UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

SUBPOENA AND INFORMATION REQUEST

I. STATUTORY AUTHORITY

This Subpoena and Information Request is issued pursuant to the authority vested in the EPA Administrator under Section 11(c) of the Toxic Substances Control Act ("TSCA"), 15 U.S.C. § 2610(c), Section 308 of the Clean Water Act ("CWA"), 33 U.S.C. § 1318, and Section 3007 of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 6927.

II. CERTIFICATION

The information provided shall be verified by, and submitted under an authorized signature by a responsible corporate officer,[1] with the following certification:

> I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

III. CONFIDENTIAL INFORMATION

The information requested herein must be provided notwithstanding the possibility that the information requested may be characterized as confidential information or trade secrets. Request for confidential treatment must be made when information or access to records is provided and in accordance with the instructions provided in Section V.O below.

IV. SUBMISSION OF YOUR RESPONSE TO THE INFORMATION REQUESTED

All submissions required by this request shall be provided by December 1, 2010, and addressed to:

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[1] The term "responsible corporate officer," as used herein, means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation.

Jim Willis
Director, Chemical Control Division
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
MC 7405M
Washington, DC 20460
(202) 564-0104

V. INSTRUCTIONS

A. Respond to Each Request Completely. Each request is numbered and may contain subparts identified by lowercase letters. A separate response must be made to each request and subpart. Provide a separate narrative response to each request and subpart and clearly identify your responses with the number, subpart, and text of the request to which it corresponds. Each question posed must be answered. If the appropriate response is "none" or "not applicable," that information should be so stated. You must also submit any documents you relied on in preparing your response. Incomplete, evasive, or ambiguous answers shall constitute failure to respond to this Subpoena and Information Request and may subject you to penalties as discussed in the cover letter.

B. Source(s) of Response. Include with each narrative response, the name, position, and title of each person(s) who provided information responsive to the request.

C. Electronic Submittal. Except for the maps and diagrams, EPA requests that you submit your responses as one or more electronic files on a CD or similar media storage device, provided your electronic files are accompanied by a letter that identifies the file software and version, file name(s), size(s), date(s), and time(s) of creation. If any information is contained in proprietary software, or any other format that is not easily understood, you must provide an easily understood format and include appropriate explanatory information to allow interpretation of the information. EPA requests that you submit your responses as one or more electronic files on a CD or similar media storage device in a form that allows EPA to readily retrieve and utilize the information using commercially available software. To that end, EPA requests that your responses be provided on the CD enclosed with this request and that you use the Excel spreadsheet format contained on the CD. Your electronic files should include any documents you relied on in preparing your responses.

D. Submitting Maps. When submitting maps, identify the scale of the map, the map title and an explanation of what the map depicts. When identifying features on the map, either label the feature at its location on the map or include in the map's legend the symbol used for identifying the feature.

E. Submission of Documents. Label each document submitted with the request number and subpart (if applicable) to which it corresponds. Date stamp each document you submit. If anything is deleted from a document produced in response to this Information Request, state the reason for and the subject matter of the deletion.

F. Documents Responsive to More than One Request. If a document you submit is responsive to more than one request, provide one copy of the document and identify all the requests, by number and subpart, to which it corresponds.

G. Do Not Substitute Derivative or Summary Documents. Where a document is requested, please provide the responsive document. You may, if you wish, provide additional or explanatory documents to accompany the responsive document(s). However, your failure to provide the document requested will be considered a failure to completely respond to this Subpoena and Information Request.

H. Provide the Best Information Available. Unless otherwise specified, responses do not require you to create new data or information. However, you should provide responses to the best of your ability, even if the information sought was never put down in writing or if the written documents are no longer available. You should seek responsive information from current and former employees and/or agents. Submission of cursory responses when other responsive information is available to you will be considered a failure to completely respond to this Subpoena and Information Request. If you cannot provide a precise answer to any questions, please approximate and state the reason for your inability to be specific.

