

Philadelphia Refinery

LEGACY REMEDIATION

Evergreen Public Meeting

Thursday, February 17, 2022 @ 6:00 - 7:30 PM

Questions & Answers

Transcribed Q&A

1. The Newsletter should be included in the globe times.

That is something we can do. We included ads in the Southwest Globe Times newspaper over the last few months. We recently posted the “stay-informed” flyers and the flyer for this meeting.

2. What are the responsibilities of Hilco and Evergreen?

Evergreen's Remediation



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- Evergreen's remediation includes historic (pre-2012) contamination underground:
 - Soil
 - Groundwater
 - LNAPL (petroleum/oil)
- It does not include demolition or property development.

Remediation = Cleanup

Evergreen is responsible for soil and groundwater pre-2012, whereas development is Hilco. The details of specific tasks and timelines of both Evergreen and Hilco are responsible for are outlined in the diagram from our website [here](#) and summarized in this [video](#).

3. How does the remediation serve the development?

The development serves the remediation because the remediation is dependent upon the future use of the development space. For example, paving a particular site area is a type of remediation because it blocks a pathway or route of exposure. The topic of development and remediation intersect, and it may be beneficial to have joint conversations with the developer, Hilco, to discuss this overlap further in the future.

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4. Have all of the vapor intrusion studies required by the DEP been completed? What do they show?

Vapor intrusion (Vi) is part of the Act 2 process. The description of Vi was included in past remedial investigations. However, it is something that Evergreen must continue to investigate because it ties into Evergreen's cleanup plans and risk assessment. Evergreen is at a point where they need to be, but it is a continual process. The process may need to be discussed in a subsequent meeting because of its depth.

5. If there is a 1993 consent order, is data available for the quality of air and contamination in the ground from that time to the present day?

The consent order issued in 1993 started the interim remedial measure because there was an immediate need for remediation in certain spots. Still, there were investigations and other work going before that time. All Act 2 documents completed have been reopened for public comment on the website; however, you will see a historic reports button there if you scroll down. You can access these documents from the website [here](#). We post many reports pre-act 2 because they're referenced in those reports. We collected information from older reports to put in our remedial investigations. They go back to before 1991 and are available to look at but keep in mind that all of that information was summarized in our remedial investigations.

6. How can community members stay in the loop, and how will information be shared with the community?

The website was created as a repository for reports and basic site information. We are in the process of developing the site into a more comprehensive place where information can be shared with the community. We also have quarterly meetings such as this one and newsletters to write updates on the remediation. Additionally, there are text messaging updates where you can receive updates on the remediation if you sign up. Hummingbird is continually executing additional items written in the [Public Engagement Plan](#), so please stay in touch with Hummingbird. We have updated the public involvement page of the website, where you can continually stay involved.

Hummingbird firm is executing some of the items that were included or written in the Public Engagement Plan, so please keep in touch with us, but we have updated the public involvement page of the website to show, at a high level, if someone goes onto the website how they can get involved and stay informed.

7. The concern for some was that people want to be involved before decisions and reports are final with data and drafts.

A large part of what consultants do is dive into the information that must be incorporated and accounted for about all other aspects of the site. They are trying to achieve the big picture, which takes time and effort. Also, part of that thinking process is when they start

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putting it down on paper and writing that first draft before it is even ready to be shared. So, the initial interpretation of the data may change once it is incorporated into the big picture. Thus, when we create our drafts, because of the amount of thought, correlation to the big picture, and interpretation that goes into each iteration, our initial understanding may not have the same conclusion as our final answer. Additionally, there are many things that they must consider as a professional environmental engineer that goes into a design or a cleanup plan. Therefore, it is hard to incorporate comments/public input into those phases where these professionals are trying to complete their work.

Public feedback comes into play in a couple of ways, not only through reviewing a report but other platforms of feedback that we receive from public comment periods that are not about the remedial investigation reports but other topics. We must consider all of those things when thinking about the data and making plans. For example, the questions around vapor intrusion in the reports that have been submitted might have been sufficient to DEP and EPA standards. Still, perhaps there's something we need to do in addition to explaining that in future efforts, so all of your feedback gets incorporated into the thought process.

8. The public needs more than 30-days.

The public comment period is standard. We understand that there is much information in each report. However, we think it is sufficient time. We are also under consent order deadlines. We have discussed this with the City and EPA and agree that we will abide by it this year.

