



## EASTWICK FRIENDS & NEIGHBORS COALITION

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### Memorandum

**To:** Mr. Josh Barber, EPA Project Manager, U.S. Environmental Protection Agency  
**From:** Eastwick Friends and Neighbors Coalition  
**Date:** September 30, 2013  
**Re:** Comments to Lower Darby Creek Area Superfund Site Proposed Plan

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This Memo presents the comments, questions and concerns of the Eastwick Friends Neighbors Coalition (EFNC) with regard to the Proposed Remedial Action Plan (PRAP) of the U.S. Environmental Protection Agency (EPA) for the Clearview Landfill. Questions and concerns that require action are presented in **Bold**.

EFNC supports the Darby Creek Valley Association's comments submitted to EPA on September 30, 2013.

#### I. Site security and public health

EPA should immediately construct perimeter fencing with signage around the Clearview site. The PRAP refers to the Clearview site currently as "a public health hazard for recreational users due to the physical hazards present at the site." The PRAP states that "(f)encing around the perimeter would still be necessary to prevent unauthorized access from recreational vehicles, e.g., ATVs, and to deter unauthorized activities." (Page 40). However, there is nothing in the proposed plan that provides **near term** site security for residents and their children. EPA should install fencing and signage around the perimeter immediately to reduce exposure to site contamination.

**What is EPA's timeline for installation of fencing and signage as a measure to keep the community off the site until capping is completed?**

#### II. Infiltration

It is EFNC's understanding that a Flexible Membrane Layer (FML) has greater potential to reduce infiltration than the proposed ET cover. However, EFNC recognizes that a membrane cover will likely not provide the potential benefits of an ET cover in providing some passive recreation, green space in the neighborhood, air quality benefits, wildlife habitat and functionality as a carbon sink.

**Some comparable ET capped landfills show as much as 15% of the total precipitation passed through the cover as measured by the lysimeters. This data is limited.**

**What is EPA's projected infiltration with the ET cap versus the membrane?**

**Could the additional percolation of stormwater through the ET cover exacerbate the existing groundwater contamination plume at the site and under Eastwick?**

**How has EPA estimated the impacts of the different infiltration amounts on the groundwater contamination migration? What are those results?**

**Has EPA assessed the effectiveness of constructing a subsurface, vertical barrier around the perimeter of the land fill to prevent leachate from eventually flowing underneath and away from the evapotranspiration cover?**

**What is the timeline for the Operational Unit-3 (OU3) groundwater assessment? How will the results of OU3 study impact the capping decision in the Clearview Landfill (OU2)?**

III. Stormwater runoff and post-capping Erosion

**The slopes of the capped landfill design are steep. Given the proposed angle of the side slope of the final landfill, which Alternative provides the best long-term stability to prevent sagging or slippage?**

IV. Vapor intrusion (VI)

The plume of groundwater contamination appears to be moving easterly further into the Eastwick neighborhood. The extent of the groundwater plume is not fully developed which could mean that VI impacts may be a greater problem for residents in other parts of Eastwick.

EPA sent 122 flyers to Eastwick residents seeking permission to conduct VI assessments, but only 11 actually took place. This represents less than 10% of the homes surrounding the site.

**EPA must conduct a more comprehensive vapor intrusion study, both in terms of number of households and spatially.**

**What are EPA's plans to conduct a more representative number of vapor intrusion studies in the Eastwick community? What is the timeline for these studies?**

Based on the VI assessments to date, it is unclear if the hazardous indexes/readings were from the landfill gases or typical household cleaning products.

**What measures will EPA take to determine if the source of the vapor intrusion is from the landfill or from other sources? What measures will EPA take as part of its community outreach to reduce all sources of indoor hazardous vapor?**

V. Soil Contamination

There are contaminated soils under the streets in Eastwick neighborhood with chemical concentrations that exceed the risk-based cleanup values for the site. EPA proposes to leave much of those soils in place under asphalt.

EFNC does not believe that pavement is an appropriate cap or Institutional Control. Paving is temporary and will not ensure long term safety for the residents in the neighborhood. City workers or their sub-contractors will also be at risk when conducting maintenance work conducted at those sites and residents have no guarantees that the City will take proper precautions when disturbing pavement – especially in emergency situations.

**What are EPA's proposed institutional controls? Will they be protective? How will the degree of protection be monitored and measured? What will prevent a maintenance crew from digging up the asphalt to repair some future utility/road problem?**

**Please provide a figure showing the elevated soil locations and concentrations exceeding the cleanup values. Please provide the rationale for leaving the contaminated soils in place.**

**ENFC requests that EPA remove all areas of soil with chemical concentrations above the Primary Remediation Goals.**

VI. Groundwater

EPA's sampling for groundwater migration was too limited, especially in the Eastwick neighborhood. It appears that most of the sample borings were conducted on the known periphery of the Clearview landfill and primarily in the streets and other city-owned right-of-ways.