I. Unavailability of Records. If you are unable to respond to a request in a detailed and complete manner, or if you are unable to provide any of the information requested, indicate the reason for your inability to do so. If a record(s) responsive to a request is not in your possession, custody, or control and you have reason to believe that another person may be able to provide it, state the reasons for your belief and provide the person's name, address, telephone number, and any information available (i.e., author, date, or subject matter) about the record(s).

J. Documents That Have Been Transferred. If any records responsive to a request have been transferred or otherwise disposed of, identify the document, identify the person to whom it was transferred, describe the circumstances surrounding such transfer or other disposition, and state the date or approximate date of such transfer or other disposition.

K. Duty to Provide and/or Correct Information on a Continuing Basis. If any records responsive to a request are not known or are not available to you at the time you submitted your response, but later become known or available to you, you must submit the new information as a supplement to your response. If at any time after submission of your response you learn that any portion is or becomes false, incomplete, or misrepresents the facts, you must notify EPA of this fact as soon as possible and provide a corrected response. Failure to supplement your response within thirty (30) days of discovering such responsive information may subject you to an enforcement action. If any part of the response to this Subpoena and Information Request is found to be false, the signatory to the response and the company may be subject to criminal prosecution.

L. Identify Personal Privacy Information. Personnel and medical files, and similar files, the disclosure of which to the general public may constitute an invasion of privacy, should be segregated from your responses, included on separate sheet(s), and marked as "Personal Privacy

Information." You should note however, that unless prohibited by law, EPA may disclose this information to the general public without further notice to you.

M. Indicate Objections to Requests. While you may indicate that you object to certain requests contained in this Subpoena and Information Request, you must provide responsive information notwithstanding those objections. To object without providing responsive information may subject you to the penalties discussed in the cover letter.

N. Claims of Privilege. If you claim that an entire document responsive to this Subpoena and Information Request is a communication for which you assert that a privilege exists, identify the document and provide the basis for asserting the privilege. For any document for which you assert that a privilege exists for a portion of it, provide the portion of the document for which you are not asserting a privilege; identify the portion of the document for which you are asserting the privilege; and provide the basis for such an assertion. Please note that regardless of the assertion of any privilege, any facts contained in the document which are responsive to the Subpoena and Information Request must be disclosed in your response.

O. Confidential Business Information. You must provide the information requested even though you consider it confidential information or trade secrets. You may assert a business confidentiality claim for part or all of the information requested, as described below and set forth in 40 C.F.R. Part 2, Subpart B. Information covered by such a claim will be disclosed by EPA only to the extent and only by the procedures set forth in 40 C.F.R. Part 2, Subpart B. If no confidentiality claim accompanies the information when EPA receives it, the information may be made available to the public by EPA without further notice to you.

If you wish EPA to treat any information or response as "confidential," you must advise EPA and comply with the following procedures. Place on or attach to the information at the time it is submitted to EPA a cover sheet, stamped or typed legend, or other suitable form of notice employing such language as *trade secret, proprietary,* or *company confidential*.[2] You must clearly identify allegedly confidential portions of otherwise non-confidential documents and you may want to submit these separately to facilitate identification and handling by EPA. EPA will ask you to substantiate each claim of confidential business information by separate letter in accordance with applicable EPA regulations, 40 C.F.R. Part 2, Subpart B.

VI. DEFINITIONS

Except as otherwise defined below, terms in this information request have the same definition used in the CWA, 33 U.S.C. §§ 1251 through 1387, RCRA, 42 U.S.C. §§ 6901 through 6992k, and TSCA, 15 U.S.C. §§ 2601 through 2695d, and the regulations promulgated thereunder.

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[2] Note that EPA has issued guidance that may be relevant in considering whether to assert confidentiality claims. For example, the Agency has stated that, in general, EPA expects to find that chemical identity in health and safety studies submitted under the Toxic Substances Control Act is not CBI unless it explicitly contains process information or discloses portions of a mixture. 75 Fed. Reg. 29,754 (May 27, 2010). Also, in the interest of transparency, we ask that you exercise prudence and assert CBI claims sparingly.

