

# Exhibit G

# Exhibit G

1



RECEIVED

MAR 29 2016

RIGHT-TO-KNOW LAW ("RTKL")
APPEAL OF DENIAL, PARTIAL DENIAL, OR DEEMED DENIAL

OFFICE OF OPEN RECORDS

Office of Open Records ("OOR")

Email: openrecords@pa.gov

Fax: (717) 425-5343

Commonwealth Keystone Building

400 North St., 4th Floor

Harrisburg, PA 17120-0225

Today's Date: March 29, 2016

Requester Name(s): Kendra L. Smith, Esq.

Address/City/State/Zip: 125 Technology Drive, Suite 202, Bailey Center I, Canonsburg, PA 15317

Email: klsmith@smithbutzlaw.com Phone/Fax: 724-745-5121 / 724-745-5125

Request Submitted to Agency Via: [X]Email [ ]Mail [ ]Fax [ ]In-Person (check only one)

Date of Request: February 1, 2016 Date of Response: March 9, 2016 [ ]Check if no response

Name of Agency: Pennsylvania Department of Environmental Protection - Southeast Region

Address/City/State/Zip: 2 East Main Street, Norristown, PA 19401

Email: N.A Phone/Fax: 484-250-5940 / 484-250-5943

Name & Title of Person Who Denied Request (if any): Sachin Shankar, P.E., Assistant Regional Director

I was denied access to the following records (REQUIRED. Use additional pages if necessary): 444 pages of paper records, 89 electronic records of responsive records were withheld and the records provided were heavily redacted. The Position Statement attached hereto outlines the denial in greater detail.

I requested the listed records from the Agency named above. By signing below, I am appealing the Agency's denial, partial denial, or deemed denial because the requested records are public records in the possession, custody or control of the Agency; the records do not qualify for any exemptions under § 708 of the RTKL, are not protected by a privilege, and are not exempt under any Federal or State law or regulation; and the request was sufficiently specific.

I am also appealing for the following reasons (Optional. Use additional pages if necessary): See the attached Position Statement.

- [X] I have attached a copy of my request for records. (REQUIRED)
[X] I have attached a copy of all responses from the Agency regarding my request. (REQUIRED)
[X] I have attached any letters or notices extending the Agency's time to respond to my request.
[ ] I hereby agree to permit the OOR an additional 30 days to issue a final order.
[ ] I am interested in resolving this issue through OOR mediation. This stays the initial OOR deadline for the issuance of a final determination. If mediation is unsuccessful, the OOR has 30 days from the conclusion of the mediation process to issue a final determination.

Respectfully submitted, [Signature] (SIGNATURE REQUIRED)

You should provide the Agency with a copy of this form and any documents you submit to the OOR.

### DEP Right-to-Know Law Record Request Form

**Business Hours:** 8:00 am - 4:30 pm (RTK requests received after 4:30 pm are considered received the next business day)  
**Mail to:** DEP Open Records Officer ("AORO"), DEP/BOS, PO Box 8473, Harrisburg, PA 17105-8473.  
**Or Fax to:** 717-705-8023  
**Or Email to:** [EP-DEP-RTK@pa.gov](mailto:EP-DEP-RTK@pa.gov) \*Request sent to any other email will not be deemed a RTKL request.  
**Contact:** 717-787-2043

**Name of Requestor (or Anonymous):** Kendra L. Smith, Esq.  
**Name of Company (or N/A):** Smith Butz, LLC  
**Requestor's Street Address:** 125 Technology Drive, Suite 202, Bailey Center I  
**Requestor's City/State/Zip Code:** Canonsburg, PA 15317  
**Requestor's Telephone Number:** (724) 745-5121  
**Requestor's Email Address:** [klsmith@smithbutzlaw.com](mailto:klsmith@smithbutzlaw.com)

Records being requested (please sufficiently describe the record(s) requested so that they are identifiable to Department staff.):

Core Laboratories d/b/a Protechnics, Division of Core Laboratories, LP

Name of Individual / Company for records being requested (including former names)

Yeager Drill Site

Facility Name for requested records (if different than Company Name)

McAdams Road, Washington, PA 15301

Street Address (including zip code)

Washington

County(ies)

Amwell

Municipality(ies)

Additional information to assist with search and retrieval of responsive records (e.g. permit no.(s); dates or timeframe of records requested; programs of interest, geographic area):

Please see, "Attachment 1," attached hereto.

**FORM OF RECORD PRODUCTION – check appropriate response:**

**REQUESTING FILE REVIEW ACCESS:**

Seeking access, review and self copying of records is at a reduced cost of \$.15 per page.  YES  NO

**REQUESTING DUPLICATION AND MAILING RECORDS:**

Agency copying of records is at a cost of \$.25 per page  YES  NO

**REQUESTING CERTIFICATION OF RECORDS:**

I WANT DEP TO CERTIFY RECORDS (AT A COST OF \$5.00 PER REQUEST):  YES

PENNSYLVANIA – OFFICE OF OPEN RECORDS  
RIGHT-TO-KNOW REQUEST

“ATTACHMENT 1”

Any and all approvals, permits, licenses/licensures, applications for permits and/or licenses, reciprocity letters, reciprocity licenses, reciprocity agreements and/or reciprocity arrangements, including, but not limited to all licenses issued by the Pennsylvania Department of Environmental Protection (“PA DEP”) to Core Laboratories d/b/a Protechnics, Division of Core Laboratories, LP (hereinafter, “Protechnics”) for use, storage and possession of radioactive materials and/or other licensed material. Additionally, this request seeks any and all investigation reports, Notices of Violation(s), Consent Order and Agreement(s) issued to Protechnics by the PA DEP and/or between Protechnics and the PA DEP for any and all work or services performed by Protechnics at any natural gas well site in the Commonwealth of Pennsylvania. Included in this request is a request for copies of all Notices of Violation issued by the PA DEP to Protechnics, including but not limited to Notices of Violation dated 06/15/10, 01/28/10, 11/26/13, 09/13/13 and 10/14/13, Violation Numbers 677913, 677915, 677914, 682834, 682833, 682829, 682835 and all corresponding inspection reports, field notes and other related writings. Further, this request seeks any and all Consent Order and Agreements between the PA DEP and Protechnics, including, but not limited to, Consent Orders and Agreements dated November 2, 2013 and November 2, 2010.

Additionally, this request includes a request for copies of all enforcement activity taken by the PA DEP against Protechnics, including but not limited to Enforcement ID Number 305057, 259202 and 263973, as well as all inspection reports completed by the PA DEP regarding Protechnics, including, but not limited to, Inspection ID Numbers 1891418, 1919964, 2147772, 2204156 and 2221258.

This request further seeks any and all Radioactive Tracer Well Site Agreements made between Protechnics and any well site operator(s) for each and every well traced in the Commonwealth of Pennsylvania that is or was submitted to the PA DEP, including, but not limited to, the April 7, 2013 Radioactive Tracer Well Site Agreement between Protechnics and a well operator.

In addition to the above, this request seeks any and all notifications submitted to the PA DEP by Protechnics or the associated operator or subcontractor regarding Protechnics confirmation that licensed material, including, but not limited to, radioactive material, was returned to the surface at any well site in which Protechnics operated/performed work or services in the Commonwealth of Pennsylvania.

Additionally, this request seeks any and all documents, correspondence, e-mails and any other communication(s) between Protechnics and the PA DEP and/or Range Resources and the PA DEP regarding Protechnics and any and all work/services performed in the Commonwealth of Pennsylvania by Protechnics.

Further, this request seeks any and all MSDS/SDS (material data safety sheets and safety data sheets) in the possession of the PA DEP regarding any and all products utilized by Protechnics at

any well site in Pennsylvania, including, but not limited to, all MSDS/SDS for Protechnics Radioactive Tracer Products, as well as any and all Chemical Frac Tracer ("CFT") products, including, but not limited to, CFT 1000, CFT 1100, CFT 1200, CFT 1300, CFT 2000, CFT 2100, CFT 1900, CFT 1700.



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL  
PROTECTION

**CERTIFIED MAIL 7015 0640 0003 8208 3311**

March 8, 2016

Kendra L. Smith, Esquire  
Smith Butz, LLC  
125 Technology Drive, Suite 202, Bailey Center 1  
Canonsburg, PA 15317  
[klsmith@smithbutzlaw.com](mailto:klsmith@smithbutzlaw.com)

Re: Right-to-Know Request Numbers: 1400-16-071 (CO), **4100-16-0027 (SE)**, 4200-16-023 (NE), 4300-16-019 (SC), 4400-16-010 (NC), 4500-16-018 (SW), 4600-16-029 (NW)

Dear Ms. Smith:

On February 1, 2016, the open-records officer of the Department of Environmental Protection (Department) received your written request for records and assigned it the tracking numbers listed above. Due to the nature of this request it was assigned to the Department's Central Office (CO), and the Southeast (SE), Northeast (NE), Southcentral (SC), Northcentral (NC), Southwest (SW), and Northwest (NW) Regional Offices.

For purposes of this letter, the Department's SE Regional Office is responding on its own behalf as to your request under the Pennsylvania Right-to-Know Law, 65 P.S. §§ 67.101-67.3104 (RTKL). You will receive final correspondence under separate cover from the other assigned offices.

You requested records for Core Laboratories d/b/a Protechnics, Division of Core Laboratories, LP located at the Yeager Drill Site, McAdams Road, Washington, Pennsylvania. You are seeking:

- Any and all approvals, permits, licenses/licensures, applications for permits and/or licenses, reciprocity letters, reciprocity licenses, reciprocity agreements and/or reciprocity arrangements, including, but not limited to all licenses issued by the Department to Core Laboratories d/b/a Protechnics, Division of Core Laboratories, LP (hereinafter, "Protechnics") for use, storage and possession of radioactive materials and/or other licensed material. Additionally, this request seeks any and all investigation reports, Notices of Violation(s), Consent Order and Agreement(s) issued to Protechnics by the Department and/or between Protechnics and the Department for any and all work or services performed by Protechnics at any natural gas well site in the Commonwealth of Pennsylvania. Included in this request is a request for copies of all Notices of Violation issued by the Department to Protechnics, including but not limited to Notices of Violation dated June 15, 2010, January 28, 2010, November 26,

2013, September 13, 2013 and October 14, 2013, Violation Numbers 677913, 677915, 677914, 682834, 682833, 682829, 682835 and all corresponding inspection reports, field notes and other related writings. Further, this request seeks any and all Consent Order and Agreements between the Department and Protechnics, including, but not limited to, Consent Orders and Agreements dated November 2, 2013 and November 2, 2010.

- Copies of all enforcement activity taken by the Department against Protechnics, including but not limited to Enforcement ID Numbers 305057, 259202 and 263973, as well as all inspection reports completed by the Department regarding Protechnics, including, but not limited to, Inspection ID Numbers 1891418, 1919964, 2147772, 2204156 and 2221258.
- Any and all Radioactive Tracer Well Site Agreements made between Protechnics and any well site operator(s) for each and every well traced in the Commonwealth of Pennsylvania that is or was submitted to the Department, including, but not limited to, the April 7, 2013, Radioactive Tracer Well Site Agreement between Protechnics and a well operator.
- Any and all notifications submitted to the Department by Protechnics or the associated operator or subcontractor regarding Protechnics confirmation that licensed material, including, but not limited to, radioactive material, was returned to the surface at any well site in which Protechnics operated/performed work or services in the Commonwealth of Pennsylvania.
- Any and all documents, correspondence, e-mails and any other communication(s) between Protechnics and the Department and/or Range Resources and the Department regarding Protechnics and any and all work/services performed in the Commonwealth of Pennsylvania by Protechnics.
- Any and all MSDS/SDS (material data safety sheets and safety data sheets) in the possession of the Department regarding any and all products utilized by Protechnics at any well site in Pennsylvania, including, but not limited to, all MSDS/SDS for Protechnics Radioactive Tracer Products, as well as any and all Chemical Frac Tracer ("CFT") products, including, but not limited to, CFT 1000, CFT 1100, CFT 1200, CFT 1300, CFT 2000, CFT 2100, CFT 1900, CFT 1700.

By your email of February 3, 2016, to , Edward Stokan, Legal Counsel for the Department's Southwest Regional Office, you amended your RTKL request to the following:

Kendra L. Smith, Esquire

March 8, 2016

- All drill sites in the Commonwealth, including but not limited to the Yeager Drill site as indicated in attachment 1 of the original request.

An initial response to your request was due on or before February 8, 2016. On February 8, 2016, we notified you that the Department required an additional thirty days, until March 9, 2016, to respond to your request.

Your request is granted in part and denied in part.

For records where your request has been granted, the SE Regional Office has produced 16 pages of responsive records (12 redacted and 4 unredacted) and 15 electronic documents on one CD of which 17 pages were electronically redacted.

The total cost of fulfilling your request is \$ 21.18 (\$1.00 for duplicating of 4 pages at \$.25 per page; \$6.00 for the manual redacting of 12 pages at \$.50 per page; \$7.00 for one CD; and \$7.18 for postage).

Please remit payment in the amount listed above by March 29, 2016, to the Department at the address listed in the footer on the first page. Checks should be made out to the Commonwealth of Pennsylvania and also reference the above-listed RTKL Request Number. The remittance should be sent to the attention of Judy Lashley. Cash or credit cards are not accepted. You will be reimbursed if the actual cost of production is less than the estimated cost. You will be required to pay the difference prior to accessing the requested records, if the actual cost exceeds the estimated cost.

Further, please note that failure to pay for records made available in response to a RTKL request to any executive agency will preclude you from obtaining further records from another executive agency, pursuant to the provisions of section 901 of the RTKL and Section IV (D) of the Department's RTKL Policy at:  
<http://www.dep.pa.gov/Citizens/PublicRecords/RightToKnowLaw/Pages/default.aspx#.VobNGxwo7X4>.

Also, if payment is not received and you request the same records again, you may be considered a disruptive requester under 65 P.S. § 67.506(a)(1) of the RTKL.

With respect to those records for which the Department is denying your request, the records are either exempt from production under Section 708 of the RTKL, 65 P.S. § 67.708, or protected by a privilege. Section 305 of the RTKL provides that records shall not be presumed to be public records if they are exempt under section 708 or protected by a privilege. 65 P.S. § 67.305(a) and (b).

The Department has withheld 444 pages of paper records, 89 electronic records, and also redacted portions of 29 pages of material for the following legally permissible reasons:

**Regulatory Preclusion to the Release of Records**

The Department's regulations pertaining to radiologic health specify that among those records not available for public inspection are "[a] report of an investigation ... which would disclose the institution, progress or results of an investigation undertaken by the Department." 25 Pa. Code § 215.14(2). Under the RTKL, the presumption of an agency record being public does not apply if a record is exempt from disclosure under any state law or regulation. 65 P.S. § 67.305(a)(3). Consequently, the regulatory inability to release inspection reports by the Department's radiation protection program and records for the radioactive materials general license registration, removes approximately 443 pages of responsive records and 77 electronic records from the RTKL definition of a public record. 65 P.S. § 67.102. Therefore, access to these records is denied due to a regulatory restriction.

**Public Safety and Security**

Radioactive materials files cannot be released to the public for public safety and security reasons. A radioactive materials license, related complaint, incident report, inspection report, any notice of violation regarding radioactive materials and the company employees' names and contact information who manage the radioactive material are exempt from disclosure under multiple provisions of the RTKL. Disclosing the contents of these records would reveal specific information pertaining to the nature and location of radioactive materials.

Pursuant to Section 708(b)(2) of the RTKL, a record is exempt from access by a requester if the record is "maintained by an agency in connection with the military, homeland security, national defense, law enforcement or other public safety activity that if disclosed would be reasonably likely to jeopardize or threaten public safety or preparedness or public protection activity ...." 65 P.S. § 67.708(b)(2).

Furthermore, Section 708(b)(3) of the RTKL provides that a record is exempt from access by a requester if disclosure of the record "creates a reasonable likelihood of endangering the safety or the physical security of a building, public utility, resource, [or] infrastructure ...." 65 P.S. § 67.708(b)(3).

The disclosure of a license's contents, incident report, and any inspection report could reasonably lead to public safety risks. The license and reports provide detailed information about the specific location and the security measures taken to protect radioactive materials. Moreover, radioactive materials files generally contain information identifying radioactive source possessed, the quantity or type of source, activity of the source, location of the source, identity of individuals authorized to have access to or use of the source, and similar sensitive

information. Information contained within these files would give a determined adversary the means to actually do harm to others.

An individual could utilize the information in the license and reports to unlawfully obtain the radioactive materials for illicit purposes thus creating a major security and health breach. If an individual with criminal intent obtained these materials or should an individual re-publish the information contained within a license and reports which was subsequently obtained by someone with criminal intent, the public's health and safety could be severely compromised.

The SE Regional Office has withheld approximately 300 pages of records and 70 electronic records that would otherwise be responsive to your request. The information of concern within these records specifically includes the licensees' names, license numbers, physical addresses, ProTechnics' employees' identities, ProTechnics' employees' email addresses, types of sources, activities of sources, quantities of sources, locations of sources, use of sources or modalities, names of authorized users, contact names at the site, license-specific information, inspection reports, SE Regional Office staff who have knowledge of the sources, and documentation of security controls implemented at the site to prevent unauthorized access to the sources.

**Internal, Predecisional Deliberation Exception**

The Department denies your request to records that reflect its predecisional, internal deliberations, because such records are exempt from production under the RTKL. 65 P.S. § 67.708(b)(10).

Section 708(b)(10)(i)(A) of the RTKL states that a Commonwealth agency can withhold records that reflect, "The internal, pre-decisional deliberations of an agency, its members, employees or officials or pre-decisional deliberations between agency members, employees or officials and members, employees or officials of another agency..., contemplated or proposed policy or course of action of any research, memos or other documents used in the predecisional deliberations." 65 P.S. § 67.708(b)(10)(i)(A). According to the language of Section 708(b)(10)(i), protected records must be internal, predecisional, and deliberative. *McGowan v. Dep't of Env'tl. Protection*, 103 A.3d 374 (Pa. Cmwlth. 2014).

Furthermore, in addition to protecting records that are internal, predecisional deliberations, Section 708(b)(10)(i)(A) also protects records that "reflect" deliberations. Although "reflect" is not expressly defined in the RTKL, it was discussed at length by the Commonwealth Court in *Office of the Governor v. Scolforo*, 65 A.3d 1095 (Pa. Cmwlth. 2013) (*en banc*) (*Scolforo*). The Court stated:

[W]e recognize that the General Assembly utilized the specific term "*reflect*," 65 P.S. § 67.708(b)(10) (*emphasis added*), and did not use the term "*reveal*." The term *reflect* means "mirror" or "show," while the term *reveal* means "to make publicly or generally known" or, in other words, "disclose." *Webster's Third New International Dictionary* 1908, 1942 (2002).

Given the broad meaning of the term *reflect*, as opposed to *reveal*, and the fact that the General Assembly chose the term *reflect* when providing for the predecisional deliberative exception, we must interpret the exception as written.

*Scolforo*, 65 A.3d at 1101-1102.

Accordingly, the General Assembly's specific use of the word "reflect" in the internal, predecisional deliberation exception of the RTKL signifies that there is no requirement that the deliberated course of action be detailed, set forth, or summarized in a record in order to confer this protection. 65 P.S. § 67.708(b)(10)(i)(A). Thus, a record is protected from disclosure even if it reflects the agency's deliberations.

Consequently, approximately 8 electronic records are exempted from disclosure because these records are or reflect the SE Regional Office's internal, predecisional deliberative records or were relied upon by the Department as part of its internal, predecisional deliberative process. The records withheld pertain to internal correspondence among Department employees reflecting the decision making process regarding enforcement actions, draft letters, draft notices of violations and meeting notes. These records are internal, prior to any final decision, and do not reflect the final determination of the Department.

#### **Confidential Proprietary Information**

To the extent that your request identifies confidential proprietary information, the SE Regional Office denies a portion of your request because such records are exempt from disclosure by the Radiological Health Regulations, 25 Pa. Code § 215.1 *et. seq.* and the RTKL, 65 P.S. § 67.708(b)(11).

Specifically, the SE Regional Office has determined that approximately 128 pages of records reveal confidential proprietary information and constitute or reveal trade secrets. These responsive records are exempt pursuant to 25 Pa. Code § 215.14 of the Radiological Health Regulations, which states:

The following Department records are not available for public inspection, unless the Department determines that disclosure is in the public interest and is necessary for the Department to carry out its duties under the act:

(1) Trade secrets or secret industrial processes customarily held in confidence.

(2) A report of investigation, not pertaining to safety and health in industrial plants, which would disclose the institution, progress or results of an investigation undertaken by the Department.

(3) Personnel, medical and similar files, the disclosure of which would operate to the prejudice or impairment of a person's reputation or personal safety.

"Confidential proprietary information" is defined under the RTKL as "[c]ommercial or financial information received by an agency: (1) which is privileged or confidential; and (2) the disclosure of which would cause substantial harm to the competitive position of the person that submitted the information." 65 P.S. § 67.102.

Also, under the RTKL "trade secrets" is defined as:

Information, including a formula, drawing, pattern, compilation, including a customer list, program, device, method, technique or process that:

- (1) Derives independent economic value, actual or potential, from not being generally known to and not being readily ascertainable by proper means by other persons who can obtain economic value from its disclosure or use; and
- (2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy. The term includes data processing software obtained by an agency under a licensing agreement prohibiting disclosure.

65 P.S. § 67.102.

Specifically, the SE Regional Office has determined that the disclosure of approximately 50 pages, and approximately 15 electronic records, though responsive, would undermine ProTechnics' competitive position in the marketplace and would reveal a specialized framework that ProTechnics expended substantial time and money to develop. Therefore, based on these legal authorities, the SE Regional Office withheld approximately 50 pages, and approximately 15 electronic records. These records include patent information and well tracer product information.

**Attorney-Client Privilege**

Section 305 of the RTKL provides that records shall not be presumed to be public records if they are exempt under or protected by a privilege. 65 P.S. § 67.305(a)(2). The specific privilege that applies to a number of these records are the attorney-client privilege.

The attorney-client privilege provides that “in a civil matter counsel shall not be competent or permitted to testify to confidential communications made by him by his client, nor shall the client be compelled to disclose the same, unless in either case this privilege is waived upon the trial by the client.” 42 Pa.C.S. § 5928. This privilege also covers confidential client-to-attorney communication and confidential attorney-to-client communications made for the purpose of obtaining or providing legal advice. *Gillard v. AIG Insurance Co.*, 15 A.3d 44 (Pa. 2011).

The RTKL defines “Privilege” as “the attorney-work product doctrine, the attorney-client privilege, the doctor-patient privilege, the speech and debate privilege or other privilege recognized by a court interpreting the laws of this Commonwealth.” 65 P.S. § 67.102. The OOR has properly acknowledged the attorney-client privilege even applies to less formal communications, such as e-mails, between a public agency and its attorneys. *Gusler v. Jefferson Township*, No. AP-2009-0367 (Pa. O.O.R.D. June 5, 2009).

Based on this preliminary review, the Department believes that 3 electronic records exist where legal advice was sought and provided by Department Legal Counsel to Department personnel regarding oversight of Protechnics, and therefore are exempted from disclosure.

**Noncriminal Investigation**

The noncriminal investigation exceptions of 65 P.S. §§ 67.708(b)(17)(i) and (ii) exempt from disclosure: (i) Complaints submitted to an agency; and (ii) Investigative materials, notes, correspondence and reports. Section 708(b)(17)(vi)(A) through (E) further exempts records, that, if disclosed, would do one or more of the following:

- (A) Reveal the institution, progress or result of an agency investigation, except the imposition of a fine or civil penalty, the suspension, modification or revocation of a license, permit, registration, certification or similar authorization issued by an agency or an executed settlement agreement unless the agreement is determined to be confidential by a court.
- (B) Deprive a person of the right to an impartial adjudication.
- (C) Constitute an unwarranted invasion of privacy.
- (D) Hinder an agency's ability to secure an administrative or civil sanction.
- (E) Endanger the life or physical safety of an individual.

65 P.S. §§ 67.708(b)(17)(vi)(A-E).

Section 305(a) of the Radiation Protection Act states:

The department or its duly authorized representatives shall have the power to enter at all reasonable times with sufficient probable cause upon any public or private property, building, premise or place, for the purposes of determining compliance with this act, any license conditions or any rules, regulations or orders issued under this act. In the conduct of an investigation, the department or its duly authorized representatives shall have the authority to conduct tests, inspections or examination of any radiation source, or of any book, record, document or other physical evidence related to the use of a radiation source.

35 P.S. § 7110.305(a).

Section 215.12 of the Radiation Regulations states:

(a) *Maintenance of records.* Licensees and registrants shall maintain records under this article and have these records available for inspection by the Department at permanent sites or facilities of use identified in a license or registration issued under this article.

(b) *Rights of the Department.* The Department and its agents and employees will:

(1) Have access to, and require the production of, books, papers, documents and other records and physical evidence pertinent to a matter under investigation.

(2) Require a registrant or licensee to make reports and furnish information as the Department may prescribe.

(3) Enter the premises of a licensee or registrant for the purpose of making an investigation or inspection of radiation sources and the premises and facilities where radiation sources are used or stored, necessary to ascertain the compliance or noncompliance with the act and this chapter and to protect health, safety and the environment.

(c) *Inspections and investigations by the Department.* The Department, its employees and agents may conduct inspections and investigations of the facilities and regulated activities of registrants of radiation-producing machines

and licensees of radioactive material necessary to demonstrate compliance with the act or this article.

(d) *Additional inspections and investigations.* The Department, its employees and agents may conduct additional follow-up inspections and investigations if violations of the act or regulations promulgated thereunder were noted at the time of the original inspection, or if a person presents information, or circumstances arise which give the Department reason to believe that the health and safety of a person is threatened or that the act or this article are being violated.”

25 Pa. Code § 215.12

To substantiate the RTKL noncriminal investigation exception under 65 P.S. § 67.708(b)(17), an agency must demonstrate that a systematic or searching inquiry, a detailed examination, or an official probe was conducted regarding a noncriminal matter. *Dep't of Env'tl. Protection v. Delaware Riverkeeper Network*, 113 A.3d 869 (Pa. Cmwlth, 2015). Additionally, records created by the Department, or gathered from outside sources and used as part of its investigation, are also exempt from disclosure. *John v. Dep't of Env'tl. Protection*, No. AP-2011-0657 (Pa. O.O.R.D. July 8, 2011).

Approximately 20 pages of responsive records and approximately 5 electronic documents include inspection reports prepared by the Department's radiation protection program, internal pre-enforcement documents, and reviews of the radioactive materials general license registration. These records prompted the SE Regional Office to conduct an official probe at the facility and conduct a detailed examination of the registration documents under the Department's statutory and regulatory authority within the Radiation Protection Act, 35 P.S. § 305(a) and Radiation Protection Regulations, 25 Pa. Code § 215.12. Consequently, the disclosure of those reports would reveal the SE Regional Office's institution, progress or result of an agency's investigations pertaining to routine inspections, noncompliance inspections or complaint-driven inspections, which are conducted within its statutory authority.

#### **Personal Identification Information**

The RTKL exempts personal identification information (PII) from disclosure. 65 P.S. § 67.708(b)(6). Personal identification information includes, but is not limited to a person's Social Security number, driver's license number, personal financial information, home, cellular or personal telephone numbers, personal e-mail addresses, employee number, or other confidential personal identification number.

Kendra L. Smith, Esquire

March 8, 2016

The SE Regional Office has withheld records that would otherwise be responsive to your request because they contain personal identification information. The information of concern within these records includes Department employees' internal telephone numbers. These records are the records previously accounted for and also withheld under the "regulatory preclusion" and noncriminal investigation exception contained within this response. Section 708(b)(6)(a) of the RTKL, 65 P.S. § 67.708(b)(6)(a), lists what constitutes personal identification information. Based on the types of information listed, it clearly means information that is unique to a particular individual or which may be used to identify or isolate an individual from the general population. It is information which is specific to the individual, not shared in common with others, and which makes an individual distinguishable from another. *Delaware County v. Schaefer*, 45 A.3d 1149, 1153 (Pa. Cmwlth. 2011).

This rationale of telephone numbers being specific to an individual and thus being deemed personal extends to government-issued "personal" cellular telephones, as well as assigned personal telephone extensions. The fact that government business may be discussed over an employee's government-issued personal cellular telephone does not make that telephone any less "personal" within the meaning of the RTKL. *Office of the Governor v. Raffle*, 65 A.3d 1105, 1111 (Pa. Cmwlth. 2013). Personal does not mean that it has to involve a public official's "personal affairs" but that it is personal to that official in carrying out public responsibilities. *City of Philadelphia v. Philadelphia Inquirer*, 52 A.3d 456, 461 (Pa. Cmwlth. 2012).

Both government issued telephone numbers and direct desk telephone extensions are clearly personal to that official for carrying out the duties of Commonwealth employment. Consequently, as personal identification information, it is appropriate for the Department to withhold these records. *See also Dep't of Public Welfare v. Clofine*, 2014 WL 688127 (Pa. Cmwlth. February 20, 2014).

However, you have a right to appeal this response in writing to Executive Director, Office of Open Records, Commonwealth Keystone Building, 400 North Street, 4<sup>th</sup> Floor, Harrisburg, Pennsylvania 17120. If you choose to file an appeal you must do so within 15 business days of the mailing date of this response and send to the OOR:

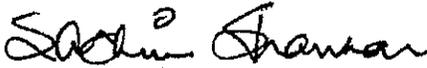
- 1) all Department responses;
- 2) your request; and
- 3) the reason(s) you believe the Department erred in its response.

Kendra L. Smith, Esquire

March 8, 2016

Also, the OOR has an appeal form available on the OOR website at:  
<http://www.openrecords.pa.gov/Using-the-RTKL/Pages/RTKLForms.aspx#.VpOKEBwo7X6>

Sincerely,

A handwritten signature in black ink that reads "Sachin Shankar". The signature is written in a cursive style with a horizontal line underneath the name.

Sachin Shankar, P.E.

Assistant Regional Director  
Right-to-Know Law Official  
Southeast Regional Office

Enclosure



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
RADIATION PROTECTION PROGRAM

November 2, 2010

PRIORITY MAIL DELIVERY CONFIRMATION NO. [REDACTED]

[REDACTED]  
ProTechnics Division of Core Laboratories LP  
[REDACTED]  
[REDACTED]

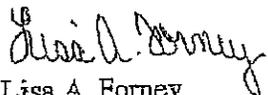
Re: License No. [REDACTED]  
[REDACTED]

Dear [REDACTED]

Enclosed is an executed copy of the Consent Order and Agreement (COA), which is dated November 2, 2010. This will also acknowledge receipt of check number 660223 in the amount of \$29,000.00 in accordance with the COA.

Thank you for your cooperation. If you have any questions, please feel free to contact me at 717.705.4898.

Sincerely,

  
Lisa A. Forney  
Compliance Specialist  
Radiation Protection Program

Enclosures

cc: General Counsel with enclosure

bcc: SCRO - License No. [REDACTED]  
CO File - Via Electronic Filing  
L. Forney with enclosure  
J. DeMan with enclosure  
C. Sullivan with enclosure  
M. Siegel with enclosure

[REDACTED]  
[REDACTED]  
[REDACTED]

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In the matter of:

ProTechnics Division of Core Laboratories L.P. : Violations of the Radiation Protection Act of  
[REDACTED] : July 10, 1984, P.L. 688, No. 147, 35 P.S. §  
[REDACTED] : 7110.101 *et seq.* and 25 Pa. Code § 217 *et seq.*  
 : License No. [REDACTED]  
 : [REDACTED]

CONSENT ORDER AND AGREEMENT

This Consent Order and Agreement (COA) is entered into this 2<sup>nd</sup> day of November, 2010, by and between the Commonwealth of Pennsylvania, Department of Environmental Protection (the "Department"), and ProTechnics Division of Core Laboratories LP ("ProTechnics"), aka ProTechnics, a Core Laboratories Company ("ProTechnics").

Findings

The Department has found and determined the following findings which ProTechnics agrees are true and correct.

- A. The Department is the agency with the duty and authority to administer and enforce the Radiation Protection Act, Act of July 10, 1984, P.L. 688, No. 147, 35 P.S. § 7110.101 *et seq.* ("The Act") and Section 1917-A of the Administrative Code of 1929, Act of April 9, 1929, P.L. 177, as amended, 71 P.S. § 510-17 ("Administrative Code"); and the rules and regulations promulgated thereunder.
- B. ProTechnics conducts business at [REDACTED]  
[REDACTED] ([REDACTED]) is the president of ProTechnics.
- C. ProTechnics is contracted by well owners and/or well operators ("Well Owner/Operator") to inject radioactive material into gas wells, which are intended to extract natural gas from the Marcellus Shale Formation. The injection is necessary to determine the effectiveness of hydraulic fracturing.
- D. On April 1, 2008, the Department granted the Reciprocity General License [REDACTED] to ProTechnics. License [REDACTED] authorized ProTechnics to conduct radioactive tracer studies within Pennsylvania in accordance with Texas Radioactive Material License Number [REDACTED] [REDACTED] expired on April 1, 2009.

- E. On April 20, 2009, the Department granted the renewal of Reciprocity General License [REDACTED]. The license remained in effect until April 30, 2010.
- F. On December 10, 2009, ProTechnics injected [REDACTED] containing [REDACTED] at the [REDACTED]. Following ProTechnics' departure from [REDACTED], a flow back incident occurred, which produced radioactive residual waste. The radioactive residual waste was transported from the site and directed for disposal by a third party.
- G. On December 22, 2009, Modern Landfill notified the Department that a load of waste had alarmed their radiation monitors. The source was identified as [REDACTED] in residual waste from [REDACTED].
- H. On December 30, 2009, ProTechnics attended a meeting with Department representatives and agreed to apply for a Pennsylvania Radioactive Materials License.
- I. On January 26, 2010, ProTechnics submitted an incident report and affirmed their commitment to obtain a Pennsylvania Radioactive Materials License.
- J. On January 28, 2010, the Department issued a Notice of Violation ("NOV") to ProTechnics for failing to adhere to the terms of Texas Radioactive Material License Number [REDACTED] and reciprocity general license [REDACTED].
- K. Pennsylvania Radioactive Materials License [REDACTED] was issued on February 26, 2010 and remains in full effect through February 26, 2020.
- L. [REDACTED] ("Well Owner/Operator") contracted ProTechnics to inject radioactive tracer into a series of wells located along the [REDACTED] in [REDACTED] (Site). The injections occurred between April 17, 2010 and April 23, 2010.
- M. On April 17, 2010, representatives from the Well Owner/Operator and ProTechnics signed a well tracer agreement for [REDACTED]. The agreement described the necessary actions to be taken in the event of a well flow back/ well reversal and authorized the placing of well returns (containing radioactive tracer material) for decay *In Situ* on Site.
- N. ProTechnics conducted a Site survey on April 23, 2010 prior to their departure.
- O. Between the dates of April 23, 2010 and April 27, 2010, licensed radioactive material returned to the surface or flowed back at [REDACTED] ("flow back incident"). Well returns, containing approximately 0.078% of the injected quantity of Ir-192, were collected onto a tarped area around the well and allowed to evaporate. The tarp was cut into pieces and directed for disposal by a third party.

