

ARMY CORPS OF ENGINEERS
SOILS AND RESIDENTIAL FOUNDATION STUDY

PUBLIC MEETING

Held at the Holiday Inn, 6001 Rockside
Road, Independence, Ohio, on Tuesday, the 2nd
day of April, 2019, beginning at 7:00 p.m.

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1

2 [REDACTED]: Good evening and

3 welcome. I would like to introduce [REDACTED]

4 [REDACTED].

5 [REDACTED]: Welcome, everybody. I

6 really appreciate you taking the time tonight.

7 We're here to talk about the Harshaw Chemical

8 site as a formerly utilized site, remedial

9 action program site. We are going to discuss

10 the proposed actions and what we are going to do

11 to address that site tonight.

12 Before we get into the formal

13 presentation, I want to recognize that we have

14 numerous representatives from partner agencies;

15 city, state, local. I just wanted to list out

16 all those agencies we have here; it really shows

17 the strength of our collaborative and collective

18 partnership as we look at each of these sites.

19 We have the US EPA here tonight; we

20 have the Northeastern Ohio Regional Sewer

21 District; we have The City of Cleveland; we have

22 BASF; we have Cleveland City Council;

23 representatives from the Ohio Department of

24 Health; the Ohio EPA; the Canalway Partners;

25 Cleveland Metro Parks; Arcadis; Metrowest CDO

1 and Department of Energy Legacy Management
2 Division. So thank you very much for taking the
3 time and investing in partnership with us.

4 It really warms my heart to see all
5 of the posters and all of my team busy up here
6 answering questions and making sure that if
7 you've got a curiosity, they are getting after
8 it. We've got another session after so there is
9 plenty of time. There will be time for formal
10 comments, and then there will also be time for a
11 poster session afterwards if you have follow-up
12 questions or whatnot, or if you want to talk to
13 each of the team members.

14 There are many sources of pride as a
15 District Commander. The two I want to highlight
16 tonight are that we have a distinguished history
17 since 1857 serving the citizens and really the
18 watershed of the two lower Great Lakes. The
19 District boundary from the west is the
20 Ohio/Indiana state line, and then to the east to
21 New York.

22 We really pride ourselves in the
23 service we provide and the variety of different
24 business lines in the FUSRAP programs. The
25 second real source of pride is the employees

1 that we have that are doing all of that work.
2 That have done that work and that are presently
3 doing that work. We've brought a pretty robust
4 team with us tonight and I thought it would be
5 helpful to introduce each of them so you see who
6 is here tonight.

7 I think it will be helpful, if you
8 have questions for some of them specifically, so
9 I'll highlight a little bit of their expertise.
10 So if you see the team assembled, it is a
11 phenomenal team of experts tonight and I really
12 want to highlight who all we've brought.

13 We are going to start off with [REDACTED]
14 [REDACTED] is the Project Manager; he's going to be
15 doing most of the presentation here in a few
16 minutes. He has got 20 years of environmental
17 and project management experience. He is my
18 lead guy for all of the different moving pieces.

19 Working hand in hand with [REDACTED] is
20 [REDACTED]. [REDACTED] is standing right there.
21 [REDACTED] is my lead technical, so when it comes to
22 the Project Engineer and the technical aspects
23 of the site, [REDACTED] is working with Steve to make
24 sure we've got this addressed. She's got 13
25 years of environmental experience.

1 Then we have [REDACTED] sitting
2 next to [REDACTED], she has got 27 years of
3 environmental toxicology experience. So she is
4 responsible mainly for evaluating the potential
5 for human health and ecological risks, release
6 of contamination into the environment. She is a
7 well known name in this area of the country
8 because she is just prolific in how involved she
9 is in all the different projects.

10 Working with her is [REDACTED], she
11 is a Health Physicist. So she is looking at the
12 aspect of radiation support and waste management
13 support. Also rounding out our project team is
14 [REDACTED], [REDACTED] is right there. [REDACTED] is out
15 working on our active remediation site in
16 Lafayette, Ohio. He is daily going up and
17 experiencing that, but he is also sitting on
18 over 20 years of experience in environmental
19 biology and health physics.

20 Also we've got here, [REDACTED].
21 [REDACTED] is sitting right next to [REDACTED]. [REDACTED] is
22 looking at our groundwater; he is our main
23 hydrogeologist. He is probably the most
24 experienced hydro geologist in the Corps of
25 Engineers with 29 years.

1 We've also got [REDACTED] was
2 introducing me and [REDACTED] is sitting right there.
3 We've got [REDACTED] and [REDACTED] who are both
4 here, they are associated with other projects,
5 but they are both here teaming on communication,
6 making sure we are keeping open lines of
7 communication and we've dedicated those efforts
8 to that. That is how important that is, we've
9 dedicated two people for that alone.

10 That rounds out our specific project
11 delivery team. Also here is leadership support.
12 We've got [REDACTED], Chief of Special
13 Projects Branch. When we look at all of the
14 different projects, all of the FUSRAP Programs
15 within the District, [REDACTED] is on them. Also [REDACTED]
16 happens to be a former Project Manager for the
17 Harshaw Chemical site.

18 [REDACTED], you said it was five, ten years
19 ago that you were working on it?

20 [REDACTED]: I wish; it was
21 2003.

22 [REDACTED] So early on in the
23 process, so [REDACTED] has got some roots there. Also
24 working with [REDACTED] we've got [REDACTED],
25 who is my Chief of Environmental Branch, again,

1 with that project management and technical.
2 Dave Frothingham has got 24 years of engineering
3 experience as well.

4 [REDACTED]. [REDACTED] is our Team
5 Leader for the Environmental Project Management
6 Branch. He's got 23 years of experience working
7 on engineering, environmental engineering,
8 project management. [REDACTED] is sitting at the
9 same table. [REDACTED] is the Team Leader for
10 Environmental Engineering, he's got 21 years of
11 environmental engineering experience.

12 [REDACTED] is sitting at the same
13 table there. [REDACTED] has 11 years of physics
14 experience, he is a Team Leader for
15 Environmental Health. And then not here tonight
16 is [REDACTED], District Counsel. He
17 apologizes for not being here tonight, but he
18 will be available to reach out in another forum.

19 I did a quick tally of the collective
20 team I just introduced you to. They have
21 268 years of collective experience working on
22 FUSRAP and similar type work and that is
23 including work that is ongoing. I want you to
24 leave tonight rest assured that we have the very
25 best team aligned against this project. And

1 that is only highlighting us inside the District
2 and we pride ourselves on regional teaming.

3 So other districts that are
4 aforementioned here that have FUSRAP expertise,
5 or related expertise, we will definitely
6 leverage them, as well as their expertise. Now
7 you know who is here tonight, so please ask the
8 tough questions. [REDACTED] in particular
9 likes the tough questions.

10 I'm going to hand it over to [REDACTED]
11 here, I've just got one or two other points.
12 This project is unique for the District as well.
13 We have a Cleveland area office, so we have
14 employees that are members of the community
15 here. So not only is this project important to
16 us as a national program to make sure it gets
17 taken care of, but we have individual employees
18 in our District that are invested.

19 The number one priority for our team
20 when it comes to the FUSRAP sites and really all
21 of our projects is human health, life safety and
22 the environment. So we have that collective
23 expertise aligned into that number one priority,
24 so you are going to see that throughout the
25 night as we talk about some of the specifics.

1 I'll just wrap it up by saying thank
2 you. Thanks for investing and taking the time
3 to come tonight and contribute to the process.
4 We absolutely want your input, we value it. We
5 are looking forward to your comments. Some of
6 you have indicated you want to provide formal
7 comments at the end. There will also be time
8 for follow-up and talk with our team of experts
9 after the presentation, if something comes up.

10 If you did not indicate that you
11 wanted to comment, there will be a time at the
12 very end. We do ask that you hold questions
13 until the end that allows us to -- we have a
14 recording system to make sure that we record
15 your comments for the record. Did I miss
16 anything as far as instruction? So with that,
17 here is [REDACTED].

18 [REDACTED]: Sure. Thank you, sir.
19 Good evening, everyone. Again, welcome. I'm
20 here to tonight to present to you our proposed
21 plan for the cleanup of the Harshaw site.
22 First, I'd like to start with a brief history.

23 As you can see up here, there are a
24 couple of photos. The photos on the left, the
25 top photo is from around 1949 and the bottom

1 photo is from 2018. Basically that is just to
2 show you the amount of change that has occurred
3 at the site, the 55 acre former Harshaw Chemical
4 Company site that I'll just call Harshaw from
5 this point forward, so I don't have to keep
6 saying it in its entirety.

