

Toby

M E M O R A N D U M

TO: Hooker File

FROM: Toby

DATE: 13 October 1981

Dr. Mason, in his affidavit in the U.S. response to the amici brief, states on page 3, paragraph 9, that the remedial concept in the agreement was selected from entombment in place, excavation, grout curtain walls, incineration, and purge well systems. He said that assuming the chemicals have moved a minimum of 500 feet west, northwest, and north and have migrated into the fractured zone of the the lockport formation, that a minimum of 1,860,000 tons of soil and 870,000 tons of rock would have to be removed and that it would require blasting and the use of heavy earth-moving equipment. He says that removal of at least this volume of material would be essential if the amici's arguments regarding TCDD are correct. However, cross-examination of Dr. Mason revealed that he had not made any investigations into any sites, was not aware of even the other Hooker site, Montague, where a similar volume of waste containing some dioxin is to be evacuated and placed in a clay vault. It is clear that Dr. Mason did not seriously investigate excavation as an alternative. He also misrepresented amici's submission that the primary source of contamination should be excavated with purge wells placed at the site to remove the wastes that had already migrated from the landfill.

Dr. Mason, in paragraph 23 of his affidavit, also states that the purge well and leachate collection system proposed in the settlement agreement allow the chemicals to be removed over a relatively short period of time without the major environmental upset and risk of harm that would result from the excavation of a very large volume of contaminated material. He also cites Dr. Kleppinger as saying that even clay is permeable. He says that a clay vault would therefore release the chemicals at a very slow rate over thousands of years with no assurance that they would be collected after they leave the site where they are entombed. It seems clear that if the primary contaminant source is left in place at Hyde Park, the chemicals will continue to leach out towards the Niagara Gorge for thousands of years and that the short period of time that Dr. Mason talks about is totally unfounded and without any basis. On the other hand, a controlled clay vault with a leachate collection system in place, would certainly be able to run for a finite time. Here with the fractured lockport dolomite and contamination in the Rochester Shale, there is no guarantee that a purge well system would even collect all the wastes. It is certainly arguable right now whether excavation is even technology that can be considered by the parties under RRT. Hooker's response document to the amici brief on page 16 says that the government relief was grounded in in situ efforts and "had the government pressed for waste removal along the lines proposed by amici, Hooker would have rejected settlement as a viable option." It also says that "Hooker will not be voluntarily associated with any remedial effort which included such a plan". This seems to be setting the stage for further litigation about

the excavation option. The settlement agreement should be modified to clearly include a study and full evaluation of excavation as remedial technology at the beginning and not as a strategy to be used if all else fails.

EXTENT OF CONTAMINATION

Paul Counterman in his affidavit in the New York State response to the amici brief says that he has known of the presence of non-aqueous phase organic chemicals in observation well 18-79 and says the agreement addresses this.

Kernan Davis says he raised the issue of leachate migration to depths below 15' below the surface of the bedrock. It seems at this point in time both Davis and Counterman are admitting the presence of chemicals below the 15' into the lockport dolomite and therefore are already admitting that RRT is going to be necessary. It is clear this must have been known at the time of the settlement agreement and that certainly technology should have been specified to clean up these areas of known contamination at this time.

RE: SHALE

Twedell in his affidavit in the U.S. response to the amici brief in paragraph 14, page 5, says after the evaluation of the data it may become necessary for EPA and New York States to require Hooker to modify the proposed remedial system so that chemicals are collected throughout the entire lockport formation, relying on the Rochester formation as a physical bottom for the technology employed.

Mason in paragraph 16 says that the technical team designed the monitoring and survey system in such a way that the distribution of chemicals from the surface down to the Rochester formation will be identified. If chemicals are found in the lockport formation, RRT will be used to determine how to contain the chemicals at these lower depths if possible.

TV:kh

Government Pre-Hearing Statement, page 6, re fingerprint chemicals. They include chemicals that Hooker is known to have deposited in large quantities, e.g. 16,500 tons of chloro-benzene wastes. It also says that hexachloro-cyclohexanes were selected as fingerprint chemicals because of their extreme toxicity.

Page 9, they say that one additional consideration regarding the selection of MCB, MCT, TCP, and HCB is that they are easy to measure analytically and test results are obtained quickly. TCDD analysis, on the other hand, is extremely time-consuming. This is due to the fact that there is limited nation-wide laboratory capability to analyze for TCDD in accordance with approved federal government laboratory practices. Thus, if all samples collected for the purpose of the proposed agreement were to be analyzed for TCDD, there would be lengthy delays in implementation of the remedial programs.

Page 10, EPA personnel inspected the Niagara Gorge face during the summer of '79 and did not find evidence of groundwater contamination. Non-aqueous phase chemicals have been found at a depth of 50' into the bedrock at a distance of 700' from the landfill.

Page 11, because of the many variables involved, no best estimate of the experts as to the rate of flow can be given at this time.

Page 12, the Johnston study supports the belief that a governmental experts at the Rochester Shale will act as a barrier to the downward migration of chemicals. As Johnston notes, the Rochester Shale at the top is almost impermeable and acts as a confining bed...page 19.

Page 22, total excavation and incineration of the Hyde Park chemicals and contaminated soils, rock and other material was carefully considered in the course of the negotiations.

Page 29, re shale: It is the opinion of the governmental experts that the Rochester Shale will act as a barrier to the downward migration of chemicals. This opinion is based on the Johnston study and the personal experience of Dr. David Twedell and Mr. Kernan Davis who had visually examined various rock course from the Rochester Shale.

Page 44, question (this is from the Judge's order) What is the possibility of the chemicals drifting downward to the Rochester Shale?

Answer: Governmental experts believe that the aqueous phase chemicals have and will continue to migrate into the lockport dolomite. Most of this migration is believed to be in the upper ten to fifteen feet of the lockport dolomite. The non-aqueous phase chemicals will flow through the cracks in the fractured rock; they will flow under the force of gravity that will preferentially move in the same direction as the dip or slant of the bedding planes of the rock. It is unknown at this time whether the lower portion of the lockport dolomite will prevent the migration of non-aqueous phase chemicals; however, it is unlikely that non-aqueous phase chemicals would migrate below the top of the Rochester Shale.