**EFNC requests that EPA expand the extent of groundwater contamination monitoring in the OU3 phase.**

Extensive groundwater sampling was conducted as part of the initial Clearview Landfill RI. Several data gaps still exist regarding the extent of impacted groundwater associated with the Landfill.

**Will these data gaps be addressed under the OU3 phase?**

Figure 10 shows the approximate extent of contaminant migration into the groundwater system in the Landfill area, based on specific conductivity measured in the monitoring wells during August 2011. As shown in the figure the “plume” of higher specific conductivity is largely located east of the limit of the Landfill, and is consistent with an eastward component of groundwater flow. Therefore, it is likely that groundwater has carried dissolved constituents eastward below the Eastwick neighborhood. The presence of elevated concentrations of 1,4-dioxane in MW-15S provides further confirmation of impacted groundwater migration. 1,4-dioxane is very mobile and often found to be present at the leading edge of groundwater contaminant plumes. The furthest extent of this eastward flow is not currently defined.

**Will EPA focus on identifying the full extent of the plume under the Eastwick neighborhoods as a component of the OU3?**

The groundwater flows vary in direction at different soil depths. In the deeper groundwater levels, the flows are all moving east. Shallow groundwater is following the land, east side of landfill goes east, west of landfill going west.

**How will EPA consider post-capping infiltration and groundwater plumes mitigation in the landfill cap design? If so, please summarize how.**

VII. City Park

In City Park, some samples were found to be very contaminated in initial sampling. Follow up sampling found significantly less soil contaminations.

**Did EPA conduct identical sampling protocols in each instance? Was composite sampling used in either or both of these sampling assessments?**

**If either or both samplings were composite, EFNC requests EPA explain the rationale of this sampling method. Composite sampling seems to be disregarding contaminated “hot spots.”**

**Will this contamination be removed from City Park?**

According to the PRAP, the landfill cap may be expanded further into City Park. The PRAP states that

“(e)xposed soils will be iteratively sampled to evaluate if all appropriate soil Preliminary Remediation Goals (PRG) have been attained. If they have not, further excavation will be conducted and additional soil samples collected until it is confirmed that remaining soils do not exceed clean-up goals or excavation of soils is no longer deemed practicable, e.g., contaminated soils below the water table. If subsurface soils are contaminated above PRGs at substantial depths, it may be appropriate to extend the cap rather than excavate all of the impacted materials.” (Page 34)

“Upon completion, the portions of City Park outside of the cap would be available for all types of future uses including residential and recreational. There is potential that soils with Contaminants of Concern (COC) at concentrations greater than PRGs could remain in the subsurface and not under the cap if excavation of those soils is impracticable, e.g., below the water table. In this case, Institutional Controls would be implemented to prevent future exposure to human and ecological receptors. All human and ecological exposure risks on the Landfill would be eliminated by the cap.” (Page 40)

**What institutional controls will EPA utilize in these City Park locations to contain/cap contamination below the waterline? Where else has this technology/methodology been utilized? Please provide summaries of those sites' assessments.**

The proposal is to remove the soils in City Park that have chemical concentrations that exceed the risk-based cleanup values.

**Please provide a map/figure of the locations of soils with exceedances and identify which soils will be removed. How deep will the removal go? Will clean soils be placed on top of the soils that are removed?**

**The PRAP states that**

“An appropriate buffer zone between the limits of the cap and nearby properties will be established as part of the design and coordinated with the local community members affected by remedial activities.” (Page 34). “New trees and shrubs will be planted along the perimeter of the Landfill bordering City Park (Zone 2) to provide a screen for the Eastwick Neighborhood. (Page 39).

**Please describe the specific materials and appearance of the proposed buffer zone. Will it be fencing, vegetation, etc.?**

**EFNC requests that EPA plant native plant species for these buffer areas to increase survivability, reduce maintenance requirements and prevent increased infiltration of invasive species.**

Groundwater recharge of precipitation occurs throughout the Clearview Landfill area. Groundwater and/or leachate visibly discharged at seeps in the banks of the Darby and Cobbs Creeks north, west, and southwest of the Landfill. Gas bubbles were observed in the base of the Darby and Cobbs Creeks, suggesting that groundwater/leachate seeps into the creek beds with actively decaying organic matter. There is also potential for contaminated groundwater to migrate beneath Darby and Cobbs Creeks (Page 15).