A. The terms "and" and "or" shall be construed either disjunctively or conjunctively as necessary to bring within the scope of this information request any information which might otherwise be construed to be outside its scope.

B. The term "any," as in "any documents," for example, shall mean "any and all."

C. The term "Company" shall mean the entity identified as the addressee on the cover letter to this information request and all related and affiliated corporate entities (including, but not limited to, parent corporations, subsidiaries, joint ventures, partnerships, and affiliates) that perform hydraulic fracturing services.

D. The term "correspondence" or "communications" includes, but is not limited to, all oral, written, telephonic, facsimile, and electronic correspondence and/or communications.

E. The term "describe" means to detail, depict, or give an account of the requested information, or to report the content of any oral and/or written correspondence, communication, or conversation, or to report the contents of any document, including the title, the author, the position or title of the author, the addressee, the position or title of the addressee, indicated or blind copies, date, subject matter, number of pages, attachment or appendices, and all persons to whom the document was distributed, shown, or explained.

F. The terms "document" and "documents" shall mean any information subject to any method of recording, storage, or transmittal, and shall include any information now or formerly in your possession, custody or control, or now or formerly in the possession, custody or control of any agent acting on your behalf. "Document" shall include, but not be limited to:

1. Writings of any kind, formal or informal, whether or not wholly or partially in handwriting, typed form, or printed form, including drafts, originals, and nonconforming copies that contain deletions, insertions, handwritten notes or comments, and including (by way of illustration and not by way of limitation) any of the following:

    1. invoices, receipts, endorsements, checks, bank drafts, canceled checks, deposit slips, withdrawal slips, orders;
    2. letters, correspondences, faxes, telegrams, telexes, electronic communications including, but not limited to, e-mails and other correspondence using computers or other electronic communication devices;
    3. minutes, memoranda of meetings and telephone and other conversations, telephone messages;
    4. agreements, contracts, and the like;
    5. log books, diaries, calendars, desk pads, journals;

6. bulletins, circulars, forms, pamphlets, statements;
7. reports, notice, analysis, notebook;
8. graphs, charts; or
9. records, pamphlets, surveys, manuals, statistical compilations, pictures.

2. Microfilm or other film record, photograph, or sound recording on any type of device.

3. Any tape, disc, or other type of memory generally associated with computers and data processing, together with:

    1. the programming instructions and other written material necessary to use such disc, disc pack, tape, or other type of memory; and
    2. printouts of such disc, disc pack, tape, or other type of memory.

4. Attachments to or enclosures with any document.

G. The term "flowback" as used in this information request refers to the water mixture produced when the hydraulic fracturing procedure is completed and pressure is released, and the direction of fluid flow reverses. The well is "cleaned up" by allowing water and excess proppant to flow up through the wellbore to the surface. Both the process water and the returned water are commonly referred to as "flowback" and the term is used in both ways herein.

H. The term "identify" or "provide the identity of" means, with respect to a person to set forth: (a) the person's full name, (b) present or last known business and home addresses and telephone numbers; (c) present or last known employer (including the full name and address), with job title, and position or business;

I. The term "identify" or "provide the identity of" means, with respect to a corporation, partnership, business trust, government office or division, or other entity (including a sole proprietorship), to set forth: (a) its full name; (b) complete street address; (c) legal form (e.g. corporation, partnership); (d) the state under whose laws the entity was organized; and (e) a brief description of its business.

J. The term "identify" or "provide the identity of" means, with respect to a document, to provide: (a) its customary business description (e.g., letter, invoice); (b) its date; (c) its number if any (e.g., invoice or purchase order number); (d) the identity of the author(s), the address, and the addressee(s) and/or recipient(s); (e) and a summary of the substance or the subject matter.

K. The term "person" means an individual, trust, firm, joint stock company, corporation (including a government corporation), limited liability company, partnership, association, State, municipality, commission, political subdivision of a State, or an interstate body.

L. The term "produced water" as used in this information request refers to the water mixture produced when the drilling and fracturing of the well are completed, and water is produced along with the natural gas. Some of this water is returned fracture fluid and some is natural formation water. These produced waters move back through the wellhead with the gas.

