19-07-002

(SUBMIT IN DUPLICATE)

TO

MONTANA BOARD OF OIL AND GAS CONSERVATION
2535 ST. JOHNS AVENUE
BILLINGS, MONTANA 59102

REQUEST FOR TRADE SECRET EXEMPTION

1. Classification of Requesting Party
   ☐ Operator ☒ Service Company ☐ Other – Specify _____

2. Full name of the Owner, Operator, or Service Company Halliburton Energy Services, Inc.

3. Address 3000 North Sam Houston Parkway, E
   (Address) (City) (State) (Zip Code) (Telephone Number)

4. 82-10-603, MCA requires that an owner, operator, or service company provide the complete disclosure of fracturing fluid. This must include the chemical compound name and the chemical abstracts service (CAS) registry number of the ingredients, including any hazardous components listed on a material safety data sheet as defined in 50-78-102, MCA, the product name, and the type of additive used. In limited situation the identity of the components of the fracturing fluid may be exempt from public disclosure as a "trade secret" under the criteria in 30-14-402, MCA.

   I am requesting that the identity of a fracturing fluid component qualify for non-disclosure as a trade secret.

   Chemical Family associated with the Chemical Constituent (redacted) (FightR EC-1)

In order to claim that the identity of the fracturing fluid component is entitled to protection as a trade secret, I understand that I must provide specific information regarding each of the questions set forth in the MBOGC Trade Secret Guidelines. I have attached separate pages setting forth information in response to the questions set forth in the Guidelines.

CERTIFICATE

I declare under penalties of perjury that this request and supporting information have been examined by me and to the best of my knowledge are true, correct and complete.

Denise A. Tuck
Signature

Denise A. Tuck, P.E., Principal Product Champion
Print name and title

FOR STAFF USE ONLY:

APPROVED: ☒ Yes ☐ No

Signature Petroleum Engineer Title 9/30/19 Date

ATTACHMENT 1

TRADE SECRET JUSTIFICATION

To demonstrate that the information for which confidentiality is sought constitutes trade secrets, you must respond to the following questions and provide the information specified and any supporting documentation (such as previous confidentiality determinations):

1) **To your knowledge, has the identity of the ingredient, its concentration, or both as appropriate, been publically disclosed:**
   a. **Pursuant to any federal or state law or regulation?**

      The identities of the ingredients (including the chemical compound name and CAS number) *and* their use in FightR EC-1 functioning as a friction reducer have not been disclosed pursuant to any federal or state law or regulation by HESI or, to HESI's knowledge, anyone else.

   b. **In professional trade publications?**

      The identities of the ingredients (including the chemical compound name and CAS number) *and* their use in FightR EC-1 functioning as a friction reducer have not been disclosed in professional trade publications by HESI or, to HESI's knowledge, anyone else.

   c. **Through any other media or publications available to the public or your competing oil and gas operators, or service companies?**

      The identities of the ingredients (including the chemical compound name and CAS number) *and* their use in FightR EC-1 functioning as a friction reducer have not been disclosed via the FracFocus database by HESI or, to HESI's knowledge, anyone else.

In responding to these questions, you must take steps that are reasonable and appropriate under the circumstances to determine the knowledge of relevant individuals within the company. You must provide a description of the investigation you undertook to respond to these questions.

HESI has taken steps it believes are reasonable and appropriate under the circumstances to determine the knowledge of relevant individuals within the company. These steps include consultation with the Principal Product Champion for the Company's Production Enhancement division, Technology – Scientific Advisor/Lead, Projects Lead, Discipline Manager and other relevant individuals within that group who are involved with the development of this type of additive. These are the individuals in the company who would

be most likely to have knowledge regarding previous public disclosure of this information.

