

Superfund Records Center
SITE: Iron Horse
BREAK: 5.4
OTHER: 552970

**EXPLANATION OF SIGNIFICANT
DIFFERENCES
(ESD)**

**IRON HORSE PARK SUPERFUND SITE
OPERABLE UNIT 4**

BILLERICA, MASSACHUSETTS



**U.S. ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION 1
5 POST OFFICE SQUARE
BOSTON, MA 02109-3912**



SDMS DocID 552970

Summary of ESD

The purpose of this ESD is to document the volume reduction of sediment requiring excavation from approximately 7,400 cubic yards (estimated in the ROD), to approximately 1,000 cubic yards. The volume reduction is based on post-ROD toxicity sampling.

In addition, sediment cleanup levels established in the ROD are no longer appropriate to delineate the limits of sediment excavation in the B&M Pond (cleanup levels were exceeded over most of the pond at sample locations later shown by toxicity testing to not be toxic). Instead, toxicity testing will be used to delineate the area that will require remediation. The area in question is limited in scope and is already bounded by a landfill on one side, and on the other by the bulk of the pond which has already been determined (via toxicity testing) to not be toxic.

This package also includes a TSCA Determination regarding PCB contaminated sediments. The contents of the Determination were coordinated with Kimberly Tisa.

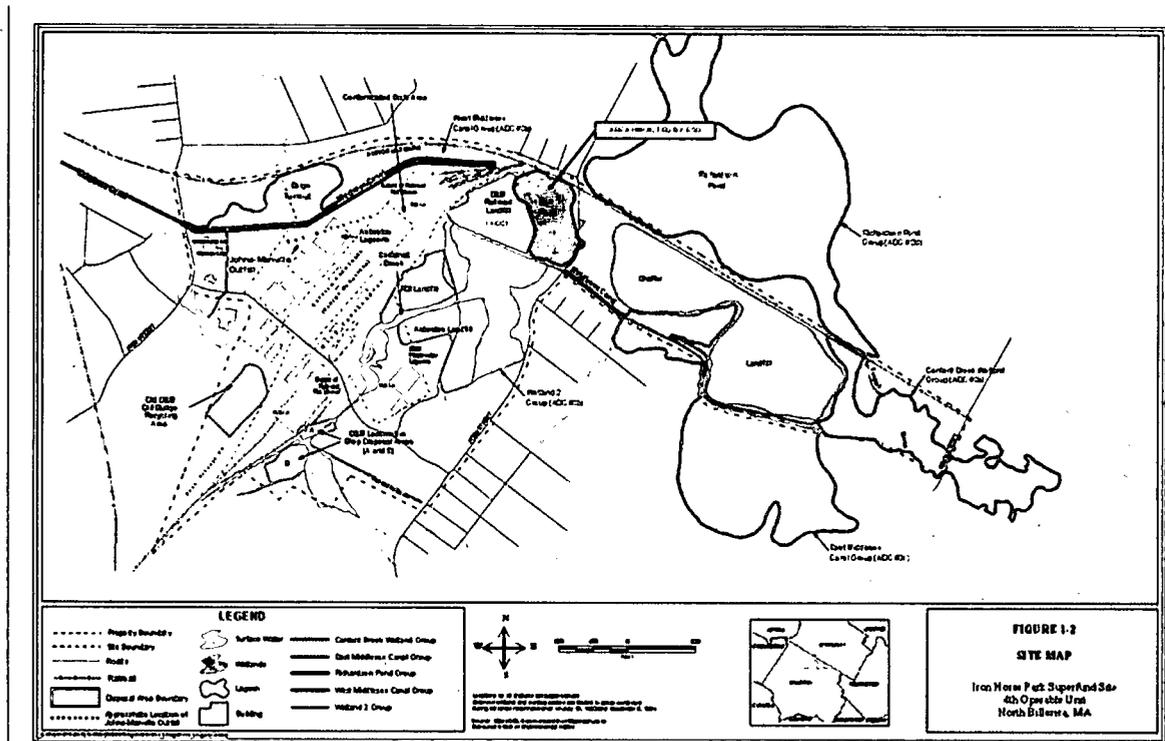
Iron Horse OU4 is in RDRA negotiations with PRPs regarding this work. The Case Team recently responded to the PRPs Good Faith Offer. The PRPs are aware of, and have reviewed this ESD

I. INTRODUCTION

A. SITE NAME & LOCATION

Site Name: Iron Horse Park Superfund Site, Operable Unit 4

Site Location: Billerica, Middlesex County, Massachusetts



B. LEAD & SUPPORT AGENCIES

Lead Agency: United States Environmental Protection Agency ("EPA")

- Contact: Don McElroy, EPA Remedial Project Manager, (617) 918-1326

Support Agency: Massachusetts Department of Environmental Protection ("MassDEP")

- Contact: Jay Naparstek, MassDEP Deputy Division Director, (617) 292-5697

C. LEGAL AUTHORITY FOR ESD

This Explanation of Significant Differences ("ESD") for the Iron Horse Park Superfund Site ("Site"), Operable Unit 4 ("OU4") documents changes in certain

components of the remedy as originally set forth in the July 25, 2011 Record of Decision (“ROD”).

The United States Environmental Protection Agency (“EPA”) is required to publish this ESD by Section 117(c) of the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”), 42 U.S.C. § 9617(c), and the rule at 40 C.F.R. § 300.435(c)(2)(i). EPA decided to seek public comment on this ESD pursuant to 40 C.F.R. § 300.825(b). A 30-day public comment period was held from May 5, 2014 to June 9, 2014.

