Transcript of June 12, 2024, Open House
Formerly Utilized Sites Remedial Action Program
U.S. Army Corps of Engineers

Held at the Florissant Municipal Court Building

Video recording available at https://www.youtube.com/watch?v=qPh8sKr64Vo

Bob Klein, Facilitator (Program Manager with the U.S. Army Corps of Engineers, Los Angeles District):

So this is Bob Klein, moderator. If you take your seats, we're going to be starting in about two or three minutes, please. Thank you. If I could get your attention for a minute, we still have an engagement going on outside. I know some of those people will want to be in here. So, I told them I'm going to give them five more minutes. So, I appreciate your patience, but it wouldn't be right to start without. So, five more minutes and then hopefully they've all moved in and we'll get started. Thank you. While we're waiting to start, you see the box in that chair right there? If you have a comment, you filled out and would like us to read it up here, just put it in that box right there, and we'll grab it.

OK, can you take your seats, please, and let the people at the tables sit down behind your tables, please.

OK, thank you. To get started, good evening. My name is Bob Klein. I will be the moderator for this evening. Thank you for all joining us for the annual Formerly Utilized Sites Remedial Action Program, which is a long word for what we call, FUSRAP. FUSRAP's what we call it here. Thank you for taking your time. I know you're all busy.

Before we begin, I just want to do a couple housekeeping things, so you all know where things are. If you haven't signed into the table back there when you first came in, please do so before the night's over. Give us your email address if you want the Corps to communicate with you all. If you notice that some of the tables and the one that came in on there's a QR code on the table. If you put that into your cellphone, you'll get the handout that's also back there. If you want a hard copy, it's back here on the last table. Or you can do the QR codes, and you can do it on your mobile devices that way. The restrooms, you probably all know, are directly behind the back wall here. You'll see that. If you exit, please go out this door over here where you see people coming in right now. The emergency exits, obviously the door you came in. This door over here, which we don't normally use, but, if it's an emergency, you know, please go out that door.

If you need to move around, I realize that this is being broadcast. We have also media here, so, you know, please don't, kind of, get in front of the cameras if you can help it.

So, I'd like to recognize the elected officials and staffers -- and I've got to be honest with you -- I just got the list just now. So, if it's not in the correct order, it's none of my fault, sorry. And I believe you're in the room right now. So, we have [Breckenridge Hills] Councilwoman (Valeda) Keys. You don't have to identify yourself; I just want to make sure I acknowledge you're here. We have [Florissant] Councilman (Jeff) Caputa, if I pronounced that correctly. [St. Louis County] Councilwoman and Chair, Ms. (Shalonda) Webb. We have Todd Hughes from the office of the mayor of (Florissant) Tom Lowery, or Tim Lowery, excuse me. [State] Representative (Chantelle) Nixon-Clark, and this name I'm probably going to slaughter, I'm sorry, Ms. (Danielle) Spradley, congressional staffer for Congresswoman (Cori) Bush. Is that correct? Thank you. OK. Thank you very much. And [State] Representative (Tricia) Byrnes. Thank you.

All righty. Again, I want to say, this is the form you have. If you want to fill it out and put it in that chair, then we'll use it. We got it in the back, too. Please do that, and we'll go through those. I'll read them up here later on.

OK. We also have tables in the back. You'll see that in a second. I want to thank the media being here and helping us inform the public, I think that's great. I would like to introduce the panel, and I'll start with the Colonel.

So, this is Colonel Andy Pannier. Sorry. And then we have Phil, I'm sorry. [pointing back to Colonel Pannier] Commander of the district here and district engineer. Phil Moser, who's chief of FUSRAP and Environmental Branch. Robin Parks, he's technical lead for the St. Louis FUSRAP, which is what we're here for today. And Jonathan Rankins, who's the radiation safety officer.

OK, so hopefully we have a little slide up on there. Can't see; Oh, we don't, OK. So, I'm going to tell you what we're doing tonight. Slide should tell you, but I don't mean to say it. So, we're going to have presentations by some folks up here and some people over here. You'll see those presentations. And then we'll have a Q&A afterward. And then after that, we'll invite you to visit the tables in the back where you can ask more detailed questions if you so desire. During the presentations, as they're speaking, if you have any question that comes to your mind, please put it in the box there. Uh…do you know we have a person in the back waving it? If you don't want to get up and walk over, that's fine; she'll come over to you and get it from you. Will address as many questions as we can for the amount of time. We absolutely have to be out of here -- this is not our building -- by 8 o'clock tonight.

And during the open house, I already mentioned you can walk to any table you want, again, as long as we're out of here. I also want to note, I won't list all the tables we've got there, but I do have some special ones. So, we have officials from the St. Louis County, Missouri Department of Health and Senior Services over here and EPA [U.S. Environmental Protection Agency], Region 7. And we also have Dr. Usman. who's associate professor of nuclear engineering from the Missouri University of Science and Technology. And he'll be collecting community members' perceptions and comments, and he has a table back there. And I'm sorry, where are you at, sir? There you are at the corner there, OK. All right. So, I did a little housekeeping.

Now let me just talk a little bit about ground rules, so we can make sure we hear from everybody. So please always maintain an atmosphere of respect. I'm sure you will. Silence your cellphones, please. The Colonel had me silence mine, so you all have to silence yours.

Use the comment cards. I've talked about that a couple times already. In order to allow our panel members to respond to your questions during Q&A, kindly avoid speaking over the top of them. I know you probably have multiple questions that follow-on questions. We have a way of taking care of that. While they're talking and presenting and answering questions, please let them do that. So, we don't want to interrupt the flow of Q&A. We want everyone to speak comfortably.

Again, I mentioned the meeting will absolutely conclude at 8 o'clock.

And I would like to begin with opening comments from the Mississippi Valley Division Commander, General Kimberly Peeples.

Time marker 6:41

Brigadier General Kimberly Peeples, Commander of the Mississippi Valley Division:

Thanks, Bob. And thank you all very much for being here today. Just a quick introduction. I'm Kim Peeples. I'm the Commander of the Mississippi Valley Division. Our headquarters is in Vicksburg, Mississippi. And I'm responsible for six districts that are located along the Mississippi River with varied mission sets. And St. Louis District. And Colonel Pannier in command of one of the six districts. First, to carry a word of, thanks, I want to pass along regards from Chief of Engineers Lieutenant General Scott Spellmon. I think many of you have had an opportunity to meet him. He's visited this area and the St. Louis community multiple times. And as the Corps of Engineers, he is currently in Maui tonight, he and I want to reiterate to all of you that public health -- and safety -- is our top priority. This program is important, and it matters.

So, I came up this morning. I'm actually born in Missouri. I'm a Missourian from the other side of the state in Kansas City. Actually, you have both of us in uniform today, have roots here in Missouri. And, so, I just wanted to share that it is really good to be home and discussing with you an update on this critically important program. I wanted to thank you for your gift of time. I know this is a very difficult time of year, specifically in June. There's a lot going on with summer and activities and evening events. I have a 12-year-old, so I know what that brings. And just your presence in coming here tonight to share with us your stories and to help us better communicate the updates on this program and also to hear your concerns and, if they're in our realm and the Corps of Engineers related to the remediation of this, that we're able to answer your questions. And if you have any other concerns that may not be within our agency that we're able to connect you tonight. So, I think you'll hear that a couple times. I know Colonel Pannier and I, we've discussed this at length, and we are a resource and an advocate tonight and just honored and privileged to be here with you.

So, three points that I'll reiterate: One is that the cleanup and the mission related to FUSRAP and the cleanup mission that we've got is a team sport. And, so, you'll see many members here from St. Louis District but also sister partners that are at our meeting tables tonight, and here to answer your questions I want to thank the Department of Missouri, the Health Department and the EPA among the few but also congressional representatives, community members, family members, friends. I've had a chance to talk to some of you already and to hear your stories and to help the issues that you're dealing with on the day-to-day so that we can carry them forward, and we can make sure that we are communicating transparently and openly with you, which is my second point.

This is part of why we're here today, is to give a program update. You'll hear from the team, I believe, very similar to the annual meeting that you had last year. But what I'm most looking forward to is hearing from you and listening and taking notes and connecting. And that's really the message here today is that do not leave here without

us either understanding your issue, writing it down or connecting. We may not be able to answer or give you the information completely, to answer that to the full extent, but we will do our very best, and, where we can, too, we will connect you with the resourcing agency responsible for that topic.

So, I just wanted to be here personally tonight to say that I'm grateful to the community for your partnership to the St. Louis District and the FUSRAP team -- the communication -- as we work through hard issues, and there will be more hard issues to come. But, together, we will remain committed to this important project and to working through all of these things together. So, thank you again, and I will pass the floor now to your local district commander, the St. Louis District, and I'll be here throughout the night. So, afterward, if you'd like to talk or you have a story to tell, I'd appreciate your time. Thank you very much.

Time marker 11:42

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

Thanks, General Peebles, I appreciate you making the trip all the way up here from Vicksburg. This is equally as important across the entirety of the Corps and the Corps-wide effort, so I appreciate you demonstrating that for us here tonight.

Good evening again, I'm Colonel Andy Pannier, St. Louis District commander. Thanks for joining us. I appreciate your time. I do want to listen to what you have to say. Our entire district wants to hear what you have to say. I have already heard some of that, so I've implemented changes. There are things that you will see that are different. We need some feedback if it works or it doesn't work. I need to know if it's hitting the mark, right?

And so, some of those things are, comment cards will not be sorted. You put them in there, we'll read the stack in order. We're going to do it for about 20 minutes, as he said, and then we're going to stop. We may not get through them all. I don't know how many are in there, but we're going to stop at about 20 minutes so that I can open the floor for about 15 minutes to additional question and answer. Because questions that get read on a comment card get an answer, spur another question (NOTE: “Two for the price of one”), I will ask, though, if you have an additional question, please limit it to one so that we can go around and get through, and, then, if we have time, if there aren't that many, we can come back for more. But I want to afford that opportunity to everyone.

I am proud of what this district has done.

Community Member:

I'm sorry. I’ve got a quick question. If we don't get to all of the index cards, are you going to keep them and we're going to have another meeting?

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

So, if we don't get through all of them, my intent is to go back, answer all of them, and post that for everyone to be able to access so that everyone has the answer. I don't want to go back to the individual, and only that person gets the answer.

I am proud of this district. I'm proud of the work that this team does. They are passionate about this work. They care about this work. It's important to us. And probably the best day in this whole program is the day we don't ever sit here and talk to each other again, right? Not that I don't like any of you, but it means we're done, right? We get this material out, and that's our role in the Corps. Our role is to remove the material that's there. We're all working toward a general same end in different lanes.

There are different entities here from government; there are different non-government groups here, all trying to achieve a betterment for this community and for the people that live in it. And our lane is to work on remediating that material and getting it out. And, so, you're going to see a map tonight. It's back there. It's going to be on the slides that show the red, yellow, green, and blue. You've seen that before. And you see a lot of areas of green or yellow or blue and very little area of red. By no means does that mean to us that this is a small problem. It's a significant problem. And for us, if there's even one area of red left on that map, that's too much. So, our goal is to get all the red off that map.

I'm going to pause to focus this meeting for a minute and just talk to you about who we are so that we have a clearer understanding of where we fit, right? So, I did grow up in the area. I grew up 20 miles across the river on the Illinois side in a small farm town. Half my family is in Missouri; half my family is in Illinois. I've dedicated the majority of my adult life to serving the citizens of this nation. I'm not different from the 700-plus employees I have in the district. The majority of us grew up in the local area -- some within these exact communities. And we have all chosen to serve. I have members in the district that have served in branches of the military dating back to the Vietnam War. When they finished, they chose to continue to serve, and they came to the Corps of Engineers. And, so, they continue to serve now in a better capacity in one sense because we are a federal government entity, but we're not some acronym agency that's thousands of miles away. We're serving in a local capacity, where we grew up, what means something to us. So, this is passionate to everyone on our team. No one wants to leave here not having completed all of this and that there’s areas that we missed on the way, so we're very thorough in what we do.

I just also want to assure you, in the trust of this district. So, this district is responsible for a lot of things to include FUSRAP. We're responsible for five Corps of Engineers lakes across this footprint. And you trust us when you go to those lakes that they are safe and secure recreational facilities. You trust that we provide that for you. You trust this Corps of Engineers district for the past two years to keep the Mississippi River open to commerce in extreme low water, record low conditions. You trust us to stand alongside a levee in a flood and fill sandbags with you if it's going to overtop. You trust us in our outreach programs, educating children on the environment and the different programs that we have. You trust us to build and grow the next generation of professional engineers in our organization and scientists.

All of that happens in this district across all those programs, that's all the same makeup of the same people that are on our FUSRAP team, and you can trust the work they're doing. They have no intention of deceiving, of being dishonest, or being incomplete in

the work we're doing. The team is professional, but the team is not robotic. We are connected to what is going on and all of you.

I sincerely care about making progress, and I know that they do as well. And, so, the door is open for the engagements. I want to engage with you. I want more connection. I want more communication so that we can understand where the needs are and what hasn't been met.

