BENDEKGEY E LEE

Form 5

February 17, 2009

OMB APPROVAL FORM 5

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

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations

Expires: 2005 Estimated average ANNUAL STATEMENT OF CHANGES IN BENEFICIAL burden hours per OWNERSHIP OF SECURITIES response... 1.0

See Instruction Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, 1(b). Form 3 Holdings Section 17(a) of the Public Utility Holding Company Act of 1935 or Section Reported 30(h) of the Investment Company Act of 1940

Form 4

may continue.

Transactions Reported

1. Name and Adda BENDEKGEY		ng Person *	2. Issuer Name and Ticker or Trading Symbol	5. Relationship of Reporting Person(s) to Issuer			
(Last) (First)		(Middle)	ARCA biopharma, Inc. [ABIO] 3. Statement for Issuer's Fiscal Year Ended	(Check all applicable)			
			(Month/Day/Year)	Director 10% Owner			
201 INDUSTRIAL ROAD, SUITE 310		, SUITE	12/31/2008	X Officer (give title Other (specify below)			
	(Street)		4. If Amendment, Date Original	6. Individual or Joint/Group Reporting			
			Filed(Month/Day/Year)				
				(check applicable line)			

SAN CARLOS, CAÂ 94070

X Form Filed by One Reporting Person Form Filed by More than One Reporting

OMB

Number:

3235-0362

January 31,

(City)	(State)	^(Zip) Tabl	e I - Non-Der	ivative Se	curitie	es Acquir	ed, Disposed of	, or Beneficiall	y 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. Securi (A) or Di (Instr. 3,	ispose	d of (D)	5. Amount of Securities Beneficially Owned at end of Issuer's Fiscal Year (Instr. 3 and	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
Common Stock (1)	02/29/2008	Â	J <u>(2)</u>	Amount 99		Price \$ 28.39	4) 1,502	D	Â
Common Stock (1)	05/30/2008	Â	J <u>(2)</u>	214	A	\$ 13.09	1,502	D	Â
Common Stock (1)	08/29/2008	Â	J <u>(2)</u>	334	A	\$ 8.416	1,502	D	Â
Common Stock (1)	11/28/2008	Â	<u>J(2)</u>	533	A	\$ 5.268	1,502	D	Â

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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 2270 (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	2.	3. Transaction Date	3A. Deemed	4.	5.	6. Date Exerc	cisable and	7. Title	e and	8. Price of	
Derivative	Conversion	(Month/Day/Year)	Execution Date, if	Transaction	Number	Expiration D	ate	Amou	nt of	Derivative	
Security	or Exercise		any	Code	of	(Month/Day/	Year)	Under	lying	Security	
(Instr. 3)	Price of		(Month/Day/Year)	(Instr. 8)	Derivative	•		Securi	ties	(Instr. 5)	
	Derivative				Securities			(Instr.	3 and 4)		
	Security				Acquired						
	•				(A) or						
					Disposed						
					of (D)						
					(Instr. 3,						
					4, and 5)						
									Amount		
						Date	Expiration		or		
						Exercisable	Date		Number		
						Lacroisable	Dute		of		
					(A) (D)				Shares		

Reporting Owners

Reporting Owner Name / Address	Relationships						
	Director	10% Owner	Officer	Other			
BENDEKGEY E LEE 201 INDUSTRIAL ROAD, SUITE 310 SAN CARLOS, CA 94070	Â	Â	CFO and Treasurer	Â			

Signatures

Lee Bendekgey 02/17/2009

**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) Purchased through the Employee Stock Purchase Plan pursuant to Rule 16b-3(c) of the Securities Exchange Act of 1934, as amended.
- (2) Purchased through the Employee Stock Purchase Plan pursuant to Rule 16b-3(c) of the Securities Exchange Act of 1934, as amended. Note: File three copies of this Form, one of which must be manually signed. If space provided 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.

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