From:	Granger, Michelle
To:	Cummings, James
Cc:	Hauber, Erin M CIV USARMY CENWK (USA)
Subject:	RE: OU-3
Date:	Thursday, October 10, 2019 11:20:00 AM

Hi, James-
Wow! Yes, he did tell me that!! That's so great…How time flies?!...
So, we are under some time pressure. If it's not too much trouble, it would be great to do it today at 2:30pm or even 3pm. Please let me know what's best for you and Erin will send us an invite with call in info.
Thank you so much, James!
Best Regards,
Michelle

From: Cummings, James <Cummings.James@epa.gov>
Sent: Thursday, October 10, 2019 10:57 AM
To: Granger, Michelle <Granger.Michelle@epa.gov>
Cc: Gilbert, Edward <Gilbert.Edward@epa.gov>
Subject: RE: OU-3
Excellent. You were reading my mind. I have a strong preference for having things to look over before I try to help RPMs.
In that vein, Tues at 9:30 would probably work best. If you are under time pressure, we could chat at 2:30 today. Let me know.
I did glance at the writeup in the email. In the 20+ years I have been doing in situ thermal, this is the first situation that I know of where the vendor has changed mid-stream. That is not a trivial perturbation. Although they may all fit under the title 'in situ thermal', the technologies - and the models they use to design and predict performance - are significantly different. I am also quite familiar with the new TCH 'slinky' technology.
Don't know if Mark told you, but a 'few' years ago, we rode bikes to my daughter's HS lacrosse game when he was in town for a meeting. (She is now 31).
Cheers/

From: Granger, Michelle <Granger.Michelle@epa.gov>
Sent: Thursday, October 10, 2019 10:12 AM
To: Cummings, James <Cummings.James@epa.gov>
Subject: FW: OU-3
Hi, James-
Hope all is well!
My husband, Mark, forwarded me your message below. It would be a pleasure to talk through my thermal site (Pohatcong OU3) with you . Thank you for your time and expertise!
My USACE thermal project manager, Erin Hauber, drafted the background info below. I included it here below my message, just to be thorough, but- absolutely no pressure to read it before talking. Erin will explain the details during the call.
Please let me know what time works best for you for a call. We are so grateful.
Our availability:
Today, 10/10-
* 11-12 PM ET

* 2:30-3:30 ET

Tues 10/15-

* 9:30-12PM ET
* 2:30-3:30 ET

Best Regards,

Michelle Granger, EPA RPM

212-637-4975

A little background… This is an EPA R2 site, where USACE is providing the PRP oversight (Pohatcong OU3). We've worked alongside the PRP through an extensive PDI, full design process (30, 65, 95, 100%) and RAWP. Cascade drilling and thermal was integrated with this process and provided much of the content. The treatment zone is below an active manufacturing building, in glacial till, vadose zone only, spans from ~60-120 ft bgs, and is ~22,000 cy. COC is TCE with cleanup goal of 1 mg/kg. The installation requires a significant number of angled borings, up to 220 ft in length. About three weeks prior to mobilization, contractual negotiations between the thermal vendor and PRP fell through and they switched vendors. We are racing to understand the impact to the design and stay on schedule, which may be incompatible. One of the most significant changes is the vapor recovery strategy. They switched from a VEW co-located with each heater boring and fully screened across the treatment zone to a chimney or short VEW screen above the TTZ, in line with TRS's traditional VEW design. They are relying on a passive venting through the 2" annular space around the heaters to serve as the primary vapor recovery mechanism within the TTZ. The glacial till has very low permeability based on an SVE pilot test (although some enhancement is expected when heating). They are also using a new TCH technology (patented this past April) and our ability to collect soil confirmation samples is labor intensive and complicated by limited access to the manufacturing area.

As a thought exercise, the ROI of each heater is 177 sq ft (7.5 ft ROI). Vapor and steam generated 7.5 ft from a heater would need to travel horizontally towards the heater then upwards or diagonally as long as 55 ft before reaching a vapor extraction screen. I'd think the vacuum influence from the chimney to the underlying TTZ would be fairly limited.

If we reach an impasse on this element, I'm inclined to ask for more confirmation soil samples and vacuum/pressure monitoring points. We previously agreed to consider waving confirmation sampling if the temperature and recovery data were convincing.

I attached the Pohat design drawings and an example of the vapor recovery approach I believe they are proposing (TRS well construction from another site).

From: Granger, Mark <Granger.Mark@epa.gov>

Sent: Wednesday, October 09, 2019 6:39 PM

To: Granger, Michelle <Granger.Michelle@epa.gov>

Subject: FW: OU-3

From: Cummings, James <Cummings.James@epa.gov>

Sent: Wednesday, October 09, 2019 5:00 PM

To: Granger, Mark <Granger.Mark@epa.gov>

Subject: Re: OU-3

Great to hear from you. Feel bad that we didn't do a better job staying in touch.

Would be a pleasure and a privilege to try to be of assistance.

Gorm Heron left Cascade to go to TRS. but they have other folks at Cascade who do ERH.
Regards/

From: Granger, Mark <Granger.Mark@epa.gov>
Sent: Wednesday, October 9, 2019 4:06 PM
To: Cummings, James <Cummings.James@epa.gov>
Subject: OU-3

james –
hope this finds you well!
a colleague (who, as it turns out, I'm married to) has this site with a heat remedy that has gotten complicated and I mentioned that you might be able to illuminate or circumscribe or otherwise help clarify said complications. so just passing along a heads up that she may be reaching out, subject of course to your schedule, convenience, and interest. she's working with a corps heat project manager who she holds in high regard (Erin Hauber, Kansas City).
quick fundamentals … pohatcong valley OU-3 (NJ), very active industrial facility, PRP lead, TCE source under main bldg, 125 feet thru mostly till to groundwater (I think), remedy is electric not steam, and deployment is to be thru the floor of the production bldg. the other two OUs are groundwater plume (OU-1, like one mile of plume) and far groundwater plume (OU-2, like 2 to 5 miles). they had cascade and were ready to go, then something happened and cascade is no longer available, not sure who they have stepping up.
hope everything is going good with you, jim, and hope our paths cross again soon!
-- mark
ps. looks like we may be turning the lights out at cortese, a remedy that actually worked better than expected!