9. Would it be possible to forward a tentative draft section kind of section by section?

This is something that has to be fully digested. The written reports or the information summarized by those professionals, but you'll notice on all those remedial investigation reports a P.G., or professional geologist, stamped them. A professional engineer will stamp cleanup plans in the future. They're essentially certifying that everything in here is true and correct to the best of their knowledge & professional capabilities. I don't know that a professional will be willing to put a draft of anything out there because they genuinely do get edited right up until the end and they are peer-reviewed internally with their companies. Perhaps we can pull concepts out because there is much information. We may be able to pull sections or ideas out that we can talk about separately and talk about data or results or whatever, kind of piecemeal like that.

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Zoom Chat Questions

Answered during the meeting (see transcription document or meeting recording)

1. **Have all of the vapor intrusion studies that were required by the DEP been completed? What do they show? - Marilyn Howarth**
2. **If there is 1993 consent order, is data available for the quality of air and contamination in the ground from that time to the present day? - Charles Reeves**
3. **The public needs more than 30 days to comment before something is finalized by DEP. Also, would it be possible if people made specific requests for data earlier? - Lisa Hastings**
4. **How does remediation serve development = remediation is driven by land use. My understanding is that since the future use of this site has changed, from oil refining / heavy industry to something else, then remediation may need to change to respond to that. If that's not the case, I would be curious to know why not - James Mullison**

Answer: Answered partially during meeting Q&A. DEP standards must consider site use, but both oil refining and heavy industry and general commercial use are all non-residential uses, which determines the DEP standard. Remediation needs to be protective of all receptors. Receptors like the river and sewers do not change based on site use, but future buildings/workers will change. So remediation/attainment of a standard will need to consider those factors (e.g. vapor intrusion assessment will need to be completed on future buildings to be protective of site workers).

Unanswered

1. **Can you provide general information about how much contamination in a test well triggers remediation, and how clean must the treated water be before going back into the wastewater system? - Marta Guttenberg**

Answer: Right now the remediation systems in place are meant to protect receptors (meaning sewers, the river, or a property boundary) and are not necessarily driven by how much contamination is there, but are there because of obvious impacts like high dissolved concentrations or presence of LNAPL (oil on the water table). But the upcoming Fate & Transport report will help guide if other areas of remediation are necessary based on the levels that are present now. The Cleanup Plans will also

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address this and will spell out if certain levels of contaminants must be met by the remediation systems to be protective of both human health and the environment.

2. **These are remediation techniques for volatile organics. What are the techniques for heavy metals like lead? - Marilyn Howarth**

Answer: If there are dissolved metals in groundwater they are removed along with volatiles as the groundwater is extracted from the ground. But in general metals are not soluble in groundwater like volatiles are and are also not as mobile. If there are metals in soil, like lead, there is a soil management plan that will determine where soils can be used onsite based on levels or need to be removed from the site.

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Zoom Chat Comments

1. Just to be clear the Fate and Transfer model was originally due Dec 31 2021 - *Russell Zerbo*
2. The newsletter should be included in the Globe Times - *Marilyn Howarth*
3. Consider closed captioning for the next meeting - *Marta Guttenberg*
4. Even if Philadelphia does not drink the water, groundwater from these aquifers does provide drinking water for areas in NJ. Groundwater can move a long distance, so drinking water should not be dismissed just because Philadelphia doesn't use it. - *Lisa Hastings*
5. I think a separate meeting re: vapor intrusion would be appropriate given the historic legacy of heavy toxic pollution associated with this site - *James Mullison*
6. Thank you for acknowledging that DEP continues to ask for further groundwater testing at many specific sites - *Russell Zerbo*
7. Please sent drafts of the fate and transport report and the environmental risk reports directly to people and groups who have been involved or requested information well before the beginning of the official 30 day comment period. Get them to us early, and it would be best if unfinished drafts be shared during development. - *Lisa Hastings*
8. By "staying in the loop" I think the concern for some was that people want to be involved BEFORE decisions and reports are final, with data and drafts. - *Lisa Hastings*

Philly Thrive Questions - Sent in Advance

[General Remediation and Development Questions]

1. What are the responsibilities of Hilco/Evergreen?

Answered during the meeting (see transcription document or meeting recording)

2. How does the remediation serve the development?

Answered during the meeting (see transcription document or meeting recording)

[Communication]

1. How can community members stay in the loop?

Asked and answered during meeting (see transcription document or meeting recording)

2. How many reports are available to the public and for public comments?

Right now there are no reports open for official comment period – but reminder you can submit a comment on any topic/report at any time. There are many reports on the website right now which include Act 2 Reports (which are the ones that have a public comment period), historic reports that have been referenced in Act 2 reports, and we post our semi-annual reports which provide remediation system updates twice a year.