I often say to the people in the district, “The best partnerships we have are the ones that will look at us and tell us if we're doing something right, but, more importantly, they'll point out what we're doing wrong.” And those who advocate against what we're doing in some way or capacity help us because it makes us pause and look at what we're doing and check and make sure we're right. And, if we're not right, to look at options on how we do it better. And if we are right, then we’ve got to look at how we're communicating it because we're missing the mark somewhere because it's not coming through, and it's not understood correctly. And so that's part of the effort going forward. We have to continue to improve every day our communication, the transparency, the relationships.

Ashley Bernaugh said outside in really great words, the federal government or the government agencies have to work together. That's where you got to go.

I'd extend that a little further to say, we do have to work together as federal/state agencies. But we have to do it with all of you. The Corps doesn't do anything on its own, not here and not on any project we have. We have a partner every step of the way on everything we do. We don't do anything alone, and we need the help and support of the communities to do it.

I do want to address a comment I've heard multiple times since being in the district about the pace of our work. Questions about how we can be faster or are we working at the capacity we can.

I ask my team this question all the time, and I push to do more, and they push to do more, and we want to achieve more. So, thanks to federal congressional members, we have seen an increase. We have seen increased funding over the past decade. In 2014, the program is about $11.5 million in funding. In fiscal year 2024, it's $47 million. So, with that increased funding, it allows us to increase capacity.

And we've done that in several ways. We have a larger, on-site lab facility at our airport loadout point. So, what that means is, when we take samples, we don't have to send them to labs around the United States and wait in a queue competing against every other effort going on. We can process the samples and analyze them in our lab. So, that creates a much quicker turn-around for us. And we have the capacity to scale up and scale down based on volume. Also, we've been able to hire more contractors that help us do all the work. So, what that has done is we can work on things simultaneously. So, now we're able to conduct sampling, conduct analysis, develop remediation plans, execute remediation, and do the documentation that it takes to formally release something, simultaneous.

I met with some media members today out along McDonnell Boulevard where some work is going on. And it was a great example of what that is, where the former Ballfields

are, and we finished remediation, where we're restoring right next to that in an inaccessible area under the road and the bridge we couldn't get to previously. Because they're doing construction there, and they removed the bridge in the county, we were able to coordinate with them, and we're remediating where that bridge is. We could not have done that a decade ago with the funding we had.

So, now we can, we can work on multiple things simultaneously. And, as we do that, we prioritize. So, we operate in a very large general sense in three stages. The first was remove the source material, and we've done that. So, now we're working on all the residual material. So, Stages 2 and 3 is to find the residual material and then remove it. And that is a lot harder than the original. The original was time-consuming because there was a large volume of source material. We had to move a lot. But it was easy because it was accessible.

Now we have smaller volumes spread over a lot of areas -- in residential areas, in commercial areas, in industrial areas. And, so, getting at those is a little more, I like to say, a little more surgical. We've got to get into smaller areas, right, where I could bring five excavators out to an open field. I can't bring five excavators to the Coldwater Creek bank off Jana Street where we just completed the work. Right, so it limits not our capacity in terms of the funds; it limits the physical space of the capacity we operate.

So, what we're looking at as a team is how do we do more of those sites simultaneously? Can we build the contract capacity to do that? I don't know yet. That's something we're trying to address. We're always looking for ways.

Another way that we get more efficient and we actually become quicker is, after every project is completed, we go through analysis of that project. What lessons did we learn? And then we roll those lessons into the next project. So, we're progressively learning and growing, and the more repetitions, the better you get and the faster you get and the smoother you get. So, we're learning from each of those and growing from those. And the team's doing a great job of making that a concerted effort to take those lessons and carry them forward so that we don't make the same mistakes and slow down work.

If you haven't attended one of these meetings before, we're going to go through a lot of information. I've asked my team to try to communicate that across a lot of levels tonight. There are some of you that may have never been to one of these and have never heard the word “FUSRAP” until recently. Or maybe didn't even hear it until you got here tonight. So, I want you to walk away from here with an understanding, and you could turn to your neighbor, and you could talk about what you heard, and it made sense to them.

But, at the same time, I need my team to be able to communicate on a deeper level to those of you that have come over and over. And, so, part of the changes in the presentation are going to be because of my direction on that. That's where we need some feedback. Did we help you or not? Where are we not communicating well? If you have not been here or you're not really familiar with the material, and we start getting technical and you don't understand something, please just write down a note.

We are stopping at 7:15 with this formal part to allow 45 minutes for you to engage at the tables. If you're not comfortable asking a question in front of people, please come to a table and ask it.

If there's something you didn't understand, jot a note, and come ask it. And we'll work on getting you that information and make sure you understand. It's important to me that you leave here understanding. It's also important to me that we build and strengthen the trust in the relationships.

I firmly believe it takes all of us in whatever lane we're working in, in this effort, if we're going to reach completion. And that includes for my piece in this district with my team on just remediation. We've got to have your feedback. We've got to have strong relations with you so that we're collectively moving forward. And, so, I think you can get that from our team. You will get that from me in my time here in this district as a leader. It's what I believe in. I am grounded in partnership and relationships because that's how we move forward. So, I don't mind dissention or disagreement. It's healthy. If we can work through it in respectful ways and we move forward in a better, healthier direction for all of us. I welcome those kinds of conversations, and I welcome the opportunity to engage in that professional manner and have that discussion.

Thanks for being here tonight. I'm going to turn it over to Phil, and then he's going to bring two of our members up. He's going to walk through a little overview of this program, and then we're going to walk through the work we've done and what we have planned in the next year. Thank you.

Time marker 25:51

Phil Moser, Chief of the FUSRAP and Environmental Branch, St. Louis District:

All right. Thank you, sir. Thank you, General Peeples. I appreciate the commitment that we have from our leadership, as seen here tonight. So, what I wanted to do with my time here – and I'll try to get through it as quickly as I can to make sure we have sufficient amount of time -- is to kind of give those of you that were mentioned that maybe not have had a lot of exposure or individual knowledge of the FUSRAP program and maybe here tonight for the first time. So, to give a general overview and for myself, mentioned already, I'm Phil Moser, the chief of the FUSRAP and Environmental Branch in the St. Louis District, and one of my main focuses is to make sure that everybody is aware that we are continuing this conversation. This conversation that started many, many years ago, even before my time with the Corps of Engineers, we want to make sure everybody is aware that, hey, we're here to answer those questions. We have a formal period, but we also have many dedicated technical professionals that are only a portion of the entire team of over 100 dedicated professionals that deliver on this program each and every day. So, what is FUSRAP? But went through the acronym, a bunch of letters pushed together, right? Formally Utilized Sites Remedial Action Program.

You'll see on the slide there as far as our primary mission. A lot of words there. What that really comes down to is we're here to support the community by finding and removing contamination that's a result of government activities from the Manhattan

Engineer District and Atomic Energy Commission. You may have heard Manhattan Project from a lot of different avenues, and that's kind of why we're here. We're here because, it was put here, at one point in time, it was put here, and we have the mission to come and clean that up. That leads me to my next point, who and why USACE, right? Similar to EPA Superfund program that some of you may have heard about or may be more familiar with is it's similar to that, but we have a more specific focus because the mission was given directly to the Army Corps of Engineers from a previous Department of Energy program that was started in 1974. Transferred to the Corps of Engineers in 1997. That's why we're here at today for the execution with eventual turn-over to DOE Office of Legacy Management when we are completed with the sites.

How do we operate? You'll see it on the slide there: CERCLA, or Comprehensive Environmental Response, Compensation and Liability Act. Very good, that's a mouthful, right? Once again, another parameter in which we use to carry out our daily work. And that's why we have all those dedicated professionals to make sure we are doing it in accordance with that. To go along with that is a Record of Decision, or ROD, which gets approved by multiple agencies and stakeholder input at the beginning of a lot of programs or projects or contaminated sites to make sure that we are carrying out the remedy as selected.

The last bullet there is around the funding. How do we get funding? We're funded annually by Congress in the USACE Civil Works budget. Historical and current funding levels can be actually found on the Civil Works budget website, which I put a link in the slides if you've got one of the handouts or the QR code that will take you directly to the overall Civil Works budget website that can give you an insight into those. And if there’s ever any more questions on that, we're more than willing to talk about that, for sure.

Next slide. Going a little bit further into what CERCLA means. So, once again, trying to give everybody that maybe hasn't been to one of these programs or these program reviews or any one of our outreach meetings that we have had over the years, a little bit of background behind that: So, Comprehensive Environmental Response, Compensation Liability Act is the main law that governs our actions at our FUSRAP sites. So, this slide is actually from the National Program's annual report. There's a link down there as well, like the previous one, I had a link to that. So, there's a good amount of information, not just at the local level, but, at the national level, which we try to make sure that we get information out, as well as explain technical concepts to any individual that may have questions.

We are only one of the 21 active sites within the program, but they all will follow the same framework of CERCLA. One thing I will point to there is, I mentioned it just a little bit ago, is that bottom middle called a Record of Decision, or ROD, what is that? Record of Decision is one of the documents that documents the final cleanup alternative that was selected. And in consultation with the state and federal agencies, as well as the public, and it describes the actual components of that selected remedy and how we're going to carry that out. It's also good information for some background info on the sites, how things transpired. And then there's a lot of documents that lead up to that Record of Decision. Both the St. Louis Downtown Site and the North St. Louis County Sites have

Records of Decision where the primary contaminants of concern are elements in the uranium decay chain.

That next portion there as you follow the flowchart to remedial design is the remedial design and the remedial action involve designing, developing, implementing the cleanup methods described in that Record of Decision. So, basically how we carry out our work, how we go out and do that actual digging and then bring that back to the site and do what we need to do to ship it off to licensed, out-of-state disposal facilities. So, those two kind of work hand-in-hand. And, if you look at the remedial-action portion, there's a lot of individual, once again, technical concepts in there that we will try to implement, or that are part of the overall process: pre-designed investigation, detailed sampling that we're going to do, rights of entry to make sure that we have an access agreement to individual property since we do not own any of these lands, so we have to work with landowners to make sure that we have the access to go sample and remediate.

The last one there in the box is a Five-Year Review. Each of these sites, the St. Louis Downtown Site, and the North St. Louis County Sites, go through this process to evaluate that selected remedy in the Record of Decision and determine whether it continues to be protective or not. It's a really good check on the process that we coordinated with the federal and state agencies and all the input that was required for the individual Record of Decision or the initial stage of that.

Since it's an ongoing remedy at the St. Louis Downtown Site and the North St. Louis County Sites, there's an extensive amount of work performed, and the St. Louis Sites are currently in their fifth Five-Year Review cycle, and all of the previous four demonstrating that the actions taken up to that point and the actions going to be taken to implement the full remedy will be protective once fully in place.

Lastly, I'll mention, and it was mentioned our partner agencies that are here, they're all part of that process as well whether it's the initial stages to get your Record of Decision the Five-Year Review process and all of those remedial actions that we take. We have our sister agencies - EPA, Missouri Department of Health and Senior Services, Missouri Department of Natural Resources -- that we bring along in that entire process so that they are involved in that and the overall, as we get to a complete stage for those activities.

Next slide.

Time marker 33:49

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

I'm going to steal from Phil for just a second, right? You want to talk about accountability; I'm being accountable. I didn't manage the time well, right? Because we started late. I should have not spoken as much, right? I took away their time. So, I'm going to make an audible here. I want to get your questions. Phil's going to wrap this up.

If you want information on the update of the St. Louis Downtown Site, we have a table in the back, and you can go back and get that. We won't give all of the St. Louis Vicinity Properties update. I'm asking to just move to the Coldwater Creek part and give that

update. And, if you want more information, you'll have time after you go to that table so that we can move on to questions and at least afford you that time.

So, my apologies, this is not my team; this is me.

Community Member:

Thank you.

Time marker 34:35

Phil Moser, Chief of the FUSRAP and Environmental Branch, St. Louis District:

I'll just finish this up really quick as far as where we actually fit.

This is another slide from the National Programs Initiative to put out some information on all sites. So, where we fit within there, you can see the other sites out east that some of the other districts and divisions will manage on FUSRAP. And then where we're at in the St. Louis region, specifically the St. Louis Downtown Site and North St. Louis County Sites, which includes the St. Louis Airport Site. St. Louis Airport Site Vicinity Properties and the Latty Avenue Properties.

Next slide. And then zooming in a little further, setting the table up for those individual briefs for those specifics of the site, you can see where we're at in the St. Louis region with the St. Louis Downtown Site, some history there as far as the processing that happened at that site from 1942 to 1957, and then those materials for those, The residues from the uranium processing at the Mallinckrodt plant at the Downtown Site moved up to the SLAPS storage area. In 1946, the Atomic Energy Commission bought a 21.7-acre tract of land that is now known as SLAPS, and that's where that material was stored for a long period of time. Some other history there. There's a lot of history behind that, but there's another aspect of it that I will point out is the... is you see on the map HISS and Futura, or Hazelwood Interim Storage Site and Futura, and the Latty Avenue Properties. In 1966, the residues were purchased from a private company, and the storage and handling processes that had part of that transportation that is contributed to the spread and some of the significant challenges that we have today in order to find and remediate that contamination.

So, with that. I can turn it over to Kevin to talk about some of the specifics at the North St. Louis County Sites. And thank you again for everybody for your time.