- P. On May 21, 2010, Rustick, LLC McKean County Landfill ("McKean County Landfill") notified the Department that a load of waste had alarmed their radiation monitors. The source was identified as [REDACTED] in residual waste, including, but not limited to the tarp from the Site.
- Q. On May 24, 2010, the Well Owner/Operator contacted ProTechnics and advised them of the flow back incident at [REDACTED] and subsequent radiation alarm at McKean County Landfill.
- R. On June 1, 2010, the radioactive residual waste was returned to the Site for decay *In Situ*. ProTechnics posted a sign and placed a fence around the area containing the radioactive residual waste.
- S. ProTechnics violated the regulatory requirements under the Act as follows:
1. ProTechnics failed to transfer radioactive material to an authorized entity that was licensed to handle radioactive material, in violation of 25 Pa. Code § 217.1(a).
  2. ProTechnics failed to only use or store licensed material at temporary job sites in Pennsylvania, as required by License [REDACTED] and 25 Pa. Code § 217.1(a).
  3. ProTechnics failed to adhere to the Emergency and Operating Procedures included in License [REDACTED] in violation of License [REDACTED] Condition [REDACTED] and 25 Pa. Code § 217.1(a).
  4. ProTechnics failed to submit a report and a signed agreement from the property owner authorizing storage for Decay *In Situ* within 30-days of an uncontrolled well reversal, in violation of License [REDACTED], Condition [REDACTED] and 25 Pa. Code § 217.1(a).
- T. On June 15, 2010, the Department issued an NOV to ProTechnics, for the violations listed in Paragraph S, above.
- U. On July 12, 2010, an administrative enforcement conference was held between ProTechnics and representatives of the Department. ProTechnics provided the [REDACTED] Site Agreement dated April 17, 2010; a draft of proposed changes to the well site agreement; as well as copies of job site survey forms.
- V. On July 13, 2010, ProTechnics submitted a report to the Department, as well as a description of proposed corrective actions.
- W. On July 23, 2010, the Department sent a deficiency letter requesting a 30-day report, which included all items listed in License [REDACTED], Condition [REDACTED]
- X. On July 28, 2010, ProTechnics provided a response letter; a copy of the April 17, 2010 [REDACTED] site agreement and a copy of ProTechnics' guidelines for radioactive tracers during well stimulations.

- Y. The violations described in Paragraph S, above constitute unlawful conduct under Section 307 of the Radiation Protection Act, 35 P.S. § 7110.307, a public nuisance under Section 309(a) of the Radiation Protection Act, 35 P.S. § 7110.309(a), and subjects ProTechnics to civil penalty liability under Section 308(e) of the Radiation Protection Act, 35 P.S. § 7110.308(e).

### ORDER

After full and complete negotiation of all matters set forth in this COA and upon mutual exchange of the covenants herein, the parties desiring to avoid litigation and intending to be legally bound, it is hereby ORDERED by the Department and AGREED to by ProTechnics as follows:

1. Authority. This COA is an Order of the Department authorized and issued pursuant to Section 308(e) of the Radiation Protection Act, 35 P.S. § 7110.308(e) and Section 1917-A of the Administrative Code, *supra*. The failure of ProTechnics to comply with any term or condition of this Consent Order and Agreement shall subject ProTechnics to penalties and remedies provided by those statutes for failing to comply with an order of the Department.
2. Findings.
  - a. ProTechnics agrees that the findings in paragraphs A through Y are true and correct and in any matter or proceeding involving ProTechnics and the Department, ProTechnics shall not challenge the accuracy or validity of these findings.
  - b. The parties do not authorize any other persons to use the findings in the COA in any matter or proceeding.
3. Corrective Actions.
  - a. ProTechnics shall provide a copy of the Radioactive Tracer Well Site Agreement in Attachment A to each Well Owner/Operator who contracts ProTechnics to conduct a radioactive tracer study within Pennsylvania.
  - b. ProTechnics and the Well Owner/Operator shall sign and complete a Radioactive Tracer Well Site Agreement for each well that is traced in Pennsylvania. Within five business days of completing the form, ProTechnics shall submit a copy to the Department.
  - c. Prior to tracing each well, ProTechnics shall provide an instructional session to the Well Owner/Operator which includes, but is not limited to general radiation safety principles, as well as procedures for handling flow back incidents and acceptable methods of disposal. ProTechnics shall document that training was provided and provide copies to the Department upon request.

d. Within 14 days of the execution of this COA, ProTechnics shall submit a license amendment request to the Department to amend License [REDACTED] as follows:

License [REDACTED] Sec 7.1.4

1. ProTechnics shall request that License [REDACTED], Condition [REDACTED] be amended to exclude the term "Property Owner."

2. ProTechnics shall request that License [REDACTED] be amended to include the submission of the completed Radioactive Tracer Well Site Agreement within five business days of signature and completion.

3. ProTechnics shall request that License [REDACTED] be amended to include that ProTechnics make arrangements with the Well Owner/Operator to ensure the stabilization of each earthen barrier containing radioactive residual waste for *In Situ* decay within Pennsylvania. ProTechnics shall conduct a minimum of one inspection per year which shall include, but not be limited to an assessment of the integrity of the area, markings, and fencing; the adequacy of stabilization, an indication of any maintenance that may be required; and documentation that the inspection was completed.

4. ProTechnics shall request that License [REDACTED] Condition [REDACTED] be amended to include that ProTechnics will provide notification to the Department in accordance with Paragraph 10 of this COA.

5. ProTechnics shall request that License [REDACTED] be amended to include that ProTechnics will immediately notify the Department upon confirmation that licensed radioactive material is contained within flow back/ well returns.

e. In the event of a flow back incident, ProTechnics shall contain the well reversals containing licensed radioactive material to the on site earthen barrier, in accordance with Section 7 of the Emergency and Operating Procedures included in License [REDACTED], Condition [REDACTED]

f. Upon confirmation that licensed material has returned to the surface, ProTechnics shall immediately notify the Department in accordance with Paragraph 10 of this COA. This shall apply to all well returns / flow back containing licensed radioactive material regardless if it is controlled or uncontrolled and regardless of the quantity of licensed material that reaches the surface.

g. ProTechnics shall conduct and document a complete survey<sup>?</sup> and sketch of the area surrounding the well returns / flow back containing licensed material in accordance with Section 7.1.4 of the Emergency and Operating Procedures included in License [REDACTED] Condition [REDACTED]. ProTechnics shall provide copies of the completed survey form to the Department upon request.

h. ProTechnics shall submit a report, which summarizes the events that caused licensed radioactive material to flow back and all actions taken following the incident. The report shall be in accordance with the terms of License [REDACTED], Condition [REDACTED] and shall be submitted within 30 days of the flow back of licensed material.

4. **Civil Penalty Settlement.** Upon signing this COA, ProTechnics shall pay the civil penalty of TWENTY NINE THOUSAND DOLLARS (\$29,000.00). Subject to Paragraph 5, below, this payment is in settlement of the Department's claim for civil penalties for the violations set forth in Paragraph 5., herein. The payment shall be by corporate check or the like, made payable in the following manner and to the referenced parties: (a). Payment in the amount of TWENTY NINE THOUSAND DOLLARS (\$29,000.00). to the "Commonwealth of Pennsylvania Radiation Protection Fund," and sent c/o Ms. Lisa A. Forney, Compliance Specialist, DEP Southcentral Region, Radiation Protection Program, 909 Elmerton Avenue, Harrisburg, PA 17110-8200.

5. **Stipulated Civil Penalties.**

a. In the event that ProTechnics fails to comply in a timely manner with the provisions of this COA, ProTechnics shall be in violation of this COA and, in addition to other applicable remedies, shall pay a civil penalty in the amount determined under the following schedule:

1. For any documented violation of Paragraph 3, ProTechnics shall pay of civil penalty of FIVE HUNDRED DOLLARS (\$500.00) per day for each violation.

b. Stipulated civil penalty payments shall be payable monthly on or before the fifteenth day of each succeeding month, and shall be forwarded as described in Paragraph 4, above.

c. Any payment under this paragraph shall neither waive the duty of ProTechnics to meet their obligations under this COA, nor preclude the Department from commencing an action to compel ProTechnics with the terms and conditions of this COA. The payment resolves the liability of ProTechnics only for civil penalties arising from the violation of this COA, for which the payment is made.

d. Stipulated civil penalties shall be due automatically and without notice.

6. **Additional Remedies.**

a. In the event that ProTechnics fails to comply with any provision of this COA, the Department may, in addition to the remedies prescribed herein, pursue any remedy available for a violation of an order of the Department, including any action to enforce this COA.

- b. The remedies provided by this paragraph and paragraph 5 are cumulative and the exercise of one does not preclude the exercise of any other. The failure of the Department to pursue any remedy shall not be deemed to be a waiver of that remedy. The payment of a stipulated penalty, however, shall preclude any further assessment of civil penalties for the violation for which the civil penalty is paid.
7. **Reservation of Rights.** The Department reserves the right to require additional measures to achieve compliance with the applicable law. ProTechnics reserves the right to challenge any action which the Department may take to require those measures.
8. **Liability of Operator.** ProTechnics shall be liable for any violations of the COA, including those caused by, contributed to, or allowed by its officers, agents, employees or contractors. ProTechnics also shall be liable for any violation of this COA caused by, contributed to, or allowed by its successors and assigns.
9. **Transfer of Site.** The duties and obligations under this COA shall not be modified, diminished, terminated, or otherwise altered by the transfer of any legal or equitable interest in any Pennsylvania Site, where ProTechnics is contracted to conduct radioactive tracer studies or any part thereof.
10. **Correspondence with the Department.** All correspondence with the Department concerning this COA shall be addressed to:

Ms. Lisa A. Forney, Compliance Specialist  
DEP, Southcentral Regional Office  
909 Elmerton Avenue  
Harrisburg, PA 17110-8200  
717-705-4898.  
[forney@state.pa.us](mailto:forney@state.pa.us)

And

Mr. John Chipppo, Radiation Protection Program Supervisor  
PA DEP Rachel Carson State Office Building  
400 Market Street  
Harrisburg, PA 17105  
717-787-2208  
[jchipppo@state.pa.us](mailto:jchipppo@state.pa.us)

11. **Correspondence with ProTechnics.** All correspondence with ProTechnics shall be addressed to:

[REDACTED]  
ProTechnics, a Division of Core Laboratories, L.P.  
[REDACTED]  
[REDACTED]

And

General Counsel  
[REDACTED]  
[REDACTED]

ProTechnics shall notify the Department whenever there is a change in its contact person's name, title or address. Service of any notice or any legal process for any purpose under this COA, including its enforcement, may be made by mailing a copy by first class mail to the above address.

12. **Severability.** The paragraphs of this COA shall be severable and should any part hereof be declared invalid and unenforceable, the remainder shall continue in full force and effect between parties.
13. **Entire Agreement.** This COA shall constitute the entire integrated agreement of the parties. No prior or contemporaneous communications or prior drafts shall be relevant or admissible for purposes of determining the meaning or extent of any provisions herein in any litigation or any other proceeding.
14. **Attorney Fees.** The parties shall bear their representative attorney fees, expenses and other costs in the prosecution or defense of this matter or any related matters, arising prior to the execution of this COA.
15. **Modifications.** No changes, additions, modification or amendments of this COA shall be effective unless they are set out in writing and signed by the parties hereto.
16. **Decisions Under Consent Order.** Any decision which the Department makes under the provisions of this COA shall not be deemed to be a final action of the Department, and shall not be appealable to the Environmental Hearing Board or to any court. Any objection which ProTechnics may have to the decision will be preserved until the Department enforces this COA. At no time, however, may ProTechnics challenge the content or validity of this COA, or challenge the Findings agreed to in this COA.
17. **Titles.** A title used at the beginning of any paragraph of this COA is provided solely for the purposes of identification and shall not be used to interpret that paragraph.
18. **Termination.** The obligations of Paragraphs 1-18 shall terminate when the Department deems that ProTechnics has completed the actions required in Paragraph 3, paid the civil penalty assessed in Paragraph 4, and paid any stipulated penalties due under Paragraph 5, above. Upon the Department's determination that the obligations of Paragraphs 1-19 have been satisfactorily met, the Department shall provide a written statement to conclude this COA.

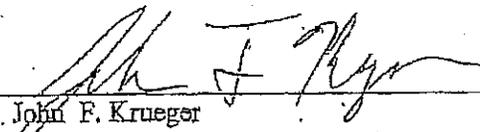
IN WITNESS WHEREOF, the parties have caused the COA to be executed by their duly authorized representatives. The undersigned representatives of ProTechnics certify, under penalty of law, as provided by 18 Pa. C.S. § 4904, that they are authorized to execute this COA on behalf of ProTechnics, that ProTechnics consents to the entry of this COA as an ORDER of the Department, that ProTechnics hereby knowingly waives any right to a hearing under the statutes referenced in this COA, and that ProTechnics knowingly waives their right to appeal this COA and the foregoing Findings, which rights may be available under Section 4 of the Environmental Hearing Board Act, the Act of July 13, 1988, P.L. 530, No. 1988-94, 35 P.S. § 7514; the Administrative Agency Law, 2 Pa. C.S. § 1039a) and Chapters 5A and 7A, or any other provision of law.

FOR PROTECHNICS DIVISION  
OF CORE LABORATORIES LP:

FOR THE COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION:

  
\_\_\_\_\_  
President

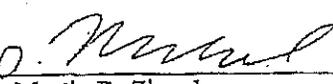
11/1/10  
Date

  
\_\_\_\_\_  
John F. Krueger  
Radiation Protection Program

11/2/10  
Date

  
\_\_\_\_\_  
Attorney for ProTechnics

11/1/10  
Date

  
\_\_\_\_\_  
Martin R. Siegel  
Assistant Counsel

11/1/10  
Date

# Attachment A

## RADIOACTIVE TRACER WELL SITE AGREEMENT

By signature below, the parties hereby agree to the requirements set out below for handling well reversal, well returns, or flowback ("Well Returns") containing radioactive tracer material. The Pennsylvania Department of Environmental Protection, Bureau of Radiation Protection ("PA DEP") has approved the placing of Well Returns containing radioactive tracer material in an on-site earthen barrier for decay *in situ* for three years from the date of radioactive tracer material injection. The following steps must be taken when handling Well Returns containing radioactive tracer material.

1. The Well Owner/Operator shall notify ProTechnics [REDACTED] within 24 hours of Well Returns containing any solid materials. ProTechnics shall survey such returns for the presence of radioactive tracer material within 2 business days after notification from the Well Owner/Operator.
2. All Well Returns containing radioactive tracer material shall be diverted to the on-site earthen barrier. If the Well Returns are first diverted to on-site tanks, the tanks must be surveyed prior to removal from the well site. ProTechnics shall survey all equipment, location ground site cover tarps, holding tanks, or anything else that may have come into contact with the Well Returns within 2 days after notification from the Well Owner/Operator and prior to removal from the well site. The Well Owner/Operator shall notify ProTechnics within 24 hours of any such contamination.
3. The earthen barrier will be covered with two feet of stabilized clean soil and stabilized in accordance with 25 Pa. Code § 102.1 *et seq.*, the Site's approved Erosion and Sediment Control Plan, 25 Pa. Code § 78.1 *et seq.*, and the respective Oil and Gas Permit (Oil and Gas Well Permit No. \_\_\_\_\_).
4. Upon establishment, the earthen barrier shall be identified by GPS coordinates. Access to this area will be restricted by a durable fence.
5. The earthen barrier will be posted with signage: Caution - Radioactive Material - Keep Out - Do Not dig in this area before (Date: \_\_\_\_\_) - notify ProTechnics [REDACTED] for additional information.
6. This signed agreement between the Well Owner/Operator and ProTechnics for radioactive material decay *in situ* in the earthen barrier will be kept on file by ProTechnics and a copy sent to PA DEP to become incorporated into the ProTechnics' Radioactive Material License for the well location listed below.
7. Both the access control fence and the earthen barrier integrity must be maintained by the Well Owner/Operator for 3 years from the date of tracer material injection or approximately (Date: \_\_\_\_\_). All associated signage and fences shall be removed within 30 days of the above date.
8. Any failure by the Well Owner / Operator to promptly report solid material Well Returns which contain radioactive materials or to control such radioactive materials onsite may subject both ProTechnics and the Well Owner/Operator to regulatory enforcement by PA DEP.

ProTechnics reserves the right to supervise any necessary decontamination activities should any actions occur that result in the loss of integrity of the earthen barrier.

This agreement will be attached and incorporated into ProTechnics' Radioactive Materials License Number [REDACTED] which is administered by PA DEP, until the date specified in Item #7.

RADIOACTIVE TRACER WELL SITE AGREEMENT (Continued)

\_\_\_\_\_  
Printed Name  
Radiation Safety Officer  
ProTechnics, Division of Core Laboratories LP

\_\_\_\_\_  
Signature  
Radiation Safety Officer  
ProTechnics  
Division of Core Laboratories LP

\_\_\_\_\_  
Date Signed

\_\_\_\_\_  
Printed Name  
Well Owner/ Operator  
Representative

\_\_\_\_\_  
Signature  
Well Owner/ Operator  
Representative

\_\_\_\_\_  
Date Signed

\_\_\_\_\_  
Company Name  
Well Owner/Operator

\_\_\_\_\_  
Well Name:  
  
\_\_\_\_\_  
  
\_\_\_\_\_  
  
\_\_\_\_\_

\_\_\_\_\_  
Earthen Barrier / Storage Pit Location  
(Approximate GPS Coordinates - Please  
Indicate If Not Applicable)

\_\_\_\_\_  
Company Mailing Address  
Well Owner/Operator

## Attachment B



ProTechnics  
A Div. of Core Laboratories, LP

www.protechnics.com

### TRACER WELL SITE AGREEMENT

By signature below, the parties hereby agree to the requirements set out below for handling well returns containing tracer material. The State of Pennsylvania has approved the placing of well returns containing tracer material in an on site earthen barrier for decay in situ. The following steps must be taken when handling well returns containing tracer material.

1. All well returns containing gamma emitting tracer material shall be diverted to the on site earthen barrier.
2. The earthen barrier will be covered with two feet of clean soil.
3. The earthen barrier shall be identified by GPS coordinates. This area will be restricted by the use of a durable barrier.
4. The earthen barrier will be posted with signage (Caution - Radioactive Material - Keep Out - Do not dig in this area - notify ProTechnics [redacted] for additional information.
5. This signed agreement between the Company below and ProTechnics for decay in situ will be kept on file by ProTechnics.
6. Access control of the earthen barrier must be maintained by the well owner/operator until 3 Years. The signs can be removed at this time.

ProTechnics reserves the right to supervise any necessary decontamination activities should any actions occur that result in the loss of integrity of the earthen barrier.

Dated and signed April 17<sup>th</sup> 2010

[redacted]  
ProTechnics Division of Core Laboratories LP

[redacted] 4/17/10  
Representative Date Signed

[redacted] \_\_\_\_\_  
Well Owner/Operator Well Name:

Pennsylvania 22662010

*Kenny*



Pennsylvania Department of Environmental Protection

909 Elmerton Avenue  
Harrisburg, PA 17110-8200  
January 28, 2010

Southcentral Regional Office

717-705-4703  
FAX - 717-705-4890

NOTICE OF VIOLATION

PRIORITY MAIL DELIVERY CONFIRMATION NO. [REDACTED]

[REDACTED]  
Operations Manager  
Citrus Energy Corporation  
[REDACTED]

Dear Mr. Searfoss:

It is the Department's understanding that Citrus Energy Corporation (Citrus Energy) contracted Core Laboratories, L.P. - ProTechnics Division (ProTechnics) to conduct a radioactive tracer study at [REDACTED] (well site), located along [REDACTED] [REDACTED] (Site). On December 10, 2009, ProTechnics injected a gel solution that was comprised of water, sand and [REDACTED] under Pennsylvania Reciprocity License No. [REDACTED] and Texas License [REDACTED]. After the injection of [REDACTED] the ProTechnics' field representative left the well site.

Following ProTechnics' departure from the well site, Citrus Energy pumped sand and water, which were contaminated with [REDACTED] (radioactive residual waste), to the surface and contacted Clean Harbors Environmental Services, Inc. (Clean Harbors) to remove the radioactive residual waste from an on-site tank.

On December 21, 2009, Clean Harbors emptied the on-site tank and transported the radioactive residual waste to the Lancaster Oil Company (d/b/a Environmental Recovery Corporation of PA (ERC)).

On December 22, 2009, ERC transported a roll-off container, which included the radioactive residual waste to Modern Landfill for disposal. Upon entering the scale at Modern Landfill, a radiation monitor was alarmed and Modern Landfill notified the Department of this event.

The following violation is noted:

- 25 Pa. Code § 287.54(a)(1) requires the performance of a detailed analysis to fully characterize the physical properties and chemical composition of each type of waste generated.

January 28, 2010

On December 10, 2009, Citrus Energy failed to conduct a proper waste analysis of the radioactive residual waste prior to contacting Clean Harbors to remove the waste.

You are hereby notified of the existence of a violation as well as the need to provide prompt corrective action. Failure to correct the violation may result in legal proceedings under the Radiation Protection Act and the Solid Waste Management Act. Under each Act, each day of violation is considered a distinct and separate offense and will be handled accordingly.

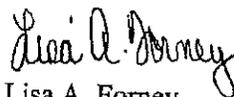
Be advised that the violation described above constitutes a public nuisance under Section 309 of the Radiation Protection Act, 35 P.S. § 7110.309, as well as Section 610 of the Solid Waste Management Act, 35 P.S. § 6018.601. This may subject you, under Section 308(e) of the Radiation Protection Act, 35 P.S. § 7110.308(e) and Section 605 of the Solid Waste Management Act, 35 P.S. § 6018.605 to civil penalty liability of up to (\$25,000) for each violation. Additionally, under the Radiation Protection Act, penalties may be assessed up to (\$5,000) per day for each continuing day of violation.

The Department requests that a written response be sent within 14 days of the receipt of this Notice of Violation. The response should include, but not be limited to a typed letter that provides a detailed description of the actions taken to avoid any future occurrences.

This Notice of Violation is neither an order nor any other final action of the Department. It neither imposes nor waives any enforcement action available to the Department under any of its statutes.

Thank you for your cooperation. If you have any questions, please call me at 717-705-4898.

Sincerely,



Lisa A. Forney  
Compliance Specialist  
Radiation Protection Program

Citrus Energy Corporation

-3-

January 28, 2010

bcc: CO File  
SCRO File  
S. Acker  
L. Forney

**To:** Pryber, Joseph[jpryber@state.pa.us]; Croll, Richard[rcroll@state.pa.us]; Reynolds, Brooke[brreynolds@state.pa.us]; Costello, Francis[fcostello@state.pa.us]; Craig, Bridget[bcraig@state.pa.us]  
**From:** Derstine, Terry  
**Sent:** Fri 1/29/2010 2:14:59 PM  
**Importance:** Normal  
**Subject:** FW: Protechnics and Citrus Energy NOV's  
[Citrus Energy NOV 01282010.pdf](#)  
[ProTechnics NOV 01282010.pdf](#)

FYI

**Terry W. Derstine** | Radiation Protection Program Manager  
Department of Environmental Protection  
Southeast Regional Office  
2 East Main Street | Norristown, PA 19401  
Phone: 484.250.5854 | Fax: 484.250.5951  
[www.depweb.state.pa.us](http://www.depweb.state.pa.us)

-----Original Message-----

**From:** Forney, Lisa  
**Sent:** Thursday, January 28, 2010 3:16 PM  
**To:** Krueger, John; Acker, Stephen; Melnic, Joseph; Allard, David  
**Cc:** Chippo, John (DEP); Tomayko, William; Rathfon, Anthony; Barton, Marylou; Forney, Lisa; Perry, Scott; Vargo, George  
**Subject:** Protechnics and Citrus Energy NOV's

An NOV for Citrus Energy and NOV for ProTechnics have been mailed. A copy of each is attached:

Joe--- Will you be including this in the weekly report, or should I? Please advise.

Have a Nice Afternoon ☺

**Lisa A. Forney** | Environmental Protection Compliance Specialist  
Department of Environmental Protection  
Southcentral Regional Office  
909 Elmerton Avenue | Harrisburg, PA 17110.8200  
Phone: 717.705.4898 | Fax: 717.705.4710  
[www.depweb.state.pa.us](http://www.depweb.state.pa.us)



Pennsylvania Department of Environmental Protection

909 Elmerton Avenue  
Harrisburg, PA 17110-8200  
January 28, 2010

Southcentral Regional Office

717-705-4703  
FAX - 717-705-4890

NOTICE OF VIOLATION

PRIORITY MAIL DELIVERY CONFIRMATION NO. [REDACTED]

[REDACTED]  
Core Laboratories, L.P.- ProTechnics Division  
[REDACTED]

Re: License No. [REDACTED]

Dear Mr. Hampton:

The Department is aware that the services of Core Laboratories, L.P. - ProTechnics Division (ProTechnics) were enlisted by [REDACTED] in order to conduct a radioactive tracer study at the [REDACTED] (well site), located along [REDACTED]. On December 10, 2009, ProTechnics injected a gel solution, which was comprised of water, sand and [REDACTED] under Pennsylvania Reciprocity License No. [REDACTED] and Texas License No. [REDACTED]. After the injection of [REDACTED] the ProTechnics' field technician left the well site.

Following ProTechnics' departure from the well site, Citrus Energy pumped sand and water, which were contaminated with [REDACTED] to the surface. Clean Harbors Environmental Services, Inc. (Clean Harbors) removed the radioactive material from an on-site tank on December 21, 2009 and transported the radioactive material to the [REDACTED]. [REDACTED] in turn, transported a roll-off container, which included the radioactive material to Modern Landfill for disposal on December 22, 2009. Upon entering the scale at Modern Landfill, a radiation monitor was alarmed and Modern Landfill notified the Department of this event.

The following violation is noted:

- 25 Pa. Code § 217.1(a) requires that a person may not receive, possess, use, transfer, own or acquire radioactive material except as authorized under a specific license. Specifically, Texas Radioactive Material License [REDACTED] Conditions [REDACTED] and [REDACTED] require that the released radioactive material be possessed, handled and/or disposed in a manner outlined in the procedures submitted with the license application.

ProTechnics failed to ensure proper handling and disposal of the radioactive material after it had been pumped to the surface and sent for disposal at an off-site location.

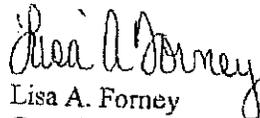
January 28, 2010

The Department is in receipt of an incident report, which described the corrective actions taken. Be advised that no additional response is necessary at this time.

This Notice of Violation is neither an order nor any other final action of the Department. It neither imposes nor waives any enforcement action available to the Department under any of its statutes.

Thank you for your cooperation. If you have any questions, please call me at 717-705-4898.

Sincerely,



Lisa A. Forney  
Compliance Specialist  
Radiation Protection Program

cc: [redacted] Radiation Safety Officer, Core Laboratories, L.P.- Protechnics Division



January 28, 2010

bcc: CO File  
SCRO File  
S. Acker  
L. Forney

**To:** Acker, Stephen[sacker@state.pa.us]; Derstine, Terry[tderstine@state.pa.us]; Yusko, James (DEP)[jyusko@state.pa.us]; Allard, David[djallard@state.pa.us]; Angelo, Dennis[dangelo@state.pa.us]; Bookser, Barbara[bbookser@state.pa.us]; Chippo, John (DEP)[jchippo@state.pa.us]; Diamond, Rusty[rdiamond@state.pa.us]; Ferguson, Dennis[denferguso@state.pa.us]; Gaisior, David[dgaisior@state.pa.us]; Lewis, Robert K.[rolewis@state.pa.us]; Malers, Robert[rmalers@state.pa.us]; Martin, Sandra[sandmartin@state.pa.us]; Melnic, Joseph[jmelnic@state.pa.us]; Pryber, Joseph[jpryber@state.pa.us]; Seiber, Benjamin[bseiber@state.pa.us]; Wagner, William[wwagner@state.pa.us]; Werner, Bryan[brwerner@state.pa.us]

**From:** Acker, Stephen

**Sent:** Mon 5/10/2010 4:07:21 PM

**Importance:** Normal

**Subject:** Notes & action items from Monday's ROCO call  
Regional Office Central Office May meeting action items.doc

**Regional Office – Central Office Monthly Conference Call Action Items**  
Monday, May 12, 2010 10:00 am

**Agenda**

1. Division & Section Briefings / Updates

a. Radon – Pyles

Radon training available, information on the radon web page. Regions to check interest.

NSTS call this week, Acker to publish notes from call

2. New Business

- IMPEP self assessment actions – Acker  
NRC proposed changes to IMPEP questionnaire. Acker to check for changes

- Complaint tracking system entries (calls went to NRC instead of us):  
1.) Broken tritium sign in NER; open SERO needs to see survey results,

Discussion: Allard: the RP Weeklies are not confidential. Diamond: typically, complaints don't go in Weeklies.

4.) Intraop's letter stating safety concerns competitor using the Novac7 IORT device can cause harm to patients when used for therapy SERO, Cosgrove to visit this week. CO will respond with SERO input.

Protechnics in-situ decay site surveys Regions to survey.

- MQSA citation and fine to Carlisle Regional.  
Need to decide if or how we respond to the email & letter.  
Derstine to look into possible changes to inspection procedure to cross-reference patients needing a letter and letters sent.
- Diquad project – update on program  
1<sup>st</sup> 300 sent – in prog, 3 calls came in that they have no intraoral or don't want to play - send badges back to diquad – don't throw away  
CO needs another 50 candidates – Sandy to send email request.

**April 7 Working Group Action Item List**

1. Allard to send out ER training memo *IP this week*
2. Melnic to get acknowledgement of 15 day report to SWRO *IP*
3. Gaisior needs to draft x-ray Qual Journal and share with x-RAY sub-committee *IP*

4. Denny to organize x-ray training in SWRO *IP Acker take over*
5. Wagner to get HAZWPR refresher training schedule from Leib *IP, regions have received trng, CO training status?*
6. Submit accelerator checklists to Ferguson for review *IP SC & SW supplying info, SE needs to forward inspection info*
7. Compliance specialist group to look into possibilities for overdue fee collections *IP Derstine include bullets for # 8*
8. Martin to look into efficacy of using Att. Gen. closed AG can't support
  - *Need to determine how to collect overdue fees, or seal units. Ken – figure percentage, how much time do you want to spend on small percentage? Summary citation route.*
  - *Sandy sent list*
9. Regions to call Nucletron users to verify software upgrade *IP regions to do*
10. Yusko to get more information on J.L. Shepard Type B shipping container approval *IP*
11. Allard to go to NRC about J.L. Shepard Type B shipping container approval *IP*
12. Web Based licensing  
Can't open up eFACTS to public. May need to see exactly what NRC wants (spreadsheet?) *IP*

Continuing Ed verification req'd for all inspections.

**To:** Zaccano, Robert[rzaccano@pa.gov]; Deman, Joseph[jdeman@pa.gov]; Portman, Stevan K. (DEP)[sportman@pa.gov]; Chippo, John[jchippo@pa.gov]; Melnic, Joseph[jmelnic@pa.gov]; Allard, David[djallard@pa.gov]; Croll, Richard[rcroll@pa.gov]; Noll, Jennifer[jenoll@pa.gov]  
**From:** Forney, Lisa  
**Sent:** Mon 12/23/2013 5:06:16 PM  
**Importance:** Normal  
**Subject:** ProTechnics Letter  
Stipulated CP Letter.pdf

This is a copy for your records. If you have any questions, please let me know.

**Lisa A. Forney, MEPC | Environmental Protection Compliance Specialist**

Department of Environmental Protection  
Southcentral Regional Office  
909 Elmerton Avenue | Harrisburg, PA 17110.8200  
Phone: 717.705.4898 | Fax: 717.705.4890

[lforney@pa.gov](mailto:lforney@pa.gov)

[www.depweb.state.pa.us](http://www.depweb.state.pa.us)

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# pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
RADIATION PROTECTION PROGRAM

December 23, 2013

PRIORITY MAIL DELIVERY CONFIRMATION NO. [REDACTED]

[REDACTED]  
ProTechnics Division of Core Laboratories LP  
[REDACTED]

Re: License No. [REDACTED]  
November 2, 2010 Consent Order and Agreement

Dear Mr. Flecker:

Thank you for participating in the December 18, 2013 conference and for clarifying the events that resulted in the issuance of the November 26, 2013 Notice of Violation. As you know, the Department was represented by: Ms. Lynn E. Langer, Mr. Robert M. Zaccano, Mr. Joseph H. DeMan, Mr. Richard F. Croll, Ms. Jennifer N. Noll and myself. Mr. Will Williams and Mr. Craig Konieczny were present on behalf of ProTechnics Division of Core Laboratories, LP (ProTechnics). In addition to you, Mr. Larry Stephenson and Mr. Ron Blush participated via telephone.

