

From: [Kalt, Brian](#)
To: [Frame, Jason R](#); [Pendergrass, Curt \(CHFS DPH\)](#)
Cc: [Partridge, George \(EEC\)](#); [McKinley, Matthew W \(CHS-PH\)](#); [Fowler, Kathy L \(CHFS PH\)](#)
Subject: RE: Phone Call on February 26, 2016
Date: Wednesday, March 02, 2016 10:48:00 AM
Attachments: [image001.png](#)
[image003.png](#)
[image005.png](#)
[image006.png](#)

All,

What time works best for everyone this Friday?

Kind Regards,

Brian Kalt
President
Fairmont Brine Processing, LLC
412-680-6244

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From: Frame, Jason R [<mailto:Jason.R.Frame@wv.gov>]
Sent: Wednesday, March 02, 2016 10:25 AM
To: Pendergrass, Curt (CHFS DPH); Kalt, Brian
Cc: Partridge, George (EEC); McKinley, Matthew W (CHS-PH); Fowler, Kathy L (CHFS PH)
Subject: RE: Phone Call on February 26, 2016

Curt,

I would like to accompany you on this visit. Thanks

Jason R. Frame B.S. R.T. (R), Chief Radiological Health Program
Office of Environmental Health Services/Radiation, Toxics and Indoor Air Division
350 Capitol Street, Room 313
Charleston, West Virginia 25301
Office: (304)356-4303
Fax: (304) 558-0524
Email: Jason.R.Frame@WV.gov



From: Pendergrass, Curt (CHFS DPH) [<mailto:Curt.Pendergrass@ky.gov>]
Sent: Wednesday, March 02, 2016 10:11 AM
To: Kalt, Brian
Cc: Partridge, George (EEC); McKinley, Matthew W (CHS-PH); Fowler, Kathy L (CHFS PH)
Subject: RE: Phone Call on February 26, 2016

How about we pay you a visit on Friday Mr. Kalt? I would need to reach out to my counterparts in WV just to see if they wish to accompany us on this sampling trip to your Fairmont, WV facility. We never go into another agencies jurisdiction without first checking with them. And I believe Mr. Jason Frame has quite a bit of experience working with you and your facility. You said the sludge would be easily accessible with proper planning. What would that entail exactly just so we can bring the proper sampling equipment.

Curt Pendergrass PhD
Supervisor, Radioactive Materials Section
Kentucky Radiation Health Branch

275 East Main Street
Mailstop HS1C-A
Frankfort, KY 40621
Tel: 502-564-3700 ext. 4183
Fax: 502-564-1492
E-mail: curt.pendergrass@ky.gov

Website: <http://www.chfs.ky.gov/dph/radioactive.htm>

Pay your fees on line at https://prd.chfs.ky.gov/rad_epay/

Be notified of proposed regulation changes <https://secure.kentucky.gov/Regwatch/>

Dispose of unwanted sources <http://www.crcpd.org/StateServices/SCATR.aspx>



From: Kalt, Brian [<mailto:BKalt@fairmontbrine.com>]
Sent: Wednesday, March 02, 2016 10:00 AM
To: Pendergrass, Curt (CHFS DPH)
Cc: Partridge, George (EEC); McKinley, Matthew W (CHS-PH)
Subject: RE: Phone Call on February 26, 2016

Mr. Pendergrass,

The sludge does not accumulate in either of the large ponds you see in the picture below, but rather in the middle of the picture in what looks like a rectangle ("concrete basin"). With proper planning, we can access the sludge easily. What day would work for you and or your team?

Kind Regards,

Brian Kalt
President
Fairmont Brine Processing, LLC
412-680-6244

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From: Pendergrass, Curt (CHFS DPH) [<mailto:Curt.Pendergrass@ky.gov>]
Sent: Wednesday, March 02, 2016 9:38 AM
To: Kalt, Brian
Cc: Partridge, George (EEC); McKinley, Matthew W (CHS-PH)
Subject: RE: Phone Call on February 26, 2016

Sorry to hear that Mr. Kalt but I was thinking that was probably going to be the case given the amount of time that has transpired. But thanks for checking on the samples with Summit and Reliance just the same. Looking back your earlier e-mails, you mentioned that the sludge was being dewatered on site in dewatering boxes. Do you have any of this sludge material currently on site that we can easily access to take a sample of what you are now processing that you would mind us coming to get? I am not familiar with your facility but I really don't wish to get in a boat to float on your settling pond or don scuba gear to take sludge sample at the bottom of a deep settling pond. The picture of the pond on your website looks like it would be difficult to sample.

