

UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF NEW YORK

UNITED STATES OF AMERICA,
THE STATE OF NEW YORK

Plaintiffs,

v.

HOOKEER CHEMICALS & PLASTICS CORP.;
OXY CHEMICAL CORPORATION; HOOKEER
CHEMICAL CORPORATION; OCCIDENTAL
PETROLEUM INVESTMENT CO.; THE TOWN
OF LEWISTON; THE TOWN OF NIAGARA,
(Hyde Park Landfill).

Defendants.

Civil Action No. 79-989

AFFIDAVIT OF BENJAMIN J. MASON

STATE OF VIRGINIA)
COUNTY FAIRFAX) ss.
CITY OF SPRINGFIELD)

Dr. Benjamin J. Mason, being duly sworn, deposes
and says:

1. My office is located at 7606 Long Pine Drive,
Springfield, VA 22151.
2. I am a private consultant and the principal of
Ethura, an environmental consulting firm.
3. I am a soil scientist by profession and am
certified by the American Registry of Certified Professionals
in Agronomy, Crops and Soils (Certificate No. 1271).
4. I have a Doctor of Philosophy in the field of
soils from Oregon State University where I served as a full
time researcher on the staff of the Soils Department.

5. Since completion of the PHD degree in 1967, I have served as a research scientist and consultant in the environmental field specializing in pollutant migration, the effects of pollutants and risk assessment.

6. Prior to starting my own consulting business, I worked as Principal Scientist for Geomet Technologies, Inc. where I carried out research and managed contracts dealing with environmental carcinogenesis, hazardous waste assessment, and landfill evaluations. In this capacity I served as the Project Manager and Soil Scientist for an environmental study conducted by the EPA Office of Research and Development at the Love Canal Landfill in Niagara Falls, New York. I was responsible for collecting and examining approximately 250 soil cores from the area.

7. Since April 1979, I have been working closely with the U.S. EPA and U.S. Department of Justice regarding the Hyde Park litigation. I have participated in most of the technical negotiating sessions held between the governmental parties and Hooker, and have provided technical support in the area of soils and environmental monitoring. I have examined all of the data concerning the Hyde Park Landfill as well as numerous soil and rock cores from the Niagara Falls area. ✓

8. The primary objective of this affidavit is to clarify those provisions of the Stipulation and Judgment Approving Settlement Agreement which have been misinterpreted

by two consultants, Mr. Grant Anderson and Dr. Edward W. Kleppinger, who provided statements for the Amici Brief dated June 30, 1981.

9. The remedial concept proposed in the Settlement Agreement was believed to be the only viable alternative. It was selected from the following alternatives: entombment in place, excavation, grout certain walls, incineration, and purge well systems. *which was that?*

10. Two choices were open to the negotiating team:

(1) to design the entire remedial system in the Settlement Agreement, or (2) to develop the basic concepts of the remedial system but delay the final design until adequate data were acquired under court and EPA supervision. The latter approach was chosen by the team in order to expedite the development of the design of the proposed remedial system and to obtain data that we believed would ultimately be more reliable than data acquired by any other legal mandate. *why not get the facts?* *why?*

11. The monitoring program encompassed in the Settlement Agreement provides for a well system designed to determine the distribution of chemicals, the concentrations of key marker chemicals and the hydraulic characteristics of the area. Without this data, it would be impossible to design a meaningful containment system.

12. The negotiating team believes that the nature of this site is such that there is a strong possibility that the chemical wastes were placed in direct contact with the Lockport Formation.

13. The data available to the negotiating team indicated the presence of chemicals in well OW-18-79, which is approximately 500 feet to the west of the northwest corner of the Hyde Park Landfill. The most likely route of migration for the chemical was in the highly fractured upper layer (approximately 15 feet thick) of the Lockport Formation. Any chemical reaching this fractured zone will migrate in the direction of groundwater if it is in an aqueous phase, and along the dip of the bedding planes if it is in a non-aqueous phase. The rate of migration depends not only upon the hydraulic gradient of the groundwater, but also upon the fluid dynamics of the non-aqueous phase chemicals, which appear to act contrary to the water flow patterns at times.

14. Dr. Kleppinger and Mr. Anderson both note that the piezometric head in the Lockport Formation lies above the top of the bedrock, thus indicating an artesian effect at some points. This effect, however, which would cause water to rise above the top of the bedrock in some wells, does not alter the fact that the hydraulic gradient is steeply downward. This downward gradient is also strongly influenced by the tight lower layer of the Lockport Formation and ultimately, the underlying Rochester Formation which is a very tight shale.

→ Anderson
Clearly
states
that

on
what
basis

2
15. The highly fractured zone of the Lockport Formation lies between a tight portion of the Lockport Formation below and a relatively tight layer of clay or till above. This stratigraphy creates the equivalent of a French Drain below the site. Such a drain system can be dewatered through the use of purge wells, creating a cone of depression extending down to the bottom of the fractured zone. This in effect would collect any aqueous phase chemicals which have migrated into the fractured zone thus creating the equivalent of a "bottom" on the landfill. It is possible that this system could also provide a "bottom" for the non-aqueous chemicals as well.