As a result of the discussions, the following action items were developed and agreed upon by ProTechnics and the Department:

- As a result of violations of the November 2, 2010 Consent Order and Agreement (COA), stipulated civil penalties totaling \$75,000 are due by January 15, 2014. Acceptable forms of payment include cashier's check, certified check and money order. Payment will need to be payable to the "Commonwealth of Pennsylvania, Radiation Protection Fund" and mailed to my attention.
- It is the Department's understanding that the language of the Radioactive Tracer Well Site Agreement (Well Site Agreement) has created many questions from Well Owner/Operators and that revision may be warranted. Please draft revisions to the Radioactive Tracer Well Site Agreement in Attachment A and submit them by January 15, 2014.
- The Department will review any suggested revisions and schedule a conference call in the event that additional discussion is necessary.
- Upon final approval of the Well Site Agreement, the Department will draft an Addendum to the COA, which will then be executed by both parties.

Southcentral Regional Office | 909 Elmerton Avenue | Harrisburg, PA 17110-8200

717.705.4703 | Fax 717.705.4890

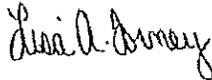
[www.depweb.state.pa.us](http://www.depweb.state.pa.us)

December 23, 2013

- The Addendum will require ProTechnics to submit a License Amendment request within 14 days of the execution of the Addendum. The amendment will request a License Condition requiring the submission of the newly revised Well Site Agreement as specified in the COA.
- The Addendum will also require an annual meeting between representatives of ProTechnics and the Department. The annual meeting will be initiated by ProTechnics and will occur in May of each year.

Thank you for your cooperation. If you have any questions, please feel free to contact me at 717.705.4898.

Sincerely,



Lisa A. Forney, MEPC  
Compliance Specialist  
Radiation Protection Program

Enclosures

cc: General Counsel



December 23, 2013

[REDACTED]

bcc: SCRO -- License No. [REDACTED] - File Via L. Forney  
CO File -- Via Electronic Filing  
L. Forney  
R. Zaccano  
J. DeMan  
S.K. Portman  
J. Chippo  
J. Melnic  
D. Allard  
R. Croll - SBRO  
J.N. Noll - SERO

General Counsel  
[REDACTED]

Please send email to [REDACTED] & [REDACTED] with the note:

Enclosed please find a courtesy copy of Department correspondence being sent today. Any questions regarding this document or its contents should be directed to Lisa Forney at 717.705.4898 or lforney@pa.gov.

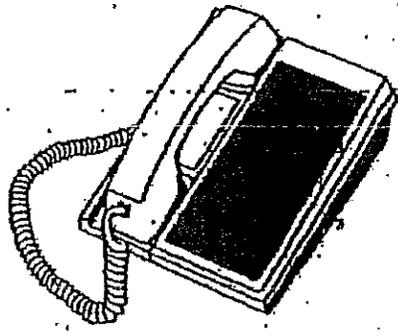
NMS 8

U.S. NUCLEAR REGULATORY COMMISSION  
Region IV  
611 Ryan Plaza Drive, Suite 400  
Arlington, Texas 76011

**DIVISION OF NUCLEAR MATERIALS SAFETY**

DATE/TIME: 1/28/03

PRIORITY:  
Immediately X  
1 Hour \_\_\_\_\_  
2-4 Hours \_\_\_\_\_



MESSAGE TO: MELANIE Wong - NMS - DUM - KLD

MESSAGE FROM: LOUIS CARSON - NMS - RIV

NUMBER OF PAGES: 8 PLUS TRANSMITTAL SHEET

TELECOPY NUMBER: 301-415-5899 VERIFICATION NUMBER: \_\_\_\_\_

CONTACT: \_\_\_\_\_

SPECIAL INSTRUCTIONS/ATTACHMENTS:

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J/27



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

December 18, 1995

MEMORANDUM TO: Ross Scarano, Director  
Division of Radiation Safety  
and Safeguards, RIV

FROM: Margaret V. Federline, Acting Director *M.V. Federline*  
Division of Waste Management, NMSS

SUBJECT: TECHNICAL ASSISTANCE REQUEST - PROTECHNICS INTERNATIONAL'S  
GENERIC 20.2002 REQUEST

As requested in your memorandum dated August 17, 1995, the Low-Level Waste and Decommissioning Projects Branch staff has completed review of Protechnics International's request for a generic authorization to bury radioactive materials pursuant to 10 CFR 20.2002. ~~The review has determined that the generic request for on-site burial of flowback sand can be approved with certain restrictions.~~

In their request, Protechnics committed to keeping the total concentration of radioactivity in the flowback sand below 0.001  $\mu\text{Ci/g}$  (or 1000 pCi/g). However, there was no information concerning the number of isotopes to be used for each well injection. ~~It was assumed that for each injection only a single isotope was used, thereby its concentration in the flowback sand would be equal to 1000 pCi/g. This is the maximum possible concentration for each isotope. If more than one isotope was injected into a well, the concentration of each isotope in the flowback sand would be less than 1000 pCi/g. The 1000 pCi/g concentration was then compared to the concentration of each isotope necessary to produce a dose of 15 mrem/yr to a resident farmer.~~

~~The attached table lists the isotopes and maximum activities which Protechnics is authorized to inject into a well. The table also lists the soil concentration of each isotope that would result in a 15 mrem/yr dose to a resident farmer assuming one meter to the groundwater, as listed in NUREG-1500 Working Draft Regulatory Guide on Release Criteria for Decommissioning. NRC Staff's Draft for Comment. As shown on the chart, the only isotopes which will produce a dose of less than 15 mrem/yr with a concentration 1000 pCi/g are Au-198 and Cr-51. However, the concentration of Rb-86 is very close to its concentration limit and would increase the dose only slightly. I-131 and Xe-133 have very short half-lives and would decay to unrestricted release limits in 8 days and thereby would have little impact on a resident farmer. Based on the above information, when the flowback sand contains any or all of these isotopes (Au-198, Cr-51, Rb-86, I-131, and Xe-133), the sand can be buried on site in burial pits with no restrictions except to have a total concentration of 1000 pCi/g or less.~~

Contact: Heather Astwood, DWM  
415-5819

-2-

The remaining isotopes, Ir-192, Sc-46, Zr-95, and Sb-124 exceed the concentration which would result in a dose of 15 mrem/yr. to a member of the public and therefore, these isotopes will require restrictions when buried on-site.

For the restricted isotopes, there are two potential scenarios in which a member of the public could receive a dose greater than 15 mrem/yr. The first is if a member of the public dug into the burial. To prevent this from occurring, Protechnics should be required to maintain control over the burial until the activity has decayed to releasable levels. Of the isotopes requiring restrictions, the one with the longest half-life and lowest allowable soil concentration is Sc-46. Its half-life is 83 days and acceptable soil concentration is 10.8 pCi/g. If the initial concentration of Sc-46 in the sand is 1000 pCi/g it would take approximately 1.6 years for the isotope to decay to unrestricted release limits. Therefore, Protechnics should be required to maintain control of the site for 1.6 years. Control could be defined as a fence around the burial site, which limits access and a sign posting no trespassing.

The second potential pathway is to a member of the public via the groundwater. As seen on the chart, the concentration of the sand being buried is a fraction of the activity being injected into the well, therefore there is little potential for the burial to significantly increase the impact on the aquifer being tested by the injections. However, the burial could affect other groundwater aquifers in the area. Any aquifer which is located below the burial site but above the zone where the isotopes are being injected has the potential to be contaminated. The information Protechnics submitted indicated that a majority of the contamination in the flowback sand is located on man-made beads (Zero-Wash) which retain the radioactive material and prevent it from leaching into the groundwater. If this is the case, there will be little impact on groundwater below the burial. However, Protechnics should be required to demonstrate that the radioactive material will remain on the beads and not migrate out of the burial pit. If this cannot be proven, Protechnics should demonstrate that the contamination will not flow off-site or to a residential well before it decays to acceptable levels. In other words, the contamination should not reach the nearest down-gradient site boundary or residential well in less than 1.6 years. The calculations Protechnics performs to determine that contamination does not migrate or will not reach a residential well should be maintained with the disposal records for each burial, and all records should be made available for NRC inspection.

The application package received from Protechnics contained little information concerning the environment surrounding a typical well site. Therefore, several important assumptions were made concerning the environment in which the burials will take place (i.e., one meter to the groundwater, remote area away from residential wells, high sorption capability of Zero-Wash beads). If these assumptions are incorrect, or do not pertain to all areas where burials are going to occur, the burials should not be permitted without sufficient additional information justifying the suitability of the burials. It is Protechnics' responsibility to ensure that the burials are performed in accordance with the directions above.

We have reviewed this proposed action as if it were a request for on-site burial, at multiple locations, in accordance with 10 CFR 20.2002. These actions would comply with the regulations for on-site burials in 10 CFR 20.2002 which requires the dose to the public to be less than the public dose limit. ~~Additional requirements would be required to meet the conditions of the burial in accordance with the reporting requirements in 10 CFR 20.2008(a).~~ The regulations also state that the doses should be as low as reasonably achievable (ALARA). The information which Protechnics submitted stated that this type of burial would reduce the exposure to the worker by not requiring the workers to clean-up, containerize, and handle the radioactive materials.

We will be interested in your experience implementing this action at the Protechnics sites. After sufficient experience is gained, please share this experience with us so we can consider the need to develop a Policy and Guidance Directive on disposal of flowback sands in accordance with 20.2002.

If you have any questions, please contact Heather Astwood of my staff on (301) 415-5819.

Attachment: As stated

Docket No. 30-30429  
 License No. 42-26928-02

Isotope	Half-life	Maximum activity (pCi) per well	Sand Conc. (pCi/g) if total conc is 0.001 $\mu$ Ci/g	Soil conc (pCi/g) in NUREG-1500 for 15 mrem/yr
I-131	8 d	2E+11	1000	543
Ir-192	73 d	2.5E+12	1000	30.4
Sc-46	83 d	1.5E+12	1000	10.8
Au-198	2.6 d	3E+12	1000	1540
Zr-95	64 d	2.5E+11	1000	18.6
Xe-133	5.2 d	3E+11	1000	---
Cr-51	27.7 d	7.5E+11	1000	1980
Sb-124	60 d	1E+12	1000	15.8
Rb-86	18.6 d	1.5E+12	1000	879

Table 1. Possible isotopes to be injected into a well and the NUREG 1500 soil concentration which will produce approximately 15 mrem/yr.

Attachment

We have reviewed this proposed action as if it were a request for on-site burial, at multiple locations, in accordance with 10 CFR 20.2002. These actions would comply with the regulations for on-site burials in 10 CFR 20.2002 which requires the dose to the public to be less than the public dose limit. Protechnics would be required to maintain records of the burials in accordance with record keeping requirements in 10 CFR 20.2108(a). The regulations also state that the doses should be as low as reasonably achievable (ALARA). The information which Protechnics submitted stated that this type of burial would reduce the exposure to the worker by not requiring the workers to clean-up, containerize, and handle the radioactive materials.

We will be interested in your experience implementing this action at the Protechnics sites. After sufficient experience is gained, please share this experience with us so we can consider the need to develop a Policy and Guidance Directive on disposal of flowback sands in accordance with 20.2002.

If you have any questions, please contact Heather Astwood of my staff on (301) 415-5819.

Attachment: As stated

Docket No. 30-30429 *01*  
 License No. 42-26928 *02*

TICKET:D-351

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<i>P. Smith</i>	<i>C. Jones</i>				

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DATE	10/31/95	10/31/95	1 / 95	12/11/95		12/18/95

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

DEC 01 1993

MEMORANDUM FOR: John E. Glenn, Chief  
Medical, Academic and Commercial  
Use Safety Branch  
Division of Industrial and  
Nuclear Safety, NMSS

FROM: John H. Austin, Chief  
Decommissioning and Regulatory  
Issues Branch  
Division of Low-Level Waste Management  
and Decommissioning, NMSS

SUBJECT: TECHNICAL ASSISTANCE REQUEST FROM PROTECHNICS INTERNATIONAL,  
INC., FOR GENERIC AUTHORIZATION TO BURY RADIOACTIVE FRAC  
SANDS PURSUANT TO 10 CFR PART 20.2002

This is in response to your memorandum dated Oct. 26, 1993, concerning a request from Protechnics International, Inc. for generic authorization to bury frac sands that are contaminated with radioactive material at temporary job sites.

As your memorandum stated, NRC has approved the burial of frac sands on a case-by-case basis, but is continuing to consider the approval of generic burials. In a response to your office dated May 6, 1991, staff indicated that NUREG/CR-5512 should be finalized and published before a decision concerning generic burials could be completed.

At this time, NUREG/CR-5512 has not been completed in a satisfactory manner and thus, can not be used to support a generic authorization. However, the Enhanced Participatory Rulemaking (EPR) process is currently being used by the Commission to develop residual radioactive contamination criteria. Although the EPR is not specifically intended for this type of application, the results of the rulemaking, scheduled to be finalized by May of 1995, could be extended to cover these cases.

Therefore, the staff believes that decisions concerning generic approval should be postponed until after the EPR process has been completed. Until that time site specific requests will continue to be considered on a case-by-case basis.

*John H. Austin*

John H. Austin, Chief  
Decommissioning and Regulatory  
Issues Branch  
Division of Low-Level Waste Management  
and Decommissioning, NMSS

**To:** Croll, Richard[rcroll@pa.gov]  
**From:** Costello, Francis  
**Sent:** Tue 9/17/2013 5:47:53 PM  
**Importance:** Normal  
**Subject:** Protechnics  
[protechnics.pdf](#)

Rick,

I thought that you might find this interesting.

Frank

**To:** Allard, David[djallard@state.pa.us]  
**Cc:** Melnic, Joseph[jmelnic@state.pa.us]; Acker, Stephen[sacker@state.pa.us]; Yusko, James (DEP)[jyusko@state.pa.us]; Bookser, Barbara[bbookser@state.pa.us]; Costello, Francis[fcostello@state.pa.us]; Reynolds, Brooke[brreynolds@state.pa.us]  
**From:** Derstine, Terry  
**Sent:** Wed 12/30/2009 8:10:39 PM  
**Importance:** Normal  
**Subject:** RE: DEP - Protechnics mtg agenda - draft  
Well Log Tracer Study Guide[1].pdf

Attached is the Kansas well-logging guidance document. It looks as if page 19 refers to the DIS requirements.

**Terry W. Derstine** | Radiation Protection Program Manager  
Department of Environmental Protection  
Southeast Regional Office  
2 East Main Street | Norristown, PA 19401  
Phone: 484.250.5854 | Fax: 484.250.5951  
[www.depweb.state.pa.us](http://www.depweb.state.pa.us)

-----Original Message-----

**From:** Allard, David  
**Sent:** Tuesday, December 29, 2009 10:15 PM  
**To:** Diamond, Rusty; Yowell, Robert; Melnic, Joseph; Chipppo, John (DEP); Krueger, John; Acker, Stephen; Derstine, Terry; Pryber, Joseph; Yusko, James (DEP); Bookser, Barbara; Barton, Marylou; Perry, Scott; Seighman, Susan M  
**Subject:** DEP - Protechnics mtg agenda - draft

FYI, draft DEP - ProTechnics mtg agenda. Any thing I missed? Pls let me know by 11AM... will print and send final.

Thnx,

Dave

\*\*\*\*\*

David J. Allard, CHP, Director  
PA Dept. of Environmental Protection  
Bureau of Radiation Protection  
P.O. Box 8469  
Harrisburg, PA 17105-8469

Tel: 717-787-2480  
Fax: 717-783-8965

E-mail: [djallard@state.pa.us](mailto:djallard@state.pa.us)  
<http://www.dep.state.pa.us/brp/>

\*\*\*\*\*

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**GUIDE FOR THE PREPARATION OF APPLICATIONS FOR THE  
USE OF RADIOACTIVE MATERIALS IN WELL-LOGGING OPERATIONS**

Kansas Department of Health and Environment  
Bureau of Air and Radiation  
Radiation Control Program  
Forbes Field, Bldg. 283  
Topeka, Kansas 66620

May 1999

## PREFACE

The purpose of this guide is to assist applicants in the preparation of applications for radioactive material licenses or amendments thereto to receive, possess and use radioactive materials for well-logging operations.

The Nuclear Energy Development and Radiation Control Act of 1963 charges the Kansas State Department of Health and Environment with, among other things, responsibility for regulating the receipt, possession, and use of radioactive materials. The Department is authorized to establish by rule, regulations or order such standards and instructions to govern the possession and use of radioactive material as it may deem necessary or desirable to protect health or to minimize danger to life or property.

In the performance of its regulatory functions, the Department has promulgated the Kansas Radiation Protection Regulations. The following parts are pertinent to the subject of this guide:

1. Part 1, "General."
2. Part 3, "Licensing of Sources of Radiation."
3. Part 4, "Standards for Protection Against Radiation."
4. Part 10, "Notices, Instructions and Reports to Workers, Inspections."

These four parts were in effect as of May 1, 1986, and are printed in a regulation booklet entitled "Kansas Radiation Protection Regulations." Current copies of the Department regulations may be obtained from the Kansas Department of Health and Environment, Bureau of Air and Radiation, Radiation Control Program, Forbes Field, Bldg. 283, Topeka, Kansas 66620.

General requirements for issuance of a specific license are contained in Part 3. An application submitted in accordance to these requirements will be evaluated against the regulations of Part 4 - "Standards for Protection Against Radiation." Part 10 includes information as to the rights of workers involved in the use of radioactive materials or radiation producing devices. Part 1 contains definitions of terms used in the other regulations.

The information contained herein is intended to provide illustrative guidance and should not be considered a substitute for the applicant's careful evaluation of the proposed use of radioactive materials, or for assuring that the application correctly and adequately describes the radiation safeguards and procedures to be followed.

Information not specifically discussed herein should be included with the application if the applicant considers it to be an important part of the radiation safety program. Where an application is incomplete, it may be necessary for the Department to request additional information so as to provide reasonable assurance that the applicant has established an adequate radiation safety program. Exchanges of correspondence between the Department and applicant delay final action on the application. This may be avoided by a thorough study of Department regulations and this guide prior to the filing of an application.

## TABLE OF CONTENTS

	<u>Page</u>
Introduction	1
ALARA Concept	2
Filing an Application	3
Contents of Application	4
Appendix A - Radiation Protection Program - Sealed Sources	12
Appendix B - Radiation Protection Program - Tracer Studies	16
Appendix C - Radiation Protection Program - Sealed Source Logs Gas Storage Caverns in Salt or Salt Production Wells	20

## INTRODUCTION

If for any reason you feel confident that an application can be submitted without following this guide, please remember that any necessary information that is not submitted will delay completion of the review of your application.

The purpose of this document is to describe the type and extent of information that the Kansas Radiation Control Program staff needs to evaluate an application for the use of radioactive materials in oil, gas, and mineral well-logging operations. The issuance of this type of license is provided for under Regulation 28-35-179a and 28-35-180a of the Kansas Radiation Protection Regulations. The applicant should carefully study the regulations and this guide and submit all information requested. The well-logging operations covered by this guide are the use of the electronic well-logging containing sealed sources and the use of radioactive materials to conduct tracer studies. This guide is not intended for use in the preparation of applications for use of multicurie tracers in secondary recovery operations or for use of special nuclear material in well-logging operations.

The following Kansas Radiation Protection Regulations apply to well-logging operations and should be used in conjunction with this guide. The applicant should carefully study the regulations. This guide does not substitute for understanding the requirements of the regulations.

Part 1, "General"

Part 3, "Licensing of Sources of Radiation"

Part 4, "Standards for Protection Against Radiation"

Part 10, "Notices, Instructions and Reports to Workers, Inspections"

Please note that this guide is intended only for general guidance in preparation of the license application and should not be considered as a substitute for the applicant's safety evaluation of the proposed use of radioactive material. The applicant must ensure that the application correctly and adequately describes the radiation safety measures and procedures to be followed in order to provide adequate protection.

## AS LOW AS REASONABLY ACHIEVABLE

The applicant should, in addition to complying with the requirements set forth in the Kansas Radiation Protection Regulations, make every reasonable effort to maintain radiation exposures, and radioactive material effluents to unrestricted areas, As Low As Reasonably Achievable (ALARA). Applicants should give consideration to the ALARA philosophy in the development of operating procedures and in the training of personnel using radioactive material.

Some of the items that should be considered to help maintain radiation exposures as low as reasonably achievable are discussed below. The discussion is not intended to be all inclusive, but should be used as a guide in establishing an operating philosophy for maintaining occupational radiation exposures as low as reasonably achievable.

The most important single item is the routine use of survey meters to ensure that radioactive sources have been returned to the storage container after each log operation. The necessity of performing adequate surveys should be emphasized during initial classroom training, on-the-job training, and refresher training of personnel.

The habit of taking advantage of available shielding at temporary job sites also contributes to maintaining low occupational exposures. Again, this practice can and should be addressed during initial training, on-the-job training, and refresher training.

In addition to the practices mentioned above, taking advantage of the full length of the handling devices, using as long a handling tool as practicable and properly storing radioactive material as soon as possible after use can all contribute to maintaining occupational exposures as low as reasonable achievable.

In addition to providing for items as those listed above, the necessity of using the safety equipment that is provided should be emphasized during initial training of radiation workers.

Management can also contribute to maintaining low occupational exposures by spreading the workload among personnel so that the same person does not always receive the assignment that involves the highest exposure. Management should review personnel monitoring records to identify those individuals who have exposures higher than the average and to try to establish and correct the cause.

## FILING AN APPLICATION

A license application for radioactive material should be submitted on Form RH-1, "Application for Radioactive Material License." Since the space on Form RH-1 is usually not sufficient to contain all of the required information, additional sheets should be appended. Each separate sheet or document submitted with the application should be clearly identified by a heading indicating the appropriate item number.

The application should be completed in duplicate. The original should be mailed to the Kansas Department of Health and Environment, Bureau of Air and Radiation, Radiation Control Program, Forbes Field, Bldg. 283, Topeka, Kansas 66620. Since the license will require, as a condition, the licensee follow the statements and representations set forth in the application and any supplements to it, one copy of the application with all attachments should be retained by the applicant. In addition, Regulation 28-35-332a of the Kansas Radiation Protection Regulations requires that this information be posted or otherwise made available to employees of the licensee.

Upon completion, the application Form RH-1 must be signed and dated by an official representative of the applicant, e.g., President, Department or Division Head, or other person authorized to sign official documents to certify that the application contains information that is true and correct to the best of the applicant's knowledge and belief. Applications that are unsigned will be returned for proper signature.

## CONTENTS OF APPLICATION

The following discussion deals with specific items on the application forms. Any section of the application which is not applicable should be so designated. Materials submitted on a separate attachment should be clearly identified.

The information should pertain to the specific activities for which authorization is requested and should be as complete and detailed as possible. Submissions of incomplete information will result in delays because of the correspondence necessary to obtain supplemental information. The submitted information must be sufficient to allow the Department to determine that the proposed equipment, facilities, procedures, and controls are adequate to protect health and minimize danger to life and property.

If applying for amendment to existing license, information previously submitted may be referenced.

Application for a Radioactive Materials License

Item 1. (a) NAME AND STREET ADDRESS OF APPLICANT

Enter the name of the firm applying for the license, the mailing address and telephone number.

Item 1. (b) STREET ADDRESS(ES) AT WHICH RADIOACTIVE MATERIAL WILL BE USED

If the mailing address in Item 1 (a) is a P.O. Box or if different from the location where radioactive material will be primarily stored, then list the street address where the radioactive material will be primarily stored and/or used. Since well-logging operations involve travel away from a home base, indicate that materials will also be used at temporary job sites.

Item 2. DEPARTMENT TO USE RADIOACTIVE MATERIAL

Department or section within company which will use radioactive material (if applicable).

Item 3. PREVIOUS LICENSE NUMBER(S)

Indicate if this is a renewal, amendment, or a new license application. If a renewal or amendment, please indicate the appropriate Kansas License Number.

Item 4. INDIVIDUAL USER(S)

As indicated in the application, give name and titles of individuals who will use or supervise the use of radioactive materials.

Item 5. RADIATION PROTECTION OFFICER

A qualified individual should be designated the responsibility for radiation protection. The individual designated as Radiation Protection or Safety Officer (RSO) is normally an individual user, supervisor, or other individual who will maintain the license and have overall responsibility for the radiation protection program. The applicant should detail the named individual's duties and responsibilities. The RSO is expected to coordinate the safe use of the radioactive material and to ensure compliance with the requirements of the Kansas Radiation Protection Regulations.

Typical duties of the RSO should include the following:

- (a) To ensure that radioactive materials that are possessed or used by the applicant are limited to those materials specified in the license.
- (b) To ensure that the radioactive materials are used only by those individuals authorized by the license.
- (c) To ensure that all users wear personnel monitoring equipment, such as film badges or thermoluminescence dosimeters (TLD). If certain trace studies are performed, the RSO should insure that bioassays are performed on individuals using large quantities of material.

- (d) To ensure that radioactive material is properly secured against unauthorized removal at all times.
- (e) To supervise leak testing of sealed sources and instrument calibrations.
- (f) To develop operating and emergency procedures and to assist in personnel training and orientation in these procedures.
- (g) To conduct a periodic physical inventory to account for all sources of radiation.
- (h) To conduct a program of inspection and maintenance of equipment and containers to assure proper labeling and physical condition.
- (i) To serve as a point of contact and give assistance in case of emergency (well-logging tool damage, theft of radioactive materials, fire, etc.) and to ensure that proper authorities, (for example, local police and Department personnel) are notified promptly in case of an accident or other incident that may involve the release of radioactive material.
- (j) To ensure that the terms and conditions of the license, such as periodic leak tests, are met and that the required records, etc., are periodically reviewed for compliance with Kansas Radiation Protection Regulations, applicant license conditions and applicant submittals to the Department.
- (k) To conduct radiation safety inspections of licensed activities periodically to ensure compliance with the regulations, license conditions and company operating procedures.

The individuals who will use or supervise the use of radioactive materials should be listed, and the qualifications and training of these individuals along with a brief resume of their experience with radioactive materials and formal training should be entered under items 8 and 9 of this application. This should include a copy of a certificate of training for individuals who have attended an authorized training course on radiation principles and safety, if applicable.

Item 6. (a) RADIOACTIVE MATERIAL

(Examples)

- 1. Americium 241/Beryllium
  - 2. Cesium 137
  - 3. Iodine 131
  - 4. Iridium 192
- (b) Chemical and/or physical form and maximum quantity of each chemical and/or physical form you wish to possess at one time.

(Example)

1. Sealed source (XYZ Company, Model 2, 2 curies per source.) 4 sources total.
2. Sealed source (XYZ Company, Model 1, 125 millicuries per source), 2 sources total.
3. NaI (Sodium iodide) (100 millicuries total)
4. Tagged sand (100 millicuries total)

Item 7. DESCRIBE PURPOSE FOR WHICH RADIOACTIVE MATERIAL WILL BE USED

1. To be used for neutron logging at oil and gas wells.
2. To be used for density logging of oil and gas wells.
- 3&4. To be used for tracer studies in oil and gas wells.

Item 8. TRAINING AND EXPERIENCE OF EACH INDIVIDUAL(S) NAMED IN ITEM 4:  
and

Item 9. EXPERIENCE WITH RADIATION

A resume of the training and experience of each person who will supervise the use of radioactive material, who will use radioactive material without supervision, or who will have responsibilities for radiation safety should be submitted. User qualifications should include instructions in radiation safety practices appropriate for activities to be performed, and in company requirements, manuals and standard operating procedures, and radiation regulations, and on-the-job experience actually handling comparable materials. Descriptions of on-the-job training should include the degree of independent use, the types and quantities of materials handled, the company or other employer where the experience was gained, and the length of time over which the training occurred.

In addition, the qualifications of the Radiation Safety Officer should include familiarity with Kansas Radiation Protection Regulations and company requirements and procedures, general training in basic radionuclide handling techniques and safety practices, and on-the-job experience actually handling comparable materials. Descriptions of on-the-job experience should include aspects such as the degree of independent use of radioactive materials, the types and quantities of radioactive materials handled, the types of surveys and other radiation safety duties performed, the name and address of the company or other employer where the experience was gained, and the length of time over which the experience was obtained.

Provide any documentation supporting each individual's training and experience. This should include but not be limited to copies of certifications from approved training or certification programs, and/or corporate training records detailing the type and extent of training and experience.

Item 10. RADIATION DETECTION INSTRUMENTS

A radiation survey instrument is advised for all oil well-logging operations. Each radiation survey instrument should be calibrated at intervals not to exceed one year and after each instrument servicing. E.G., a calibration should be performed if there is reason to suspect damage to the

instrument as a result of an accident (vehicle accident or dropping of meter).

Instrumentation and survey methods used during tracer studies should be sufficiently sensitive to detect the radioisotopes being monitored. A thin-end window (less than 2 mg/cm<sup>2</sup>) GM detector should be used for beta-emitting radioisotope tracer contamination surveys.

The applicant should specify for each type of radiation detection instrument available to the program: The manufacturer's name and model numbers, the number of instruments available, the type of radiation detected (alpha, beta, gamma, and/or neutron), and the sensitivity range in milliroentgens per hour or counts per minute. For instruments to be used for surveys, the instrument should have a capability of measuring a minimum of 0.1 milliroentgens per hour.

The applicant should submit details if the use of a logging tool as a survey instrument is proposed, including the radiation detected and the sensitivity range.

List any other radiation detection instruments available which are not routinely used for health physics surveys or monitoring.

Item 11. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE

Instrument calibration provisions should be detailed in the application. The applicant should state the calibration frequency, and describe the methods and procedures for calibration of survey and monitoring instruments as well as any other instruments and systems used in the radiation protection program such as measuring instruments used for assay, bioassay and/or sealed-source leak-test samples.

In instrument calibration will be performed by an organization other than the applicant, the name of the organization and the calibration frequency should be included in the application.

If the applicant wishes to calibrate instruments, the following information should be submitted:

- (a) The type (radioisotope, manufacturer and model number) and activity of the source to be used and the manufacturer and model number of the device.
- (b) The specific procedures to be used for calibration, including radiation safety procedures to be followed for use of the source. These procedures should include sample calculations to demonstrate an understanding of how to establish the exposure rate at a given distance and sample calculations to demonstrate an understanding of how to correct for source decay.
- (c) The name and pertinent experience of each individual who will perform instrument calibration.

Item 12. FILM BADGES, DOSIMETERS, AND BIOASSAY PROCEDURES USED

The types of personnel monitoring employed should be adequately described. Please specify the type of radiation detected by the film badges and in addition, indicate what company supplies the film

badge service. State at what intervals the film badges will be exchanged and where personnel attach the badges to their clothing.

Film badges, TLD or equivalent personnel monitoring devices are recommended for well-logging operations. Use of these devices with monthly evaluations is an acceptable practice.

If the use of pocket dosimeters is proposed, the applicant should provide the name of the manufacturer, type, model number and range (mR), and frequency of reading and recording.

During tracer studies, bioassays (thyroid checks, urinalysis, etc.) may be required when individuals work with multi-millicurie quantities of iodine-131, depending on the type of work, equipment used, and procedures followed. For example, if an individual handles 50 millicuries of iodine-131 per week in noncontained form, thyroid checks should be made. Such criteria to be used in determining the need for bioassays and the type of bioassays that will be performed should be described. If a commercial bioassay service is to be used, the name and address of the firm should be provided.

### Item 13. FACILITIES AND EQUIPMENT

The applicant should describe the facilities to be used to ensure security and safe storage of materials. Sources of radiation must be stored in a manner which will minimize danger from explosion and/or fire. This provision is considered necessary to reduce the probability of damage to sources of radiation stored in the proximity of explosives frequently used in well-logging operations, and in the event of fire. U.S. Department of Transportation regulations prohibit the storage and transportation of radioactive materials with Class A and other specified explosives.

In describing available facilities, the applicant should submit the information requested in the following; subitem (a) for sealed source programs, and/or subitem (b) for tracer studies programs.

#### (a) Sealed Source Programs

Storage and other facilities. The description of field office, site or vehicular storage containers and facilities should include drawings or sketches. The design dimension, thickness or shielding, type of shielding materials (concrete, steel, lead, etc.), and means for securing sources from unauthorized removal should be described. The expected radiation levels at the surface of containers and accessible areas of storage facilities should be given. Laboratories or field office facilities that are to be maintained as restricted areas for survey instrument and logging tool calibration and repairs should be described.

#### (b) Tracer Operations

1. Facilities and equipment for sample preparation. If tracer samples are not to be purchased in ready-to-use form, laboratory or field office facilities that are to be maintained as controlled areas for sample preparation should be described. Sketches are helpful. Hoods, sinks, trays with absorbent materials, remote handling tools, rubber gloves, etc., that will be available at these laboratory sites should also be described.

2. Storage provisions. The description of storage facilities should include drawings or sketches of the rooms, buildings, pits, - etc., showing shielding materials (concrete, steel, lead, earth, etc.), and means for securing materials from unauthorized removal.

Storage facilities should be designed and materials positioned so that radiation levels do not normally exceed 2 milliroentgens per hour at 18 inches from the exterior surface of the storage facility in order to meet the criteria for an uncontrolled area.

In addition to the permanent storage facility, please provide a detailed description of the precautions that will be taken for storage of material at temporary jobsites. This should include the following:

- (a) A detail of the storage vault or container that is provided on transporting vehicles, including dimensions and shielding information.
- (b) Posting of temporary storage facilities.
- (c) Precautions that will be taken to prevent unauthorized removal of radioactive material from temporary storage facilities.
- (d) Precautions that will be taken during transport. Transport containers shall be physically secured to the transporting vehicle to prevent accidental loss, tampering, or unauthorized removal.

#### Item 14. RADIATION PROTECTION PROGRAM

##### Contamination Surveys

Please describe in detail the procedure used for determining if contamination is present on the logging tool after the completion of each log. The logging tool and well site should be surveyed for contamination when logging tools are removed from the hole and after the source has been removed from the logging tool. The survey may be performed with a survey meter or by energizing the logging tool after the source has been removed. Methods and instruments used in surface contamination surveys should be sufficiently sensitive to detect the nuclides being monitored. Records of contamination surveys shall be maintained for inspection by the Department.

The Kansas Radiation Protection Regulations do not specify limits for surface contamination. Each applicant may propose and justify the levels of removable surface contamination that will be allowable before decontamination must be performed. These limits should be based on the need to avoid transfer of significant amounts of contamination to uncontrolled areas and to maintain exposures as low as is reasonably achievable. Emergency instructions should be established in case contamination is detected. Decontamination procedures should be provided by the applicant.

