FORM 4

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

| vvasimigton, D.O. 20045 | |
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| Check this box if no longer subject | t to |
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| Section 16. Form 4 or Form 5 | |
| obligations may continue. See | |
| Instruction 1(h) | |

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

OMB APPROVAL OMB Number: 3235-0287 Estimated average burden 0.5 hours per response:

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

| Name and Address of Reporting Person* JOSEPH TAMARA L | | | | | 2. Issuer Name and Ticker or Trading Symbol INVIVO THERAPEUTICS HOLDINGS CORP. [NVIV] | | | | | | | (Che | ck all applica Director | ble) | Perso | n(s) to Issue 10% Ow Other (s) | ner |
|--|---|--|---|---------|--|----------|---------|---|----------------|--------------|----------------------------|--|--|------------|--|--|----------|
| | IVO THEF | irst) RAPEUTICS HC QUARE, SUITE | | DD | 3. Date of Earliest Transaction (Month/Day/Year) 03/24/2014 | | | | | | | X Officer (give title below) Other (specify below) SVP, General Counsel | | | | | |
| (Street) CAMBR (City) | | IA State) | 02139 (Zip) | 4 | 4. If Amendment, Date of Original Filed (Month/Day/Year) 6. Individual or Joint/Group Filing (Line) X Form filed by One Report Form filed by More than O | | | | | | | | ting Person | | | | |
| | | Ta | able I - Non-l | Derivat | ive S | ecuritie | es A | cquired, | Dispos | sed | of, or Ber | eficially | Owned | | | | |
| Date | | | . Transact Date Month/Day | | 2A. Deemed Execution Date if any (Month/Day/Ye | | Code (I | tion Di | | | d (A) or r. 3, 4 and 5) | 5. Amount Securities Beneficial Owned Fo Reported | s Forn ally (D) o ollowing (I) (Ir | | n: Direct I or Indirect E nstr. 4) | 7. Nature of Indirect Beneficial Ownership | |
| | | | | | | | | Code | V Ar | Amount (A) o | | Price | Transactio | saction(s) | | | nstr. 4) |
| 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/Yea | Code | nsaction Derivative | | | 6. Date Exercisable and Expiration Date (Month/Day/Year) 7. Title and Amo Securities Under Derivative Secur (Instr. 3 and 4) | | | nderlying ecurity | 8. Price of Derivative Security (Instr. 5) | 9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) | | 10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 11. Nature of Indirect Beneficial Ownership (Instr. 4) | |
| | | | | Code | v | (A) | (D) | Date Exercisable | Expira Date | ation | Title | Amount or Number of Shares | | (Instr. 4) | ייונא) | | |
| STOCK OPTION (RIGHT TO BUY) | \$1.88 | 03/24/2014 | | A | | 300,000 | | (1) | 03/23/ | /2024 | COMMON STOCK | 300,000 | \$0 | 300,00 | 00 | D | |

Explanation of Responses:

1. The option is exercisable as to 25% of the shares on the first anniversary of the date of grant, and the remaining shares vest thereafter on a monthly basis in 36 equal monthly installments.

/s/ Elizabeth Fraser, as Attorney 03/26/2014

in Fact

** Signature of Reporting Person

Date

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

- * 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).

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

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 Number.