7 It is located at 1000 Harvard Avenue
8 in Cleveland, approximately five miles southwest
9 of downtown Cleveland. This site is in a low
10 lying area right next to the Cuyahoga River, you
11 can see that here as well. It is surrounded by
12 industry on three sides. The main portion of
13 the facility, which is right there, at one time,
14 it contained over 30 buildings and about
15 16 acres of land.

16 As you can see today, all of those
17 buildings have been removed; I will talk a
18 little bit about that. That was a combination
19 of efforts of the Corps of Engineers and the
20 owner. From 1944 to 1959 approximately 5,000
21 tons of uranium materials were processed.

22 It is no longer there, but you can
23 see where G1 used to be. Building G1 was
24 removed in the winter of 2014-2015 to address
25 some health and safety hazards and to enable

1 further investigation of the contamination that
2 was beneath that building.

3 Earlier investigations to address the
4 residual radiological contamination of the site
5 were conducted from 1976 to 1979, and the
6 current property owners conducted additional
7 investigation into the 1990s. And as I said,
8 numerous buildings have been demolished.
9 Actually all of the buildings -- well, the
10 former buildings, have been demolished, removed.

11 As you can see, the map on the right
12 shows two operable units or OUs, as we call
13 them, that we are going to be talking about
14 tonight. Upper Unit 1 is the large area right
15 there. That is where the main chemical plant
16 was located. That is to the north; Operable
17 Unit 2 is to the south. I'll explain why there
18 are two operable units here in a little bit.

19 This area that is shown right here is
20 known as Investigative Area 06, IA06. That was
21 already completed back in 2011, when we signed a
22 No Action Record of Decision, which meant that
23 there were no actions necessary for that
24 particular piece of land. Next slide.

25 So as the federal program being used

1 to address this site is known as the Formerly
2 Utilized Site Remedial Action Program or FUSRAP;
3 we like to use acronyms. I'll do my best to
4 tell you what each of those is. So the FUSRAP
5 Program, the program was initiated in 1974 to
6 identify, investigate, and if necessary, clean
7 up or control these sites throughout the country
8 that were contaminated as a result of the
9 Manhattan Engineer District, or early Atomic
10 Energy Commission activity.

11 If the words stuck out to you, the
12 Manhattan Engineer District, yes, that was part
13 of the Manhattan Project, our nation's early
14 atomic weapons program. The objectives for
15 FUSRAP Program are identified on the slide
16 there.

17 And just to reiterate what the
18 Commander said earlier, while we are performing
19 the work, our top priority for all of the
20 activities at the site is protection of the
21 health and safety of not only the workers, but
22 also the community and also environment. Next
23 slide.

24 So what this slide shows is the
25 CERCLA process. CERCLA stands for the

1 Comprehensive Environmental Response
2 Compensation and Liability Act, or as we call
3 it, CERCLA. That is the process that we are
4 required to follow under the FUSRAP Program for
5 the investigation and cleanup of our FUSRAP
6 sites.

7 As you can see, actions at the
8 Harshaw site were started by the Department of
9 Energy with a referral letter to the Corps of
10 Engineers in 1999. Tonight, we are at the
11 proposed plan phase, right there, for the
12 Operable Units 1 and 2, which I'll get to here
13 in just a moment. Next slide.

14 This looks very familiar. I just
15 wanted to give you a time line of how this
16 CERCLA process is played out at the Harshaw
17 site. So FUSRAP began in 1974; the Harshaw site
18 was included in the program in 2001 for further
19 characterization and preliminary assessment.

20 The Corps of Engineers completed
21 their remedial investigation of the site in 2009
22 to determine the nature and extent of the FUSRAP
23 contamination and potential impact to human
24 health and the environment. The feasibility
25 study, which basically evaluates remedial

1 alternatives for the site, was completed in
2 2012.

3 And in March of this year, we
4 released a feasibility study addendum. We did
5 adjust our alternatives a little bit, based on
6 investigation after the removal of Building G1,
7 as I mentioned earlier. We also, at the same
8 time, released the proposed plans for Operable
9 Units 1 and 2, which is why we are here tonight.

10 The reason we are here tonight is
11 that we need to gather your input and concerns
12 and questions regarding what we put forth as our
13 preferred alternatives, before we fill out the
14 remedy for the site. And actually I will go
15 over that process in a little more detail, but
16 that is why we are here.

17 So once we move past the Proposed
18 Plan phase, the next is the Record of Decision.
19 That document will lay out what the selected
20 remedy is for the project to be remediated.
21 Next slide.

22 So as I said, we have two operable
23 units. The reason that there are two operable
24 units has to do with two factors. One is
25 determining the reasonable future land use for a

1 particular piece of land and the associated
2 critical group.

3 So the governing regulation that we
4 follow defines the critical group. And forgive
5 me, I am going to read this verbatim so that I
6 don't mess it up. "The critical group is the
7 group of individuals reasonably expected to
8 receive the greatest exposure to residual
9 radioactivity for any applicable set of
10 circumstances."

11 So essentially the people using the
12 land in the future, who would most likely
13 receive the greatest impact of any contamination
14 left there. If I flubbed that up, Karen can fix
15 that later.

16 So back to Operable Units 1 and 2.
17 So Operable Unit 1, which, if you remember, that
18 was the larger area where the actual chemical
19 plants was, the critical group for that is the
20 construction worker. The reason for that is
21 because the reasonable future land use for
22 Operable Unit 1 is anticipated to be a
23 combination of uses, but primarily for
24 industrial, commercial or recreational.

25 The construction worker is considered

1 a critical group because they would be
2 reasonably expected to receive the greatest
3 exposure under those circumstances.

4 Moving on to Operable Unit 2, the
5 critical group for that one is a resident. The
6 reason for that is -- so right now, Operable
7 Unit 2, there is no development expected, at
8 least in the near future. However, future
9 planning by the City of Cleveland indicates that
10 a portion of that could be used for residential
11 development, or may be rezoned for residential.

12 So in doing our evaluations, we had
13 to assume that that property could, someday, be
14 used for residential development. Therefore,
15 the critical group for that is the resident.

16 So we'll start with Operable Unit 1.
17 If you didn't see it before, we have a poster
18 for both of these and a lot of other things.
19 But if you need to see that in more detail, I
20 invite you to look at the poster.

21 Basically the pink areas shown here
22 are where FUSRAP contamination is present that
23 proposed a risk to critical user, which in
24 Operable Unit 1 were the construction workers.
25 The little dots inside the pink areas represent

1 locations where we've collected soil samples.

2 In addition to those dots, there are
3 a lot of other areas where soil samples were
4 collected. They don't show up very well on
5 here; but they do show up very well on the
6 poster. So if you would like to see the full
7 extent of the sampling we did at the site, I
8 invite you to take a look at the poster after
9 the presentation.

10 As I mentioned, reasonable future
11 land use is industrial, critical group is the
12 construction worker. Next we are going to talk
13 about the groundwater at Operable Unit 1. This
14 slide is showing that there are impacts to
15 groundwater from the FUSRAP related contaminate.

16 I want you to notice these lines here
17 that represent not only the location of the
18 contamination, but also concentration. What we
19 found is that the contamination was mostly
20 centered on that building, G1. In case you
21 didn't remember, that is basically the location
22 where Building G1 was.

23 The primary water bearing zones
24 underneath the site are not used as a drinking
25 source. Obviously the City of Cleveland and

1 surrounding areas, just like we do in Buffalo,
2 we get our drinking water from Lake Erie. So
3 the groundwater at the site is not used as a
4 drinking water source.

5 Groundwater from the site does
6 discharge into Big Creek and to the Cuyahoga
7 River. However, our sampling and our data and
8 our modeling to date have shown that the
9 contamination is not migrating off of the site.
10 Our samples from the river have shown no known
11 impact above allowable levels.

12 Just to reemphasize, as long as the
13 groundwater in Operable Unit 1 is not used as a
14 drinking source, exposure to contamination from
15 the groundwater would not pose a risk to human
16 health, or to workers on the site.

17 Next, we will talk about surface
18 water in Operable Unit 1. This map, again,
19 shows contaminated soil areas in the yellow
20 shaded areas that you can see here on the
21 figure. The blue shaded area represents the
22 100 year flood inundation zone. So in the event
23 of a 100 year flood, that would be where the
24 waters from the river would breach.

25 Right now, our groundwater model

1 predicts that the rain in transport would not
2 increase in the future to the surface water. We
3 also conducted hydraulic modeling to determine
4 the potential for erosion, particularly along
5 the Cuyahoga River and also along Big Creek,
6 over a 1,000 year period.

7 I'm going to talk about the criteria
8 that we used to evaluate. One of those, when we
9 are doing our evaluation, we have to consider
10 what the impact to the site will be over a 1,000
11 year period. In looking at that, we do have the
12 remediate alternatives that do include methods
13 to reduce that erosion risk.

