OhioEPA
State of Ohio Environmental Protection Agency

Southwest District Office

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March 5, 2009

Ronald Murawski
U.S. EPA, Region V
77 West Jackson Blvd (SR-6J)
Chicago, IL 60604-3590

RE: TREMONT CITY BARREL FILL SITE
Email from Jerome Maynard dated February 5, 2009
Bulk Waste Disposal at Barrel Fill

Dear Mr. Murawski:

Ohio EPA has reviewed the February 5, 2009 email[1] and attachments sent by Jerome Maynard on behalf of Responsible Environmental Solutions Alliance (RESA), the PRP group responding to EPA's RI/FS orders for the Tremont City Barrel Fill site. Mr. Maynard asserts in his email that Ohio EPA misspoke during a December 18, 2008 conference call regarding bulk waste disposal practices at the Barrel Fill. Mr. Maynard's email was accompanied by two attachments: 1) Summary of Cell Reports and Cell Logs; and 2) the deposition of a former employee of the Barrel Fill, Wade Nelson Wallis. This letter responds to these issues and provides additional information on the disposal of bulk waste at the Barrel Fill as documented in Ohio EPA's correspondence files and/or in depositions included in Appendix U of the RI Report.

Mr. Maynard's email discusses the disposal of sludges from oil recovery operations conducted at the Former Waste Transfer Facility based on the deposition of Waid Nelson Wallis.[2] The Wallis deposition and several others are included in Appendix U of the RI Report. On page 93 of this deposition, Mr. Wallis describes these sludges as "heavy gray mud...Mostly it was dirt, floor sweepings from factories. Some of it would have been finely divided carbon from motor operations, bits of metal from bearings and machinery that the oil was in. A small amount of oil would remain in it and some water."

Regarding the quantity of this waste, when asked on page 94 of the deposition if it would amount to thousands of gallons on a cell report, Mr. Wallis responded "I would think in the hundreds. I can't imagine it getting into thousands of gallons. The tank -- the treatment tanks would only hold about four thousand gallons so -- and it was a small percentage of that, so I don't think you would get into the thousands of gallons off that."

[1] See Attachment 1
[2] See Attachment 1, Deposition of Waid Nelson Wallis, December 16, 2005, pages 58 through 61.

The Summary of Cell Reports and Cell Logs (Summary) included as an attachment to Mr. Maynard's email includes an entry for "42 pallets of paint sludge" for cell G-6, along with a notation stating that this was bulk waste. Mr. Wallis is questioned regarding these same pallets on page110-111 of his deposition:

> "Q. But if you see on the first page which is a cell report for cell G-6, the first item listed is PPG Industries, pallets, parentheses, looks like it says paint sludge or PT, period, sludge, and then it says forty-two pallets. What do you think that indicates?"
> "A. Sloppy recordkeeping."
> "Q. Was sloppy recordkeeping typical at that site?"
> "A. No. This particular cell report does not look typical of what you would expect to have seen there. Certainly it would have had to have -- whatever that material was, if it was any kind of sludge, it had to have been in some sort of a container to be on a pallet so whether they had three or four drums sitting on a pallet and rather than record hey, I put four drums in of this material, they just wrote down how many pallets they put in."
> "Q. How many drums would fit on one pallet?"
> "A. You can put four drums on a possible."
> "Q. So does forty-two pallets indicate to you that it would have been forty-two times four, the number of drums?"
> "A. That's what I would have expected, yes."

The Summary also lists 120 cubic yards of still bottoms disposed of in cell 2-B. In a June 22, 1977 IOC from Joe Moore, Ohio EPA Southwest District Office, to Bob Brown, Ohio EPA Central Office, Mr. Moore notes:

> "I have reviewed Mr. Wright's monthly reports of materials disposed on the site. They are in agreement except for one item - WOO56 Systech Still Bottoms 120 cu yds. This material was disposed bulk in Cell B-2. What is the status of this material? Is it acceptable for disposal in the chemical landfill? Please contact Mr. Wright directly if you need further specific information about the waste - (513) 969-8346."[3]

While there is not a response to Mr. Moore in the file, Mr. Wallis, a former employee of Systech, addresses still bottoms on page 84 of his deposition:

> "Q. Getting back to this solvent recovery process, what kind of container would the stillbottoms be in at the end of that process?"
> "A. They could either be drummed or it could have been done in bulk. Typically the -- at that time most of the people who were recovering solvents would have drawn the still bottoms out."
> "Q. Why do you say that?"

[3] See Attachment 3, Ohio EPA 1977 Correspondence File

"A. Because it's a small part of the total and when they cleaned out the still it's easier to dump it into it -- it's typically a sticky, gooey, chewing gum material and it's a lot easier to rake that out into a drum than do anything else with it."
"Q. Do you remember any of that material, stillbottoms, coming into the site in anything other than drums?"
"A. I don't even remember any of it coming in when I was there."

The Summary also contains two listings of still bottoms in boxes. The deposition of Clyde Hill, a chemist hired by IWD Liquid Waste to assist them in expanding their operations at the Tremont site, is included in Appendix U of the RI Report.[4] Mr. Hill was present during the initiation of operations at the Barrel Fill, and observed disposal practices employed for the first several waste cells, some of which were not continued in subsequent cells. Mr. Hill was the on-site chemist responsible for testing wastes received at the Tremont site (which included the Waste Transfer Facility) to determine its ultimate disposition. A subset of this waste was disposed of in the Barrel fill. Mr. Hill was questioned on the subject of stillbottoms from Systech in boxes. From pages 90-92 of Mr. Hill's deposition:

"Q. Was there anything that you got from Systech that went into the barrelfill?"
"A. Paint sludge when they were -- from their solvent reclamation process. They distilled the solvents out of the paint sludge and then we would water paint sludge. That's the only thing I remember in barrels."
"Q. Is that what would be referred to as stillbottoms?"
"A. Yes, that's the sludge that come out of the still."
"Q. Did that ever come in barrels?"
"A. Yes."
"Q. Do you remember it ever coming in anything that would be recorded as a box on the cell log?"
"A. I don't know, unless they figured out -- later on figured out a way of driving it out where they could get the mostly just dry sludge. It was little -- had some water in it, but if they got -- if you do a real good job, then you opened up the bottom of the still and you get this big glob of goo out of there."
"Q. Do you remember any other generator of stillbottoms besides Systech?"
"A. No, I don't remember anybody else reclaiming anything."
"Q. Do you remember how often you would get Systech stillbottoms?"
"A. No, because they would kind of save it up until they had a bunch of it or something. That way they cut their costs so you made one trip and picked up the whole batch out of there."
"Q. So each time it was picked up from Systech, about how much was in that load, if you remember?"
"A. It was -- I can't remember if they did it with the semi trailer truck or the small state bed truck about half as big as I -- I don't think it was a huge quantity. Came from the Franklin plant where they had the still and they would steam distill the

[4] See Attachment 4, Deposition of Clyde Hill

sludge or solids, waste solids, and you would get all the paint, the dried paint and everything. It was pretty inert."
"Q. Was there more than one occasion when stillbottoms were picked up from Systech and brought to Tremont?"
"A. I think so."
"Q. You think it was more than five times while you were there?"
"A. Oh, no."
"Q. It was less than five times?"
"A. Yes."

Ohio EPA has not verified the remainder of the information provided in the Summary of Cell Reports and Cell Logs, and does not dispute that this information was gathered from cell reports and cell logs. Ohio EPA correspondence files (attached) document the types of bulk waste initially approved for disposal at the Barrel Fill and as operations progressed.[5]

Lastly, Mr. Maynard asserts in his email that Ohio EPA statements made during the December 18, 2008 conference call "mischaracterized the operational history or were in plain error." Ohio EPA discussed disposal of bulk polyol waste in the first two cells and mentioned that asbestos was permitted to be disposed of as a bulk waste. These statements were made based on the recollection of the deposition of Clyde Hill. From page 38 of the Hill deposition:

"Q. So would they pour the polyol along the edges so it wasn't actually on top of the drum?"
"A. Oh, yeah, it would flow. Usually get -- I imagine it came pretty much over -- Some of the polyol was almost set up and –
"Q. Do you mean almost solidified?
"A. It was real thick and wouldn't flow very good.
"Q. Was this done with the polyol from the very first cell?
"A. Yes.
"Q. Was it done with every cell?
"A. Two of them I know.
"Q. Do you know which two?
"A. The first two. In the northwest corner was the first cell and the then the next cell was right next to it. Here, I can show you on that picture."

From pages 61-64 of Mr. Hill's deposition:

"Q. Now, you had testified earlier that polyol was poured in there around the edges of the drums in the first two cells?"

[5] See Attachments 2 and 3, Ohio EPA Correspondence files, 1976-1977

"A. Now, wait. I think the second cell they might have had some rusty paint sludge drums that they took the lid off and dumped because the drum had been setting around and was rusting out and wasn't, you know, couldn't do much with it."
"Q. So they took the lid off and poured the content of the drums directly into the cell?"
"A. Yes."

"Q. How many drums were there if you can estimate? Was it more than –"
"A. I would say probably eighty drums maybe because there was two truckloads that they picked up, Stolle Corporation."
"Q. And did all of those eighty drums go into the same cell?"
"A. As far as I know."
"Q. And your recollection of the rusty drums were the lids were taken off, would that have been all eighty or all of the rusty drums or just some of them?"
"A. It was most of them because the bottom of the drum, a lot of them when you started to go like that (indicating), you didn't have to take the lid off."
"Q. It just fell apart?"
"A. That's right. And went down in the cell."
"Q. So they just let the contents pour directly into the cell?"
"A. Yeah."
"Q. Do you know if that ever happened at any other times with paint sludge?
"A. I don't remember another batch being that bad."

The reason Ohio EPA discussed the disposal practices of the first two cells during the December 18, 2008 call was that between the cell reports, logs, and Mr. Hill's eyewitness account, it is perhaps the best documented account of the disposal of bulk waste at the Barrel Fill. Mr. Maynard's email refers only to the Wallis deposition, but Mr. Wallis worked at the end of the operating life of the Barrel Fill and apparently was not directly involved in any bulk waste disposal. From page 71 of his deposition:

"Q. Do you have any memory of any material being disposed of in bulk form in order to use up any remaining free space in the cells after the drums were placed in there?"
"A. As I remember, the permit allowed for sludges to be placed around the drums but I don't remember during the time that I was there that we actually did that."

Finally, Mr. Maynard's email concludes:

"Based on the records referred to above and Mr. Wallis' sworn testimony, uncontainerized industrial wastes consisting of sludges which are mostly liquid in nature were disposed of in most if not all of the Barrel Fill Landfill cells during operations in 1977 through the end of 1979. Based upon the presence of liquid uncontainerized industrial wastes in many of the cells over 28 years ago, empirical data indicates that the tills prevent migration of liquids from the cells very effectively."