Time marker 36:55

Kevin Davis, FUSRAP St. Louis Sites Program Manager, St. Louis District:

Thank you, Phil. I'm Kevin Davis, and I'm going to cover Coldwater Creek so I'm going to ask you to skip through some slides. I'm going to step over here and help get her to the right one. So, as was mentioned, the other slides are on our website so if you want to look at those or even come to the table.

This map shows the Coldwater Creek Vicinity Properties that are in the mostly residential area north of I-270 or Dunn Road. This is a fairly large area, so this map is very hard to read, but we have it back there. We also have folks with other maps that

can help you locate where information that we have on this map is relative to where you might have an interest.

The coloring on this map goes all the way to the Missouri River. So, that represents our initial inspections and checks of that area are largely complete. There's about 1 percent that we need to get landowner permissions to go onto their properties and do our investigations, but, by and large, the initial round of investigation is complete.

The colors on the map do matter.

The gray is what I was talking about with landowner permissions.

The red color, as the Colonel mentioned, is where contaminated soil is present, and removal is required. I may be referring to these as problem spots that we have to address. Now, that word “spots” is not meant to diminish the issue that we have to go after these. That's important to go after these. It is simply meant to reflect that they are, fortunately, somewhat infrequent and tend to be smaller in size than the other colors that we'll be able to talk about tonight. If you total up all that area that's colored red, it's about 1.4 percent of the entire colored area that we have on this figure.

Let me drill down a little bit further. While one property is too many, in terms of the flood plain area, there’s only 16 properties [correction: 35] that would have one of these red areas that's in the floodplain. The rest would be within the creek, or the creek banks themselves.

So, that's a fortunate aspect for us. Like I said, those are 16 [correction 35] too many, but the initial investigation did not identify a continuous stream of red areas along the creek.

There are purple diagonal lines on some areas where we have completed the remedial action -- removal of the contaminated soil. They're about 0.5 percent.

The yellow color is areas that we are still doing follow-up investigation on some part of the property. It's not the entire property, but there's some part that requires us to go back and do some more evaluation.

The blue color is an area where the field investigation is complete, and we are working on a documentation to be able to say mission is complete for that property.

And the green color indicates mission complete. We have completed our evaluations and documentation. That number is 415 out of the 650 properties shown on this particular map.

So, now for those areas that are red, we do contact the landowners to let them know about the situation. We send them letters, and we continue to work with them after the fact in order to make the arrangements that we need to make for the eventual removal. The question comes up about how bad are these problem spots.

Again, the fortunate part for us is that the current configuration of where these are located relative to the depth that they're located, relative to the location, brush that limits access to it, other features. When you combine all that together, and also the concentrations, when you combine all that together, the existing configuration remains

protective until we are able to get to the removal. We know this because we did an analysis with a collection of the highest samples along the stretch of the creek. Samples even from areas that have already been remediated, samples that occur anywhere along the section, we assume we're all located together in one place.

So, we tried to create this worst-case scenario so we could apply it to any area. The risk associated with that analysis meets the CERCLA protective risk. So, that information is provided to help you with the uncertainty of what this means in terms of how bad it is. It's bad enough that we need to be able to clean it up, but it's not bad enough that we have to do it tomorrow. The current configuration shows protection of this.

To help keep, to ensure that protectiveness remains, we have an inspection program we started this year, where we go out every quarter in order to be sure that the configuration stays the same. And that also allows us an opportunity to engage with the landowners in order to talk with them. If they do need to make a change, we can come out and help them deal with that change, make sure that it's done safe, let's say putting in a fence.

OK, next slide. This shows a worker at the top of the bank. You can kind of see the types of areas that we had to deal with, the complexities, the steepness of the bank, fallen trees, thick brush. We have pulled out all the stops to overcome those kinds of obstacles. They've slowed us up, but we can figure out how to overcome them.

Next slide. More pictures to show what we're faced with in terms of hills, getting up and down them, clearing brush that's in the way.

Next slide. We have in here where we've actually built stairs into the hillside to be able to go up and down. We have in the middle picture folks that are using a hand drill in order to get to through rock to get to soil underneath that we need to sample. And again, there's these large rocks that we have to work around.

Next slide, please. We actually sample inside the sediment under the creek itself. Sometimes folks are in waders, like you see in the forefront of the left picture, and others are on a work platform. We actually have a hole in the center of it so that we can sample through that portion instead of workers leaning over the edge of the boat to save for position from where they work from. The guys in the waders, they actually have a pole that they're using in front of them to feel the bottom of the tree before they step there in order to help provide for safety there.

Community Member (in the background):

And they put those on before they got to the water, but now …

Time marker 43:26

Kevin Davis, FUSRAP St. Louis Sites Program Manager, St. Louis District:

The right picture shows us, we're getting that platform out of the water, there aren't boat ramps, so moving that in and out provides its own challenge.

Next slide, please. This shows on the left side using a drill rig. That's our preferred method. It gives us better information. But we can't get that drill rig to every place, like

you see on the right side, where the workers are doing hand-auguring to get the sample material. And you'll notice that they are working in the wintertime. We are working all year-round to get the work done. You'll also see in the front of that, picture with the snow, a bag, it's hard, maybe hard to pick up, but that's a bag of clay chips. When we remove the soil for the sampling, none of that goes back in the hole. We use these clean, bagged chips that we purchased to fill it up.

Next slide, please. So, a year ago, we had discussed here our results for the investigation of the, I'll call it the active areas of Jana School. These areas were safe. These areas were safe; they were to be safe from a radiological standpoint.

But we also discussed that there was area behind the school, down this creek bank that had contamination and required removal. As I mentioned in an earlier figure about a worker saying at the top of the bank, that's the same bank that is next to Jana School. I'm pleased to report that contaminated soil that's down in the bank has been removed, shipping about 90 rail cars of contaminated soil from that area.

Next slide. We have a series of slides to show you kind of the steps that it takes to go through that. Removing brush to be able to get to the area.

Next slide. Installing a road to be able to get our heavy equipment down to the area that we need to remediate.

Next slide. This one shows a side view cutaway of the creek bank, starts at the top of the bank and goes down to the water line.

The orange area is uncontaminated soil that we had to move out of the way in order to get our equipment down to the contaminated area, which is down further where those bright red lines are. In the moving process for that orange area, the soil was tested and verified to not be contaminated. The vertical bars in this figure shows the sampling done before any soil movement.

The blue vertical bars are uncontaminated soil, and there's a dark red vertical bar that is the contaminated soil. You might notice that there are blue uncontaminated soil bars in the area that we are, we ended up remediating inside those bright red lines. That's because whenever we are doing this work, we end up having to, excavate more than what is really required or is really necessary to get the contaminants off because we need safe access for people to get and check that the contamination is removed. We also have the large equipment that we're using to do this. It's not very precise equipment, but that large equipment does the work more quickly, so we accept that we'll remove some clean soil, and it's part of the process. As you can see on this figure, the orange area is larger than the red area.

Time marker 46:55

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

So, I'm going to conclude there. We'll go to questions and answers, right? And, so, if you want information on Coldwater Creek, please go back to our table.

Again, I own this one, right? We could have done better on the timing to get you that information. I want to make it available to you back there, but I think it's important we get to your questions. We do have a little extra time in this room, so we'll be able to get to the questions and then still afford you the time to go back to the tables.

Time marker 47:25

Bob Klein, Facilitator:

Sir, first question's going to be yours, by the way.

Question and Answer (Q&A) Session

Time marker 47:26

Bob Klein, Facilitator:

OK, I'm Bob Klein again. So, what the Colonel's talking about -- extra time -- is the courthouse has allowed us 20 extra minutes, so we're not going to finish at 8; we're going to finish at 8:20. And because of that, we're going to take 15 minutes to read as many of these questions as we can. If we don't get to a question -- I know a lot of you want your question answered here -- they will be answered by the Colonel and his staff on their website, but there's way too many questions to do in 15, 20 minutes. And at 7:15, we will stop and take questions from the floor.

If you want to ask the same question you wrote, as long as we didn't answer it yet, please do. That's fine but understand that we're trying to get everybody in here and get your questions answered. So, let's just get started. I'm going to read the question because we're recording, so we need to hear the question. And then I'm going to hand it to the Colonel. He's going to decide who answers it. OK. And by the way, great handwriting. I can read every one of them. Thank you for that.

Time marker 48:14

1. Can the Colonel please speak to the previous instances of the Army's miscommunication and problems with communications with the public and how, as the Colonel, you will correct this behavior and build bridges with the communities.

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

Great, thank you. All right, thanks. I appreciate that. So, yes, so let's go back to something we just heard, right? And that was, sometimes it's difficult to convey what's in your mind out verbally and get that across in a way that makes sense. And, so, there is no property that can wait till tomorrow or the next day or the next day.

Several Community Members:

Thank you.

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

But there's only so many we can work on at a given time.

Community Member:

Understood.

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

And, so, we try to prioritize that.

And I think I said this earlier in my opening comments: We try to prioritize the areas that would have the highest risk for potential exposure to the public to be first. and then move to the next and the next. And, so, when I thought about this program at first, I thought you would clean the source material, you would start at the top of the creek, and you'd clean to the Missouri. OK? But some of that is in less risk of exposure to people than others. So, the program is adopting that, has adopted that approach, right? Which would have the highest potential risk of exposure.

Let's get to that first. So that goes to your question. Yes, we will address and correct information if we need to. We are working on communication. I can't speak for everything that happened before I was here, before Phil was here, before anybody on this team was here. This has been a decades-long program. I can tell you where we're going forward, and that is more communication, more discussions, understanding where you have concerns or if you don't understand something, how we communicate that. That requires constant feedback from you on when we're doing it well and when we're not doing it well so that we can adjust on that.

Time marker 50:35

Bob Klein, Facilitator:

OK, thank you, sir. This is kind of a related question. So, and I'm not going to read any personal information because it's going on the Internet, so I'm not going to read addresses and all that stuff.

2. OK, so this person wrote, I have been told additional funding will not speed up the cleanup because of a lack of skilled workers. Specifically, what skills are needed to speed up the remediation work, and are you willing to start a training program for local people to get trained and employed?

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

Yep, OK, thanks. Another great question. How funding relates to workers, right? The obvious direct connection, we hire more contractors that are trained to do this, but there's a competition. It takes someone who is technically qualified to work with this kind of material to get this right. The last thing we want is to put someone who hasn't been properly trained or trained to the standard we need on a job, and then we miss something, and then, 20 years from now, we told you it was good, and it's not. So, we've got to get the right people, and that requires time for them to be trained. It's not a short timeline. But we're competing again with all agencies across the United States that are trying to do remediation work. And I don't know the percentage of people that want to go into this work, but there's a limited pool. And so, we are looking at, that's one of

the things when I said we're looking at ways to accelerate. We're going to look at “can we expand our contractor capacity?”

Is the available pool of technical experts that we need to carry this job from beginning to end available? And if so, can we bring them on board to our program? And, if so, does Phil's team have enough government employees to provide the right oversight to make sure that we're not missing anything? And so, we're working through all of that.

We will not build a training program for this. That's just not our lane to train them. We don't have the education. We have the education to execute. These are not instructors up here. I don't know who could take that on across the government, but I would say you can share those concerns with government officials.

Maybe there's a program to help build the capacity. I don't know what it is. I'll ask my team if they know. But I mean, there are ways to make those things happen. It's not something we can do. Danielle.

Danielle Spradley, Outreach Director for Congresswoman Cori Bush

I'm with Congresswoman Bush's office on that. The Congresswoman actually approached Secretary Granholm. We were in a meeting with the Corps about a year ago.

Bob Klein, Facilitator:

You didn't use the mic, so it gets recorded, ma’am.

Danielle Spradley, Outreach Director for Congresswoman Cori Bush

OK. So, I'm with Congresswoman Bush's office. The Congresswoman actually did; we had this discussion with the Corps about a year ago, but also just recently we talked to Secretary Granholm and have asked for exactly this, Department of Energy to fund more training programs to bring in more engineers, more techs to help the Corps so we can speed up the cleaning process. So, we are in communication and going to be following up with the Department of Energy to try to get programming like that.

Bob Klein, Facilitator:

OK, so we have about eight more minutes on the questions that you wrote. We’re not going to get to all of them, but they will be answered on-site. Like what just happened, you need to talk into the microphone when you talk, and we’ll do that in a couple minutes. And you’re going to walk up like that gentleman just did, and turn on the mic.

We have a couple more questions. This one is probably a really easy one.

Time marker 54:23

3. What risk number are you using? 1 to 10,000 or 1 to 1,000,000?

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

Great question, I'm going to hand this one off.

Jonathan Rankins, FUSRAP Radiation Safety Officer, St. Louis District:

The correct answer is both. We use both numbers: It's a risk range. So, you start at a very low end, and you go to a higher end: 10^{-4}, 10^{-6}. That's one in 10,000 excess cancer risk to one in a million excess cancer risk. And those are morbidity numbers, not mortality numbers. That is not cancer death. That is just a model that we use to guide our cleanup levels and our selected remedy.

Time marker 55:16

Bob Klein, Facilitator:

So, this one is not a particular geographical area, but it's a general question:

4. What is the status of investigating and remediating the groundwater?

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

All right, another great question. This is why I surround myself with really smart people that have a lot of knowledge on this.