14 Finally, the Operable Unit 1 ecology.
15 As part of the remedial investigation, we did
16 perform an ecological risk assessment to
17 determine if there were any potential adverse
18 effects on the environment. The results of that
19 risk assessment indicate that there was no
20 action required for the protection of ecological
21 receptors, for example, plants, animals and
22 fish.

23 Okay. We are going to get into the
24 remedial alternatives now for each of the
25 Operable Units. So these were the three

1 alternatives that we considered in the
2 feasibility study for Operable Unit 1.

3 As you can see there, Alternative 1
4 is crossed off. Alternative 1, or the "no
5 action alternative" as it is called, is required
6 under CERCLA to serve as a comparison, so that
7 is why it appears here. It was established for
8 comparison purposes only. However, since the no
9 action alternative was not protective of human
10 health or the environment, it was removed from
11 further consideration. We are going to talk
12 about this in more detail.

13 Alternative 3 is our preferred
14 alternative for the site: Complete removal of
15 the contaminated soil and offsite disposal at a
16 licensed disposal facility. So I'll go over
17 each of those alternatives individually now.

18 As I said, the no action alternative
19 just like it is named. It means we do nothing
20 at the site. It is required by CERCLA, so we
21 did consider it. However, it provides no
22 protection to human health and the environment,
23 so as I said, it was removed from further
24 consideration.

25 Of the remaining two, Alternative 2

1 is known as the limited action and land use
2 controls. Basically land use controls would
3 consist of environmental covenants or deed
4 restrictions that would be applied to the land
5 and restrict future uses of that property to
6 minimize the exposure to FUSRAP contamination.

7 Access controls would further reduce
8 that potential for human exposure to the
9 critical group. Active controls typically
10 consist of fencing; there is fencing around the
11 site now. This would include probably
12 additional fencing around those areas where
13 FUSRAP contamination was located.

14 Informational tools would include
15 posting signs and placards to let people know
16 about the presence of FUSRAP contamination that
17 was left there. The Land Use Control Plan,
18 which would be prepared as the Record of
19 Decision, would detail all of this very
20 specifically.

21 Also under that bank stabilization
22 along the Cuyahoga River. If you remember back
23 to what I said earlier about the erosion studies
24 that we did. And that would be to minimize any
25 potential bank erosion which could expose FUSRAP

1 contamination and also to minimize any impact to
2 the environment.

3 Under this alternative, the site
4 could be used for passive recreation like a
5 walking path, or things like that. Because this
6 alternative would leave the site in a state that
7 was not unrestricted use, we would have to
8 conduct five year reviews to ensure that the
9 FUSRAP contamination did not become more of a
10 risk to human health.

11 The duration of this alternative
12 would be approximately six months and would cost
13 approximately \$4.5 million with an annual cost
14 of about \$66,000 for those five year reviews.
15 And then finally, our preferred alternative, as
16 I mentioned, complete removal with offsite
17 disposal.

18 So this alternative consists of
19 excavating approximately 10,000 cubic yards of
20 soil, would be the cleanup goal. With offsite
21 disposal to a properly permitted disposal
22 facility. This alternative will also require
23 five year reviews because based on the
24 reasonable future land use and critical group,
25 there would be levels remaining that would not

1 permit the site for basically what we call
2 unlimited use or unrestricted exposure. UUUE,
3 that is another one of our favorite acronyms.

4 Since under FUSRAP, we are only
5 authorized to address FUSRAP contamination, any
6 other contamination left there at the site would
7 be addressed by the site owner. As I said, we
8 are only authorized to address FUSRAP
9 contamination, unless there is other
10 contamination commingled with FUSRAP
11 contamination that could not be separated.

12 The capital costs for this is a
13 little bit more than Alternative 2;
14 approximately \$32 million. Also that annual
15 operations and maintenance cost associated with
16 those five year reviews. And it is estimated it
17 would take about two and a half years to
18 complete this alternative.

19 I want to talk a little bit about how
20 we evaluate these alternatives. CERCLA
21 specifies that there are nine criteria that are
22 used to evaluate each alternative and they are
23 shown here on the slide. They are in three
24 groups for a reason. Basically you would read
25 this from left to right.

1 So those first two that you see on
2 the left side, those are the threshold criteria.
3 As you can see, they are protection of human
4 health and the environment and compliance with
5 applicable or relevant and appropriate
6 requirements. Those must be met in order for an
7 alternative to be considered further. That is
8 why the no action alternative was not considered
9 further, because it does not meet the threshold
10 criteria.

11 For alternatives that do meet the
12 threshold criteria, you look at that middle
13 column, those are known as the balancing
14 criteria. Each alternative is evaluated for
15 those five criteria, and then those balancing
16 criteria, as the name implies, are used to weigh
17 the major tradeoffs among the alternatives.

18 Those are the primary criteria upon
19 which our detailed evaluation is based and from
20 which we select our preferred alternative.
21 Finally, the last column, the remaining two are
22 known as modifying criteria public and those are
23 evaluated following the public commentary, what
24 we are doing here tonight.

25 As I said before, the reason we are

1 here is to present this and also to get your
2 input and feedback on our preferred alternatives
3 because those will be considered in developing
4 what will eventually become the selected remedy
5 for the site.

6 So here is a table that shows that
7 comparative analysis we performed for Operable
8 Unit 1, Alternatives 2 and 3, using those
9 balancing criteria. As I mentioned earlier,
10 both 2 and 3 met the threshold criteria, so they
11 moved on for further consideration.

12 Alternative 3 provides the best
13 balance of tradeoffs when compared with
14 Alternative 2. As you see, Alternative 3
15 provides a higher degree of long term
16 effectiveness, permanence and implementability.
17 And we determined that those balancing criteria
18 outweigh the higher cost of Alternative 3.

19 Next, we will talk about Operable
20 Unit 2. Just to remind you, that is the portion
21 there to the south. So a real quick recap: The
22 future land use for that was assumed to be
23 residential. The critical group for Operable
24 Unit 2 is the resident.

25 Again, as I mentioned earlier, the

1 pink areas are the areas of soil contamination.
2 The small black dots are where we collected soil
3 samples. There are many more than that; they
4 are on the poster, if you wish to see those up
5 close. That is it for Operable Unit 2.

6 Sorry, I got ahead of myself. So
7 similar to Operable Unit 1, we considered three
8 alternatives for Operable Unit 2. Again, the no
9 action alternative was removed from further
10 consideration, but it has to be there per
11 CERCLA.

12 As you can see, Alternative 7 is our
13 preferred alternative, for reasons that I'll go
14 into here shortly. Alternative 6 is very
15 similar to Alternative 2 for Operable Unit 1,
16 same thing: Limited action on land use control,
17 would all be the same environmental covenants
18 and deed restrictions; access controls to
19 prevent entry to the site; informational tools
20 to let people know that contamination is still
21 there.

22 Similar to Operable Unit 1, under
23 this alternative the land could be used for
24 passive recreation. Also similar to Alternative
25 2 from Operable Unit 1, five year reviews would

1 be necessary because we would not be removing
2 the FUSRAP contamination that is present.

3 The capital cost is just under \$2.5
4 million. That annual O and M cost associated
5 with the five year reviews is about \$46,000 and
6 we estimate the implementation would be about
7 six months. Moving on to Alternative 7, which
8 is our preferred alternative, it consists of
9 excavating approximately 800 cubic yards of
10 impacted soil that exceed our cleanup criteria.

11 That would be transported to an
12 offsite facility that is permitted to receive
13 those materials. This action, similar to
14 Operable Unit 1, since we would only be
15 addressing the FUSRAP contamination, there would
16 be further State removal coordination required
17 for any remaining contamination not associated
18 with the FUSRAP Program.

19 The capital cost for Alternative 7 is
20 just under \$6 million and we estimate that it
21 could be implemented in about one and a half
22 years. Again, here is the comparative analysis
23 of those five balancing criteria for the two
24 alternatives considered for Operable Unit 2.

25 Again, very similar to Operable Unit

1 1, Alternative 7 provides the best balance of
2 tradeoffs when compared to Alternative 6. As
3 you can see, with a higher degree of long term
4 effectiveness, permanence and implementability.
5 Again, we believe that those benefits outweigh
6 the higher cost of Alternative 7. Although in
7 this instance, the cost is much less.

8 So just to recap what we just went
9 through, basically our preferred alternative in
10 the proposed plan for Operable Unit 1 is
11 Alternative 3: Complete removal and offsite
12 disposal. We would excavate the FUSRAP
13 contaminated soils that exceed our cleanup goals
14 for the protection of the construction workers.

