

DAWSON GEOPHYSICAL COMPANY

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February 13, 2009

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, 2008
Filed December 9, 2008
Response Letter Dated January 23, 2009
Response Letter Dated February 4, 2009
File No. 0-10144**

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 February 10, 2009 (the "Comment Letter") with respect to the Company's annual report on Form 10-K for the Fiscal Year Ended September 30, 2008 (File No. 0-10144) (the "Annual Report"). 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.

Definitive Proxy Statement on Schedule 14A filed on December 16, 2008

Short-Term Incentive Compensation, page 8

- 1. We note your response to our prior comment one and we reissue this comment. Please provide greater detail on the formula used to determine the distributions of the bonus pool to eligible employees. Provide a quantitative example of how the formula is used to calculate the incentive compensation awarded from the bonus pool to a named executive officer. Finally, provide disclosure, in table format or otherwise, of the actual value of each variable for each named executive officer.**

In response to the Staff's additional comment, the Company will revise its disclosure in future proxy statements generally as follows and will amend the Summary Compensation Table to show separately for each NEO amounts awarded under our profit-sharing plan and the discretionary cash bonus (changes are shown against current proxy disclosure):

"The Named Executive Officers participate in our profit sharing program, along with all other eligible employees. The profit sharing program is designed to award our employees for the financial success of the Company. With respect to each fiscal year, our Board of Directors,

acting on the recommendation of our Compensation Committee, determines a pool amount available to be allocated in the first quarter of the following fiscal year to all eligible employees, including the Named Executive Officers. For both fiscal 2008 and fiscal 2007, our Board of Directors set the pool at 5% of our pre-tax net income for the applicable fiscal 2008 year. The distribution of the pool to eligible employees is based upon a variety of factors including formula consisting of (i) base salary at the time of calculation, times (ii) a seniority factor (which reflects each employee's length of service with the Company), times and (iii) an internal value of the position and seniority, or "position code." The Company uses the resulting "bonus pool share factor" derived from the calculation to allocate the bonus pool to each eligible employee on a pro rata basis (with higher bonus pool share factors receiving a higher percentage of the bonus pool). For instance, the 2008 calculation for Mr. Jumper would have been $\$350,000 \times 20.545 \times 1.25$, resulting in a bonus pool share factor of 0.024. That bonus pool share factor was then multiplied by the aggregate bonus pool of \$2,980,840 to obtain the \$71,716 awarded to Mr. Jumper. The position code starts at 1 for all employees and increases pursuant to the internal value of the position up to 1.25 for senior officers and other senior managers. While in recent years, the Company has weighted the three factors comprising the formula equally, management periodically reassesses the formula based on its assessment of the appropriate balance and relevance of the individual factors in order to retain key individuals. The fiscal 2008 and fiscal 2007 profit sharing awards paid to our Named Executive Officers are included in the Summary Compensation Table on page ____ 42. The seniority factors of each Named Executive Officer for fiscal 2007 and fiscal 2008, respectively, were as follows: Mr. Jumper — 20.228 and 20.545; Ms. Hagan — 19.115 and 19.469; Mr. Tobias — 18.391 and 18.772; Mr. Pardue — 22.515 and 22.772; and Mr. Forsdick — 17.135 and 17.572. Each of the Named Executive Officers had a position code of 1.25 for both fiscal 2007 and fiscal 2008. In September 2008, our Board of Directors preliminarily set the fiscal 2009 allocation for the profit sharing plan at 5% of our pre-tax net income for fiscal 2009."

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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: Sean Donahue
John Madison
Securities and Exchange Commission

Stephen C. Jumper
Dawson Geophysical Company

Sarah Rechter
Baker Botts L.L.P.