

PROSPECTUS SUPPLEMENT NO. 8
(to Prospectus dated March 23, 2018)

169,933,626 Shares



GASTAR EXPLORATION INC.

Common Stock

This prospectus supplement is being filed to update and supplement information contained in the prospectus dated March 23, 2018, relating to the resale or other disposition of our common stock par value \$0.001 per share, which may be offered for sale from time to time by the selling stockholders named in the prospectus, with information contained in our Current Report on Form 8-K, filed with the Securities and Exchange Commission on August 1, 2018.

This prospectus supplement updates and supplements the information in the prospectus and is not complete without, and may not be delivered or utilized except in combination with, the prospectus, including any amendments or supplements thereto. This prospectus supplement should be read in conjunction with the prospectus and if there is any inconsistency between the information in the prospectus and this prospectus supplement, you should rely on the information in this prospectus supplement.

Investing in our securities involves risk. Please see “Risk Factors” beginning on page 3 of the prospectus for a discussion of certain risks that you should consider in connection with an investment in the securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

This prospectus supplement is dated August 1, 2018.

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

FORM 8-K

CURRENT REPORT
PURSUANT TO SECTION 13 OR 15(D) OF THE
SECURITIES EXCHANGE ACT OF 1934

Date of Report (Date of earliest event reported): August 1, 2018

GASTAR EXPLORATION INC.

(Exact Name of Registrant as Specified in its Charter)

DELAWARE
(State or other jurisdiction
of incorporation)

001-35211
(Commission File Number)

38-3531640
(IRS Employer
Identification No.)

1331 LAMAR STREET, SUITE 650
HOUSTON, TEXAS 77010

(Address of principal executive offices)

(713) 739-1800

(Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
 - Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
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- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards pursuant to Section 13(a) of the Exchange Act.

SECTION 8 – OTHER EVENTS

Item 8.01 Other Events.

On August 1, 2018, Gastar Exploration Inc. (the “Gastar”) announced that it is considering potential strategic transactions, including financing, refinancing, sale, or merger transactions, and is encouraging proposals from existing stakeholders and interested third-parties. As previously announced, the board of directors of Gastar (the “Board”) has appointed Jerry R. Schuyler, Randolph C. Coley and Harry Quarls to serve as members of a Board committee tasked with exploring financial, transactional, and strategic alternatives, including a potential restructuring of Gastar’s balance sheet.

Gastar previously disclosed in its Form 8-K filed on July 23, 2018 that it received a non-binding preliminary term sheet from funds affiliated with Ares Management, L.P. (“Ares”) proposing a potential restructuring transaction through a sale, among other means. As disclosed, Gastar continues to review and evaluate the Ares proposal, and is open to and will similarly evaluate any other proposals from other stakeholders or third-parties.

Gastar has retained Kirkland & Ellis LLP, as legal advisor and Perella Weinberg Partners L.P. and Tudor Pickering & Holt L.P., as financial advisors. Parties interested in participating in Gastar’s process should contact Kevin Cofsky of Perella Weinberg Partners at 212.287.3357/kcofsky@pwpartners.com or Chad Michael of Tudor Pickering at 713.333.7101/cmichael@tphco.com.

A copy of the Company’s press release, dated August 1, 2018, is filed herewith as Exhibit 99.1.

SECTION 9 – FINANCIAL STATEMENTS AND EXHIBITS

Item 9.01 Financial Statements and Exhibits

(d) Exhibits

The following is a list of exhibits furnished as part of this Form 8-K:

| Exhibit No. | Description of Document |
|--------------------|---|
| 99.1 | <u>Press Release issued August 1, 2018.</u> |

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: August 1, 2018

GASTAR EXPLORATION INC.

By: /s/ Michael A. Gerlich

Michael A. Gerlich

Senior Vice President and Chief Financial Officer

For Immediate Release



NEWS RELEASE

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Gastar Exploration Announces Efforts to Consider Restructuring Transaction Proposals

HOUSTON, August 1, 2018 - Gastar Exploration Inc. (NYSE American: GST) ("Gastar" or the "Company") announced today that it is considering potential strategic transactions, including financing, refinancing, sale, or merger transactions, and is encouraging proposals from existing stakeholders and interested third-parties.

As previously announced, the board of directors of Gastar (the "Board") has appointed Jerry R. Schuyler, Randolph C. Coley and Harry Quarls to serve as members of a Board committee tasked with exploring financial, transactional, and strategic alternatives, including a potential restructuring of Gastar's balance sheet.

Mr. Schuyler, the interim Chief Executive Officer and Board Chairman of Gastar, commented: "We are running an open process to consider all strategic transactions, including financing, refinancing, sale, or merger transactions, or other forms of restructuring. We encourage all existing stakeholders and interested third-parties to participate."

Gastar previously disclosed in its Form 8-K filed on July 23, 2018 that it received a non-binding preliminary term sheet from funds affiliated with Ares Management, L.P. ("Ares") proposing a potential restructuring transaction through a sale, among other means. As disclosed, Gastar continues to review and evaluate the Ares proposal, and is open to and will similarly evaluate any other proposals from other stakeholders or third-parties.

Gastar has retained Kirkland & Ellis LLP, as legal advisor and Perella Weinberg Partners L.P. and Tudor Pickering & Holt L.P., as financial advisors. Parties interested in participating in Gastar's process should contact Kevin Cofsky of Perella Weinberg Partners at 212.287.3357/kcofsky@pwpartners.com or Chad Michael of Tudor Pickering at 713.333.7101/cmichael@tphco.com.

About Gastar Exploration

Gastar is a pure-play Mid-Continent independent energy company engaged in the exploration, development, and production of oil, condensate, natural gas, and natural gas liquids in the United States. Gastar's principal business activities include the identification, acquisition and subsequent exploration and development of oil and natural gas properties with an emphasis on unconventional reserves, such as shale resource plays. Gastar holds a concentrated acreage position in the normally pressured oil window of the STACK Play, an area of central Oklahoma which is home

to multiple oil and natural gas-rich reservoirs including the Meramec, Oswego, Osage, Woodford, and Hunton formations. For more information, visit Gastar's website at www.gastar.com.

Forward Looking Statements

This news release includes "forward looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Forward looking statements express our current expectations, opinion, belief or forecasts of future events and performance. A statement identified by the use of forward looking words including "may," "expects," "projects," "anticipates," "plans," "believes," "estimate," "will," "should," and certain of the other foregoing statements may be deemed forward-looking statements. Although Gastar believes that the expectations reflected in such forward-looking statements are reasonable, these statements involve risks and uncertainties that may cause actual future activities and results to be materially different from those suggested or described in this news release. These include risks described in Gastar's Annual Report on Form 10-K and other filings with the U.S. Securities and Exchange Commission ("SEC"), available at the SEC's website at www.sec.gov. By issuing forward looking statements based on current expectations, opinions, views or beliefs, Gastar has no obligation and, except as required by law, is not undertaking any obligation, to update or revise these statements or provide any other information relating to such statements.

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