15 The contaminated soils would be
16 disposed of at a properly licensed and permitted
17 disposal facility. Capital cost is \$32.5
18 million; there would be five year reviews
19 required and it would take about two and a half
20 years.

21 Again, just to recap for Operable
22 Unit 2, our preferred alternative is Alternative
23 7, also complete removal with offsite disposal.
24 Again, we would excavate all of the FUSRAP
25 contaminated soil that exceeded our cleanup

1 goals for a resident. Those soils would be
2 disposed of at a properly licensed disposal
3 facility. It would cost about \$6 million and
4 would take about a year and a half.

5 So here are the next steps: The
6 proposed plan was released on March 14th, which
7 began the public comment period, the 60 day
8 public comment period, so that began on March
9 14th and will end on May 14th. Then after
10 careful consideration of all the comments that
11 we receive, not only tonight, but comments can
12 be received in writing during that review
13 period.

14 After we receive those and after
15 careful consideration, we will use those to
16 determine the selected remedy for each of the
17 Operable Units, and those will be published, if
18 you will, in the Record of Decision.

19 Currently, we are scheduled to
20 complete the Record of Decision by the end of
21 calendar year 2020, so a little over a year from
22 now. Once the Record of Decision is signed, the
23 start of the remedial design action phases begin
24 and that depends on the funding available in the
25 FUSRAP Program.

1 This completes my presentation on the
2 preferred alternatives for the Harshaw site.

3 I'll turn you back over to [REDACTED]

4 [REDACTED].

5 [REDACTED]: Thank you. So what we
6 are going to do now is get to the second portion
7 for tonight. If you have any questions or
8 formal comments that you want to enter into the
9 public record. [REDACTED] has listed out a couple of
10 logistics here, ground rules if you will. So we
11 have got sign in cards and I received seven that
12 stated they would like to make comments. Some
13 of them just said "maybe." So comments or
14 questions are welcome.

15 We've got a stenographer here and
16 she'll be recording and so what we would like to
17 do is start with the seven I'll call forward.
18 And also I expect there will be opportunity for
19 other questions or comments that you would like
20 to enter into the public record. We would like
21 to keep one person speaking at a time so that we
22 can make sure to get it on the record
23 accurately.

24 Please step up to the microphone so
25 all can hear your comment or question. We also

1 ask that state your name and any affiliation
2 with an organization or agency and that again,
3 goes into the record. Just so that we allow
4 enough time for all, we are going to go with
5 five minute blocks, so please limit your
6 questions or comments to five minutes and we'll
7 go from there. So we will start off with [REDACTED]
8 from Big Creek Connect.

9 [REDACTED] My name is [REDACTED]
[REDACTED] and I'm from Big Creek Connect as well as
11 [REDACTED]. We are on the board formerly of
12 Friends of Big Creek and we now are Big Creek
13 Connect. We are 21 years of working with the
14 trails and water purity and environmental study
15 here in -- we are located in Brooklyn.

16 My question is on page 2 of your
17 handout, the groundwater model, the second
18 statement, sentence, "The site groundwater is
19 currently being treated for nickel contamination
20 by another party." I would like to have someone
21 explain what the environmental effect is of
22 nickel contamination. And who is the other
23 party?

24 [REDACTED]: I think our
25 resident expert for groundwater is [REDACTED]. [REDACTED],

1 you want to take that one?

2 [REDACTED]: So the Army Corps
3 of Engineers, we came to the site and pretty
4 much our contamination that we looked at is
5 uranium thorium radium. So the nickel
6 contamination is on site from the industrial
7 process from the private landowner, BASF.

8 So they operate that system and that
9 is designed kind of like a sump pump system.
10 Correct me if I'm wrong in any way. What it
11 does is it de-waters or takes nickel
12 contaminated groundwater out of the area near
13 the sewer line that kind of runs through the
14 middle of the site north from Chem-Solvents down
15 to the western edge of the site and out in to
16 the trunk line of the sewer at the street.

17 So what they do is they remove nickel
18 through like a slurping process that removes
19 nickel from that bedding along the sewer line,
20 or the gravel around it. They collect it, they
21 treat it on site in a treatment system and they
22 essentially scrub it from the groundwater. And
23 then that effluent is then rechanneled into the
24 sewer system as a clean effluent after removing
25 the nickel.

1 So what it tries to do is limit the
2 amount of infiltration into the sewer line of
3 the high nickel groundwater that is onsite.

4 ██████████ Also an addendum,
5 there are two trails that are in process and the
6 representatives are here for that, those trails,
7 and the trailhead is -- and they will know.
8 Does that have any effect to any people hiking,
9 biking in the future, or that is going to be
10 taken care of?

11 ██████████ For the groundwater
12 or the nickel?

13 ██████████: That is EPA. There
14 is an EPA individual here and we can introduce
15 you to her and you can chat with her afterwards.

16 ██████████ Thank you.

17 ██████████ ██████████, thanks. ██████████

18 ██████████: I'm ██████████;

19 I'm outside counsel for BASF. I want to thank
20 you all for the information tonight. I
21 represent the property owner, BASF. As you
22 know, they are not only the property owner, but
23 we are performing our own remediation on the
24 site.

25 For the past year or so we have been

1 requesting to have discussions with the Army
2 Corps as well as the EPA to coordinate that
3 remediation with the remediation that is being
4 proposed under FUSRAP.

5 And the purpose of that coordination
6 is to make sure that the remedies are performed
7 as efficiently and as timely as possible, so not
8 only can we complete our regulatory obligations
9 in accordance with our obligation, but to get
10 the property redeployed as soon as possible, as
11 I know the community is interested in doing.

12 We are very encouraged by the various
13 discussions we have had today with all of the
14 various representatives of the Army Corps. We
15 look forward to having those discussions and
16 redeploying the property as soon as possible.
17 Thank you.

18 [REDACTED]: [REDACTED], I appreciate
19 it. We did have a chance to talk, so I think
20 there is definitely an opportunity for
21 coordination.

22 [REDACTED], you indicated that maybe you
23 would like to speak. Now is the opportunity.

24 [REDACTED]: I teach special ed
25 and my concern is that I have a lot of kids who

1 have disabilities because of pollution and that
2 is why I'm here tonight. My husband also works
3 for the City of Cleveland EPA. I just came to
4 educate myself more about this because this is
5 breaking my heart right now, worrying about
6 future kids.

7 I guess an overarching question is
8 why would it be zoned for people to use in the
9 future for like building in a flood zone if we
10 don't do that and we don't recommended people do
11 that. I don't understand why if there is a
12 potential for risk for people to live there, for
13 construction workers, and why if the feasibility
14 study was done in 2012, why was there no action
15 since then?

16 What will be done to protect and
17 monitor until the actions do take place? Where
18 does one comment? You said that it is open
19 until the 14th of May, but not where. It seems
20 like different agencies. Is there something
21 overarching it all? There is the EPA; there is
22 you guys; what is overseeing it all?

23 [REDACTED]: Let me answer just
24 the where; that is an easy one. There we go.
25 So everything that we are recording now will go

1 into the public record. As far as additional
2 opportunities for formal comments for the
3 record, this is the address for points of
4 contact and e-mail address.

5 So [REDACTED] that would be the answer to
6 one of the eight questions I think you asked.
7 We'll try to address each of them, but we might
8 need you to repeat them because I didn't have an
9 opportunity to write them all down.

10 [REDACTED], do you want to handle the
11 first one? We caught that one, then we will go
12 from there.

13 [REDACTED]: Sure. So with
14 respect to the rezoning, which I presume you
15 were referring to Operable Unit 2 --

16 [REDACTED] And 1. I mean, why
17 would you put people on either of them whether
18 they are going to work there or live there? I
19 just don't understand that.

20 [REDACTED]: Sure. We don't
21 have anything to do with the rezoning of that
22 property. The reason we look at that is to try
23 to gather as much information as we can in order
24 to determine reasonable future land use and to
25 determine the critical group to do our risk

1 assessment.

2 So although we are not aware of any
3 plans right now, or in the near future, to
4 rezone Operable Unit 1 for residential. But
5 based on information that we did have, there is
6 the potential for that in the future.

7 There is nothing specific that says
8 it will be rezoned, but there is the potential
9 for it to be, so --

10 [REDACTED]: You talked about it
11 being used for construction and construction
12 workers as well, right?

13 [REDACTED] Well, Operable Unit
14 1, that is already zoned for industrial use.
15 There would be no change to that and we are not
16 aware of any proposals or plans to rezone that,
17 for example, residential.

18 So, does that address the question on
19 rezoning?

20 [REDACTED]: Not pleasantly.

21 [REDACTED] Did we get the next
22 the question? Why was the feasibility study
23 done in 2012 and nothing done until now, [REDACTED]?