✓ Anderson
+
K

✓ Potentially
Abundant

16. The technical team designed the monitoring and survey system in a way such that of the distribution of chemicals from the surface down to the Rochester Formation will be identified. If chemicals are found in the Lockport Formation, Requisite Remedial Technology will be used to determine how to contain the chemicals at these lower depths, if possible.

17. Dr. Kleppinger suggests that the hazardous wastes should be excavated from the landfill. His concept of digging up this site reflects a lack of understanding concerning the complexities and hazards of handling such materials.

↓
What
complexities
+
hazards

18. The following will help put his proposal into perspective. Assuming that chemicals have moved a minimum of 500 feet to the west, northwest and north through the fractured zone of the Lockport Formation and migrated into the fractured zone of the Lockport Formation, the following volumes of soil and rock would have to be excavated:

Location	Soil 3 (yd)	Fractured Rock 3 (yd)
Elevated portions of landfill	490,000	--
Area below landfill	400,000	310,000
Total landfill excavation	890,000	310,000
Area off of landfill site	970,000	560,000
Total excavation volume	1,860,000	870,000

207/K Removal of at least this volume of material would be essential if Amici's arguments regarding TCDD are correct. In fact, one could assume that all contaminated rock between the surface and the Rochester Formation would have to be excavated at least within the immediate vicinity of the site. This would increase the volume of materials to be reburied from 2.7 million cubic yards to approximately 6 million cubic yards and would require a major quarry operation complete with blasting and heavy earth moving equipment.

ask
him about
other
sites -
firms
specializing
in removal

19. Any attempt to blast the rock would inject toxic materials into the air at levels far exceeding any levels likely to be encountered as a result of the remedial concept proposed in the Settlement Agreement.

NT (page 5)
Bentley

20. Excavation would require the evacuation of homeowners, students at Niagara University, and workers at Tam Ceramics, Grief Brothers, Home Oil Company and Niagara Steel Finishing until the work was completed and the resulting hole filled in with clean materials.

21. The questions raised in the Amici Brief with regard to TCDD were raised and discussed extensively on numerous occasions during the negotiations. As was stated, in the Amici Brief, TCDD is one of the most toxic chemicals known to man. Data in the literature, however, indicate that this chemical readily adsorbs onto clay colloids and remains there unless exposed to ultra violet light or some other radiation source. We chose to leave the chemical in place rather than risk resuspension of the materials in Bloody Run Creek and the potential for releasing large quantities of TCDD in the air if the hazardous wastes were excavated.

adsorption
from
particles
in suspension

22. Reburial of the materials is not an easy task nor is it safe. Dr. Kleppinger appears to contradict himself by pointing out the weakness of the proposed clay cap because

only shows that m+m
Necessary
good even w/
containment
technology

of its potential to transmit water, while proposing the creation of a containment vault constructed of clay to store the chemical-laden soil and rock excavated from the Hyde Park Landfill some material. As Dr. Kleppinger correctly notes, even clay is permeable to some extent and 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.

23. The purge well and leachate collection systems 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.

? What
the
hell
does
this
mean?

24. An additional area where the Amici Brief appear to have misinterpreted the data is that of groundwater flow patterns. There is in fact a recharge area to the east of the landfill as was noted by the Amici. However, this recharge area is bordered by a groundwater divide that is created by the flow of water to the west of the PASNY conduits and to the east under the landfill. This divide precludes the chemicals from reaching the conduits. The flow patterns at

Anderson

the site are from this recharge area towards the northwest and possibly to the west. Monitoring wells proposed in the Settlement Agreement will provide the additional information regarding flow patterns needed to plan the containment system. If new data indicate the need for additional purge wells, they will be included in the plans and specifications before the remedial program is approved.

25. The misconceptions resulting from Dr. Kleppinger's conversation with Mr. Richard H. Johnston during which he asked generalized questions about the geology at the site, are not only misleading but are indicative of poor science. Any soil scientist or hydrologist knows that any area must be investigated on a site specific basis before any conclusions can be reached regarding the direction of fluid movement through the soil and rock layers. Dr. Kleppinger does not appear to have done this and his opinions should be treated accordingly. The generalized flow patterns outlined in Mr. Johnston's book cannot be used to define what is happening at the Hyde Park Landfill site.

Kleppinger
did-
for
mead
in
1977-
prepared
extensive
Study
of
Site

26. I personally believe that had Mr. Johnston been given an opportunity to examine the data available to the negotiating parties, he would arrive at similar conclusions. His treatise, Groundwater in the Niagara Falls Area, New York, was used extensively throughout the negotiations.

Totally
irrelevant

27. I am personally convinced that the Settlement Agreement as presented to the court provides safeguards to the public, avoids major environmental impacts, protects nearby residents, three industries and a university from major disruption, and is scientifically sound given the constraints of existing data. The Settlement Agreement was developed to obtain the needed data under court and EPA supervision before a total remedial concept is selected and designed with adequate safeguards to insure its effectiveness. Any delay in implementing this Settlement Agreement only further exasperates the final solution.

↓
even
could
brief
wouldn't
make
such
broad-
sweeping
representation

Benjamin J. Mason
Benjamin J. Mason

Subscribed and sworn to before me

this 23rd day of July, 1981.

Brenda F. Hurst

My Commission expires: Nov. 14, 1981.