




Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
ARMISTICE CAPITAL, LLC 510 MADISON AVENUE, 7TH FLOOR NEW YORK, NY 10022	X	X		
Armistice Capital Master Fund Ltd. C/O DMS CORPORATE SERVICES LTD. 20 GENESIS CLOSE, P.O. BOX 314 GRAND CAYMAN, E9 KY1-1104		X		
Boyd Steven C/O ARMISTICE CAPITAL, LLC 510 MADISON AVENUE, 7TH FLOOR NEW YORK, NY 10022	X	X		

Signatures

Armistice Capital, LLC, By: /s/ Steven Boyd, Managing Member		05/14/2019
		Date
Armistice Capital Master Fund Ltd., By: /s/ Steven Boyd, Director		05/14/2019
		Date
/s/ Steven Boyd		05/14/2019
		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).

The reported securities are directly owned by Armistice Capital Master Fund Ltd., a Cayman Islands corporation (the "Master Fund"), and may be deemed to be indirectly beneficially owned by Armistice Capital, LLC ("Armistice Capital"), as the investment manager of the Master Fund. The reported securities may also be deemed to be

(1) indirectly beneficially owned by Steven Boyd as Managing Member of Armistice Capital. Armistice Capital and Steven Boyd disclaim beneficial ownership of the reported securities except to the extent of their respective pecuniary interest therein, and this report shall not be deemed an admission that either of them are the beneficial owners of the securities for purposes of Section 16 of the Securities Exchange Act of 1934, as amended, or for any other purpose.

The reported securities are directly owned by a separately managed account client of Armistice Capital, and may be deemed to be indirectly beneficially owned by Armistice Capital as the investment manager of such separately managed account. The reported securities may also be deemed to be indirectly beneficially owned by Steven Boyd as

(2) Managing Member of Armistice Capital. Armistice Capital and Steven Boyd disclaim beneficial ownership of the reported securities except to the extent of their respective pecuniary interest therein, and this report shall not be deemed an admission that either of them are the beneficial owners of the securities for purposes of Section 16 of the Securities Exchange Act of 1934, as amended, or for any other purpose.

(3) This constitutes the weighted average purchase price. The prices range from \$4.77 to \$4.87. The Reporting Person will provide upon request by the Securities and Exchange Commission staff, the issuer, or a security holder of the issuer, full information regarding the number of shares purchased at each separate price.

(4) This constitutes the weighted average purchase price. The prices range from \$4.86 to \$5.29. The Reporting Person will provide upon request by the Securities and Exchange Commission staff, the issuer, or a security holder of the issuer, full information regarding the number of shares purchased at each separate price.

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.