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ADDENDUM

The purpose of this addendum to the Analysis of Alternatives (AOA) Report, Du Pont, Necco Park Site, Niagara Falls, New York (October, 1995), is to provide the reader with additional comments made by the U.S. Environmental Protection Agency (EPA) on the AOA Report. For the purposes of finalizing this document in a timely manner, although under separate cover, this addendum is part of the AOA and should be considered as such.

ADDITIONAL COMMENTS

* Du Pont has presented new figures, tables and conclusions in this AOA based on analytical data collected after the remedial investigation (completed in 1992). The EPA has not validated any of the post-investigation data collected by Du Pont and can not verify the information presented in the new tables, figures and conclusions. For example, information is presented in the report indicating decreasing trends in groundwater contamination. However, this decreasing trend is based largely on data collected after the investigation. Therefore, the EPA has concerns with the use of this data and will not rely solely on the information collected after the remedial investigation to determine trends in groundwater concentrations or evaluate remedial alternatives. The EPA will consider the data as a supplement to validated data collected from previous investigations, but does not believe that the post-investigation data significantly alters EPA's interpretations or conclusions concerning groundwater conditions at Necco Park.

* The EPA has concerns regarding the modeling approach used in the AOA. The use of multiple models with differing assumptions may not provide completely accurate simulations of groundwater conditions or adequately evaluate the impacts of the various remedial alternatives. EPA has a number of specific comments on the various models. However, EPA believes that it is more important to continue to proceed with completing the Investigation and Analysis of Alternatives (I/AOA) process rather than spend additional time correcting the models since there is some uncertainty associated with modeling in a fractured media. Furthermore, models are only a supplemental tool to be used in evaluating various remedial options. Therefore, EPA will not comment on technical problems associated with the modeling. Instead, EPA is providing this addendum to the AOA citing EPA's concerns with the modeling.

* In the Executive Summary and in other section of the AOA Report, Du Pont claims to have achieved "substantial containment and control of groundwater in the source area in the upper bedrock zones" from the operation of recovery wells completed in the upper bedrock. The EPA does not believe that Du Pont has sufficiently demonstrated hydraulic containment of the source area groundwater in the upper bedrock zones (B&C zones) for a number of reasons including: 1) Conceptual capture zones presented in the AOA (Figures 1-14, 1-16 and 1-18) do not completely cover the source area; 2) The conceptual capture zones represent the optimal pumping conditions which are not consistently achieved. Review of the pumping records for wells RW-1, RW-2 and RW-3 reveals that the pumping has been inconsistent. The pumps are frequently down due to various mechanical problems and pumping rates fluctuate widely. 3) Groundwater at the edge of the conceptual capture zone may not be captured but may only be influenced by pumping. 4) Actual capture zones have not been calculated. These factors make the claim of "containment" in the upper bedrock of the source area improbable.

* In the Executive summary and in other sections of the report Du Pont concludes that trends in groundwater contamination indicate the diffusion of chemical constituents into the bedrock matrix which would continue to act as a low-level source of contamination throughout areas down gradient of Necco Park. The EPA and NYSDEC do not believe that the data collected to date clearly demonstrates that matrix diffusion has occurred and is controlling contaminant concentrations down gradient of the source area. In addition the EPA has concerns regarding model conceptualization and the uncertainty of modeling in fractured bedrock.

* In the Executive summary and other section of the AOA Report Du Pont makes the statement that the NYPA conduit drainage system and the Falls Street tunnel capture "a substantial portion" of dissolved Necco Park constituents in the groundwater. While the NYPA drainage conduits would intercept groundwater flow in the lower bedrock zones (D through G), the EPA does not believe Du Pont has demonstrated that "most", or "all but a small percentage of", the groundwater flowing south in the upper bedrock zones (B and C) from Necco Park enters the Falls Street tunnel. In addition the AOA report also states that a portion of the groundwater captured by the Falls Street tunnel and the NYPA drainage conduits is diverted to the City of Niagara Falls publicly owned treatment works (POTW) where it is treated before discharge to the Niagara River. The EPA provides the following information for clarification: At a minimum, an undetermined amount of groundwater flowing south from Necco Park in the upper bedrock zones (B and C) has the potential to, or does, enter the Falls Street tunnel. Currently, 100% of dry weather flow in the tunnel goes to the Niagara Falls POTW. Also, groundwater flowing west from Necco Park in the middle and lower bedrock

zones (D through G) has the potential to, or does, enter the NYPA drainage conduits. There is a direct hydraulic connection between the NYPA drainage conduits and the Falls Street tunnel where the two structures cross. It is believed that water from the drainage conduits enters the Falls Street tunnel at this intersection which is located southwest of Necco Park. Water entering the Falls Street tunnel goes to the Niagara Falls POTW. However, there is currently insufficient information to determine the direction of flow in the NYPA conduit drains on a continual basis. It is believed that fluctuations in water used by the NYPA creates changes in flow direction in the NYPA conduit drainage system. Therefore, any groundwater contamination from Necco Park that may enter the conduit drainage system has the potential to flow either to the north where it may discharge to the Forebay Canal through bedrock fractures, or to the south where at least a portion of the water enters the Falls Street tunnel.

* Section 1.6.4.1 - Du Pont references Kappel 1995b in the AOA Report. This reference cites information from unpublished sources which have not been verified or finalized and are subject to change. Therefore, all reference to unpublished data or information (Kappel 1995b) and any conclusions drawn from that information shall be disregarded.

* Figure 1-10 and reference to this Figure is based on information from an unpublished source. Information from unpublished sources have not been verified or finalized and are subject to change. Therefore, all reference to unpublished data or information (Kappel 1995b) and any conclusions drawn from that information shall be disregarded.

* All reference to dollar amounts spent by Du Pont at this Site have not been verified by the EPA.