Currently, FBP does not physically dewater the sludge on-site. The sludge is removed via pump into standard dewatering boxes. After some dewatering period on-site, the boxes were received by Advanced TENORM Services for dewatering and solidification, as appropriate to pass paint filter test, and then landfilled. Based on FBP's understanding of the dewatering process and solidification process, the extremely low levels of naturally occurring radioactive materials were to be eliminated.

WV • Marion Co.



Curt Pendergrass PhD
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Be notified of proposed regulation changes <https://secure.kentucky.gov/Regwatch/>
Dispose of unwanted sources <http://www.crcpd.org/StateServices/SCATR.aspx>



From: Kalt, Brian [<mailto:BKalt@fairmontbrine.com>]
Sent: Wednesday, March 02, 2016 9:11 AM
To: Pendergrass, Curt (CHFS DPH)
Cc: Partridge, George (EEC); McKinley, Matthew W (CHS-PH)
Subject: RE: Phone Call on February 26, 2016

Dr. Pendergrass,

I just spoke with Summit, and they keep samples on file for sixty days unless a client requests a longer period of time prior to analysis.

Kind Regards,

Brian Kalt
President
Fairmont Brine Processing, LLC
412-680-6244

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From: Pendergrass, Curt (CHFS DPH) [<mailto:Curt.Pendergrass@ky.gov>]
Sent: Wednesday, March 02, 2016 9:08 AM
To: Kalt, Brian
Cc: Partridge, George (EEC); McKinley, Matthew W (CHS-PH)
Subject: RE: Phone Call on February 26, 2016

Thank you sir.

Curt Pendergrass PhD
Supervisor, Radioactive Materials Section
Kentucky Radiation Health Branch
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Pay your fees on line at https://prd.chfs.ky.gov/rad_epay/
Be notified of proposed regulation changes <https://secure.kentucky.gov/Regwatch/>
Dispose of unwanted sources <http://www.crcpd.org/StateServices/SCATR.aspx>



From: Kalt, Brian [<mailto:BKalt@fairmontbrine.com>]
Sent: Wednesday, March 02, 2016 9:06 AM
To: Pendergrass, Curt (CHFS DPH)
Cc: Partridge, George (EEC); McKinley, Matthew W (CHS-PH)
Subject: RE: Phone Call on February 26, 2016

Dr. Pendergrass,

I heard back from Reliance this morning, and they only keep samples for a couple of months before they dispose of them. I will try and get an answer from Summit today and get back with you.

Kind Regards,

Brian Kalt
President
Fairmont Brine Processing, LLC
412-680-6244

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From: Pendergrass, Curt (CHFS DPH) [<mailto:Curt.Pendergrass@ky.gov>]
Sent: Wednesday, March 02, 2016 9:02 AM
To: Kalt, Brian
Cc: Partridge, George (EEC); McKinley, Matthew W (CHS-PH)
Subject: RE: Phone Call on February 26, 2016

Thank you Mr. Kalt for the thorough explanation of the inverse square law. And thank you for letting us know that the on-contact dose rate reading with the Fairmont Brine Processing sludge did indeed read 2 mrem/hr.

“Based on the highest recorded Source reading: 2 mrem/hr @ contact (assumed 0.25” from source)”

The 2 mrem/hr on contact dose rate reading is what we were led to believe this sludge read from others in WV.

You did not answer my question but would you be willing to contact those laboratories where you previously sent this same FBP sludge for analysis to see if they retained a sample of that material and if so, would they mind releasing that material to our office for radiochemical analysis? As I said, we would be more than happy to make the drive to OH or WV to pick up the samples. And as long as we have your [written permission](#) to release these samples, assuming they still exist, I would be more than happy to contact Reliance or Summit on your behalf and inquire as to whether they still retained these samples.

Please let me know about the samples and thank you once again for your cooperation and assistance in this matter.