Robin Parks, FUSRAP Technical Lead, St. Louis District:

Right now, at both SLDS and North County, we are not in any process of remediating groundwater. We are monitoring groundwater. We are tasked with monitoring the effects of our actions on the groundwater.

We're also tasked with ensuring that we are not affecting the groundwater in a negative way with our actions. Currently, both in North County and SLDS, we're expanding our groundwater monitoring program because our breadth of areas that need remediation has expanded. So, we're expanding our monitoring program to match our current footprint of remediation.

Bob Klein, Facilitator:

Thank you.

I'm going to do two more questions here.

Time marker 56:38

5. Can you please explain the number of vicinity properties – VPs -- that were included in the 2005 ROD? And please provide the total number of properties included in the cleanup as of today.

Phil Moser, Chief of the FUSRAP and Environmental Branch, St. Louis District:

So yeah, I can take that one on. So, for instance, when you look at the original Record of Decision that was signed in 2005, it was made with information that the entities or the personnel that put it together knew at the time. So, you can say that it was incomplete compared to what we know today.

Community Member:

Louder.

Phil Moser, Chief of the FUSRAP and Environmental Branch, St. Louis District:

I've got to hold it a little closer. I'm sorry. So, you can see that the information to compare to what we know today was incomplete as far as the amount of contamination in Coldwater Creek and as it moved down progressing to the Missouri River. So, assumptions were made at the time as far as the number of vicinity properties within the original Record of Decision boundary that includes the St. Louis Airport Site and the Latty Avenue Properties -- the Hazelwood Interim Storage Site and Futura. And as we learn more, as we did more investigation, you realize that number of vicinity properties went way up compared to the original Record of Decision. So that's what we're doing now in all of the investigations that we're doing and even additional actions to provide an Explanation of Significant differences to that Record of Decision to fully document the amount of vicinity properties, which we have, over 750 now -- to include all of the properties from Dunn Road all the way to the Missouri River. All of the properties that touch Coldwater Creek are going to be included and fully documented in that documentation.

Bob Klein, Facilitator:

Don't turn the microphone off. That's what's messing us up. OK, there you go.

Time marker 58:39

6. How many other schools are affected by this radiation?

Phil Moser, Chief of the FUSRAP and Environmental Branch, St. Louis District:

The answer to that question is none. The only school that was close to where the contamination was on the creek bank was Jana Elementary School. And we were able to surge resources after the report of contamination to go inside that school and take samples. To be able to… [inaudible interruption]

Bob Klein, Facilitator:

When we do the Q&A, you can stand up. Thank you.

Phil Moser, Chief of the FUSRAP and Environmental Branch, St. Louis District:

…To be able to provide the information that we provided to the public last summer to make sure that it was safe from a radiological standpoint.

And not just us, other federal agencies, other state agencies agreed with that determination.

Bob Klein, Facilitator:

OK, I'm sorry this is going to be the last written question, but, again, it will be answered, and then we'll go to the Q&A on the floor.

Time marker 59:40

7. Where did all of the rail cars of contamination go? Where did they end up? Somebody mentioned there's 17,000-plus rail cars. Does anybody know where they went?

Phil Moser, Chief of the FUSRAP and Environmental Branch, St. Louis District:

So, this is a question we get often as far as you dig it up, now where does it go? And that's understandable, right? Because we want to know exactly where some of that contaminated material may go. Anytime that we go throughout the entire process, we send the contaminated soil from our loadout area at the St. Louis Airport Site to a term that we say, “licensed, out-of-state disposal facilities.” We have three that we normally ship to.

Currently, the majority of the material right now is going to a landfill in Michigan. We also send material to landfills in Idaho and Utah.

Time marker 1:00:34

Bob Klein, Facilitator:

OK, so what we're going to do is I'm going to hand these questions to the Colonel, so he knows. You're going to tend to them later.

We're going to go to the Q&A. Now I mentioned the time changed a little bit. So, it's 7:15 right now. We're going to do 20 minutes of Q&A on the floor and then we're going to let you look at the tables and talk to the tables.

So, if you want to speak, like that young lady right there, he's going to hand you the microphone. And if you kind of want to line up so we don't waste time people walking up, please do. But we are going to cut it off at 7:35 unless the Colonel tells me different. And say your question because it has to be recorded. Sure.

Time marker 1:01:08

Ashley Bernaugh:

8. Hello, my name is Ashley Bernaugh. Thank you, Colonel, for your time. I appreciate your time, and, of course, I appreciate everyone's efforts here. I am, would like to follow up with you directly, Colonel, with a conversation that we had and a commitment that you made regarding our communication ongoing and the betterment of that. In our communication and conversation, we discussed the importance of good-quality, good-faith communication, and, unfortunately, in the past that has not always been completed by members of your team. And, so, I want to offer you the opportunity to speak directly to the community in rectifying prior communication, misunderstandings, misinformation, and offer you the opportunity to set right going forward the kinds of communication in line with the commitments from yesterday. Could you please provide that level of commitment for us, please?

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

Yeah, Ashley, thanks for that. I appreciate the question. So, I think where this starts, is through this communication. If you feel that has been the case, helping me understand the parameters of it, like what was the type of information, how did it come across to you, so that I can then go back and sit with my team and say how did we communicate this, did we miss the mark, how do we do it better and more effectively, so that we don't have a repeat of the same thing. And, so, I think continued engagements with myself and different organizations, such as Just Moms and yourself so that I better understand

where we didn't communicate effectively or we didn't meet the mark on what you're asking and then go back and have a conversation with my team to say, “How do we achieve this?” and then be able to communicate back to you what that plan would look like.

Time marker 1:02:58

Ashley Bernaugh:

Respectfully sir, I think the commitment yesterday was for the community to receive maybe a much-needed apology or a “mea culpa” and an opportunity to set a very clear line between communication of the past and communication forward. Are you able to still provide that commitment today?

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

Yeah, so what you're referring to is more specifically to some social-media communication, right? And, so, in that case, first off, yes, we were wrong in some of the things we communicated. And I do apologize to you for that. And I will gladly deliver, and shortly, a written apology to you for that. Because I think that's part of the problem with the communication is, let's stand up if we did something wrong and say it, and move on.

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

And, so, with that being said, we will use social media as a means of sharing information. That's what it's there for. We will use our websites as a means to communicate and put information to provide you that information to meet the needs. It's better, I think, to be able to put it on a venue like that gives more people access than just going one-on-one and providing information because then it's limited to an individual.

Bob Klein, Facilitator:

You don't have to give your name if you don't want to, but just ask the question, please.

Time marker 1:04:21

State Representative Chantelle Nixon-Clark:

9. Thank you. State Representative Chantelle Nixon-Clark. You all may know that a lot of people that’s in this room I represent. I want to take this time to first say thank you again for the apology and the acknowledgement of the acts that have happened. It is my hope that we don't continue to tear each other down publicly, whether you feel strongly about your perspective or not.

I think that it breaks the trust in the community. It disrupts barriers that we have when people are still dying. So, you have to understand that emotions are high. This is your profession. You do not live here. You do not sleep here. You were not raised up here. You have may or may not have experienced cancer in your body; you may not have lost a loved one to cancer or any other ailment. So, providing that sense of compassion when you come forth and represent such a large organization, I think that we need to start there first. I did have a question. My question is, like you guys showed the

Coldwater Creek information up there. Where is the protective gear for the workers? Thank you.

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

So, first, thanks for sharing all of that with us. I agree with you, right? It that this is not a mechanical process that's separate from human emotion, right? This is very near and dear to every one of you here for many reasons. And it is important to us to have a human element to all of that, right? That my team is very passionate about what they do and believe. You are all very passionate about this material being gone and an end to the situation you have. And, so, again, collectively, we have to work together in a way that we can communicate professionally knowing that there is a lot of emotion involved, and, when we feel all that emotion coming up, just being able to step back for a minute and let it, let it subside for a minute so that we can talk without being defensive on either side and try to engage because my goal is just to move forward. How can we move forward collectively? And we do that understanding what is on your plate and the value it means to you.

And, so, it is going to take a lot of maturity and professionalism, right, to stand up and say, “We need to listen to this,” and it's hard for all sides and then figure out the path forward. Phil, I'm going to let you.

Phil Moser, Chief of the FUSRAP and Environmental Branch, St. Louis District:

So as far as protective gear for workers, we've gotten this question before, and it's important, right? You'll see pictures and you'll see workers.

Community Member: Can't hear you.

Phil Moser, Chief of the FUSRAP and Environmental Branch, St. Louis District:

You'll see pictures, and you'll see workers out there. And the standard statement is, workers will wear protective gear in accordance with the level of contamination or radiation that they're going to be dealing with. So, you may see sites around the nation that have higher levels or higher levels of radiation or contamination where they will wear more protective gear. There's been significant amount of evaluations done, monitoring that was done in the early portions of the program where levels were higher for some of the contamination that they were encountering. Thankfully, we're well past that, and we're able to protect workers as needed for the contamination that they may encounter.

In addition to that, there's continuous monitoring that goes on around a lot of these areas as well, as you'll see some of the instruments that we've brought, that we continue to bring back there that workers will continue to monitor themselves, check to see if there's any contamination. When they're doing any samples, they do have gloves on, and they do the consistent scanning of those processes to make sure that they are doing things in accordance with our safety procedures, and they are being protected.

Time marker 1:09:11

Ray Hartmann:

10. Colonel, my name is Ray Hartmann. You referenced people who had been in previous FUSRAP hearings. I can tell you the first one I was at was in April of 2013, 11 years ago. I know it because I was there as a journalist. Some of you may know I'm running for Congress now. This is a big deal for me, but this isn't about a political speech. I was there, and, at that hearing, there were maps. There was a table; there was talk about better communication. I have one simple question, and I'm not a victim, but I see a lot of victims here. What reason, given that everything -- and I think you've done a fine job presenting yourself -- what reason do these people have in 2024, in the same kind of FUSRAP hearing, with the same maps and the same tables and the same expression of communication, what reason do these people have to believe you that this is going to be different than it was in 2013?

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

Yeah, so we have to demonstrate that, right? So, our actions going forward have to match the words that we say here, and you have to see positive results. So, I have talked to my team about all of this, right? Things don't change overnight, or even the changes that happen don't necessarily get recognized right away.

It has to be constant, continuous progress that is seen. And, so, again, I can't speak for what happened before me, but I can tell you that is my goal that what we say is matched by what we do, and that rebuilds trust, right? I'll take it out of the context of all this. My son says to me, “I'm sorry,” a thousand times for the same thing. And I said, at some point, the value's gone. If your actions don't match, right? So that's our goal is to always back what you hear with what we do. And I know that the team has done that throughout the year. Say something, in fact, that if there are areas we have fallen short in that, help me to see it so that we can address it. But that's how we're going to do it. To rebuild trust, our actions have to match the words.

Time marker 1:11:32

11. As someone who's been affected by this with losing multiple family members, friends, still ongoing, when Jana was tested, we were told the levels were OK. Multiple tests further, all of a sudden there's how many Olympic-sized swimming pools (amount of contamination) removed? How do we know that when you say these areas are clean, that they are clean, that they're safe? I grew up in Wedgwood. The topsoil from the creek was taken and put on our neighborhood yards. Have those been tested? I went to Cross Keys; I went to Wedgwood. A tributary ran through there. It flooded. We walked through it till they built the bridge. How are these schools not being tested? How are these areas not being tested? How do we know when you say an area is clean that someone's not going to hire an independent company to come in and say, “Oh, wait a minute; it's not”?

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

Yes, ma'am, I'm going to take part of that, and then I'll let my team take part of that.

So, first, I'll go back to the part on the area that we just finished remediation on Coldwater Creek embankment by Jana Drive. So, what was reported was the equivalent of eight Olympic swimming pools. I'll correct that for you today. So, if we go back, can you put that drawing back up that showed the cut of information, I mean the cut on Coldwater Creek behind you now. Side profile. The side profile. Yeah, the side profile. I've got another one.

Unidentified member of the FUSRAP team:

Down or up?

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

Yeah, I'm going up. No, it's this one. Yeah. there. OK, so, this material that you see here is what we sampled, was not contaminated, but we needed to remove it to give us access to this. This is about 19,000 cubic yards; that's about the equivalent of six, sticking with the vernacular, six Olympic-size swimming pools -- this material we removed and set to the side so we could access this material. What we removed from here was about approximately 7,400 cubic yards. That's about three Olympic swimming pools. Not downplaying the value. I'm just correcting the information, right? So, then this material we can then use when we're complete to help restore the area and finish. So, when I talk about this, the three Olympic swimming pools, that's commingled contaminated particles. So, when the particles in the soil, it's attached to a piece of soil. You have each one of those. So, there's some particles that have none, and some particles that have some. So, it's commingled. And, so, our approach is dig it all out.

We're not trying to separate particle by particle. So, an example, if I had a little kiddie pool from Walmart up here and I filled it 70 percent full of salt and 30 percent full of pepper and I mixed it really well and the pepper was the contaminated part, I could spend a lot of time, energy and money picking out all the pepper with a pair of tweezers, or I could do it a lot faster and try to finish work by taking it out with a shovel. That's our approach. Get the excavator in there and dig it out. But dig some overburden and dig a little more. We don't want to leave anything.