24 [REDACTED]: So during the
25 remedial investigation of the FUSRAP site, we

1 determined that there was no immediate threat to
2 the human health or the environment, based on
3 the contamination there. So there wasn't a need
4 to begin a more immediate remedial action to
5 address that contamination. It was contained
6 and it is contained.

7 Where our evaluation shows that the
8 risk levels would be unacceptable is over that
9 long term timeframe, that thousand years that I
10 spoke of.

11 ██████████ And the other one
12 was: What will be done to protect, monitor
13 until you do take further action?

14 ██████████ I mean the same
15 monitoring and protection that is there right
16 now. I mean, nothing --

17 ██████████: Okay.

18 ██████████: Correct. Well, the
19 fence is there to prevent people from accessing
20 the property.

21 ██████████ Is there any
22 concern about the quality of air or no?

23 ██████████: No air concerns.

24 ██████████: Then the last thing
25 was that it seems like there are agencies here

1 and there taking care of this part and that
2 part. Is there something overseeing all of
3 this?

4 [REDACTED] Well, I guess the
5 best answer I could give is, no, there is no one
6 overarching agency in charge of the entire
7 thing. Like I say, we are under the FUSRAP
8 Program.

9 [REDACTED]: So there is no
10 accountability to one --

11 [REDACTED] Each agency is
12 accountable under the law. So I mean, each
13 agency has different authority. I think that is
14 sort of what Steve is getting after. For this
15 particular program, the FUSRAP Program, we have
16 certain authority, so the Corps of Engineers has
17 to operate under that authority.

18 We do work in collaboration with the
19 US EPA. So we work with them on a variety of
20 different programs that include FUSRAP of some
21 of these sites. There isn't necessarily one
22 federal government agency that oversees
23 everything.

24 Similarly, we work with the
25 Department of Energy and Legacy Management.

1 Once the site has been remediated, we would hand
2 that site to Legacy Management, so those are
3 established relationships.

4 Each of those federal agencies are
5 accountable under their authority, but there
6 isn't one overarching government organization.
7 I mean, we are all members of the executive
8 branch. So in that way --

9 [REDACTED]: I'm not a big fan
10 of the current administration.

11 [REDACTED] That is noted on
12 the record as well. Hopefully, that answered
13 your question. Okay.

14 [REDACTED]: (Inaudible.)

15 [REDACTED] To help with
16 clarity, absolutely, you'll have an opportunity.

17 [REDACTED]: Thank you, I'm
18 Councilman [REDACTED]. I just wanted to
19 speak on the zoning side. First and foremost,
20 every one of these categories that we talked
21 about early on, in the first one, no action is
22 not acceptable.

23 The idea of -- I don't think the
24 comparison to a flood zone or building someplace
25 that is going to be under hazard of a flood or

1 collapse is necessarily the comparison. The
2 comparison for us is 22 acres of land.

3 That is a very desirable area; there
4 is a lot of activity going on around there
5 between what they are doing with the trails and
6 connection to the river, the industrial
7 development and expansion that is going on.

8 So from a city standpoint, we want to
9 see that we claim the highest and best use we
10 can so that we can put that 22 acres back into
11 use, however we go through that process and
12 having community engagement. As stated, the
13 zoning right now is industrial and we are going
14 to continue to work toward getting this cleaned
15 up as best as possible to recapture the 22 acres
16 and put it to good, productive use for whatever
17 category we end up landing in, once it gets
18 cleaned up.

19 [REDACTED]: Thank you,
20 Councilman. [REDACTED]? He had here "maybe,"
21 I guess that is a yes as he walks to the
22 microphone.

23 [REDACTED]: Thank you for
24 allowing me to speak on this issue. I go back
25 to 2001, that little box that said in 2001 we

1 are going to investigate this again, I'm one of
2 the persons that was in the meeting room in
3 Buffalo with a whole array of experts from the
4 Army Corps at the time. And this was the
5 kickoff of what was going to be this plan. That
6 was some time ago.

7 It was kind of interesting, on lunch
8 break, when we talked about what we call the
9 "hot building" today, and you know, meeting
10 people for the first time and saying, "What do
11 you think about the hot building? Is it going
12 to stay?" They said, "No way; that building has
13 to go."

14 Day one, we knew that building had to
15 go. That building finally went in 2015. And it
16 went, by the way, after us being told
17 repeatedly, and George Cantor of City Planning,
18 he was in one of these stakeholder meetings that
19 happened along the way, that there is just no
20 way. You've got to follow this process. You
21 can't tear the building down until you've done
22 A, B, C, D, E, F, G.

23 Well, we found out that one year when
24 they had money they had to spend or lose it, the
25 Army Corps was able to figure out how to get rid

1 of that building. By the way, that was the
2 right move, no doubt about it in my mind.

3 When you look at those issues that
4 they've presented in terms of the standards,
5 there is a reason why the construction worker
6 and residential -- because these come with
7 different cleanup standards. In fact, the
8 strictest one they could have come up with,
9 although, again, completely unreasonable, would
10 have been an agrarian farmer.

11 Somebody who was going to live on the
12 land, grow the food they eat and be there
13 probably 15 or 16 hours a day. Now, that would
14 have been the strictest cleanup criteria that
15 you would have had to face with this project, if
16 it was adopted and that was your screening the
17 device.

18 As you can see, they said one part of
19 the parcels, they want to look at industry and
20 the construction worker. And really the
21 exposure there is when you are building the
22 building, when you are cutting into the ground,
23 that's where you are going to get exposed, so to
24 me, residential has construction worker in it as
25 well.

1 That first meeting in 2001, I think
2 it is kind of important, when we went to that
3 meeting, we came with a concept plan that talked
4 about a future use of this property that was
5 going to play off the Towpath trails, so it
6 would look good. To integrate a system that
7 would snake its way down to Big Creek to the
8 zoo. And it was going to end up being a new
9 page in the ongoing story of the Cuyahoga River
10 Valley.

11 And that is kind of a moment today,
12 because we are here on the edge of a 50 year
13 anniversary of the last time our river caught on
14 fire. You guys probably heard about that,
15 right? Anyway, that incident launched many good
16 things.

17 And I think today, when you look at
18 the river value and all the investment that has
19 been going on, it is hard to predict, Tony.
20 Maybe there will be a need for residential here.

21 However, I think, if I'm not wrong
22 here, the site that we are looking at for
23 potential residential, that is basically a
24 capped landfill right now. So that has uranium
25 perhaps in it when they capped it so it is

1 safer, so it won't expose everyone.

2 So when I look at the price tags
3 there of \$32 million, plus another nine, \$40
4 million worth of investment here. And the
5 alternative that were faced, it makes me wonder
6 if there weren't another highbred alternative
7 and there isn't some planning that ought to
8 happen here that talks about the ultimate future
9 of this property and its role in the community.

10 We have tremendous flooding problems
11 down in this area. If we are going to go and
12 take these parcels on, is there an opportunity
13 to kind of shape the parcels in a manner that
14 they could hold extra water during heavy flood
15 times? So instead of Jennings Road becoming a
16 river, we keep the water in the river. Perhaps,
17 I don't know; I'm not an engineer.

18 But there ought to be something we
19 might at least look at because we might miss an
20 opportunity there. Is that a property that is
21 going to lay in the cross hairs of a trail
22 system that could have investment that looks a
23 lot more like people have invested in the little
24 town of Peninsula, Ohio? I think it is
25 something we ought to explore.

1 But I don't think that at the end of
2 the day, the \$40 million we put in here, that
3 the cost -- or the value of the property -- is
4 going to be equal to the amount of money that we
5 put in. But I'm wondering -- and I'm all for
6 cleaning it up, trust me; I understand human
7 health, et cetera.

8 But I also understand that I think
9 there is a highbred approach that could look to
10 stabilize the conditions. Things like topping,
11 capping it with a parking lot that we need for
12 trail users, for instance. That could stop
13 migration of any uranium left in the soil.

14 Right now it is not a big problem, as
15 they reported, with groundwater. So you know,
16 as we rush forward to approve this, we ought to
17 take a time out and try to think of other
18 community based solutions and community based
19 improvements so that at the end, we do all the
20 things we want to do here. Everybody wants a
21 clean environment for everyone's health and
22 safety.

23 But maybe deliver a product that
24 benefits the community as we move forward.
25 Thank you.

1 [REDACTED] [REDACTED] thanks for
2 your input. We welcome that to look at other
3 alternatives. So as we look at future land use,
4 part of it is remediating to get to the point to
5 look at future land use, so thank you. [REDACTED],
6 you indicated you might want to comment or ask a
7 question. Ma'am, if you could come up to the
8 microphone.