Under Section 117(c) of CERCLA, 42 U.S.C. § 9617(c), the rule at 40 C.F.R. 300.435(c)(2)(i), and EPA guidance (Office of Solid Waste and Emergency Response [OSWER] Directive 9200.1-23P), if the EPA determines that differences in the remedial action significantly change but do not fundamentally alter the remedy selected in the ROD, with respect to scope, performance, or cost, EPA shall publish an ESD explaining the differences between the remedial action being undertaken and the remedial action set forth in the ROD, and the reasons such changes are being made. EPA has determined that the adjustments to the ROD provided in this ESD are significant, but do not fundamentally alter the overall remedy for OU4 of the Site with respect to scope, performance, or cost. Therefore, this ESD is properly issued.

D. SUMMARY OF CIRCUMSTANCES NECESSITATING THIS ESD

The July 2011 ROD for OU4 of the Site requires the excavation of contaminated sediments from B&M Pond which exceed ecological risk standards, Monitored Natural Recovery (MNR) of sediments outside of the B&M Pond area (primarily the Unnamed Brook) which exceed ecological risk standards, and stormwater runoff controls to prevent recontamination of sediments by stormwater runoff draining directly into the B&M Pond and the Unnamed Brook. The selected remedy also requires the establishment of a groundwater compliance boundary and groundwater monitoring to ensure that groundwater that exceeds groundwater performance standards remains within the groundwater compliance boundary.

The major components of the remedy are:

For Sediment

- Excavation of about 7,400 cubic yards of B&M Pond contaminated sediment.
- Dewatering, transport and disposal of contaminated sediments (either off-site or on-site to an OU3 landfill).
- Treatment of dewatering fluid (if necessary), with discharge to on-site surface waters, and possible stabilization of sediment prior to disposal.
- Wetland mitigation, as required.
- MNR in Unnamed Brook and other unexcavated sediments that exceed sediment cleanup levels.

- Implementing stormwater runoff controls to prevent sediment recontamination.
- Institutional Controls, (including at least yearly compliance monitoring) to protect stormwater controls and to prevent disturbance of wetlands undergoing MNR or contaminated sediments that are naturally covered under the MNR process. ICs would remain in effect until no longer needed to support the remedial action.
- Assessing cleanup protectiveness every 5 years (until sediment cleanup standards are achieved). If MNR is achieved through the natural covering of contaminated sediments, 5 year reviews would be conducted for as long as contamination exceeding risk standards remains covered in place.

For Groundwater

- Groundwater monitoring to confirm that contaminants do not migrate beyond the compliance boundary for the Site (including the installation of new wells to supplement the existing monitoring well network).
- Institutional Controls, including at least yearly compliance monitoring, to prevent use of groundwater within the compliance zone, to prevent installation of wells in the buffer zone, and to protect components of the remedy.
- Five-year reviews.

The ROD estimated the cost of the selected remedy for OU4 at **\$ 5.4 million**.

Post ROD Developments

This ESD impacts the portion of the remedy which addresses sediment within B&M Pond only.

The ecological risk assessment which concluded that there is an ecological risk from exposure to sediment requiring a cleanup action in B&M Pond, was based on one toxicity sample at one location (SED-05, see Figure 1). Following the ROD and in anticipation of settlement negotiations with potentially responsible parties (“PRPs”) to perform the cleanup in the 2011 ROD, the PRPs requested the opportunity to sample sediment in B&M Pond in order to fully delineate the sediment locations where ROD established cleanup levels were exceeded.

Pursuant to an April 2012 Consent Order¹, the PRPs collected shallow sediment samples from 12 locations within B&M Pond. The samples were analyzed for OU4 Contaminants of Concern (COCs) and compared with cleanup levels identified in the OU4 ROD.

¹ The Consent Order required collection of shallow (from 0-1 foot below sediment surface) and deeper (from 1-2 feet below sediment surface) sediment samples from across B&M Pond. Samples were to be analyzed for contaminants with cleanup requirements (Total PAHs, 4,4-DDD, Total PCBs, lead, chromium, copper, vanadium and zinc), as well as other parameters (Total Organic Carbon (TOC), grain size, AVS/SEM and pore water). The objective of the sampling was to delineate the vertical and lateral extent of sediment requiring remediation.

The results of the sampling, conducted in August 2012, and reported in a January 2013 Report submitted pursuant to the Consent Order, demonstrated that various COCs (polycyclic aromatic hydrocarbons [PAHs], polychlorinated biphenyls [PCBs], 4,4 DDD, chromium, copper, lead, vanadium, and zinc) exceeded cleanup levels to some degree at all 12 sample locations. These results, taken as is, would have required excavation of sediments throughout virtually the entire B&M Pond in accordance with the OU4 ROD. However, it is possible for cleanup levels to be exceeded at locations which are not toxic (which do not present an unacceptable risk to ecological receptors). This is due to environmental factors at each location such as percentage of organic matter present, overall chemistry of the sample location (and any interaction with the COCs), sediment grain size, and the impacts that these factors can have on the bio-availability of the COCs (the availability of the COCs to be consumed by the potentially at-risk organisms).

As a result, EPA determined it was appropriate to consider whether the exceedances shown by the 2012 sampling data indicated actual widespread toxicity in B&M Pond sediment. Based on the limited evidence of ecological risk (one sample exhibiting toxicity), EPA determined it was appropriate to undertake a sediment toxicity sampling effort. In addition, based on the results of the sediment delineation effort (indicating that virtually the entire pond might require remediation), EPA was concerned with conducting a widespread sediment excavation and the significant disruption the excavation would cause to the wetland, without further information to support such an extensive excavation.