Ohio EPA's correspondence files, the depositions of past employees, the type of bulk waste permitted for disposal at the Barrel Fill, and the test pit investigations conducted during the RI do not support Mr. Maynard's conclusion that the bulk wastes were "sludges which are mostly liquid in nature" or "liquid industrial waste." They are documented as gels and sludges, not liquids. They will not flow into the liquid waste extraction sumps proposed in Alternative 7 of the FS Addendum.

It is noted that RESA has previously tried to characterize water table cell water as bulk liquid industrial waste, performing flawed qualitative evaluations if that were actually the case.[6] It would appear from the concluding statement in Mr. Maynard's email that this continues to be RESA's approach, only this time it's the bulk waste which is mischaracterized as liquid industrial waste and not the cell water.

Please feel free to call me at (937) 285-6059 if you have any questions or if we can be of any further assistance.

Sincerely,

Mark V. Allen

Mark V. Allen
Division of Emergency and Remedial Response

Cc: via email only
Kelly Kaletsky, SWDO\DERR
Joan Tanaka, U.S. EPA Region 5
Diana Embil, U.S. EPA Region 5
Bob Kay, U.S. EPA Region 5
David Reisman, U.S. EPA ORD
Ed Barth, U.S. EPA ORD
Jewel Keiser, CH2M Hill

Attachments

[6] "The problem with RESA's analysis is that the drums have not yet released their contents. The concentrations of contaminants detected in the drums from test pit 3 are orders of magnitude higher than concentrations detected in the test pit 3 cell water. This issue of Barrel Fill wastes increasing the permeability of the till as they are released over time remains to be addressed." Page 5, Ohio EPA February 4, 2008 Review Comments, Feasibility Study, Tremont City Barrel Fill Site, Clark County, German Township, Ohio, November, 2007

Attachment 1

Mark Allen

From: "Maynard, Jerome"
To: ,
Date: Thursday, February 05, 2009 11:56 AM
CC: "Mark Allen" , "Kelly Kaletsky" , , "Salinas, Sharon" , ,
Attachments: "Mark Allen" , "Kelly Kaletsky" , , "Salinas, Sharon" , ,

Diana and Ron:

RESA wants to correct the record regarding waste disposal at the Tremont City Barrel Fill Site. During our meeting on December 18, 2008, attended by some participants by phone, statements were made by OEPA regarding the operational history of the Barrel Fill Landfill. RESA has confirmed by review of the records, including witness deposition transcripts, that some of those statements mischaracterized the operational history or were in plain error. RESA wants to ensure that all decisions made in this matter are based upon the facts, scientific data and best evidence.

Regarding disposal of uncontainerized or bulk wastes in the cells with the barrels, aka containerized waste, the statement was made that at most only a very few of the Barrel Fill Landfill cells received uncontainerized wastes and that the disposal of such wastes ceased soon after operations began. In fact, two separate and independent sources indicate that large quantities of uncontainerized wastes were disposed of in most if not all cells throughout the operational history of the Barrel Fill Landfill.

First, the Site operational records document disposal of uncontainerized wastes received from customers in 16 cells in 1977. Attached is a spread sheet prepared by H&A that summarizes the recorded uncontainerized waste that was disposed of in the cells. This spreadsheet was prepared from the copies of the original cell reports and logs as prepared by the operator at the time the cells were filled with wastes. Summaries of those cell reports and logs were included as Appendix B to the RI Report. As with all records at the Barrel Fill Landfill, the records are detailed and specific. They indicated that over 300,000 gallons of such wastes were disposed of in 16 of the cells as noted in the records. Those records indicate that such disposal began in April, 1977 and continued throughout 1977. These records are for uncontainerized wastes, primarily sludges, that the site operator received from customers.

In addition, the deposition testimony of Waid Nelson Wallis who worked in a supervisory capacity at the Barrel Fill Landfill for IWD Chemical during most of 1979 and into early 1980 confirms that unrecorded sludges also were disposed of in many of the cells. Mr. Wallis was probably the most lucid and credible of the several former Barrel Fill Landfill employees whom we deposed. He clearly states that during the entire time he worked there, and to his knowledge prior to that, IWD disposed of sludges in the Barrel Fill Landfill from its oil recovery operation located on what is now referred to as the waste transfer station. Please see pp. 89-95 of the attached deposition transcript of Mr. Wallis' testimony. These were wastes that were generated internally by IWD operations rather than being received from IWD customers. We have found no records of the quantity or quality of these wastes, but Mr. Wallis' testimony is uncontroverted.

Based on the records referred to above and Mr. Wallis' sworn testimony, uncontainerized industrial wastes consisting of sludges which are mostly liquid in nature were disposed of in most if not all of the Barrel Fill Landfill cells during operations in 1977 through the end of 1979. Based upon the presence of liquid uncontainerized industrial wastes in many of the cells over 28 years ago, empirical data indicates that the tills prevent migration of liquids from the cells very effectively.

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Summary of Cell Reports and Cell Logs
Tremont City Barrel Fill Site
Clark County, German Township, Ohio

Cell ID	Total Drums	Total Bulk (gallons)	Bulk Waste Description
A1	1,525		
A2	1,177	72,000	Bulk Sludges
A3	1,620	6,000	Latex Glue 4,000 gal, Asbestos & water 2,000 gal
A4	1,176		
A5	693	12,200	Bulk Sludges
A6	910		
A8	1,066		
A9	656		
A10	817		
A11	521		
B1	1,980	35,000	Ash Water 25,000 gal, Latex 10,000 gal
B2	424	25,012	Still Bottom 120 cu yards & 770 gal
B3	1,232	1,500	Latex Glue 1,000 gal & Soap etc. 500 gal & (3 boxes of Still bottoms)*
B4	360	2,000	Latex Glue
B5	1,114	20,000	Bulk Sludges
B6	966		
B7	1,743		
B8	501		
B9	882		
B10	1,517		
C1	1,008		
C2	763	5,000	Bulk Sludges
C3	915	72,000	Bulk Sludges
C4	521		
C6	1,470		
C7	1,466		
C9	660	4000	Bulk Sludges
D1	805	2,000	Latex Glue
D2	1,089	20,500	Bulk Sludges
D3	823	5,000	Bulk Sludges
D4	853	20,000	Latex Glue 2,500 gal, Asbestos 17,500 gal
D6	705		
D7	2,768		
D9	810		
E1	865		
E2	561	2,000	Bulk Sludges & (1 Box of Still bottoms)*
E3	798		
E4	770		
E6	2,150		
E7	1,337		
F2	624		
F3	606		
F4	315		
F6	2,294		
F7	2,005		
G2	480		
G3	599		
G6	1,620		42 pallets of Paint sludge*
H2	314		
H3	575		
	Sub Total:	304,212	

Notes:
* Additional bulk wastes not included total

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF OHIO
WESTERN DIVISION
* * *

RESA,

Plaintiff,

vs. CASE NO. 1:04-CV-013

WASTE MANAGEMENT, INC.,
et al.,

Defendants.

* * *

Deposition of WAID NELSON WALLIS, Witness herein, called by the Plaintiff for cross-examination pursuant to the Rules of Civil Procedure, taken before me, Mary Jo Stevens, a Notary Public in and for the State of Ohio, at Thompson Hine, 2000 Courthouse Plaza, NE, 10 West Second Street, Dayton, Ohio, on Friday, the 16th day of December 2005, at 9:33 a.m.

* * *

APPEARANCES:

On behalf of the Plaintiff:
Walter & Haverfield LLP
By: Leslie G. Wolfe
Attorney at Law
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On behalf of the Defendant Waste Management, Inc.:
Tucker Ellis & West LLP
By: Courtenay Y. Jalics
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On behalf of the Defendant Systech:
Frost Brown Todd LLC
By: Daniel A. Brown
Attorney at Law
300 North Main Street
Suite 200
Middletown, Ohio 45042-1919

ALSO PRESENT:
David Hagan

* * *

WAID NELSON WALLIS

of lawful age, Witness herein, having been first duly cautioned and sworn, as hereinafter certified, was examined and said as follows:

CROSS-EXAMINATION

BY MS. WOLFE:

Q. Would you please state your name for the record?

A. Waid Nelson Wallis.

Q. Good morning, Mr. Wallis. My name is Leslie Wolfe and I'm the attorney representing the plaintiff in this case which is Responsible Environmental Solutions Alliance. Are you familiar with the litigation?

A. No.

Q. Okay. Well, this is a contribution case relating to a Superfund site which is the Tremont landfill Superfund site in Clark County, Ohio. Are you familiar with that site?

A. From many, many years ago, yes.

Q. And do you understand that you are here to be deposed today in connection with your work at that site?

A. Yes.

Q. Are you represented by counsel today?

A. Yes.

Q. And you have just indicated you are represented by Mr. Dan Brown --

A. Correct.

Q. -- who is here representing you and Systech Environmental Corporation; is that correct?

A. That's correct.

Q. Have you ever been deposed before?

A. Yes.

Q. How many times?

A. Once.

Q. What was that in connection to?

A. That was in connection to a site in Columbus, Ohio.

Q. So that was a similar situation where you were being asked about your work at that site?

A. Yes.

Q. How long ago was that deposition?

A. '96, I believe.

Q. Who did you work for at that

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particular site?
A. I worked for Systech. The site was subsequently sold through another -- what, two other companies, and ended up being a Laidlaw site.
Q. So what was that site called?
A. That was originally a Systech Liquid Treatment, Hillard, Ohio.
Q. You said it was near Columbus?
A. Yes, it is a suburb of Columbus.
Q. Do you remember when that deposition took place?
A. I believe it was '96, but that's about as good as I'm going to do.
Q. Well, that's not too long ago so you might remember some of the basic rules for depositions, but I'm going to go over them just in case. Okay?
A. Okay.
Q. And the first and probably one of the most important things to remember is to always give verbal responses and that is so the court reporter can take your answers down.
A. Okay.
Q. Because she can't take down any

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head nod or shaking of the head or um-hums. Those are hard to record.
A. Yes.
Q. Also, we should both try not to interrupt each other. That means I will wait for you to give your full responses before I ask you the next question and please wait until I finish the question before you answer me. Okay?
A. Okay.
Q. If you don't understand a question, please tell me and I'll try to rephrase it in a way that you can understand?
A. Okay
Q. If you do answer the question, then that will be an indication to me that you understood it. Okay?
A. Okay.
Q. If you need a break, please let me know and we can take a break, and if you need to help yourself to coffee or water, it's here in the room for your convenience. Okay?
A. Thank you.
Q. Do you have any questions?
A. No.