##### Radiation Area Surveys

Please indicate in detail the methods and occasions for conducting radiation surveys. Detail the procedures employed to assure that personnel exposure is kept to a minimum during source handling. (Refer to Appendices A and/or B of this guide.)

Indicate in detail the procedure employed to assure that the source has been returned to its storage container after use for a log. In addition, indicate what records are maintained for this survey. Please submit the format used for these records.

Describe the procedure, the frequency of the procedure, and the instrument used for performing surveys for the purpose of determining radiation levels at the storage location and what quantities of radioactive material are used. Specify what records will be maintained.

#### Environmental Surveys

Environmental surveys are not applicable with the use of sealed radioactive sources.

Environmental surveys are required if radioactive tracer materials are used. In the event of a spill or a well-head ejection of radioactive material, detailed procedures should be on hand for clean-up, decontamination, and environmental and follow-up surveys. The applicant should submit these procedures with or as a part of their Health Physics Program.

#### Leak Tests

A leak test of sealed radioactive sources used for well-logging is required at six (6) month intervals. If the tests will be performed using a commercial "kit", the name of the kit manufacturer or distributor and the kit model designation must be given. If the applicant intends to perform in-house leak tests without the use of an approved commercial leak-test kit, the following information must be submitted:

- (a) The name and qualifications of each individual who will perform the leak tests.
- (b) Procedures and materials to be used in collecting test samples.
- (c) The type, manufacturer's name, model number, and radiation detection and measurement characteristics of the instrument to be used for assaying the test samples. Determination and periodic verification of the counting efficiency of the instrument should be included in the measurement characteristics of the instrument.
- (d) Instrument calibration procedures, including the name of the manufacturer and model number of each standard source to be used, the step-by-step calibration procedures to be followed, and the name, experience, and training of each individual who will perform the calibrations. In providing information about the standard sources used in the calibrations, applicants should provide information concerning the accuracy of each source used. Each source should be, as a minimum,  $\pm 5\%$  of the stated value and traceable to a primary standard, such as that maintained by the National Institute of Standards and Technology.
- (e) The method, include a sample calculation, used to convert instrument readings to units of activity, e.g., microcuries.

## Health Physics Program

The applicant should describe the radiation protection program that will be implemented to ensure safe use of radioactive materials. The applicant should submit a copy of the operating and emergency procedures that individuals will follow in the use of radioactive material. Appendix A describes the elements of an acceptable radiation protective program for the use of sealed sources. Similarly, Appendix B describes the elements of an acceptable radiation protection program for tracer use of radioactive materials.

### Item 15. WASTE DISPOSAL

The applicant should describe the procedures for disposing of radioactive material.

#### (a) Sealed Sources

Sealed sources containing radioactive material should be returned to the manufacturer or transferred to another licensee authorized to possess the specific quantity and from being transferred. Please note that the loss and subsequent abandonment of a radioactive source down-hole constitutes disposal, and must be indicated in disposal records.

#### (b) Tracer Operations

Wastes from tracer operations such as unused materials, contaminated tissues, gloves, tools, clothing, containers, etc., should be disposed of in accordance with the Kansas Radiation Protection Regulations.

Short, half-life materials may be stored to allow decay to background radiation levels. Containment and security during storage should be provided.

A commonly used method of disposal is transfer to a commercial firm licensed to receive radioactive wastes.

Spills should be cleaned up and, if possible, injected into the well. Any wash water used to clean up or decontaminate equipment should be treated as radioactive waste.

If wash water is discharged into a sanitary sewerage system, the dilution of the activity by the sewerage must be such that the limit established for such disposal by Regulation 28-35-232a Appendix A of the Kansas Radiation Protection Regulations is not exceeded. If you do not have the capability of assaying the wash water for the concentration of contaminant in microcuries per milliliter, the amount of tracer material actually used on the job and the water consumption must be used to determine that limits are not exceeded.

If the wash water is discharged into a holding tank, then the surface of the fluid in the holding tank shall be surveyed after each such decontamination operation, and if any activity above background is noted, the tank shall be posted with a radiation warning

sign alerting everyone concerned of the possible hazard.

Whatever methods of waste disposal are used, records reflecting the final disposition of all radioactive materials must be maintained for inspection by the Department.

Item 16. CERTIFICATE

THE APPLICATION MUST BE SIGNED AND DATED

The application must be signed and dated by an official representative of the applicant, e.g., President, Department or Division Head, or other person authorized to sign official documents to certify that the application contains information that is true and correct to the best of the applicant's knowledge and belief. Applications that are unsigned will be returned for proper signature.

Submit ONLY the Original To:

Kansas Department of Health and Environment  
Bureau of Air and Radiation  
Radiation Control Program  
Forbes Field, Bldg. 283  
Topeka, Kansas 66620

## APPENDIX A

### RADIATION PROTECTION PROGRAM - SEALED SOURCES

Procedures should be established to ensure compliance with the provisions of the Kansas Radiation Protection Regulations, Part 10, "Notices, Instructions and Reports to Workers, Inspections," and Part 4, "Standards for Protection Against Radiation." The procedures should be specific and adequate to provide protection against potential radiation hazards associated with the use of sealed sources in well-logging activities. As a minimum each of the following elements should be described in the application.

#### 1. Survey Program

Kansas Radiation Protection Regulations require that the surveys be made to determine if radiation hazards exist during the use of radioactive material. A survey means an evaluation of the radiation hazards incident to the use, release, disposal, or presence of radioactive materials. When appropriate, this evaluation includes a physical survey of the location of radiation or concentrations of radioactive materials present.

For operations involving sealed sources, a survey program should include evaluation and/or measurements of gamma and/or neutron radiation levels for both storage and use of sealed sources. Surveys for evaluating the adequacy of shielding, dose, rates during leak testing of sources, the need for personnel dosimeter, or changes in operating procedures may be appropriate. Preparation of shipping labels, posting and establishing restricted areas, limiting work times, locating lost or dropped sources, and monitoring during any down-hole recovery operations are activities that will require surveys.

Leak test wipes should be surveyed with a low-range survey meter for gross contamination to determine safe handling before mailing or otherwise forwarding for assay. Such surveys can be made with a thin-end window G-M (less than 2 mg/cm<sup>2</sup>) detector held close to a dry smear sample immediately after it is taken in the work area.

#### 2. Periodic Inventory

Each licensee or registrant should conduct a periodic physical inventory to account for all sources of radiation. Records should be maintained for inspection by the Department, and should include the quantities and kinds of sources of radiation, the location where sources of radiation are assigned, the date of the inventory, and the name of the individual conducting the inventory.

#### 3. Utilization Records

Each licensee should maintain current records, which would be kept available for inspection by the Department showing the following information for each source of radiation:

- (a) make, model number, and a serial number of each source of radiation used;

- (b) the identity of the well-logging supervisor or field unit to whom assigned; and
- (c) locations where used and dates of use.

The word "record" has been used instead of "log" so as not to imply a requirement that a specific log be maintained. Other records normally kept on sources of radiation could be adequate if they contain the information required.

#### 4. Inspection and Maintenance

Each licensee should conduct, at a six-month interval, a program of inspection and maintenance of source holders, logging tools, source handling tools, storage containers, and transport containers to assure proper labeling and physical condition. Records of inspection and maintenance shall be maintained for inspection by the Department.

If any inspection conducted reveals damage to labeling or components critical to radiation safety, the device must be removed from service until repairs have been made.

Each source, source holder, or logging tool containing radioactive material shall bear a durable, legible, and clearly visible marking or label, which has, as a minimum, the standard radiation caution symbol, without the conventional color requirement, as required by Part 4 of the Kansas Radiation Protection Regulations. This labeling should be on the smallest component transported as a separate piece of equipment.

#### 5. Records Management Program

Provisions for maintenance and management review of utilization records and records of surveys, periodic inventories, personnel exposures, leak tests, and employee training should be established. Job log sheets or other standard forms that facilitate recordkeeping of field operations should be submitted. Procedures for ordering or shipping materials, for notification or responsible persons upon receipt should also be established.

#### 6. Methods for Establishing, Posting, and Controlling Access to Controlled Areas

Procedures for posting and controlling access to work areas that comply with the Kansas Radiation Protection Regulations, Part 4 should be established. When radiation levels exceeding 2 milliroentgens in any one hour are created, methods for controlling access to operational areas should be established. All unnecessary personnel should be restricted from the areas. During each logging operation, the logging supervisor or other designated employee shall maintain direct surveillance of the operation to protect against unauthorized and/or unnecessary entry into a controlled area, as defined in Part 1 of the Kansas Radiation Protection Regulations. A controlled area usually exists for only a relatively short period of time, i.e., during the loading of the tool and insertion into the hole. "Caution - Radiation Area" signs should be posted when radiation levels exceed 5 milliroentgens in any one hour. Physical surveys or established distances from sources may be used to establish radiation areas and need for personnel monitoring in a particular area.

## 7. Transportation of Radioactive Material

The transport of radioactive materials over public roads by Licensees is subject to the regulations of the Department of Transportation (DOT). Regulation 28-35-195a of the Kansas Radiation Protection Regulations requires that DOT regulations be followed for transport of radioactive materials when transport is intrastate. The DOT regulations cover, among other things, radiation levels at package surfaces (not to exceed 10 mR/hr at one meter from any surface and 200 mR/hr at the surface of containers) contents, construction, and labeling of packages; permissible radiation levels around a vehicle, placarding of vehicles; and accident reporting.

Procedures should be established to assure safe transport and should include at least the following: (a) method for securing radioactive materials in vehicles to prevent shifting or unauthorized removal during transport, (b) a survey program including determination that radiation levels in the passenger compartment do not exceed 2 mR/hr, and (c) placarding vehicles on all four sides with "Radioactive" when "Radioactive Yellow-III" labeled packages are being transported as required by regulations of the Department of Transportation (49 CFR 172.504).

When vehicles are used for temporary storage, the requirements of the Kansas Radiation Protection Regulations, Part 4 are applicable. Security from unauthorized removal, posting with "Caution - Radioactive Material," and radiation levels (verified by surveys) not exceeding DOT limits are acceptable practices.

## 8. Operating and Emergency Procedures

Written standard operating and emergency procedures for operating personnel should be developed for the specific operations that will be performed. The procedures may be incorporated into check-off type sheets or other forms used onsite to keep records. Copies should be supplied to all employees who are responsible for job site use of materials. Management should institute review procedures to assure that the established radiation safety program is followed.

Procedures for operations with sealed sources should include at least the following:

- (a) Storage precautions. Each source of radiation must be provided with a storage and/or transport container. The container shall be provided with a lock, or tamper seal for calibration sources, to prevent unauthorized removal of, or exposure to, the source of radiation. Failure to lock transport and storage containers is a common cause of unnecessary exposure to personnel and/or the loss or theft of these sources. Tamper seals may be used instead of locks for calibration sources. The requirement that transport and/or storage containers be locked should reduce risks without imposing undue restrictions.
- (b) Procedures for transporting sources to job and well sites and for storing sources in transit and onsite. Transport containers should be physically secured to the transporting vehicle to prevent accidental loss, tampering or unauthorized removal. Surveys of radiation levels around vehicles and storage sites, securing and positioning sources and

containers, inspection of equipment, posting, and records to be kept should be covered.

- (c) Precautionary procedures for loading the logging tool, placing the tool in the well, removing the tool from the well and unloading the source. The use of handling tools, logging tool orientation, establishing, posting, and controlling access to controlled areas; minimum times and distances to be observed during handling of sources; and instructions for dealing with equipment malfunction including lost or dropped sources should be covered.
- (d) The number, type, and length of handling tools. The company must provide and require the use of tools that will assure remote handling of sealed sources other than low-activity calibration sources. Drawings or sketches showing general design and provisions for attaching to or gripping sources should be submitted. **WELL-LOGGING SOURCES MUST NEVER BE HANDLED DIRECTLY BY HAND.**
- (e) Personnel monitoring provisions. Instructions covering the occasions for using of personnel monitoring devices, the location on the body where the devices are to be worn, frequency at which they should be changed, records to be kept, and care of devices should be covered. Any personnel monitoring device, such as film or TLD badges, should be assigned to a specific person; i.e., these devices are not to be worn by different individuals during the period of issuance by the monitoring service company.
- (f) Survey program. The occasions for surveys, frequency and methods, instrument to be used, and records to be kept should be covered.
- (g) Precautionary procedures to be followed to assure the recovery of sealed sources in shallow, uncased holes. The procedures should include the means for preventing possible contamination of potable aquifers during logging operations.
- (h) Procedures to be followed in the event a source is lost down hole. The well-logging company should not perform wireline service operations with a sealed source unless, prior to commencement of the operation, they have a written agreement with the well operator, well owner, drilling contractor, or landowner that in the event a sealed source is lodged down hole, a reasonable effort at recovery will be made. Instructions should cover notification of owners, management, and the Kansas Bureau of Air and Radiation, Radiation Control Program. Prevention of damage to the source during retrieval efforts, monitoring at the surface for the presence of radioactive contamination with a radiation survey instrument or logging tool during logging tool recovery operations, notification of the Bureau immediately by telephone if radioactive contamination is detected at the surface or if the source appears to be damaged, provisions for controlling exposures, personnel monitoring, provisions for permanently sealing the source in place, the setting of a whipstock or other deflection device, and permanently marking the well when the source cannot be recovered should be included.
- (i) Emergency procedures. These instructions should cover procedures to follow in case of vehicle accidents, fire or explosion, ruptured sources, or similar emergency situations. The instructions should describe immediate actions to be taken to prevent further contamination of personnel, equipment, and facilities and evacuation of the area. The

instructions should specifically state the names and telephone number of responsible persons to be notified in case of an emergency (owners, management, and the Department). The Kansas Radiation Protection Regulations, Regulation 28-35-229a, contains a number of specific requirements for the occasions and methods for reporting incidents.

9. Sealed Source Leak Testing

Well-logging sealed sources (and any sealed calibration sources) must be tested for leakage and contamination at intervals not to exceed six (6) months. When the supplier does not certify that such tests have been performed within six months, the sources should be used until tested.

The test must be capable of detecting the presence of 0.005 microcurie of removable contamination. The test sample should be taken from the source or from accessible surfaces of the device in which the sealed source is mounted or stored where contamination is likely if the source is leaking. Records of leak test results must be maintained for inspection by the Department. Leaking sources must be withdrawn from use.

If a test reveals the presence of 0.005 microcurie or more of removable contamination, a report shall be filed with the Department in accordance with the Kansas Radiation Protection Regulations.

## APPENDIX B

### RADIATION PROTECTION PROGRAM - TRACER STUDIES

Procedures should be established to ensure compliance with the provisions of the Kansas Radiation Protection Regulations, Part 10, "Notices, Instructions and Reports to Workers, Inspections," and Part 4, "Standards for Protection Against Radiation." The procedures should be specific and adequate to provide protection against potential radiation hazards associated with the use of radioactive materials during tracer studies in well-logging activities. As a minimum, each of the following elements should be described in the application.

#### 1. Survey Program

Kansas Radiation Protection Regulations require that surveys be made to determine if radiation hazards exist during the use of radioactive material. A survey means an evaluation of the radiation hazards incident to the use, release, disposal, or presence of radioactive materials. When appropriate, this evaluation includes a physical survey of the location of radiation or concentration of radioactive materials present.

Radiation surveys must be made and recorded at the jobsite or well-head for each tracer operation. These surveys shall include measurements of radiation levels before and after the operation. Survey records should be maintained for inspection by the Department.

For operations involving tracer use of radioactive material, a survey program should include monitoring, with an appropriate survey meter, of personnel (hands, feet, clothing) and all tools, equipment, and facilities at job sites for contamination and effectiveness of clean up. Such surveys can be made with a thin-end window (less than 2 mg/cm<sup>2</sup>) GM detector. Procedures should be established to minimize the chance for inadvertent spread of contamination by the contamination survey or other activities to be performed, and to determine which areas require greater attention during decontamination. Reasonable efforts should be made to remove all residual contamination. Acceptable levels of residual contamination should be established.

Short half-life wastes that are stored to allow physical decay to background levels should be surveyed with an appropriate instrument before discarding with normal trash. Any radioactive labeling should be defaced or destroyed before disposal. If this method of disposal is used, records must be maintained to meet the requirements of Regulation 28-35-137 of the Kansas Radiation Protection Regulations.

Operations with tracers may require surveys to evaluate the adequacy of storage facility shielding to determine if restricted areas must be established and posted.

Part 4 of the Kansas Radiation Protection Regulations specifies radiation levels for unrestricted areas. Any accessible external surface of the storage facility or enclosure must meet the requirements for an unrestricted area.

#### 2. Periodic Inventory

Each licensee or registrant should conduct a periodic physical inventory to account for all sources of radiation. Records must be maintained for inspection by the Department, and should include the quantities and kinds of sources of radiation, the location where sources of radiation are assigned, the date of the inventory, and the name of the individual conducting the inventory.

### 3. Utilization Records

Each licensee should maintain current records, which would be kept available for inspection by the Department, showing the following information for each source of radiation.

- (a) a description of each source of radiation used;
- (b) the identity of the well-logging supervisor or field unit to whom assigned;
- (c) locations where used and dates of use; and
- (d) in case of tracer materials and radioactive markers, the utilization records should indicate the radionuclide and activity used in a particular well.

The word "record" has been used instead of "log" so as not to imply a requirement that a specific log be maintained. Other records normally kept on sources of radiation would appear to be adequate if they contain the information required.

### 4. Inspection and Maintenance

Each licensee should conduct, at a six month interval, a program of inspection and maintenance of logging tools, source handling tools, storage containers, transport containers, and injection tools to assure proper labeling and physical condition. Records of inspection and maintenance shall be maintained for inspection by the Department.

If any inspection conducted reveals damage to labeling or components critical to radiation safety, the device must be removed from service until repairs have been made.

### 5. Records Management Program

Provisions for maintenance and management review of utilization logs and records of surveys, inventories, personnel exposures, leak tests, and employee training should be established. Job log sheets or other standard forms would facilitate keeping records on field operations. Procedures for ordering or shipping materials, for receipt of materials, and for notification of responsible persons upon receipt should also be established.

Management control of operations with tracers should include procedures to avoid injection into fresh water zones and to evaluate expected concentrations of radioactivity

in water, oil, gas, or air released for uncontrolled use.

6. Methods for Establishing, Posting, and Controlling Access to Controlled Areas

The applicant should establish and describe procedures for posting and controlling access to all work areas including injection sample preparation area and field sites to comply with Kansas Radiation Protection Regulations, Part 4. When radiation levels are created that exceed 2 mR in any one hour the applicant should establish and describe methods for controlling access to all operational areas. All unnecessary personnel should be restricted from the areas. During each logging operation, the logging supervisor or other designated employee should maintain direct surveillance of the operation to protect against unauthorized and/or unnecessary entry into a controlled area, as defined by Part 1 of the Kansas Radiation Protection Regulations. A controlled area usually exists for only a relatively short period of time, i.e., during the tracer sample preparation and injection into the hole. "Caution - Radiation Area" signs should be posted when radiation levels will exceed 5 mR/hr.

7. Transportation of Radioactive Material

The transport of radioactive materials over public roads by licensees is subject to regulations of the Department of Transportation. Regulation 28-35-195 of the Kansas Radiation Protection Regulations requires that DOT regulations be followed for transport of radioactive materials when the transport is intrastate. The DOT regulations cover, among other things, radiation levels at package surfaces (not to exceed 10 mR/hr at one meter from any surface and 200 mR/hr at the surface of containers); contents, construction, and labeling of packages; placarding of vehicles; and accident reporting.

Procedures established to assure safe transport should include at least the following: (a) methods for securing radioactive materials in vehicles to prevent shifting or unauthorized removal from transport, (b) a survey program including determination that radiation levels in the passenger compartment do not exceed 2 mR/hr, and (c) placarding vehicles on all four sides with "Radioactive" when "Radioactive Yellow-III" labeled packages are being transported as required by regulations of the Department of Transportation (49 CRF 172.504).

When vehicles are used for temporary storage, the requirements in the Kansas Radiation Protection Regulations, Part 4 are applicable. Security for unauthorized removal, posting with "Caution - Radioactive Material," and radiation levels (verified by surveys) not exceeding DOT limits are acceptable practices.

8. Operating and Emergency Procedures

Written standard operating procedures for operating personnel should be developed for the specific operations that will be performed. The procedures may be incorporated into check-off type sheets or other forms used onsite to keep records. Copies should be supplied to all employees who are responsible for job site use of materials and should be submitted as part of the application. Management should institute review procedures to assure that the established radiation safety program is followed.

Instruction covering tracer operations should be specific for each different type of study and should include at least the following:

- (a) Procedures for handling samples, including sample preparation, and injection methods. The instructions should also include methods for establishing, posting, and controlling access to the area; prevention of contamination of site, equipment, and personnel; and tools, protective clothing and equipment to be used in performing the tracer study.
- (b) General safety equipment. Protective gloves and other appropriate protective clothing and equipment shall be used by all personnel handling radioactive tracer material. Precautions shall be taken to avoid ingestion or inhalation of radioactive material. A description of protective clothing (such as rubber gloves, coveralls, respirators, and face shields), auxiliary shielding, absorbent materials, injection equipment, secondary containers, plastic bags for storing contaminated clothing, tissue, handling tools, etc., that will be available at well sites should be submitted.
- (c) Survey programs. The required frequency and methods of surveys, instruments to be used, records to be kept and contamination limits to be observed should be covered.
- (d) Decontamination procedures. These procedures should cover cleaning up spills, using protective clothing and equipment, and decontaminating personnel and equipment, including acceptable contamination limits.
- (e) Procedures to be used for picking up, receiving, and opening packages containing radioactive material. Provisions should be made such that the requirements of Regulation 28-35-221a of the Kansas Radiation Protection Regulations are met.
- (f) Waste disposal procedures. The disposal methods to be used, surveys to be made, and records to be kept should be included in the procedures.
- (g) Emergency procedures. Procedures to be followed in case of vehicle accidents, fire or explosion, personnel contamination or over-exposures, or similar emergency situations should be explained. These instructions should describe immediate action to be taken to prevent contamination of work areas and personnel, the need for restricting and/or evacuating the area, and procedures for containment of the spills. The instructions should specifically state the names and telephone numbers of responsible persons (owners, management, and the Department) to be notified in case of an emergency. Kansas Radiation Protection Regulations, Regulation 28-35-229a contains a number of specific requirements for the occasions and methods for report incidents.

## APPENDIX C

### RADIATION PROTECTION PROGRAM SEALED SOURCE LOGS IN GAS STORAGE CAVERNS IN SALT OR SALT PRODUCTION WELLS

Procedures for this use should include:

Type of sources:

1. The use of sealed sources in these facilities should be limited to the smallest, shortest half-life beta gamma sources available. The use of PuBe, RaBe or AmBe neutron sources will not be authorized.
2. The procedures should include a notification of the agency before beginning work in a field, storage or production facility. Such notice should include:
  - (a) Location of the field.
  - (b) Use (storage or salt production).
  - (c) Sealed sources to be used (isotope, size in curies)
  - (d) Procedure to be followed to insure the tool is not lost in cavern.
  - (e) Written condition in the contract with field owner agreeing to the plugging and stabilizing of all connected caverns if a source is lost or abandoned.



# pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
RADIATION PROTECTION PROGRAM

May 7, 2014

PRIORITY MAIL DELIVERY CONFIRMATION NO. [REDACTED]

[REDACTED]  
ProTechnics Division of Cote Laboratories, LP  
[REDACTED]

Re: License No. [REDACTED]

Dear [REDACTED]

Enclosed is an executed copy of the Addendum to Paragraphs 3 and 11 of the Consent Order and Agreement dated November 2, 2010. If you have any questions, please call me at 717.705.4898.

Sincerely,

Lisa A. Forney, MPE  
Compliance Specialist  
Radiation Protection Program

Enclosure

cc: [REDACTED]

ADDENDUM TO PARAGRAPHS 3 AND 11 OF THE CONSENT ORDER AND  
AGREEMENT DATED NOVEMBER 2, 2010 BY AND BETWEEN THE  
COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL  
PROTECTION ("DEPARTMENT") AND PROTECHNICS DIVISION OF CORE  
LABORATORIES, LP ("PROTECHNICS")

3. Corrective Actions.

- a. ProTechnics shall provide a copy of the revised "Instructions for Handling Well Returns Containing ProTechnics [REDACTED] Acknowledgement Form" ("Acknowledgement Form") in Attachment A to each Well Owner/Operator who contracts ProTechnics to conduct a radioactive tracer study within Pennsylvania. The revised Acknowledgement Form shall supersede the use and submission of the Well Site Agreement included in the Consent Order and Agreement dated November 2, 2010.
- b. ProTechnics and the Well Owner/Operator shall sign and complete an Acknowledgement Form for each well that is traced in Pennsylvania. Within five business days of completing the form, ProTechnics shall submit a copy to the Department.
- i. Within 14 days of the execution of this Addendum, ProTechnics shall submit a license amendment request to the Department to amend License [REDACTED] to include the submission of the completed Acknowledgement Form within five business days of signature and completion.

11. Correspondence with ProTechnics. All correspondence with ProTechnics shall be addressed to:

[REDACTED]  
ProTechnics, a Division of Core Laboratories, L.P.  
[REDACTED]

And

General Counsel  
[REDACTED]

ProTechnics shall notify the Department whenever there is a change in its contact person's name, title or address. Service of any notice or any legal process for any purpose under this COA, including its enforcement, may be made by mailing a copy by first class mail to the above address.

IN WITNESS WHEREOF, the parties have caused the COA to be executed by their duly authorized representatives. The undersigned representatives of ProTechnics certify, under penalty of law, as provided by 18 Pa. C.S. § 4904, that they are authorized to execute this COA on behalf of ProTechnics, that ProTechnics consents to the entry of this COA as an ORDER of the Department,

that ProTechnics hereby knowingly waives any right to a hearing under the statutes referenced in this COA, and that ProTechnics knowingly waives their right to appeal this COA and the foregoing Findings, which rights may be available under Section 4 of the Environmental Hearing Board Act, (the Act of July 13, 1988, P.L. 530, No. 1988-94, 35 P.S. § 7514; the Administrative Agency Law, 2 Pa. C.S. § 1039a) and Chapters 5A and 7A, or any other provision of law.

FOR PROTECHNICS DIVISION OF  
CORE LABORATORIES, LP:



President

5/1/14  
Date



5-1-14  
Date

FOR THE COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL  
PROTECTION:

[Signature]  
Robert M. Zaccano  
Radiation Protection  
Program  
Date

[Signature] 5/6/14  
Stevan Kip Portman  
Assistant Counsel  
Date

**Attachment A**

**Instructions for Handling Well Returns Containing ProTechnics  
[REDACTED] Acknowledgement Form**

In some flowback situations, special handling of flowback materials may be required.

**ProTechnics must be notified within 24 hours of well returns containing solids. ProTechnics will then survey the solids for elevated gamma readings. If a ProTechnics survey finds that the level requires special disposal, the Well Owner/Operator shall consult with ProTechnics prior to disposing of the waste.**

Please indicate the pre-decided disposal option that will be utilized in the event of well returns requiring special handling:

- Option 1: On-site earthen barrier for decay *in situ* for 3 years.
- Option 2: Temporary onsite tank storage, then shipment to a licensed disposal facility.

Well Owner/Operator Name	Well Name
	Well Permit Number

Well Owner/Operator Address	Storage Pit Location (Approximate GPS Coordinates - Option 1 only)
Owner/Operator Representative (Printed Name & Job Title)	ProTechnics Site Supervisor (Printed Name)

Owner/Operator Representative (Signature)	Date	ProTechnics Site Supervisor (Signature)	Date
--	------	--	------

Owner/Operator Declined to Sign Acknowledgement Form

**Only complete this section following a flowback incident**

Date of Flowback Event: _____	Date Elevated Level Confirmed: _____
Date ProTechnics was Notified: _____	Date of Notification to PaDEP: _____

## Instructions for Handling Well Returns Containing ProTechnics

- [REDACTED]
1. The Well Owner/Operator shall notify ProTechnics [REDACTED] within 24 hours of Well Returns containing any solid materials. ProTechnics shall survey such returns for the presence of radioactive tracer material within 2 business days of notification from the Well Owner/Operator.
  2. All Well Returns containing radioactive tracer material shall be diverted to the on-site earthen barrier. If the Well Returns are first diverted to on-site tanks, the tanks must be surveyed prior to removal from the well site. ProTechnics shall survey all equipment, ground cover tarps, holding tanks, or anything else that may have come into contact with the Well Returns within 2 days after notification from the Well Owner/Operator and prior to removal from the well site. The Well Owner/Operator shall notify ProTechnics within 24 hours of any such contamination.
  3. The earthen barrier will be covered with 2 feet of stabilized clean soil and stabilized in accordance with 25 Pa. Code § 102.1 *et seq.*, the Site's approved Erosion and Sediment Control Plan, 25 Pa. Code § 78.1 *et seq.*, and the respective Oil and Gas Permit.
  4. Upon establishment, the earthen barrier shall be identified by GPS coordinates. Access to the area will be restricted by durable fence.
  5. The earthen barrier will be posted with signage: Caution – Radioactive material - Keep Out - Do Not Dig in This Area before Date: \_\_\_\_\_ - Notify ProTechnics [REDACTED] [REDACTED] for additional information.
  6. This signed acknowledgement form will be kept on file by ProTechnics and a copy sent the PA DEP for incorporation into ProTechnics Radioactive Materials License [REDACTED] for the well location indicated on page 1 of the acknowledgement form.
  7. Both the access control fence and the earthen barrier integrity must be maintained by the Well Owner/Operator for 3 years from the date of the tracer material injection or Date: \_\_\_\_\_. All associated signage and fences shall be removed within 30 days of the date listed in paragraphs 5 and 7.
  8. Any failure by the Well Owner/Operator to promptly report solid material Well Returns that contain radioactive materials or to control such radioactive materials or to control such radioactive materials onsite may subject both ProTechnics and the Well Owner/Operator to regulatory enforcement by PA DEP.

ProTechnics reserves the right to supervise any necessary decontamination activities should any actions occur that result in the loss of integrity of the earthen barrier.



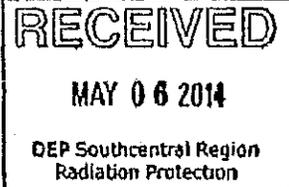
ProTechnics Division

www.corelab.com

Vice President

May 5, 2014

Pennsylvania  
Department of Environmental Protection  
Radiation Protection Program  
Southcentral Regional Office  
909 Elmerton Avenue  
Harrisburg, PA 170010-8200



Re: License No. [REDACTED]  
November 2, 2010 Consent Order and Agreement

Ms. Forney,

Enclosed please find three original copies of the Addendum to the Consent Order and Agreement signed by [REDACTED]

Please return an executed copy back to us.

If you have any questions please feel free to call [REDACTED] at the above number.

Thank you,



Enclosure



# pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
RADIATION PROTECTION PROGRAM

November 26, 2013

## NOTICE OF VIOLATION

PRIORITY MAIL DELIVERY CONFIRMATION NO. [REDACTED]

[REDACTED]  
ProTechnics, a Division of Core Laboratories, L.P.  
[REDACTED]

Re: [REDACTED]

EFACTS Inspection ID No. [REDACTED]  
EFACTS Enforcement ID No. [REDACTED]  
Taylor Borough, Lackawanna County

Dear [REDACTED]

In response to a report of unidentified radioactive material alarming the radiation monitor at Alliance Landfill located at 398 South Keyser Avenue, Taylor Borough, Lackawanna County, Pennsylvania, Mr. Richard Croll conducted inspections on September 13, 2013 (Inspection ID [REDACTED]). A subsequent records review was conducted on November 14, 2013 (Inspection ID [REDACTED]). Based upon the inspection findings, violations of the Department of Environmental Protection's (Department) rules and regulations were revealed. The regulations are available at [www.dep.state.pa.us/bcp](http://www.dep.state.pa.us/bcp).

The following violations were observed:

1. 25 Pa. Code § 219.5(a) incorporates 10 CFR § 20.1802, which states, "The licensee shall control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage."

ProTechnics, a Division of Core Laboratories, L.P. (ProTechnics) failed to maintain control and constant surveillance of licensed material. Specifically, ProTechnics was hired by [REDACTED] to inject licensed material into gas wells at the [REDACTED] in [REDACTED] to evaluate the effectiveness of hydraulic fracturing. Following the injection, licensed material returned to the surface in a flow back incident. Flow back waste materials, drill-cuttings and municipal solid waste were placed into a roll-off container and subsequently transported to Alliance Landfill on September 9, 2013 for disposal. Upon entering the scale at Alliance Landfill, radiation monitors alarmed. The load was isolated, surveyed and traced back to activities at the [REDACTED]

2. 25 Pa. Code § 219.5(u) incorporates 10 CFR § 20.1902(e), which states, "The licensee shall post each area or room in which there is used or stored an amount of licensed material exceeding 10 times the quantity of such material specified in appendix C to part 20 with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, RADIOACTIVE MATERIAL(S)" or "DANGER, RADIOACTIVE MATERIAL(S)."

Southcentral Regional Office | 909 Elmerton Avenue | Harrisburg, PA 17110-8200

717.705.4703 | Fax 717.705.4890

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[www.depweb.state.pa.us](http://www.depweb.state.pa.us)

November 26, 2013

ProTechnics failed to post a conspicuous sign bearing the radiation symbol and the words "CAUTION, RADIOACTIVE MATERIAL(S)" or "DANGER, RADIOACTIVE MATERIAL(S)" on roll-off containers located at [REDACTED] and the [REDACTED] in [REDACTED]. Specifically, the [REDACTED] revealed a roll-off container being filled directly from the flow back auger, which was not posted as required. A subsequent inspection of the [REDACTED] revealed a partially filled roll-off container of drill cuttings that was not properly posted.

3. 35. P.S. 7110.309(b) states, in part, "It shall be the duty of any person to comply with any order issued under this subsection." Specifically, Paragraph 3.b. of the Consent Order and Agreement dated November 2, 2013 (COA) states, "ProTechnics and the Well Owner/Operator shall sign and complete a Radioactive Tracer Well Site Agreement for each well that is traced in Pennsylvania. Within five business days of completing the form, ProTechnics shall submit a copy to the Department."