So, again, I'm not downplaying any of this to you. Any contamination that we remove from there that we're remediating needs to be removed. But when we say three Olympic-sized swimming pools, it's not 100 percent contaminating material in the sense that every particle has a piece attached to it. It's all contaminated in the sense it's mixed in and we can't separate it. It's not…we don't want to take the time. We would rather move down and clean more. And, so, that's what we did there. And that's how we got to that.

So, to go further in your question, then one is how do you trust us? So, I think…grab another microphone…All right, so a couple of things I will say there, right?

So, when we did our initial investigations, when the team had investigated these areas, we had identified that area of the bank, right? So, that was one of those areas where we knew in the bank there was the contamination, not beyond the bank, right? And, so, that was one of the areas where we said, "We've got to prioritize which one we hit next."

Because it's deep in that bank, unless someone digs it out, we're not exposing anyone at that moment.

So, let's get somewhere like we did Duchesne Park. A lot of public are there, and it was potentially -- correct me if I'm wrong -- closer to the surface. So that was a higher priority, and then come to this one, right? So, this was always in the plan to go get that out of there. We just had to sequence the priority, right?

The information that came out that there was a potential of contamination on the school grounds or in the school, we reacted to that by surging resources, so pulling resources, also other work we were doing, to surge them there and sample all of that.

Our data showed us that there was not that. There was still what we knew was there, but nothing further. Because that was extremely important to all of you that any of that was there, right? We said, “Hey, maybe we’ve got to re-prioritize; let's get it out now.” And, so, we moved to that point, right? And, so, I'm not going to say that we'll always get that priority order right. We're trying to get that priority order right. I wish I had enough resources to just drop everything on Red Spot and clean all of it starting today. But we can't, so we've got to do the juggling act of how do we get to each one of those?

If I did not completely answer your question, please stand up, and let me know so I can give it to one of these guys to give you further explanation.

Time marker 1:17:57

12. What about the schools and testing? What about the other schools and the testing. Will it be tested by Cross Keys, by Wedgwood, by Hazelwood?

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

Yeah, so there is nothing in the information we have right now in the testing we've done that leads us to believe it's beyond where it's at -- that it would be there.

We are trying to look at other tools that may be available to let us know “Did something ever get moved there?” And then we can go test there and see. But, again, it's a matter, at this point, of trying to find some kind of evidence that would allow us to say we need to go do that. Because every time we go test somewhere, I'm not doing something somewhere else. So, how do I balance the resources?

And, so, we're trying to figure out... where we think it can be based on everything we have. We look at as many historical photos as we can find. What did it look like in the past? Did it look like somebody moved dirt there to build something? OK, then maybe where did that dirt come from? We're really trying to run through all of that. We're trying to pull out every stop we can think of to find where it may be. But, at the same time, we can't just go test everywhere and pull the resources from where we know it's at right now.

Like we get out what we know is there as we keep - and that's why you see some of the yellows there, right? We’ve got to work on getting out what we know is there, but we’ve got to keep going back to some of these areas too and refining and understanding if it's there and then develop that plan.

Time marker 1:19:29

13. And the other thing is you said your goal is to remove it all, which is what we all want. We're looking at 30 more years. The majority of the people in this room will be dead if we live a normal expectancy. Otherwise, we're going to die of cancer. We are ticking time bombs.

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

So, the timeline that we're working off of, I'm not sure where that number came from, the timeline that we're working off of is completion by 2038. So that's the timeline we're working on. That's with all the information we have before us today. So, if we investigate a yellow area and there's something there that we didn't know was there, then we'll have to address that one and clean that. But that's based on the current information we have, but what you have there, 2038 is our timeline.

Bob Klein, Facilitator:

All right, I'm going to turn it over to you. OK. Because you've been standing a long time, we'll do everybody who's standing, OK? And then, gentlemen in the red hat, you're last, OK? And then, anybody else who wants to put a comment in, please do it in writing, you can do it on the website or give us a piece of paper.

But we need to kind of get to the tables eventually, so we're going to extend the time a little bit more. But again, we have to be out of here by 8:20. So, ma'am, go ahead.

Time marker 1:20:54

Rebecca Hutchason:

14. Yes, thank you so much. So, my name is Rebecca Hutchason, I'm a Florissant advocate. So, Colonel Andy, I did hear you say that you had gotten a specific laboratory to be able to do all of your samples here for all of the grounds and things like that, so it's not like a time-consuming thing? That is amazing. What I'm a little bit confused about is that all the testing for the soil and the water and all of this. The most important part is not being tested, and it’s me! I would like to hear, where is the testing for us? For the radium, the thorium, the uranium. That we know the uranium has a half-life of 4.5 billion years. So, when you have that new funding, are we going to be tested ourselves and our homes that have been flooded numerous times? That we're sleeping in, breathing in, eating in, taking showers in. This is a source that's very important that we need to address. And I always hear it's a challenge to do those tests. Well, I looked it up, and it's urine, breath and blood. And that can be done at a lab. And if you popped one up for your soil, I'm really hoping you're going to pop one up for me.

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

I want to make sure that I'm clear, right, you're talking human testing, right?

Rebecca Hutchason:

Yes.

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

Yes. OK, so we will not, right, and I'm going to say this why, right? We're the Corps of Engineers; we're not the Corps of Medicine. We're not the experts to do that. We could not do you justice to say we would test that, right? There are agencies that are designed for that, right? I'm not saying they're the right agency, but I'm saying the health agency that's here could probably better ask that question if you go to them, right? Department of Health and Senior Services because they work more towards the medical side.

We are engineers chartered to get rid of what's in the ground. So, in no way do I disregard what you're going through, what we talked about earlier, what you're facing and what the future is. I just cannot do that in this organization. We don't have that expertise.

Time marker 1:23:23

Rebecca Hutchason:

15. Would you be able to recommend on our behalf as you, as the Colonel of the organization here in St. Louis, would you back us up, support us that we need testing for us? I know you can't do it. Who does? Yeah, who does? Who do we go to? It's residents.

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:
So, what I can do is create venues like this public meeting that bring together agencies like this and that bring together staff representatives and congressional members that you can speak to about that. So that's what I can do.

Rebecca Hutchason:

Do that.

Time marker 1:24:11

Debra Volz:

16. Thank you for being here. My name is Debra Volz. I wondered about the soil and stuff that's deep in the creeks. I was born in Bloor Street and grew up there. I'm having my 50th birthday next week. And I have a prognosis of maybe 10 years. I would like for everybody to, you know, and all of you guys to understand that like a lot of us that come to these meetings and do this, it's just not our mental health. It takes a lot of us, takes a lot out of us physically to, you know, come, and try and advocate for this. My question though, I've been with many of the groups for as long as I found out about it, but I did attend the 2013 meeting, last year's meeting, some of the TANA meetings. I realized that the cleanup is a huge process, but I find it hard to believe that posting signs and making sure that people that are moving into the areas, people that are coming to work in the areas, I mean Hazelwood just got a grant for people to come and move, come live here, come work here, but we're not going to tell you what you're moving into. There's no signage anywhere that is appropriate. And I mean, I realize the cleanup, but does it take this long to get signage out?

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

OK, yeah, thanks. I know this is a...absolutely an area of concern for many of you. And so I will sit with my team and figure out how we've got to what you saw, right, versus what you're asking and whether that's at my level or that's a level above me or two levels above me, where do I have to engage?

Debra Volz:

So, when people see construction though, like if somebody wasn't known, they drove by SLAPS and they go, "Oh gosh, they're doing construction there?" No, not really. I mean, there's no good, you know, there's no caution whatsoever to even let people know that like, you know, like there's something going on there. Like it's not just construction.

Bob Klein, Facilitator:

So, we'll get the last two speakers and let Jon catch up.

Debra Volz:

Sorry, I gotcha.

Bob Klein, Facilitator:

You both wrote it very well, and he'll answer that in writing.

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

Yeah. Yeah, I will follow up with you. All right, let me get a little smarter for my team. I will follow up.

Debra Volz, Community Member:

Thank you.

[Written Response Regarding Signs at SLAPS: Signs at SLAPS exist around operational areas requiring access control, e.g., the soil pile, laboratory rooms, and water sedimentation basin. Control is provided by fencing, roped boundaries within a fenced area, or building walls. Signs are posted on the fencing, ropes, or room entrances of sufficient size to be obvious to those approaching the areas of requirements before entering the area.

Robin Parks, FUSRAP Technical Lead, St. Louis District:

When we get to the individual discussions, come talk to me.

Debra Volz:

I'll come talk to you. Thank you.

Time marker 1:27:00

Harvey Ferdman:

17. Hi. It's Harvey Ferdman. Colonel, thank you for your service and hopefully for the service you're going to continue to perform on behalf of this community for our government. As you know, many feel that we've been wronged, and we're looking for

the government to do their best to help us out. I know that you're sincere about this, so thank you. I also know that your staff is sincere. I've been working with your staff for a while. I also know your staff is sincere about working within the constraints of the Record of Decision. My question is, are there any areas outside of the constraints of the Record of Decision, including people's homes and basements, that you guys' suspect may be contaminated, that by the statutes or the Record of Decision you are not allowed to go investigate?

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

Yeah, so I'm going to punt this over to Phil in just a second, right, but I will tell you that there's not a defining stop line if we continue to see evidence of contamination, right? So, we have a start point, and that's in there a governed kind of start point. But, if we reach the limit of that start point and we're finding contamination, then we move beyond that. So, I'm going to defer it to him to give you a little more definitive answer, particularly to what you said, because I don't know that at this point.

Robin Parks, FUSRAP Technical Lead, St. Louis District:

OK, so the very simple answer is, if there is suspected contamination outside of our current ROD area, we do have the authority to go investigate and take care of it. That's the simple answer, but we need evidence to support a suspicion.

We need a link. It needs to be the conceptual model. It needs to be some photos, historical photos. It needs to be some documentation from over history. There needs to be something. It can't be hearsay, right? It can't just say, OK, "Someone said this; someone said that" because let's talk about an example. There supposedly were three dump trucks buried on SLAPS, and I can promise you we didn't find any dump trucks.

But the very simple answer is, there is no such thing as out of our boundaries that would make it out of our authority if the link is there.

Time marker 1:29:37

Community Member:

18. Can I ask you to respond in writing to the following? As many people know, when you're dealing with cancer, especially surgeries, the surgeons want to take more tissue than is contaminated. They call that the margins, right? They want to work out some margins. Can you respond in writing what your margins are, according to the ROD?

Robin Parks, FUSRAP Technical Lead, St. Louis District:

Are you talking about aerial margins, like land area? Are you talking about what we cut?

Community Member:

Geographic margins, so you're saying that you would look, if you suspect an area, you will look. And I'm asking, if you have an area that is contaminated, how far out do you look? What is your margin for you to say, "This has not spread beyond what you found"?

Another Community Member:

… and sample size.

Robin Parks, FUSRAP Technical Lead, St. Louis District:

Yeah, so I'm listening to Jon, and there is a technical answer about our distances, but I don't think that's what you're asking. You're saying if there's something five miles away and evidence says that soil was moved five miles away, would that be under authority, right?

Original Community Member asking the question:

I know the definition of Vicinity Properties that would be under authority, correct?

Robin Parks, FUSRAP Technical Lead, St. Louis District:

Yes.

Original Community Member asking the question:

Right. Now what I'm asking is what Jon is talking about, the margins. So, if you find it in my front yard.

Robin Parks, FUSRAP Technical Lead, St. Louis District:

Yes. Do you then test 100 feet, 1000 feet, 2000 feet away to make sure that it's nowhere else in that area? What's your margin?

Robin Parks, FUSRAP Technical Lead, St. Louis District, addressing Jon Rankins, FUSRAP Radiation Safety Officer, St. Louis District:

Do you know the exact?

Jon, come on up. Yeah. There's the answer. I just ...

Original Community Member asking the question:

I asked for it to be writing to make this easier.

[Written Response: Investigative sampling is conducted to determine the area and depth of known contaminated soil. Based on geology, experience, and the results for surrounding samples, a margin is added to the known contaminated soil. The margin varies depending on the conditions. For example, the margin was a few feet to approximately 40 ft for the remediation design for the creek bank near Jana St. Another margin occurs during excavation. After reaching the area and depth of the remediation design, additional survey and sample data are collected. When that data guides us to more contaminated soil, the excavation is expanded. This process of guided excavation continues until no more contaminated soil is identified. Excavation areas get their own final status surveys. To provide another margin, another final status survey is conducted for the soil around the excavation areas. This surrounding final status survey could be 300 feet or more from the edge of the excavated areas.]

Jon Rankins, FUSRAP Radiation Safety Officer, St. Louis District:

I like the way you described it, the margins, like with a surgery. That's a good description. It's a lot better than some of the language that we use typically. As you've probably some of you heard, like class one, class two, class three type of survey units that we use, we do establish an extremely large margin around known contaminated areas. We then go out hundreds of meters around those in every direction. And we sample, although there's a less dense sample population around the known contaminated areas. And then we take a third margin out indefinitely where we have an even less sample density to characterize that margin type of area. So, it is extremely large margin that we build into our modeling and characterization, investigation, so that we absolutely do not leave anything behind.

Original Community Member asking the question:

Thank you.

Bob Klein, Facilitator:

OK, last question, please, sir.