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Q. What is your current address?
A. 3310 State Route 72 North, Cedarville, Ohio.
Q. How long have you lived there?
A. Roughly thirty years.
Q. Do you live there alone?
A. No.
Q. Who do you live with?
A. My wife.
Q. Anyone else?
A. No. Kids are all gone.
Q. What is your date of birth?
A. 12-12-46.
Q. Happy birthday a few days ago.
A. A couple.
Q. Please tell me a little bit about your education starting with high school and then moving beyond high school.
A. High school, Liberty Union Local Schools in Fairfield County, Ohio. Undergraduate BS in chemistry from Cedarville College. Master's degree in chemistry from Wright State University.
Q. Any other graduate or postgraduate degrees?

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A. No.
Q. Did you undertake any other training or education in your field?
A. Numerous courses and seminars on various aspects. I'm also a CHMM which is a certified hazardous material manager. It's one of the certifications for the business.
Q. For the waste disposal business?
A. For environmental business in general, but waste handling in particular.
Q. What is your current employment?
A. I am technical manager for Systech Environmental Corporation in Kettering.
Q. How long have you held that position?
A. I've been in that position since, let's see -- I don't remember when I switched. I think '98. Prior to that I was a project manager for a couple years.
Q. And what is your responsibility as technical manager?
A. I'm responsible for oversight and audit of laboratories, oversee engineering and any other technical aspects that may come up on different projects.

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Q. What is the business of Systech Environmental Corporation?
A. Systech Environmental is a wholly-owned subsidiary of Lafarge Cement and its primary function is to provide alternative fuel for the cement kiln.
Q. For the cement what?
A. Kiln, K I L N. It's a big long tube that you throw rocks in at one end and fire in at the other and you make cement when it comes out.
Q. And that creates just ordinary cement that would be used in building projects?
A. Yes, Portland Cement.
Q. So prior to '98, were you still working for Systech at that time?
A. I don't remember when I came back. I believe it was March of '97 when I started back at Systech.
Q. So are you indicating that there was a time period when you were away from Systech and then came back?
A. Yes. I had worked for Systech from March of 1980 until they sold the liquid treatment division which I believe was July of

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'82. And when that division was sold I went with the group that took that over which was Tricell.
Q. How long were you with Tricell?
A. Until they were sold to Laidlaw which was about 1991 or '92, somewhere in there.
Q. And then what happened?
A. Then I worked for Laidlaw until about '96 when I left there.
Q. Where did you go when you left Laidlaw?
A. Actually tried being an independent contractor for a few months before I figured out that that wasn't going to work.
Q. And at that time what did you do when you figured out that wasn't going to work?
A. Went back to work for Systech.
Q. What position did you take when you went back to Systech at that time?
A. It was a project manager position.
Q. And did you hold that position until you became a technical manager in '98?
A. Yes.
Q. So before you began working for

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Systech in March of 1980, where did you work?
A. I had worked for a government contractor at Wright-Patterson Air Force Base that was Stevens Company out of Newport, Kentucky.
Q. How long did you work there?
A. About seven years.
Q. So does that mean that you worked there from about '73 until 1980?
A. I believe I started working for -- started working for Stevens in the fall of '72 when I finished graduate school.
Q. So was there a period of time in the late '70s or early '80s when you worked for IWD or one of the IWD companies?
A. I worked for IWD for a little less than a year after I left Stevens Company and before I went to work for Systech the first time.
Q. Do you remember giving an interview in connection with the Tremont landfill a few years ago?
A. Yes.
Q. Do you recall in that interview stating that you worked for IWD from about

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spring of '79 until spring of 1980?
A. That's about right.
Q. You would say that was probably the period of time that you worked for IWD?
A. Yeah. I know it was March of '80 when I left there because that's when Chemical Waste Management purchased the site.
Q. Were you ever employed by Chemical Waste Management?
A. For about a week. They took over the site and immediately laid everybody off.
Q. Including yourself?
A. Including myself.
Q. Why did they lay everybody off?
A. They were closing the site.
Q. When you say the site, do you mean the entire Tremont landfill or just the barrelfill portion of the site?
A. The barrelfill, the oil recovery, the transportation company which was -- what was the correct name for that -- but not the sanitary landfill that was down near the river. They didn't buy that.
Q. Was the transportation company you're trying to think of IWD Liquid Disposal?

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A. There were several companies. The company that I worked for was IWD Chemical Disposal of Ohio. There was also an IWD Chemical Disposal of Indiana and an IWD -- and I'm not sure if I've got -- it was chemical transportation or something with transportation. It was the trucking part of that operation.

Q. Was it IWD Liquid Waste, Inc.? If you're not sure --

A. I'm not sure how the structure was. They were all -- there were several independent companies but they were all under one IWD umbrella.

Q. Who was the parent company of these entities you're referring to?

A. All of them were owned by the construction company -- I can't think of the name. It's a big construction company here in Dayton. I can't think of the name right now.

Q. Are you trying to think of Danis?

A. Danis, that's correct. They were all owned by Danis.

Q. Do you remember which Danis entity was the parent company?

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A. No, I don't.

Q. So was IWD Disposal of Ohio, your employer, also owned by the Danis Company you're trying to think of?

A. I'm not sure whether that company was owned by an intermediate company before it went to Danis or it was directly to Danis. I don't know.

Q. Did you ever work for any other Danis affiliated entity other than IWD Chemical Disposal of Ohio?

A. No.

Q. Did you ever work for any other Waste Management or Chemical Waste Management affiliate?

A. Like I said, for about a week for Chemical Waste Management when they bought that site.

Q. Do you know why the site was sold to Chemical Waste Management?

A. I was on the periphery of that. I know that the Danis family at that time owned a very large number of various companies in the area. I think it was close to a hundred and fifty companies that they owned and at that

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time they had decided that they wanted to get out of this phase of the business.

Q. Were you involved in any work to close the barrelfill site or any of the other sites that were closed at the time that Chemical Waste Management came in?

A. The barrelfill had been closed at the very end of '79 so there was no activity in 1980 at the barrelfill.

Q. What took place to close it at the end of '79?

A. They had made a decision that they did not want to operate that barrelfill in the future and I don't know exactly all of the -- there's a supposition in my mind, but I don't know that it's true so I'm not going to say it.

Q. So do you recall when the last drums went into the barrelfill?

A. December 31st, 1979.

Q. They were disposing of drums up until the very last day of 1979?

A. Yes.

Q. Was there a push at the end of '79 to get as many drums buried as possible?

A. Absolutely.

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Q. What else do you remember about that last push?

A. That's about it.

Q. Were you involved in that effort?

A. Indirectly.

Q. How were you involved indirectly?

A. The laboratory was part of my responsibilities and we did the testing and qualification of the waste streams that were put into the landfill.

Q. Did anything about your work change at the end of '79 with respect to that final push to get drums buried?

A. I'm not sure what you're asking. Did we change procedures, no.

Q. Did you do anything in addition to your previous responsibilities during that time?

A. I don't believe so.

Q. Were drums buried in a different manner than they normally would have been during that time?

A. No.

Q. Was there anything different done other than just a faster process as you seem to

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have indicated? Let me rephrase that. Was it just that more drums were buried during that time because the end of the year was coming up?
A. I don't know that there were more drums buried than normal, but I know that the push was to make sure that all of the drums they had on site to be buried were buried before they closed out.
Q. And were they able to do that?
A. I believe so because they had stopped receiving new material prior to that time knowing that they were going to close it out.
Q. How much prior to that time did they stop receiving new material?
A. I don't know.
Q. Do you think it was a matter of weeks or months?
A. Since they never had more than a week or two's worth of material on site to bury, I would say it was weeks, but, again, I don't have anything other than just kind of that's how much they had on site.
Q. From January 1st, 1980 until the time you left, were there drums on site in the

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yard or in any area of the site that normally would have been buried? Let me rephrase that. Was there a yard where drums were stored?
A. Yes.
Q. And did that yard have any drums in it after the site closed?
A. They have to be kind of -- the rest of the operation continued. The barrelfill was closed the end of 1980, but we continued to be operating as far as oil recovery, shipping, receiving, shipping materials to other sites which were all ongoing processes, so only one piece of the total operations stopped.
MR. BROWN: Just to be clear, I thought you said the barrelfill had closed the end of 1980.
THE WITNESS: 1979. Pardon me.
Q. What did your work consist of after this barrelfill closed before you left your employment there?
A. It was pretty much the same as before. We qualified waste streams. We did all of the laboratory testing, operated the oil recovery system and shipped materials to other

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sites for disposal.
Q. I would like to go through all of those different responsibilities with you one by one in some more detail.
A. Okay.
Q. Did you say that you tested materials?
A. Yes. We had an on-site laboratory.
Q. What materials did you test in that laboratory?
A. We tested samples that the salesmen brought in to qualify the waste streams. We tested materials from incoming truckloads, both bulk and drum, and after the initial sorting of materials on outgoing loads, we would do tests, depending on which site it was going to to qualify the material into another site and we did -- in addition to that, we did QC work for like the oil recovery, the recovered oil that we were selling.
Q. What's QC work?
A. Quality control.
Q. You mentioned that you tested samples of waste streams that the salesmen

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would bring in?
A. Yes.
Q. Which salesmen are you referring to? And I don't mean identifying by name, I mean who were the salesmen employed by?
A. An excellent question. I think they were actually -- I think they were actually employees of the transportation company.
Q. Were they employees of any of the generators of waste?
A. No, these salesmen were IWD salesmen.
Q. Did you have representatives from any of the generators bringing samples of waste to be tested or to be disposed of?
A. We did get site visits from customers, generator representatives, and it's possible -- I don't remember. It's probable that they had brought samples to us at one time or the other to see if we could do something with them.
Q. Did you test a sample of every waste that was disposed in the barrelfill?
A. I believe so. Every waste stream

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that came into the site was first sampled and paperwork obtained by the sales representative that went out. That came in. We did the initial testing, qualified it to whether or not we could put it there or we had to send it off for incineration or what the disposition. The salesmen used that information to do the pricing, get back to the customer the proposal on what we could do for them.

When the trucks came in, samples were taken from either the bulk truck or the individual barrels that were on the truck to make sure that we knew which barrels were what. Every barrel had a waste qualification number which was then spray painted on the barrel for identification purposes. And then as those barrels were taken out and loaded onto a truck to go into the barrelfill, the fellows that were running that checked that against the list of approved materials and recorded where in the cells those materials were placed.

Q. Okay. We're going to go through some of those steps one by one. With respect to the samples, did you say the samples would come in prior to the load of waste coming in

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from the generator?

A. Yes.

Q. How large were the samples?

A. Typically they were quart jar samples.

Q. What kind of container were they in typically?

A. Typically they were in glass wide-mouth bottles which we provided to the salesmen for that purpose. Occasionally somebody would send samples in some other type of container.

Q. After the testing was complete, was there a portion of that waste sample left over?

A. Yes.

Q. What did you do with that portion?

A. It was retained for a certain amount of time, and I can't remember how long it was retained, whether it was one month or three months or whatever that we retained the samples in case there was a question that came back about the material. And at the end of that time depending upon what the sample was, if it was, say, a solvent or something like

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that, it would be put into a bulk load of solvents going out to be incinerated. If they were oil samples, obviously they went into the oil recovery operation.