ProTechnics failed to provide a signed copy of the well-site agreement within 5 days of completing the form for each site where radioactive material was utilized within Pennsylvania. On September 25, 2013, the Department requested copies of all Radioactive Tracer Well Site Agreement forms completed since the execution of the COA. In correspondence dated August 26, 2013, ProTechnics indicated that licensed material was injected at five sites during the period and that proper notification had been provided. However, proper notification was not received by the parties indicated in the COA. Furthermore, the April 7, 2013 Radioactive Tracer Well Site Agreement was not completed in its entirety and Pennsylvania Radioactive Materials License Number [REDACTED] was listed in the place of the Oil and Gas Well Permit Number.

4. 35. P.S. 7110.309(b) states, in part, "It shall be the duty of any person to comply with any order issued under this subsection." Specifically, Paragraph 3.f. of the COA states, "Upon confirmation that licensed material has returned to the surface, ProTechnics shall immediately notify the Department in accordance with Paragraph 10 of this COA. This shall apply to all well returns / flow back containing licensed radioactive material regardless if it is controlled or uncontrolled and regardless of the quantity of licensed material that reaches the surface."

ProTechnics failed to immediately notify the Department upon confirmation that licensed material had returned to the surface at the [REDACTED]

5. 35. P.S. 7110.309(b) states, in part, "It shall be the duty of any person to comply with any order issued under this subsection." Specifically, Paragraph 3.g. of the COA states, "ProTechnics shall conduct and document a complete survey and sketch of the area surrounding the well returns / flow back containing licensed material in accordance with Section 7.1.4 of the Emergency and Operating Procedures included in License PA-1400, Condition 14.A. ProTechnics shall provide copies of the completed survey form to the Department upon request."

ProTechnics failed to properly conduct and document a complete survey and sketch of the area surrounding the well return/flowback containing licensed materials at the [REDACTED]

November 26, 2013

6. 35 P.S. 7110.309(b) states, in part, "It shall be the duty of any person to comply with any order issued under this subsection." Specifically, Paragraph 3.h. of the COA states, "ProTechnics shall submit a report, which summarizes the events that caused licensed radioactive material to flow back and all actions taken following the incident. The report shall be in accordance with the terms of [REDACTED] Condition [REDACTED] and shall be submitted within 30 days of the flow back of licensed material."

ProTechnics failed to submit a 30 day report to summarize the events that caused licensed radioactive material to flow back to the surface as well as all actions taken following to the incident at the [REDACTED]

You are hereby notified of the existence of violations as well as the need to provide prompt corrective action. Failure to correct the violations may result in legal proceedings under the Radiation Protection Act (Act). Under the Act, each day of violation is considered a distinct and separate offense and will be handled accordingly.

The violations described above constitute a public nuisance under Section 309 of the Act, 35 P.S. § 7110.309, and may subject you, under Section 308(e) of the Act, 35 P.S. § 7110.308(e), to civil penalty liability of up to TWENTY-FIVE THOUSAND DOLLARS (\$25,000.00) for each violation plus up to FIVE THOUSAND DOLLARS (\$5,000.00) per day for each continuing day of violation.

You are requested to attend an informal administrative conference with Department representatives on Tuesday, December 17, 2013 at 10:00 AM, at the Southcentral Regional Office, 909 Elmerton Avenue, Harrisburg, PA 17110. Options for settlement of the above-described violations will be discussed at that time. Finally, we recommend that you correct any outstanding violations prior to this conference and that you bring documentation of the corrective actions to the conference.

Please notify this office by December 4, 2013 to confirm your attendance at the conference described above. Also, please inform us if your attorney will be attending the meeting.

This Notice of Violation is neither an order nor any other final action of the Department. It neither imposes nor waives any enforcement action available to the Department under any of its statutes.

Thank you for your cooperation. If you have any questions, please feel free to contact me at 717.705.4898.

Sincerely,



Lisa A. Forney, MPE  
Compliance Specialist  
Radiation Protection Program

cc: General Counsel  
[REDACTED]

November 26, 2013

[REDACTED]  
bcc: SCRO- RP File [REDACTED] File Via L. Forney  
CO File – filed electronically through L. Forney  
SCRO Enforcement Binder  
J. DeMan  
R. Zaccano  
R. Croll - SERO  
J.N. Noll - SERO  
T. Derstine - SERO  
J. Chippo – BRP  
J. Melnic - BRP  
S.K. Portman  
L. Langer  
R. Conrad

General Counsel

[REDACTED]

[REDACTED]

[REDACTED]

**To:** Costello, Francis[fcostello@pa.gov]  
**From:** Croll, Richard  
**Sent:** Tue 9/17/2013 5:52:53 PM  
**Importance:** Normal  
**Subject:** RE: Protechnics

Thanks, we do allow ProTechnics to store radioactivity on a well pad for decay but the details are in a 2010 COA issued by SCRO details are not in the license. I'm told the COA takes priority but I don't think you need to go to the NRC licensing school to write a COA. How can that be?

-----Original Message-----

**From:** Costello, Francis  
**Sent:** Tuesday, September 17, 2013 1:48 PM  
**To:** Croll, Richard  
**Subject:** Protechnics

Rick,

I thought that you might find this interesting.

Frank

**To:** Noll, Jennifer[jenoll@pa.gov]  
**From:** Croll, Richard  
**Sent:** Wed 1/15/2014 11:56:50 AM  
**Importance:** Normal  
**Subject:** RE: Protechnics

sure

**From:** Noll, Jennifer  
**Sent:** Monday, January 13, 2014 12:04 PM  
**To:** Croll, Richard  
**Subject:** Protechnics

Lisa has asked that we closeout the violations in efacts for your Protechnics inspection. Could you take care of this?

Thanks!

**J. Niki Noll** | Radiation Protection Program Supervisor

Department of Environmental Protection | Southeast Regional Office

2 E. Main Street | Norristown, PA 19401

Phone: 484.250.5846 | Fax: 484.250.5951

[www.depweb.state.pa.us](http://www.depweb.state.pa.us)



February 8, 2016

VIA EMAIL

Kendra L. Smith, Esquire  
Smith Butz, LLC  
125 Technology Drive, Suite 202, Bailey Center 1  
Canonsburg, PA 15317  
[klsmith@smithbutzlaw.com](mailto:klsmith@smithbutzlaw.com)

Re: Right-to-Know Request Numbers: 1400-16-071 (CO), 4100-16-0027 (SE), 4200-16-023 (NE), 4300-16-019 (SC), 4400-16-010 (NC), 4500-16-018 (SW), 4600-16-029 (NW)

Dear Attorney Smith:

On February 1, 2016, the open-records officer of the Department of Environmental Protection (Department) received your written request for records and assigned it the tracking numbers listed above. The subject of your request requires its assignment to the Department's Central Office (CO) and the Southeast (SE), Northeast (NE), Southcentral (SC), Northcentral (NC), Southwest (SW), and Northwest (NW) Regional Offices. Each office has its own tracking number and may respond separately to your request for records in their possession. For purposes of this letter, the Department's CO is initially responding on behalf of all assigned offices under the Pennsylvania Right-to-Know Law, 65 P.S. §§ 67.101-67.3104 (RTKL).

You requested records for Core Laboratories d/b/a Protechnics, Division of Core Laboratories, LP located at the Yeager Drill Site, McAdams Road, Washington, Pennsylvania. You are seeking:

- Any and all approvals, permits, licenses/licensures, applications for permits and/or licenses, reciprocity letters, reciprocity licenses, reciprocity agreements and/or reciprocity arrangements, including, but not limited to all licenses issued by the Department to Core Laboratories d/b/a Protechnics, Division of Core Laboratories, LP (hereinafter, "Protechnics") for use, storage and possession of radioactive materials and/or other licensed material. Additionally, this request seeks any and all investigation reports, Notices of Violation(s), Consent Order and Agreement(s) issued to Protechnics by the Department and/or between Protechnics and the Department for any and all work or services performed by Protechnics at any natural gas well site in the Commonwealth of Pennsylvania. Included in this request is a request for copies of all Notices of Violation issued by the Department to Protechnics, including but not limited to Notices of Violation dated June 15, 2010, January 28, 2010, November 26, 2013, September 13, 2013 and October 14, 2013, Violation Numbers 677913, 677915, 677914, 682834, 682833, 682829, 682835 and all corresponding inspection reports, field notes and other related writings. Further, this request seeks any and all Consent Order and Agreements between the Department and Protechnics, including, but not limited to, Consent Orders and Agreements dated November 2, 2013 and November 2, 2010.

- Copies of all enforcement activity taken by the Department against Protechnics, including but not limited to Enforcement ID Numbers 305057, 259202 and 263973, as well as all inspection reports completed by the Department regarding Protechnics, including, but not limited to, Inspection ID Numbers 1891418, 1919964, 2147772, 2204156 and 2221258.
- Any and all Radioactive Tracer Well Site Agreements made between Protechnics and any well site operator(s) for each and every well traced in the Commonwealth of Pennsylvania that is or was submitted to the Department, including, but not limited to, the April 7, 2013, Radioactive Tracer Well Site Agreement between Protechnics and a well operator.
- Any and all notifications submitted to the Department by Protechnics or the associated operator or subcontractor regarding Protechnics confirmation that licensed material, including, but not limited to, radioactive material, was returned to the surface at any well site in which Protechnics operated/performed work or services in the Commonwealth of Pennsylvania.
- Any and all documents, correspondence, e-mails and any other communication(s) between Protechnics and the Department and/or Range Resources and the Department regarding Protechnics and any and all work/services performed in the Commonwealth of Pennsylvania by Protechnics.
- Any and all MSDS/SDS (material data safety sheets and safety data sheets) in the possession of the Department regarding any and all products utilized by Protechnics at any well site in Pennsylvania, including, but not limited to, all MSDS/SDS for Protechnics Radioactive Tracer Products, as well as any and all Chemical Frac Tracer ("CFT") products, including, but not limited to, CFT 1000, CFT 1100, CFT 1200, CFT 1300, CFT 2000, CFT 2100, CFT 1900, CFT 1700.

By your email on February 1, 2016, to Department Legal Counsel, Edward Stokan, you amended your RTKL request to the following:

- All drill sites in the Commonwealth, including but not limited to the Yeager Drill site as indicated in attachment 1 of the original request.

Under the RTKL, a written response to your request is due on or before February 8, 2016.

This is an interim response. Under the provisions of 65 P.S. §67.902(b)(2), you are hereby notified that your request is being reviewed for the reasons listed below and the Department will require up to an additional 30 days, until March 9, 2016, to issue a final response to your request.

- Compliance with your request may require the redaction of certain information that is not subject to access under RTKL.
- Your request is under legal review to determine whether a requested record is a "public record" for purposes of the RTKL.

- The extent or nature of the request precludes a response within the required time period.

If you have requested an estimate of cost, the Department will only advise of prepayment costs if record production exceeds \$100.00. 65 P.S. § 1307(h). Otherwise, requested records will be produced and billed accordingly. If you are concerned about copying costs, you may wish to withdraw this request and conduct an informal file review. An informal file review allows self-copying at the reduced rate of \$.15 per page for standard size pages and provides you the opportunity to review and copy only those records you desire rather than all records the Department deems responsive to your request.

Further information about informal files reviews can be found at: <http://www.dep.pa.gov/Citizens/PublicRecords/Pages/Informal-File-Review.aspx#VpAasxwo7X4>. An informal file review does not preclude you from filing a RTKL request at a later date.

Lastly, if you elected to have records copied and mailed to you, the estimated or actual total for any fees owed when the record becomes available will be included in the Department's subsequent response. Prepayment is required before providing access when the estimated cost to fulfill a request exceeds \$100.00. 65 P.S. § 67.1307(h).

If you have any questions regarding this letter, please contact me.

Sincerely,



Dawn Schaeff  
Agency Open Records Officer

cc: RTK CO Legal via email  
RTK CO COM, OG, RP via email  
RTK SE NE SC NC SW NW via email

[Print](#) | [Close Window](#)

**Subject:** FW: New Right-to-Know Law Record Request Received - Kendra L. Smith, Esq. (565)  
**From:** "EP, Right-to-Know" <EP-DEP-RTK@pa.gov>  
**Date:** Mon, Feb 01, 2016 10:53 am  
**To:** "klsmith@smithbutzlaw.com" <klsmith@smithbutzlaw.com>  
**Cc:** "EP, Right-to-Know" <EP-DEP-RTK@pa.gov>  
**Attach:** RTKPDF.565.pdf

Attorney Smith-

Your attachment was not attached to your RTKL request. Please reply back to this email with your attachment. Thank you.

Agency Open Records Office  
Department of Environmental Protection | Bureau of Office Services  
Rachel Carson State Office Building  
400 Market St | Hbg PA 17101  
Phone: 717.787.2043 | Fax: 717.705.8023  
[www.dep.pa.gov](http://www.dep.pa.gov)  
—Original Message—

**From:** ep-dep-rtk@pa.gov [mailto:ep-dep-rtk@pa.gov]  
**Sent:** Monday, February 01, 2016 10:28 AM  
**To:** EP, Right-to-Know  
**Subject:** New Right-to-Know Law Record Request Received - Kendra L. Smith, Esq. (565)

A new Right-to-Know Law Record Request has been Received. A copy of the request has been attached to this e-mail.

**Subject:** Your Right-to-Know Law Request Has Been Received by DEP  
**From:** ep-dep-rtk@pa.gov  
**Date:** Mon, Feb 01, 2016 10:28 am  
**To:** klsmith@smithbutzlaw.com  
**Attach:** RTKPDF.565.pdf

Thank you for your Right-to-Know Law submission that will be forwarded to the Agency Open Records Officer (AORO) for processing.

If you wish to modify a pending Right-to-Know Law request, do not complete another online form. A second online submittal will not modify your original request. Instead, please send an e-mail to [ep-dep-rtk@pa.gov](mailto:ep-dep-rtk@pa.gov) and we will assist you with modifying your original request.

Please note that your request is deemed received on the Department's next business day if:

- Your request was submitted after 4:30 p.m. Monday-Friday,
- Your request was submitted during a weekend,
- Your request was submitted on a holiday observance recognized by the Commonwealth, or
- Your request was submitted any time Executive Offices are closed as a result of weather or any other emergency.

The Department will contact you no later than five business days from the receipt of your request as to its status. If you have any further questions on this process, please visit the Department's webpage at:  
[http://www.portal.state.pa.us/portal/server.pl/community/public\\_records/19207](http://www.portal.state.pa.us/portal/server.pl/community/public_records/19207)

Thank you.

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**POSITION STATEMENT IN SUPPORT OF APPEAL TO DENIAL OF RTKL  
REQUEST 4100-16-0027 (SE)**

Kendra L. Smith, Esquire (the "Requester") submits this Position Statement in support of this Appeal of the Department of Environmental Protection's ("Department") March 8, 2016 denial of Right to Know Request 4100-16-0027 (SE).

**GENERAL BACKGROUND**

On February 1, 2016, the Requester submitted a Right to Know Request ("Request") to the Department seeking records related to activities of Core Laboratories d/b/a ProTechnics, Division of Core Laboratories at the Yeager Drill site in Amwell Township, Washington County, Pennsylvania where ProTechnics was hired to inject radioactive tracers and to perform radioactive tracing associated with hydraulic fracturing. It appears that the Department transmitted this Request to its regional offices, each of which transmitted a response to the Requester. These responses were substantially the same but, because they were assigned separate Request Numbers by the Department, they will be appealed separately. This appeal relates only to the Department's Southeast region response, identified by the Southeast region as No. 4100-16-0027 (SE).

**DEPARTMENT RESPONSE TO REQUEST**

The Department's Southeast region responded to the Request by granting the Request in part and denying the Request in part. The Department identified that with respect to responsive documents, it redacted numerous portions of material and withheld 444 pages of paper records, 89 electronic records based on wide-ranging and ill-founded exemptions under the Right to Know Law ("RTKL"). The Southeast Office produced sixteen pages of responsive records, and itemized charges for the baseless heavy redaction that it undertook, with the redactions supposedly based upon the RTKL exemptions claimed by the Department. At the conclusion of its Response, the

Department identified the Requester's right to file an appeal with the Office of Open Records and, that in such appeal, the Requester should identify the grounds for appeal.

Given the breadth of the Department's withholding of responsive records and the generality of the asserted exemptions, this Position Statement is intended to highlight the foundational implausibility of the Department's assertion of exemptions to withhold hundreds of pages of responsive records. Each of the Department's claimed exemptions will be addressed in order.

### **Regulatory Preclusion**

The first basis for exemption of records set forth by the Department is founded upon its contention that it has a "regulatory inability to release inspection reports by the Department's radiation protection program and records for the radioactive materials general license registration," resulting in the Department withholding a varying number of responsive records, ranging from 300 to 443, depending on the section of the Response, as well as 77 electronic records. The Department appears to rely on 25 Pa. Code § 215.14(2) which provides:

#### **§ 215.14. Availability of records for public inspection.**

The following Department records are not available for public inspection, unless the Department determines that disclosure is in the public interest and is necessary for the Department to carry out its duties under the act:

- (1) Trade secrets or secret industrial processes customarily held in confidence.
- (2) A report of investigation, not pertaining to safety and health in industrial plants, which would disclose the institution, progress or results of an investigation undertaken by the Department.
- (3) Personnel, medical and similar files, the disclosure of which would operate to the prejudice or impairment of a person's reputation or personal safety.

These claimed bases for withholding records are repeated by the Department elsewhere in its denial of the Request and are addressed more comprehensively in the relevant sections of this Position Statement related to those specific assertion. However, generally, the Department's assertion that, under the law, substantial information is not subject to public disclosure based on these factors misses the mark and is not in-line with the nature and context of the Request.

In no way did the Requester seek for the Department to release information that constitutes confidential proprietary information such that it is exempt from disclosure under state law or regulation. In the documents that the Department presented, the name of the ProTechnics product that was used was redacted. The name of the product is the "ZeroWash" tracer, which is a trade name that ProTechnics promotes on its website. It even makes a brief case study of its use available on its own website: <http://www.corelab.com/ProTechnics/case1>. In short, according to ProTechnics' own website, its "ZeroWash" tracer products use radioactive isotopes that are injected with sand proppant into the hydraulic fracturing process of an oil and gas well and then the radioactivity is used to determine how effect the hydraulic fracturing was. <http://www.corelab.com/ProTechnics/abstracts/133059>. The "ZeroWash" products use the radioactive isotopes Scandium, Iridium and Antimony. *Id.* At a January 26, 2016 hearing before the Court of Common Pleas of Washington County regarding a Motion to Compel ProTechnics to produce documents responsive to a subpoena in the matter of *Stacey Haney, et al v. Range Resources-Appalachia, LLC, et al*, the President of ProTechnics testified in open court, on direct examination, regarding the general way that "ZeroWash" radioactive tracer products are utilized, referencing the product by name. *See*, Hearing Transcript at pp. 27-31 attached hereto as **Attachment 1**.

Quite clearly, information regarding ProTechnics and its use of its "ZeroWash" radioactive tracer product in the field of hydraulic fracturing is well within the public domain, is even used as a marketing tool, and the Department's redaction of documents that identify the trade name of a product finds no support in the Department's generalized "regulatory preclusion" argument under 25 Pa. Code §215.14. The Request was designed to obtain documents about the use of "ZeroWash" tracers at particular job sites, including the Yeager site in Amwell Township, Washington County that is the subject of the afore-referenced *Haney* litigation. The Requester merely sought basic information concerning the use of the radioactive tracers and whether a license existed for their use and/or disposal, which in no way touch upon any matters of the asserted "Regulatory Preemption."

As noted, the Request sought information about the use of "ZeroWash" by ProTechnics at specific sites. While the Department claims that hundreds of pages were withheld upon the basis of regulatory preclusion, related to investigations, the Department did produce documents that demonstrate that there were investigations and enforcement actions taken by the Department. Though heavily redacted, the Department produced Violation notices and a Consent Order and Agreement related to these "ZeroWash" tracers. As a result, it is readily apparent that the Department possesses and produced records related to its investigation of "ZeroWash" tracers. So, it is unclear how the Department, on one hand, will disclose documents to the Requester providing information about investigations and, on the other hand, claim that hundreds of pages of documents are exempt because they would show the progress or results of an investigation. This makes no logical sense.

*Public Safety & Security*

In its Response, the Department identified that 300 pages of records responsive to the and 70 electronic records also responsive to the Request were withheld based on the Department's contention that these records were exempt from disclosure pursuant to Section 708(b)(2) of the RTKL and Section 708(b)(3) of the RTKL, which the Department categorized under the heading "Public Safety and Security". The Department's claim that these records are exempt from disclosure under these sections of the RTKL and the rationale asserted by the Department in support of this is grossly deficient.

In order for an agency to properly assert an exemption under Section 708(b)(2) of the RTKL, the agency bears the burden to demonstrate that "the disclosure of the records would be reasonably likely to jeopardize or threaten public safety or preparedness or public protection activity." Carey v. Pennsylvania Department of Corrections, 61 A.3d 367, 374 (Pa. Commw. Ct. 2013). Evaluation of the "reasonably likely" test involves analysis of "the likelihood that disclosure would cause the alleged harm, requiring more than speculation." Id. at 375. The Department's assertion of this exemption under Section 708(b)(2) is mere unfounded speculation, which is made readily apparent by both the content of the Department's Response and the fact that other state and federal government agencies have published the same type of information on their websites that is nearly identical to what was sought in the instant Request and what is presumably being withheld by the Department.

With these "Public Safety and Security" exemptions, the Department engages in baseless fear-mongering to direct attention away from the deficiency of its Response. Amongst the doomsday scenarios presented by the Department in its Response are its contentions that:

- disclosure of licensure information could allow an individual to “utilize the information contained in the license and reports to unlawfully obtain the radioactive materials for illicit purposes thus creating a major security and health breach.” [Department Response at p. 4].
- “Disclosing the contents of these records would reveal specific information pertaining to the nature and location of radioactive materials.” [Department Response at p. 4].
- “Information contained within these files would give a determined adversary the means to actually do harm to others.” [Department Response at p. 4].

Essentially, the Department would have one believe that if it provided the records in its possession that are responsive to this Request, that cities across the Commonwealth would suddenly become black market weapons bazaars full of unsavory characters purchasing radioactive materials. These “scare tactics” are preposterous and are nothing more than ill-fated attempt to direct attention away from the fact the Department has not and cannot demonstrate, beyond mere conjecture, that it is reasonably likely that the disclosure of these records will jeopardize or threaten public safety, as is required by law. Carey, 61 A.3d at 374, 75. In fact, beyond using “buzzwords”, the Department’s Response does not even rise to mere speculation of potential harm to “Public Safety and Security.” A cursory examination of the Department’s assertion of this exemption, in concert with records that the Department provided *and* general background information, reveals the absurdity of the Department’s position that the “Public Safety and Security” exemption applies.

The most egregious example of the Department’s misuse of the “Public Safety and Security” exemption to withhold responsive records from the Requester is the Department’s decision not to disclose the address of ProTechnics. In its Response, the Department identifies that among the withheld records, there is information about “. . . physical addresses.” [Response p. 4]. In the documents that the Department produced, the mailing address of ProTechnics is redacted.

From a threshold perspective, it is unclear how the Department could conclude that disclosure of the business address of a company where correspondence is directed would endanger the "Public Safety and Security." ProTechnics' office is not a secret military facility where national security could be compromised by disclosure of its mailing address: it is an office building in suburban Houston. A visit to the ProTechnics website includes a page where one can obtain the address and telephone number for every ProTechnics location: (<http://www.corelab.com/ProTechnics/locations>). A copy of this webpage is attached hereto as **Attachment 2**. In fact, on that website, ProTechnics lists its headquarters address and phone numbers and invites people to make contact with the company:



The image is a screenshot of a website section titled "Contact ProTechnics". It features a dark header with the text "Contact ProTechnics" in white. Below the header, the text "Email Us" is displayed. Underneath, there is a dark button with the text "Send us a request" in white. Below the button, the text "Headquarters" is followed by the address "6510 W. Sam Houston Pkwy. N. Houston, TX 77041". Further down, the text "Call Us" is followed by three phone numbers: "USA: 1-713-328-2320", "Canada: 1-403-571-1685", and "International: 1-713-328-2323". At the bottom of the section, the text "Technical: 1-713-328-2340" is displayed, followed by the text "Locations".

See, Attachment 2. Presumably, if ProTechnics was concerned about the "Public Safety and Security" ramifications of the disclosure of its address, it would not maintain this information on its own website. Since ProTechnics has disclosed its headquarters address and its other numerous business locations on its own website, the unidentified "determined adversary" that the Department

cites in its Response would not have to work too hard to acquire this information. In light of these facts, the Department's redaction of ProTechnics' address and its withholding of documents with ProTechnics' name and address on them is not justified by its asserted "Public Safety and Security" exemption claims.

The Department's refusal to provide records containing ProTechnics' mailing address is but the tip of the iceberg in the Department's puzzling and improper redaction of records and withholding of records based on its "Public Safety and Security" exemption. If one reasonably interprets the Department's Response, one reaches the conclusion that the Department will neither confirm nor deny that ProTechnics has a radioactive materials license in the Commonwealth, as the Department asserts that it withheld records that include "... licensees' names, license numbers. . ." [Response at p. 4]. The records that the Department did produce, however, clearly indicate that ProTechnics had or has a radioactive materials license that the Department was referencing, either by way of a general license, a reciprocal license or a Pennsylvania radioactive materials license. This is exemplified in the June 15, 2010 "Notice of Violation" directed to ProTechnics and regarding "License No. REDACTED".<sup>1</sup> Obviously, ProTechnics had a radioactive materials license number, or there would be nothing to redact in this line. This is confirmed in the Consent Order and Agreement of November 2, 2010 that the Department provided wherein it states, at Item K, that ProTechnics obtained radioactive materials license on February 26, 2010. *See*, November 2, 2010 Consent Order and Agreement attached hereto as **Attachment 3**. Quite clearly, the

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<sup>1</sup> Examination of this June 15, 2010 Notice of Violation further reveals that the Department has redacted the eFACTS Inspection ID Number and the eFACTS Enforcement ID Number. If this information is found on the Department's online eFACTS system, it is very difficult to accept the Department's assertion that its disclosure in the context of a Right to Know Law request would somehow endanger Public Safety and Security.

Department's resistance to any disclosure of information relative to ProTechnics possessing such license is undermined by the records that were produced.

Related to ProTechnics' licensure, among the Department's redactions is ProTechnics' Texas radioactive materials license. Much like the Department's refusal to disclose ProTechnics' business address, the Department's redaction of ProTechnics' Texas radioactive materials license number is without merit or basis under a "Public Safety and Security" exemption. Information regarding the Texas Department of State Health Services' radioactive materials licensure is available online, which sets forth license numbers, license type, license status, license expiry, general details regarding the particular license, specifically what radioactive materials and in what quantity these radioactive materials may be used and for what purpose, as well as the company address and company phone number. An exemplar copy of such information, as well as an incident summary report are collectively appended hereto as **Attachment 4**. Again, the Department's claim that it cannot disclose information because of threats to "Public Safety and Security" is contradicted by the fact that this information is already in the public domain and, in fact, placed on the internet by a sister state from which the Department granted ProTechnics a reciprocity license to use radioactive material in Pennsylvania.

Among the information that the Department has withheld or redacted is information regarding locations where ProTechnics products were used. The Department's claim that disclosure of this information would jeopardize "Public Safety and Security" is wholly undermined by the records that the Department produced. In the records that the Department produced, the Department redacted the well sites where ProTechnics radioactive tracer products were injected into gas wells. However, in a puzzling decision, the Department did not redact the names of landfills where these ProTechnics radioactive tracers that flowed-back from the well were taken

for disposal. Reason would dictate that *if* the Department was concerned that its disclosure of locations where ProTechnics products were injected into the ground could “give a determined adversary the means to actually do harm to others”, the Department would more vigorously guard the location of the landfill where the recovered radioactive flowback was disposed-of.<sup>2</sup> As discussed below, the federal Nuclear Regulatory Commission makes this information available on its own website, further undermining the Department’s position. More to this point, it is odd that the Department would redact the names of the companies that hired ProTechnics in the records that the Department produced, while disclosing the names of the names of the companies where these tracers were disposed-of. Even then, the Department’s redactions were incomplete, defeating the purpose of the exercise, as, for example, the Southcentral regional office disclosed a Notice of Violation directed to Citrus Energy Corporation. *See*, Notice of Violation directed to Citrus Energy attached hereto as **Attachment 5**.

Along similar lines, the Department’s contention that revealing “inspection reports” and “documentation of security controls” would undermine the “Public Safety and Welfare” is frustrated by other information that the Department has provided. For example, the Department’s Northwest Regional Office provided the minutes of a June 16, 2010 Program Managers’ Conference Call in response to the Request. *See*, June 16, 2010 Program Managers’ Conference Call minutes attached hereto as **Attachment 6**. This document identifies that the Rustick Landfill had a radiation alert for Iridium-192, in waste generated from a gas well where ProTechnics utilized Iridium-192 tracer beads. The letter then continues that “ProTechnics is currently the only company utilizing this technology in PA.” Quite clearly, information about “security controls” and

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<sup>2</sup> To this end, it seems implausible for the Department to contend that, with respect to the matters referenced in its Notices of Violation, that disclosure of the locations where Protechnics tracers were used several years ago jeopardizes any public safety.

the results of incidents have been provided by the Department. In light of this, the Department cannot credibly refuse to produce documents responsive to the Request by asserting an exemption that the Department itself has already ignored.

Also unclear is how the Department's redaction of the names of individuals employed by or representing ProTechnics is an appropriate "Public Safety and Security" exemption under the RTKL. For example, in the records that the Department has produced, it has partially redacted the identity of the employee at ProTechnics that correspondence was directed to and the Department also redacted the names of attorneys for ProTechnics that signed a Consent Assessment of Civil Penalty on behalf of ProTechnics. There is absolutely no reason why the identity of ProTechnics' legal counsel should be redacted from documents. The redaction of such information is also suspect and improper when the Department already provided such information from its other offices.<sup>3</sup> Moreover, the Department's redaction was sloppy, at best, because while the Department redacted the name of the addressee from the address, it did not redact the names of "Mr. Hampton" and "Mr. Flecker" from the salutations. *See*, January 28, 2010 Notice of Violation transmitted to "Mr. Hampton" and December 23, 2013 correspondence to "Mr. Flecker" appended hereto as **Attachment 7**. Additionally, where the Department has redacted the names of individuals at ProTechnics, the Department did not redact the names and addresses of other parties involved in matters subject to the Request, such as the August 3, 2010 Consent Assessment of Civil Penalty involving Elk Waste Services, Inc. of 134 Sara Road, Saint Marys, PA 15857, which was signed by Chester L. Cheatle, the President of Elk Waste Services. *See*, August 3, 2010 Consent Assessment of Civil Penalty attached hereto as **Attachment 8**. The Department even produced a

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<sup>3</sup> Moreover, documents available on the Nuclear Regulatory Commission website contain the names of ProTechnics employees. *See*, **Attachment 9**. If the Nuclear Regulatory Commission does not find it to be contrary to the public safety or, indeed, individuals' personal safety to place this information on its website, the Department cannot credibly assert such exemption.

check from Elk Waste Services bearing the company's bank account number. *See*, Attachment 8. There can be no doubt that the Department's selective redaction and non-disclosure of even basic information is arbitrary.

While these examples indicate that specific parts of the Department's withholding of responsive records based on "Public Safety and Security" are nonsensical, a more global view of the Department's "Public Safety and Security" exemption claim reveals that its fundamental premise is fatally flawed. At the heart of the Department's "Public Safety and Security" claim is that disclosure of information related to radioactive licenses, complaints and violations would somehow jeopardize the public welfare. This contradicts the practice of the United States Nuclear Regulatory Commission ("NRC"), the federal agency entrusted with nuclear regulation and safety. Whereas information such as radioactivity license numbers, corporate addresses, types of radioactive sources, locations of use, etc. are guarded by the Department for fear of falling into the hands of unidentified miscreants, the NRC makes all of this information available on its website. *See*, Attachment 9. Also puzzling is that the Department's Northwest regional office produced, in response to the Request, an internal e-mail, dated November 16, 2010, wherein Department employees noted concerns of radiation exposure to Department inspectors associated with the use of radioactive tracers. *See*, November 16, 2010 Department email attached hereto as **Attachment 10**.

On the front page of the NRC website, there is a "Search" feature where, if one enters "ProTechnics", five (5) pages of results are populated, with hyperlinks to a variety of documents. Searching through these free, publicly available files on the NRC website reveals a plethora of information about ProTechnics. For example, one entry on the NRC website involved an April 2014 event in Colorado involving ProTechnics:

Agreement State	Event Number: 50065
Rep Org: COLORADO DEPT OF HEALTH Licensee: PROTECHNICS Region: 4 City: FRUITA State: CO County: License #: CO 545-01 Agreement: Y Docket: NRC Notified By: JAMES JARVIS HQ OPS Officer: DONALD NORWOOD	Notification Date: 04/28/2014 Notification Time: 16:15 [ET] Event Date: 04/04/2014 Event Time: 14:30 [MDT] Last Update Date: 04/28/2014
Emergency Class: NON EMERGENCY 10 CFR Section: AGREEMENT STATE	Person (Organization): MARK HAIRE (R4DO) FSME EVENTS RESOURCE (EMAI)

#### Event Text

##### AGREEMENT STATE REPORT - SCRAP FACILITY GATE ALARM

"On 04/04/14 at approximately 1430 MDT, the Colorado Radiation Program received phone notification of a scrap load that had been rejected at a recycling facility in Englewood, CO due to a gate radiation alarm. Scrap facility personnel performed surveys around the container using hand held survey instruments. Surveys indicated readings up to a maximum of 120 microrem/hour (Ludlum Model 3). Recycling facility staff indicated that the load would not be returned to the shipper until the following week and that the load/roll-off container was segregated onsite. The Colorado Radiation Program issued a DOT special permit and the scrap metal was returned to the originator, Baker-Hughes (Colorado License No. 678-01; 285 County Road 27, Brighton, CO 80603) on or about 04/11/14.