Curt Pendergrass PhD
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Pay your fees on line at https://prd.chfs.ky.gov/rad_epay/
Be notified of proposed regulation changes <https://secure.kentucky.gov/Regwatch/>
Dispose of unwanted sources <http://www.crcpd.org/StateServices/SCATR.aspx>



From: Kalt, Brian [<mailto:BKalt@fairmontbrine.com>]
Sent: Tuesday, March 01, 2016 5:01 PM
To: Pendergrass, Curt (CHFS DPH)
Cc: Partridge, George (EEC); McKinley, Matthew W (CHS-PH)
Subject: RE: Phone Call on February 26, 2016

Dr. Pendergrass,

Please note, for clarity, the values provided previously were numbers calculated above background. In radiographic inspection, the radiation spreads out as it travels away from the source. Therefore, the intensity of the radiation follows Newton's Inverse Square Law. This law accounts for the fact that the intensity of radiation becomes weaker as it spreads out from the source since the same amount of radiation becomes spread over a larger area. The intensity is inversely proportional to the distance from the source.

In industrial radiography, the intensity at one distance is typically known and it is necessary to calculate the intensity at a second distance. Therefore, the equation takes on the form of:

$$\frac{I_1}{I_2} = \frac{D_2^2}{D_1^2}$$

Accordingly, we calculated our maximum dose (measured at 2 mR/hr at sludge contact) as follows:

Radiation Dose Rate and Dose Examples:

With a known dose rate reading at a given distance from the source (at contact, say 0.25", or 0.0208 feet), the fixed law called the Newton Inverse Square Law is applied to determine the dose rate at any other distance. Note: 1 mrem = 1000 µrem.

$$\text{Radiation dose} = \frac{(\text{Dose Rate, mrem/hr}) * (\text{Distance of the known dose rate, in feet})^2}{(\text{Distance where you want to calculate the dose rate, ft})^2}$$

Examples: (Distance from source)

Based on the highest recorded Source reading: 2 mrem/hr @ contact (assumed 0.25" from source)

If you were standing on the sludge for one hour, the dose would be 2mrem

If you were standing 1 ft from the source for one hour, the dose would be:

$$\text{Dose} = \frac{(2 \text{ mrem/hr}) * (0.0208 \text{ ft})^2}{(1 \text{ ft away})^2} = 0.000866 \text{ mrem, or } 0.866 \text{ µrem}$$

If you were standing 2 ft from the source for one hour, the dose would be:

$$\text{Dose} = \frac{(2 \text{ mrem/hr}) * (0.0208 \text{ ft})^2}{(2 \text{ ft away})^2} = 0.0002163 \text{ mrem, or } 0.2163 \text{ µrem}$$

Note, at this distance, the reading would not be measured above background, as the detection equipment is not sensitive enough.

If you were standing 10 ft away from the source for one hour, the dose would be:

$$\text{Dose} = \frac{(2 \text{ mrem/hr}) * (0.0208 \text{ ft})^2}{(10 \text{ ft away})^2} = 0.000000086 \text{ mrem, or } 0.0086 \text{ } \mu\text{rem}$$

Note, at this distance, the reading would not be measured above background, as the detection equipment is not sensitive enough.

Examples: (Time exposed to source)

Source reading: 2 mrem/hr @ contact (assumed 0.25" from source)

If you were standing on the source for 5 minutes (.083 hours), the dose would be 0.166 mrem.

If you were standing 1 ft from the source for 5 minutes (0.083 hrs), the dose would be:

$$\text{Dose} = \frac{(2 \text{ mrem/hr}) * (0.083 \text{ hrs}) * (0.0208 \text{ ft})^2}{(1 \text{ ft away})^2} = 0.0718 \text{ } \mu\text{rem (0.0000718 mrem)}$$

Kind Regards,

Brian Kalt

President

Fairmont Brine Processing, LLC

412-680-6244

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From: Pendergrass, Curt (CHFS DPH) [<mailto:Curt.Pendergrass@ky.gov>]

Sent: Monday, February 29, 2016 4:29 PM

To: Kalt, Brian

Cc: Partridge, George (EEC); McKinley, Matthew W (CHS-PH)

Subject: FW: Phone Call on February 26, 2016

Thank you Mr. Kalt for sending along the attached documentation and especially the results of the sludge analysis. Unfortunately, looking through the analysis results from both Reliance Laboratories and the Summit Environmental Technologies Laboratories I don't see where any radiochemical analysis on any of this material was performed which is what we were really hoping to find. Something that actually put a number to the actual pCi/g for Ra-226 and Ra-228 from a certified referenced lab would be great to have. Would you mind reaching out to these two companies and inquiring as to whether or not they retained the samples from last fall and if so, if our office could acquire a portion for radiochemical analysis by our Environmental Monitoring Laboratory? We would be more than happy to come pick up the samples if they are available.