**Will the leachate wells that discharge into surface wetlands eliminate that direct and untreated drainage? How often will EPA monitor the groundwater leachate systems, including engineered wetlands? What are EPA's targeted goals for contaminants and volume in the leachate collection systems? What options are available to EPA should these systems not work as designed?**

VIII. Alternative 4 (Hybrid) and Alternative 7 (Evapotranspiration Cover or ET Cover)  
(Pages 43-44)

According to the PRAP, both of these alternatives provide for significant reduction from existing conditions in percolation of rain and melting snow through the landfill waste and into the groundwater -- 97% and 96% respectively. EFNC recognizes those as significant reductions in infiltration. However, those reductions assume full vegetation of a good growth of trees on the ET Cover (or partial ET Cover in Alternative 4).

**How does the infiltration/rate of percolation fluctuate during seasonal changes? In this Mid-Atlantic region, vegetation is typically dormant for 6 months so there may be greater amounts of infiltration. Are the 97% and 96% reductions a yearly average? What is the anticipated rate of infiltration in both the Hybrid and ET Cover alternatives during the dormant season verses the growing season?**

The PRAP notes that

“maximum effectiveness of reduction of percolation through and drainage from the bottom of the ET Cover will not be realized immediately after installation is completed. Percolation through the ET Cover and subsequent leakage into the waste will decrease over time as vegetation and tree growth become more established” (Page 44).

**What are the anticipated impacts on the increased infiltration rates and corresponding contamination plume during the 18-20 month construction timeframe (Hybrid) and the 14-16 month construction timeframe (ET Cover) infiltration?**

**How many years will it take for the ET cover to become “established” to attain full effectiveness? What preventative measures will EPA take during the construction and establishment growth timeframes to ameliorate these impacts?**

EFNC supports EPA’s efforts to save selected large trees on the current site. “Current vegetation and soil thickness will be evaluated during the design to determine if any portions of the Site where the ET Cover is to be constructed can be enhanced with additional soil to save large trees” (Page 41). This effort will reduce percolation during installation of the ET or Hybrid until the new plantings become established.

The overall size and massive weight of the land fill has placed a tremendous amount of pressure on the underlying aquifers and water table.

**How will the ET solution help to slow or prevent the continuation of the downward, gravity aided movement of the toxic pollutants so that these pollutants will not continue to have a negative effect on the underground water table, the Eastwick community and the Darby Creek?**

#### IX. Engineered Wetlands (page 35-36)

EFNC is not, in principal, opposed to wetlands. Wetlands provide a host of beneficial functions, such as, water quality enhancements, flood attenuation, habitat, etc. However, the engineered treatment wetlands discussed in the PRAP have too few details to enable the EFNC to make an informed decision on their function as a method to adequately protect the Eastwick community or the environment. At this time, EFNC is concerned that the engineer wetlands discussed in the PRAP will not effectively stabilize, overtime, the contaminated leachate. The Eastwick area experiences frequent flooding and is projected to be impacted by sea-level rise and storm surges.

**When will the specific details of the engineered wetland design and locations be available to the public? ENFC is interested in the specifics of the wetlands locations, leachate treatment, flooding potential and their anticipated effectiveness.**

**Will the LCT be constructed as a surface-only solution? or**

**Will it (LCT) be capable of containing subsurface, toxic leachate as well?**

**How will the engineered wetlands treat the toxic leachate?**

**Will the engineered wetlands be sufficient to handle the toxic pollutants coming from the land fill?**

Specifically, what data has EPA reviewed and/or plans to review in terms of climate change, sea-level rise and storm surges, in design considerations?

**What will prevent the leachate in the wetlands from being flushed away during the normal plant dormancy of winter or storm events? Please describe how the accumulated leachate will not be flushed out of the engineered wetlands and into the Eastwick community or into the Darby Creek during storm events or flooding.**

**What other leachate treatment methodologies has EPA considered? Has EPA considered a leachate pre-treatment process linked to the Philadelphia municipal treatment facilities? This area of the City consists of many industrial facilities. Pre-treatment systems should exist locally making this a practical consideration.**

X. Potential flooding impacts

EPA states "Potential impacts from flooding on the final remedy's integrity will also need to be considered and addressed." (Page 41)

**Please summarize EPA's understanding of the flooding impacts on the landfill, City Park, Eastwick community and communities downstream.**

In referencing Darby Creek streamside erosion controls, EPA states that "Geocells or other bank stabilization products that allow for full slope vegetation will be utilized." (Page 35)

**Where has this technology been used before? What is its track-record? How frequently will EPA or other responsible party monitor the integrity of this feature?**

XI. Next Five Years

One of the biggest problems now, as well as after capping is completed, is the use of motorized dirt bikes and quads motorcycles. They dig ruts and dislodge vegetation that will, over time, seriously degrade the cap. This activity will contribute to runoff and erosion. Addressing this problem now should include installing fencing around the landfill and erecting multi-lingual signage. EPA must create a solution to erosion caused by active recreation over the short and long-term, including once the landfill has been capped. Active and passive recreation is important amenities for the Eastwick community. The Eastwick community should be an active part of developing a recreational plan for this area and how it complements the entire Eastwick community.

