



DIVISION OF  
CORPORATION FINANCE

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

January 3, 2012

Via E-mail

Mr. Morgan F. Johnston  
Senior Vice President, General Counsel, and Secretary  
GreenHunter Energy, Inc.  
1048 Texan Trail  
Grapevine, TX 76051

**Re: GreenHunter Energy, Inc.  
Registration Statement on Form S-1  
Filed December 8, 2011  
File No. 333-178386**

Dear Mr. Johnston:

We have limited our review of your registration statement to those issues we have addressed in our comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. Where you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

General

1. We note that you have omitted certain pricing-related information as well as other information from this filing. If you intend to rely on Rule 430A, please note that Rule 430A does not allow for the omission prior to effectiveness of amounts that may be computed, based on the maximum number of shares offered and the mid-point of an offering range, or the number of shares to be offered on the cover. In addition, please confirm that you will not circulate copies of the registration statement or the preliminary prospectus until you include all information except information you may exclude in reliance upon Rule 430A.
2. Prior to the effectiveness of the registration statement, please arrange to have FINRA call us or provide us with a letter indicating that FINRA has cleared the underwriting arrangements for the offering.

3. Please ensure all disclosures in the registration statement are up to date. In this regard, we note your statement on page 32 that you anticipate the first closing of a certain acquisition to occur on November 30, 2011, a date prior to the initial filing of the registration statement.

Outside Front Cover Page of the Prospectus

4. The “Calculation of Registration Fee” table indicates that in addition to the 10% Series C Cumulative Preferred Stock and warrants to purchase common stock, you are attempting to register the offer of the common stock underlying the warrants and the offer of the common stock issuable upon conversion of the preferred stock in the event of a change in control. Please disclose the title and amount of the common stock offered on the outside front cover page of the prospectus. Refer to Item 501(b)(2) of Regulation S-K. For the common stock, please also provide the information required by Items 501(b)(3) and (4). You should also discuss the offering of the common stock under “The Offering” in the prospectus summary.

Use of Proceeds, page 21

5. Please revise this section so that it also addresses how you intend to use the proceeds from the exercise of the warrants.
6. Please disclose the approximate amount of proceeds intended to be used for each purpose you identify in this section. Additionally, please indicate the order of priority for the purposes you identify, and discuss your plans if substantially less than the maximum proceeds are obtained. Refer to Item 504 of Regulation S-K and Instruction 1 thereto.

Determination of Offering Price, page 22

7. Please clarify the reference to a “rights offering” in the last sentence of the first paragraph.

Undertakings, page II-2

8. Please revise this section to remove the Rule 430B undertaking, or tell us why you believe you are eligible to rely on Rule 430B. Please also remove the undertaking in paragraph (b) as you do not incorporate subsequent Exchange Act documents by reference.
9. If you intend to rely on Rule 430A, please include the undertaking required by Item 512(i) of Regulation S-K.

Signatures

10. Please have your controller or chief accounting officer sign the registration statement in that capacity. Refer to Instruction 1 to Form S-1.

Exhibit Index

11. We note that you undertake to file certain exhibits, including the form of underwriting agreement and the legality and tax opinions, among others, in an amendment to the registration statement. Please understand that we will need adequate time to review these materials prior to effectiveness of the registration statement.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

Morgan F. Johnston  
GreenHunter Energy, Inc.  
January 3, 2012  
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Please contact Jessica Dickerson, Staff Attorney, at (202) 551-3749 or me at (202) 551-3397 with any questions.

Sincerely,

/s/ Jay Ingram

Jay Ingram  
Legal Branch Chief

cc: Via E-mail  
Michael Hedge  
K&L Gates LLP