M. The term "site" means a property drilling to support hydraulic fracturing for energy production and related activities occur, whether or not the property is owned or leased by the Company, including all areas within the exterior boundaries of that property. Multiple wells may be located at a single site.[3]

N. The terms "waste," "waste streams," and "wastewater," as used in this information request, refer to by-products, residues, solid waste, hazardous waste, process wastewater, waste slurry or sludge, cooling water, storm water runoff, and sanitary wastewater.

VII. SUBPOENA AND INFORMATION REQUEST

Your response to the following questions is due within thirty (30) days of receipt of this request.

1. Provide the name of each hydraulic fracturing fluid formulation/mixture distributed or utilized by the Company within the past five years from the date of this letter. For each formulation/mixture, provide the following information for each constituent of such product. "Constituent" includes each and every component of the product, including chemical substances, pesticides, radioactive materials and any other components.[4]

    a. Chemical name (e.g., benzene – use IUPAC nomenclature);

    b. Chemical formula (e.g., C_6H_6);

    c. Chemical Abstract System number (e.g., 71-43-2);

    d. Material Safety Data Sheet;

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[3] EPA is interested in information regarding domestic, on-shore drilling.

[4] EPA requests chemical information for all chemicals used, including those chemicals not otherwise disclosed on material safety data sheets (MSDSs). EPA is requesting information on all basic combinations of chemicals (hydraulic fracturing systems), and additional information on modifications that may be made to adjust for site specific circumstances, or under the direction of clients. Please note that EPA does not at this time require the information requested under question 1 to be provided on a well-specific basis. EPA's goal is to understand the identity of all chemicals used during the requested time period, the rationale for the choice of chemicals and concentrations injected into wells, and the concentrations of each formulation as delivered on site and as typically injected into wells.

e. Concentration (e.g., ng/g or ng/L) of each constituent in each hydraulic fracturing fluid product. Indicate whether the concentration was calculated or determined analytically. This refers to the actual concentration injected during the fracturing process following mixing with source water[5], and the delivered concentration of the constituents to the site. Also indicate the analytical method which may be used to determine the concentration (e.g., SW-846 Method 8260, in-house SOP), and include the analytical preparation method (e.g., SW-846 Method 5035), where applicable;

f. Identify the persons who manufactured each product and constituent and the persons who sold them to the Company, including address and telephone numbers for any such persons[6];

g. Identify the purpose and use of each constituent in each hydraulic fracturing fluid product (e.g., solvent, gelling agent, carrier,);

h. For proppants, identify the proppant, whether or not it was resin coated, and the materials used in the resin coating;

i. For the water used, identify the quantity, quality and the specifications of water needed to meet site requirements, and the rationale for the requirements[7];

j. Total quantities of each constituent used in hydraulic fracturing and the related quantity of water in which the chemicals were mixed to create the

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[5] EPA requests information on the actual concentrations (typically) injected, as well as the corresponding source water quality. To the extent that the concentration injected is a function of the chemistry of the water supplied and the design of the project, the Company should supply the design or intended concentrations corresponding to each typical hydraulic fracturing fluid system used, and information regarding tolerance for deviation from the design concentrations, along with the rationales for deliberately changing concentrations from the design. See Question 1(i) and Question 3.

[6] If the Company provides the required information regarding all chemicals used in hydraulic fracturing, EPA may waive the requirement to provide information regarding the persons who manufactured each product and related contact information.

[7] EPA understands that often the Company may not provide or even specify the water quality that is provided for hydraulic fracturing. However, to the extent that the quantity, concentration and identity of chemicals ultimately injected depends at least in part on the quantity and quality of water provided, EPA requests information on the actual concentrations (typically) injected, as well as the corresponding source water quality. See Question 1(e).

fracturing fluids to support calculated and/or measured composition and properties of the hydraulic fracturing fluids[8]; and

k. Chemical and physical properties of all chemicals used, such as Henry's law coefficients, partitioning coefficients (e.g. K_{ow} K_{OC}, K_d), aqueous solubility, degradation products and constants and others.

