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August 26, 2009

VIA EDGAR
Mr. H. Roger Schwall, Assistant Director
Mr. John Lucas, Staff Attorney
United States Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549

Re: Natural Gas Services Group, Inc.
Form 10-K/A for the fiscal year ended December 31, 2008

Definitive Proxy Filed April 27, 2009
File No. 1-31398

Gentlemen:

Enclosed for filing via EDGAR on behalf of Natural Gas Services Group, Inc. (the "Company") is Amendment No. 1 to Form 10-K/A for the year ended December 31, 2008.

The following are responses to the comments of the Staff contained in the Staff's letter dated July 30, 2009, commenting on the filings referenced above. Our responses are in bold following the restatement of your questions, which are in non-bold italics.

Form 10-K Comments

1. *Ensure that you file as exhibits all materials contracts pursuant to Item 601(b)(10) of Regulation S-K. Also disclose the material terms of all such material contracts. In that regard, we note the contributions of Devon and XTO to your consolidated revenues in 2008.*

In connection with the rental of natural gas compressors, the vast majority of customers enter into the Company's form of master services agreement that sets forth the basic rental terms. The Company believes its many master services agreements are contracts made in the ordinary course of business and therefore is not required to be filed as material contract exhibits under Item 601(10) Regulation S-K. At December 31, 2008, approximately 93% of the compressor units under rent were rented on a month-to-month basis or had rental terms of less than six months, which was noted as a risk factor in the Company's 10-K.

With respect to XTO, approximately 80% of the revenues attributable to XTO are from sales of Compressor units rather than rentals. Sales are made to XTO pursuant to basic purchase orders; thus, no material contract is involved. With respect to Devon, compressor rentals are made pursuant to Devon's form of lease agreement, which contains standard rental terms in the ordinary course of business. Based on the foregoing, the Company believes this rental agreement is also a contract made in the ordinary course of its business and not required to be filed under Item 601 of Regulation S-K.

2. Please include the disclosure required by Item 308(a)(4) of Regulation S-K.

The Company has included the disclosure you requested in its 10-K/A.

Proxy Statement Comments

Prior to responding to the compensation comments contained in your letter, some background on the Company may assist the Staff's review of the Company's responses to the comments regarding the compensation matters disclosed in its 2009 Proxy Statement. The Company became a public reporting company in 2002 when it completed its small IPO. While the Company has had steady growth since its IPO, it remains a relatively small public company with annual revenues in 2008 of less than \$100 million. In 2008, the Company maintained a lean executive management team of only four executive officers, none of which earned total compensation of more the \$200,000, except for the Chief Executive Officer. Thus, the Company does not have sophisticated compensation policies, and the relatively modest compensation paid to its executive officers in 2008 and prior years makes some of the in-depth analysis specified in Item 402 of Regulation S-K inapplicable or of very limited benefit to investors. With the foregoing in mind, the Company responds to the Proxy Statement comments as follows:

3. Based on your disclosures here and on page 18 under the caption "Assistance of Compensation Consultants," it appears that you may engage in compensation benchmarking. Please identify the companies that you looked to in determining competitive compensation levels in your industry, and explain in greater detail how this data were considered in awarding compensation. In addition, state what you determined the industry median was for your industry and how you arrived at that figure.

The Compensation Committee does not believe it engages in compensation benchmarking to the extent requiring the breadth of disclosure noted in Compliance and Disclosure Interpretations Question 118.05. In its review of compensation matters, the Compensation Committee has generally reviewed compensation in the oil and gas services industry, but does not believe that there are any comparative companies specializing in gas compression services of similar size from which to benchmark against. Thus, its review of industry compensation has been limited to simply obtaining a broad-based, general understanding of current compensation practices. In the Committee's experience, the gas services companies it has reviewed have typically been significantly larger, on both a revenue and market capital basis, than the Company. In addition, most of these companies typically have a much broader scope of services and products than offered by the Company. Thus, the Committee has not used this information for benchmarking purposes.