EPA should also post multilingual signage along the creek now and once the cap is installed to inform and educate about not eating the fish.

**EFNC recognizes that EPA has conducted some fish tissue studies as part of the Clearview Superfund cleanup. When will that data and analysis be made public? We look forward to that information.**

**Are there some temporary measures that will be put in place such as fencing, signage, and additional soil removal prior to full remedial activities?**

XII. Sediment

A total of forty four (44) sediment and surface water samples were collected upstream, adjacent to and downstream of the Clearview Landfill as part of the RI. PAHs were detected more frequently and at much higher concentrations than any other class of contaminants in the sediment samples. **Figure 12** shows the spatial distribution and concentrations of total PAHs from all sampling locations in 2002 and 2005. A pattern of increased PAH concentrations downstream of Clearview Landfill is clearly evident. Other potential sources, e.g., urban runoff upstream, the tank farm and Folcroft Landfill, also appear to contribute to contaminated sediments.

EFNC believes more needs to be known about the source of the soil contamination in City Park and Eastwick. Is it coming from the landfill or an accumulation of sediment deposits from past flooding events from up-stream sources? Metals were most commonly detected in stormwater. Three metals, arsenic, iron, and manganese, were detected above their respective RBC and one metal, lead, was detected above its EPA action level. Three VOCs (1,4-dichlorobenzene, MTBE, and PCE) were detected above their RBCs in six stormwater samples. Five SVOCs, (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and indeno(1,2,3-C,D)pyrene) were

detected above their respective RBC in the stormwater sample from CS04. One pesticide, heptachlor epoxide, was detected above its RBC at one location (CS02) during a dry period.

**Will there be additional assessment of these sources when EPA looks at Folcroft landfill (OU3)? EFNC requests that EPA determine and disclose the origin of these contaminants so appropriate measures can be taken to prevent further deposits.**

The PRAP states that “PCBs associated with GPR-111 will be excavated and sent off-site for treatment (if practicable) and/or disposal.” (Page 33)

**Please describe what would make this material impractical for treatment and/or disposal. If deemed “impractical for treatment and/or disposal, what would happen to them?”**

### XIII. Stormwater

**While designed to transport rainwater and melting snow, will the stormwater swales be designed to treat stormwater quality? EFNC requests that water quality considerations be incorporated in the design. Will the drainage swales discussed on Page 35 be vegetated or rock?**

**How will the landfill cap and riparian zone (land area adjacent to the creeks) be protected from erosion and constant impact from the creek under normal and storm flow conditions?**

### XIV. General

The PRAP states “(t)o confirm that dioxins are not present at concentrations in soils outside of the planned cover area that would present a potential unacceptable risk, additional dioxin sampling will be conducted as part of the PDI as well.” (Page 33). EFNC supports and thanks EPA for addressing the dioxin issue and conducting dioxin sampling as part of the PDI. We request EPA collect sample for dioxin analysis within Eastwick and City Park.

**What happens to the site if the proposed remedial activities don’t get funded?**

### XV. Responsible Party

EPA stated in their July 18 Public Informational meeting that a “high percentage of the cleanup money is derived from the RP”.

**How does EPA determine how much each Responsible Party (RP) pays?**

**EFNC is concerned about the remaining open and active businesses on the Clearview site. What agency is providing oversight on these businesses to assure new sources of contamination are not being introduced to the site?**

**When will these businesses be required to move off the site? EFNC believes that the Clearview site remediation and capping will proceed much more quickly once these businesses relocate. What is EPA’s timeline for requiring the remaining businesses to move?**

### XVI. Site preparation – Erosion and Sediment Control

EFNC urges EPA to strictly monitor and enforce all erosion and sediment controls throughout the construction process. This area is subject to chronic and catastrophic flooding. During flooding events and severe storms, erosion and sediment controls can be compromised. EPA must assure there is compliance systems in place to assure these controls are maintained constantly, put particularly during weather events.

END