



DIVISION OF
CORPORATION FINANCE

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

January 18, 2011

Mr. Michael A. Gerlich
Vice President and Chief Financial Officer
Gastar Exploration Ltd.
1331 Lamar Street
Houston, TX 77010

**Re: Gastar Exploration Ltd.
Form 10-K for Fiscal Year Ended December 31, 2009
Filed March 25, 2010
Response dated January 10, 2011
File No. 1-32714**

Dear Mr. Gerlich:

We have reviewed your response and have the following 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 within ten business days by amending your filing, by providing the requested information, or by advising us when you will provide the requested response. If 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 filing and the information you provide in response to these comments, we may have additional comments.

Form 10-K for Fiscal Year Ended December 31, 2009

Production, Prices and Operating Expenses, page 28

1. We note your response to our prior comment one. Please note that Item 1204(b) of Regulation S-K requires the disclosure of average production cost information by geographic area (i.e., by individual country, groups of countries within a continent, or continent). As such, it does not appear that limiting the presentation of this information to your operations in the Hilltop area of East Texas meets these disclosure requirements. Please confirm that you will provide the required disclosure in future Exchange Act filings.

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Form 10-Q for Fiscal Quarter Ended September 30, 2010

Financial Statements

Notes to Condensed Consolidated Financial Statements

3 – Property, Plant and Equipment, page 6

2. We note your response to our prior comment six. With a view toward future disclosure, please provide us with a discussion of your exploration activities with a focus on any changes to your development timetable in East Texas and Marcellus Shale.

You may contact Sandy Eisen at (202) 551-3864 if you have questions regarding comments on the financial statements and related matters. Please contact me at (202) 551-3311 with any other questions.

Sincerely,

Ethan Horowitz
Branch Chief