9 [REDACTED]: So my question is
10 about goals for Operable Units 1 and 2. Upper
11 Unit 1 had, I think as one of the goals, was
12 bank stabilization, but I didn't see that for
13 Operable Unit 2. So I was wondering about,
14 after looking at the 100 year flood maps,
15 whether or not besides the construction worker
16 exposure scenario, whether there was any
17 modeling of flooding along the banks, and then
18 particulate transport into the waterways, if
19 that was considered?

20 My other question is: Operable Unit
21 2 doesn't seem to have very many sampling
22 points. I was wondering what the historical
23 land use was there. I think there was another
24 landfill on that property, but I don't know
25 anything about that and it doesn't look like it

1 was sampled. So those are my questions.

2 [REDACTED] Maybe we will
3 separate out the sampling scheme versus the
4 latter question. The first couple of questions
5 were related to the hydrology of the site, like
6 flood risk, and so forth, transport risk, for
7 Operable Unit 2. So maybe -- [REDACTED], do you want
8 to start off with that and maybe another member
9 of the technical team something you don't catch
10 there.

11 [REDACTED]: The difference
12 between Operable Unit 1, Alternative 2 and
13 Alternative 3, relative to bank stabilization is
14 since Alternative 2 will leave material in
15 place, we have material that is close to the
16 river bank. So therefore, that area would be
17 armored, if you want say, it is stabilized.

18 The bank stabilization, in some way,
19 shape or form. We don't have a specific thing
20 for the Army Corps of Engineers, we use big
21 rocks sometimes. So that would be incorporated
22 into that alternative to kind of protect the
23 left in place contamination.

24 That is not included in Alternative 3
25 because that material that is near the bank

1 would actually be removed. So therefore, it
2 would be gone. So we would backfill the bank
3 area with local, native materials like from a
4 quarry, or something like that. And then that
5 wouldn't require -- there would be nothing to
6 protect other than soils.

7 We would probably, you know,
8 geotechnically stabilize the bank so that we
9 have erosion protection, but we wouldn't armor
10 it like we would in the other alternative.

11 [REDACTED] Does that answer
12 the first part of your question?

13 [REDACTED] So within the 100
14 year floodplain portion, you would have clean
15 fill once the contamination is treated?

16 [REDACTED] It would be clean
17 fill, yeah. It would have to be very specific.
18 The 100 year floodplain towards Operable Unit 1,
19 which is the industrial site, the chemical site,
20 that 100 year flood actually still stays in the
21 channel. It doesn't come up onto the plateau
22 where the plant once was.

23 The 500 year flood will. And it
24 inundates the surface by about a couple of
25 inches; that is what we predicted. We would

1 protect in a 100 year flood on down because that
2 is where you would see the most erosive forces.

3 If you had a 500 year flood in the
4 area, it would look a lot more like a lake than
5 a river. So the sheer stresses of the moving
6 water would be a lot less because it would be
7 literally -- that site would be your least worry
8 at that point in time for the local community.
9 It would be that everybody's houses would be
10 floating.

11 So that is why we design to the 100
12 year event, because those have been where you
13 see the most erosive forces.

14 [REDACTED] My other question
15 was: Operable Unit 2, what was the land use
16 there? That wasn't sampled there as much. What
17 was the rationale?

18 [REDACTED] Just to speak to
19 the rationale behind the sampling scheme. Yeah,
20 we've got about four or five people that could
21 answer that.

22 [REDACTED] In doing the bank
23 stabilization, would that increase
24 channelization of Big Creek or the Cuyahoga
25 River, those channelizations?

1 [REDACTED] No, she is asking
2 if it would induce channelization of the river.
3 And what we would probably do is use the
4 existing bank and just work with that. We
5 wouldn't change the course of any of the
6 waterways.

7 [REDACTED] Thank you.
8 [REDACTED] Do you want to
9 talk about sampling?

10 [REDACTED] Yeah. So for OU2,
11 we sampled -- there was an array of sampling
12 that occurred. Most of the sampling was focused
13 on where we saw radioactivity with a gamma
14 walkover survey, which is like a radiologic
15 detector that you walk around with that you
16 define where your contamination is.

17 And a lot of the material that we see
18 in OU2, where we sampled and found contamination
19 above the residential criteria, a lot of it was
20 debris, like bricking and materials that were
21 not muck soil-like, but more materials and brick
22 work and stuff like that that we would do more
23 of like a debris cleanup -- as well as some soil
24 around it, but mainly debris cleanup.

25 [REDACTED]: That is not a

1 capped landfill?

2 [REDACTED]: The capped
3 landfill, that is the site owner of this land.
4 We didn't build that piece.

5 [REDACTED]: The site owner was
6 Chevron.

7 [REDACTED]: Is that a trucking
8 company there now?

9 [REDACTED]: Yeah. The parking
10 lot and the building, is a trucking company.

11 [REDACTED] Was it formerly
12 owned by Chevron?

13 [REDACTED]: I cannot recall who
14 actually owned that property, but I think
15 Chevron owned the property.

16 [REDACTED] Thanks, [REDACTED]. Like
17 I said, [REDACTED] likes the hard questions too. He's
18 been the one in the hot seat there. [REDACTED]

19 [REDACTED] from the Northeast Ohio Regional Sewer
20 District?

21 [REDACTED]: Thank you. I'm
22 [REDACTED] from the Northeast Ohio Regional
23 Sewer District. So our concern of the site is
24 groundwater. There has been talk that the
25 groundwater isn't a concern, but there is an

1 active site sanitary sewer that remains on the
2 property in the general vicinity of Building G1.

3 There is no sanitary usage on the
4 property, but we continue to see flow in that
5 sanitary sewer discharging into the public
6 beltline sewer. We tested that water and it
7 does have measurable concentrations of
8 radioisotopes below the OAC standards, but
9 nonetheless, there is migration.

10 As you go into that site and disrupt
11 the surface soils and perhaps change the way the
12 groundwater is behaving, we have concern that
13 there will be additional migration of
14 radioisotopes to that active sanitary sewer
15 system.

16 So what we would like to see is
17 similar to what happened with the storm system
18 that was connected to the Cuyahoga River when
19 there was concerns of radioactive isotopes
20 discharging into the river, to have that system
21 disconnected from the public sewer so that there
22 is no conduit for those pollutants to reach the
23 public sewer.

24 We also know that the beltline sewer,
25 the public sewer that runs through the property

1 and in very close proximity to Building G1, is
2 susceptible to infiltration, which is why there
3 is the nickel collection system. So we need to
4 be sure that as the conditions are changed at
5 that site, that there is no allowance for water
6 to change its flow direction and to become
7 hydrostatic pressure on that pipe and on that
8 collection system and to further contaminate the
9 nickel recovery, or to infiltrate the beltline
10 sewer system.

11 Our preference would be to have that
12 disconnected before you begin any remediation
13 efforts. Now, as I understand it, you are kind
14 of only allowed to access the footprint of what
15 is the federal site and what the federal camp
16 has to occur. And that manhole connection point
17 where that site sanitary sewer connects to the
18 beltline, may not be in your footprint; it may
19 be in the footprint of Harshaw and BASF.

20 I would hope that for the sake of the
21 community that the two legal teams would be able
22 to make sure that there are no access issues for
23 the FUSRAP remediation to disconnect that system
24 if it is not within your service area.

25 We have drawings and are more than

1 happy to work with you and provide data. I had
2 a good conversation with [REDACTED] and provided him
3 some things. For the record, I just wanted to
4 put our concerns out there.

5 [REDACTED] Thank you. Just
6 for the record, that was [REDACTED] or [REDACTED]

7 [REDACTED]

8 [REDACTED]: [REDACTED]

9 [REDACTED] Then you were
10 talking to the right guy. Last is [REDACTED].

11 [REDACTED] I am [REDACTED]
12 with the City of Cleveland. I'm going to raise
13 the groundwater as well. I wanted to know how
14 deep is the contaminated groundwater? This is
15 all on OU1. You talked about having it for
16 construction workers and I wanted to know if you
17 took in modeling of construction above and below
18 the frost line builds and is that taken into any
19 play? Is the groundwater above or below the
20 frost line?

21 I don't know anything about the
22 technical, but I know, you know, generally
23 enough to say, hey. I'm going to go on to the
24 Sewer District here. Are there any sewers,
25 public or private, that you know of on OU1? How

1 deep are those? Are any of those sewers
2 grouted?

3 And if the groundwater won't travel
4 as you are claiming in your report, how did it
5 previously migrate, as Mr. Broski was saying,
6 when it got into the river? So the those are my
7 questions.

8 [REDACTED]: [REDACTED] you are up
9 again. Those are good questions.

10 [REDACTED]: I can't remember
11 some things.

12 [REDACTED] I know. I think I
13 caught one.