"Preliminary communications with Baker-Hughes personnel indicated that it performed well fracking work in mid-March 2014 and worked with another Colorado licensee - well logging tracer company, ProTechnics (Colorado License No. 545-01; 703 Greenway Drive, Fruita, CO 81521). Baker-Hughes is not authorized for tracer material use. Baker-Hughes requested that ProTechnics perform surveys on the rejected scrap load to determine whether the contamination was naturally occurring radioactive material, or tracer material. ProTechnics performed radiological surveys on or about 04/15/14 at the Baker-Hughes facility and determined that a small amount of tracer material remained in one component (a manifold removed from the pumping truck) of the scrap load. ProTechnics identified the tracer material as Iridium-192. The tracer material combined with approximately 10 lbs. of fracking sand was removed/decontaminated from the scrap component and was packaged by ProTechnics and returned to their facility in Fruita, CO for decay in storage. ProTechnics estimated the activity of Ir-192 tracer material in the component to be approximately 0.015 mCi. After receiving a preliminary written report from ProTechnics on 04/16/14, Colorado Radiation Program staff performed phone interviews of Baker-Hughes personnel and ProTechnics personnel.

"Colorado Radiation Program staff performed on-site verification surveys of the scrap load (post-decontamination) on 04/21/14. Surveys indicated that no radiation levels above instrument background were detected on the remaining decontaminated scrap.

"The Colorado Radiation Program is continuing to investigate the incident to determine further actions."

Readily apparent is the ProTechnics Colorado radioactive materials licensure number, the exact time and date of the incident, the type of incident, and the specific radiation source, an IR-192 tracer as well as the names of individuals reporting the incident. There are many other entries on the NRC website with similar specificity as to the identity of where, what and how specific radioactive tracers were used and mishandled. *See*, Attachment 9.

When one examines the information that the NRC makes available on its own website, it is readily apparent that the scope of the Request is fairly encompassed within these documents. The Department cannot credibly claim that it withholds information for “Public Safety and Security” reasons when its federal counterpart makes this same information available, without even any need for a Freedom of Information Act inquiry. In the Department’s case, it is difficult to imagine what risk to the public wellbeing would arise by the disclosure of information about where decaying radioactive tracers were injected into gas wells a half-decade ago.

Simply put, the Department withheld hundreds of pages of records based on “Public Safety and Security” exemptions and redacted information in other records based on these same exemptions that are inappropriate under the RTKL.

#### **Internal Predecisional Deliberation Exemption**

The Department next asserts that it is withholding 8 electronic records based on the “Internal, Predecisional Deliberation Exception” found in Section 708(b)(1)(i)(A) of the RTKL. To satisfy the Predecisional Deliberation exemption, the Department must demonstrate that the withheld records are “(1) internal; (2) prior to agency decision or course of action; and (3) deliberative in character.” Worcester v. Office of Open Records, 129 A.3d 44, 61 (Pa. Commw. Ct. 2016). Factual information is not deliberative in character. Id. Only the information “that

constitutes confidential deliberations of law or policymaking, reflecting opinions, recommendations or advice is protected as deliberative.” Pennsylvania Department of Education v. Bagwell, 114 A.3d 1113, 1122-23 (Pa. Commw. Ct. 2015) (internal citations omitted). Further, “each of the three elements must be established by the underlying facts, as the absence of any of the elements precludes protection under the exception.” Id. at 1123.

Interestingly, the Southeast region notes that it is withholding information, such as internal Department correspondence and meeting notes under this exemption, when the Department’s Northwest region produced a November 16, 2010 internal e-mail communication among Department employees *and* the meeting minutes of a June 16, 2010 Department meeting as well as the internal e-mail of the Department’s Northwest regional office expressing concern over oil and gas inspectors’ radiation exposure at these well sites. *See*, Attachments 6 & 10. The Department has withheld the same type of documents produced by the Northwest regional office without substantiating this exemption with respect to each of the records and electronic records that it has withheld under this exemption. As a result, the Department has not met the threshold required to withhold such documents pursuant to this exemption and thus must be compelled to produce all of the records that have been withheld.

#### **Confidential Proprietary Information**

The Department next contends that it is withholding 128 pages of responsive records that, if disclosed “would undermine ProTechnics’ competitive position in the marketplace and would reveal a specialized framework that ProTechnics expended substantial time and money to develop.” The Department also asserts that, among the withheld records are “patent information and well tracer presentation information.” The initial explanation provided by the Department in

its denial of the Request fails to demonstrate that the Department is appropriately asserting this exemption

The RTKL defines “Confidential or proprietary information” as:

Commercial or financial information received by an agency: (1) which is privileged or confidential; and (2) the disclosure of which would cause substantial harm to the competitive position of the entity that submitted the information.”

65. P.S. § 67.102. The Department’s contention, that 128 pages of information are being withheld under this exemption, is overly broad, as the Department generally claims that the withheld records “include patent information and well tracer presentation information.” This superficial explanation does not and cannot support the Department’s exemption. For example, substantial information regarding patents held by ProTechnics is available on the United States Patent and Trademark Office Website. A search for Patent Number 5,182,051 reveals a patent for “Radioactive tracing with particles” that is held by ProTechnics. A copy of this patent document is attached hereto as **Appendix 11**. This patent reveals substantial information regarding the development, use and purpose of this technology. Again, as referenced above, the President of ProTechnics testified in open court, on direct examination, in great detail regarding how the “ZeroWash” radioactive tracer works. *See*, Attachment 1.

Along similar lines, ProTechnics’ ZeroWash Tracer, which was used at the Yeager drill site in Amwell Township<sup>4</sup>, which is the focus of this Request, was the subject of a 2013 article in the Journal of Chemical and Pharmaceutical Research, entitled “Study and application of ZeroWash tracer fracture monitoring.” A copy of this article is attached as **Attachment 12**. In this

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<sup>4</sup> Attached hereto is a copy of a nonprivileged document produced in related litigation demonstrating Protechnics’ use of ZeroWash tracers at the Yeager well site and the quantities in which they were utilized.

article, the authors discuss the ZeroWash tracer and how it is used in the hydraulic fracturing process. Similar to information contained in patent documents, the Department cannot demonstrate that the disclosure of the withheld records would actual cause substantial harm to ProTechnics' competitive position that takes into account information already in the public realm.

#### *Noncriminal Investigation*

The Department next contends that twenty (20) pages of responsive records and five (5) electronic documents have been withheld as a result of a noncriminal investigation. Hallmarks of a noncriminal investigation involve a “systematic or searching inquiry” and a “detailed examination.” Department of Environmental Protection v. Delaware Riverkeeper Network, 113 A.3d 869, 875 (Pa. Commw. Ct. 2015). While the Department recites provisions of the Radiation Protection Act at-length in its Response to the Request, the Department does not and cannot demonstrate how the requested records constitute a “systematic or searching inquiry.” Instead of a systematic and detailed examination, it appears that, from the Department’s description, the its interaction with ProTechnics with regard to this matter involved mere issuance of violations for actions contrary to Pennsylvania law. To accept this explanation would serve to cause an incredible percentage of records maintained by the Department to be shielded from public view. Moreover, while the Department contends that “these records prompted the [Department ] to conduct an official probe at the facility . . .” the Department does not identify what this “facility” is.

#### *Attorney-Client Privilege/Attorney Work Product*

The Department has asserted that three (3) electronic records were withheld as a result of application of the attorney-client privilege. The Department’s Response does not provide any

particularized information to demonstrate that this privilege is being asserted appropriately and the Department must be made to substantiate this claim of privilege. Further complicating this situation, and which must be explained by the Department, is the Department's practice of identifying private industry as a "client". Obviously, the Department's counsel cannot claim the companies that are regulated by the Department as a "client" and thus assert attorney client privilege to justify the withholding of documents when the Department's "clients" are the environment and the health and safety of the people of the Commonwealth.

#### *Personal Identification Information*

The Department claims an exemption pursuant to the "Personal Identification Information" exception in Section 708(b)(6) of the RTKL. Presumably, since the Department did not mention that any records were withheld explicitly as a result of this exemption, it can be understood that the Department is asserting this exemption with respect to the scant records that were provided and in records that were withheld. In either case, the Department's utilization of this exemption is far too broad and improper.

An examination of the redactions in the records that the Department provided reveals that its concept of "Personal Identification Information" apparently is all-encompassing, ranging from Priority Mail Delivery Confirmation Numbers, to addresses of public companies, to names of attorneys representing companies. Presumably, the Department redacted the Delivery Confirmation Numbers so that the Requester could not insert these tracking numbers into the U.S. Postal Service website to obtain the ProTechnics delivery address. Given that ProTechnics posts the addresses of all of its locations on its own website already, this is not necessary. The Department clearly takes a very expansive view of what should be redacted that is not justified under the RTKL.

In addition to this, the Department's claim for the need to redact its employees' email addresses and telephone numbers is absurd. Protection of employees' internal telephone numbers makes little sense, as Department directories are available on the internet and reaching representatives by phone is as easy as calling the Department's switchboard and asking for a particular representative. The Northwest regional office did not redact the telephone number of John R. Crow, its Solid Waste Supervisor in a letter to Mr. Chester Cheadle of Elk Waste Services, Inc. enclosing a Consent Assessment of Civil Penalty, in the records it produced in response to the Request. Other regional offices have provided e-mails with Department representatives e-mail addresses on them. *See*, Attachment 10. Moreover, the Department's assertion that "[t]he same analysis applies to government issued personal e-mails" is confusing. The Request did not seek personal e-mails among Department staff. The Request sought a very focused set of records and, if personal e-mails were used by personnel for this purpose, the mere fact that they are personal e-mails does not render them beyond the scope of the Right to Know Law. Moreover, the selective redaction of certain information pertaining only to ProTechnics and inconsistency among Department offices regarding what was disclosed indicates that the assertion of this exemption is *ad hoc* and inappropriate.

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IN THE COURT OF COMMON PLEAS OF WASHINGTON COUNTY  
PENNSYLVANIA  
CIVIL DIVISION

STACEY HANEY, et al., )  
Plaintiffs, )  
vs. ) No. 2012-3534  
RANGE RESOURCES - )  
APPALACHIA, LLC, et al., )  
Defendants. )

EVIDENTIARY HEARING ON THE MOTION  
TO COMPEL, IN THE ABOVE-ENTITLED  
CAUSE, BEFORE THE HONORABLE  
WILLIAM R. NALITZ, SENIOR JUDGE,  
HELD ON JANUARY 26, 2016, IN  
COURTROOM NO. 6

APPEARANCES:

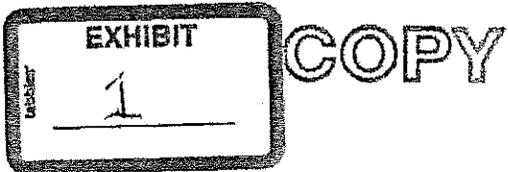
Kendra L. Smith, Esquire  
John M. Smith, Esquire  
Representing the Plaintiffs

Roy W. Arnold, Esquire  
Representing Third Party  
Core Laboratories/ProTechnics

TRANSCRIPT OF PROCEEDINGS

Transcribed by:  
Resa Hall  
Court Reporter

Transcript filed in the  
Office of the Prothonotary  
this 8th day of February, 2016



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I N D E X

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WITNESS: Michael J. Flecker	Page
Direct Examination by Mr. Arnold	7
Cross-Examination by Ms. Smith	32

E X H I B I T S

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Plaintiffs' Exhibits:	Marked	Admitted
1 - Completion Diagnostics Proposal	71	--
2 - Packet of Invoices	76	--
3 - Materials License	81	--
4 - Job Site Survey Form	87	--
5 - Master Service Agreement	90	--
5A - Collection of E-mails	96	--
6 - ProTechnics Product Descriptions	98	--
7 - Material Safety Data Sheets Revised 4/20/09	104	--
8 - Material Safety Data Sheets Date Issued 9/24/11	109	--
9 - Inital Flowback Report	111	--
10 - June 15, 2010, Notice of Violation	125	--
11 - November 26, 2013, Notice of Violation	127	--
12 - Preparedness Prevention and Contingency Plan	130	--

## 1 P R O C E E D I N G S

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3  
4 THE COURT: Okay. This is the time for a  
5 hearing in the matter of third-party discovery directed  
6 to ProTechnics in the matter of Haney vs. Range  
7 Resources, No. 3534 of 2012.

8 On December 17th, we issued an order refusing  
9 some of Plaintiffs' motion to compel and scheduling the  
10 remainder for a hearing, which is scheduled for today.

11 Are the parties ready to proceed?

12 MR. ARNOLD: Yes.

13 MS. SMITH: Yes, Your Honor.

14 THE COURT: Mr. Smith, Ms. Smith, I guess one  
15 of you should go first.

16 MS. SMITH: Your Honor, the hearing was  
17 requested, as you may recall, by counsel for  
18 ProTechnics. If you want me to go first, I'm happy to  
19 do that, but it --

20 THE COURT: Okay. Well, yeah, I guess --

21 MR. ARNOLD: Your Honor, I'm happy to proceed  
22 however Your Honor would like, and we're fine going  
23 first.

24 Brief remarks to open, and, then, Your Honor,  
25 we were going to call Mr. Michael J. Flecker to

1 testify.

2 THE COURT: Okay.

3 MR. ARNOLD: Your Honor, obviously, we  
4 received Your Honor's order of December 17th. Since  
5 that time -- and I think Plaintiffs would  
6 acknowledge -- we did supplement the production with a  
7 couple of additional invoices that we were able to  
8 locate. We produced those to Plaintiffs.

9 We also produced a product description  
10 relating to the isotope tracers. That product  
11 description, also, is a -- it's a one-pager, and it  
12 lists information including -- for each of the isotopes  
13 that was identified in the jobsite survey, it  
14 identifies the radionuclide, chemical form, SG, mesh  
15 size, and half-life days. So it provided Plaintiffs  
16 with some additional information relating to those  
17 isotope tracers.

18 We think, Your Honor, in terms of what's at  
19 issue today, per Your Honor's order, is paragraph 7C of  
20 Plaintiffs' motion to compel, which is specifically  
21 relating to the gas chromatography, mass spectrometry,  
22 and ion chromatography data. That's the underlying  
23 data that underlies the test results that were actually  
24 provided to Plaintiffs in the initial flowback report  
25 that was produced very early on in this process.



D I R E C T E X A M I N A T I O N

BY MR. ARNOLD:

Q. Good afternoon, Mr. Flecker, would you please introduce yourself to the Court?

A. I am Mike Flecker.

Q. And where do you live?

A. I live in Sugar Land, Texas. Just outside of Houston.

Q. Okay. Did you travel here today from Houston to testify?

A. Yes, I did.

Q. Okay. And who's your current employer?

A. Core Laboratories. ProTechnics Division of Core Laboratories, to be specific.

Q. Okay. And what's your current position with ProTechnics or Core Laboratories?

A. I'm the president over the ProTechnics Division and over the Stim-Lab Division.

THE COURT: I'm sorry, did you say stem?

THE WITNESS: Stim, S-T-I-M, dash, L-A-B.

THE COURT: Okay.

BY MR. ARNOLD:

Q. In your role as president of the ProTechnics Division, what are your responsibilities?

A. It's everything from financial to sales and

1 marketing to global operations, technology development.

2 Q. And how long have you been in the oil and gas  
3 industry?

4 A. Thirty-five-plus years.

5 Q. And how long have you been employed by  
6 ProTechnics or Core Labs?

7 A. It will be 16 years in February.

8 Q. What type of work does ProTechnics specialize  
9 in?

10 A. Completion diagnostics is what we claim is  
11 our main -- that's our main market. Reservoir  
12 diagnostics is another area. There's a few other  
13 smaller areas. But, predominantly, completion  
14 diagnostics.

15 Q. And with respect to the Yeager well,  
16 specifically, and the job, what does ProTechnics  
17 provide in that field?

18 A. In that particular area, that falls in our  
19 completion diagnostics arena. And in that case, we  
20 provided tracer services, where we would go out to  
21 location and inject tracers into the stream. It's like  
22 a taggant.

23 As they're pumping the frac job, we're just  
24 marking the fluid and the proppant that goes downhole  
25 so that we can understand how each stage was treated

1 and how it performs when it comes back on production.

2 Q. Okay. And what is the relationship between  
3 ProTechnics and Range Resources?

4 A. We're a service provider to Range contracted  
5 on a per-well basis.

6 Q. Okay. And are you aware that Plaintiff  
7 served a third-party subpoena on ProTechnics in this  
8 case?

9 A. Yes.

10 Q. And were you involved in collecting documents  
11 in order to respond to the subpoena?

12 A. Yes.

13 Q. And did you assist counsel in preparing  
14 ProTechnics' response to the subpoena that Plaintiff  
15 served?

16 A. Yes.

17 Q. Okay. Now, without revealing any  
18 confidential or proprietary trade secret information,  
19 can you tell the Judge -- what can you tell the Judge  
20 about the nature of the ProTechnics chemical tracers?

21 A. Okay. Our chemical tracers are -- you know,  
22 we pump them at less than one part per million. Each  
23 individual tracer is kind of unique. It's not  
24 naturally occurring in the reservoir so that we can  
25 clearly identify each zone without it being interfered

1 with by naturally occurring chemicals.

2 Our chemicals are -- I guess, there's certain  
3 criteria that have to be had, such as it being unique.  
4 But before we start testing the chemicals to see if  
5 they'll work as a tracer, we actually first look at  
6 HSE -- health, safety, environment.

7 We look at the EPA and other agencies, like  
8 in Canada and Europe, and validate that they're not  
9 listed on any known carcinogens or bioaccumulation  
10 toxins. So that's the easy one. That's the first  
11 criteria.

12 Then we go and we look at, does it qualify?  
13 Will it handle the temperature and pressure? Will it  
14 be stable? Not degrade. Not be eaten by bugs. Many  
15 different other criteria.

16 Most of the effort to determine what chemical  
17 can be used for a tracer or a taggant is proprietary.  
18 Part of the reason why we protect this is we don't want  
19 to give out that recipe to our potential competitors.

20 Q. Okay. And did you say that -- what type  
21 of -- are they sodium salts?

22 A. They are sodium salts.

23 Q. And in the particular instance of the tracers  
24 used on this site, they were sodium salts?

25 A. Correct.

1 Q. Okay. But there are unique aspects to it  
2 that you can't --

3 A. Correct.

4 Q. -- or you protect in order to protect the  
5 value of those tracers to your business?

6 A. Correct. That is our core business. The  
7 tracers. All of our employees, everybody that works  
8 for us is -- the jobs, everything we do, is strictly  
9 based on this tracer technology.

10 Q. And if I understood your testimony right, you  
11 start as a threshold matter in deciding what types of  
12 salts -- sodium salts to use, the threshold there is  
13 that they're not listed on any kind of environmental  
14 watch list or hazardous material list?

15 A. Correct.

16 Q. Now, have you had a chance to look at the  
17 flowback report --

18 A. I have.

19 Q. -- that was produced in this case?

20 A. Yes.

21 Q. Okay. Can you describe, generally, what is  
22 contained in a flowback report and the nature of what  
23 type of results are in this report?

24 A. Okay. Well, to put around some context, we  
25 pump a unique tracer with each frac stage. So a well

1 might have ten stages.

2 MR. SMITH: Just for clarification,  
3 Mr. Arnold, are we speaking about this document or just  
4 in general?

5 THE WITNESS: This document.

6 MR. ARNOLD: This document.

7 MR. SMITH: Okay. Thank you.

8 THE WITNESS: So in this case, I can't  
9 remember how many stages were in that well. Let's say  
10 it was ten stages. They will perforate the wellbore to  
11 have fluid access to that, and they will hydraulically  
12 fracture an interval of the zone. And we place a  
13 tracer in there with that fluid to make sure that we  
14 understand how that fluid behaves.

15 Once it goes on production, they'll  
16 perforate -- they'll set a plug, isolate that zone,  
17 perforate, and frac the next zone. So a unique fluid  
18 system goes in there. We'll mark it. And we do that  
19 until we get done with the well completion.

20 When the well is put back on production, we  
21 collect water samples at surface, and from that water,  
22 we can identify what tracers are in the water. And  
23 let's just say the bottom three zones were plugged or  
24 blocked and not working. The plumbing is messed up.  
25 We take a water sample, and we see we have seven

1 tracers in the water, but these bottom three tracers  
2 aren't showing up.

3 So that's a simple application here of should  
4 I go in with coil tubing, clean out the well. It might  
5 have been filled with sand. Clean it out so we can get  
6 all those zones producing.

7 So that's a simple -- it's about as simple as  
8 that. That's the simplest way to determine what we do  
9 with that report.

10 There's other information and other  
11 applications. It can get complex, what we do, but  
12 that's the simple way to describe it.

13 Q. Okay. And when you're talking about those  
14 stages, those are the chemical tracers that are going  
15 into each stage; is that right?

16 A. Right. We're marking the frac fluid that  
17 carry the proppant down there.

18 Q. Okay. And the proppant, there are proppant  
19 tracers, too? Those are the isotope tracers that we  
20 talked about?

21 A. That's correct.

22 Q. Okay. Now, the report that was produced --  
23 the flowback report -- explain that the samples were  
24 analyzed with gas chromatography, mass spectrometry,  
25 and ion chromatography.

1 A. Correct.

2 Q. Can you -- were the results of those tests  
3 contained in the flowback report that was produced?

4 A. They are.

5 Q. Okay. What about the underlying data that  
6 was used to produce the report?

7 A. The underlying data is raw data, area counts,  
8 that have to be calibrated and converted to get these  
9 engineering results that you can interpret.

10 The raw data, as you know, we made an  
11 attempt -- or -- multiple attempts to try to retrieve  
12 that data. Unsuccessfully. I can describe more.

13 Q. Sure. Why don't you tell the Judge about  
14 what you did as president of ProTechnics to try and  
15 obtain the raw data for the Plaintiffs in this  
16 situation?

17 A. Yeah. We have a chemistry lab manager who  
18 manages all of our processes with regard to analyzing  
19 these samples. I went to our lab manager and asked him  
20 to produce the -- I said we had a subpoena. I gave him  
21 the well name. Told him I need to get the raw data for  
22 this job.

23 He went and searched the database, tried to  
24 see if he could find the raw data.

25 We do not have the ability to locate that

1 data through our database.

2 Q. And is that because this job was done back in  
3 2009? December of 2009?

4 A. Correct. Back at that time, you know, our  
5 raw data is not something that we leverage. It's  
6 the -- the interpretation is based off of the report  
7 that we provided. That's what we provide our client.  
8 That's what our engineers use.

9 Once we calibrated and moved to that phase,  
10 that's what you use. That's the -- what has value.  
11 And so we've never worried about the raw data once we  
12 get it converted.

13 Q. Now, in this flowback report, there's a  
14 paragraph that describes essentially what you described  
15 about using the tracers and injecting them into the  
16 frac stages. And eight frac stages, it says.

17 But there's a summary here. And it says, "As  
18 the sample period proceeds with time, the chloride  
19 concentrations are observed to increase, while the  
20 total chemical tracer concentrations are observed to  
21 decline. This trend suggests that the formation brine  
22 component of the flowback fluid is increasing as the  
23 chemically traced treatment fluid component declines."

24 Can you explain what that means, and why that  
25 is important in the context of this report?

1           A. Yeah. That's another application of the  
2 diagnostic. We used to only measure the chemical  
3 concentration, and over time you can see the chemical  
4 concentration dropping off. That's just historically  
5 true.

6                     And sometimes people wonder is that really  
7 accurate. Is that what's going on with my well,  
8 because it didn't -- and so we started taking the  
9 cation measurements to which that just is taking the  
10 measurements of the water itself. Not our tracers. An  
11 independent measurement. Because the water that we  
12 pump downhole is more fresh water. And the formation  
13 water is more like sea water. It's a high salinity.

14                    So when you see the cations, which is the  
15 salts that are in the fresh water going downhole. When  
16 you start producing the well back, the first fluid you  
17 produce back is going to be more the frac fluid. So  
18 it's going to be more fresh water.

19                    And over time, as the zone cleans up and the  
20 frac fluid cleans up and gets out of the way, the  
21 formation water starts coming in and almost washing it  
22 out, which cleans up the frac and it flows better then.

23                    The original purpose of pumping tracers, and  
24 the patent that we had was because when they were  
25 pumping frac fluids, they would use a gel. Like, a gel

1 stabilizer. Because they want to carry sand and  
2 proppant and get it out thousands of feet away. The  
3 gel would be like glue, and it would -- yeah, you might  
4 create a fracture and proppant, but if the glue doesn't  
5 break and clean up, it's just a plugged fracture.

6 So the purpose -- original purpose of the  
7 tracers was to mark the different stages of fluid and  
8 determine is it cleaning up. And early on we had a lot  
9 of glue. And so they changed the fluid systems, and  
10 they've improved them to try to get them to clean up.

11 So this is doing two things. We're showing  
12 the chemicals are coming back, but the fact that we  
13 have the salinities coming up is showing that the  
14 formation fluids are coming in. And those formation  
15 fluids are just cleansing out the frac fluid. And the  
16 well is going to be producing better once you get the  
17 frac fluid off.

18 We say in our world that the frac fluid is  
19 damaging and that it's plugging the production. So  
20 it's, like, a plumbing issue. How can I get that  
21 cleaned out? And that's the number one purpose of the  
22 tracers, is to make sure our fluid systems are  
23 effective at cleaning up and creating an effective  
24 fracture. Conductive fracture.

25 Q. Okay. Can you describe to the Judge how the

1 water samples are taken at the well and sent to  
2 ProTechnics?

3 A. We -- when our employees go out to location  
4 to pump the tracers, we leave a kit on location. That  
5 will be boxes with bottles with labels on them with  
6 FedEx shipping. The box is labeled with our name.  
7 Everything is set up.

8 We hand that off to -- typically, the client  
9 will have a flowback crew on location. I'm not exactly  
10 certain all that they do. But right after the frac,  
11 the client will have somebody out there monitoring  
12 flowback and determining how much of the frac fluid has  
13 been recovered and taking their measurements.

14 They'll take these samples in a small, like,  
15 125-millimeter-size Nalgene bottle. Label it. Send it  
16 into Houston. And these are coming in from all over  
17 the world. Our one location.

18 Those samples are then taken through a  
19 process -- proprietary process that we have to analyze  
20 for our tracers.

21 So they might collect several samples on the  
22 first day, and then the next day, less. And as time  
23 goes by, they'll collect fewer samples.

24 Q. Did ProTechnics keep those bottles -- water  
25 bottles of samples for six years or more?

1           A.    No.  Our normal practice is that we will take  
2 those samples, we'll analyze them.  Because we don't  
3 need the whole 125-mils of fluid to analyze it.  We can  
4 analyze that thing a hundred times, probably, with that  
5 amount of fluid.

6                    What we do is, we'll hold those samples in  
7 storage, and then when the new samples come in from  
8 around the world, we'll put those in storage.

9                    So it's kind of like first-in, first-out.  We  
10 just shift the old samples and properly dispose of  
11 those.  Bring in new samples.  So there's a cycle.

12                   And so the amount of time they stay there  
13 might be a month, might be two months.  Depends on the  
14 rate of samples coming in.  We don't offer that as a  
15 service.  It's not -- we just do it as a matter of,  
16 well, hang on to them just in case somebody says, hey,  
17 let's go back and reanalyze the sample or something.

18           Q.    Now, I heard you testify earlier about the  
19 underlying data not being identifiable or retrievable.

20           A.    Correct.

21           Q.    Let's assume, hypothetically, that you, in  
22 fact, could retrieve the information.  If the data was  
23 retrievable, would it be usable?  And I'm talking about  
24 the gas chromatography, mass spectrometry, or ion  
25 chromatography.  Would that data be usable to the

1 Plaintiffs in its raw form?

2 A. I don't know how.

3 Q. Can you explain?

4 A. Well, the chromatography data is measured in  
5 area, and it's a number. It's not -- it's not -- it's  
6 almost unitless. And until you can calibrate and  
7 convert it into parts per billion or parts per million,  
8 you know, concentration. Because you cannot get  
9 concentration from the raw data. The raw data would  
10 have to be calibrated and converted into. Which is --  
11 what we provided was the calibrated results that are  
12 interpretable.

13 And that's what our engineers use to help our  
14 clients figure out how better to produce the wells, is  
15 the report that we provided.

16 Q. If Range Resources, back in November, had  
17 made the same request by Plaintiffs -- or in December  
18 or today -- if Range Resources made the same request  
19 for this underlying raw data, would you be able to --  
20 would the answer be any different in terms of your --

21 A. No. No.

22 Q. Can you tell the Court some of the things  
23 that have affected, as you understand it, ProTechnics'  
24 ability to try and identify or locate the underlying  
25 raw data?

1           A. Well, we have gone through personnel changes,  
2 system changes, new database changes. Currently,  
3 today, we actually do have the ability, with our  
4 current database, to go in and say, hey, this sample,  
5 here's the raw data, and it's linked. Part of that is  
6 because if a manager wanted to go review somebody's  
7 performance, he could go and quickly look at it. We  
8 didn't have that ability back at that time.

9           The other thing is, we have multiple  
10 instruments running 24/7 with samples coming in from  
11 all over the world. The samples being analyzed are  
12 intermingled with other projects.

13           They are intermingled -- they might --  
14 this -- like, if we look at the samples on this list,  
15 one of them might have been run on this day on that  
16 instrument. This sample which came in seven days later  
17 might have been analyzed on that instrument. There's  
18 no -- it's a -- so we got multiple instruments,  
19 different PCs.

20           There are other complications. I think --  
21 and the PCs back then, we couldn't have them on the  
22 network due to security issues of XP or some IT issue.  
23 They wouldn't let it be on the Internet because that  
24 version of operating system was not being supported by  
25 Microsoft. It wasn't secure. I don't know. There's

1 some other -- I don't understand the technical side of  
2 why we can't get the data.

3 Q. Okay. Now, the underlying raw data, is that  
4 still something -- is that something you consider  
5 confidential and proprietary? Do you give it to  
6 clients?

7 A. Yeah, that would also -- in order to be able  
8 to use that data, and if you look at the raw data, it's  
9 going to pretty much identify what our tracers are.

10 With that being said, that's a trade secret,  
11 and that's our company. That trade secret is  
12 foundational. If there's anything we have to keep  
13 trade secret, that is it. So that's the number one  
14 biggest concern, is we did -- cannot reveal the tracer.  
15 It would -- we might be able to redact things from it  
16 to eliminate that issue.

17 The other one is, if you have to figure out  
18 how to use that data, and if it's useable, you have to  
19 be able to calibrate it, and you have to understand how  
20 we perform our process. And the process, even, to  
21 analyze our data is unique to our company. No one  
22 outside our company knows what we're doing or how we do  
23 it.

24 So it would reveal two things. Our process  
25 is proprietary, and more importantly, the tracer. And

1 the tracers are, again, low concentration, to mark the  
2 fluids or the massive fluids going down are the --  
3 what's really being pumped downhole. We just have a  
4 small marker, similar to what people do to mark  
5 gasoline or drugs or dollar bills for  
6 anticounterfeiting. That's kind of what we're doing.  
7 And that is confidential.

8 Q. Now, so the process and the tracer  
9 composition, those are both -- they're not disclosed  
10 publicly?

11 A. Correct.

12 Q. And ProTechnics undertakes measures to  
13 protect those -- both the process and the tracer  
14 composition -- from outside knowledge?

15 A. We protect it even on the inside. There's  
16 very few people who are allowed to know.

17 Q. Does the process and the tracer composition,  
18 do those provide economic value to ProTechnics?

19 A. That's our whole -- that's it. That's our  
20 core of how we make our money.

21 Q. Do you know if there are competitors out  
22 there who would like to get access to that information?

23 A. We do know.

24 Q. Have you had situations where competitors  
25 have tried to steal your information?

1           A.    We're in a lawsuit right now due to some  
2 ex-employees who have stolen --

3           Q.    So you know competitors are out there?

4           A.    I have maybe alleged -- yeah, that's what  
5 we're alleging, and that's what we're dealing with  
6 right now.

7           Q.    Okay.  And you know that there are  
8 competitors out there that would like to get that?  
9 Your technology?

10          A.    We do know that.

11          Q.    Can you tell the Judge the kind of harm that  
12 would occur to ProTechnics if those trade secrets and  
13 proprietary information were to get out into the  
14 public?

15          A.    Well, for me personally, especially right  
16 now, what comes dear is we have had reductions in  
17 force.  You guys know the industry situation right now.  
18 Ultimately, that's what it would end up leading to.

19          Q.    Really damaging to their revenue?

20          A.    It would be damaging to our profitability.  
21 Ultimately, the number of people we're going to be able  
22 to employ.

23          Q.    One of the things that was at issue was  
24 producing the contract with Range Resources.  Contract  
25 or subcontract.  Did you -- did you collect the

1 pertinent agreement with Range Resources?

2 A. Correct. I provided the MSA.

3 Q. MSA. Is that the --

4 A. Master Service Agreement.

5 Q. -- Master Service Agreement?

6 A. Correct.

7 Q. Okay. Do you understand that that was  
8 produced?

9 A. Yes.

10 Q. Okay. Did you also produce proposals and  
11 invoices?

12 A. Yes.

13 Q. Specific to the Yeager site?

14 A. Yes.

15 Q. Okay. Do you understand that there were  
16 jobsite surveys that were produced?

17 A. Yes.

18 Q. Okay. Can you tell me were there -- other  
19 than jobsite surveys or a survey that might have been  
20 produced -- or -- well, let me strike that.

21 Does ProTechnics use any or create -- strike  
22 that.

23 Does ProTechnics create any other surveys or  
24 use any other surveys as a part of the Yeager job?

25 A. We don't produce any other surveys. That's

1 the only survey we did.

2 Q. The jobsite survey; right?

3 A. The jobsite survey. We do -- as part of our  
4 responsibility to the client up front is to design what  
5 I call the diagnostic. More like the experiment.  
6 How -- what their problem is, what they're trying to  
7 solve, redesign it.

8 So they'll provide us with data on their  
9 well, and then we decide, well, here's how we would  
10 approach diagnostics to answer that question.

11 So they provide us, I think in this case, up  
12 front, a directional survey. Different information on  
13 the well. Our engineers then take that and decide,  
14 here's how we would approach this problem. We would  
15 then provide them with a proposal.

16 And then, at that point, they either call our  
17 district, say, yes, we want you out here at such and  
18 such time to provide that service.