In order to clarify the disclosure, the Company proposes in future filings the following (or something substantially similar thereto):

Historically, we have not focused on a specific peer group to evaluate and establish the compensation of our executive officers. This is primarily because our Compensation Committee has not found similarly-situated companies specializing in gas compression services of similar size. In the Committee's experience, most of the gas services companies in our industry offer a broader scope of products and services than we do, and typically are significantly larger, on both a revenue and market capital basis. Thus, the Committee's review of industry compensation has been limited to simply obtaining a broad-based, general understanding of current compensation practices. For this reason, we have not in the past and do not currently consider the specific amounts of executive compensation paid by such companies when evaluating or determining our executive compensation. We do, however, from time to time, consider the types of executive compensation offered by publicly traded gas service companies and the annual increases or decreases on a percentage basis in such compensation.

To the extent that the Committee changes its policies in the future and engages in compensation benchmarking, the Company confirms that it will comply with the Staff's comments in future filings.

4. Where compensation differed materially from the 20% of median range that you target, disclose the reasons for the variance. See Item 402(b)(xiv) of Regulation S-K and Compliance and Disclosure Interpretations Question 118.05, found at www.sec.gov.

Please see the response to comment #3 above.

5. Please disclose the specific performance levels you considered in awarding stock options in 2008, including the targets for cash flow from operations, earnings per share, market share, and market value of your common stock. See Item 402(b)(2)(v)-(vi) of Regulation S-K. To the extent you believe that disclosure of the targets would result in competitive harm such that they could be excluded properly under Instruction 4 to Item 402(b) of Regulation S-K, please provide on a supplemental basis a detailed explanation supporting your conclusion. To the extent disclosure of the quantitative or qualitative performance-related factors would cause you competitive harm, you are required to discuss how difficult it will be for you to achieve the target levels or other factors. Please see Instruction 4 to Item 402(b) of Regulation S-K and Regulation S-K Compliance and Disclosure Interpretations Question 118.04, found at www.sec.gov.

The Compensation Committee does not award stock options based on specified quantifiable performance levels. Historically, the grant of stock options has not been a significant part of the compensation package for the Company's executive officers. In fact, as noted in the option grant table for 2008 on page 22 of the proxy statement, two of the four executive officers did not receive stock options in 2008. With respect to Stephen C. Taylor, the Company's CEO, his option grants have primarily been contractual in nature (in 2008 the Company signed a new employment agreement with Mr. Taylor which provides for a stock option or other equity award of 30,000 shares per year.)

With respect to the disclosure regarding stock options on pages 14-15 of the proxy statement, the Company recognizes that the listing of cash flow, earnings per share, percentage of market share and market value of the Company's common stock may give the impression that the Committee sets specific performance targets in connection with receiving stock option grants. Thus, the Committee proposes in future proxy statements to modify the list of factors it considers in its analysis to read as follows:

- *the individual performance, leadership, business knowledge and level of responsibility of our officers;*
- *the particular skill-set and longevity of service of the officer;*
- *the effectiveness of the officer in implementing our overall strategy; and*
- *the general financial performance and health of the Company.*

To the extent that the Committee uses specific performance levels in awarding stock awards in the future, the Company confirms that it will comply with the Staff's comments in future filings.

6. Please disclose the specific performance targets you set in 2008 for awards under your incentive cash bonus program, including total revenues, EBITDA, and net income before taxes. To the extent you believe this disclosure would result in competitive harm, follow the same guidance provided in the prior comment, above.

7. In a table or another appropriate manner, disclose each named executive officer's target award opportunity percentage, as well as the factors considered in setting each target.

8. Please describe the factors considered in awarding 15% of the possible 30% attributable to the total revenue performance metric, which was not met in 2008. In this regard, we note the illustration you provide in the fourth paragraph of this section, which appears to suggest that failure to meet a performance objective would result in a full 30% reduction.