Because of the dual concerns regarding the accuracy of the spatial extent of sediment toxicity in the pond and the potentially unnecessary widespread disruption of the wetland, in June 2013, EPA collected sixteen sediment samples in B&M Pond and one reference sample in a nearby pond to be evaluated for toxicity. The sample locations were distributed over almost the entire pond area (see Figure 1). The samples were used to perform 10-day aquatic toxicity tests (the same toxicity testing that had been utilized previously in the Risk Assessment at the Site). The samples were also analyzed for metals, pesticides, PCBs, PAHs and Total Organic Carbon. The results of the sampling effort, reported in August 2013, showed that none of the 2013 sample locations exhibited toxicity which would lead to unacceptable ecological risk from the sediment. Therefore, only the previously identified location (SED-05) exhibits toxicity in sediment that requires remediation in order to address ecological risk.

As a result of more recent, specific information regarding the actual toxicity of sediment in B&M Pond, this ESD documents the reduction of the volume of contaminated sediment requiring remediation in B&M Pond, and the establishment of new criteria to delineate the boundaries of sediment excavation in B&M Pond. EPA's determination in the ROD that sediment and surface water at B&M Pond do not pose a risk to human health is unchanged. Only ecological risk is present at B&M Pond.

The ROD estimated that approximately 7,400 cubic yards of B&M Pond sediment would need to be excavated. It is now estimated that up to approximately 1,000 cubic

yards will require excavation. In addition, new delineation criteria are required to determine the necessary extent of sediment excavation. Because most locations in the B&M Pond with exceedance(s) of sediment cleanup levels do not present an unacceptable risk, sediment cleanup levels contained in the ROD will no longer be used to determine the extent of sediment excavation. Instead, sediment excavation will be delineated with additional toxicity sampling. If a delineation sample is toxic, the sediment associated with that sample will require excavation. If a delineation sample is found to be not toxic, the associated sediment will not require excavation.

E. AVAILABILITY OF DOCUMENTS

This ESD, supporting documentation for the ESD, and the Administrative Record are available to the public at the following locations and may be reviewed at the times listed:

U.S. Environmental Protection Agency
Records Center
5 Post Office Square, Suite 100
Boston, MA 02109
617-918-1440
Monday-Friday: 9:00 am - 5:00 pm
Saturday and Sunday – Closed

Billerica Public Library
25 Concord Road
Billerica, MA 01821
978-971-0948
Monday-Thursday: 9:00 am – 9:00 pm
Friday-Saturday: 9:00 am – 5:00 pm
Sunday: 1:00 pm – 5:00 pm

II. SUMMARY OF SITE HISTORY, CONTAMINATION AND SELECTED REMEDY

A. SITE HISTORY, CONTAMINATION AND SITE RISKS

History

The 553 acres of land that now make up the Iron Horse Park Site were first purchased by the B&M Railroad (now Boston & Maine Corporation, a subsidiary of Pan Am Railways which is a subsidiary of Pan Am Systems, Inc.) in 1911. Prior to that year, the Site consisted of approximately 18 privately owned parcels that Boston & Maine Corporation (B&M) consolidated. Since 1911, a variety of industrial disposal practices have resulted in the creation of numerous lagoons, landfills, and open storage areas. At various times over the years, B&M has sold or leased several parcels of the land and some of the buildings on the Site to various companies. B&M operated an oil

and sludge recycling area beginning sometime prior to 1938. This operation took place on property which was subsequently owned by Penn Culvert Company and currently, Cooperative Reserve Supply, Inc. In 1944, the B&M Railroad sold approximately 70 acres of land in the western portion of the Site to Johns-Manville Products Corporation, which at that time began to manufacture structural insulating board that contained asbestos. Three unlined lagoons were built to dispose of the resulting asbestos sludge waste. At approximately the same time, B&M leased approximately 15 acres of land in the eastern portion of the Site to Johns-Manville to be used as a landfill for asbestos sludge and other asbestos mill wastes generated by their manufacturing operations. EPA capped this landfill in 1984 as part of an "Immediate Removal Action" under CERCLA. The B&M Landfill, the RSI Landfill, and the B&M Locomotive Shop Disposal Areas were unmonitored landfill/disposal operations.

Iron Horse Park was listed on the National Priorities List (NPL) in 1984 and was subsequently divided into four operable units (OUs). OU1 is the Boston & Maine (B&M) Wastewater Lagoons, OU2 is the Shaffer Landfill, and OU3 was originally the remainder of the site, including an active industrial complex (the Iron Horse Industrial Park), a railyard, numerous manufacturing operations, open storage facilities, landfills, and lagoons. Areas of concern (AOCs) in OU3 consist of the B&M Railroad Landfill, the B&M Shop Disposal Areas (A and B), the RSI Landfill, the Old B&M Oil/Sludge Recycling Area, the Contaminated Soils Area, and the asbestos contamination areas (including the Asbestos Landfill and the Asbestos Lagoons). Investigational activities, including a baseline ecological risk assessment (BERA) and baseline human health risk assessment (HHRA), were completed for OU3 in 1997. At the time of the Feasibility Study (FS) for OU3, completed in 2004, it was decided that site-wide surface water, sediment, and groundwater required additional investigation and the OU3 FS was then limited to site source areas. Therefore, OU4 includes residual groundwater, surface water, and sediment contamination. It should be noted that groundwater associated with Shaffer Landfill (OU2), which was addressed under a 1993 ROD for OU2, was not included as part of the OU4 evaluation.

This ESD impacts the portion of the OU4 remedy which addresses sediments within B&M Pond only.

