

**Technical Review Panel (TRP)
Decision Document
Site Remediation and Waste Management Program**

Technical Review Request #5

Panelists: Barry Frasco, Assistant Director, Hazardous Site Science Element
Ed Putnam, Assistant Director, Remedial Response Element
Kevin Kratina, Acting Assistant Director, Responsible Party Remediation Element

Remediating Party: Rhodia, Inc.

Date of Request: 9/17/03

Consultants: Mactec Engineering and Consulting
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Date of Meeting: 1/13/04

URS Corporation
Michael Carnese
201 Willowbrook Blvd.
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Site Address: Rhodia, Inc./Rhone Poulenc
298 Jersey Ave.
New Brunswick, NJ 08901
ISRA Case # E86328
PI#:G000001656

Background:

Rhodia has manufactured fragrances for the beauty and household product industries at this 20-acre parcel since the early 1950s. Historical operations have also included assorted chemical manufacture, diesel/gasoline motor manufacture, a municipal incinerator and an ash landfill. Rhodia industrial operations ceased at this location in April 2002.

The area surrounding the site is primarily industrial and was developed prior to 1920. The site is bisected by the Mile Run Brook (MRB) which flows north through the site for nearly 2000 feet. Fill within a flood plain was used to bring the original stream bank up to grade level for building construction. Over 50 areas of concern have been identified and investigated at this site since triggering the Environmental Cleanup and Responsibility Act (ECRA) in 1986.

Disputed Technical Issues per the Technical Review Request

In summary, there are two main issues being addressed as part of this technical review request:

- 1) The first involves the need for an engineering control for contaminated historic fill that has been identified along the banks of the Mile Run Brook (MRB). The banks of the MRB in this area are generally steep, unstable and historic fill is exposed. Contamination with polycyclic aromatic hydrocarbons (PAHs) and metals has been identified above residential and non-residential criteria. Rhodia has proposed an institutional control only, based on a risk assessment. Rhodia disputes that if the Department requires an engineering control as a matter of policy for contaminants that exceed the non-residential cleanup criteria, responsible parties are precluded from evaluating impacts to receptors on site specific basis. Rhodia further disputes that the Department policy of requiring engineering and institutional controls is not supported by the plain language of the Brownfields and Contaminated Sites Remediation Act (N.J.S.A. 58:10B-1 et seq.) or the Industrial Site Recovery Act (ISRA or N.J.S.A. 13:K-1 et seq.). In addition, Rhodia believes that on the basis of their risk assessment, the historic fill does not represent an impact to human health and the environment thus supporting no need for an engineering control.
- 2) Secondly, the appropriate background concentrations for PCBs in the banks of the MRB is in disagreement. This dispute stems from the lack of agreement on the sampling locations by which background levels should be determined. Rhodia claims that the PCB samples associated with an upstream PCB transformer release (not associated with the Rhodia site) and cleanup is adequate to document background concentrations. Rhodia proposes a background concentration of 32.9 ppm based on the sum of the highest concentration of Aroclor 1248 (26 ppm), Aroclor 1254 (6.5 ppm) and the upstream PCB cleanup criteria for Aroclor 1260 (0.55 ppm). Rhodia claims that the approximate 6000 foot length of MRB sampled as a result of the upstream transformer spill is more appropriate for determining background in this case than sampling a 150-foot segment upstream of the Rhodia property boundary as required by the Department.

Decision of the Technical Review Panel

Issue 1: The Department has allowed Rhodia to propose an alternate remediation criteria (ARC) for this site. The Department has reviewed the submitted risk assessment titled “Human Health Evaluation of Historic Fill Along Mile Run Brook” dated February 19, 2004. The stated purpose of the risk assessment is to evaluate surface runoff/erosion from the bank soils to human receptors and to determine if the historic fill (from bank soils) poses unacceptable risks, when or if, the soils become brook sediments. The contamination in question is located in historic fill as bank soils. The risk assessment limits the amount of sediment ingestion to 10 mg/day for adults and 20 mg/day for children. In addition, Rhodia did not consider a worker scenario since the facility is

inactive with a fence and security. The Department disagrees with the basic pathways of exposure, risk assessment scenarios and ingestion rates.

The evaluation of human health impacts from sediment is rarely considered in a risk assessment since there are no standardized exposure variables for evaluating dermal contact and incidental ingestion of sediments. There is also great uncertainty concerning the assumptions used in the calculations of the exposure pathways (e.g., adherence factors, exposure time and duration for sediments). Exposure to sediments has generally been found to contribute less to human health risk than through the soil direct contact pathway, due to the length of time exposed. Impacts from contaminated sediment in a brook are more appropriately evaluated for ecological concerns through comparison to the Department's sediment screening criteria.

