

IONATRON, INC.  
Form 4  
January 31, 2007

**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 \*  
MCCAHERN STEPHEN WILLIAM

(Last) (First) (Middle)

IONATRON, INC., 3716 E. COLUMBIA STREET - SUITE 120

(Street)

TUCSON, AZ 85714

(City) (State) (Zip)

2. Issuer Name and Ticker or Trading Symbol  
IONATRON, INC. [IOTN]

3. Date of Earliest Transaction (Month/Day/Year)  
01/29/2007

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)  
Executive VP Engineering

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)	Price		
Common Stock	01/29/2007		S <sup>(1)</sup>	3,360 D	\$ 5.2901	5,947,608	D
Common Stock	01/30/2007		S <sup>(1)</sup>	56,640 D	\$ 5.2111	5,890,968	D
Common Stock	01/30/2007		S <sup>(1)</sup>	12,000 D	\$ 5.2001	5,878,968	D

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

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SEC 1474 (9-02)

number.

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

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)	5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)	6. Date Exercisable and Expiration Date (Month/Day/Year)	7. Title and Amount of Underlying Securities (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of Derivative Securities Owned Following Transaction (Instr. 5)
				Code	V (A) (D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares

## Reporting Owners

### Reporting Owner Name / Address

### Relationships

Director 10% Owner Officer Other

MCCAHERON STEPHEN WILLIAM  
IONATRON, INC.  
3716 E. COLUMBIA STREET - SUITE 120  
TUCSON, AZ 85714

Executive VP Engineering

## Signatures

/s/ Stephen  
McCahon 01/31/2007

\*\*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).

This sale was made pursuant to a trading plan previously entered into by the reporting person and complies with the requirements of Rule (1) 10b5-1(c)(1) under the Securities Exchange Act of 1934, as amended. The reporting person terminated the 10b5-1 plan after the close of trading on January 31, 2007.

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.