Contamination

Contaminated sediments and surface water at the Site are likely the result of contaminated groundwater discharge and runoff impacted by contaminated soils.

Contaminants with Preliminary Remediation Goals established in the OU4 ROD (PAHs, PCBs, 4,4 DDD, chromium, copper, lead, vanadium, and zinc) were detected throughout B&M Pond and in numerous locations were detected above ROD established cleanup levels. The location with the highest detected concentrations (SED-05) is in the southwest portion of the pond, adjacent to the edge of the B&M Landfill (AOC 1 of Operable Unit 3). This is the same location which exhibited

toxicity, and which was utilized to establish sediment cleanup levels in the OU4 ROD. (See Figure 1).

Site Risks

EPA evaluated in several ecological risk assessments whether contamination in surface water or sediment poses an unacceptable ecological risk (for additional detail, see Section G of the OU4 ROD). EPA determined, as documented in the OU4 ROD, that there is a moderate risk posed to bottom dwelling organisms, specifically benthic invertebrates, from exposure to contaminated sediment in the B&M Pond and the Unnamed Brook. The sediment risk documented in the OU4 ROD was due to the presence of: PAHs, PCBs, 4,4 DDD, chromium, copper, lead, vanadium, and zinc.

The sediment cleanup levels that were established in the OU4 ROD are as follows:

Total PAHs	4,834	ug/kg
4,4'-DDD	16	ug/kg
Total PCBs	1	mg/kg
Chromium	22	mg/kg
Copper	63	mg/kg
Lead	115	mg/kg
Vanadium	23	mg/kg
Zinc	128	mg/kg

As discussed earlier, the sediment cleanup levels established in the ROD were set at levels that EPA has now determined are not toxic in the B&M Pond. Therefore, the cleanup levels above are no longer applicable to sediment in the B&M Pond. Toxicity testing in the B&M Pond (as demonstrated in the 2013 toxicity sampling results) has eliminated most of B&M Pond from requiring sediment excavation. The remaining area where unacceptable risk exists, and where sediment excavation is required, is in the vicinity of sample location SED-05, adjacent to the edge of the B&M Landfill. (See Figure 2). The extent of sediment excavation in this area will be determined by toxicity testing rather than by setting new cleanup levels.

EPA determined, as documented in the OU4 ROD, that there is not an unacceptable ecological risk present from exposure to surface water.

B. SUMMARY OF THE PORTION OF THE OU4 REMEDY AT B&M POND ORIGINALLY DESCRIBED IN THE OU4 ROD

As described in Section I.D. of this ESD, at the B&M Pond the remedy selected in the OU4 ROD calls for excavation of approximately 7,400 cubic yards of contaminated sediment which exceeds site specific cleanup levels, dewatering, transport and disposal of contaminated sediments (off-site or on-site at an OU3 landfill), treatment of dewatering fluid (if necessary) with discharge to on-site surface waters and

potential stabilization of sediment prior to disposal and wetland mitigation, as required.

III. Basis for the document

This ESD documents the reduction of the volume of contaminated sediment requiring excavation in B&M Pond, and proposes that sediment toxicity testing be used to delineate the extent of contamination requiring excavation in B&M Pond. Post-ROD toxicity testing in the B&M Pond demonstrated that, aside from one location (location SED-05) adjacent to the B&M Landfill, sediments in the B&M Pond that exceeded ROD established cleanup levels were not toxic to ecological receptors. Therefore, only sediments in the vicinity of SED-05, as determined by toxicity testing, will require excavation.

All other sediment and groundwater components of the remedy documented in the July 25, 2011 ROD are unchanged and are not impacted by this ESD.

IV. DESCRIPTION OF SIGNIFICANT DIFFERENCES

The modifications to the remedy are summarized below.

Original Remedy for Iron Horse Park OU4

The original remedy for Iron Horse Park OU4 is described in detail in Section I.D. of this ESD.

Modified Remedy

The purpose of this ESD is to modify the portion of the remedy regarding contaminated sediments in the B&M Pond.

Because most of the sediment in B&M Pond is not toxic, the volume of sediment in need of excavation in the pond is reduced from the estimated volume in the OU4 ROD.

Sediment cleanup levels established in the ROD are no longer appropriate to delineate the limits of sediment excavation in the B&M Pond. Instead, toxicity testing will be used to delineate the area that will require remediation. EPA estimates that the volume of sediments in need of excavation will not exceed 1,000 cubic yards (see Figure 2). The OU4 ROD estimated volume of sediments in need of excavation was 7,400 cubic yards.

Sediment that exhibits toxicity as a result of toxicity testing will be excavated and disposed as described in the OU4 ROD.

Summary of Costs

There will be reduced costs associated with this ESD due to a reduction in the estimated volume of sediment to be excavated in B&M Pond.

Based on an estimated maximum volume of sediment excavation of approximately 1,000

cubic yards the estimated capital cost for OU4 would fall from \$3.4 million to approximately \$735,000.

V. SUPPORTING AGENCY COMMENTS

The Commonwealth of Massachusetts indicated concurrence with the ESD in a letter dated June 19, 2014.

VI. STATUTORY DETERMINATIONS

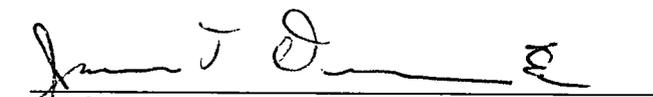
This ESD documents EPA's modification of the OU4 ROD to change the cleanup levels used to determine the extent of contaminated sediments in the B&M Pond requiring excavation and the resulting estimated volume of contaminated sediment in B&M Pond requiring excavation.