The Department's position, consistent with USEPA's recommendations, is to utilize a soil ingestion rate of 100mg/day for the evaluation of a "Trespasser" and "Outdoor Worker" scenarios. The USEPA's outdoor worker exposure scenario includes an ingestion rate of 100mg/day and an exposure frequency of 225 days/year for 25 years as outlined in the USEPA's *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites, August 2001*. Using these two scenarios, the Department recalculated the direct contact alternate remediation criteria for benzo-a-pyrene (BaP) and arsenic since they represented the more critical contaminants of concern. An average body weight of 42 kilograms was utilized for the 6-16 year old trespasser scenario consistent with EPA's Exposure Factors Handbook dated August 1997. In addition, exposure to bank soils was based on two days per week for the trespasser scenario.

The trespasser scenario results in an ARC ranging from 0.7 to 1.41 ppm for BaP based on the applicable exposure frequency. These ARC are above the NJDEP's current Direct Contact Soil Cleanup Criteria (DCSCC) of 0.66 ppm that is based on the analytical practical quantitation limit (PQL) for BaP. The Department's recalculation also indicates that the outdoor worker scenario results in an ARC of 0.44 ppm. The outdoor worker based ARC would default to the BaP PQL based on the DCSCC of 0.66 ppm.

The trespasser scenario ARC ranged from 3.42 to 6.88 ppm for arsenic. These values are below the current arsenic DCSCC of 20 ppm, which is based on statewide natural background level of arsenic. For arsenic, the outdoor worker resulted in an ARC of 2.12 ppm. The outdoor worker based ARC would default to the current arsenic DCSCC of 20 ppm. The recalculation of the ARC shows that the risk assessment provides no relief to Rhodia in disputing the potential future exposure using either a trespasser or outdoor worker scenario. The presence of elevated levels of arsenic up to 51 ppm and BaP up to 4.6 ppm, as indicator chemicals at the site, demonstrates the potential for human health impacts associated with direct contact exposure to the bank soils. Therefore, as a minimum remedial remedy, an engineered cap will be required to address the historic fill related contaminants. By allowing the submittal of the above referenced risk assessment, the Department has allowed Rhodia to evaluate site specific impacts to receptors.

Rhodia claims that the Department does not have the authority to require both engineering and institutional controls based on the language contained in ISRA or the Brownfields and Contaminated Sites Recovery Act (BCSRA). The Department disagrees with the Rhodia's interpretation of BCSRA as the entire reading of this statute must be taken into account. The Department directs Rhodia to the definition of a "Restricted use remedial action" in BCSRA that "means any remedial action that requires the continued use of **engineering and institutional controls in order to meet the established health risk or environmental standards** (emphasis added). Further, BCSRA, states that

"Unrestricted use remedial actions, limited restricted use remedial actions and restricted use remedial actions shall be allowed except that unrestricted use remedial actions and limited restricted use remedial actions shall be preferred over restricted use remedial actions. The department, however, may not disapprove the use of a restricted use remedial action or a limited restricted use remedial action so long as the selected remedial action meets the health risk standard established in subsection d. of this section, and where, as applicable, is protective of the environment. The choice of the remedial action to be implemented shall be made by the person performing the remediation in accordance with regulations adopted by the department (emphasis added) and that choice of the remedial action shall be approved by the department if all the criteria for remedial action selection enumerated in this section, as applicable, are met. The department may not require a person to compare or investigate any alternative remedial action as part of its review of the selected remedial action."

The Department has clearly adopted regulations at N.J.A.C 7:26E that allow responsible parties the ability to select a remedy consistent with BCSRA provided minimum requirements are met. Since the Department has determined that the site does present a risk to human health, the Department does have the authority and has exercised that authority to require Rhodia to meet the required health risk standards. Contaminant levels exceed non-residential cleanup criteria and any proposal to leave contamination in place above unrestricted use criteria must be accompanied by a plan to eliminate the potential for future expose by capping and the maintenance of those controls.

The TRP finds that any plan to leave contamination above a non-residential cleanup criteria in this case requires both engineering and institutional controls to eliminate future risk. In addition, the uncontrolled erosion of solid waste to MRB must be stopped. The Department is willing to discuss options of slope stabilization that could be combined with security fencing that could accomplish engineering requirements.

Issue 2:

Determining cleanup criteria for PCBs for this site must be based on an evaluation of all the available PCB data from the MRB. Rhodia's approach to proposing 32.9 ppm, as the PCB cleanup criteria, based in part on the sum of the highest level of Aroclors 1248 (26 ppm) and 1254 (6.5 ppm) from the Paddington Estates' investigation and cleanup, falls short of taking into account all the available data. Rhodia's own request for the TRP review specifically notes "in the two upstream sections of the remediation closest to Rhodia's property (Sections IV and V) represent a data set that is both: 1) representative of conditions that may have impacted Rhodia's property and further downstream; and 2) more extensive and, therefore, representative of background conditions than samples taken from immediately upstream of Rhodia's Site." Rhodia goes on to criticize the

Department for selecting a single point for a “background level” when Rhodia’s own proposal is based on selective single point sampling. Rhodia targets the highest PCB results for the proposed “background” number, and by doing so, falls way short of acknowledging the majority of upstream samples in Sections IV and V that are more representative of a much lower distribution of PCBs.