Q. What if it was a sample of a type of waste that was acceptable for disposal in the barrelfill, what did you do with that sample?

A. I believe all of those were put into the barrelfill, in a barrel put in the barrelfill.

Q. So the sample would be put into a barrel and then put into the barrelfill?

A. As far as I remember, that was the way -- there may have been times when samples were dumped out of the bottles in a barrel to be put in the barrelfill.

Q. Were samples ever dumped straight into a barrelfill cell without being dumped into a barrel first?

A. I don't believe that ever happened. Just the logistics were the lab is over here, it's much easier to take the samples and dump them out at the lab rather than go way back in the field someplace to dump out

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bottles.

Q. Was there a policy or procedure related to how those samples would be dealt with?

A. Certainly was a policy and procedure. Was it written down, maybe. I don't remember.

Q. And just to get a little bit of background on your employment during that time, what was your title when you were employed at the site?

A. I was employed as manager of Chemical Disposal of Ohio.

Q. What was your responsibility as manager?

A. I oversaw the day-to-day operation of the laboratory, the oil recovery and the drum yard.

MS. JALICS: I'm sorry, did you say drum yard?

THE WITNESS: Yes, drum yard.

Q. Did you supervise any employees?

A. Yes.

Q. Do you recall who you supervised?

A. Names or positions?

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Q. Names and/or positions, whatever you remember.
A. A few names. In the -- we had several people in the laboratory. Our laboratory manager at that time was named Gary Karas, and that's with a K. We had Vaughn Arthur.
Q. What was Mr. Arthur's title or position?
A. He basically was a technician taking samples from trucks and drums and we had a couple of other guys who worked in the lab, and I can't remember their names.
Q. Did you work with John Budding?
A. The name sounds familiar. I'm trying to put a face with it. I think John worked in oil recovery, if I remember him.
Q. I think that's correct.
A. And -- yes. Okay. I can't remember any of the names of the other guys who were in oil recovery. Too far back.
Q. Are you in touch with Gary Karas today?
A. I have not talked with Gary for probably twenty years.

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Q. Do you know if he's still living in the area?
A. He had left the area at that time. He was somewhere in the northeastern part of Ohio.
Q. Do you know if at some point in time he worked for the City of Urbana?
A. He had worked for the City of Urbana, I believe before coming to IWD, and I'm not sure if he worked for them afterwards or not, but he had worked in the laboratory at the wastewater treatment plant.
Q. At the City of Urbana's wastewater treatment plant?
A. I believe that's correct.
Q. What were his responsibilities as lab manager at the Tremont site?
A. He was in charge of the lab. He did -- directed the other people that were in the lab as well as doing some of the testing himself.
Q. Was he there the entire time that you were there?
A. Yes. He was there prior to the time that I was there.

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Q. Was he fired when Waste Management purchased the company?
A. As far as I know, everyone -- the announcement was generally everybody was laid off at the same time.
Q. And you said you also supervised Vaughn Arthur?
A. Yes.
Q. What was his responsibility at the site?
A. He took samples and helped some in the lab.
Q. Did you work with any of the employees that actually placed drums or barrels in the cells?
A. Yes. Primary person in charge of that was Butch -- and I don't know his real name -- Slaughter.
Q. Was that Lester Slaughter?
A. It could -- I don't know, but -- he always went by Butch. I don't know what his real name was.
Q. Was he responsible for that operation in your recollection or --
A. He was certainly the supervisor of

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that area.
Q. And you're referring to supervising the placement of drums?
A. Placement of the drums and also the construction of the cells.
Q. Do you recall who else he worked with in that capacity?
A. I don't remember the names of the other guys that were back in that area.
Q. Do you recall anyone with the last name Goings, G O I N G S?
A. There were two, father, son, again, nicknames. Shorty was the son for obvious reasons and I don't remember the father's name right now, but I believe both of them worked primarily in the transportation side of business transporting materials to and from the site.
Q. In your role as manager of Chemical Disposal of Ohio, did you have any responsibility for how the drums were placed in the cells or which wastes were placed in which cells?
A. We qualified the waste streams that were going into the cells, did the lab

work and we made sure that the record as far as the cell logs were completed and turned in, but the actual day-to-day placement in the cells and how they were working there, I wasn't involved in.

Q. Did you work at the site at the same time as Clyde Hill?

A. I believe he was gone by the time that I came there though I heard a lot of stories about him.

Q. Do you remember what his position was?

A. I believe he worked in the laboratory.

Q. Do you know if he had the same position that you had?

A. No, I don't think he did. I think he was just a laboratory worker.

Q. Do you know who would have supervised him?

A. Probably Gary Karas.

Q. So let me make sure this is correct based on your testimony. You supervised Gary Karas?

A. Correct.

Q. But you believe Gary Karas would have been higher up on the ladder than Clyde Hill during the time Clyde Hill was there?

A. I believe so, and this is just hearsay from the stories I heard about Clyde Hill after I got there.

Q. Do you recall who held your position before you got there?

A. I believe the position was created by splitting out some of the responsibilities of Jack Wright. Jack Wright was president of all those IWD chemical companies and I believe that the portion that I was doing he had been doing prior to that. There was also -- there was another gentleman who had come in and taken some responsibilities in the operation too and I don't remember his name.

Q. I think I know who you're thinking of, but I can't think of the name right now off the top of my head.

A. Yeah, he was there shortly before I got there and left I believe shortly before they shut it down.

Q. What are some of the stories that you heard about Clyde Hill?

A. This is all very, very hearsay of people making fun of a former employee so -- they claim that he was so afraid of things there that they could easily get him to go into a faint just by faking the smell of cyanide anywhere near him and that was one of the things that we did because we did handle cyanides. We taught everybody what the smell of cyanide smelled like just so that they understood if you smelled this burnt almond smell, it's time to leave. And so people would deliberately take some almond extract and put it someplace where Clyde Hill would smell it and he would immediately get sick and faint, so I don't know if that's true or not.

Q. So you never witnessed that, but from the looks of your expression you would like to have witnessed that?

A. I find it amusing, but there was a certain amount of camaraderie among the people there that there was some stuff like that that happened.

Q. Was there anything else about Clyde Hill's work that you were told that was negative about Clyde Hill?

A. Most of the people there did not like him and that's about as much as I know about Clyde Hill.

Q. Was he a chemist?

A. I believe he had also worked for a city at the wastewater -- one of the wastewater plants around there before coming. Whether he was a chemist or a lab technician, I'm not sure.

Q. Do you know why he left?

A. Yeah, I think he got tired of taking the abuse from the other people and from what was said he really was afraid of chemicals.

Q. It's tough to be a chemist or a lab analyst and be afraid of chemicals, isn't it?

A. Well, I think that was part of why he had left.

Q. Did you have any reason to think based on what you heard that his work wasn't adequate at the site?

A. I don't have any idea on that.

Q. Do you know whether people didn't like the way he handled incoming waste at the

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site or whether the hearsay has anything to do with --

A. I don't know that it has anything -- I think it was much more a personality thing than anything to do with his work or how he was doing his work, but, again, that's really hearsay.

Q. Do you know whether he followed procedures that were required to be adhered to at the site?

A. No way of knowing that.

Q. Is there anyone that you worked with that you know didn't follow procedures with regard to the laboratory?

A. Within the laboratory from the time I was there, no, everybody was pretty good.

Q. Are you aware of anybody that didn't follow procedures or the law applicable to disposal of waste in the cells?

A. As far as disposal in the cells, no. We fired one or two people for violating work rules and things, but it was more related to safety aspects than the disposal of the materials.

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Q. I would like to ask you some questions about the process for dealing with waste that came into the site.

A. Okay.

Q. What happened with drummed waste that came in on a truck into the site?

A. Well, if we can step back a step before that, the procedure was that you qualified the waste streams first and each waste stream was assigned a code number, so that when the drums came to the site you had a number on the barrel which you could then open the barrel, take a sample, confirm that what was in the barrel was what the generator said it was. Then once that happened, the drums were sorted as to what their disposal method would be, and that was done in the drum area.

Q. Let me just interrupt you for a moment and go back. How did you confirm that what was in the drum was actually what it was -- what the code number indicated that it was?

A. It depended on the type of waste. If someone were telling us we're sending you a drum of chlorinated solvent, we would run a GC

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on that, gas chromatograph on that material on the original sample. When the material would come in they would take samples out of the drums, verify that that looked the same. If it was supposed to be methylene chloride, that in fact it was methylene chloride in the drum.

Q. This was done in a visual --

A. No, this was done gas chromatograph. It's a laboratory instrument that separates organic compounds and gives you an indication of which compound you have in a particular waste stream.

Q. So you would run this test on the drums that came into the site?

A. Right.

Q. Did you run the test on every drum?

A. Not that particular test because other materials had other tests that would be run on them so it really depended on -- if it's an organic waste, you would run a gas chromatograph. If it were an acid, you would look at pH. If it were a -- some samples were done visually. If we got a drum that said it was peanut butter and we opened it up and it

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looked like peanut better, we pretty much said okay, that's peanut butter, knowing what site it came from and what it looks like, that would go on.

Q. How did you determine which wastes would actually be tested chemically versus wastes where you felt it wasn't necessary because you could tell visually what it was?

A. I think as we qualified the waste streams we pretty much determined what we were going to do when it came in as far as tests.

Q. Did you know which wastes to expect to see so many in on each particular day or was it a surprise what wastes would come into the site?

A. That depended on the customer. We had certain customers who would say I've got this waste stream, so many drums of this, so many drums of that that would come in. We had other customers where we went there every week or in some cases every day and picked up drums, and in those cases while they were all qualified, we would go and pick up whatever drums they had, bring them back and then sort them when they came back in. And that in

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particular was like Procter & Gamble out of Cincinnati which was a very large customer and there was one or two truckloads a day that would come from them. And the majority of that material was pretty innocuous. It was food waste, detergent samples, materials like that which weren't what we would think of as a high risk type material.

Q. Was the food waste and detergent that you just mentioned from Procter & Gamble in drums?

A. Yes.

Q. Was it ever in bulk form?

A. I don't think we ever took anything from Procter & Gamble in bulk.

Q. I want to go back just a minute to something you said earlier regarding cyanide. What handling of cyanide did the site undertake?

A. If we had a cyanide waste stream, it was typically from a plating company. Those materials would come in, we would sample them, look at the amount of cyanide in there because that was important from an economic standpoint. The disposal cost is based on percentage of

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cyanide. Initially we would look at the metals so that we could qualify that into a cyanide destruction company and then those drums were reloaded onto -- as a truckload to go to a treatment site for cyanide.

Q. Did you do any processing of cyanide at the site?

A. No.

Q. Did you dispose of any cyanide at the site?

A. No.

Q. You hesitated for a minute. Did you think of anything --

A. I was just thinking was there anything that was cyanide and I don't think there was. We did dispose of plating waste, but it was all treated plating waste, wastewater treatment sludges, and those typically would not have cyanide left in them.

