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

**FORM 8-A**

**FOR REGISTRATION OF CERTAIN CLASSES OF SECURITIES  
PURSUANT TO SECTION 12(b) OR 12(g) OF THE  
SECURITIES EXCHANGE ACT OF 1934**

**Vanguard Natural Resources, LLC**

(Exact Name of Registrant as Specified in its Charter)

**Delaware**  
(State of incorporation or organization)

**61-1521161**  
(IRS Employer Identification No.)

**7700 San Felipe, Suite 485**  
**Houston, TX 77063**  
(Address of principal executive offices and zip code)

Securities to be registered pursuant to Section 12(b) of the Act:

**Title of each class  
to be so registered**

**Name of each exchange on which  
each class is to be registered**

Common units representing limited liability company interests

NYSE Arca, Inc.

If this form relates to the registration of a class of securities pursuant to Section 12(b) of the Exchange Act and is effective pursuant to General Instruction A.(c), check the following box.

If this form relates to the registration of a class of securities pursuant to Section 12(g) of the Exchange Act and is effective pursuant to General Instruction A.(d), check the following box.

Securities Act registration statement file number to which this form relates: **333-142363 (if applicable)**.

Securities to be registered pursuant to Section 12(g) of the Act: **None**

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**INFORMATION REQUIRED IN REGISTRATION STATEMENT**

**Item 1. Description of Registrant's Securities to be Registered.**

A description of the securities to be registered by Vanguard Natural Resource, LLC, a Delaware limited liability company (the "Registrant"), will be contained in the sections entitled "The Limited Liability Company Agreement," "Cash Distribution Policy and Restrictions on Distributions," "How We Make Cash Distributions," "Description of the Units" and "Material Tax Consequences" in the prospectus to be filed by the Registrant pursuant to Rule 424(b) under the Securities Act of 1933, as amended, which prospectus will constitute a part of the Registrant's Registration Statement on Form S-1, as amended (No. 333-142363), initially filed with the Securities and Exchange Commission on April 25, 2007. Such prospectus, in the form in which it is so filed, is incorporated herein by reference.

**Item 2. Exhibits.**

The following exhibits to this Registration Statement on Form 8-A are incorporated by reference from the documents specified which have been filed with the Securities and Exchange Commission.

<u>Exhibit No.</u>	<u>Description</u>
1	Registrant's Form S-1 Registration Statement, as amended (Registration No. 333-142363), initially filed with the Securities and Exchange Commission on April 25, 2007 (the "Form S-1 Registration Statement") (incorporated herein by reference).
2	Certificate of Formation of the Registrant (incorporated herein by reference to Exhibit 3.1 to the Form S-1 Registration Statement).

- 3 Second Amended and Restated Limited Liability Company Agreement of the Registrant (incorporated herein by reference to Exhibit 3.2 to the Form S-1 Registration Statement).
- 4 Specimen Unit Certificate for the Common Units (incorporated herein by reference to Exhibit 3.2 to the Form S-1 Registration Statement).

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### SIGNATURE

Pursuant to the requirements of Section 12 of the Securities Exchange Act of 1934, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereto duly authorized.

### VANGUARD NATURAL RESOURCES, LLC

By: /s/ Scott W. Smith

Name: Scott W. Smith

Title: President and Chief Executive Officer

Date: October 19, 2007

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### INDEX TO EXHIBITS

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