Also, thank you for the information on the radiological surveys of this sludge material. Can you give me a little more information on what type of survey instrument you were using when you took the surveys referenced below (make, model, calibration date). If you took a background with this instrument, what did it read? You indicated you took your readings 1 foot from the sludge. Is that 1 foot from the sludge samples before you sent them to Reliance and Summit or 1 foot from the sludge boxes or 1 foot from the sludge pit?

In the second half of 2015, FBP's sludge had exhibited very, very low levels of naturally occurring radioactive material above background. The average reading of all samples (1 foot from the sludge) was only 0.2267 $\mu\text{R/hr}$ (0.0002267 mR/hr). The highest reading (1 foot from the sludge) was only 0.8652 $\mu\text{R/hr}$ (0.0008652 mR/hr). As published by the Nuclear Regulatory Commission (NRC) and United States Environment Protection Agency (EPA), both readings are lower than the dose of drinking several glasses of beer per hour (0.07 mR per beer), and slightly lower than consuming one banana (0.009863 mR per banana).

Thanks again for your cooperation and assistance in this matter.

Regards,

Curt Pendergrass PhD

Supervisor, Radioactive Materials Section

Kentucky Radiation Health Branch

275 East Main Street

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Be notified of proposed regulation changes <https://secure.kentucky.gov/Regwatch/>
Dispose of unwanted sources <http://www.crcpd.org/StateServices/SCATR.aspx>



From: Kalt, Brian [<mailto:BKalt@fairmontbrine.com>]
Sent: Monday, February 29, 2016 3:33 PM
To: Partridge, George (EEC); Pendergrass, Curt (CHFS DPH)
Subject: RE: Phone Call on February 26, 2016

Gentlemen,

Please see the responses in green to your questions below.

1. A description of the containers used for the shipment of the waste.

Each box can hold up to 25 yards. Length 20', Height 6' and Width 8'. Empty Weight is 9,000 lbs.

2. Who manufactured the shipping containers?

Still trying to track this information down.

3. What was the total quantity of waste shipped in the 47 shipments that were received by Blue Ridge Landfill between July and November of 2015?

After Fairmont Brine Processing's (FBP) Sludge Disposal Plan (Please see attached) was accepted and approved by Jason Frame, Chief Radiological Health Program at the Office of Environmental Health Services/Radiation, Toxics and Indoor Air Division, Advanced TENORM Services picked up 865.33 tons of material.

4. Was all the waste similar in nature?

FBP uses sodium sulfate, a soluble compound whose predominant use is in the manufacture of powdered soaps, to capture barium, a toxic constituent in some brines, as barium sulfate and to capture radium, as radium sulfate, to form an insoluble sludge. This chemical precipitation process also removes sand and some hydrocarbons. This sludge has been determined to be non-hazardous.

When soluble barium is converted to insoluble barium sulfate, it's toxic nature becomes so benign that it is used by doctors as a contrast media to coat esophagus, stomach, or intestine so that diseased or damaged areas can be seen by x-ray or CT scan.

FBP's sludge has been fairly consistent since operations began in 2013. Because of the possible co-precipitation of radium with barium, FBP monitors the sludge with a handheld detector. In 2014 and early 2015, FBP's sludge had no levels of naturally occurring radioactive materials above background. This sludge is similar in nature to sludge generated at a typical drinking water treatment plant.

In the second half of 2015, FBP's sludge had exhibited very, very low levels of naturally occurring radioactive material above background. The average reading of all samples (1 foot from the sludge) was only 0.2267 $\mu\text{R/hr}$ (0.0002267 mR/hr). The highest reading (1 foot from the sludge) was only 0.8652 $\mu\text{R/hr}$ (0.0008652 mR/hr). As published by the Nuclear Regulatory Commission (NRC) and United States Environment Protection Agency (EPA), both readings are lower than the dose of drinking several glasses of beer per hour (0.07 mR per beer), and slightly lower than consuming one banana (0.009863 mR per banana).