2. Provide all data and studies in the Company's possession relating to the human health and environmental impacts and effects of all products and constituents identified in Question 1[9].

3. For all hydraulic fracturing operations for natural gas extraction involving any of the products and constituents identified in the response to Question 1, describe the process including the following:

   a. Please provide any policies, practices and procedures you employ, including any Standard Operating Procedures (SOPs) concerning hydraulic fracturing sites, for all operations including but not limited to: drilling in preparation for hydraulic fracturing including calculations or other indications for choice and composition of drilling fluids/muds; water quality characteristics needed to prepare fracturing fluid; relationships among depth, pressure, temperature, formation geology, geophysics and chemistry and fracturing fluid composition and projected volume; determination of estimated volumes of flowback and produced waters; procedures for managing flowback and produced waters; procedures to address unexpected circumstances such as loss of drilling fluid/mud, spills, leaks or any emergency conditions (e.g., blow outs), less than fully effective well completion; modeling and actual choice of fracturing conditions such as pressures, temperatures, and fracturing material choices; determination of exact concentration of constituents in hydraulic fracturing fluid formulations/mixtures; determination of dilution ratios for hydraulic fracturing fluids[10], and

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[8] Provide the information for the entire range of typical hydraulic fracturing fluid systems, including information on the decision rules and tolerances applied to determine the concentration of each chemical as ultimately injected.

[9] Include any and all studies conducted, received or held by the Company, including any reports of environmental or human health impact from exposure or alleged exposure to materials used in hydraulic fracturing or exposure to materials which occurred or is alleged to occur as a result of hydraulic fracturing. For example, include reports and results of worker exposure to materials, complaints from the public regarding release of materials due to hydraulic fracturing, or reports of contamination of water or other media due to hydraulic fracturing.

[10] EPA is requiring specific information regarding standard operating procedures. For example, the choice of chemicals depends on a variety of factors including the properties of the formation receiving the hydraulic fracturing treatment and others. EPA is requiring information regarding the specific decision rules applied (either routinely, as rules of thumb, or as directed by clients) regarding the choice and concentration of chemicals. Similarly, injection pressures depend on a

b. Describe how fracturing fluid products and constituents are modified at a site during the fluid injection process.

4.

a. Identify all sites[11] where, and all persons to whom, the Company:

i. provided hydraulic fracturing fluid services that involve the use of hydraulic fracturing fluids for the year prior to the date of this letter, and

ii. plans to provide hydraulic fracturing fluid services that involve the use of hydraulic fracturing fluids during one year after the date of this letter.

b. Describe the specific hydraulic fracturing fluid services provided or to be provided for each of the sites in Question 4.a.i. and ii., including the identity of any contractor that the Company has hired or will hire to provide any portion of such services.

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variety of factors. EPA is requiring information regarding the specific control variables and limits used to determine and monitor injection pressure. A typical decision rule might be: maintain maximum injection pressure but do not exceed pressures corresponding to greater than 80% of the burst strength of the innermost string of casing. EPA expects that actual decision rules and standard operating procedures may be much more complex than the example provided here. Choice of chemicals and injection pressures are listed here as illustrative examples of the aspects of standard operating procedures. The Company should provide a complete description of standard operating procedures related to hydraulic fracturing, including, but not limited to, water acquisition, chemical mixing and injection, flowback and produced water management, treatment and disposal.

[11] EPA intends that the Company provide a unique well identifier and an actual, specific geographic location for each well. Geographic locations may be street addresses, global positioning system coordinates or other information that would allow a person to travel to the actual location.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

SUBPOENA AND INFORMATION REQUEST

SIGNATORIES:

DATE: NOV - 9 2010

STEPHEN A. OWENS
ASSISTANT ADMINISTRATOR
OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

DATE: NOV - 9 2010

MATHY STANISLAUS
ASSISTANT ADMINISTRATOR
OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

DATE: NOV - 9 2010

PETER S. SILVA
ASSISTANT ADMINISTRATOR
OFFICE OF WATER