EPA believes that the modified remedy as stated in this ESD remains protective of human health and the environment, complies with all Federal and State requirements that are applicable or relevant and appropriate to this remedial action, meets the remedial action objectives specified in the OU4 ROD, and is cost-effective.

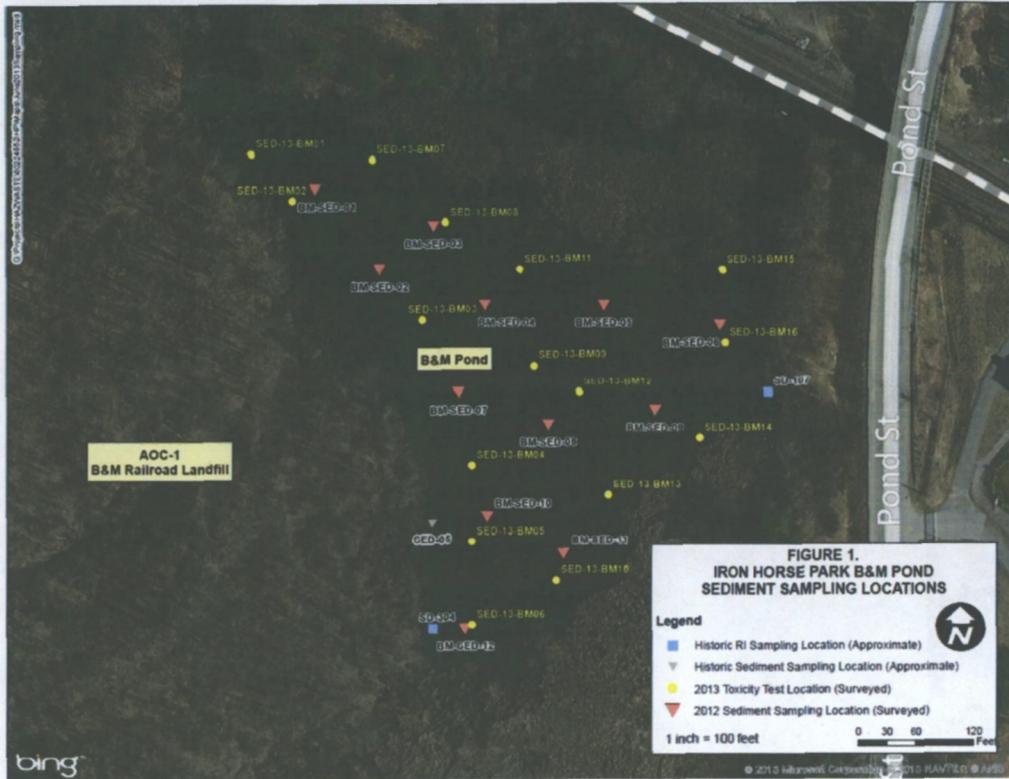
VII. PUBLIC PARTICIPATION COMPLIANCE

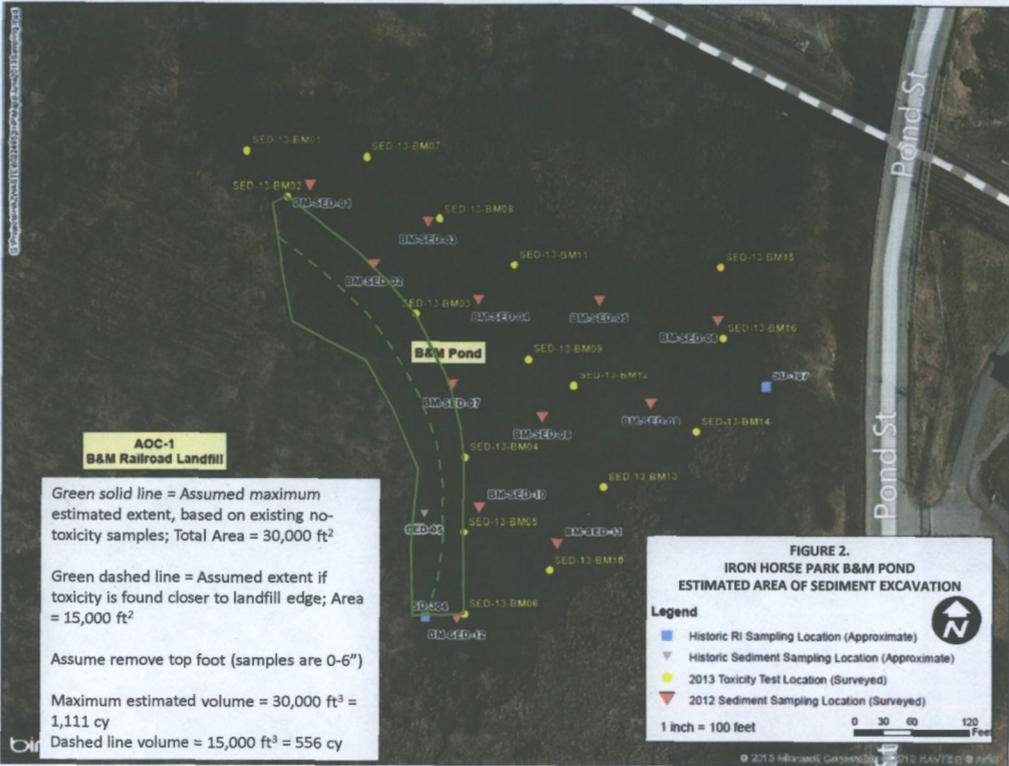
EPA provided a 30-day public comment period on this ESD from May 5, 2014 through June 9, 2014. Notice of availability for review of the ESD and the Administrative Record was published in the Lowell Sun newspaper on May 5, 2014, encouraging the public to submit comments on this ESD.

