

DAWSON GEOPHYSICAL COMPANY

508 West Wall, Suite 800

Midland, Texas 79701

(432) 684-3000

January 13, 2011

VIA FACSIMILE AND EDGAR TRANSMISSION

Memorandum

for

Securities and Exchange Commission

100 F. Street, N.E.

Washington, D.C. 20549

**Re: Dawson Geophysical Company
Form 10-K for the Fiscal Year Ended September 30, 2010
Filed November 23, 2010
File No. 1-34404**

This memorandum sets forth the responses of Dawson Geophysical Company (the "Company") to the comments provided by the staff (the "Staff") of the Securities and Exchange Commission (the "Commission") in its comment letter dated January 3, 2011 (the "Comment Letter") with respect to the Company's annual report on Form 10-K for the Fiscal Year Ended September 30, 2010 (File No. 1-34404) (the "Form 10-K"). As requested by the Staff, the Company will address the Staff's comments in this response letter and on an ongoing basis in our future annual and quarterly reports. For your convenience, we have repeated each comment of the Staff in bold type face exactly as given in the Comment Letter and set forth below such comment is our response. In each case below where we have proposed amending the Company's disclosure in response to the Staff's comments, we have underlined new text and struck out old text.

Form 10-K for Fiscal Year Ended September 30, 2010

Business, Page 2

Contracts, Page 6

- 1. We note your disclosure on page 8 that your order book consists of written orders or commitments for services that you believe to be firm. Please tell us how you have considered disclosing the dollar amount of backlog orders believed to be firm pursuant to Item 101(c)(viii) of Regulation S-K.**

The Company has not previously disclosed a dollar amount of backlog orders because of the high variability in its order book. The variability arises from a number of factors, including customers' right to cancel or delay their service contracts on short notice, the necessity of obtaining land access permits from third parties prior to beginning a project, weather and holiday

delays, the effect of crew repositioning between projects and uncertainty regarding the timing of crew availability upon completion of in-process projects. Because of this high level of uncertainty, the Company has customarily disclosed only that its order book reflects general commitment levels sufficient to maintain operations on its crews for a defined period of time rather than trying to predict which orders are firm and when revenues will be realized (see current disclosure on page 17 of the Company's Form 10-K).

In future filings, the Company will amend the applicable risk factor to read as follows:

“Our clients could delay, reduce or cancel their service contracts with us on short notice, which may lead to lower than expected demand and revenues.

Our order book ~~reflects consists of written orders or client commitments at levels we believe are sufficient to maintain our operations on our existing crews for the indicated period for our services that we believe to be firm.~~ However, our clients can delay, reduce or cancel their service contracts with us on short notice. As a result, our order book as of any particular date may not be indicative of actual demand and revenues for any succeeding fiscal period.”

Notes to Financial Statements, page F-8

Note 1. Summary of Significant Accounting Policies, page F-8

Impairment of Long-Lived Assets, page F-9

2. You indicate on page 4 that you own sufficient recording equipment, energy sources and ancillary vehicles to support 16 seismic crews. However, you indicate that at September 30, 2010, you had 12 active seismic crews, and in your fourth quarter earnings conference call, you indicate that you believe you will be able to maintain 12 active crews in fiscal 2011. Please provide us with a comprehensive analysis of your impairment conclusions related to your recording equipment, energy sources and ancillary vehicles at September 30, 2010 so that we can better understand your disclosure that no impairments were required during fiscal 2010.

While the number of data acquisition crews continues to be an important metric for the seismic industry to measure the overall size of a Company, it is not the best metric for measuring the value or utilization of equipment. A data acquisition crew does not consist of a fixed number of pieces of equipment. Rather it consists of a central recording system, recording channels, and ancillary vehicles that are deployed, as needed, to match the requirements of a particular project. A crew can be as large as 14,000 recording channels or as small as 1,200 recording channels, depending on the project requirements, the geographic area involved, the type of terrain and other factors. In addition, in the past few years most of our clients have required ever-higher channel counts on projects in order to obtain improved data quality and analysis of subsurface formations. As a result (and we disclose this in our Business discussion), we use our equipment interchangeably, in multiple deployments and groupings according to project requirements. So while our current level of equipment could support 16 seismic crews, the trend has been for us to field ever-larger crews with more equipment deployed on a smaller number of crews.