Q. I'm not a chemist so I might have a few maybe seemingly elementary questions for you. Would you explain why cyanide would not be disposed of at the site?

A. Most of it was in liquid form in fairly caustic solution and the preferred

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disposal method was to have that sent to a site that would treat the cyanide to destroy it.

Q. Were there any waste streams that contained cyanide that would have been accepted for disposal in the barrelfill?

A. There are probably trace amounts of cyanide in some of the metal plating sludges, but it would be a fairly low level. I can't think of anything else that we dealt with that had cyanide in it.

Q. Do you know when the site was permitted to bury materials that had a trace amount of cyanide?

A. Too long ago for me to remember what was in the permit.

Q. Is your recollection that whatever was accepted for disposal was permitted by law?

A. Yes.

Q. And you do recall that plating waste that contained a trace amount of cyanide was disposed of?

A. Well, wait a minute, I said we took plating waste and it was probable there was trace amounts left in there. I don't know if it was there or not.

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Q. But the plating waste was disposed of at the site?

A. Yes, there were plating waste sludges that were disposed of.

Q. Do you recall in general terms how much plating waste or what proportion of the waste?

A. Small amount compared to the other materials.

Q. A small amount. Would that be in the, you know, tens of drums or hundreds of drums if we're talking about what the site took in in a week? Can you put in a number on it in that regard?

A. It would be closer in the tens than anything else in any week and typically you would get that from a plating company so if you got drums from them you might get a drum and then not see them again for several months before they had another group of drums ready.

Q. Do you know which plating company generated that waste?

A. There were several plating companies in the area. I don't remember the names now.

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MS. WOLFE: Go off the record for just a minute.

(Pause in proceedings.)

Q. Mr. Wallis, earlier you talked about sampling of waste that came in to the site.

A. Yes.

Q. And what I would like to know is was every drum that came into the site sampled?

A. The procedure was to take a sample out of every drum that came in and then the lab would make a decision as to can we composite this group of drums and run the test as a group or do we need to do them individually because they physically looked different or seemed to be different materials and so we wanted to look at them separately.

Q. So are you saying --

A. No, I cannot --

Q. I'm sorry.

A. -- tell you that every drum was sampled because I was not out in the drum yard to see that, but the procedure was that every drum be sampled. As far as I know, every drum was sampled.

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Q. When you say sampled, you mean a portion of the waste was removed from the drum?

A. Correct.

Q. But that portion of waste might not necessarily have been tested, am I correct?

A. It would either be tested by compositing it with portions from other drums or it would have been tested individually, so not -- the test wasn't necessarily done on each individual drum by itself but it might have been included with, say, if you had ten drums from the same generator of the same waste code and then they brought the samples in, they all looked the same, typically you would composite that by taking a small portion out of each of those samples to put them together.

Q. So the decision to composite samples from different drums was made based on how they were identified by the generator and how they looked?

A. Yes. Now, the chemist had the leeway to look at those and say yes, I can do that or no, this one looks different or has a different pH or something and so we're going to hold that one separately and figure out what it

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is separately.

Q. Were there any safeguards to prevent compositing samples of different wastes if perhaps they were labeled as the same waste but in fact they weren't the same waste?

A. Well, that went back to the chemist. If he got two different waste streams and they were significantly different, even if they had been composited, when he compared the result of his test to the original sample, he would say they don't match and at that point then you go back and you look at each drum.

Q. And you when you say original sample, you mean the one that might have been received previously before the load came in?

A. Right.

Q. And what was the purpose of testing those samples?

A. Several purposes, I guess. One of the main reasons obviously is we were being paid to take certain materials and if somebody shipped something else to us, it might cost us a lot more to ship that to a different disposal site and we wanted do make sure that we were charging the right amount to the customer and

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we also wanted to make sure we were shipping it to the right disposal site. We wouldn't want to ship a drum of chlorinated solvent which we could sell to an incinerator and pay to have it burned if we could sell it to a company to reclaim the chlorinated solvent and there's also safety aspects to that. We put oil into our oil process facility and we wouldn't want to put a low flash material in there which might cause a fire in that part of the plant. So there's several reasons why you wanted to know what was in the drums.

Q. So of the drums that were destined for disposal in the barrelfill, was there any effort to separate the waste types so that particular wastes went into particular cells?

A. Typical operation was there was one cell at a time opened. Occasionally as you're finishing out an old cell, finished filling this, you have got a new one built ready to start putting materials in, but the normal operation was to fill the cell that's open. The materials were compatible. It wasn't the case of if I put this drum next to this drum the two of them are going to react

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and cause some sort of a problem so, no, there was no need for segregation of the materials.
Q. When you said that the materials were compatible, do you mean that the materials that were acceptable for drum disposal were all safe to mix together?
A. Well, they were certainly safe to put in the same cell. You wouldn't get -- if you took this material, some of this and some of this and poured it together, you wouldn't get a reaction that would be adverse to the health and safety of the people there or cause some problem down the road in the cell.
Q. And is it correct to say that the drums were not intended to keep that mixing that you just described from happening?
A. No.
Q. But rather to encapsulate them temporarily?
A. We expected that the drums would eventually decay, but we also expected that because the cells were in a very heavy clay and very well capped, that the drums would last for a long, long time before they decayed out of there.

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Q. How long do you think that long, long time would actually be?
A. Pure speculation, we guessed it had at least thirty years before these drums would have been gone.
Q. It's been about thirty years.
A. Yeah, and I don't know. I don't know if anybody has dug any up to see how intact or nonintact those drums may be.
Q. Now, when you refer to that speculation of a thirty year life on the drums before they decay, are you referring only to metal drums or are you referring to all types of drums?
A. We're talking about metal drums which probably ninety plus percent of the drums that went into that drumfill were metal drums.
Q. What other types of drums went in?
A. The only other type of drum may have been some plastic drums.
Q. What proportion of the total drums do you think were plastic?
A. It was a very small portion.
Q. Less than ten percent of the total drums that went in?

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A. I would say maybe less than ten percent. Maybe less than five percent.
Q. Do you remember which generators would generate waste in plastic drums?
A. No.
Q. Do you remember what types of wastes were in the plastic drums that went into the cells?
A. No. I would say the choice of a plastic drum was probably because they had it more than that they needed a particular drum for that particular waste stream. It's just at that point in time almost all of the drums that we got were because the company had received something in the drum, used up that raw material and then placed the waste that they were shipping out in the drum so that they didn't have to buy new drums.
Q. What would the lifespan of a plastic drum be in comparison to a metal drum?
A. I would expect plastic drums to last almost forever in there. There's no reason for them to deteriorate. They weren't exposed to light or anything to cause them to deteriorate in the ground.

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Q. So a plastic drum would last even longer than a metal drum?
A. Yes, I would think so.
Q. Was there any other kind of material that a drum would be made out of?
A. The only other kind of drum that I know of is a fiber drum which is a hard paper, but I don't ever remember receiving anything for the barrelfill in fiber drums.
Q. Is it possible that some were received, even though you don't remember it?
A. It's possible that could have happened. And it could have happened before I was there too.
Q. Did the site accept any kind of drum or only certain kinds of drums?
A. I'm not sure I understand the question.
Q. Was there any kind of drum that for any reason wouldn't have been an acceptable way to bury waste?
A. Certainly any drum that we took had to be sound. In other words, it couldn't be in such a deteriorated state that it was falling apart or bent halfway over or something

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coming in. And typically the transportation company wouldn't load a drum that didn't look good and to be in good shape because they had to transport it down the highway and you don't want it to fall apart or fall off the truck or do something on the highway.

Q. Is there any other reason you would want the drum to be in a sound condition other than for ease of transportation?

A. Well, as they constructed the cell, obviously they were stacked in there, so drum layer, then another drum layer and you would want those drums to be sound enough so that the next layer of drums wouldn't tip over or fall over because something gave way underneath of them.

Q. Were there any other kind of containers other than drums that were disposed of in the cells?

A. I don't believe so. I can't remember in the cells that there was anything there. There were materials that went into the regular landfill down below that certainly weren't drums, but in the drum fill itself, I think everything was drums.

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Q. Do you remember anything being disposed of in a box in the cells?

A. A box? Not that I remember.

Q. Do you remember anything being disposed of in a tub?

A. No.

Q. Were you involved with any paperwork associated with waste disposal in the cells? And I don't mean lab paperwork, but I mean any kind of record of what went into the cells.

A. Yes. I reviewed the cell logs and prepared those to go to the health department.

Q. When you reviewed the cell logs, what were you reviewing them for?

A. Completeness primarily. The logs themselves, when they did them, they were written out -- as they put the drum into the cell, they would write the numbers down so we had to translate that into a legible text that could be submitted and people could read.

Q. Are you saying that you would rewrite the cell log or transfer the information onto --

A. We transferred that information

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to -- well, occasionally a handwritten sheet and then later I believe we went to typing them out so that the people could read them easier.

(Thereupon, Plaintiff's Exhibit 1 was marked for purposes of identification.)

Q. Mr. Wallis, handing you what has just been marked for identification purposes as Wallis Deposition Exhibit 1, would you please take a look at this document and tell me if you have seen it before?

(Pause in proceedings.)

MS. WOLFE: And I'll represent that this document consists of six pages.

THE WITNESS: I don't believe I've seen this particular cell report before.

Q. Have you seen similar cell reports?

A. I've seen similar reports, but this cell finished in February of '79 which was probably just before I went to work there.

Q. But you have seen similar reports to this you said?

A. Yes.

Q. And are you referring to the first page that says cell report?

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A. Yeah, the cell report and the sheets -- the back-up sheets for it.

Q. Are these back-up sheets representative of the cell logs you were referring to earlier?

A. Yes.

Q. Is this the same format that the cell logs were in when you were there?

A. I'm not certain that it is. Because we did make some changes as we went along to do things.

Q. What do you think looks different about it from what you remember?

A. It may just be in the way they recorded it because it appears that on this particular one they chose to put the number down and then draw arrows to indicate the locations as opposed to recording individual drums. It accomplishes the same thing.

Q. Would it help --

A. I say, it accomplishes the same thing, gives the location of the cell and the material in the cell.

Q. Would it help refresh your recollection if you saw another example from

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during the time that you were there?
A. Yes, it would.
MS. WOLFE: I'm not going to mark this document as an exhibit just yet. I'm just going to show you this document dated July 27th, 1979, see if that looks closer to the cell reports you remember.
A. Yes, this is more familiar. You actually have the number for each drum recorded on the sheets.
Q. So now do you remember that typically the actual number for each drum would be separately written on that grid that you're looking at?
A. On this, yes.
Q. And you're referring to --
A. What's called the landfill log here.
MS. JALICS: Could we for the record identify the date on the first page of that cell report?
MS. WOLFE: I think it was July 27th, 1979.
THE WITNESS: This one runs from June 11th of '79 to June 18th of '79.