19 Q. And has ProTechnics provided Plaintiffs with  
20 any surveys that it had that it used or produced?

21 A. We provided them with the survey that we did.  
22 The surveys that Range supplied to us was in the file,  
23 you might say, or folder that we had when they -- that  
24 we received from them. We also produced that survey.

25 Q. To Plaintiffs?

1 A. Everything we had on this job, we produced.

2 Q. Okay. And what about with respect to  
3 correspondence with Range?

4 A. Yeah.

5 Q. Did you look for correspondence with Range?

6 A. We looked and provided the correspondence  
7 associated with this well.

8 Q. Okay. You talked about the chemical tracers.  
9 I want to focus now on the proppant tracer. And can  
10 you explain what the product description was that was  
11 produced, and why, you know, it had this data about  
12 half-life, that kind of thing?

13 A. Yeah. Basically, those are the isotopes that  
14 were pumped on this job. I think our report that was  
15 provided shows how much on each stage and what type was  
16 pumped. That is a brief description that we hand out  
17 sometimes to provide people with an understanding of  
18 what it is that we're pumping.

19 In this case, we had -- I mean, it kind of  
20 describes in detail how we manufacture the bead. Where  
21 it's a ceramic bead that looks like a sand grain. It's  
22 like the proppant.

23 Typically, it's higher strength than sand, so  
24 when the formation closes down, it can't get crushed.  
25 It's -- even with sand that's propping it open is

1 weaker than the ceramic bead that we're using. So it's  
2 a high strength ceramic bead that's typically used for  
3 propping formations.

4 But what we've done with the patent several  
5 years ago is we introduced small amounts of scandium  
6 metal and iridium metal and antimony metal. And those  
7 unique three metals, then, are taken to, let's say,  
8 Texas A&M. Their reactor put downhole. They are  
9 irradiated, and then they have a short half-life.  
10 Sixty- to ninety-day half-life.

11 And we then inject that at very small  
12 concentrations into the stream of proppant. Typically,  
13 about 10 ccs per 50,000 pounds. So that's -- if you  
14 look at a dual-axle dump truck, those hold  
15 25,000 pounds of sand. So two dual-axle dump trucks.

16 And we'll have a little vial, about this  
17 size, of these beads that we mix in fluid, and we pump  
18 it in like an IV. We're just dripping it into the  
19 stream. Marking all that 50,000 pounds of proppant  
20 with a small amount.

21 We then -- and that's basically what that is.  
22 That ceramic bead, because it's contained in the metals  
23 inside of the ceramic matrix, the crystalline  
24 structure, we labeled it, marketing-wise, as Zero Wash.  
25 Because you can wash it with temperature, with acid.

1 The isotope stays internal to the ceramic bead. Stays  
2 in place. So that as you produce the well, it's still  
3 there. We can run an imaging log and identify where  
4 the frac went.

5 So it's significant in that it's -- it goes  
6 with the proppant, stays with the proppant, doesn't  
7 move with production, and allows us to image where  
8 things went.

9 Q. That being --

10 A. Kind of like a medical diagnostic.

11 Q. Translation, if the proppant, that ceramic  
12 bead that's irradiated, if that is in the frac, the --  
13 let's say, the crack under the ground --

14 A. In the proppant -- or in the fracture. In  
15 the fracture.

16 Q. It's staying in the fracture; right?

17 A. Correct.

18 Q. Okay. And on the jobsite survey, were the  
19 various isotopes actually listed on the jobsite survey  
20 that was produced?

21 A. Yeah. The isotope and the amount.

22 Q. And that's like, for example, Ir-192?

23 A. Iridium-192.

24 Q. Yeah. And was there a radiation survey done  
25 before and after to know --

1 A. Correct.

2 Q. -- whether or not there were increased  
3 radiation levels?

4 A. Correct. We measure the natural radiation  
5 background for the area that we're in. It would vary  
6 whether you're in the mountains or at the beach or  
7 whatever.

8 So we first get a baseline of what that  
9 natural background radiation is. And then before we  
10 leave, we go back and survey everything and verify that  
11 we're at natural background. That's just part of our  
12 licensed procedures.

13 Q. Okay. Going back to that master service  
14 agreement, do you remember that there was a request  
15 from Plaintiffs where they were asking about whether we  
16 had any work orders?

17 A. Correct.

18 Q. Do you remember that?

19 A. Yes.

20 Q. Did you ask your guys whether or not there  
21 were any work orders?

22 A. I asked the two individuals that would be  
23 closest to it. The contact with the client salesman  
24 and operations. Both of them together, at the same  
25 time, and they both looked at me like, what are you

1 talking about?

2 So my thought is work orders are not  
3 something that we do. Our work order for ourselves,  
4 probably, would be -- and because our client doesn't  
5 design the job and say, here's what I want you to do.  
6 Our client gives us data. Our engineers design the  
7 job. We put a proposal out that says, this is what we  
8 should do. Provide them with that. And then the  
9 engineer would say, yeah, that sounds good.

10 And then, at that point, our normal mode is,  
11 we get a call to our district. Because we'll provide  
12 them with the information about how to contact us, or  
13 they already know. They call our operations group to  
14 go out and do the job.

15 So it's kind of verbal, I guess, is the way  
16 we --

17 Q. Verbal.

18 MR. ARNOLD: Your Honor, I have no further  
19 questions at this time for Mr. Flecker.

20 THE COURT: Okay. Thank you.

21 Mr. Smith? Ms. Smith?

22 MS. SMITH: Thank you, Your Honor.

23

24

25



1           A.    What I would say -- and I think more in the  
2 public view is it's more like a holding company.

3           Q.    Core Laboratories is?

4           A.    Correct.

5           Q.    Okay.

6           A.    And it depends. I mean, that's the way I  
7 view it. The name overriding from a marketing point of  
8 view is leverage. But each division operates  
9 separately. We have no Core Lab marketing group. We  
10 have no -- it's all -- each division operates on their  
11 own.

12          Q.    And you understand from the subpoena that was  
13 served on Core Laboratories, slash, ProTechnics that it  
14 was designated as just that? To Core Laboratories,  
15 slash, ProTechnics; correct?

16          A.    Are you saying the subpoena?

17          Q.    The subpoena. Uh-huh. That counsel said  
18 that you helped do a response to.

19          A.    Correct.

20          Q.    Okay.

21          A.    I can't remember what the language on the  
22 subpoena said.

23          Q.    Okay. And, sir, in your 16-year tenure with  
24 Core Laboratories/ProTechnics, have you ever worked in  
25 the lab before?

1           A.    I was responsible for the lab at one point in  
2 time.

3           Q.    Were you the lab manager of ProTechnics/Core  
4 Laboratories?

5           A.    For that, I filled the role of lab manager  
6 for our chemistry lab. I was the -- hired on as a  
7 director of technology, then manager of engineering,  
8 vice president, president. So my involvement with the  
9 lab was pretty intimate.

10          Q.    Okay. And do you have any background in  
11 analytical chemistry?

12          A.    Not by education.

13          Q.    But you were familiar with the laboratory --  
14 ProTechnics/Core Laboratories' actual laboratory that  
15 would do analysis on samples it would receive from all  
16 over the world?

17          A.    Yes.

18          Q.    And are you familiar with the  
19 instrumentation, the gas and ion chromatography and the  
20 mass spectrometry, and how they work --

21          A.    Yes.

22          Q.    -- to give you an actual result?

23          A.    Yes.

24          Q.    Okay. And so with those instruments, once a  
25 sample is put into one of those instruments, those

1 instruments are calibrated to test for certain  
2 parameters, whether it be metals or radionuclides;  
3 correct?

4 A. That is correct.

5 Q. And they're not just testing one sample at a  
6 time, they're doing usually about 20 samples at a time;  
7 correct?

8 A. Only one sample at a time.

9 Q. So with one -- you run your gas  
10 chromatography instrument one sample at a time, not a  
11 batch of samples; is that right?

12 A. That is correct.

13 Q. Okay. And so with each one of the samples,  
14 the samples are labeled with a sample ID number;  
15 correct?

16 A. Correct.

17 Q. And that's how you delineate one sample from  
18 the other?

19 A. Correct.

20 Q. And when you receive a sample in, in that  
21 laboratory, you receive it with what's known as a chain  
22 of custody document that you briefly described when  
23 counsel asked you; correct?

24 You have to answer out loud. You're shaking  
25 your head.

1 A. I'm not certain what you're referring to.

2 Q. When you receive a vial of fluid in from a  
3 customer to have it analyzed, you receive with that a  
4 piece of paper telling you where it came from, what  
5 customer had it, when that sample was taken, and what  
6 it contains?

7 A. That's correct.

8 Q. Okay. And within that chain of custody  
9 document, it gives you an address of a contact person,  
10 whoever collected the sample, that you were supposed to  
11 report the results back to; correct?

12 A. I don't believe so.

13 Q. So how do you know who to contact once you do  
14 the analysis of the sample?

15 A. The well name would -- when we did the  
16 proposal, there's a well name. And so that sample  
17 coming in has a well name. And so we tie it to the  
18 well name. And that well name, then, up front, we  
19 would have the engineer or any information from the  
20 proposal stage would then be tied. That's how it would  
21 happen.

22 Q. And so, then, that well name is then tied to  
23 the laboratory sample ID number; correct?

24 A. Correct.

25 Q. Okay. So if someone were to come to you and

1 say, I would like you to pull for me all the data  
2 concerning Yeager 7H well, corresponding with Yeager 7H  
3 well will be a sample ID number; correct?

4 A. Correct.

5 Q. And so, then, you could look up by sample ID  
6 number those results; correct?

7 A. That is unfortunately -- we can, in the  
8 database, get the sample results that way.

9 Q. Okay. And so when it is actually -- the  
10 sample is actually put into the different  
11 instrumentation, it's logged with that same sample ID  
12 number; correct?

13 A. I believe that's correct.

14 Q. Okay. And then once that analysis is run by  
15 that specific instrumentation, it is then uploaded into  
16 an electronic, for lack of a better term, filing  
17 cabinet; correct?

18 A. At that point, the way it's done is we  
19 process the data and we calibrate converted. And the  
20 only thing that's uploaded is the concentration  
21 results. That's the only thing that's uploaded.

22 Q. And so when you run a sample by a specific  
23 instrument, that specific instrument -- before you run  
24 the sample, every morning you calibrate it, make sure  
25 that it's working properly, it's calibrated to test for

1 particular parameters, whatever they may be --  
2 radionuclides or metals or whatever; correct?

3 A. It is calibrated. And I won't go into  
4 details about our calibration.

5 Q. Sure. But it's -- and the reason you do that  
6 is to make sure that the instrument is running properly  
7 and it's able to actually analyze as it's meant to do;  
8 correct?

9 A. Yeah, that's correct.

10 Q. And that's done every morning before you  
11 start samples, or at least one time during the day,  
12 whenever you do that calibration; correct?

13 A. Yeah. That's proprietary.

14 Q. Okay. And so, then, once you do that  
15 calibration and all of that is set with the instrument,  
16 you then put the sample in, and it runs its analysis  
17 with that laboratory ID number tied to that well  
18 number, and it gives you a result?

19 A. Correct.

20 Q. That result is in concentrations; correct?

21 A. Can you repeat? Because I might have --

22 Q. Sure. So once the instrumentation does its  
23 analysis of that sample --

24 A. Yes.

25 Q. -- it then gives you a result; correct?

1 A. Correct.

2 Q. And that result is in concentrations;  
3 correct? Whatever they may be.

4 A. It is not in concentration.

5 Q. What is it in?

6 A. Area count.

7 Q. And is that true for both the gas and ion  
8 chromatography, as well as the mass spectrometry?

9 A. It is for the gas chromatography, mass  
10 spectrometry. I'm not certain about the ion. The ion  
11 might actually produce a concentration result as a part  
12 of that process, but I'm not certain. I --

13 Q. Then those -- I'm sorry. Go ahead. I didn't  
14 mean to cut you off.

15 A. Yeah, I'm focusing on the GCMS, the gas  
16 chromatography, mass spectrometry. That one does not  
17 produce concentration. Just area.

18 Q. Okay. And so it produces the area in the ion  
19 chromatography. It may produce an actual  
20 concentration --

21 A. It may. I'm not certain.

22 Q. You're unsure. Okay.

23 Then those results are then uploaded into an  
24 electronic system; correct?

25 A. Not the GCMS results.

1 Q. Okay. How are the GCMS results then uploaded  
2 into your ProTechnics system?

3 A. We have a software -- custom software package  
4 that we wrote from an efficiency point of view that  
5 will take whatever data comes off the instruments and  
6 will take the calibration instrument information and  
7 the sample results and compute a concentration and  
8 upload that into the database. That's the only thing  
9 that's uploaded.

10 Q. Okay. So before it ever gets to upload, that  
11 concentration calculation is done by the software;  
12 correct?

13 A. Correct.

14 Q. So what you're uploading into your electronic  
15 system is concentrations?

16 A. Correct.

17 Q. Okay. And that uploading into that system,  
18 that system at Core Laboratories/ProTechnics is the  
19 LIMS system? Laboratory information management system?

20 A. We actually have a custom system. The LIMS  
21 systems that are out there aren't efficient enough. We  
22 have a -- we do hundreds of samples a day, 24/7. We  
23 had to develop our own software to handle that volume.  
24 We handle a higher volume than most any laboratory --  
25 normal laboratory.

1 Q. And that electronic system stores all of  
2 those results by laboratory ID number; correct?

3 A. Correct.

4 Q. And when did ProTechnics get that LIMS  
5 system?

6 A. Well, I hate to call it a LIMS system because  
7 it's custom --

8 Q. Custom LIMS system.

9 A. -- and that implies it's, you know, a  
10 third-party software.

11 So our custom application was developed  
12 probably years ago and has been in development and  
13 continues to be in development.

14 Q. Okay. And when you say it was developed  
15 years ago, was it developed in 2008?

16 A. It was.

17 Q. So you had it up and running in 2008;  
18 correct?

19 A. Correct.

20 Q. Where it allowed you to search your system,  
21 the customizable LIMS system --

22 A. Yes.

23 Q. -- for laboratory results by laboratory ID  
24 number; correct?

25 A. Correct.

1 Q. And you indicated earlier in your testimony  
2 that with the raw data that because that wasn't in  
3 concentrations that it would be meaningless if you gave  
4 it to me; is that right?

5 A. I said that I did not know what use you would  
6 have for it.

7 Q. Because it wasn't in concentrations?

8 A. Because -- yes, you would -- the ability to  
9 convert that into something meaningful would require  
10 calibration data and process.

11 Q. Right. And that calibration data would be in  
12 the raw data package; correct?

13 A. I'm not certain what a raw data package is.

14 Q. The raw data package is everything from the  
15 actual instruments, once it read how it was calibrated,  
16 what it was calibrated to test for. That would be in  
17 the raw data packages; correct?

18 A. There would be a raw -- there would be  
19 several -- several raw data files associated with  
20 calibration, and there would be a sample. So there  
21 could be several.

22 Q. Okay.

23 A. So that is correct. Those would both --  
24 they're both raw data at that point.

25 Q. And if I gave that information in that raw

1 data package that would have the calibration, the  
2 method detection limits, the reporting limits, what the  
3 instrument was calibrated for on that day, all the  
4 laboratory checks in terms of blanks and how they  
5 operated and whether they, you know, were compromised  
6 in any way or what reagents were used. All that  
7 information contained in there. That I then gave that  
8 to an expert in analytical chemistry, he would be able  
9 to give me those concentrations; correct?

10 A. Should be able to. There would be some  
11 twists to it that would be maybe not normal. Again --  
12 but close enough.

13 Q. And in your dealings in the lab and having  
14 run the lab for Core Laboratories/ProTechnics at one  
15 point, are you familiar with what types of methods --  
16 approved methods are used by Core Laboratories and  
17 ProTechnics to analyze samples? Like for metals or  
18 radionuclides. That sort of thing.

19 A. What do you mean by "approved method"?

20 Q. Approved method. Like, for instance,  
21 EPA 200.7 to test for metals.

22 A. Right. Yeah, I'm aware that we don't run any  
23 approved methods. Ours are all proprietary and no  
24 third-party agencies, no third-party companies are  
25 aware of our processes. They're all confidential.

1 Q. And are these approved -- are these methods  
2 that you use approved by any accrediting body at all?

3 A. No one knows of our process. It's all  
4 confidential.

5 That would -- again, our tracers that we have  
6 chosen what we're analyzing for, all of that is  
7 confidential. As well as the process. So everything  
8 combined, you could not have a third-party aware of  
9 what we're doing.

10 Q. So, then, when you have to provide results of  
11 testing that you've done on a radionuclide tracer -- a  
12 radioactive tracer to, let's say, the United States  
13 Nuclear Regulatory Commission, for which ProTechnics  
14 holds a license to use radioactive tracers, how do you  
15 ensure to the US government that the test results that  
16 you're giving, those methods are correct and were  
17 properly followed by your laboratory?

18 A. Yeah, we don't do laboratory analysis of  
19 radionuclides because we don't receive those back at  
20 the lab. Those are used -- placed downhole, and we run  
21 an imaging log in the well to identify where those  
22 tracers and concentrations, you might say, are located.

23 Any individual would be able to look at our  
24 data and determine its accuracy with the data  
25 standalone because we have in -- down in the earth,

1 naturally occurring radioactive shale sand that are  
2 measured in American Petroleum Institute units. API  
3 units. We are measuring that.

4 At the same time, we are measuring our  
5 material. So it's almost like a self-calibration. You  
6 can see how we're responding in this region of the well  
7 where it's been calibrated, let's say, by a third-party  
8 even, and show that ours is measuring exactly the same.  
9 So that when you get down to the interval where our --  
10 where the proppant tracers are located, there's direct  
11 confirmation that those are calibrated within the well  
12 itself.

13 Q. And so with regard to my question, for the US  
14 government, when you, for instance, are required to  
15 provide them with testing that you've done to show  
16 amounts of radioactivity in a tracer that you're going  
17 to use or you have used, how do you certify to the US  
18 government that the method that you used to do that was  
19 done properly, and two, the method or the instructions  
20 it was supposed to do, if this isn't told to anyone?

21 A. Are you talking about laboratory? I'm not --  
22 we don't do laboratory analysis of the results that  
23 come back to our lab. It's always -- it's field. We  
24 inject it in the field, we run our imaging logs in the  
25 well itself, and they can look at that data at any

1 point in time. It's not hard to determine the accuracy  
2 of that.

3 Q. You just said that you don't do analysis.  
4 And we just talked about you receiving samples in and  
5 doing analysis on samples.

6 A. Those are analysis for the chemical tracers.  
7 Not the radionuclides. Because the radionuclides are  
8 stuck in a ceramic bead and trapped in the rock. When  
9 the formation closes, the proppant is held in place.

10 And so the way we measure the -- that -- the  
11 whole purpose of that is not to measure something back  
12 at the lab, it's to run an instrument in the hole and  
13 run a survey across the wellbore to identify where  
14 those proppants were placed, where the fracture is  
15 located to make sure the targeted zones were actually  
16 properly simulated.

17 Q. You're familiar with the term "sandout" or  
18 "flowback," aren't you?

19 A. Yes.

20 Q. And when sandout or flowback occurs, some of  
21 that proppant with the radioactive tracer in it can  
22 come back to the surface; correct?

23 A. Correct.

24 Q. And that has happened with ProTechnics and  
25 their Zero Wash tracers; correct?

1           A.    On the Range 7H well? I'm not familiar with  
2   that.

3           Q.    Not on the Range 7H well, but in other places  
4   that has happened; correct?

5           A.    It has happened.

6           Q.    Okay. And when that happens, those little  
7   ceramic beads that you talked about being stuck in the  
8   rock are no longer stuck. They come back up to the  
9   surface with that radioactivity in it; correct?

10          A.    Correct.

11          Q.    And when that occurs, ProTechnics/Core  
12   Laboratories is responsible for that radioactive  
13   product that they put downhole that's now back at the  
14   surface; correct?

15          A.    That's correct.

16          Q.    And when they are responsible for that  
17   product, how do they test to ensure that the  
18   radioactivity of that product that's now back on the  
19   surface where it shouldn't be doesn't exceed certain  
20   levels that would induce health effects?

21          A.    The surveys that we used, 11 Model 3  
22   (phonetic), you'll see on probably one of the reports  
23   is what is commonly used to quantify that.

24                    Those are calibrated on -- I think we even  
25   calibrate at a greater rate than what the government

1 requires. And we're certified. We have a Spectrotech  
2 Division that does that calibration. And we're  
3 audited, you know, on a regular annual basis at all of  
4 our districts, and so on.

5 Q. Who audits your districts?

6 A. It depends. If it's an NRC state or --  
7 whether it's a -- you know, whichever state agency is  
8 managing it.

9 Some states are regulated by the NRC. Other  
10 states have their own health department or different  
11 agency that does that.

12 Q. How about here in Pennsylvania? Which is it?  
13 An NRC state, or does the Pennsylvania DEP Bureau of  
14 Radiation do it?

15 A. I believe it's the DEP.

16 Q. And to utilize these radioactive tracers, I'm  
17 correct, am I not, that you have to have a license?

18 A. Correct.

19 Q. And that license you hold -- that  
20 ProTechnics/Core Laboratories holds, one is with the US  
21 Department of Nuclear Regulatory Commission; correct?

22 A. Correct.

23 Q. And the other is with the Pennsylvania  
24 Department Bureau of Radiation; correct?

25 A. That's one example.

1 Q. And in both of those licenses, it  
2 specifically states what ProTechnics/Core Laboratories  
3 can and cannot use radioactive tracers for; correct?

4 A. You know, I'm not -- when you say "for," I  
5 don't know. I know that the purpose of the license is  
6 to say what we can do and how we're supposed to do it.

7 Q. And those licenses limit how ProTechnics/Core  
8 Laboratories can use those radioactive tracers;  
9 correct?

10 A. Again, when you say "how," that sounds like  
11 applications. Our applications can be widespread how  
12 we use those tracers. It could be in cement. It could  
13 be in many different applications. So I'm not -- the  
14 way you're stating it is not clear to me.

15 Q. So you're not clear in the license that  
16 ProTechnics and Core Laboratories holds with the  
17 Nuclear Regulatory Commission for the radioactive  
18 materials that it has used, you're unfamiliar with the  
19 fact that it's spelled out exactly in that license what  
20 it can be used for?

21 A. No. What I'm saying is, I'm unclear with  
22 your question.

23 MR. ARNOLD: Objection, Your Honor.  
24 Argumentative and badgering the witness.

25 She should be rephrasing her question in

1 light of the witness indicating he didn't understand  
2 her question.

3 THE WITNESS: Yeah, I'm not clear with your  
4 question. I thought I kind of said that how we use it  
5 is there's many applications. So the way you phrased  
6 the question, we don't really have restrictions on the  
7 application.

8 MR. ARNOLD: And, Your Honor, I would add an  
9 objection to this line of questioning.

10 She hasn't established that any of this  
11 relates to the actual Yeager site. So she's going off  
12 on this whole exercise. And I've allowed it 'til now.  
13 But I do object to this without tying it to the Yeager  
14 site.

15 THE COURT: I understand. Objection is  
16 overruled for the time being.

17 BY MS. SMITH:

18 Q. Sir, with regard to your license --  
19 ProTechnics/Core Laboratories' license to use  
20 radioactive materials, both by the US government and by  
21 the Pennsylvania DEP, is it your understanding in those  
22 licenses that it specifically spells out the particular  
23 uses that ProTechnics/Core Laboratories is being  
24 authorized to use those products for?

25 A. I would have to look at the license.

1 Q. And with regard to the use of the radioactive  
2 tracers at the Yeager site -- well, let me step back  
3 for a minute.

4 I understood you to testify earlier that  
5 radioactive tracers were used at the Yeager site;  
6 correct?

7 A. Yes. The documentation shows, like I said,  
8 how much we used.

9 Q. Okay. And to use those at the Yeager site  
10 would require you to have a license by the Pennsylvania  
11 Department Bureau of Radiation; correct?

12 A. Either that or a reciprocity.

13 Q. Okay. And with regard to the Yeager site and  
14 the radioactive material that was used there by  
15 ProTechnics/Core Laboratories, did ProTechnics/Core  
16 Laboratories have a license to use radioactive material  
17 there at the time it was used in 2009?

18 A. Certainly.

19 Q. By whom was that issued?

20 A. I don't recall. There was a time when we  
21 operated in Pennsylvania through reciprocity. I don't  
22 recall what year we switched over to having a license  
23 in Pennsylvania specifically.

24 Q. Does 2008 sound familiar? Does 2008 sound  
25 familiar? Does it refresh your recollection as to the

1 year that it went from reciprocity to a state license?

2 A. I can't say.

3 Q. And in 2010, was ProTechnics/Core  
4 Laboratories cited by the Pennsylvania DEP for  
5 utilizing radioactive material without a license?

6 MR. ARNOLD: Your Honor, I'm going to object  
7 to this line of questioning.

8 She hasn't connected it in any way to the  
9 Yeager site, to Washington County. She's referring to  
10 things that are entirely far afield from this, and, in  
11 fact, don't have anything to do with Range Resources.  
12 Without her establishing some foundation for that  
13 question, it's objectionable.

14 THE COURT: Are you asking about the Yeager  
15 site specifically?

16 MS. SMITH: That's my very next question,  
17 Your Honor. If that went to the Yeager site.

18 THE COURT: Okay. You may ask it.

19 BY MS. SMITH:

20 Q. Did ProTechnics/Core Laboratories receive a  
21 notice of violation by the Pennsylvania DEP for  
22 utilizing radioactive material at a natural gas drill  
23 site in 2010 without a license?

24 MR. ARNOLD: I --

25 THE COURT: Overruled.

1 MR. ARNOLD: Well, I thought Your Honor ruled  
2 that with respect to the Yeager site.

3 THE COURT: Well, I understand the next  
4 question is now going to be, was that at the Yeager  
5 site?

6 MS. SMITH: Yes.

7 MR. ARNOLD: Well -- okay.

8 THE COURT: You may answer that question.  
9 Were you cited?

10 BY MS. SMITH:

11 Q. Do you want me to repeat it?

12 A. Yes.

13 Q. In 2010, did Core Laboratories/ProTechnics  
14 receive a notice of violation for the use of  
15 radioactive material at a natural gas well site without  
16 a license?

17 A. That does not sound familiar.

18 Q. So you have no recollection?

19 A. I do recall one incident where -- our normal  
20 process is to file for reciprocity before we come into  
21 the state. It may have been that the sending of that  
22 information for reciprocity did not happen prior to the  
23 job.

24 Q. And that's why the NOV was issued? Because  
25 radioactive materials were utilized before the license

1 was issued; is that correct?

2 A. It's not a license. It's a reciprocity.

3 Q. Before the reciprocity was issued?

4 A. Right. So we have a license to operate every  
5 job. You have to -- when you don't have a license in  
6 that state, you have to file for reciprocity. It's a  
7 quick thing. And I think that happened -- the job --  
8 we covered it, then the reciprocity happened. The  
9 timing of that, if I recall correctly, didn't happen in  
10 the proper sequence.

11 Q. And was that failure to have a license before  
12 using -- or failure to have that reciprocity before  
13 using that radioactive material at a natural gas drill  
14 site at the Yeager site?

15 A. No. There are no issues with the Yeager  
16 site, to my knowledge.

17 Q. How do you know that?

18 A. I would know because if there was anything  
19 associated with the Yeager site, I would definitely  
20 know at this point in time.

21 Q. What documents did you look at to confirm  
22 that that notice of violation did not go with the  
23 Yeager site?

24 A. There are several individuals associated with  
25 discovery. The managers involved with any violations

1 sit right next to me. That would have been quite  
2 apparent.

3 Q. Did you actually review the notice of  
4 violation yourself to determine that, in fact, it was  
5 not from the Yeager site?

6 A. I never looked at anything other than what  
7 was associated with the Yeager 7H well site. And there  
8 was nothing associated with this well site.

9 Q. Did you ask your managers if there were any  
10 notices of violation issued by the DEP for the Yeager  
11 site with regard to ProTechnics or Core Laboratories?

12 A. I asked them for anything associated with the  
13 7H. Not just that.

14 Q. And did you ask them, as well, for either the  
15 reciprocity or the license to use radioactive material  
16 at the Yeager site?

17 A. No.

18 Q. So you didn't produce the license or  
19 reciprocity that Core Laboratories and ProTechnics had  
20 to get in order to use that radioactive material at the  
21 Yeager site; correct?

22 A. Well, I think that associated with the 7H  
23 well and the Range Resources interactions and the  
24 discovery requests, that we provided everything  
25 associated with the well.

1           There are many procedures that we do on every  
2 single job that we didn't provide. You know, training  
3 manuals, training certificates, you name it. What we  
4 did was provide the data associated with the 7H well as  
5 part of discovery.

6           Q. Sir, you indicated that you were the one that  
7 helped prepare the responses to the subpoena; correct?

8           A. Correct.

9           Q. And the subpoena says, "Any and all documents  
10 and things related to work performed or services  
11 rendered for the Yeager oil and gas well site in Amwell  
12 Township, Washington County, Pennsylvania, related to  
13 any oil and gas well, on behalf of Range Resources,  
14 Universal Wells at any time."

15          A. And we provided all that.

16          MR. ARNOLD: Your Honor, I would like to  
17 object.

18                 We're here today relating to the paragraphs  
19 in Your Honor's order that are very specific. And none  
20 of this relates to these paragraphs.

21          THE COURT: Ms. Smith?

22          MS. SMITH: Your Honor, with regard to that,  
23 we asked for all of the documentation, contracts,  
24 anything that they needed in order to do the job that  
25 they did up at the site.

1           Clearly, one of those things that they needed  
2 was a license. And he was up on the stand and said,  
3 "We produced all documents with regard to the Yeager  
4 oil and gas drill site."

5           Clearly, they haven't.

6           The fact that there were notices of violation  
7 that have been issued against this company, number one,  
8 for not having a license, and number two, for using  
9 radioactive tracers, and those things releasing  
10 inappropriately, which we still don't know what site  
11 that is for, that's why I'm asking.

12           Because if there is no license to use these  
13 radioactive tracers by ProTechnics or Core Laboratories  
14 prior to the use, that should have been in with the  
15 contracts and the master service agreement. All of  
16 that stuff that they would have had to have had in  
17 order to ever take the job and sign that contract  
18 agreement. Which, clearly, the subpoena covers.

19           MR. ARNOLD: Your Honor, if I may. They  
20 filed the motion to compel. They described the  
21 paragraphs that they were seeking to compel a response  
22 on. There is nothing in paragraph 7 of their motion to  
23 compel that says anything about licenses with the  
24 state. They didn't ask for it. They didn't ask for it  
25 specifically in any meet and confer. They didn't ask

1 for it in their motion to compel. They didn't -- they  
2 argued about it.

3 But what the evidence shows today is she has  
4 no basis to say that any violation was ever found with  
5 respect to the Yeager site. She's grabbing something  
6 from a completely different place. She hasn't even put  
7 in the basis for what she's saying. And she's trying  
8 to use that to bootstrap to say that we didn't produce  
9 something that they didn't even ask for or seek to  
10 compel. And it's nowhere in Your Honor's order.

11 So this is a whole fishing expedition that  
12 doesn't have anything to do with what we're here for  
13 today, Your Honor.

14 MS. SMITH: Your Honor, as part of your order  
15 it says that we would have this hearing in order to  
16 assess the issues of relevancy. That's what this is  
17 assessing. The issue of relevancy. Whether there  
18 were -- these radioactive tracers, which, by the way,  
19 Your Honor, with regard to my clients and whether those  
20 radioactive tracers were in their water and whether the  
21 DEP knew that they were using radioactive tracers so  
22 that they could be tested for in my client's water is a  
23 big issue in this case.

24 And if they didn't have a license to use them  
25 even to begin with, then the DEP wouldn't have known

1 that they were using them and knew to test for them to  
2 see if they had gotten into their water.

3 MR. ARNOLD: Your Honor, if it was a big  
4 issue, why isn't it in their motion to compel? And  
5 they're just -- there's no connection.

6 THE COURT: This notice of violation, you  
7 have no evidence it has anything to do with the Yeager  
8 site?

9 MS. SMITH: I don't, Your Honor. I have it  
10 with me, and I'm going to give it to him. I just  
11 wanted to ask some preliminary questions.

12 No, I don't.

13 THE COURT: Well, then, let's move on.

14 MS. SMITH: Okay.

15 BY MS. SMITH:

16 Q. When you received the subpoena and it was  
17 brought to your attention and you were collecting  
18 documents for it, did you limit your search in any way  
19 to collect documents responsive to the subpoena?

20 A. No.

21 Q. And so did you just, then, look for documents  
22 that had the Yeager name on it or the identification  
23 number -- sample identification number? How did you do  
24 that?

25 A. Well, we have a folder on all of the, let's

1 say, files associated with producing the product that  
2 we provide Range. So, I mean, it was pretty much a  
3 normal process to go and grab what information we had.

4 Q. And in that process, did you or anyone else  
5 at ProTechnics speak with anyone at Range Resources to  
6 see what it was that you should produce?

7 A. Not that I am aware of.

8 Q. You personally didn't?

9 A. No.

10 Q. At any time, did you or anyone else contact  
11 Range Resources and inform them that you had been  
12 served with a subpoena in this case with regard to the  
13 Yeager site?

14 A. Not that I'm aware of.

15 Q. And you indicated in your affidavit in  
16 Paragraph No. 3 that you spoke with someone in the  
17 laboratory about collecting the analytical data from  
18 the gas and ion chromatography and mass spectrometry;  
19 correct?

20 A. Correct.

21 Q. Who was that person?

22 A. That was David Chastain (phonetic), the lab  
23 manager.

24 Q. And you indicated earlier in your testimony  
25 that you gave him the name of the Yeager well site to

1 go look for that information?

2 A. Correct.

3 Q. Did you ever give him the laboratory ID  
4 numbers that were associated with that well name that  
5 were put into or placed with the samples when they went  
6 through the GCMS or the ion chromatography?

7 A. That would be unnecessary because the well  
8 name, he goes to his database, he can look all that up.  
9 He can get all the results. The parts per billion.  
10 Everything that's within that report is stored in our  
11 database.

12 Q. Okay. But in terms of getting the actual raw  
13 data, did you give him the sample ID numbers so that he  
14 could go to the raw data and match them up?

