



DIVISION OF
CORPORATION FINANCE
MAIL STOP 7010

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549-7010

August 7, 2007

Via U.S. Mail and Fax (713) 739-0458

Mr. Michael Gerlich
Chief Financial Officer
Gastar Exploration Ltd.
1331 Lamar Street, Suite 1080
Houston, TX 77010

**Re: Gastar Exploration Ltd.
Form 10-K for the Fiscal Year Ended December 31, 2006
Filed March 27, 2007
File No. 1-32714**

Dear Mr. Gerlich:

We have reviewed your Form 10-K for the Fiscal Year Ended December 31, 2006 and have the following comments. We have limited our review of your filing to those issues we have addressed in our comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Form 10-K for fiscal year ended December 31, 2006
Cover page

1. We note your non-accelerated filer status and your aggregate market value held by non-affiliates at June 30, 2006. Tell us how you determined your filer status under Rule 12b-2 of the Securities Exchange Act of 1934.

Management's Discussion and Analysis of Financial Condition and Results of Operations
Critical Accounting Policies and Estimates
Asset Retirement Obligation, page 34

2. We note you attempt to limit the impact of management's judgment of variables used in your ARO by engaging independent petroleum engineers. While you are not required to make reference to this independent evaluation, when you do, you should also disclose the name of the expert and include the consent of the expert as required by Item 601(a)(23) of Regulation S-K. Please confirm if the engineering consent filed with your Form 10-K is the qualified third party referenced in this disclosure. Please revise to comply with this comment.

Balance Sheet, page F-4

3. Tell us and disclose your distinction between revenues receivables and accounts receivables, net.

Note 3. Cash Call Receivable, page F-13

4. We note this balance represents the proportionate share of planned authorized expenditures payable to the operator and an advance payment to a drilling contractor. It is not clear why the amounts payable to the operator represent a receivable. Please revise your disclosure to clarify what this balance represents, how you account for these payments and why it should be considered a long-term receivable. Further, tell us and disclose why your amortization period is appropriate and how the amortization reduces your capitalized natural gas and oil property costs.

Note 6. Long-term Debt
Senior Secured Notes, page F-17

5. We note in connection with the senior secured note issuances, you agreed to issue additional common shares at closing, and on each of the six, twelve and eighteen-month anniversaries of the closing date, for no additional consideration. We also note you recorded a liability of \$17.0 million and a corresponding amount recorded as a debt discount. Citing the appropriate accounting literature, tell us and disclose how

you accounted for this transaction, and how you will account for subsequent issuances on each closing anniversary.

6. We also note you have the right on a quarterly basis to require the note holders to purchase up to an aggregate of \$10.0 million of additional senior notes through June 16, 2007. Tell us and disclose the specific terms of this arrangement, including if there is a pre-determined interest rate for these notes. In your response, please address how you have accounted for this right in your financial statements.

Note 13. Related Party Transactions
Geostar Corporation, page F-26

7. We note the look-back calculations are based on a third party engineering report. While you are not required to make reference to this third party engineering report, when you do you should also disclose the name of the expert and include the consents of the expert. Please revise to comply with this comment.

Form 10-Q for period ended March 31, 2007

Note 4. Long-Term Debt
Senior Secured Notes, page 7

8. We note you were not in compliance with one of your debt covenants at March 31, 2007, and received a waiver of the covenant default on May 9, 2007. Please tell us and disclose the nature of the default in more detail. Further, tell us and disclose the period of the waiver and your consideration of EITF 86-30 and SFAS No.78 in classifying the notes as long-term liabilities on your balance sheet.

Engineering comments:

General

9. Please provide us with a copy of your reserve report as of December 31, 2006. If possible, please submit it in electronic format such as CD-ROM. For reserves classified as proved producing, provide a graph of the production over time with the forecasted production decline also on the graph.

10. You indicate that your CBM reserves are long-lived. We note that your total reserve life is less than 7 years even though almost two-thirds of your reserves are not producing or undeveloped. As the Powder River Basin coal-bed methane wells have a life of about 7-8 years please revise to further explain this point or remove this disclosure.