The comments received during the comment period and the responsiveness summary prepared by EPA, are attached to this ESD. In accordance with Section 117(d) of CERCLA and Section 300.825(a) of the NCP, the final ESD and supporting documentation are part of the Administrative Record for the Site. This ESD and the Administrative Record are available for public review at the locations and times listed in Section I(E) above.


James T. Owens III, Director
Office of Site Remediation and Restoration

7/22/14
date





Responsiveness Summary

Responsiveness Summary
Explanation of Significant Differences

Iron Horse Park – OU4

July 2014

During the May 5, 2014 to June 9, 2014 comment period, comments on the draft ESD for the remedy at Operable Unit 4 (OU4) of the Iron Horse Park Superfund Site were received from (1) Environmental Resources Management (ERM) on behalf of Pan Am Railways, Inc. (Pan Am); and (2) Michael Clark on behalf of the Massachusetts Bay Transportation Authority (MBTA). The summarized comments of Pan Am and the MBTA, as well as EPA's responses to those comments, are below. The comments are attached to this Responsiveness Summary.

1. Toxicity testing has serious limitations as a performance management tool for defining the limits of excavation in B&M Pond. The primary limitation is that toxicity testing does not differentiate between COCs (contaminants of concern) and naturally occurring stressors, either of which can produce a positive toxicity result.

Response: *Toxicity testing has proven to be very effective at the B&M Pond as a tool to define the limits of impacted sediments. As discussed in the ESD, toxicity testing more accurately delineated the B&M Pond sediments requiring excavation. If a cleanup level evaluation alone had occurred, most of the sediments in the pond would have required excavation.*

The potential for false positives can be mitigated through data evaluation of the toxicity, water quality and associated chemistry analytical results by an experienced data reviewer.

2. Added time and expense of toxicity testing is counter to the purpose of closure samples, which is to provide unambiguous, prompt feedback regarding the limits of the excavation area.

Response: *Given that the sediment in the majority of the B&M Pond has already been eliminated from consideration for excavation as a result of completed toxicity testing, the area that remains under consideration for excavation is extremely limited. Due to the limited area involved, if testing is necessary, only a few samples will likely be needed. Removal of landfill material from the pond to be conducted as part of the OU3 – AOC1 remedy may fully address the impacted pond sediments. This would occur if removal of landfill material extends to the pond area that has already been determined to have no toxicity in sediment. The time needed to conduct and review toxicity data for only a few samples should not result in significant delays given the magnitude of all other associated work at OU4 of the Site.*

3. Analyzing for COCs with cleanup levels, is a better tool than toxicity testing to identify sediments that require removal.

Response: *Toxicity testing and established cleanup levels both have benefits and limitations when considering their potential use as a delineation tool for determining the limits of excavation of sediments. In the case of the B&M Pond, due to the limited area involved and the mix of COCs (see additional discussion below), EPA believes that toxicity testing is the best tool.*

4. Sufficient data exist to support development of revised cleanup levels.

Response: *The commingling of numerous COCs in sediments within B&M Pond creates difficulties and uncertainties when attempting to establish cleanup levels for individual COCs. When there is a mix of contaminants, it is often difficult to determine which contaminant is responsible for toxicity in a particular sample. While increasing numbers of samples can help to reduce the uncertainty, uncertainty is never completely eliminated. As discussed above, due to the limited remaining area of impacted sediments in the Pond that require excavation, the use of toxicity testing is the appropriate means to delineate the remaining sediments requiring excavation.*

5. Support was expressed for toxicity testing to be utilized in other OU4 sediment areas for decision making regarding possible sediment remediation in the future based on long-term monitoring.

Response: *This ESD only addresses sediments within the B&M Pond. However, the concept of potentially utilizing toxicity testing in other areas addressed by the OU4 ROD, in order to assess possible sediment remediation, may be considered by EPA.*

9 June 2014

Via E-mail and FedEx

United States Environmental Protection Agency
New England Region
5 Post Office Square
Boston, MA 02109-3912
Attention: Don McElroy



Re: Comments on Explanation of Significant Differences
Iron Horse Park Superfund Site, Operable Unit 4
Billerica, MA

Dear Mr. McElroy:

Environmental Resources Management (ERM), on behalf of Pan Am Railways, Inc. (Pan Am), is submitting these comments on the Explanation of Significant Differences (ESD) for the above referenced Superfund Site. Public comments on the ESD were solicited by the United States Environmental Protection Agency (USEPA) pursuant to 40 C.F.R. §300.825(b). The ESD documents changes to the remedy set forth in the Record of Decision (ROD) dated 25 July 2011. The ESD pertains only to the remedy for sediment within B&M Pond, which is located within Operable Unit 4 of the Superfund Site. In general, Pan Am agrees with the approach outlined in the ESD and the revision of the excavation extent. Additional comments are provided below.

In the ESD, the USEPA stated that “[s]ediment cleanup levels established in the ROD are no longer appropriate to delineate the limits of sediment excavation in the B&M Pond. Instead, toxicity testing will be used to delineate the area that will require remediation.” For the following reasons, it is Pan Am’s position that the use of cleanup levels, and not toxicity testing, is appropriate for determining the extent of sediment excavation in the limited area of B&M Pond.