3. When are public comment periods?

Every Act 2 report will have a public comment period that will start when Evergreen writes the draft report and sends out a notice that the report is available for public review and comment. Then those comments get incorporated into the report and are part of DEP and EPA's review of the document.

4. How will information be shared with the community?

Asked and answered during meeting (see transcription document or meeting recording; combined with #1 above)

[Remediation]

1. How is the remediation being coordinated with the demolition on site?

Because our remediation needs to continue throughout the demolition and development, the majority of the coordination to date has been around utilities which historically were tied into the refinery infrastructure: e.g. electric service, compressed air supply,

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wastewater treatment, etc. Evergreen has needed to obtain our own utilities, and this has been coordinated as the demolition has occurred around the site. Once earthwork and regrading starts happening, there will be a lot of coordination dealing with preserving our well network and system piping that is below grade.

2. How will the remediation be staged/what will the sequence be?

There really is no staging of remediation – we’re continuing to operate past remediation systems where appropriate (some installed in the early 90’s and some as recent as 2021) and will also incorporate new remediation plans as needed. The only staging or sequence aspect to the remediation program is when we get to the Cleanup Plan phase (which is the documentation of how remediation plans are going to achieve cleanup goals – these reports will have to be submitted in conjunction with development phases because we need to know what exactly is going to be built in order to show how cleanup goals will be met.

3. How often will they test the air, water and soil?

The bulk of soil, water and air sampling has been conducted over the last 10-20 years as part of remedial investigations. There are areas where additional soil sampling has been taking place recently (e.g. unit areas and lead sampling), and groundwater samples are collected at least annually site-wide and often more frequently in smaller areas. Indoor and outdoor air samples were collected site-wide in the past (when looking at how the soil and groundwater contamination might impact indoor and outdoor air), but probably won’t again until new infrastructure is in place because there will be so many changes to the site between now and then.

4. How will they communicate the testing results?

All data is communicated via reports, whether they are Act 2 reports (at various times) or the semi-annual remediation update reports (2x per year) or letter reports for non-Act 2 stuff like PFAS. All are posted to the website.

5. Is the EPA involved?

Yes, because of RCRA obligations at the site (due to presence of waste management areas at the site). The site is in the One Cleanup Program which is a program that provide the opportunity for both State (DEP) and Federal (EPA) obligations to be managed under one program. In this case they are using the Act 2 program framework for reporting, but EPA is still involved in every step of the project.

[Climate Change]

1. What are the ramifications of climate change in remediation and construction?

We cannot speak to construction in terms of the development at the site since that is being done by the developer. But for remediation, often times systems are meant to be aggressive and short-term (so few years) so climate change may not be a factor in

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design. If a system of mitigation measure is installed as an engineering control that will be in place for a longer duration (say decades), then climate resiliency would be taken into effect (e.g. looking at anticipated changes in precipitation or water levels over time).

2. How might flooding impact water and soil pollution during remediation?

Flooding at the former Refinery is not a common occurrence, and while climate change may impact water levels in the adjacent Schuylkill River, flooding is not expected to have a significant impact on the water and/or soil pollution at the site. Groundwater elevations during significant precipitation events over the last several years have not resulted in any changes to the current understanding of contaminant distribution. Furthermore, the forthcoming Fate & Transport report incorporates climate change into the modeling to understand where contamination may be transported over time, which will inform remediation strategies and associated design and implementation.

3. Will river levels impact remediation, construction and designs?

As noted above, remediation at the facility is most likely to be aggressive and have a short operational lifecycle (i.e., a few years). In those instances, river levels are not expected to impact the design or construction of remedies. For engineering controls designed to mitigate potential impacts to receptors, the anticipated increase in river levels in the adjacent Schuylkill River will be incorporated into the design and construction.

4. Will extreme weather impact remediation, construction and design?

It is not anticipated that extreme weather will impact remediation, construction, or design. Over the last decade, the facility has experienced hurricane-force winds, and significant precipitation events from hurricanes, nor-easters and other storm events, with minimal impact to the ongoing remediation. As most of the infrastructure associated with remediation resides below ground with the contaminants, severe weather is only likely to impact above-grade components of the various remedies. Such impacts would require minor repairs that can be implemented quickly, typically within a few days, often while remediation is still ongoing.

5. Will the plans for the redesign of the site include flood containment/reduction elements?

Believe this relates directly to site design/development and construction so would be a good question for Hilco.

6. Are federal flood maps available to us?

See: <https://www.fema.gov/flood-maps>