Time marker 1:32:23

Community Member:

19. Thank you, Colonel, for your service and all the other ones here. So, I just was just curious, so your logic is similar to mine, that I would probably start up in Banshee and then work my way to the river. But let's say like you said that we have a red dot by the river, so then we're going to go there next. So, then we have to come back and backtrack. So, I just want like the process so that, will that this one red dot here was cleaned up, well then, what's the remediation or what's the follow-up to make sure that, as stuff washes down the creek, it doesn't re-contaminate the red dot that you see here.

Robin Parks, FUSRAP Technical Lead, St. Louis District:

So that's a great question. We've talked about this before, but this is a topic we probably should talk about every meeting, every educational piece of public communication that we have. In general, we set our priorities for remediation, just like the gentleman said.

We start at Banshee Road; we're working downstream. What interrupts that general process of upstream to downstream is priorities where we have a higher risk of human exposure or contact, just like the Colonel and Phil and others have talked about and mentioned areas like near Jana School, St. Cin Park, Duchesne Park.

But, specifically, to address your concern, if we do one of those priority areas downstream, what about recontamination? And, two years ago, when we had the big-time rain, the big-time record-level flood on Coldwater Creek [for parts of Coldwater Creek while the 1957 flood remains the record flood for other parts], we took that opportunity. Within a day or two, we went out after the floodwaters went down, and we did extensive sampling on both sides of the creek from Banshee all the way to the Missouri River. And what we did was we went out, and we tried to find deposits left behind by that particular flood. We took an extraordinary number of samples of those

sediments, and we found no contamination. So, the end result of that study was that the residual contamination that's left in the creek, and I say residual, this is important, I don't know that we really hit on this tonight. We've talked about the source areas, right, the storage areas. We've removed those big volumes of soil. Those were the sources for migration of contaminated material into the creek. We aren't having contamination migrating into the creek any longer. Now we have the residual contamination. What is left, the spots of contamination that is left from those years of migration into the creek. So, that study that I mentioned, all of the sampling we took, it reinforced our conceptual model -- our thought process that the contamination we have left is primarily subsurface: It's not subject to migration anymore. It's not being redeposited. And, by the way, that flood-investigation report is on our website. I kind of pat myself on the back. I think it was super important. It was super helpful. It was helpful for us because it really reinforced what we thought, but it showed it on paper with data what we thought was happening. So, I hope that answers. I tried to if I got a little off track, let me know. and anyone wants to talk more about that sampling -- that report -- you can find me.

Colonel Andy Pannier, District Engineer and Commander, St. Louis District:

I'm going to turn back over to Bob here in a second, but I just want to thank you for your time here tonight. I want to thank you for allowing everybody that turned up to come up and speak. I know you leave with other questions. You still have more questions, and you can, some of you can probably ask 100, right? But I appreciate you affording the opportunity to let others get up and get that voice. We will be in this room. We can engage with you further. And we've heard several times tonight, right, thank myself for my service, those of us in uniform, but you're really all in a form of service, whether you're in a congressional position, serving this state or this country, or you're in an advocacy group serving a community, right? So, we all have a piece of this.

As I said up front, we're not going to agree on everything. If we all agree, we're only moving in one direction. And, so, we need to disagree in a healthy way. And we need to question each other and say, how do we do better or what do we need to look at? And, so, I appreciate this kind of dialogue. I think this is a healthy meeting to do.

We will not fix all this in a day. Unfortunately, we won't fix it in my time of command unless I can talk General Peeples into letting me stay here a really long time to do this job. I love this job. I love this district. I love this part of the country. Again, this is home for me, right? This region is what means something to me. So, I appreciate your time tonight and the cooperation. I think this was a healthy engagement. Thanks.

Brigadier General Kimberly Peeples, Commander of the Mississippi Valley Division:

OK, I am going to hijack and just say, reiterate Andy's comments. I started with saying it was a privilege to be here, to hear the dialogue and to get to know you tonight, and I'm closing with that as well. I really appreciate the time that you've taken, the thoughtful questions, your input, and your stories. For us, I want to reiterate the commitment of the Corps of Engineers and our agency to follow through. And our goal, as I stated, is transparent communication. So please help us get better at that. I know next time we've already discussed having more health experts available to have the dialogue. And I've

heard the comments in that realm. So, for those of you that have been to multiple meetings, you have more history. If this is your first, we open all those comments. And again, I just want to say thank you very much and reiterate our commitment to you and these communities. Thank you.

Bob Klein, Facilitator:

So, they took my speech away, that was it. We're not going to re-meet, so, as soon as you leave from this chair and you want to go talk to the tables, please do so, but we're not going to re-meet. We need to actually be out of here by 8:20, or the Colonel will be in trouble, and they probably won't let us use it again. So, please, go to the tables. Thank you very much. I really appreciate it. Go on the website; you'll see the answers to the questions that the Colonel has right there. Thank you very much.

Time marker 1:39:11

(End of recording)

Questions Remaining to be Answered at the End of the June 12, 2024, FUSRAP Open House

The following comments and questions were received during the open house, but time did not allow response during the open house. The responses are included here for completeness but are not in the recording. For questions with more than 1 subject, circled letters, e.g., Ⓐ, are place by subject in the question and also placed by the corresponding answer. These responses were drafted by Kevin Davis, Program Manager for the St. Louis Sites, reviewed by technical and project experts, and approved by Colonel Pannier.

1. Would you consider having two 2-hour meetings (example Tuesday and Wednesday) instead of one 2-hour meeting? Have one meeting to show all your information to educate the community. The second meeting for Q&A. Two hours is <u>not</u> enough time for both.

Answer: We would consider having two 2-hour meetings instead of one as we evaluate how to improve.

Explanation: Our sense is that the Q&A session was more effective than our presentations in educating the community on what they wanted to know. So, we are interested in providing a more time for Q&A, and we have details to work out on how much more that will be. In previous meetings, we have heard community concerns about how hard it is to attend these meetings, so we are mindful of that in considering having meetings two nights in a row.

2. Proper signage with proper danger warnings that make it VERY clear to anyone of the hazards. [Request for signs identifying "danger" is assumed.]

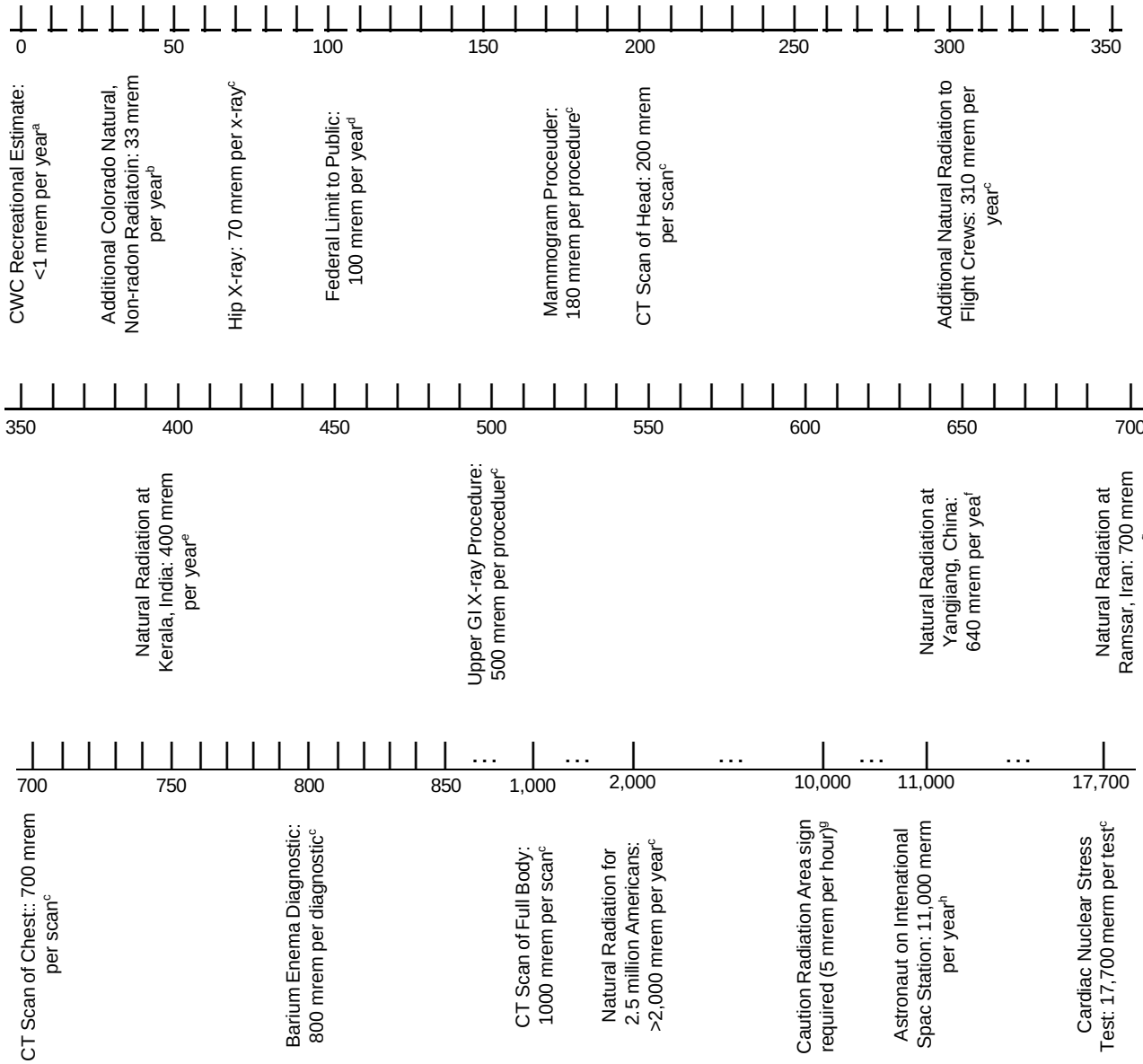
Answer: The current exposure posed by contaminated soil along CWC does not rise to the level of "danger" that is established in Federal regulations[1] for radiation. Let us be clear we are not saying that the conditions weren't different decades ago, but signs put up today have to be consistent with the conditions as we find them today. We are revisiting the content of our proposed sign.

Explanation: Determining the content of FUSRAP-related signs along CWC requires consideration of several factors, including the amount of possible exposure to the public, U.S. Nuclear Regulatory Commission (NRC), EPA regulations, and USACE regulations regarding public dose and signs. Our annual North St. Louis County Sites Annual Environmental Monitoring Data and Analysis Reports, final status surveys, and other documents show public doses are less than the most stringent of NRC and EPA limits for the public. Since 1998, the highest dose rate associated to a hypothetical maximally exposed youth playing in CWC, including swallowing 13 gallons of creek water for the year, has been 1 millirem per year or less, including background radioactivity. The highest dose rate associated to a hypothetical maximally exposed member of the public from the North St. Louis County FUSRAP Sites since 1998 is 9.7 millirem for the year of 2001 when SLAPS was being remediated. The average annual dose for the past 10 years is 3.3 millirem. These millirem numbers can also be compared to other situations, as shown in the following graphic.

[1] 10 CFR 20.1902 and 10 CFR 20.1301.

Questions Remaining to be Answered at the End of the June 12, 2024, FUSRAP Open House

Radiation Dose Examples (mrem)



[a] U.S. Army Corps of Engineers St. Louis District. *North St. Louis County Sites Annual Environmental Monitoring Data and Analysis Reports*. CY 1998 through CY 2023.

[b] Mauro, J.; Briggs, N.; Cohen, S.; and Associates, Inc. Prepared under contract by U.S. Environmental Protection Agency, Office of Radiation and Indoor Air. *Assessment of Variations in Radiation Exposure in the United States*. July 15, 2005. https://www.nrc.gov/docs/ML1224/ML12240A227.pdf. Accessed April 18, 2023.

[c] National Council on Radiation Protection and Measurements Report No. 160. *Ionizing Radiation Exposure of the Population of the United States*. 2009.

[d] U.S. Environmental Protection Agency, Office of Radiation and Indoor Air. *Federal Guidance Report No. 14: Radiation Protection Guidance for Diagnostic and Interventional X-Ray Procedures.* EPA 402-R-10003. November 2014.

[e] Nair, R.R.; Rajan, B.; Akiba, S.; Jayalekshmi, P.; Nair, M.K.; Gangadharan, P.; Koga, T.; Morishima, H.; Nakamura, S.; Sugahara, T. "Background Radiation and Cancer Incidence in Kerala, India-Karanagappally Cohort Study." *Health Physics:* 2009 Jan;96(1):55-66.

[f] Tao, Z.; Zha, Y.; Akiba, S.; Sun, Q.; Zou, J.; Li, J.; Liu, Y.; Kato, H.; Sugahara, T.; Wei, L. "Cancer Mortality in the High Background Radiation Areas of Yangjiang, China during the Period between 1979 and 1995." *Journal of Radiation Research*: 2000 Oct:41 Suppl:31-41.

[g] 10 CFR 20.1003 using 2,000 hours per year.

[h] Restier-Verlet, J.; El-Nachef, L.; Ferlazzo, M.L.; Al-Choboq, J.; Granzotto, A.; Bouchet, A.; Foray, N.. "Radiation on Earth or in Space: What Does It Change?" *International Journal of Molecular Sciences*: 2021, 22, 3739.