14 [REDACTED]: I'll say it again.
15 [REDACTED] We'll make sure we
16 get it. [REDACTED], let's start off with the first
17 one.

18 [REDACTED]: That was the frost
19 line?

20 [REDACTED]: How deep is the
21 contamination of the groundwater?

22 [REDACTED]: So the groundwater
23 at the site essentially exists from about three
24 or four feet below the ground surface, like
25 around the plant, to upwards around 15 to

1 20 feet deep as you go out towards the river, so
2 it has a radial slope away from the main part of
3 the plant that kind of goes up in a couple of
4 directions. The river eventually becomes its
5 discharge point.

6 [REDACTED]: As close as three
7 feet you said?

8 [REDACTED] In the past it
9 has been. It varies a lot; it has seasonality
10 to it. So during a rainfall event, it goes up a
11 little bit, then it drains and goes down. On
12 average it will vary between three, four. We
13 have wells that are within like 20 or 30 feet of
14 each other that will have a couple of feet
15 expression, a couple of feet difference.

16 And then within the frost line -- we
17 pretty much consider that to be below the frost
18 line, so that never really became an issue.
19 We've never noticed issues with wells, so to
20 speak, frozen wells.

21 [REDACTED]: Well, I asked that
22 because building footers have to go a certain
23 depth under code for frost lines.

24 [REDACTED]: Right. That kind
25 of harkens back to the exposure of the -- you

1 know, the construction worker exposure. And the
2 sewer system is one; did I get that right?

3 [REDACTED]: Yes. Are there
4 public or private that you know of on OU1?

5 [REDACTED] The gentleman here
6 can explain how --

7 [REDACTED] Well, I am asking
8 what you guys knew from your investigation of
9 specifically OU1.

10 [REDACTED]: Most of the sewer
11 systems that we looked at onsite were either the
12 storm sewer that ran from the main plant out to
13 the Cuyahoga, that was an issue a couple years
14 ago. That, the site owner addressed by having
15 their removal.

16 And then we also grouted some of the
17 manholes that were the receiving manholes by G1,
18 when we took the G1 building down. So we
19 actually grouted up the manholes that were kind
20 of feeding that trunk line that went on to the
21 river.

22 [REDACTED]: Is that information
23 in your public body of info?

24 [REDACTED]: Yes, in the
25 feasibility study and the addendum.

1 [REDACTED] It's in the
2 addendum?

3 [REDACTED] Yeah. It would be
4 in the G1 deconstruction report that is also
5 online. There are two reports. The
6 deconstruction part of the FS addendum appendix,
7 is that a separate --

8 [REDACTED]: That is a separate
9 document.

10 [REDACTED] And it is online?

11 [REDACTED] Yeah. And it
12 talks about private sewers on the facility.
13 Those are all mapped and that information is
14 pretty much in the RI as well.

15 [REDACTED]: Is it in your
16 footprint that you have control over that you
17 are aware of; are any of those?

18 [REDACTED]: Do you mean soils
19 that we are going to go dig up?

20 [REDACTED]: Any of the sewers
21 specifically within your footprint that you are
22 responsible for. Not BASF, but the footprint
23 under FUSRAP.

24 [REDACTED]: Yeah. Well, the
25 FUSRAP contamination kind of extends both on

1 Chevron's property and BASF's property. Our
2 contamination is a little bit like this, it
3 doesn't pay attention to fence lines. So if we
4 are cleaning up our contamination and we come
5 across sewer systems, we try not to violate the
6 integrity of these systems, we clean up around
7 them.

8 [REDACTED]: So you leave them
9 place, is that what you are saying?

10 [REDACTED]: Yeah.

11 [REDACTED]: And you are leaving
12 contaminated groundwater on site that can get
13 into those sewer systems?

14 [REDACTED]: In the end, that
15 could happen, yes. There could be residual
16 groundwater in the end that could be a risk to
17 those sewer systems.

18 [REDACTED]: When you say
19 "grouting," was the sewer a brick lined sewer in
20 the sense of bricks with grout, or is it a more
21 solid construction?

22 [REDACTED] [REDACTED], when we
23 exposed some of those, what did they look like?

24 [REDACTED] The ones we grouted
25 were brick. They were actually brick and

1 mortar.

2 [REDACTED]: And brick can be
3 very strong, but it can also shift.

4 [REDACTED]: And mortar can
5 deteriorate on a property that made hydrochloric
6 acid. So the age of those and prior site usage
7 can exacerbate those issues as well.

8 [REDACTED] So that is the
9 extent of those that filled out a card. We do
10 have a few more minutes, so if there are any
11 questions. I see two hands, so, ma'am, if want
12 to say your name.

13 [REDACTED] Thank you. I'm
14 [REDACTED] and I'm a resident of the South
15 Hills neighborhood. Will whoever's purview my
16 question falls under please answer. I have a
17 specific, brief question. The fact that people
18 living near uranium processing mills or
19 facilities could be exposed to more uranium than
20 the general population.

21 In addition to its radiotoxicity,
22 uranium possesses a chemical toxicity, which has
23 not yet been addressed. Uranium is absorbed and
24 deposited throughout the human body with the
25 highest levels found in the bone, liver and

1 kidneys. Kidney damage has been seen in humans
2 after inhaling uranium compounds.

3 My question is: Will the proposed
4 Army Corps of Engineers remediation activities
5 reduce the residents' exposure to airborne
6 radioisotope inhalants and if not, how will such
7 exposure be minimized?

8 [REDACTED], do you want
9 to take that one?

10 [REDACTED], an
11 environmental toxicologist with the Army Corps
12 of Engineers. As the Commander explained we had
13 health systems look at the radioactive
14 properties of the contaminants and toxicologists
15 look at the chemical toxicity of uranium
16 specifically. That is something that we did
17 address.

18 We evaluated that in conjunction with
19 looking at the radioactive properties to make
20 sure that the cleanup would be protective
21 generally against any radiation effects, but
22 also against the chemical toxicity of uranium,
23 which, as you stated, affects the kidneys and
24 can cause kidney damage.

25 So as we do look at both, we will

1 make sure that we are protective of both
2 chemical toxicity and also of uranium. So when
3 we do the cleanup and the excavation, we will
4 have air monitors all around to make sure that
5 nothing is going offsite in the air that could
6 be harmful to the community. Hopefully that
7 answers your question.

8 [REDACTED]: And what if
9 something is caught on the air monitor; what do
10 you do then?

11 [REDACTED] We have rules we
12 would react with. We would shut down or change
13 our construction techniques to minimize dust.
14 We are using dust compression techniques, water
15 it down.

16 [REDACTED] Thank you, [REDACTED].
17 Ma'am, did you have another question?

18 [REDACTED]: Real quick. In
19 the summer of 2015 in northern St. Louis County,
20 Missouri, the Corps of Engineers documented the
21 presence of radioactive isotopes as the result
22 of a leaking landfill.

23 Consultants for the Missouri Attorney
24 General found and reported scientific
25 documentation of offsite migration of both

1 toxins and isotopes from that. I understand
2 what your toxicologist said earlier about having
3 air monitors and watering down the material
4 before it is removed.

5 Are there other actions that can be
6 taken to either reduce or eliminate residential
7 exposure both in terms of toxicity of chemical
8 nature and radiologic nature beside watering
9 down and having monitors?

10 [REDACTED] Anybody from the
11 team can answer that. [REDACTED], if you want to --
12 we are still talking about at Luckey, Ohio, the
13 site we are in active remediation right now.
14 Those are the two prior methods that we have
15 been using to make sure it does not migrate
16 offsite. [REDACTED], I don't know if you want to
17 elaborate on that.

18 [REDACTED]: No, you've got it.
19 That is exactly right.

20 [REDACTED] We've got a major
21 remediation going on in Luckey, Ohio, which is
22 right now, the largest active remediation in the
23 country that is ongoing. So every single day,
24 [REDACTED] is out on site. He just came from the site
25 today. So we are learning things every single

1 day and monitoring tens of thousands, hundreds
2 of thousands of data points of monitoring
3 associated with that site.

4 We have air monitors that surround
5 the entire site should anything migrate off.
6 Every single load that is transported off there
7 is inspected before it goes off. Then there is
8 a very thorough water down process, then that
9 water is treated.

10 So it is not watered down for dust
11 abatement, and then the water migrates off the
12 site. The water is collected and treated onsite
13 as well, that is a requirement of the contract.
14 That is the primary method that we use to ensure
15 nothing migrates off the site and to ensure the
16 health and safety of the community.

17 I think that covered the questions.
18 [REDACTED] did you want to elaborate? He's onsite,
19 so he's the guy.

20 [REDACTED]: We have work zone
21 air monitors which monitor the work zone,
22 immediate work zone, there are three other work
23 zone monitors; Allen's workers monitor that,
24 then there are perimeters, so there are actually
25 three layers of protection.