Toxicity Testing is Inappropriate As a Performance Management Tool

Toxicity testing was previously used to characterize the general conditions (as they relate to ecological risk) in B&M Pond sediments, and to narrow the scope of future remedial disturbances to the area of the B&M Pond that may pose an unacceptable risk to ecological receptors. The toxicity testing was an

appropriate tool for general characterization purposes. However, toxicity testing has serious limitations as a performance management tool for defining the limits of excavation in the B&M Pond.

The fundamental purpose of the remedial action is to remove sediments that contain constituents of concern (COC) above levels that pose an unacceptable risk to ecological receptors. Excavation of sediments is highly disruptive to the ecosystem; it is therefore important to focus the boundaries of the excavation area to specifically target the COCs above the risk thresholds.

The primary limitation of toxicity testing is that it does not discriminate between COCs and other non-anthropogenic, naturally-occurring stressors that can yield a positive toxicity result. Measured toxicity can be the result of naturally-occurring substances such as ammonia and sulfides, and not COCs. These variables may affect the response of test organisms, and introduce ambiguity into assessing the presence or absence of COCs. Using toxicity testing as a performance management tool would force the decision-making to potentially rely on false positive results, without indication of the presence of a false positive, and without the critical feedback that the targeted COCs were actually removed. In essence, this approach would potentially result in disturbance and removal of sediments that do not contain unacceptable levels of COCs.

Additionally, the added time and expense of toxicity testing is counter to the purpose of the closure samples, which is to provide clear, unambiguous and prompt feedback to support decision-making regarding the limits of the excavation area. All aspects of toxicity testing (collection, analysis, and interpretation) take significantly more time than testing for COCs, and the potential ambiguity with interpretation of the toxicity results (especially identifying false positives) adds another level of uncertainty to the decision-making process.

The Use of Cleanup Levels is More Appropriate for Determining the Extent of Excavation

While toxicity testing was an appropriate tool for characterizing the ecological risk posed by B&M Pond sediments, and for focusing the remedial activities on the sediments that could pose an unacceptable risk, the use of cleanup levels is the appropriate tool for managing the performance of sediment excavation. The use of cleanup levels is a clear, prompt and definite criterion for deciding whether appropriate excavation boundaries have been achieved. Additionally, analysis for COCs provides direct

feedback on the actual contaminants that are the drivers for the remediation, and minimizes the risk of unnecessarily disturbing sediments that do not contain concentrations of COCs that pose an unacceptable risk to ecological receptors.

Based on the results of the Remedial Investigation of the B&M Pond, the COC list (polycyclic aromatic hydrocarbons [PAHs], polychlorinated biphenyls [PCBs], chromium, copper, lead, and zinc) appropriately captures the universe of non-naturally occurring substances of potential ecological concern at the Site. The use of specific cleanup levels for these COCs would not be less protective of the environment than the use of toxicity testing and, in fact, would better identify the need for additional removal of sediments with unacceptable concentrations of COCs.

Sufficient Data Exist to Support Development of Revised Cleanup Levels

The use of site-specific cleanup levels poses no additional burdens on the USEPA or the potentially responsible parties. In fact, USEPA previously calculated draft cleanup levels for the COCs based on the results of the toxicity characterization, which would result in no unacceptable ecological risk. Data on the concentrations of COCs at each of the toxicity testing locations was collected as part of the 2012 and 2013 investigation activities and can be used to calculate revised cleanup levels.

For the foregoing reasons, the use of the revised cleanup levels based on the 2012 and 2013 toxicity testing, rather than additional toxicity testing during the remedial action phase, is most appropriate for determining the extent of sediment excavation in the limited area of B&M Pond.

If you have any questions regarding the above comments, please feel free to contact either of the undersigned at 617-646-7800, or Mr. Dana Banks, Pan Am Railways, at 978-663-1218.

Sincerely,



Gregg Demers, P.E., LSP
Partner-in-Charge



Lyndsey Colburn, P.G.
Project Manager

cc: Dana Banks, Pan Am Railways
Rob Culliford, Pan Am Railways

June 9, 2014 (via email)

OU4 ESD Comments from Michael Clark on behalf of MBTA.

Don,

The Massachusetts Bay Transportation Authority (MBTA) has reviewed the Draft Explanation of Significant Differences (ESD) published May 5, 2014 by the U.S. Environmental Protection Agency (EPA) for the Iron Horse Park Superfund Site Operable Unit 4 (OU4). The MBTA has three comments:

1. The MBTA strongly supports the revised remedy in the ESD for the B&M Pond sediments, including the ESD conclusion that the toxicity testing proved more appropriate than the ROD cleanup levels to delineate the limits of sediment excavation in the B&M Pond.
2. However, the MBTA agrees with the Pan Am June 9, 2014 comments on the ESD that suggest use of revised site-specific cleanup levels for the B&M Pond sediments (rather than further use of toxicity testing to delineate the actual limits of pond sediment excavation during remediation). While toxicity testing was appropriate to make a decision to change the ROD remedy on the pond sediments, the MBTA believes it is appropriate now to develop and use site-specific cleanup levels (based on the existing data from the 2012 and 2013 investigations at the B&M Pond to calculate revised cleanup levels) for the final delineation of B&M Pond sediment excavation.
3. Regarding future sediment remediation decisions by EPA during OU4 for areas other than the B&M Pond, the MBTA strongly supports toxicity testing for EPA's future OU4 decisions on whether or not there should be potential sediment remediation based on the long-term monitoring of sediments in the Unnamed Brook and possible other locations. Those future decisions for whether or not there should be remediation in streams (and if so, what the nature and extent of the remediation should be) should adopt a similar toxicity-based approach to the one proposed in the ESD for the B&M Pond sediments.

