U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 8 – SUPERFUND AND EMERGENCY MANAGEMENT DIVISION
1595 Wynkoop Street
Denver, CO 80202-1129

MEMORANDUM

SUBJECT: Responsiveness Summary on the VBI-70 OU1 deletion
FROM: Jesse Avilés
TO: FILE
DATE: 2019-08-06
EPA ID: CO0002259588
STATUS: FINAL

Introduction

A Notice of Intent for Partial Deletion of Operable Unit (OU) 1 of the Vasquez Boulevard and I-70 Superfund Site was published in the Federal Register on February 6, 2019, 84 FR 2116 (1). The publication of this notice was intended to inform the public that EPA planned to delete the Site from the National Priorities List, and provide a 30-day public comment period on the proposed deletion. The closing date for comments on the Notice of Intent to Delete was March 8, 2019 and extended to April 8, 2019. Twenty-seven written comments were received. These comments are available in the Information Repositories. In addition, all public comments were considered in EPA's final decision to delete the Site from the NPL.

Responsiveness Summary

The Responsiveness Summary has been prepared to provide responses to comments submitted to EPA during the 30-day public comment period regarding the Notice of Intent for Partial Deletion of OU1 of the Vasquez Boulevard and I-70 Superfund Site (84 FR 2116). The original comments are summarized below and available at http://www.regulations.gov, Docket ID No. EPA-HQ-SFUND-1999-0010, with the support materials under document type "Public Submissions", and at the information repositories at the following addresses: 1595 Wynkoop Street, Denver CO; Valdez Perry Library, 4690 Vine Street, Denver, CO. Below are excerpts and summaries of the comments received divided in three areas.

Projects in the Superfund area

- ...might be sufficient were there no plans to more extensively disturb the local soil; has already begun to impact, the area owing to the I-70 rebuild (including - Libertarian might add - the obnoxious and expensive subterranean aspects of the project). This is on top of the Suncor and Cherokee VOC and particulate toxins
- ...contaminated soils continue to get disturbed and may potentially be harmful to infants and small children.
- Furthermore, large areas of paved over roadways were never tested, yet the city and CDOT plan to lower I-70 by up to 40 feet in a trench, as well as excavating the paved 39th Ave. roadway, the dirt beneath it never tested, to dig a 100 foot wide 10 feet deep trench, up to a mile long. ...have experienced the effects of small particulate pollution from the highways that have caused increased occurrence of childhood leukemia and asthma, as well as the effects of Superfund soil contaminants such as cadmium, lead, zinc and arsenic.

- ...questions we had about the health and environmental risks of the pending Platte to Park Hill Stormwater Drainage and I-70 expansion projects within the VB/I-70 Superfund Site.

Response

OU1 includes only the residential properties in its footprint. These comments express community concerns about other non-Superfund projects occuring in the footprint of OU1. The non-Superfund projects mentioned are overseen by other agencies such as the Department of Transportation, Colorado Department of Transportation, Colorado Department of Public Health and Environment or The City and County of Denver. The properties that were remediated under the Superfund process do not have additional restrictions placed on them.

Extent of the remedy

- OU1 designation should be expanded to cover streets, commercial/industrial areas and transport mediums such as groundwater and air that were previously excluded and further testing should be done throughout the entire Operable Unit 1.
- There is a lot of contamination in the soil from the smelters from the early 1900s, late 1800s....mercury, lead, cadmium, arsenic, and there's also some zinc.
- Please do not delist this site until it is 100% remediated and until every property in the OU is contacted (without bouncebacks) and informed of the full process of completed remediation and how they could be guaranteed their property was cleaned sufficiently. I know most of my neighbors do not know how to check their property's remediation record. We should at least have more efficient mechanisms for transparency before delisting the site.