Currently, FBP does not physically dewater the sludge on-site. The sludge is removed via pump into standard dewatering boxes. After some dewatering period on-site, the boxes were received by Advanced TENORM Services for dewatering and solidification, as appropriate to pass paint filter test, and then landfilled. Based on FBP's understanding of the dewatering process and solidification process, the extremely low levels of naturally occurring radioactive materials were to be eliminated.

5. Is there analytical data on the waste available to help us understand the impact that will have on management of the landfill?

Please see the attached Non-Hazardous Waste Approval Notification Form from the West Virginia Department of Environmental Protection's (WVDEP) Director, Scott Mandirola. Please see the attached analysis that was conducted on the Non-Hazardous Material.

If anything else is needed, please let us know.

Kind Regards,

Brian Kalt
President
Fairmont Brine Processing, LLC
412-680-6244

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From: Partridge, George (EEC) [<mailto:George.Partridge@ky.gov>]
Sent: Monday, February 29, 2016 10:07 AM
To: Pendergrass, Curt (CHFS DPH)
Cc: Kalt, Brian
Subject: RE: Phone Call on February 26, 2016

Curt;

Thank you for responding to Mr. Kalt's question.

George Partridge
KDWM

From: Pendergrass, Curt (CHFS DPH)
Sent: Monday, February 29, 2016 8:53 AM
To: Anderson, Danny J (EEC); Kalt, Brian
Cc: Partridge, George (EEC); Maybriar, Jon (EEC)
Subject: RE: Phone Call on February 26, 2016

Hello Mr. Kalt,

As promised, below the applicable Kentucky Regulatory Statutes dealing with TENORM.

KRS 211.862 Definitions for KRS 211.861 to 211.869. <http://www.lrc.ky.gov/statutes/statute.aspx?id=8501>

(8) "Naturally-occurring radioactive material" (NORM) means naturally occurring materials not regulated under the Atomic Energy Act of 1954, as amended, whose radionuclide concentrations have been increased by or as a result of human practices. Naturally occurring radioactive material does not include the natural radioactivity of rocks or soils, or background radiation, but instead refers to materials whose radioactivity is technologically enhanced by controllable practices (or by past human practices);

(10) "Region" means the geographical area of the state of Illinois and the Commonwealth of Kentucky;

902 KAR 100:010. Definitions for 902 KAR Chapter 100. <http://www.lrc.state.ky.us/kar/902/100/010.htm>

(301) "Technically Enhanced Naturally Occurring Radioactive Material "TENORM" means N.O.R.M., which has been separated to various degrees from the original ore or other material, refining or implementing it.

KRS 211.863 Control of commerce of low-level radioactive waste in and out of Kentucky

-- Prohibitions -- Exemption. <http://www.lrc.ky.gov/statutes/statute.aspx?id=8502>

(3) Naturally-occurring radioactive material (NORM) as defined in KRS 211.862(8) shall be the exclusive regulatory responsibility of the states, except that no person shall import naturally occurring radioactive material (NORM) from outside the region for disposal in Kentucky, or dispose of such imported material in Kentucky, if the imports or disposal are inconsistent with polices of the commission.

KRS 211.869 Penalties. <http://www.lrc.ky.gov/statutes/statute.aspx?id=8505>

(1) Any person who fails to comply with any provision of KRS 211.859 or 211.863, or with any administrative regulations promulgated pursuant to KRS 211.859 or 211.865, or fails to comply with any order of the cabinet issued pursuant to KRS 211.859 or KRS 211.863 and 211.865 shall be assessed a civil penalty not less than ten thousand dollars (\$10,000) nor more than one hundred thousand dollars (\$100,000). Each day of the violation or noncompliance shall constitute a separate offense.

Central Midwest Interstate Low-Level Radioactive Waste Commission Regional Management

Plan, Adopted May 1999 (http://www.cmcompact.org/publications/Regional_Mgmt_Plan.pdf)

_____Disposal of TENORM Waste at Facilities in the Region other than the Regional LLRW Disposal Facility

_____The public health and safety hazard presented by TENORM waste is a function of the radionuclides, concentrations and waste form. At a concentration of 5 pCi/g, regulatory agencies will require an analysis of the public health and safety concerns for any proposed

waste management activities whether it be disposal in place, disposal in a sanitary landfill, disposal in a licensed TENORM waste site or disposal at a licensed LLRW disposal facility.

