

O'Rourke James Calvin
 Form 4
 January 10, 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 *
 O'Rourke James Calvin

(Last) (First) (Middle)

C/O THE MOSAIC COMPANY, 3033 CAMPUS DRIVE, SUITE E490

(Street)

PLYMOUTH, MN 55441

(City) (State) (Zip)

2. Issuer Name and Ticker or Trading Symbol
 MOSAIC CO [MOS]

3. Date of Earliest Transaction (Month/Day/Year)
 01/08/2012

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)
 EVP - Operations

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 Indirect Beneficial Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|--|---|
| | | | | (A) or (D) | Price | | |
| | | | | Code | V | Amount | |
| Common Stock | 01/08/2012 | | M | | 13,830 | A | \$ 0 13,830 D |
| Common Stock | 01/08/2012 | | F | | 4,611 (6) | D | \$ 52.67 9,219 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)

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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) |
|--|--|--------------------------------------|--|--------------------------------|---|--|---|
| | | | | Code | V (A) (D) | Date Exercisable Expiration Date | Title Amount or Number of Shares |
| Restricted Stock Units | \$ 0 ⁽¹⁾ | 01/08/2012 | | M | 13,830 | 01/08/2012 ⁽²⁾ | Common Stock 13,830 |
| Stock Option (Right to Buy) | \$ 52.72 | | | | | ⁽³⁾ 07/27/2019 | Common Stock 12,019 |
| Restricted Stock Units | \$ 0 ⁽¹⁾ | | | | | 07/27/2012 ⁽²⁾ | Common Stock 11,381 |
| Stock Option (Right to Buy) | \$ 44.93 | | | | | ⁽⁴⁾ 07/27/2020 | Common Stock 20,259 |
| Restricted Stock Units | \$ 0 ⁽¹⁾ | | | | | 07/27/2013 ⁽²⁾ | Common Stock 11,128 |
| Stock Option (Right to Buy) | \$ 70.62 | | | | | ⁽⁵⁾ 07/21/2021 | Common Stock 16,150 |
| Restricted Stock Units | \$ 0 ⁽¹⁾ | | | | | 07/21/2014 ⁽²⁾ | Common Stock 7,080 |

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|--|---------------|-----------|---------------------|-------|
| | Director | 10% Owner | Officer | Other |
| O'Rourke James Calvin C/O THE MOSAIC COMPANY 3033 CAMPUS DRIVE, SUITE E490 | | | EVP - Operations | |

PLYMOUTH, MN 55441

Signatures

/s/ Richard L. Mack, Attorney-in-Fact for James C.
O'Rourke

01/10/2012

__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).
- (1) One-for-One
- (2) Not Applicable
- (3) Grant Date 07/27/2009; option becomes exercisable in three equal installments commencing on the first anniversary of the grant date and on each anniversary thereafter.
- (4) Grant Date 07/27/2010; option becomes exercisable in three equal installments commencing on the first anniversary of the grant date and on each anniversary thereafter.
- (5) Grant Date 07/21/2011; option becomes exercisable in three equal installments commencing on the first anniversary of the grant date and on each anniversary thereafter.
- (6) Shares withheld to cover tax liability incurred as a result of vesting of Restricted Stock Units.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure.

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