



DIVISION OF
CORPORATION FINANCE
Mail Stop 3030

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

May 28, 2010

Adrian Goldfarb
Chief Financial Officer
Ecosphere Technologies, Inc.
3515 S.E. Lionel Terrace
Stuart, FL 34997

Re: Ecosphere Technologies, Inc.
Form 10-K for the Year Ended December 31, 2009
Filed March 31, 2010
Form 10-Q for the Quarterly Period Ended March 31, 2010
Filed May 17, 2010
File No. 000-25663

Dear Mr. Goldfarb:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your documents in future filings in response to these comments. If you disagree, we will consider your explanation as to why our comments are inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

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 the Year Ended December 31, 2009

Liquidity and Capital Resources, page 20

1. We note the discussion on page 14 that you anticipate that you will need an additional \$25-\$30 million over the next twelve months. Please expand in future filings to further discuss your specific plan of operations over the next twelve

months, including expected sources for your funding needs. Your discussion should also address the impact to your operations if you are not successful with these funding efforts. In addition, the notes to the financial statements should discuss your viable plans to overcome the going concern matters, as required by Section 607.02 of the Financial Reporting Codification.

Cautionary Note Regarding Forward Looking Statements, page 23

2. We note your statement that your report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. In your future filings, as applicable, please reference this statute only to the extent that you meet the eligibility requirements of this act.

Exhibits, page 52

3. Please file the following agreements as material contracts or tell us why you believe they are not required filings pursuant to Item 601(b) of Regulation S-K:
 - Your long-term agreements with Southwestern Energy and Newfield, which you reference on page 3 and elsewhere;
 - The paid pilot programs with other major oil companies, which you reference on page 4;
 - The license of your technology to Ecosphere Energy Services LLC, which you reference on page 3;
 - The agreement, if any, governing the assignment of your material intellectual property from Mr. McGuire, which you reference on page 10; and
 - All material related transactions with executive officers and directors, as disclosed on pages 49 to 50 and F-22 to F-28.

Statements of Cash Flows, page F-6

4. Please revise in future filings to begin with net income (loss) as required by ASC 280-10-55-13.
5. Please tell us the nature of the \$6.2 million construction in process purchases included in your statements of cash flows.

Note 14. Commitments and Contingencies - Legal, F-46

6. In future filings, your assessment of legal matters and contingencies on page F-46 should also address the expected impact on liquidity and results of operations.

Form 10-Q for the Quarterly Period Ended March 31, 2010

Results of Operations - Revenues, page 20

7. Please revise in future filings to explain the specific reasons for the significant increase in revenues for the three months ended March 31, 2010 compared to the three months ended March 31, 2009.

As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a cover letter 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 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.

Adrian Goldfarb
Ecosphere Technologies, Inc.
May 28, 2010
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You may contact Jeanne Bennett, Staff Accountant, at (202) 551-3606 or me at (202) 551-3676 if you have questions regarding comments on the financial statements and related matters. Please contact Joseph McCann, Staff Attorney, at (202) 551- 6262, or Tim Buchmiller, Reviewing Attorney, at (202) 551-3635 if you have questions on any other comments. In this regard, do not hesitate to contact me or Martin James, Senior Assistant Chief Accountant, at (202) 551-3671 with any questions.

Sincerely,

Brian R. Cascio
Accounting Branch Chief