In response to comments 6, 7 and 8 of the Staff's comment letter, the Company proposes in future filings to integrate the following tables and disclosure (or something substantially similar thereto) into the existing disclosure regarding the Incentive Cash Bonus Plan:

The following table sets forth the bonus financial criteria and target thresholds set by the Committee and compares such thresholds to actual performance achieved and the resulting bonus payout percentages earned in 2008:

2008 Incentive Cash Bonus Program

Bonus Criteria	Base Target	Actual Performance	% of Base Achieved	Base Target Payout
Revenue	\$90,900,000	\$85,336,000	93.68 %	15 %
Net Income before Taxes	20,322,000	24,220,000	119.18 %	30 %
EBITDA	31,275,000	34,888,000	111.55 %	30 %
Personal Performance	10 %	10%	100.00 %	10 %
Total	--	--	--	85 %

As noted in the table above, actual performance for 2008 exceeded the target thresholds for Net Income before Taxes and EBITDA; thus, 60% of the total possible bonus payout amount was achieved by meeting the target amounts for these two categories. However, actual results for revenue fell slightly short of the target goal as shown in the table. Thus, after consideration of the Company's overall results for 2008, along with the fact that the 2008 target for revenue was nearly achieved, the Committee awarded 15% of the possible 30% of the bonus payout amount attributable to the revenue criteria. In addition, based upon individual performance as evaluated by our Chief Executive Officer and recommended to the Committee, each executive officer was awarded the full 10% of the bonus payout attributable to the subjective personal performance criteria (with respect to the Chief Executive Officer, his individual performance criteria is evaluated solely by the Committee.)

The following table sets forth the maximum bonus eligibility set by the Committee for 2008 for each of our named executive officers, and based upon the payout percentages noted in the table above, the bonus payout amount earned by each named executive for 2008 under our Incentive Cash Bonus Program:

Name	Title	Base Salary	Max Bonus Eligibility	% of year Eligible	Bonus Payout %	Bonus Payouts
Steve Taylor	Pres/CEO	\$275,000	50 %	100 %	85 %	\$116,875
Paul Hensley	SVP- Technology	\$145,000	40 %	100 %	85 %	\$49,300
Earl Wait	VP- Accounting	\$125,000	35 %	100 %	85 %	\$37,188
Jim Hazlett	VP- Technical Svcs	\$125,000	35 %	100%	85%	\$37,188

9. Please provide a more detailed explanation of your reasons for awarding a portion of the bonuses in stock options. You state in the opening paragraph of this section that these bonuses are awarded in recognition of company performance, but you later state that the decision to award stock options in lieu of cash was premised on the notion that this would harmonize the interests of management and stockholders.

10. Identify for us where in your executive compensation tables you account for the portion of incentive bonuses awarded in stock options. Your disclosure here suggests that only the cash portion is included in the Non-Equity Incentive Plan Compensation column.

11. Please disclose the total amount awarded to your named executive officers under your Incentive Cash Bonus Program. Identify which portions were awarded in cash and which were awarded in stock options. To the extent that the allocation between cash and non-cash payment under this plan differed amongst officers, explain the reasons for any discrepancy.

In response to comments 9, 10 and 11, historically, payments under the Incentive Cash Bonus Program have been in cash. In early 2009, when awards under the program were determined, the Chief Executive Officer suggested to the Board of Directors that employees be given an option to take a portion of their 2008 cash bonus under the program in stock options. This suggestion was made at the time when the country was deep in the current recession and the oil and gas industry was beginning to feel the effects of significantly lower oil and gas prices. It was believed that the gesture by executive management to take a portion of the cash bonus in options would demonstrate that management's interests were aligned with that of shareholders, and that management was taking a long-term approach to the Company's financial success.

In the event that a stock option alternative is offered again in lieu of cash in connection with awards under the Incentive Cash Bonus Program, the Company confirms that it will comply with the Staff's comments by (i) providing a detailed explanation of the reasons for allowing a stock option election, (ii) appropriately disclosing in the compensation table the amount of the awards taken in cash versus options, and (iii) adding a table summarizing the awards to the named executive officers, including identifying portions that were awarded in cash versus options, and providing explanation regarding the terms of the allocations.

The Company has authorized us to acknowledge the following:

- 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 defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please feel free to contact me if you have any comments or questions.

Very truly yours,

JONES & KELLER, P.C.

By: /s/ David A. Thayer

David A. Thayer