

Will W Anthony
Form 4
August 31, 2012

FORM 4

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

OMB APPROVAL

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Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person *
Will W Anthony

(Last) (First) (Middle)

C/O CF INDUSTRIES HOLDINGS, INC., 4 PARKWAY NORTH, SUITE 400

(Street)

DEERFIELD, IL 60015

(City) (State) (Zip)

2. Issuer Name and Ticker or Trading Symbol
CF Industries Holdings, Inc. [CF]

3. Date of Earliest Transaction
(Month/Day/Year)
08/29/2012

4. If Amendment, Date Original Filed(Month/Day/Year)

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

___ Director ___ 10% Owner
 Officer (give title below) ___ Other (specify below)
Sr. VP, Manufacturing & Dist.

6. Individual or Joint/Group Filing(Check Applicable Line)
 Form filed by One Reporting Person
___ Form filed by More than One Reporting Person

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transaction Code (Instr. 8) | 4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) | 5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Ownership (Instr. 4) | | |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|--|-----------------------------------|-----|-------|
| | | | | (A) or (D) | Code | V | Amount | (D) | Price |

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.

SEC 1474 (9-02)

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

| 1. Title of Derivative | 2. Conversion | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if | 4. Transaction | 5. Number of Derivative | 6. Date Exercisable and Expiration Date | 7. Title and Amount of Underlying Securities | 8. Pr |
|------------------------|---------------|--------------------------------------|-------------------------------|----------------|-------------------------|---|--|-------|
|------------------------|---------------|--------------------------------------|-------------------------------|----------------|-------------------------|---|--|-------|

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| Security (Instr. 3) | or Exercise Price of Derivative Security | any (Month/Day/Year) | Code (Instr. 8) | Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5) | (Month/Day/Year) | (Instr. 3 and 4) | Secu (Inst | | |
|---------------------|--|----------------------|-----------------|---|------------------|------------------|-----------------|--|----------------------------|
| | | | Code V | (A) | (D) | Date Exercisable | Expiration Date | Title | Amount or Number of Shares |
| Phantom Stock | (1) | 08/29/2012 | A | 0.7013 | | (1) | (1) | Common stock, par value \$0.01 per share | 0.7013 \$ 2 |

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|---|---------------|-----------|-------------------------------|-------|
| | Director | 10% Owner | Officer | Other |
| Will W Anthony C/O CF INDUSTRIES HOLDINGS, INC. 4 PARKWAY NORTH, SUITE 400 DEERFIELD, IL 60015 | | | Sr. VP, Manufacturing & Dist. | |

Signatures

/s/ Douglas C. Barnard, by power of attorney 08/31/2012

__Signature of Reporting Person Date

Explanation of Responses:

- * If the form is filed by more than one reporting person, *see* Instruction 4(b)(v).
- ** Intentional misstatements or omissions of facts constitute Federal Criminal Violations. *See* 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Each share of phantom stock is the economic equivalent of one share of CF Industries Holdings, Inc. common stock. Shares of phantom (1) stock are payable in cash following the reporting person's termination of employment with CF Industries Holdings, Inc. and may be transferred by the reporting person into an alternative investment account in accordance with the terms of the plan.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure. Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.