For the purpose of the measurement of impairment loss, the Company follows the requirements of paragraph 10 of SFAS 144 (ASC 360-10-35-23) and groups assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. Because of the central role they play in the recording and storing of seismic data, the Company has determined that its recording systems (the MRX, RSR and ARAM systems), with the associated channels and ancillary vehicles owned and used by the Company, would be the appropriate asset groups for the testing of the impairment of long-lived assets (and not the number of data acquisition crews). The assets within each of these three groups are able to be used interchangeably and configured to meet the needs of each unique project.

In analyzing impairment, the Company ascertains the carrying value of each such asset group, and then determines recoverability by comparing the carrying value to the sum of the undiscounted cash flows for the remaining useful life of the asset group. The remaining useful life of each asset group is determined by the Company in accordance with paragraph 18 of SFAS 144 (ASC 360-10-35-31/32), and is defined as the remaining useful life of the primary asset of the group, or the principal long-lived tangible asset being depreciated that is the most significant component asset from which the asset group derives its cash-flow generating capacity.

At March 31, 2010, the Company's Step 1 analysis of the recoverability of the Company's long-lived assets, including recording equipment, energy sources, ancillary vehicles and all other supporting assets, showed that the projected future cash flows from each of the three asset groups exceeded the net book value of the applicable asset groups by more than 25% on an individual basis, and also exceeded net book values on an aggregate basis by more than \$138 million. Based on these results, the Company concluded there had been no impairment of assets. At June 30 and September 30, 2010, the Company's impairment review indicated that there had not been any triggering events that would require an additional Step 1 analysis of these assets. One factor in the Company's third and fourth quarter analysis regarding whether a triggering event had occurred, was the Company's quarterly results, which had progressively improved during fiscal 2010, reflecting growing demand for the Company's services.

In future filings, the Company will amend its disclosure to help clarify for investors how the Company utilizes its equipment. Such disclosure will read as follows:

"We currently own ~~sixteen~~ sufficient recording systems, including associated energy sources and ancillary vehicles. While the number of recording systems is to operate ~~sixteen fully equipped crews~~ in excess of the number needed to field our current level of data acquisition crews, we maintain the excess equipment to provide additional operational flexibility and to allow us to quickly deploy additional recording channels and energy source units as needed to respond to client demand and clients desire for improved data quality with greater subsurface images."

Note 11. Net Income (Loss) per Common Share, page F-17

3. We note that you do not appear to disclose the total number of anti-dilutive securities outstanding for each period for which an income statement is presented. Please tell us how you have considered the disclosure requirements of ASC 260-10-50-1(c).

Although the Company indicated in its narrative disclosure on page F-18 that its outstanding stock options and restricted stock would be anti-dilutive, it did not disclose the total number of such securities.

In future filings, the Company will include the following table and narrative disclosure setting forth the total number of anti-dilutive securities outstanding for each period for which an income statement is presented:

“The following weighted average numbers of certain securities have been excluded from the calculation of diluted net income (loss) per common share for the period shown, as their effect would be anti-dilutive.

	<u>2010</u>	<u>2009</u>	<u>2008</u>
Stock Options	151,710	126,181	—
Restricted Stock	54,397	38,500	33,000

* * *

As requested by the Commission, the Company hereby acknowledges:

- It is responsible for the adequacy and accuracy of the disclosure in its filings;
- 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;
- It 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.

If you have any questions or comments regarding this memorandum, please contact Sarah Rechter of Baker Botts L.L.P. at (214) 953-6419 or, in her absence, Neel Lemon of Baker Botts L.L.P. at (214) 953-6954.

Dawson Geophysical Company

/s/ Christina W. Hagan

Christina W. Hagan
Executive Vice President, Secretary
and Chief Financial Officer

cc: Tracie Towner
Mark Shannon
Securities and Exchange Commission

Stephen C. Jumper
Dawson Geophysical Company

Sarah Rechter
Baker Botts L.L.P.