The Paddington Estates remedial investigation documents the collection of well over 400 PCB samples collected from transects, random locations and pre-excavation verification areas spaced out in five sections over a 6000-foot stretch of the MRB upstream of the Rhodia property; the last section which ends approximately 150 feet upstream of the Rhodia property line. The Paddington Estates’ data documents that Aroclors 1248 and 1254 were not detected in the first four sections of the MRB. In addition, Rhodia’s proposal to use the concentration of Aroclor 1254 at 6.5 ppm from Section IV fails to recognize that there are well over 60 samples analyzed for PCBs in 1000-foot Section V that only show three samples with any detection of Aroclor 1254 ranging from .2 to .7 ppm. Given all this data, the 6.5 ppm contribution from Aroclor 1254 fails to represent a “background” impact to the Rhodia site.

As documented in the Paddington Estates case file, areas where flow is restricted (i.e. bridge crossings) along the MRB tend to demonstrate higher PCB concentrations. In selecting a background contribution from Aroclor 1248, Rhodia selected the highest sample result for Aroclor 1248 that was detected just upstream at the Amtrak Northeast Corridor Train Bridge. This single sample location fails to take into account the results from over 60 samples collected in Section V that are more representative of unrestricted stream flow and potential PCB deposition. Out of all the data points in Section V, that are not located adjacent to the Train Bridge, only one other sample showed Aroclor 1248 even approaching the proposed background contribution of 26 ppm (sample at 23 ppm for Aroclor 1248). These select sample points fail to demonstrate a “background” level of contamination impacting the Rhodia property given the volume of upstream PCB data.

Rhodia proposes to use a cleanup criteria associated with Aroclor 1260 of .55 ppm. This value is acceptable to the Department and is consistent with the remediation conducted by Paddington Estates. Please note that it appears that the Section V map associated with the Paddington Estates file shows an incorrect concentration of Aroclor 1260 at 18.4 ppm for sample SEC V-1E. This value was used in the Rhodia’s presentation to the TRP. The report narrative and results table shows the result for this sample at 17.2 ppm for Aroclor 1248.

Rhodia further claims that it is inappropriate to sample the stretch of the MRB directly up stream of their property line due the steep bank grade and scour zone created by the outfall pipe claiming that this will result in a biased low sample. However, Rhodia then proposes to use the results from samples taken near depositional areas (highest sample results) and apply them to their entire site regardless of the nature of stream flow and deposition.

The PCB data collected on the Rhodia site demonstrate significant onsite impacts to bank soils well in excess of the levels shown upstream. In addition, Rhodia is responsible for the remediation of PCBs located at the transformer lay down area of concern at the southern most property boundary where MRB enters the Rhodia property.

The TRP finds that Rhodia's proposed background level for total PCBs is unacceptable. As noted in the Paddington Estates' file, the PCB concentrations generally decrease with distance along the length of the MRB. In addition, the Paddington Estates' file notes that in areas of steep banks, PCB delineation is achieved in short distance from the stream channel. While not discrediting the volume of upstream data collected, Rhodia must sample for PCBs immediately up stream (away from the PCB impacts associated with the Rhodia site) between the Amtrak Bridge and the New Brunswick Storm Sewer Outfall. Rhodia's concern that the data may be biased low is not justified given the upstream data that documents the PCB results are much lower than Rhodia's proposed cleanup level.

At a minimum Rhodia shall sample two transects. Each transect shall be placed up the banks on both sides of the MRB. From the contour lines depicted on the "Upper Reach Surface Soil Sample Locations" map, it appears the transects will be able to target areas of a varying bank grade and stream conditions. Samples shall be taken every vertical two feet up to the high water level with a minimum of 8 samples per transect (4 on each side of the brook). The case manager shall be contacted prior to sampling to select the locations for placing the transects.

Please note that the outcome of any background determination associated with this sampling only applies to the bank soils up to the high water level in MRB and not above. Since the PCB sampling will be able to differentiate Aroclors, Rhodia shall not propose a total background PCB cleanup level but rather propose cleanup levels for each Aroclor based on background levels, if present. To be clear, Rhodia should not propose to use a background concentration based on Aroclor 1260 (for example and if present) and apply that to an Aroclor that was not detected in background samples. Based on the above sampling, Rhodia shall propose background levels that are representative from the samples being collected immediately up stream of the Rhodia site.