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MR. BROWN: Those are the days of start and finish of the report.
THE WITNESS: Okay. The date that it was sent in, yes.
MS. WOLFE: Why don't we go ahead and mark this.
(Thereupon, Plaintiff's Exhibit 2 was marked for purposes of identification.)
(Recess held.)
Q. Mr. Wallis, let me just ask you a couple more questions about the plastic drums that we discussed earlier. You indicated that you thought that they would last a long time, possibly even longer than metal drums would last?
A. Yes.
Q. What was the reason for that?
A. We expected that the metal drums would eventually oxidize, turn into rust, just from being exposed to moisture in the ground and all, whereas the plastic drums you wouldn't have that action, but I've got no way of really knowing what happened to either one of them in the cells.
Q. So are you saying the composition

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of the plastic material would last longer than the metal?
A. Yeah. If you look at landfills, when they have dug up other landfills, certain things seem to last forever in landfills and plastic is something that once you put it in a landfill seems to be there forever.
Q. Did the plastic drums have the same structural integrity as metal drums would have?
A. No. Not that they weren't strong enough for their purpose, but a plastic drum obviously is much more flexible in the side, though they have pretty good top to bottom strength.
Q. Were plastic drums buried in the cells in the same method as metal drums?
A. Yes.
Q. Would you expect that that lower structural integrity would lead to more likelihood of crumple or bending or denting of the plastic drums?
A. The way the drums were put into the cells, they were set tight against the drum next to them so as to help give structure, kind

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of like interlocking blocks across the cell and so I wouldn't expect that that would make any difference to whether or not the cell would collapse or not.
Q. Would the deterioration of the metal drums affect the structural integrity of the plastic drums after thirty years?
A. I don't think so, and that's a pure speculation, but I don't think so.
Q. You wouldn't expect that any of the contents of the plastic drums to have escaped the drum after thirty years?
A. Probably not.
Q. But it's possible?
A. Anything is possible. And I'm no expert on what happens inside of a landfill cell after thirty years. A lot of what I know I read from EPA reports so I don't think I'm qualified to make too many statements about that.
Q. Fair enough. What about fiber drums, if there were fiber drums buried in the cells, how long would you expect them to contain their contents?
A. As long as the fiber drums were

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dry, they should last indefinitely. The only thing that's going to deteriorate them is if they get wet, obviously they lose their structural strength, but the cells should have been fairly dry so I wouldn't expect any problem, even though I don't remember there being fiber drums buried there.

Q. Do you know whether all kinds of waste could be put in fiber drums or only dry materials because you indicated that fiber drums shouldn't be wet?

A. Fiber drums are used for dry materials. It's possible to put some moist materials into fiber drums if you put a plastic liner inside the fiber drum, but typically that's not done because the fiber drum is used for dry materials.

Q. Were the wastes that were buried in the barrelfill cells wet or dry?

A. They for the most part would pass a paint filler test which means there can be some liquid encapsulated into the material but not as much as that if you drop this out it's going to have free flowing liquid out of it.

Q. So there was a range of wetness,

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you would say?

A. Sure. Anywhere from bone dry to moist.

Q. What do you think the majority of it was with respect to how wet it was?

A. I would say the majority of the material that was put in there had a fairly low moisture content, just from the nature and production of the materials that went in.

Q. So --

A. I don't know how much water is in peanut butter so I'm not sure. I think it's mostly oil. I don't think there's much water in it.

Q. So by referencing peanut butter do you think that most of the material you're thinking of was somewhere around the wetness of peanut butter, is that the reference you're using, or are you saying that most of the material was peanut butter?

A. There was a lot of peanut butter that went in but there were also latex glues that went in and the latex glue would have some amount of water in it, but I don't know how much, but typically it's pretty well bound up

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in that glue. Trying to think of what other types of materials went in. There were paint sludges that went in. They might have some moisture depending upon how the paint sludge was produced. Paint sludges from a waterfall paint booth typically have some moisture in them. If it was a dry paint booth there would be virtually no moisture in them.

Q. So was there some food waste that went in?

A. Yes.

Q. And some of that was peanut butter?

A. Some of that was peanut butter.

Q. Was there any food waste that was wet enough that hypothetically if there was a hole punched in a drum it would run out?

A. Some of it might ooze out. I don't think anything would run out. It's kind of like if you punched a hole in a tub of peanut butter and squeezed on the drum or something, you would get some oozing of the material.

Q. What about with the latex glue waste, was that something that would be loose

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enough to run or ooze out if a hole was punched in the drum?

A. It's possible.

Q. Do you remember anything about how wet the latex glue was?

A. It was everything from dried chunks, kind of overspray when they were gluing something to almost raw material which was pretty much white Elmer's Glue type stuff.

Q. Elmer's Glue would probably run?

A. Yeah, Elmer's Glue would probably run.

Q. Now, you also mentioned paint sludge. How wet was the paint sludge that you remember?

A. Again, it depends on how it's produced. From a waterfall paint booth the nature of it is that some water droplets get trapped into the paint sludge, encapsulated in it, so if you took it and swirled it around you would get some water out of it. If you just sat it there you probably don't.

Q. What other waste types do you remember being buried in the cells?

A. We got -- we had a fairly wide

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range of typical manufacturing process waste so glues, inks, oils. Now, let me step back for a second. I'm just thinking of all the things we received. Not all of those would end up in the cells.

If you just want to talk about the cells, I've got to think a little bit. I'm thinking of all the things that came to the site. But in the cells themselves, because it's heavily automotive related businesses in the area, there were a lot of paints and polyol and some glues, some plating sludges and that was pretty much all automotive manufacturing related. And then the other big category was the food and consumer products, the detergent samples. Procter & Gamble routinely took a little box of soap out of every so much soap powder that they made and they did their quality control on that and then they take that little box and throw it into a drum so you have drums of detergent.

Q. Would it help you to remember if I showed you a list that was generated after the barrelfill closed but it's a compilation of materials that might have been there?

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A. Sure.

Q. And you can tell me if you have an independent memory of these materials being buried there.

(Thereupon, Plaintiff's Exhibit 3 was marked for purposes of identification.)

Q. Handing you what has just been marked as Wallis Deposition Exhibit 3 for identification purposes, could you please examine this two page document and tell me if you have seen it before?

A. I don't believe I've seen this before, but --

Q. I'll represent that there's some highlighting on this document that might have been done after the document was created and might have been done by me. I can't remember. But the purpose of showing you this is to see if you can generate some memory of the wastes that were generated at the site. I believe that this is an EPA document that was created after the site closed. And do you see that the document lists different categories of wastes based on the type of waste?

A. Yes.

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Q. What I would like to do is go through these categories and ask some questions of each one. Starting at the top where it says glues and resins, do you recall any of these materials being disposed of in the barrelfill?

A. Yes, several of those I can say for certain were in the barrelfill.

Q. Several you can or cannot say?

A. I can say for sure they were there.

Q. Which ones?

A. The adhesive, the Bondalube sludge, the cement and glue, latex paints, coatings, grease.

Q. Anything else in that category?

A. Polyester, polyol, polyol paint, polyvinyl adhesive. I'm not -- probably was there, polyurethane. I'm not sure that styrene or styrene monomer was buried because typically that would have been sent for incineration.

Q. Why is that?

A. Styrene and styrene monomer are very flammable and very high heat value and I think typically that would have been sent for incineration. I don't remember ever seeing

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chlorinated polyol. That would be a -- that would have been a strange compound.

Q. Why would that be strange?

A. Typically polyol is a long chain alcohol with a lot of alcohol groups along the chain that is used along with TDI to make urethane rubber and we got a lot of that from the auto manufacturers because they make the urethane -- urethane foam-like dashboards and headliners with that, and I don't know why they would have that chlorinated.

Q. So are you saying that you remember polyol being disposed of but not chlorinated polyol?

A. Yes, that's what I'm saying.

Q. And you mentioned TDI. What's the full chemical name for TDI?

A. It's toluene diisocyanate which is why you call it TDI.

Q. And you mentioned that that was used in the automotive industry --

A. Yes.

Q. -- to mix with polyol to make urethane foam?

A. Yes. And they correctly don't

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have that on the list because we do not bury that either. It is a very reactive material and so it was sent out for incineration also. Though I -- I would say most of that was sent for incineration. Near the end of that time we were treating some of it on site to neutralize it.

Q. What was the treatment process?

A. You mix TDI and polyol together and you get urethane rubber.

Q. And you would do that on site?

A. We did that on site.

Q. Did you do that with all of the polyol that came on site?

A. No. It was a small portion of the material.

Q. Did you do it with all of the TDI that came on the site?

A. I would say over the period of time most of the TDI was sent off site but we did do some of this -- near the end of the time that I was there we did do some of this on site.

Q. And would you go through the process of how the polyol and TDI were

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combined?

A. We would go out on a section of the ground there, put in about, oh, a foot to two foot deep trench that would be, let's say twenty feet wide and maybe forty feet long, line that with plastic film, visqueen type material, and we had a drum dumper that would take a drum of polyol and a drum of TDI and release -- tip them so they would run together in a mixing trough. And then from that mixing trough it ran down into this plastic lined area. The two materials reacted together and after a short period of time you had a very large urethane mattress and then we would take the equipment from the loader or whatever and break that material up and put it in the landfill.

Q. What was the purpose of doing that?

A. To neutralize the TDI.

Q. What was the acceptable method of disposing of TDI if you didn't go through that process?

A. If you didn't do that, then you shipped it off site to an incinerator to be

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burned.

Q. And that mattress that was the end production of mixing polyol and TDI, where was that disposed of?

A. It was either -- I think most of it was put into the sanitary landfill.

Q. Where was the rest of it put?

A. There may have been some of it that was put into a drum cell, but I can't remember for sure which way we ended up. I think most of it ended up going down to the saniter.

Q. You have a recollection of some of it being put into a drum cell?

A. No, but I don't have a recollection that it wasn't, so I'm not certain that it was put into the drum cell but I know that they did take a lot of it and put it into the saniter.

Q. Do you think it's possible if it went into the drum cell it would have been put into a drum?

A. No, it would not have been put into a drum. It was big chunks of foam rubber and they moved it with like a bulldozer.

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Q. Now, you mentioned earlier chlorinated polyol which is on this list?

A. Yeah, and I don't remember ever seeing any chlorinated polyol.

Q. Would it be unacceptable to put chlorinated polyol in the barrelfill?

A. It was probably permitted. I'm trying to think if -- I just don't know they would have had chlorinated polyol.

Q. Is chlorinated polyol an organic compound?

A. Yeah, they are all long chain alcohols. The difference between regular polyol and chlorinated polyol is they substitute chlorine in place of some of the alcohol on the chain.