2) **To what extent is the identity of the ingredient, concentrations, or both, as appropriate, are known within the company? Please describe in detail how this information is housed in your company and what steps your employees, officers, agents, and directors, take to prevent disclosure of the information to parties outside your company.**

HESI has taken specific steps to protect the confidentiality of this chemical identity information, including the implementation of strict internal company controls to ensure the limited use of confidential chemical information. Within HESI, proprietary chemical identities are not generally available to all HESI employees, but are known only to those in the company who have need of the information in connection with their work for HESI, such as those employees engaged in product development activity and employees involved in the protection of intellectual property and protection of human health and the environment. The formulas of proprietary products (including chemical identity information) are maintained in a company password-protected system to which only a very limited number of employees have access.

HESI does not make proprietary chemical identity information available outside the company, except under strict confidentiality agreements or other protective arrangements. If disclosure is required by law, HESI will request that the information be treated as confidential, as it is doing in this application. These situations include disclosure in circumstances consistent with the OSHA hazard communication standard or circumstances consistent with EPA reporting regulations. To the company's knowledge, no such disclosures have been made regarding FightR EC-1 in circumstances in which the proprietary ingredient information was made public. HESI does not otherwise disclose its proprietary information outside of the company under any circumstances.

3) **Has any other federal or state entity determined that the ingredient, concentrations, or both, as appropriate, is not entitled to protections from public disclosure? If so, provide a copy of the agency's determination, along with any explanation as to why the Board should not make a similar determination. Provide any other information concerning prior requests for confidentiality and/or regulatory body determinations you believe relevant to the Board's determination.**

HESI is not aware of an instance in which the chemical identity information for FightR EC-1 has been determined under any Federal or State entity, to not be entitled to protection from disclosure as a trade secret or confidential commercial information.

4) **How is the identity of the ingredient, concentrations, or both, as appropriate, commercially valuable to the owner, operator, or service company? In answering this question, please**

describe why the ingredient, concentrations, or both, as appropriate, is not common knowledge in the industry, including any novel or unusual aspects of the ingredient in this application.

The identities of the ingredients are commercially valuable to HESI. FightR EC-1, an anionic liquid friction reducer, contains [ ].

Keeping this information confidential is of commercial value to HESI. The company is the global leader in well stimulation and the development of specialized non-commoditized fracturing fluids. HESI is able to remain the leader in well stimulation services because HESI offers its customers specialized products and services that they cannot obtain from any other company. These products, such as FightR EC-1, have gained a solid reputation in the industry for being the best and most effective products available, and they provide our customers with better results than any other product on the market.

HESI is able to provide FightR EC-1 and other innovative products to its customers because of its investment in research and development. The science of hydraulic fracturing includes an understanding of the geology of the formation, the physics of temperatures and pressures, and the chemistry of the stimulation fluids themselves. HESI spends significant research and development dollars understanding these factors and their role in developing new and innovative fluids to more effectively stimulate reservoirs to increase production of oil and gas and employs a number of scientists and engineers to assist in these efforts. The company has spent over $1.4 billion on technology development over the past five years, including tens of millions of dollars devoted to research on new stimulation fluids, in order to maintain its competitive edge. HESI's substantial investment in research and the success of its product development efforts have been recognized by the Patent Board, which has previously named HESI as the leader among service companies in innovation in the oil and gas industry.

HESI's proprietary fluids are the result of years of extensive research, development testing, and application to customers' wells. There are a number of basic steps in HESI's process for developing and commercializing a product like FightR EC-1. The first step is identifying a market need, *i.e.*, an opportunity to increase production from a well or perform stimulations more cost-effectively that could be taken advantage of through the development of new technology. Second, HESI determines what type of stimulation fluid is most likely to be successful in addressing the issue identified. This determination is made only after HESI has conducted significant geological study of the rock formations to be stimulated. The company then conducts extensive research and development in order to create a new or improved fluid that can be applied successfully to address the issue identified. Once a prospective fluid is developed, the company commits further financial resources and the proposed new, advanced product undergoes extensive modeling and testing in our laboratories. If the new fluid performs well in laboratory tests and computer modeling, HESI then conducts field tests of the new fluid. Finally, following successful field testing the new stimulation fluid is added to HESI's suite of products and made commercially available to our customers after considerable expenditure of resources and funds.