Natural Gas and Oil Activities, page 2

11. Please expand your disclosure to include all the information required by Item 102 of Regulation S-K for your principal fields. This includes production, reserves, nature of your interest, development, and location of your principal fields. Include any future planned activity regarding further development in these fields.

Markets and Customers, page 4

12. You indicate that you and your partners are “finalizing plans for a gathering system and pipeline” for your PEL 238 concession. Please revise to expand this disclosure to fully explain what you mean by “finalizing plans” by including the status of approval, estimated costs and the approximate timing and duration of construction of the project.

Risk Factors, page 12

13. Include risk factors that disclose the drilling and operating risks and costs associated with handling gas containing high levels of hydrogen sulfide and carbon dioxide and other contaminants such as in the Bossier trend of East Texas. Include how this affects your results and may affect them in the future and the fact that if your gas processing plant is out of commission or exceeding capacity you may have to shut-in production due to not meeting minimum pipeline specifications for your natural gas.
14. As you operate in areas that are subject to possible prior drainage of reserves, such as the Powder River Basin, this should be included as a risk factor. Please revise your document to include this and how it may have impacted your results in the past and may impact you in the future.
15. Please revise your document to include a risk factor that the typical coal-bed methane well in the Powder River Basin produces at a significantly lower gas rate and will recover significantly less reserves than a conventional gas well. Explain how this has impacted your results in the past and may impact your future results.

Our success is influenced by natural gas prices in the specific areas where we operate, page 13

16. You indicate this had a negative impact on your results in 2002. Please revise to expand your discussion to include more recent periods.

The imprecise nature of estimating proved natural gas and oil reserves, future downward revisions of proved reserves and increased drilling expenditures.....may lead to write-downs in the carrying value of our natural gas and oil properties, page 16

17. Please revise to make this risk factor more specific to you. In the recent past you have experienced impairments of certain properties, therefore, please disclose these and how they have impacted your results for those periods.

We cannot control the activities on properties we do not operate..... page 21

18. You indicate that others operate “some” of the properties you have an interest in. Please revise to clearly specify the percentage of your properties and reserves that are operated by others.

Properties, page 24

Production, Prices and Operating Expenses, page 25

19. Please tell us if these are the average oil and gas prices before hedging that you received in 2005 and 2006.

Drilling Activity, page 25

20. Please revise to fully explain the category of “undecided” under exploratory well results for 2005 and 2006 or provide a cross-reference if it is explained elsewhere in the document.

Notes to Consolidated Financial Statements

Supplemental Oil and Gas Disclosures – Unaudited, page F-37

Net Proved and Proved Developed Reserve Summary, page F-39

21. In your registration statement you disclosed that a Reserves Committee of the Board of Directors and senior management reviewed the reserves and approved the annual reserve report. However, we could find no such disclosure in your 2005 or your current 10-K. You indicated in a response to us on October 13, 2005 that you believed they provide a meaningful review and control function. Please provide us with the current status of that committee and their work and explain to us why this is not disclosed in the annual 10-K reports.

22. Although you have provided explanations for the revisions of reserves presented for these three periods, please expand your disclosure to provide the appropriate explanations for the other significant changes in reserves presented under Purchase of minerals in place and extensions and discoveries. See paragraph 11 of SFAS 69.

Closing Comments

As appropriate, please amend your filing and respond to these comments within 10 business days or tell us when you will provide us with a response. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

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 all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed investment decision. 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.

In connection with responding to our comments, please provide, in writing, a statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

You may contact Bob Carroll at (202) 551-3362, or Shannon Buskirk at (202) 551-3717 if you have questions regarding comments on the financial statements and related matters. Questions regarding the engineering comments can be directed to Jim Murphy at (202) 551 -3703.

Sincerely,

Mr. Michael Gerlich
Gastar Exploration Ltd.
August 7, 2007
Page 7

/s/ April Sifford

April Sifford
Branch Chief Accountant