Q. Is there anything else on this list that would be considered a chlorinated organic compound?

A. Let's see.

Q. And let's just start with the glues and resins.

A. Neoprene is a chlorinated rubber, however, if it's truly neoprene it's pretty stable. It's going to stay as chlorinated

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rubber for a long, long time. Polyvinyl is a PVC, polyvinyl chloride, so if you had a polyvinyl adhesive it would have a fair amount of chlorine included in that. I think that's the only ones I see there that would have been chlorinated.

Q. Do you recall the disposal of neoprene in the cells?

A. No, I don't.

Q. Do you recall the disposal of polyvinyl adhesive in the cells?

A. We disposed of a lot of adhesives and it wouldn't surprise me if some of it was polyvinyl, but I don't have any real recollection of whether it was there or not.

Q. Of all the materials in the glues and resins category that's listed here on the exhibit that you recall being disposed of in the cells, was there anything disposed of in bulk rather than in a container?

A. I don't remember ever having any of that in bulk. Almost all of this came from the manufacturers in drums.

Q. Was there anything that came from the manufacturer in drums that would have been

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emptied out of the drums and disposed of in the cell?

A. No. No. That would have been too labor intensive for any good purpose to do. Then you would still be left with a drum that's got goop in it so I'm almost certain we never did that.

Q. Do you have any memory of polyol being emptied out of drums into the cells?

A. No.

Q. Do you have any memory of any material being disposed of in bulk form in order to use up any remaining free space in the cells after the drums were placed in there?

A. As I remember, the permit allowed for sludges to be placed around the drums but I don't remember during the time that I was there that we actually did that.

Q. Are you aware of that being done before you got there?

A. Like I say, I know it was in the permit. I don't know that it was ever done.

Q. Let's look at the next category on this list which is paints. Do you remember any of these materials being disposed off?

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A. Certainly we did lots of paint sludge, paint filters. I don't remember lacquer as a category. That's another one of these things that that's fairly liquid, highly flammable and would have been sent for incineration unless they are talking about a sludge or a dried material, but certainly the other categories, yes, we did a lot of paint sludge.

Q. Do you recall any paint sludge or anything in this category being disposed of in bulk in the barrelfill cells?

A. No.

Q. Did any of these materials contain chlorinated organics or would they be considered to be chlorinated organics?

A. Typically not. The paint, again, a lot of this was from auto manufacturing and there would have been lacquers or enamels and those aren't chlorinated, so I wouldn't expect to see anything from that.

Q. What chemicals would you typically find in paint sludge?

A. Paints are made up of pigment to give it color, a resin which can be any number

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of polymers and a vehicle which is the solvent that keeps it liquid until you get it -- lets it dry to become the solid paint, and in the paint sludge most of the vehicle is gone which is why it's paint sludge instead of liquid paint so you have got mostly the resins left, the paint resins, and those can be anything from enamels, latexes, lacquers. Almost all of them are various organic polymers I guess is the general term you would use for that.

Q. Moving on to the next category, cleaning and hygiene, do you remember any of these materials being buried in the cells?

A. Yes.

Q. Which ones?

A. All of them.

Q. Were any of these materials buried in bulk?

A. No.

Q. And what kind of chemicals would you typically find in these products? Is that too broad of a question?

A. That's very broad because it's a pretty broad spectrum of materials there but those are all consumer products typical to what

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you would find in your bathroom so there's nothing particularly hazardous about any of them. You're looking at, for instance, a toothpaste which has got some form of an abrasive powder, a material, probably water, depends on the toothpaste. You may have some brighteners or some fluoride or other materials in there to do it and almost everything has got some colorant, some dye. The FBI -- FDA numbers, whatever. And something to give it a nice smell.

Q. Were any of those materials in their consumer packaging or were they all unpackaged, just --

A. I would say the most of these were packaged materials.

Q. So are you saying that you might have a drum full of toothpaste tubes filled with toothpaste?

A. Yes.

Q. Or a drum filled with shampoo bottles?

A. Yes.

Q. And what would those packaging materials be made of?

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A. Same thing you find in the store, plastic bottles. Toothpaste tubes are typically a plastic material. A lot of these were either QC samples which they also list there where they would take a -- grab a tube of toothpaste off the production line, take it over and test it to make sure that it had the right abrasiveness or whatever other tests they were doing, and then because they have squeezed a little bit out of the tube, the rest of the tube got thrown in a drum to be disposed.

Q. How long would you expect those packaging materials to remain intact after burial?

A. A long, long time based on how long they last in other landfills so they are probably still in good shape.

Q. Do you recall what kind of cleansers were buried?

A. What kind of cleansers does Procter & Gamble make? Typical household cleansers, soaps, probably most of those would be some form of detergent. I can't remember if we had any -- may have been some scouring powders in there, but typical types of

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household cleansers.

Q. Did any of the wastes that are listed under cleaning and hygiene contain chlorinated organics?

A. Probably if there's any chlorinated organics there it's in the packaging because we get a lot of PVC in consumer packaging so that's probably the most of where you would find any chlorinated.

Q. Would you say that you would find a lot of PVC in most plastic packaging or -- is it because of the plastics that you would find that?

A. Yes, it is the plastic that makes up your squeeze bottles or your detergent bottles, a lot of those are plastic and a lot of those have either a layer that's PVC or the whole container is PVC depending on the material because PVC is a very good packaging material for consumer products.

Q. Is there anything that PVC packaging or plastic packaging could come in contact with in the barrelfill that could cause it to decompose faster than it ordinarily would?

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A. I don't believe there was anything in that landfill that would decompose PVC. You would need a strong solvent to break the PVC, dissolve PVC and those solvents weren't put into the landfills.

Q. Were there any solvents put into the barrelfill?

A. There was trace amounts of solvents in the vehicle for paints in the paint sludge, but not enough to have much effect on anything.

Q. If that paint sludge with trace amounts of solvents came into contact with a toothpaste tube, would it have any effect on the tube's condition over thirty years?

A. I won't say it's impossible but I think it's probably highly unlikely.

Q. What about in a hundred years?

A. I don't know. I don't know.

Q. What about -- I'm sorry.

A. I think you're getting into the point that I don't know that there's anybody that knows that yet.

Q. Well, I'm just trying to find out whether there's another solvent in any of the

Page 78

waste that went into the barrelfill to have any effect on plastic material that was in there at the same time?
A. I don't think so, but that's purely a personal speculation. I don't think you can really say for sure.
Q. And would your answer be the same if we were talking about material with trace solvents coming into contact with a plastic drum versus a toothpaste tube?
A. The drum is certainly going to last a lot longer because it's a lot thicker and the drums typically were made of like a high density polyethylene as opposed to PVC, so I would say a drum would last a lot, lot longer than a tube of toothpaste.
Q. The next category on the list is waxes and fats, and can you tell me if there's anything in that list that you remember being buried in the barrelfill?
A. Well, certainly we did take greases and mixtures of greases with floor sweepings and dirt, fatty acids, yeah, probably we did get those. I don't remember any hexane liquids. I don't know why that would have been

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put there. And I don't know how you make hexane solid.
Q. What is hexane liquid?
A. Hexane is an organic solvent used in a lot of materials for solvent capability and, again, if it was liquid, that would be material we would have incinerated.
Q. So you don't remember any of it going in the barrelfill or you don't remember it being allowed to go in the barrelfill?
A. I don't remember any of it going into the barrelfill and we would have certainly tried very hard to make sure it didn't go into the barrelfill.
Q. The next category is solvents and stillbottoms. Do you remember any of these items going in the barrelfill?
A. I would say probably as part of the glues and resins we probably got that -- just like rubber solvent is really probably like rubber cement type materials, I think that's probably what they are talking about. Certainly solvent sludge-type materials. Not sure that ethyl alcohol would have made it to the landfill.

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Q. Why do you say that?
A. Because if it was good somebody would have stolen it.
Q. Why, is it valuable?
A. It's whiskey.
Q. Oh.
A. But I don't know why they would have listed that as a separate category. Typically we would not have put an alcohol, if it was pure alcohol into the landfill. Solvent sludge is probably really paint sludge, but, again, that's kind of speculation.
Q. What is the chemical composition that could categorize something as a solvent or is it not based on its chemical composition?
A. It's based on its ability to dissolve something and make a solution.
Q. That's what defines a solvent?
A. Yes. And there's the best one in the world (indicating). Water is the ultimate solvent for most things in the world. Organic solvents typically are used for their ability to dissolve a resin or some other organic material so that you can produce something, make something out of it.

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Q. You testified earlier that solvents would usually be recovered and sold rather than buried.
A. Chlorinated solvents were typically recovered and sold because they had a very good resale value.
Q. Was there any reason that you wouldn't want to bury solvents based on their reactability or any other character of their composition?
A. Chlorinated solvents typically because they have value we wouldn't have buried. Flammable nonchlorinated solvents typically we sent for incineration based on partially the safety considerations that flammable solvents -- moving them around and burying them in the landfill wasn't a good idea from a safety standpoint. You don't want to run heavy track equipment over a drum which may catch fire and explode underneath it. So we tried to keep everything like that to go for incineration. Now, you could have a paint sludge with solvent in it, but typically it would be solid -- mostly paint sludge with a small amount of solvent, trace amounts in it.

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Q. Were any of the materials listed here under the category of solvents and stillbottoms flammable or can you not tell from looking at this?
A. You can't tell from looking at this. In their pure state, they probably would be. Certainly ethyl alcohol, xylene are flammable as a pure substance, but when you say sludge, generally means there's a little bit of xylene and a whole lot of something else and I don't know what else is there to be able to say that and how much xylene is really there.
Q. What are stillbottoms?
A. If you recover solvents you use a still. Most of the solvent is boiled off, becomes a vapor and is then recovered over here. The stuff that's left in the bottom of the still is stillbottoms and it's typically the pigment, the resins and anything that wasn't volatile that was in the waste that you started with.
Q. When you say anything that was nonvolatile, do you mean that anything volatile would have been vaporized?
A. Yes. The whole idea of distilling

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something, to run it through the still is that you drive off those volatile fractions so that you recover it over here as a usable solvent again and the material that's left is the material that you don't want.
Q. Do you remember the identity of any of the generators of stillbottoms?
A. During the time that I was there I don't remember seeing much in the way of stillbottoms, so, no I don't remember any generators of them.
Q. Do you remember any stillbottoms coming from Systech's Franklin, Ohio facility?
A. The Franklin, Ohio facility was not in operation while I was at IWD, so, no, I don't think anything came from there during the time I was there. Now, that's not to say that something hadn't come before that.
Q. Do you know when that facility was in operation?
A. I don't know when it started, but I think I remember that it stopped around '78, but really, I was -- had no connection with it during the time it was running. I just know it wasn't running by the time that I was first

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hired by Systech.
Q. Getting back to this solvent recovery process, what kind of container would the stillbottoms be in at the end of that process?
A. They could either be drummed or it could have been done in bulk. Typically the -- at that time most of the people who were recovering solvents would have drawn the stillbottoms out.
Q. Why do you say that?
A. Because it's a small part of the total and when they cleaned out the still it's easier to dump it into it -- it's typically a sticky, gooey, chewing gum material and it's a lot easier to rake that out into a drum than do anything else with it.
Q. Do you remember any of that material, stillbottoms, coming into the site in anything other than drums?
A. I don't even remember any of it coming in when I was there.
Q. Go down the miscellaneous category on this exhibit, would you please look at that list and tell me what you remember, if

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anything, being buried in the barrelfill.
A. Certainly abrasive slurry would have been drummed and put in there. Some of these are -- I have no idea what Cold Snap is. Diatomaceous earth. I'm surprised that there are four drums of flammable waste. That probably shouldn't have happened if it did. I don't know what Sta-Sol is for sure and I don't know why two drums of water would have been put in unless there was something else in the water because I know typically we had a small water plant that we would process the water through and then transport the treated water to the local Springfield Municipal Plant, but I guess the rest of them could have been there.
Q. Do you have any idea what kind of solid drums trash might have been or solid trash in drums might have been put in there?
A. Hard to say.
Q. Do you remember any solid trash in drums being put in there?
A. If it was truly trash I would have expected it to go to the sanitary landfill, so when they are saying solid trash, I don't know what kind of category they are talking about.