If you have any questions, please feel free to contact me.

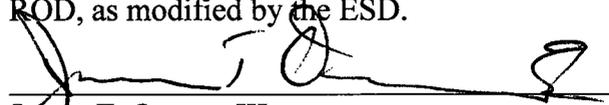
Michael P. Clark, PE, LSP, ENV SP
Board Certified Environmental Engineer
Kennedy/Jenks Consultants
P.O. Box 448 | Westford, MA 01886
Phone: 781.267.3390

TSCA Determination

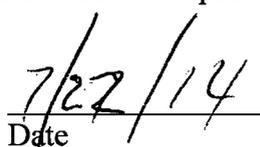
TSCA 40 CFR Section 761.61(c) Determination

Based on historical industrial activity at the Iron Horse Park Superfund Site, Billerica, MA (the Site), PCB-contaminated sediments likely meet the definition of a PCB remediation waste as defined under 40 C.F.R. Section 761.3 and thus are regulated for cleanup and disposal under 40 C.F.R. Part 761. In accordance with the requirements under the Toxic Substances Control Act (TSCA) and 40 C.F.R. Section 761.61(c), I have reviewed the Administrative Record for the Site and considered the dredging, passive dewatering and on or off-site disposal of PCB-contaminated sediment from the B&M Pond on the Site, that exhibits sediment toxicity as determined in Metcalf & Eddy (M&E). 2006a. *Ecological Risk Assessment / Wetlands Remedial Investigation Addendum (ERA/WRIA)*, Iron Horse Park Superfund Site, Operable Unit 4, North Billerica, Massachusetts. September 2006. Based on the information provided, the ROD's plan, as modified by the ESD, to address PCB remediation waste at the Site will not pose an unreasonable risk of injury to health or the environment as long as the following conditions are met:

1. All Site sediment that exhibits sediment toxicity as determined in Metcalf & Eddy (M&E). 2006a. *Ecological Risk Assessment / Wetlands Remedial Investigation Addendum (ERA/WRIA)*, Iron Horse Park Superfund Site, Operable Unit 4, North Billerica, Massachusetts. September 2006 shall be dredged from the Site and disposed of in accordance with 40 CFR Section 761.61 at a suitable licensed off-site disposal facility or within Operable Unit 3 (OU3) provided it meets the TSCA protectiveness standards under 40 C.F.R. 761.61(c).
2. EPA shall evaluate on-site disposal within the OU3 area and will issue an OU3 decision document that finds that the disposal of the sediment within the OU3 area will not pose an unreasonable risk of injury to health or the environment, before disposal of any sediment exceeding TSCA risk-standards within the OU3 area.
3. Water quality monitoring shall be performed during the dredging, passive dewatering and on-site management of dredged sediment to ensure that turbidity and toxicity levels comply with the performance criteria specified in the ROD, as modified by the ESD.
4. Air monitoring and appropriate dust suppression measures shall be implemented to ensure that airborne PCB levels from the dredging, passive dewatering, and management of dredged sediment prior to off-site or on-site disposal are below levels of concern specified in the ROD, as modified by the ESD.



James T. Owens, III
Director, Office of Site Remediation and Restoration



Date

State Concurrence Letter



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

DEVAL L. PATRICK
Governor

RICHARD K. SULLIVAN JR.
Secretary

DAVID W. CASH
Commissioner

June 19, 2014

Mr. Robert Cianciarulo, Chief
Massachusetts Superfund Section
US EPA, Mail Code: OSRR07-01
5 Post Office Square, Suite 100
Boston, MA 02109

RE: MassDEP Concurrence Letter
Draft ESD 2014. Iron Horse Park
Superfund Site OU#4.
Billerica, MA

Dear Mr. Cianciarulo:

The Massachusetts Department of Environmental Protection (MassDEP) has reviewed the proposed Explanation of Significant Differences (ESD) for the fourth Operable Unit of the Iron Horse Park Superfund Site. The ESD proposes two changes. The first is the reduction of the volume of contaminated sediment requiring excavation in B&M Pond from 7,400 cubic yards to approximately 1,000 cubic yards. The second change is to eliminate specific sediment cleanup numbers and instead use toxicity of samples when delineating the extent of contaminated sediment requiring excavation in B&M Pond. The MassDEP has reviewed the ESD and supporting information and concurs with the changes being proposed by EPA in this ESD.

Additional sampling and toxicity testing conducted in 2012 and 2013 indicated that most locations in the B&M Pond where results exceeded sediment cleanup levels established in the ROD were shown to be non-toxic. Therefore, EPA determined that the ROD identified sediment cleanup levels are no longer appropriate. The ROD estimated that approximately 7,400 cubic yards of B&M Pond sediment would need to be excavated. It is now estimated that up to approximately 1,000 cubic yards will require excavation. The limit of sediment excavation will be delineated with additional sampling. Sediment that exhibits toxicity as a result of toxicity testing will be excavated and disposed of as described in the ROD.

Mr. Robert Cianciarulo
June 19, 2014
Page 2

The Department believes that the change to sediment cleanup levels and reduced volume requiring excavation will not have an impact on the protectiveness of the Selected Remedy for this AOC.

If you have any questions regarding this letter or the attached comments, please contact Janet Waldron at (617) 556-1156.

Sincerely,



Paul Locke
Division Director
Bureau of Waste Site Cleanup

Cc: Don McElroy, USEPA
Susan Scott, USEPA
Janet Waldron, MassDEP
Andy Cohen, MassDEP
E-file:\05_ROD\2014_0619_DEPLtr_Concur_2014ESD