The disclosure of the chemical identities of the constituents in FightR EC-1 would result in substantial competitive harm to HESI. The market for oil and gas field services is highly competitive, both in Montana and elsewhere around the world. There are a number of other service companies that are active in the Montana market as well as other domestic and overseas markets. These companies all compete vigorously with HESI to provide hydraulic fracturing services to the limited number of oil and gas well operators in the State.

If HESI's product formulas were to become available to other companies, HESI's competitors would subsequently be able to make full commercial use of these product formulas for their own purposes because many of these formulas may not be patentable. As a result, HESI's competitors would be able to reproduce HESI's products and offer them to HESI's customers at a lower price. The company would lose the competitive advantages it has gained through its substantial investment in innovative products and would have to compete with other service companies on the basis of price rather than being able to charge a premium for its specialized products that represent substantial investment of funds and resources. This loss of competitive advantage would occur worldwide, not just in Montana. As a result, HESI's revenues would decline significantly. In fact, according to its own internal review, HESI estimates that public disclosure of the formulas of these proprietary products would result in annual losses to the company of approximately $375 million.

Because of the potential competitive harm to HESI, the company would choose not to use proprietary products such as FightR EC-1 in Montana if its proprietary chemical identity would otherwise be disclosed publicly. The loss of these products would significantly impact oil and gas production in the state. In fact, some wells could cease to be profitable and others might never be able to achieve profitability. For purposes of comparison, HESI has estimated that the withdrawal of proprietary products from the market in a neighboring western state would result in a loss of oil and gas production over a 14-year period valued at $29 billion dollars. The impacts of disincentives to the use of new technologies would not only be economic, but also would have significant adverse environmental impacts due to the withdrawal from the market of innovative products offering the type of environmental benefits discussed above.

5) Describe the ease or difficulty with which the complete composition of the fracturing fluid, including the identity, concentrations, or both, as appropriate, could be determined from public disclosure. Specifically, explain why use of the "systems approach" format would not be adequately protect your proprietary interest.

HESI's current practice of non-disclosure of trade secret chemical formulations attempts to ensure that competitors cannot acquire or duplicate the company's chemical formulations on their own. It would be very difficult if not impossible for HESI's competitors to obtain the formula for FightR EC-1 through any other possible legal means at the present time. However, once the identities of the constituents of FightR EC-1 are disclosed (as through this submittal), it would then not be difficult for competitors to

determine the complete formula (including the concentrations of the various constituents) or the process for developing FightR EC-1 through standard "reverse engineering" practices, effectively eliminating the trade secret status of the product formula.

In addition, having a list of ingredients in a fluid system that includes the ingredients in FightR EC-1 (*i.e.*, a "systems approach" disclosure) would not adequately protect the confidentiality of the product formula. A chemist or chemical engineer who knows the industry and the hydraulic fracturing process will be familiar with the types of chemicals (usually a limited number) that have typically been used in a particular type of additive. The chemist or chemical engineer will be able to determine in most cases what role each chemical in the list plays in the overall product formulation and would be able to identify the ingredients included in the additive. The chemist or chemical engineer will also be able to determine the general proportions that each ingredient would constitute of the whole (again with assistance from information on the product's Safety Data Sheet and disclosures made through FracFocus for fluid systems that contain FightR EC-1, which include additional concentration information for various ingredients).

These standard practices could be effectively employed by HESI's competitors to replicate HESI's specialized well stimulation products, including FightR EC-1, if the identities of the proprietary components were to be made public. Should this occur, HESI's competitors would subsequently be able to make full commercial use of these product formulas for their own purposes because many of these formulas may not be patentable.

Via Federal Express

NOTE: REDACTED VERSION

Attachment 2
Halliburton Additive Product

Additive Product	Product Type	Main Ingredient	Disclosed Generic Family Name	CAS Number
FightR EC-1	Friction Reducer	Redacted	Redacted	Redacted
		Redacted	Redacted	Redacted
		Redacted	NA	Redacted
		Redacted	NA	Redacted
		Redacted	NA	Redacted
		Redacted	NA	Redacted
		Redacted	NA	Redacted