. Sole Dispositive Power:
394,230

8. Shared Dispositive Power:
299,270

9. Aggregate Amount Beneficially Owned by Each Reporting Person:
693,500

10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares:

11. Percent of Class Represented by Amount in Row (9):
7.7%

12. Type of Reporting Person:
IN

ITEM 1(a). NAME OF ISSUER:

This statement relates to the common stock of Environmental Tectonics Corporation (the "Company").

ITEM 1(b). ADDRESS OF ISSUER'S PRINCIPAL EXECUTIVE OFFICES:

The Company's principal offices are located at County Line Industrial Park, Southampton, Pennsylvania 18966.

ITEM 2(a). NAME OF PERSON FILING:

This statement is being filed by Pete L. Stephens.

ITEM 2(b). ADDRESS OF PRINCIPAL BUSINESS OFFICE OR, IF NONE, RESIDENCE:

The filing person's address is 31 Ribaut Drive, Hilton Head, South Carolina 29926.

ITEM 2(c). CITIZENSHIP:

The filing person is a citizen of the United States.

ITEM 2(d). TITLE OF CLASS OF SECURITIES:

Common stock, par value \$.05 per share, of the Company.

ITEM 2(e). CUSIP NUMBER:

294092-10-1

ITEM 3. IF THIS STATEMENT IS FILED PURSUANT TO RULE 13D-1(B), OR 13D-2(B) OR (C), CHECK WHETHER THE PERSON FILING IS A:

- (a) Broker or dealer registered under Section 15 of the Exchange Act.
 - (b) Bank as defined in Section 3(a)(6) of the Exchange Act.
 - (c) Insurance company as defined in Section 3(a)(19) of the Exchange Act.
 - (d) Investment company registered under Section 8 of the Investment Company Act.
 - (e) An investment adviser in accordance with Rule 13d-1(b)(1)(ii)(E).
 - (f) An employee benefit plan or endowment fund in accordance with Rule 13d-1(b)(1)(ii)(F).
 - (g) A parent holding company or control person in accordance with Rule 13d-1(b)(1)(ii)(G).
 - (h) A savings association as defined in Section 3(b) of the Federal Deposit Insurance Act.
 - (i) A church plan that is excluded from the definition of an investment company under Section 3(c)(14) of the Investment Company Act.
 - (j) Group, in accordance with Rule 13d-1(b)(1)(ii)(J).
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ITEM 4. OWNERSHIP.

- (a) Amount beneficially owned: 693,500 shares of common stock of the Company.
- (b) Percent of class: 7.7%, based on 9,019,376 shares of common stock outstanding as of June 30, 2005, as reported on the cover page of the Company's Quarterly Report on Form 10-Q for the quarter ended May 27, 2005.
- (c) Number of shares as to which the person has:
 - (i) Sole power to vote or to direct the vote: 394,230 shares
 - (ii) Shared power to vote or to direct the vote: 299,270 shares
 - (iii) Sole power to dispose or direct the disposition: 394,230 shares
 - (iv) Shared power to dispose or to direct the disposition: 299,270 shares

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 [].

ITEM 6. OWNERSHIP OF MORE THAN FIVE PERCENT ON BEHALF OF ANOTHER PERSON.

Of the 693,500 shares of common stock of the Company beneficially owned by the filing person, 299,270 shares are owned of record by the filing person's spouse and children, who have the right to direct the receipt of dividends from, and the proceeds from the sale of, such shares.

ITEM 7. IDENTIFICATION AND CLASSIFICATION OF THE SUBSIDIARY WHICH ACQUIRED THE SECURITY BEING REPORTED ON BY THE PARENT HOLDING COMPANY OR CONTROL PERSON.

Not applicable.

ITEM 8. IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF THE GROUP.

Not applicable.

ITEM 9. NOTICE OF DISSOLUTION OF GROUP.

Not applicable.

ITEM 10. CERTIFICATIONS.

Not applicable.

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.

Date: September 6, 2005

/s/ Pete L. Stephens
Pete L. Stephens, M.D.