3. So blue, green, yellow and red on a map depict the Corps progress and the areas to clean up. Ok that's simple. My understanding on radiation risk to human health is not well understood. So, can the team elaborate on what each colored area measures, starting with the red zones. Please include picoCuries and/or rems for uranium, thorium, radium/radon. A range is fine. Please use as a reference where these fit into an acceptable level per the ROD.

Answer: Starting with red areas, red represents areas with radioactivity that exceed the remediation goal. For the portion of Coldwater Creek from Dunn Road to the Missouri River, the average level of the contaminates of concern in this portion are about twice the levels that require excavation. The gray, yellow, blue, green, and purple diagonal colors represent status of our investigation and removal activities. The North St. Louis County Sites maps with their legends are available on this webpage.

Explanation: These red areas are based on the initial investigation of CWC involving more than 39,000 samples. Please note that follow-up detailed investigative sampling is being conducted to better understand the extent of the red areas, and yellow areas also require more investigation. As we evaluate the results of the detailed investigations, we may return to blue- or green-colored areas to apply lessons learned by doing more detailed investigative sampling.

CERCLA requires existing safety regulations be considered when developing the Record of Decision for how to determine the places where the selected remedy is applied. Applying those regulations for this environmental contamination left behind by early atomic program activities causes the following steps to be taken to determine the red areas (more information contained in this fact sheet).

1. For radium-226, thorium-230, and uranium-238, subtract natural background concentrations from the laboratory sample results.
2. Divide those outcomes by the following concentrations:
    - For radium-226, 5 picocuries per gram (pCi/g) for the surface soil (top 6 inches), 15 pCi/g for deeper soil, and 15 pCi/g for sediment in the water channel.
    - For thorium-230, 14 pCi/g for the surface soil (top 6 inches), 15 pCi/g for deeper soil, and 43 pCi/g for sediment in the water channel.
    - For uranium-238, 50 pCi/g for soil at any depth and 150 pCi/g for sediment in the water channel. These uranium-238 limits account for dose contributions from uranium-234 and uranium-235 and their decay products.
3. Add each of those 3 outcomes together to get an SOR_N result for that sample.
4. Repeat the process for other samples at the same relative depth within an area of 100 m^2.
5. Average those SOR_N results. If that average exceeds 1, then the soil is identified as contaminated and requires removal.

Additional Information: With respect to information about radiation risk to human health, you may find useful the summary provided by the U.S. Naval Nuclear Propulsion Program on page 23 of their annual report.

4. Testing of Ⓐ homes and Ⓑ residents for radium, thorium and uranium. [Request for testing is assumed.]

Answer: Ⓑ USACE has neither the authority from Congress nor the medical expertise to test people for radioactivity. Ⓐ Testing of structures in the floodplain and creekbanks is part of the USACE investigation process for CWC. When gathered evidence indicates more sampling of structures is warranted, the investigation continues. The gathered evidence can involve the interiors of homes and structures (e.g., evidence of floodwater coming in through a basement window). Please note that sewer backups involve sewer waters that cannot follow their normal flow paths; creek floodwaters are not entering a structure through sewer backups.

Additional Information: Ⓑ Health agencies are suggested resources regarding medical testing of people such as:

- U.S. Agency for Toxic Substances and Disease Registry, including their 2019 Public Health Report that discusses medical testing of people,
- Missouri Department of Health and Senior Services,
- St. Louis County Health Department, and/or
- Primary care doctor.

Ⓐ Information that should be evaluated for more sampling can be provided at STLFUSRAP@usace.army.mil or (314) 260-3905. Based on authorizations for FUSRAP, each request must be evaluated for evidence that the structure surfaces have a reasonable potential of being impacted by environmental contamination left behind by early atomic program activities.

5. Ⓐ Radiation?? Alpha, beta, gamma or something else?? Ⓑ Concentration of radiation? Ⓒ Spotty (Where are they?) General thur (sic) the creek? [For the last question, a request for the locations of the contaminated soil is assumed. The letters are added to help associate the different questions to their answer.]

Answer: Ⓐ The contaminates of concern in the uranium decay chain emit alpha or beta radiation, and gamma radiation. Ⓒ The North St. Louis County Sites maps available on this webpage show red at locations with contaminated soil. For the portion of Coldwater Creek from Dunn Road to the Missouri River, approximately 2 percent of the total area within the banks and 10-year floodplain has contaminated soil, with current numbers as follows: 35 are within a property boundary in the floodplain, 16 are within a property boundary only within the banks, and 61 are within the banks but not in a property boundary. Ⓑ The average level of the contaminates of concern in this portion are about twice the levels that require excavation. Please note that follow-up detailed investigative sampling is being conducted to better understand the extent of the red areas, and yellow areas also require more investigation, so the number of red areas may change in the future. As we evaluate the results of the detailed investigations, we may return to blue- or green-colored areas to apply lessons learned by doing more detailed investigative sampling.

Explanation: The red areas represent soil with radioactivity that exceed the remediation goal. The North St. Louis County Sites maps with their legends are available on this

webpage. These red areas are based on the initial investigation of CWC involving more than 39,000 samples. Please note that follow-up detailed investigative sampling is being conducted to better understand the extent of the red areas, and yellow areas also require more investigation. As we evaluate the results of the detailed investigations, we may return to blue- or green-colored areas to apply lessons learned by doing more detailed investigative sampling.

CERCLA requires existing safety regulations be considered when developing the Record of Decision for how to determine the places where the selected remedy is applied. Applying those regulations for this environmental contamination left behind by early atomic program activities causes the following steps to be taken to determine the red areas (more information contained in this fact sheet).

1. For radium-226, thorium-230, and uranium-238, subtract natural background concentrations from the laboratory sample results.
2. Divide those outcomes by the following concentrations:
   - For radium-226, 5 picocuries per gram (pCi/g) for the surface soil (top 6 inches), 15 pCi/g for deeper soil, and 15 pCi/g for sediment in the water channel.
   - For thorium-230, 14 pCi/g for the surface soil (top 6 inches), 15 pCi/g for deeper soil, and 43 pCi/g for sediment in the water channel.
   - For uranium-238, 50 pCi/g for soil at any depth and 150 pCi/g for sediment in the water channel. These uranium-238 limits account for dose contributions from uranium-234 and uranium-235 and their decay products.
3. Add each of those 3 outcomes together to get an SOR_N result for that sample.
4. Repeat the process for other samples at the same relative depth within an area of 100 m^2.
5. Average those SOR_N results. If that average exceeds 1, then the soil is identified as contaminated and requires removal.

Additional Information: The following table provides a summary of the 3 types of radioactivity associated with the contaminants in the uranium decay chain.

Radioactivity Type	Emission Type	How to Block this Type of Radioactivity	How the Concentrations of Uranium Decay Chain Contaminates along Coldwater Creek between Dunn Rd. and the Missouri River could Cause Exposure in Excess of the CERCLA Protectiveness Standard
Alpha	2 Protons and 2 Neutrons	2 inches of air. Outer dead layer of skin	Each year - Inhaling the amount of contaminated soil equal to 60 black pepper packets (fast food size), or Swallowing the amount of contaminated soil equal to 4,900 black pepper packets
Beta	1 Electron	Thick clothing. Aluminum foil	
Gamma	Energy	20 inches of concrete	Spending more than 900 hours a year outside located on top of the soil that is contaminated

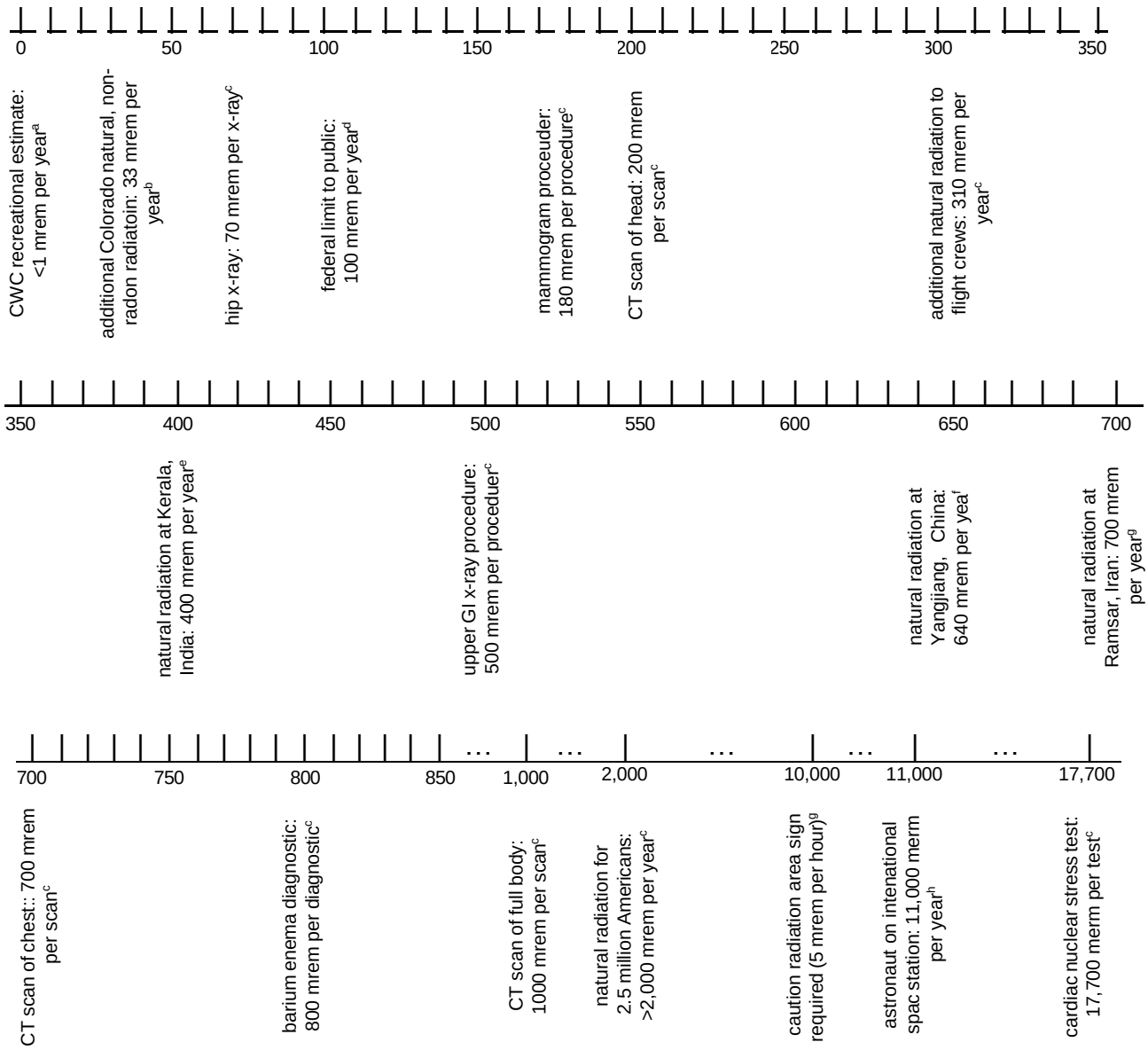
6. Dose Rates??

Answer: Since 1998, the highest dose rate associated to a hypothetical maximally exposed youth playing in CWC, including swallowing 13 gallons of creek water for the year, has been 1 millirem per year or less, including background radioactivity. The highest dose rate associated to a hypothetical maximally exposed member of the public from the North St. Louis County FUSRAP Sites since 1998 is 9.7 millirem for the year of 2001 when SLAPS was being remediated. The average annual dose rate for the past 10 years is 3.3 millirem to a hypothetical maximally exposed member of the public from the North St. Louis County FUSRAP Sites.

Explanation: Dose rates associated with FUSRAP activities at the North St. Louis County sites are presented in the annual Environmental Monitoring Data and Analysis Reports, which are located on this webpage under Documents.
These dose rates are well below the Nuclear Regulatory Commission regulations limit of 100 millirem per year to the public. That is the defined level of hazard that we follow for the public and for our workers. These millirem numbers can also be compared to other situations, as shown in the following graphic on the next page.

Questions Remaining to be Answered at the End of the June 12, 2024, FUSRAP Open House

Radiation Dose Examples (mrem)



[a] U.S. Army Corps of Engineers St. Louis District. *North St. Louis County Sites Annual Environmental Monitoring Data and Analysis Reports*. CY 1998 through CY 2023.

[b] Mauro, J.; Briggs, N.; Cohen, S.; and Associates, Inc. Prepared under contract by U.S. Environmental Protection Agency, Office of Radiation and Indoor Air. *Assessment of Variations in Radiation Exposure in the United States*. July 15, 2005. https://www.nrc.gov/docs/ML1224/ML12240A227.pdf. Accessed April 18, 2023.

[c] National Council on Radiation Protection and Measurements Report No. 160. *Ionizing Radiation Exposure of the Population of the United States*. 2009.

[d] U.S. Environmental Protection Agency, Office of Radiation and Indoor Air. *Federal Guidance Report No. 14: Radiation Protection Guidance for Diagnostic and Interventional X-Ray Procedures.* EPA 402-R-10003. November 2014.