15 A. As I said, when I give him the Yeager 7H, all  
16 that information is there. He's a smart guy, fully  
17 capable, if not more than myself, to do that. So he  
18 knows what he's doing.

19 Q. So do you know if he went and used the  
20 laboratory ID numbers to go back to the raw data and  
21 match it up?

22 A. He did make an attempt to go through, more  
23 than once. Because the first time he went through he  
24 said, "I looked for every way I can."

25 And then he went -- another time went back

1 and looked at an old database to see if it had anything  
2 in it.

3 To my knowledge, you know, he knows the IDs.  
4 We work with this every day. Currently, our system is  
5 set up that if you have that well name, you can go to  
6 the samples and click on them, and it will take you to  
7 the raw data. That was a few years ago implemented.  
8 But prior to that time, the system did not have that  
9 capability.

10 Q. And so the raw data was stored in paper form  
11 somewhere else, and you couldn't link the two; is that  
12 right?

13 A. I don't know.

14 Q. Well, then, how do you know that he did a  
15 search if you don't know that that's how it was done?

16 A. Because he told me he did the search.

17 Q. Well, if you say that you don't know how  
18 that's done, how he would have gone back, did you ask  
19 him what he did?

20 A. I did.

21 Q. Did you ask him if he went back to the paper  
22 files and looked to match up the ID numbers to pull  
23 that information?

24 A. The whole process of -- I don't know where  
25 the paper -- there's an insinuation that we have paper

1 files. I don't know if we have them.

2 Q. Well, did you ask him?

3 A. I did not ask him about paper files. I don't  
4 think we have paper files anywhere.

5 Q. So the system that you referred to in your  
6 affidavit when talking about being able to retrieve the  
7 data is purely your computer system?

8 A. Correct.

9 Q. You never looked or inquired as to whether or  
10 not the raw data in paper form existed at your company;  
11 correct?

12 A. I have never understood that we've ever put  
13 our digital information on paper. It would be  
14 inefficient and costly. And so I have no knowledge  
15 that we've ever done that.

16 Q. So you have no knowledge that at your  
17 laboratories you would use laboratory notebooks? Where  
18 the actual technicians would be writing down  
19 concentrations, how much of a reagent they put in  
20 something? You have never used laboratory notebooks at  
21 ProTechnics/Core Laboratories; is that right?

22 A. Not in the normal fashion.

23 Q. What does that mean?

24 A. Well, you're describing a process that I've  
25 understood people do. Ours is more digital. Again,

1 it's all about efficiency.

2 Q. But you said it didn't go digital, where you  
3 could read back to a sample ID number, until a couple  
4 of years ago; correct?

5 A. A few years ago.

6 Q. And so that would have predated the Yeager  
7 site in that testing; correct?

8 A. Well, as I said, we have a digital --  
9 everything's done digitally. Whenever the mathematics  
10 are done, the software that runs, it doesn't -- the  
11 software doesn't go out and look at pieces of paper and  
12 calibrate off of a piece of paper to compute a  
13 concentration. So even back historically, it's always  
14 done it digitally.

15 Q. And so why is it that when you were asked to  
16 go back and get the raw data package for the testing  
17 that was done at the Yeager site from the fluid -- the  
18 flowback that you received from Range Resources, you  
19 weren't able to do that?

20 A. Because we have no link between the database  
21 and the raw data.

22 Q. Okay.

23 A. That was an intermediary software. That was  
24 a -- would take that, process it, and upload it into  
25 the database. There's no connection between the

1 database and the raw data.

2 Q. And so did anyone at ProTechnics/Core  
3 Laboratories undertake the task of going back to just  
4 that raw data and searching by laboratory ID number to  
5 pull that information to respond to the subpoena?

6 A. David told me that he made some efforts to  
7 figure out how to do that. And he was unable to figure  
8 it out.

9 Q. So he couldn't figure out how to look for a  
10 laboratory ID number in the raw data?

11 MR. ARNOLD: Your Honor, objection.  
12 Argumentative.

13 MS. SMITH: That's how he said that it's  
14 organized.

15 THE COURT: Overruled.  
16 You may answer the question.

17 MR. ARNOLD: He's answered her question  
18 multiple times.

19 THE COURT: Well, I think he has, but we'll  
20 give him one more shot.

21 THE WITNESS: Yeah, I mean, basically, like I  
22 said, there is no organized system out there for  
23 keeping track of that data. Even for ourselves. We  
24 can't go back and get that data. We have what we're  
25 processing today, and we can convert it.

1           One thing to keep in mind, we have no care  
2 for the raw data. The information that we care  
3 about -- and what, obviously, we care about is what we  
4 stored in the database. It's the parts per billion.  
5 The concentration. That's the service we provide to  
6 our clients. That's all we've been -- that was of  
7 value at the time. The need to go back and look at raw  
8 data has never been a business need for us.

9 BY MS. SMITH:

10           Q. So I understand from your testimony here  
11 today and from your affidavit, it's not that  
12 ProTechnics/Core Laboratories doesn't have that raw  
13 data for the Yeager site, it's just that in its present  
14 form, can't be searched on a computer. It would have  
15 to be searched manually, and there's been no effort  
16 made to try and determine how to most efficiently go  
17 through that; is that correct?

18           A. There was an effort to try to figure out how  
19 to go about doing it. And I think he had some  
20 conversations with some people that had been there from  
21 back then. And all I understand is that he was unable  
22 to figure out how to go about doing it.

23                   And then the other one is, does it even still  
24 exist? We don't know.

25           Q. And you don't know whether it still exists

1 because you never undertook the process to go and  
2 search the raw data; correct?

3 A. That would be incorrect. He made an effort  
4 to go find the data.

5 Q. Well, you just told me you don't know whether  
6 it exists or it doesn't exist.

7 A. That's correct.

8 MR. ARNOLD: Your Honor.

9 THE COURT: Now it's getting argumentative.  
10 Let's move on.

11 BY MS. SMITH:

12 Q. With regard to the proposals and the invoices  
13 that were produced in this case --

14 A. Yes.

15 Q. -- you would agree with me, would you not, in  
16 the first two productions -- the first one in November  
17 of 2015 and then the second one in December of 2015 --  
18 ProTechnics/Core Laboratories did not produce any  
19 invoices, just proposals; correct?

20 A. Correct.

21 Q. Why was that?

22 A. I think an oversight. I don't know.

23 Q. How did you learn that it was an oversight?

24 A. Whenever information came that said we didn't  
25 produce the invoices, that was peculiar to me. I did

1 not know that an invoice hadn't been produced.

2 And so at the point in time when there was a  
3 question about invoices, I said, I'm going to go and  
4 get with accounting, and I'm going to do it myself.  
5 Because it didn't make any sense to me.

6 So I took initiative on my own to go find out  
7 what was going on. I thought we had produced it.

8 So I asked, I think, counsel here in  
9 Pittsburgh to send me what was produced, because I was  
10 puzzled by that. Because I thought they had to be  
11 produced. So it was -- why it didn't get produced, I  
12 don't know.

13 Q. So if a representation was made to this Court  
14 that the proposals were the same thing as invoices,  
15 that would be incorrect; right?

16 MR. ARNOLD: Your Honor.

17 THE WITNESS: Excuse me?

18 MS. SMITH: If there was a representation --

19 MR. ARNOLD: Your Honor, I'm going to object  
20 because she's now coming at me on this. And  
21 Mr. Flecker -- we thought we produced the invoices.  
22 There was a miscommunication. There was an  
23 administrative clerical error. Those invoices have  
24 been produced. So we're -- again, we're wasting Your  
25 Honor's time on this because there's no issue relating

1 to those invoices anymore.

2 BY MS. SMITH:

3 Q. Sir, with regard --

4 THE COURT: So you have the invoices?

5 MS. SMITH: Well, that's what I want to ask,  
6 Your Honor. They represented -- counsel represented in  
7 our last --

8 MR. ARNOLD: And I obviously produced them  
9 afterwards.

10 THE COURT: Don't interrupt.

11 MS. SMITH: -- last meeting that the  
12 proposals were the same thing as the invoices. And I  
13 said, Your Honor, if that's counsel's representation,  
14 I'll take him at his word that that's accurate. And  
15 then we get a letter with attached invoices saying, oh,  
16 here's additional invoices.

17 Clearly, proposals and invoices aren't the  
18 same thing, and that's what my question is going to.  
19 That they're two different things and whether we now  
20 have all proposals and all invoices that were  
21 requested.

22 MR. ARNOLD: And, Your Honor, I just want to  
23 respond so that you understand.

24 As I told Your Honor at the last hearing, we  
25 asked our client to give us the invoices. I think

1 Mr. Flecker is saying that there was some confusion on  
2 his staff's part. They gave us documents. We thought  
3 they were their invoices. We ended up getting -- we  
4 went back when they kept asking about the invoices and  
5 got the invoices. So Mr. Flecker has satisfied that  
6 issue.

7 THE WITNESS: I'll take credit for that.  
8 Somehow we didn't provide them. But as soon as I --  
9 and I even asked him to send me the documents because I  
10 would have -- I assumed they were going to be there.

11 But anyways, that's when I took action and  
12 got the invoices. So I apologize.

13 MR. ARNOLD: Your Honor, I will state as an  
14 officer of the Court that I did not have possession of  
15 the invoices we produced to Plaintiffs' counsel until  
16 literally a day or so before I actually produced them  
17 to Plaintiffs' counsel.

18 THE COURT: Okay.

19 THE WITNESS: I'll take full credit. I  
20 apologize.

21 BY MS. SMITH:

22 Q. Not a problem.

23 So what my question is, sir, with regard to  
24 the proposals, there were a bunch of proposals that  
25 were produced to us. And I'm going to hand you what

1 we've marked as Exhibit 1.

2 (Plaintiffs' Exhibit 1 was marked for  
3 identification.)

4 MS. SMITH: May I approach, Your Honor?

5 THE COURT: You may.

6 BY MS. SMITH:

7 Q. Could you take a look through them and tell  
8 me, are these all of the proposals that exist for the  
9 Yeager 7H well?

10 A. Looking at them wouldn't tell me. I can tell  
11 you that we provided all the proposals for the  
12 Yeager 7H.

13 Q. Okay. Have you had the chance to review the  
14 document, sir?

15 A. Briefly, yes.

16 Q. Okay. And can you tell me by looking at this  
17 document how you know that these proposals that we were  
18 given that were represented to be from the Yeager site  
19 are actually for the Yeager site? What identification  
20 tells you that on here?

21 A. The Proposal 29718 would be what we would  
22 reference.

23 Q. And is that number specific to the Yeager  
24 site, Range Resources?

25 A. It would be, yes.

1 Q. Okay. But that's not -- it doesn't say the  
2 Yeager site on here; correct?

3 A. It doesn't, no.

4 Q. Okay. But you know that number to be Range  
5 Resources, the Yeager site, that these are the  
6 proposals from?

7 A. Yes.

8 Q. Okay. And if you look through this package,  
9 sir, are these all of the proposals for the Yeager site  
10 that ProTechnics/Core Laboratories has in its  
11 possession?

12 A. Yes. I think we have -- the top one is the  
13 one that we sent to the client.

14 Q. When you say "the top one," the one that says  
15 Completion Diagnostics --

16 A. The first two pages of this that says 1 of 2  
17 and then 2 of 2, that's what we call our client  
18 proposal. That's what we send to the engineer so he  
19 knows what we're proposing:

20 What we send to our district office is a  
21 little more information, so operations knows exactly  
22 what they operationally have to perform.

23 You know, we call it a PTI District Proposal.  
24 It might be -- maybe what we would -- you might better  
25 call it a work order, even, for our personnel. So it's

1 to guide. This is an internal document. This does not  
2 go to the client.

3 Q. Okay. But you know that it corresponds with  
4 the Yeager site, Range Resources, because of the well  
5 ID No. 29718?

6 A. That is correct.

7 Q. Okay. And it indicates on here that there  
8 was going to be used in the different stages of the  
9 frac of Yeager 7H both a radioactive tracer and a  
10 chemical frac tracer; correct?

11 A. That is correct.

12 Q. And if we look at this document, it indicates  
13 that there were eight stages of frac done -- or to be  
14 done at the Yeager site; correct?

15 A. Correct.

16 Q. And in Stage 1, if we look at it just for an  
17 example, it says that the radioactive tracer Ir-192 in  
18 the amount of 125 millicuries was going to be used in  
19 that stage; correct?

20 A. Correct.

21 Q. Okay. And that would have been 125  
22 millicuries per injection; correct?

23 A. 125 --

24 Q. Millicuries?

25 A. Oh, each per stage?

1 Q. Yes.

2 A. Yes.

3 Q. Okay. And when that stage, for instance,  
4 Stage 1, when Ir-192 was being injected into Stage 1,  
5 it would be injected at one time at 125 millicuries?

6 A. Correct.

7 Q. Okay.

8 A. It's -- when you say "at one time," it's over  
9 the duration of -- it might be these little vials mixed  
10 in a gel. And so a -- it's plugged into high volume  
11 lines, and it's just kind of at a concentration.

12 We have headphones on. We're listening.  
13 It's like a kidney dialysis-type machine we use to  
14 introduce this into the stream at a known  
15 concentration.

16 So while they're pumping large volumes,  
17 which, if you look here, we're talking about  
18 500,000 pounds, you know, we're pumping tiny little  
19 beads to mix it along the entirety of it.

20 Q. Right. And my question went to when you're  
21 doing that, that's done in one injection? In the first  
22 stage, one injection of Ir-192 in the amount of  
23 125 millicuries was introduced; correct?

24 A. Right. When you say "one injection," I have  
25 a picture of just a blob popping out. So it's over

1 a --

2 THE COURT: Dribbled out.

3 THE WITNESS: Dribbled out over a long period  
4 of time.

5 BY MS. SMITH:

6 Q. Right. But it's not multiple injections,  
7 it's just one --

8 A. One continuous injection.

9 Q. -- one continuous injection --

10 A. That's correct.

11 Q. -- at 125 millicuries; correct?

12 A. That -- over that whole time, it adds up to  
13 125 millicuries.

14 Q. Okay. And the radioactive part of Ir-192 is  
15 the iridium --

16 A. Correct.

17 Q. -- once it's been --

18 A. Irradiated.

19 Q. -- irradiated?

20 A. Correct.

21 Q. And it indicates on this proposal that that  
22 iridium is going to be injected three separate times in  
23 three separate stages; correct? Each at the amount of  
24 125 millicuries?

25 A. That's correct.

1 Q. The proposal also indicates that in Stage 1  
2 that there will be 100 -- or -- I'm sorry -- 1,171  
3 gross of a chemical frac tracer 1100?

4 A. Grams?

5 Q. Is that grams?

6 A. Grams. Yeah.

7 Q. Okay. It had -- the "gr" next to it is  
8 grams, not gross?

9 A. Grams.

10 Q. Grams. Okay.

11 And so there would be 1,171 grams of CFT 1100  
12 injected into Stage 1 as well; correct?

13 A. Correct.

14 Q. Okay. I'm going to hand you what I've marked  
15 as Exhibit 2.

16 (Plaintiffs' Exhibit 2 was marked for  
17 identification.)

18 MS. SMITH: May I approach, Your Honor?

19 THE COURT: Yes.

20 BY MS. SMITH:

21 Q. Do you recognize this document, sir?

22 A. I do.

23 Q. What is it?

24 A. It is an invoice.

25 Q. And if you look at it, it's a series of

1 invoices. And I'll represent to you that this is what  
2 was given to us by counsel for Core Laboratories/  
3 ProTechnics.

4 Are these all of the invoices that  
5 ProTechnics and Core Laboratories has for the work or  
6 services it provided at the Yeager well site?

7 A. Yes.

8 Q. And it indicates -- if we look at this  
9 invoice, and we look specifically at the CFT 1100,  
10 which you'll find on the last page.

11 A. I found it.

12 Q. Okay. Or second to the last page. I'm  
13 sorry. It indicates that it was in -- what actually  
14 was used was 1,144 grams; correct?

15 A. Correct.

16 Q. So that's different than the proposal;  
17 correct?

18 A. That is correct.

19 Q. So if we wanted to know, for information in  
20 this case, which amount of CFT 1100 was actually used  
21 by ProTechnics/Core Laboratories at Yeager 7H, would we  
22 go by the invoice, or would we go by the proposal?

23 A. The invoice. I can -- just to help clarify  
24 that. We propose jobs when we go to a well site. That  
25 would be the proposal. We might pump more or less

1 depending on as they're fracking, if they're going to  
2 have any -- the volume they pump changes. And so our  
3 engineers know a concentration. There is a target and  
4 it's not the total amount. So as the job varies, our  
5 personnel on location varies to match it.

6 So it's more a -- ours is a concentration  
7 target. Not a volume target.

8 Q. And would that be true for every CFT that is  
9 listed in the invoice? The correct amount that was  
10 actually used at Yeager would be contained in the  
11 invoice, not the proposal?

12 A. Correct.

13 Q. And would that be true, also, of the  
14 radioactive tracers? The amounts contained in the  
15 invoices, not the proposals, would be the correct  
16 amount of the radioactive tracers used at the Yeager  
17 site?

18 A. Correct.

19 MR. ARNOLD: Your Honor, I just want to make  
20 sure there's no confusion. It's not the correct or  
21 incorrect amount. It's the actual versus proposed  
22 amount.

23 THE COURT: I understand.

24 MR. ARNOLD: And, again, Your Honor, we're  
25 going on and on about this, and it doesn't have

1 anything to do with the discovery dispute.

2 THE COURT: Go ahead, Ms. Smith.

3 BY MS. SMITH:

4 Q. The invoices, when we look at the first page  
5 on Exhibit 2, it indicates that the iridium that was  
6 utilized in the Yeager frac, that it was used --  
7 coupling the invoice and the proposal, that it was used  
8 in Stages 1, 4, and 7 at 125 millicuries each; correct?

9 A. You're looking at the invoice?

10 Q. The invoice and the proposal together.

11 A. On -- I lost you. Compare the invoice -- is  
12 this a general question or a specific?

13 Q. It's a specific question, and --

14 A. Tell me where to look.

15 Q. So with the invoice, the invoice is going to  
16 tell you how much -- right? -- of the iridium that was  
17 utilized; correct?

18 A. Yes.

19 Q. And if we look at the proposal, the proposal  
20 tells us how many times 125 millicuries was injected;  
21 correct?

22 A. The proposal is a financial proposal --  
23 engineering financial proposal. It tells you not what  
24 we pump, it tells you an estimate of what it would be  
25 if you -- if you run the job per this design, this is

1 what it would cost you. If you change it, you can  
2 figure out the rate on the proposal and how that would  
3 impact the actual invoice.

4 Q. Okay. So if we look at the proposal, it  
5 indicates in there that for Stages 1, 4, and 7, iridium  
6 was to be used; right?

7 A. Yes.

8 Q. And then if we look at the proposal, it tells  
9 us that scandium, Sc-46, was to be used in Stages 2, 5,  
10 and 8, at 125 millicuries per injection; correct?

11 A. Yes.

12 Q. And the proposal tells us that Sb-124, or  
13 antimony, was to be injected in Stages 3 and 6, at  
14 125 millicuries per injection; correct?

15 A. That is correct.

16 Q. And we discussed this a little bit earlier,  
17 but you're aware that the ProTechnics/Core  
18 Laboratories' license with the Nuclear Regulatory  
19 Commission indicates in it how much of these  
20 radioactive tracers ProTechnics/Core Laboratories was  
21 permitted to use on the site; correct?

22 A. It only talks about concentration.

23 Q. I'm going to hand you what's being marked as  
24 Exhibit 3.

25

1 (Plaintiffs' Exhibit 3 was marked for  
2 identification.)

3 MS. SMITH: May I approach, Your Honor?

4 THE COURT: You may.

5 BY MS. SMITH:

6 Q. Do you recognize this document, sir?

7 A. I do.

8 Q. And is this the license to use radioactive  
9 material that ProTechnics/Core Laboratories has with  
10 the United States Nuclear Regulatory Commission?

11 A. It is.

12 Q. And if we look at the first page, it  
13 indicates the three radioactive tracers that  
14 ProTechnics/Core Laboratories used at the Yeager site;  
15 correct?

16 MR. ARNOLD: Your Honor, I'm going to object  
17 to this line of questioning.

18 I think you previously indicated she needed  
19 to move on from this. There's no connection to this  
20 discovery dispute, and now she's even got the license  
21 she says she didn't get. So there's absolutely no  
22 prejudice. She's saying now -- she's just using this  
23 to further examine my client on subjects that aren't  
24 even pertinent to the discovery dispute.

25 THE COURT: This was not scheduled to be a

1 deposition.

2 MS. SMITH: I understand, Your Honor. And  
3 I'll move quickly on from this. I just have a couple  
4 of questions in here, just to make sure that what we're  
5 looking at in the invoices is what was actually used  
6 per their license.

7 MR. ARNOLD: Asked and answered. It's been  
8 answered already.

9 MS. SMITH: Actually, it hasn't, Your Honor.

10 THE COURT: No, I don't think it has. Go  
11 ahead.

12 MS. SMITH: Okay.

13 MR. ARNOLD: Your Honor, what does it have to  
14 do with the discovery dispute?

15 MS. SMITH: It goes to the relevancy of why  
16 these documents are --

17 MR. ARNOLD: They've been produced.

18 MS. SMITH: This has not been produced. You  
19 never produced this license. I went out and found it  
20 on my own after hours and hours of research.

21 THE COURT: All right.

22 MR. ARNOLD: Which, Your Honor, we've covered  
23 already.

24 MS. SMITH: We have not covered it.

25 THE COURT: Well -- and the license is not

1 specific to the Yeager well.

2 MS. SMITH: This, I believe, is, Your Honor.

3 THE COURT: This is?

4 MS. SMITH: I believe so. That's one of the  
5 questions I'm going to ask him.

6 MR. SMITH: It applies to the Yeager well.

7 THE COURT: Okay. You can ask him.

8 BY MS. SMITH:

9 Q. Sir, with this actual license from the US  
10 Nuclear Regulatory Commission, was this the license  
11 that was in place at the time that radioactive tracers  
12 were utilized at the Yeager site?

13 A. This would not be the license that we were  
14 operating off of.

15 Q. How do you know?

16 A. Because we would have used some other state's  
17 license for reciprocity. Not the NRC.

18 MR. ARNOLD: And, Your Honor, just for  
19 counsel here, I mean, the document itself talks about a  
20 letter dated July 30, 2012. And this license expired  
21 February 28, 2016. So it's after the fact.

22 THE COURT: It would seem to be.

23 MR. ARNOLD: This is an '09 event.

24 MS. SMITH: That's why, Your Honor, it was so  
25 important, as part of our request under the subpoena,

1 to get documents like these so we're talking apples and  
2 apples. That's why I'm asking him about it. This was  
3 never produced to us at all.

4 MR. ARNOLD: It wasn't in their motion. It  
5 wasn't in a meet and confer. They never mentioned it.

6 THE WITNESS: Your Honor, I really want to  
7 help as much as possible, but our training records for  
8 employees, you can go on and on.

9 We truly tried to produce whatever we thought  
10 was relevant to this well. I never would have  
11 imagined -- I just -- that -- how far you go. I mean,  
12 it's everything. I got education for my employees.  
13 I've got training records. I got what university they  
14 went to. It could all be relevant. I don't know what  
15 would be relevant. And I need your help.

16 THE COURT: Okay. Ms. Smith, what do you  
17 want to ask him now?

18 BY MS. SMITH:

19 Q. So with regard -- if this isn't the actual  
20 license -- well, my question is, in this license, it  
21 specifically says and limits ProTechnics/Core  
22 Laboratories' use of radioactive tracers, for the three  
23 different radioactive tracers that we are talking about  
24 in this particular case, for use in tracer studies at  
25 oil and gas wells, or to use them as calibration and

1 stabilization in another product that's not yours, or  
2 to use as pipe collar markers in oil and gas wells.

3 Is this license that I put before you  
4 today -- the state license that you used to operate in  
5 Pennsylvania -- did it restrict Core Laboratories/  
6 ProTechnics' use of radioactive tracers to the --

7 A. As I said earlier --

8 Q. -- to the tracer studies in oil and gas wells  
9 that's delineated in this particular license?

10 A. Yeah, this license is not the license that we  
11 would use for the State of Pennsylvania.

12 Q. That's why I'm asking you. The one that you  
13 used for the State of Pennsylvania, did it delineate  
14 out these specific uses only for the radioactive  
15 elements we're talking about right now?

16 A. I am not the radiological supervisor or RSO  
17 for the company, so I can't quote that.

18 Q. Does Core Laboratories or ProTechnics have in  
19 their possession the actual license that they possessed  
20 at the time that they used radioactive tracers at the  
21 Yeager site?

22 A. I would expect so.

23 Q. Okay. Yet that wasn't produced here; right?

24 A. That's correct.

25 And I don't think it was requested in

1 discovery.

2 THE COURT: That's okay. Wait for another  
3 question.

4 BY MS. SMITH:

5 Q. And under that Pennsylvania license, or the  
6 state license that you used to operate in Pennsylvania,  
7 did it limit the amount per injection that you could  
8 utilize -- ProTechnics/Core Laboratories could utilize  
9 as a tracer in their work at the Yeager site?

10 A. I'll just say that I -- I'm not prepared to  
11 answer that.

12 Q. But that would be delineated in that license;  
13 correct?

14 A. All I understand is picocuries per thousand  
15 pounds or something. There's some concentration.  
16 That's all I understand from my history.

17 Q. You indicated, also, in paragraph 8 of your  
18 affidavit, and testified here today, that you looked  
19 for jobsite surveys for the Yeager site that would  
20 demonstrate what jobs were performed by ProTechnics and  
21 Core Laboratories at the Yeager site; is that correct?

22 A. We provided the jobsite surveys, yes.

23 Q. Okay. And did you do that search to make  
24 sure that all of the jobsite surveys that I was given  
25 were all the ones that Core Laboratories/ProTechnics

1 has for the Yeager site?

2 A. I personally did that. I provided that.

3 Q. Okay. I'm going to hand you what's being  
4 marked as Exhibit 4.

5 (Plaintiffs' Exhibit 4 was marked for  
6 identification.)

7 MS. SMITH: May I approach, Your Honor?

8 THE COURT: You may.

9 BY MS. SMITH:

10 Q. And, sir, in Exhibit No. 4, are these all the  
11 jobsite survey forms that ProTechnics and Core  
12 Laboratories has in its possession related to the  
13 Yeager site and the work that was done there?

14 A. Yes.

15 Q. And if we look at Exhibit 4, the second page,  
16 it indicates that iridium-192 as a solid radioactive  
17 tracer was utilized in the total amount of 125  
18 millicuries; correct?

19 A. Correct.

20 Q. And then it says CFT 1100, the liquid tracer,  
21 and it doesn't give a total. Why is that?

22 A. I don't know.

23 Q. We went through the invoices and the  
24 proposal. The invoice says for CFT 1100 that there was  
25 1,144 grams used. Yet on the actual jobsite survey,

1 it's not listed; correct?

2 A. Correct.

3 Q. Is there some other job survey that would  
4 have been utilized specifically for the liquid tracer  
5 different than the solid tracer that we're looking at  
6 right now?

7 A. Not that I'm aware of.

8 Q. And if we look to the other pages listed --  
9 for instance, if we go to the next page, Stage 2, where  
10 CFT 1200 in liquid form tracer, that 1,144 grams were  
11 used, according to the invoice, it lists zero on here  
12 as well.

13 And that is the same for every liquid tracer  
14 that was utilized on these jobsite survey forms.  
15 There's no total amount listed; correct?

16 A. Correct.

17 Q. So these jobsite survey forms are incomplete;  
18 is that right?

19 A. The survey forms are incomplete. You can say  
20 that.

21 Q. Okay. Does there exist any other  
22 documentation at ProTechnics or Core Laboratories that  
23 would fill in those blanks in a form like this? Like a  
24 jobsite survey form where it was actually written down  
25 the total amounts that were used?

1           A.    Yeah, the engineer on location has a field  
2 receipt that he would have filled out. That would be  
3 the ticket showing what was delivered.

4           Q.    Did Core Laboratories or ProTechnics, in  
5 response to the subpoena, ever produce any field  
6 receipts or tickets to demonstrate that?

7           A.    To my knowledge, we would have, but I  
8 don't --

9           Q.    I'm sorry. Did you? I mean, I'll represent  
10 to you, I didn't get any.

11          A.    I'm just telling you everything that we  
12 produced that I'm aware of. I have not reviewed  
13 everything that we produced personally.

14          Q.    Okay. And so if the --

15          A.    Kind of like the same way I missed the  
16 invoices.

17          Q.    Okay. So if the field receipts or field  
18 tickets were not produced to me, ProTechnics or Core  
19 Laboratories would have them that would show the CFT  
20 amounts that were actually delivered in that ticket;  
21 correct?

22          A.    Yeah. That's how the invoice is created.

23          Q.    Okay. I'm going to hand you what's being  
24 marked as Exhibit 5.

25

1 (Plaintiffs' Exhibit 5 was marked for  
2 identification.)

3 MS. SMITH: May I approach?

4 THE COURT: You may.

5 BY MS. SMITH:

6 Q. Do you recognize this document, sir?

7 A. I do.

8 Q. What is it?

9 A. This is the Master Service Agreement between  
10 Range and ProTechnics Division of Core Laboratories.

11 Q. And you indicated, with regard to this MSA,  
12 in paragraph 7 of your affidavit that there were no  
13 other contracts or subcontracts for work performed by  
14 ProTechnics/Core Laboratories for Range Resources at  
15 the Yeager site; correct?

16 A. Correct.

17 Q. Could you show me where in this document,  
18 sir, that it tells you Core Laboratories/ProTechnics --  
19 what it is that Core Laboratories and ProTechnics is  
20 going to do for Range Resources at the Yeager site?

21 MR. ARNOLD: Your Honor, this sounds like a  
22 deposition again. I would object.

23 MS. SMITH: Your Honor, with regard to --  
24 I've looked up and down, because there is a question in  
25 this document -- and you can see some of the documents

1 don't add up -- with regard to this, what exactly was  
2 the work that they actually did.

3           They're saying this is the only contract that  
4 they have. I've read this whole thing. It doesn't  
5 delineate, at least from my reading of it -- and maybe  
6 there's something I don't understand -- that says  
7 exactly what it is that they were contracted to do at  
8 the Yeager site.

9           THE WITNESS: That would be our proposal.

10          MS. SMITH: I'm sorry?

11          MR. ARNOLD: She has the other documents.

12          THE COURT: Well, the -- yeah. I understood  
13 this document to be the master service agreement. So  
14 if Range is going to deal with -- well, who generates  
15 this? Range or ProTechnics?

16          THE WITNESS: It would be a shared -- I mean,  
17 probably -- it comes from Range.

18          THE COURT: Okay.

19          THE WITNESS: We would then, if there's some  
20 legalese we don't like, change it.

21          THE COURT: So if Range is going to hire  
22 somebody to do something, anything, that this is the  
23 master agreement. And it's all the standard  
24 boilerplate about workers' comp and -- you know.

25          MS. SMITH: Right. And in his affidavit,

1 Your Honor, he said there are no other -- there's no  
2 other contracts. So that's my question. How do you  
3 know what it is you're supposed to do? What services,  
4 specifically, were supposed to be rendered?

5 THE COURT: Okay. That's the question.

6 THE WITNESS: Our proposal.

7 BY MS. SMITH:

8 Q. So the proposal lays out every single thing  
9 that you were supposed to do; is that correct?

10 A. Well, the master service agreement also has  
11 some information. But with regard to the technical  
12 services we're going to provide, our proposal says this  
13 is what we're going to do. How we go about doing it  
14 would be our procedures and license. Things like that.

15 Q. And based on your proposal, the two things  
16 that you were going to do as ProTechnics/Core  
17 Laboratories at the Yeager site was to do a  
18 radioactive -- or -- I'm sorry -- radioactive tracing  
19 and logging that tracing. And then, two, was to use a  
20 chemical frac tracer and analyze that through the  
21 flowback. Correct?

22 A. Correct.

23 Q. So those were the two jobs you were hired to  
24 do? ProTechnics/Core Laboratories. Correct?

25 A. Two services. One job, two -- it had

1 multiple things we did for that job.

2 Q. And you indicated that you're not aware of  
3 any written work orders at all?

4 A. No. That's not common practice.

5 Q. Okay.

6 A. Like I said, we received instructions on what  
7 they want us to do, what their problems are. We design  
8 it, we give them a proposal, they call us out, and we  
9 go do it. That's the normal procedure.

10 Q. And so that initial contact, would that have  
11 been done in e-mail, where Range said, we would like  
12 you to do X, Y, and Z?

13 A. We could have been in their office talking to  
14 them. It could have been an e-mail. It could have  
15 been a phone call. I don't know.

16 Q. And were you the person in charge of  
17 collecting all of the e-mails from ProTechnics/Core  
18 Laboratories systemwide to see what was responsive to  
19 the subpoena?

20 A. I think our general counsel took the lead on  
21 that.

22 Q. Okay. And in the e-mails that were turned  
23 over, there are no e-mails that delineate exactly what  
24 it is that Core Laboratories/ProTechnics was going to  
25 do at the Yeager site. Is that your understanding that

1 there wouldn't be?

2 A. I don't know.

3 Q. In the affidavit that you submitted, it  
4 indicated that as part of the job surveys that were  
5 turned over, that in Paragraph No. 9 you said  
6 ProTechnics was not engaged to log the isotope tracers,  
7 and so ProTechnics has no additional responsive  
8 documents other than the jobsite surveys.

9 A. Correct.

10 Q. Okay. You just told me that one of the jobs  
11 was to use the radioactive tracers to trace and log  
12 those radioactive elements.

13 A. That is correct.

14 Q. But you didn't do that?

15 A. That is correct.

16 Q. Why?

17 A. Normally, what happens is when you trace a  
18 well, that gives you the alternative to go in and log  
19 the well. One of the issues of logging a well is it's  
20 costly. You got to run coil tubing in.

21 So there's two things. You got the cost to  
22 run it, and you have what is called the risk of well  
23 intervention. Getting stuck or problems. Which, you  
24 know, you lose the coil tubing, it's very costly,  
25 whatever.