Response

The site was placed on the NPL in 1999 due to metal contamination associated with historical smelter operations. The remedial investigation was completed in 2001 (2) and the record of decision in 2003 (3). Commercial properties were evaluated in the Baseline Human Health Risk Assessment (4). The commercial properties were not included in the remedy because "...sampling [at nearby ASARCO Globeville site] has revealed that even the highest values detected during the sampling are below a level of potential health concern for workers..." The Baseline Human Health Risk Assessment further explains:

> *Because there is no known reason why commercial properties in the vicinity of the Globe site should be less contaminated than commercial properties within Operable Unit 1 of the VBI70 site, these data are assumed to be representative of what would be obtained if sampling were to proceed at commercial properties within OU1. On this basis, it is concluded that sampling at commercial properties and detailed quantitative risk calculations for workers are not needed at OU1 of the VBI70 site.*

The ROD identified the chemicals of potential concern as lead and arsenic since "All other contaminants detected in soils in OU1 are either not of concern or are present at levels that contribute minimal risk compared to arsenic and lead." The ROD required sampling of the residential properties. EPA identified 4,864 (5) residential and non-residential properties in OU1. Soil sampling was performed at 4,445 residential properties. The property owners of 45 additional properties denied access to sample the properties.

Different sampling events in 1998 (6; 7) collected samples at the 0-2" interval, the 6"-10" interval and the 12"-16" interval. In 1999, EPA tasked ISSI Consulting Group, Inc. (ISSI) (8) to "determine whether the levels of arsenic and lead found in the surface soils (0-2 inches) are generally higher or lower than that of soils at depths of 6-10 inches." Their conclusion was:

> *When contamination is present in soils below the 0-2 inch depth, contamination is generally also present in the corresponding surficial soils at equal or greater concentrations. Therefore, a study that is designed to identify residences with elevated levels of contaminants of potential concern (COPCs) in the surface soils will be sufficient in identifying the impacted locations.*

The EPA identified for cleanup those residential properties with arsenic over 70 parts per million (ppm, or milligrams per kilogram mg/kg), or lead over 400 ppm. Cleanup activities consisted of removal and replacement of the first foot of soil. EPA performed cleanup at 814 residential properties. The property owners of 10 additional properties denied access for cleanup. Most of the soil removals occurred between 2004 and 2006. The average concentrations at properties that did not need a cleanup was 16 ppm of arsenic and 183 ppm of lead (5). These concentrations are below the risk-based clean-up criteria specified in the Record of Decision.

Another aspect of the remedy was the Community Health Program. It consisted of "community and individual health education, a biomonitoring program to measure urinary arsenic levels and blood lead levels of children, and a response program that includes necessary follow-up environmental sampling, home investigation, and response." (3)

EPA could not maintain the option to perform a soil cleanup open indefinitely. EPA implemented an administrative control to inform future owners of the properties that denied access of the presence or possible presence of contaminants at the property. The control was implemented through a notice on the property file in the City and County of Denver Assessors office and annual information letters. The Colorado Department of Public Health and Environment sends a letter yearly to the address of the owner of record and the property address. The letter informs the recipient about the status of the property regarding testing or sampling. It also provides information on how to prevent exposure to dirt and lead. (9)

Source of the contaminants

- EPA has not been able to identify the source of the pollution impacting the health and lives of people who live and work in OU1 and hence, can not offer assurance that the remedy offered by EPA, removing the top 12 inches of soil from the yards of some homes, is or will be protective of human health in the future.
- Additionally, the source(s) of pollution (lead, arsenic, and multiple other contaminants) is unclear.
- Contaminants are migrating upwards from fill dirt. The source of the contaminants is slag used as fill in the Montclair basin.
- EPA must consider health risks posed by other pollutants (e.g., cadmium)

Response

An evaluation of chemicals of potential concern was performed as part of the BHHRA. This evaluation consists of several steps, namely:

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1. Eliminate chemicals whose maximum value is below a level of concern for a residential setting (known as a risk-based concentration, or RBC). Target risk levels used to determine the RBC were 1E-06 (one in a million) for cancer-causing chemicals and a hazard quotient of 1.0 for noncarcinogenic chemicals.
2. Eliminate beneficial minerals (e.g., calcium, magnesium, potassium, sodium, iron) that are normally found in the body and are part of normal body processes, and which do not occur at levels that could result in toxicity.
3. Eliminate chemicals whose contribution is minor compared to others.
4. Investigation to confirm thallium levels were below residential RBCs.
5. Selection of chemicals of potential concern for quantitative analysis.

Thus, the chemicals of potential concern selected for quantitative analysis were arsenic and lead and were carried to the ROD. The ROD remedial action objectives were designed to protect against exposure to arsenic and lead. All other contaminants detected in soils in OU1 are either not of concern or are present at levels that contribute minimal risk compared to arsenic and lead.