[e] Nair, R.R.; Rajan, B.; Akiba, S.; Jayalekshmi, P.; Nair, M.K.; Gangadharan, P.; Koga, T.; Morishima, H.; Nakamura, S.; Sugahara, T. "Background Radiation and Cancer Incidence in Kerala, India-Karanagappally Cohort Study." *Health Physics:* 2009 Jan;96(1):55-66.

[f] Tao, Z.; Zha, Y.; Akiba, S.; Sun, Q.; Zou, J.; Li, J.; Liu, Y.; Kato, H.; Sugahara, T.; Wei, L. "Cancer Mortality in the High Background Radiation Areas of Yangjiang, China during the Period between 1979 and 1995." *Journal of Radiation Research*: 2000 Oct:41 Suppl:31-41.

[g] 10 CFR 20.1003 using 2,000 hours per year.

[h] Restier-Verlet, J.; El-Nachef, L.; Ferlazzo, M.L.; Al-Choboq, J.; Granzotto, A.; Bouchet, A.; Foray, N. "Radiation on Earth or in Space: What Does It Change?" *International Journal of Molecular Sciences*: 2021, 22, 3739.

7. Considering that the ATSDR report explains that leaf cover is NOT sufficient to provide protections for human health, how does FUSRAP justify saying that radioactive waste is "safe in its current configuration"?

Answer: Leaf cover is not a part of the risk analysis that was performed. The risk meets the CERCLA protectiveness standard for carcinogens of generally 1 in 10,000 for developing cancer in a lifetime. Not disturbing the soil, i.e., leaving soil at rest in its current configuration, provides effective control against inhaling or swallowing contaminated soil, which are the ways the evaluated concentrations of uranium decay chain contaminates could cause exposure in excess of the CERCLA protectiveness standards. When USACE disturbs the soil, we apply engineering controls, such as wetting the soil, and use radiological instruments to ensure effectiveness of the controls.

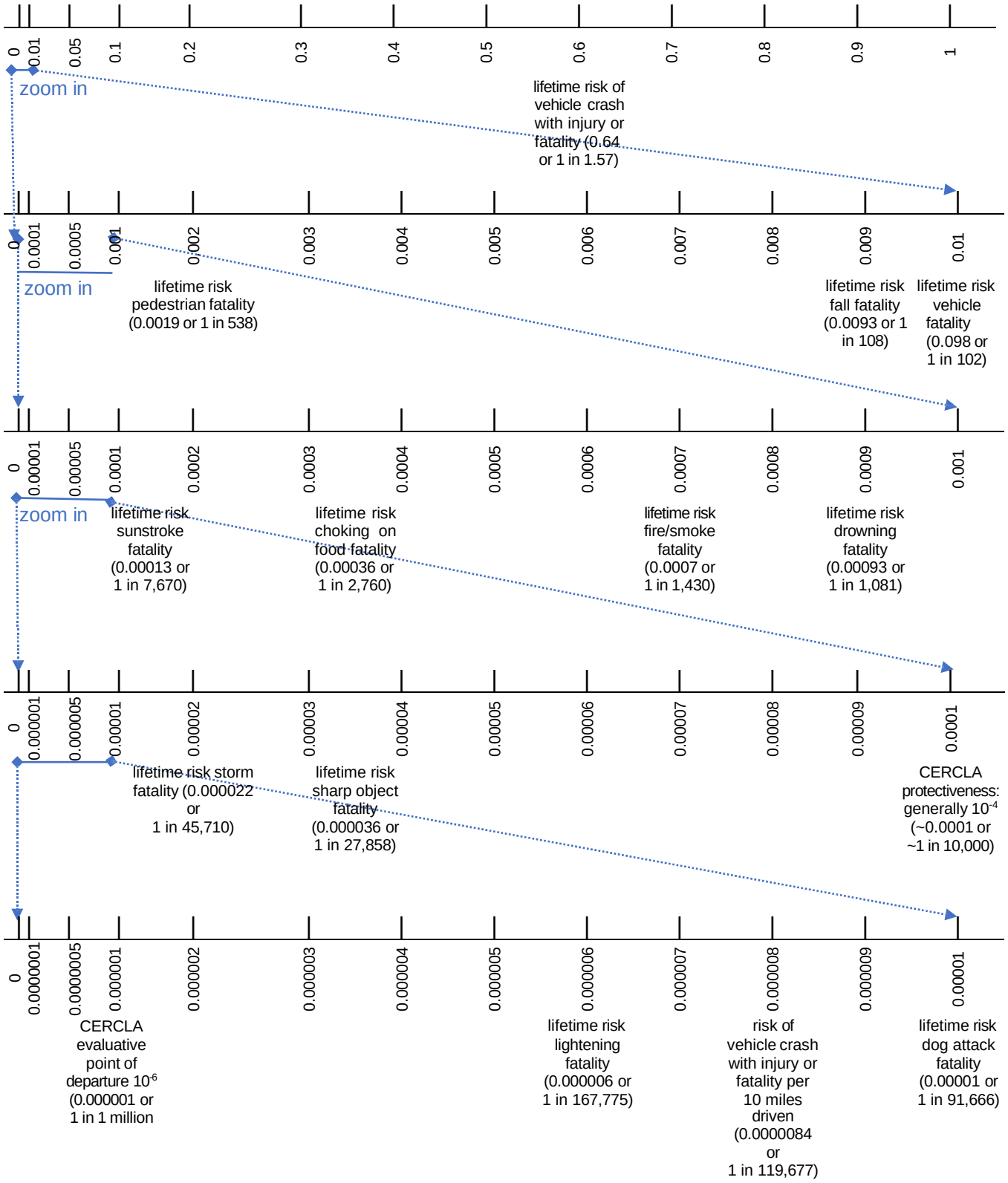
Explanation: The analysis included both surface and subsurface soil when identifying the collection of the soil samples with the highest concentrations between Dunn Road and the Missouri River, even if already remediated. These samples are not all located on the same property, but to show protection for any property, we assumed they were.

USACE operates with the authorities established by law and regulation. The CERCLA protectiveness standard for risk was set by regulation through a public comment process. EPA explained its basis for its regulations during the rulemaking process in Federal Register 55FR8666-8865: "CERCLA does not require the complete elimination of risk or of all known or anticipated adverse effects, i.e., remedies under CERCLA are not required to entirely eliminate potential exposure to carcinogens. CERCLA section 121 does direct, among other requirements, that remedies protect human health and the environment, be permanent to the maximum extent practicable and be cost-effective. Remedies at Superfund sites comply with these statutory mandates when the amount of exposure is reduced so that the risk posed by contaminants is very small, i.e., at an acceptable level. EPA's risk range of 10^{-4} to 10^{-6} [1 in 10,000 to 1 in 1,000,000] represents EPA's opinion on what are generally acceptable levels." EPA further explains in Federal Register 55FR8718: "This means that a cumulative risk level of 10^{-6} is used as the starting point … but this does not reflect a presumption that the final remedial action should attain such a risk level."

While these risk levels for developing cancer are not directly comparable to a lifetime risk of death from untimely events, such risks provide some perspective these numbers. The following graphic on the next page provides a comparison of everyday risks compiled by the National Safety Council for 2015 through 2022 and vehicle crash risks from the National Highway Traffic Safety Administration's Traffic Safety Facts for the same period. Because the numbers are so small, the number line in the graphic contains 4 levels of zoom to show risks ranging from 0.000001 to 1.

Questions Remaining to be Answered at the End of the June 12, 2024, FUSRAP Open House

Risk Comparisons



Additional Information: We are providing this risk analysis to help remove uncertainty about the risk the red areas pose in their current configuration while USACE works through removing all of them. USACE is working with landowners to maintain the current configuration or assist in maintaining protection if the landowner needs to change the configuration (e.g., install a fence).

8. Can you speak on St. Ann Park/B&K Construction yard (4140 Cypress Road, St. Ann) next to creek, dumps into Coldwater Creek on the south side of the airport?

Answer: The former B&K Construction Company property at Cypress Road, St. Ann, is not within the authority of FUSRAP. Because B&K worked for the Cotter Corporation to transport materials to West Lake Landfill, authority lies with EPA's responsibilities for West Lake Landfill.

Explanation: The work performed by B&K is documented in a report by the U.S. Nuclear Regulatory Commission at this webpage. Because this work involved transport of materials to West Lake Landfill for the Cotter Corporation, it is part of the CERCLA project being conducted by EPA for West Lake Landfill.

9. Ⓐ Is Bush Wildlife Park in Weldon Spring contaminated too? I just took my granddaughter fishing for the first time there, and her father taught her how to skin and eat it. Why am I even having to ask this? If it is contaminated, it should be broadcast everywhere like a tornado warning. My family has lost so many people to cancer because of this. Is there ever really an end? Imagine if it were you or your family slowly dying. It's so painful, and it never ends. It's bankrupting me, and now fishing. I could have hurt my innocent granddaughter, too, is horrible. Ⓑ They are making me write on this instead of just raising my hand to find out. More waiting and pain. Thanks.

Answer: Ⓐ Matters associated with the Weldon Spring Site are not within the authority of FUSRAP. The U.S. Department of Energy is responsible for that site and provides information located at this website. Ⓑ We will be providing a more time for questions and answers in future meetings.

10. Free health care for all families affected. [A request for free health care for affected families is assumed.]

Answer: USACE has neither the authority from Congress nor the medical expertise to provide health care.

Explanation: USACE authority for FUSRAP is for finding and removing environmental contamination left behind by early atomic program activities.

Additional Information: Health agencies are suggested resources regarding medical testing of people such as:

- U.S. Agency for Toxic Substances and Disease Registry,
- Missouri Department of Health and Senior Services,
- St. Louis County Health Department, and/or
- Primary care doctor.

Questions Remaining to be Answered at the End of the June 12, 2024, FUSRAP Open House

11. Ⓐ Why did it take 33 years to clean up Banshee Field, and Ⓑ is it clean now? [Assume "Banshee Field" is the former Berkeley Park Ball Fields that closed in 1988. This property is between McDonnell Blvd., Eva Ave., Coldwater Creek, and a line that would connect the ends of Byasse Dr. and Frost Ave.]

Answer: Ⓐ The work at the former Berkeley Park Ball Field had starts and stops over a 26-year period. The start-stop aspect of the work was because of fluctuating funding in those years, priority given to the radioactive material storage areas at SLAPS and HISS/Future, and priority given to non-storage areas with higher risk of human contact, e.g., road ditches along Hazelwood Avenue between Pershall Road and Frost Avenue, St. Cin Park, Duchesne Park, and residential properties near Palm Drive. Ⓑ The status map shows the areas remediated and areas remaining to be excavated along the bank of Coldwater Creek, which requires a specialized design.

Explanation: Excavation of contaminated soil from this unused 35.6-acre property occurred in 1998-1999, 2005, and, with starts and stops, from 2011 to 2024. If this large property was worked without interruptions, the length of time is estimated to be 4 years to remove the approximately 1200 rail cars cubic yards of contaminated soil and another 33,000 cubic yards of uncontaminated soil to get down to the contaminated soil.

12. Who do I contact to request that my property be tested? [Assume this request is for soil testing. Please see the response to number 4 if the request is for testing structure surfaces.]

Answer: When gathered evidence indicates more sampling of soil on properties is warranted, the investigation continues. Information that should be evaluated for more sampling can be provided at STLFUSRAP@usace.army.mil or (314) 260-3905.

Explanation: Based on authorizations for FUSRAP, each request must be evaluated for evidence that the structure surfaces have a reasonable potential of being impacted by environmental contamination left behind by early atomic program activities.

Questions Received by Email for the
June 12, 2024, FUSRAP Open House

The following comments and questions were received via email (STLFUSRAP@usace.army.mil) the day of the open house. The responses are included here for completeness but are not in the recording. For questions with more than 1 subject, circled letters, e.g., Ⓐ, are place by subject in the question and also placed by the corresponding answer.

1. My husband grew up on Heatherton Dr. behind the Jana cleanup area. We took a ride over a month ago and noticed the other side, the Heatherton Street side, nothing was remediated there. Ⓐ How is that possible that the other banks of the creek are not contaminated? Ⓑ When are you going to test the yards around the creek? Ⓒ Please address when you are going to test all the red dot hot spots shown?

Robin Parks, FUSRAP technical lead/civil engineer:

Ⓐ You are correct, there is known contamination in some spots in the general area of the creek bank opposite of the recent Jana work. The contamination is subsurface and not a risk for human contact in its current configuration. We could not remediate that bank at the same time as the Jana side for several reasons including schedule, logistical issues with access, resources, and priorities set for risk of human contact. That area (as well as all known contamination within the creek and creek banks) must undergo a more detailed investigation in order to have enough data for remedial design for remediation. Ⓑ We are currently conducting these detailed investigations moving downstream and plan to be at that specific area in 2025.

Ⓒ Note that we are conducting quarterly inspections of all known contaminated areas in and along the creek to be sure that areas aren't being disturbed, and to provide property owners advice and assistance if/when any subsurface work on their property needs to be completed. Each property owner that has contamination is communicated with directly with respect to the specific information for the contamination, activities that may need support, etc.

For your awareness, the schedule for remediations is set based on a general upstream to downstream order, with priorities put on residential areas that have a higher risk for human contact with the contaminated soils. Examples of higher risk for contact would be surface contamination in areas that has human access, and/or contamination located in close proximity to a home.

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Contact Us: STLFUSRAP@usace.army.mil