1 The idea is to catch it before it
2 leaves the work zone before it gets to the
3 perimeter so it never leaves the site. Like the
4 Commander said, we've collected tens of
5 thousands of samples out there since we have
6 been out there. We want to make sure that we
7 have multiple layers of protection so it doesn't
8 get to the to perimeter.

9 We want to do our engineering
10 controls before it hits the perimeter. For the
11 Luckey site we monitor for radionuclides and
12 lead beryllium. The site will monitor
13 radionuclides that leave the suspended meters to
14 make sure to keep the dust levels low.

15 ██████████: During our
16 deconstruction, were those monitors used?

17 ██████████: Yes, we did the
18 same thing at G1. We had the work zone --

19 ██████████ Same process?

20 ██████████: Yes, same process.

21 ██████████: Thank you.

22 ██████████ ██████████,
23 Cuyahoga River Restoration formerly known as the
24 RAP, for Remedial Action Plan. Thank you for
25 finally getting to this and moving it ahead. So

1 the number one question is, when the money is
2 available, how long will it take? I'm sorry, I
3 didn't hear anything.

4 [REDACTED] So the question, to
5 clarify, how long will it take to get the money?

6 [REDACTED]: No. Once you get
7 the money, how long will it take to do, assuming
8 Alternative 3?

9 [REDACTED]: So assuming
10 Alternative 3 and once the money is available as
11 outlined in the slide for each unit --

12 [REDACTED]: Two and a half
13 years for Operable Unit 1 and about one and a
14 half years for Operable Unit 2.

15 [REDACTED]: Simultaneously,
16 not concurrently?

17 [REDACTED] I mean, it depends
18 on the funding levels. It depends on the work
19 plan as we work it. It is possible
20 simultaneously.

21 [REDACTED] How many people are
22 in line before we get in line asking for the
23 money to implement? Right now, how many people
24 are in the line?

25 [REDACTED] I think you are

1 talking about he FUSRAP Program in general.

2 [REDACTED]: Yes.

3 [REDACTED] [REDACTED] is our Program
4 Manager, Bill Kowalewski. He can probably speak
5 to the sequencing of that and the funding.

6 [REDACTED]: So the first
7 question was how many sites are already in the
8 remedial action process? Right now there are 13
9 sites that have already made it through the
10 Record of Decision stage. So they are either
11 being cleaned up, they've been cleaned up and
12 are at the tail end of being transferred back to
13 the Department of Energy, or they are waiting
14 for funds.

15 Presently there are two sites on hold
16 waiting for funds. In fact, there is not enough
17 money in the national program to do all sites
18 simultaneously. The program has ranged between
19 100 and \$150 million a year. That is for 23
20 sites nationwide. 85 percent of those funds we
21 designate for cleanup, the balance of 15 percent
22 is to do what we are doing tonight, the
23 investigations, the decision documents.

24 So if you figure on average \$125
25 million a year is about what the national

1 program has to work with. The estimated value
2 of all the cleanups at this stage is over
3 \$2 billion for the nation. So I cannot give you
4 an answer tonight as to when we will see the
5 money to start the Harshaw site.

6 We get our moneys appropriated by
7 Congress on an annual basis. So we know what we
8 have this year, fiscal year '19, which ends at
9 the end of September. We don't know yet what
10 we'll have for next year, and that is just the
11 facts of life. We are trying to keep these
12 projects moving, keep them alive.

13 We watch Congress and we see what
14 they are going to appropriate and try to
15 forecast as best we can. So with the ROD being
16 assigned in FY20, we do have to get to that
17 stage. Once the ROD is signed and we have a
18 firm decision, we do not know when we'll start.

19 [REDACTED]: Maybe that answered
20 your question; maybe not.

21 [REDACTED]: But then the
22 question is, can other funds from outside
23 sources be put into such a project, or is it
24 absolutely limited only to the designated FUSRAP
25 funds in your system?

1 [REDACTED]: Presently our
2 authority to clean up the site is limited to
3 what Congress authorizes in FUSRAP. I'll be
4 honest, if somebody were to propose that be
5 supplemented from other sources, we would have
6 to take that homework assignment back and talk
7 to our attorneys, talk to Congress to see if
8 that could work. I'm not saying no, but we have
9 never done that presently on a FUSRAP site in
10 the national program.

11 [REDACTED]: So I think we are
12 just -- I see one more question and then we are
13 going to wrap up after that. For the record, of
14 course, there are other formats.

15 [REDACTED] Two part question:
16 One, are there any underground fires anywhere on
17 the site? And two, what measures do you have in
18 place for fire prevention or emergency response
19 in case of an explosion event?

20 [REDACTED] I can't speak to
21 underground fires, so I'm going to listen to my
22 team. Have we had any history of underground
23 fires on this site? We do not know of any
24 history of any underground fires and there are
25 none that are currently.

1 ██████████ do you want to speak to urgency
2 protocol onsite if there were an explosion?
3 Based off our experience with Luckey and what we
4 typically do.

5 ████████████████████ What we do when we
6 get on site, we have meetings with the local
7 first responders. At the Luckey site we did
8 that when we initially went out there. Then we
9 have quarterly meetings with first responders to
10 keep them apprised of what we are doing, what
11 current conditions are.

12 We have procedures in place. We have
13 a team, that is on the contractors, they do the
14 initial response, evacuation, and we are in
15 close communication with all of the first
16 responders, fire departments, local police. We
17 did that also at -- when we took down Building
18 G1, we worked with the local fire department and
19 the police out there.

20 I always check 911 on my cellphone to
21 make sure it works. You know, let them know it
22 is not an emergency, but you want to know who
23 you are going to get. So we do close
24 coordination with the local first responders,
25 fire departments, EMS.

1 When we are doing work out there, we
2 also have fire watch. We have somebody standing
3 by, their job is -- if we are doing cutting or
4 anything that creates heat or sparks, we make
5 sure we've got somebody there watching it until
6 the activity is done. We've never had that
7 problem on our sites and we hope we never have
8 that, but we are prepared if we do.

9 ██████████ I can speak at the
10 leadership level like I met with the Wood County
11 Commissioner of Health and we worked through and
12 made sure he was comfortable with the procedure
13 that was in place. And this is speaking to the
14 Luckey site. We would do the same here.

15 I want to say thank you. ██████████, did
16 you have something?

17 ██████████ One last point, if
18 there is a concern about beryllium or the
19 remaining uranium being explosive, that is not
20 the case.

21 ██████████ Is there signage on
22 the gates or fences now? Last time I drove by,
23 I didn't see any signage.

24 ██████████: I believe on the
25 fence for the Chevron property where the

1 contamination was for Building G1, there is
2 because there was some contamination inside the
3 fence line. So there is signage there, but from
4 what I remember from the BASF property fence
5 line, I don't think there is.

6 [REDACTED]: My question is:
7 Shouldn't there be?

8 [REDACTED]: It would be the
9 property owner's responsibility to put the
10 sinage up. We don't see any risk there on the
11 BASF perimeter, it was more Building G1 because
12 there is some contamination there. There's some
13 contamination on the concrete slab. We don't
14 want to open up what's underneath until we are
15 ready to remediate it.

16 From the standpoint of the BASF fence
17 line, we don't see any issues at that point. I
18 think there are some no trespassing signs on the
19 fence line, but nothing about radioactive
20 contamination, but there is on the -- at least
21 there was when we left -- on the Chevron
22 property fence line because there is some fixed
23 contamination there that we wouldn't want people
24 to be in contact with.

25 [REDACTED]: Why did you come

1 off of Jennings onto Harvard? I haven't seen
2 anything, is there something?

3 [REDACTED] Just no
4 trespassing. We have a guard and a perimeter
5 security system.

6 [REDACTED] Thank you. That
7 was my next question.

8 [REDACTED] This really
9 concludes the formal questions for the public
10 meeting tonight. I will reiterate, thank you
11 for providing the comments you did, they will be
12 factored into the final decision for the
13 remedial action at the Harshaw Chemical site.

14 Remember, there are other ways to
15 make sure we get your comments formally for the
16 record. Write them out and leave them with us
17 tonight, you can do it that way. You can mail
18 them to the address listed up there, or provide
19 an e-mail and send them via e-mail.

20 Please make sure you get those to us
21 by the end of the day, or essentially postmarked
22 by the end of the day on the 14th of May. And
23 that will become part of the official record and
24 that will be held at the District of Buffalo
25 initially. Thank you for your comments. Thanks

1 for investing your time and energy.

2 (Thereupon, the proceedings were
3 concluded at 8:41 o'clock p.m.)

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