The ROD states that the sources of contaminants in residential soils are "likely a combination of historic smelter smokestack emissions, lawn care products, and other industrial sources. ...leaded paint might be a source of lead exposure in area children..." A 1998 sampling report (7) summarized the data collected from 1524 properties from depths that ranged from 6 to 16 inches. The data shows that 87% of the properties were below the risk range for arsenic in subsurface soils as well as in surface soils (Table 1 and Table 2). For lead, 96% of the samples were below levels of concern, for both surface and subsurface soils (Table 3 and Table 4). In addition, the ISSI report (8) evaluated the relationship between concentrations of arsenic and lead at the surface and at depth. It found that concentrations at the surface were higher than concentrations at depth. Part of the remedy for the site was removing and replacing 12 inches of soil with clean soil. This further decreases the chance of contaminants at depth. There is no indication that contamination at the surface is worsening over time which belies the commenters' hypothesis regarding the upwards migration of contaminants from fill dirt.

The data collected from the 4445 properties showed that:

- Average arsenic results for properties that did not need a cleanup was 16 mg/kg (5).
- Average lead results for properties that did not need a cleanup was 183 mg/kg (5).
- Arsenic concentrations for replacement soils were not detectable (10).
- Lead results for replacement soils ranged between 6.4 mg/kg to 36 mg/kg (10).

The remedy implemented in OU1 is protective of human health and the environment.

Tables

Table 1 - Arsenic depth results

Arsenic concentration	Number of samples	% in range
<70	1247	87%
70 - 250	161	11%
251 - 399	8	1%
400 - 1000	10	1%
>1000	2	0%
	1428	

Table 2 - Arsenic surface results

Arsenic concentration	Number of samples	% in range
<70	2834	87%
70 - 250	339	10%
251 - 399	37	1%
400 - 1000	43	1%
>1000	15	0%
	3268	

Table 3 - Lead depth results

Lead concentration	Number of samples	% in range
<500	1366	96%
500 - 1000	49	3%
1001 - 1199	1	0%
1200 - 1500	3	0%
>1500	9	1%
	1428	

Table 4 - Lead surface results

Lead concentration	Number of samples	% in range
<500	3138	96%
500 - 1000	115	4%
1001 - 1199	4	0%
1200 - 1500	4	0%
>1500	7	0%
	3268	

- Data is from tables 1A to 2B of the 1998-09-21 Sampling Analysis Report for Removal Site Assessment (7).
- Table 1 and Table 3 depth is 6 - 16 inches. Table 2 and 4 depth is 0 - 2 inches.
- A total of 1524 properties were sampled.
- Concentration is in parts per million.

References

1. **U.S. Environmental Protection Agency.** Notice of Intent to Delete for the Vasquez Boulevard and I-70 Superfund Site. Washington, D.C. : s.n., February 6, 2019. 84 FR 2116.

2. **Washington Group International.** Remedial Investigation Report. Englewood, Colorado : s.n., July 2001. SEMS ID: 489928.

3. **U.S. Environmental Protection Agency.** Record of Decision. Denver, Colorado : s.n., September 25, 2003. SEMS ID: 2005189.

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4. —. Baseline Human Health Risk Assessment. Denver, Colorado : s.n., August 1, 2001. SEMS ID: 489917.

5. —. Property status database. Denver, Colorado : s.n., 2015.

6. **URS Operating Services, Inc.** Sampling Analysis Report for Removal Site Assessment. Denver, Colorado : s.n., July 6, 1998. SEMS ID: 197869.

7. —. Sampling Analysis Report - Phase II Sampling For Removal Site Assessment. Denver, Colorado : s.n., September 21, 1998. SEMS ID: 1960.

8. **ISSI Consulting Group, Inc.** Project Plan for the Vasquez Boulevard & I-70 Site Phase III Investigation. Denver, Colorado : s.n., August 4, 1999. SEMS ID: 2039988.

9. **CB&I Federal Services LLC.** Remedial Action Report. Greenwood Village, Colorado : s.n., February 22, 2017. SEMS ID: 1867122.

10. **Project Resources Inc.** Final Site Report. San Diego, California : s.n. SEMS ID: 1086688.

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