Regards,

Curt Pendergrass PhD
Supervisor, Radioactive Materials Section
Kentucky Radiation Health Branch
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Frankfort, KY 40621
Tel: 502-564-3700 ext. 4183
Fax: 502-564-1492
E-mail: curt.pendergrass@ky.gov
Website: <http://www.chfs.ky.gov/dph/radioactive.htm>
Pay your fees on line at https://prd.chfs.ky.gov/rad_epay/
Be notified of proposed regulation changes <https://secure.kentucky.gov/Regwatch/>
Dispose of unwanted sources <http://www.crcpd.org/StateServices/SCATR.aspx>



From: Anderson, Danny J (EEC)
Sent: Saturday, February 27, 2016 1:14 PM
To: Kalt, Brian
Cc: Partridge, George (EEC); Pendergrass, Curt (CHFS DPH); Maybriar, Jon (EEC)
Subject: Re: Phone Call on February 26, 2016

Mr Kalt:

Any questions you may have regarding KRS 211 and the related radiology regulations of 902 KAR 100 should be directed to the agency responsible for the enforcement of those statutes and regulations which is the Cabinet for Health and Family Services (CHFS).

Thanks,
Danny Anderson

On Feb 27, 2016, at 12:59 PM, Kalt, Brian <BKalt@fairmontbrine.com> wrote:

Dr. Partridge,

Thank you for putting this all together.

Under KRS 211.862 and 211.863, what levels of naturally occurring radioactive material has Kentucky set as being acceptable?

Kind Regards,

Brian Kalt
President
Fairmont Brine Processing, LLC
412-680-6244

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From: Partridge, George (EEC) [<mailto:George.Partridge@ky.gov>]
Sent: Friday, February 26, 2016 5:36 PM
To: Kalt, Brian
Cc: Pendergrass, Curt (CHFS DPH); Anderson, Danny J (EEC); Maybriar, Jon (EEC)
Subject: RE: Phone Call on February 26, 2016

Hello Brad;

I appreciated you calling today and the opportunity for us to talk. Just wanted to briefly highlight the questions you asked and what I shared with you.

The questions you asked addressed the following items or issues (my response is in blue):

- Who notified us regarding the shipments from Fairmont Brine Processing to Kentucky?

We received calls from Ohio that shared TENORM waste was being shipped from Ohio to Kentucky. One contact shared that TENORM waste was also being shipped from WV as well and referred us to Jason Frame. Jason Frame informed us about the waste stream from FBP.

- Was the waste solidified prior to being sent to the landfill.

Our understanding was the waste was sent directly to the landfill.

- Kentucky does not regulate TENORM?

Yes, it is regulated by the CHFS-DPH and is noted in KRS 211.862 & KRS 211.863. The Solid Waste Branch issues permits for contained landfills and they are not to accept any unpermitted waste. The DPH regulates the management and disposal of radioactive materials and is responsible for licensure.

- What fees did the landfill charge for the waste disposal?

I do not have that information.

I concluded our conversation by affirming that I am not aware of any concerns regarding how FBP managed the waste, and that I am only seeking to understand what was received by Blue Ridge Landfill since their management has not made a complete disclosure of the wastes they have received.

We would appreciate the assistance of your company in helping us obtain the following information, so we can address the questions that are being presented to our Division by the press and public. The key questions I am seeking to address in my role as a permit engineer with the Solid Waste Branch are as follows:

1. A description of the containers used for the shipment of the waste.
2. Who manufactured the shipping containers?
3. What was the total quantity of waste shipped in the 47 shipments that were received by Blue Ridge Landfill between July and November of 2015?
4. Was all the waste similar in nature?
5. Is there analytical data on the waste available to help us understand the impact that will have on management of the landfill?

Thank you again for returning my call yesterday even though you were not able to address my questions without a written request from KDEP. I am also glad you contacted me today and we got a chance to briefly address questions you have. We are both seeking to understand better what has happened and to address the questions we are receiving regarding the waste and how it was managed.

I appreciate very much that you are in contact with our Division and Dr. Curt Pendergrass. Any questions I have or information I need will be directed to your attention through formal correspondence/letters from the appropriate governing entities that we are working with.

Thank you,

George

George P. Partridge Jr., PhD, P.E., QEP

Department for Environmental Protection
KY Division of Waste Management
200 Fair Oaks Lane; 2nd Floor (SWB)
Frankfort, KY 40601
(502) 564-6716 ext. 4651

<image001.gif>