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Q. Were there any materials in this miscellaneous list that would contain chlorinated organics?
A. Other than the couple of them that I don't know what they are, I would say the rest of them would not contain chlorinated contrast.
Q. Moving on to inks, do you remember ink waste or ink sludge being placed in the barrelfill?
A. Certainly ink sludge was and I'm guessing ink waste is probably ink sludge also, just somebody used a different name.
Q. Do you recall any ink waste or ink sludge in bulk form being disposed of in the barrelfill?
A. No.
Q. Does that type of waste contain any chlorinated compound?
A. I would not expect there to be any chlorinated in there.
Q. Moving on to asbestos, do you remember any asbestos or material containing asbestos being buried in the barrelfill?
A. I don't remember any asbestos but

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certainly they did have customers who had asbestos waste, Delco being one of them, but typically asbestos waste from Delco, as I said, would be put into big plastic bags and went to the sanitary landfill. Asbestos and water could be something that would have been there.
Q. Did any dry asbestos come into the site or was it just asbestos and water?
A. I don't remember any asbestos during the time I was there, but I do know that Delco did make -- a part of their drum grinding, they ended up with an asbestos water waste.
Q. Do you remember there being a lagoon at the Tremont site or a pond?
A. There was a pond.
Q. What was that used for?
A. It was used to aerate wastewaters before they were run through the water treatment plant to go out to the city and at one point in time when they had decided to close that out, they used it for disposal of some coal residue from a -- the government program to try to make oil out of coal that was over in Moundsville, West Virginia.

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Q. Was that called Liquified Coal Development?
A. It could be. I just remember it was Moundsville, West Virginia, and the solid residue from the coal after they extracted the organics was used to fill in that pond.
Q. Do you remember the pond being used to evaporate water from water and asbestos mixture?
A. No. The only other use that I know of it was to aerate water to help reduce the COD, get some oxygen into the water so that the cost of treatment would be lower. That was done simply by pulling water from the pond, bringing it up through a flat spray nozzle and spraying it back over so it would fall through the air and pick up the oxygen out of the air.
Q. Then moving on to oil on this exhibit, do you remember any of these materials being disposed off in the barrelfill?
A. Oil sludges, yes. Typically oil or oil/water mixtures would have gone to the oil treatment plant to recover the oil. It's possible separator sludge could have gone there too.

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Q. What is separator sludge?
A. A separator is a device to remove oil from water. Typically if you have got a big manufacturing operation and a lot of trucks moving around you will get drips of oil on the ground and when it rains, then that washes off the parking lot and so they put a trap to collect that water and run it through a separator to skim that oil off the top so it doesn't get discharged into a stream someplace.
Q. Would that oil sludge or separator sludge be generated at the oil recovery facility on site?
A. Oil sludge certainly was.
Q. At the end of that oil recovery process, what kind of container would the oil sludge be in?
A. The process would have generated that in as a bulk form which they probably would -- that was vacuumed out with a truck and then that oil sludge was used as a bulk into the landfill.
Q. Into the barrelfill or into the solid waste landfill?
A. Into the barrelfill.

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Q. In bulk?
A. In bulk.
Q. Can you tell me more about that process of vacuuming it out of something and then putting it into the barrelfill?
A. We had several treatment plants where you did gravity separation of the oil and water and solids, and those were steam heated and basically heated the oil/water mixture up, held it at temperature for two to three days. The oil would float to the surface and was skimmed off. The water would be the next layer and then on the bottom all of the dirt and stuff that was in the oil would drop to the bottom. And that sludgy layer on the bottom was then -- at the end of that period you skimmed the oil off, you pumped the water to the water treatment and then this sludge that's left on the bottom was vacuumed up by a vacuum truck and moved over and put into the landfill or the drumfill.
Q. Can you quantify the amount of that material that was generated on site and put into the cells?
A. No. I can tell you that typically

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it would have been ten percent of the total volume incoming material for the oil treatment plant.
Q. So ten percent of the material that went into the oil treatment plant would end up as a sludge by-product?
A. Yeah, typically I would say that's about it.
Q. And then would that entire amount of by-products at the end of the process be put into the cells?
A. Yes.
Q. So when it was vacuumed into -- a tanker truck, you said?
A. Yes.
Q. Then would the tanker truck just directly immediately drive over to the cell and then pump it into the cell?
A. Well, yeah, typically I would say that's what happened because we would have already tested the material prior to them pumping it out of the treatment tank so there wouldn't be any reason to hold it up from pouring into the cell at that time.
Q. How often did the oil recovery

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process yield oil sludge that would be vacuumed out?
A. It was an ongoing process and I'm trying to remember. I think we had six treatment tanks and typically it was a two to three day process for each one but they wouldn't clean the sludge out until it built up a larger volume in the bottom and so that was probably -- I would say probably one of those tanks would have been cleaned out maybe one a week.
Q. So one of the six tanks per week would be vacuumed out?
A. Yeah, I think that's a rough estimate.
Q. How many gallons would it yield each time it was vacuumed, roughly?
A. Two hundred, three hundred gallons.
Q. Do you recall what size vacuum truck was used to do that?
A. Whichever truck was available.
Q. Would it ever fill the truck?
A. No. No, you're talking very small amounts, two or three hundred gallons, and I

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think the smallest vacuum truck was probably four thousand gallons and the bigger ones were six thousand gallons.
Q. Can you describe the consistency of that sludge? Obviously it was able to be vacuumed so it couldn't be too solid, but how wet or liquid was it?
A. It was -- it looked like heavy gray mud.
Q. And what did it consist of?
A. Mostly it was dirt, floor sweepings from factories. Some of it would have been finely divided carbon from motor operations, bits of metal from bearings and machinery that the oil was in. A small amount of oil would remain in it and some water.
Q. Do any of those components contain chlorinated compound?
A. No. We had to be very careful about that because chlorinated compound would make our finished product unusable. Couldn't sell chlorinated oil to somebody.
Q. Was there any record made of the amount of this material that was disposed in bulk form in the cells?

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A. It should have been recorded.
Q. Would it have been recorded on the same log used to record the drum disposal?
A. Yes.
Q. And when you say should have been, are you saying that you believe it might not have been all the time?
A. Well, I'm just thinking if I can remember seeing it on cell logs or not and I don't remember whether I saw it on cell logs or not.
Q. Would it ever be in the thousands of gallons on a cell report or do you think it would only be in the hundreds of gallons?
A. I would think in the hundreds. I can't imagine it getting into thousands of gallons. The tank -- the treatment tanks would only hold about four thousand gallons so -- and it was a small percentage of that, so I don't think you would get into the thousands of gallons off that.
Q. Did oil sludge only come from the on-site facility or did you receive any oil sludge from other generators?
A. We got some oil sludges and

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greases from other places because some of the auto plants had their own oil recovery systems and so we would get sludges and that from those.
Q. Were those in drums?
A. Yeah, that was typically in drums.
Q. Was there any in bulk?
A. There may have been, but I'm not sure that I can actually pin that down and say yes. But it would make sense from some of those plants that it may have been bulk at times.
Q. Could there have been PCB's in the oil sludge that was disposed in bulk in the cells?
A. We tested everything for PCB -- any of the oils for PCB's, so from our process I would say for certain, no, there wasn't any PCB's there. From the off site oil sludges, the original samples were tested and I think -- I think we tested PCB's on the oil sludges when they came in, but I'm not certain.
Q. What are PCB's?
A. Polychlorinated biphenyls.
Q. Are PCB's something that would be

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permitted to put in the barrelfill?
A. I doubt it, but I can't remember when the PCB rules came into effect. I think at that time -- I'm not sure if PCB's had been banned from landfills at that time or not. I can't remember where in the history of things they decided PCB's were bad.
Q. Why are PCB's banned from landfills today?
A. They are pretty much banned from everything today. They decided that -- they decided that while this material was extremely inert and at one time was thought to be just the greatest stuff in the world, they put it into transformers, they used it in the wax on the wax paper on your cereal cartons and everything else, they figured out that it's extremely inert and therefore it never goes away and it bioaccumulated in various places and then somebody decided that maybe this is a bad thing and they started doing a lot of studies and there's a lot of controversy over what the studies really said, but they decided that we're not going to allow the disposal of PCB's in landfills or other places and they set

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up special incinerators to burn PCB's and then -- well, about the same time they banned the production and there was a big hump that went through the business of getting rid of PCB's and now it's pretty rare to run into them anymore.
Q. Getting back to when you were discussing the reaction of polyol with TDI --
A. Okay.
Q. -- do you remember an incident, and this is something that you discussed in your interview a couple years ago, where a lid of a drum of TDI blew off on a hot day?
A. Yes.
Q. And you said in that interview, and correct me if this is not your recollection, that there was another time when you were reacting TDI with polyol and the material got too hot and had to be disposed of in the active cell in the site rather than in the solid waste landfill. Do you remember that?
A. Well, I remember that it did get too hot, it caught on -- it spontaneously combusted and we had to smother the fire by

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putting dirt on it, but I believe after that was done and it was put out that that material was dug out and put into the sanitary landfill. I think that's it.

Q. You mean it was put into the barrelfill and removed from the barrelfill?

A. No, not -- go back. What I said, we had the trench, if it got too hot it would spontaneously combust and then you have got burning rubber, and so the way they put it out was to just take a bulldozer and push a pile of dirt on top of it. When it was smothered, couldn't get oxygen and it cooled off and I believe the next day they went back and dug that out so it was temporarily smothered by putting dirt on it, not buried permanent.

Q. Can you describe where at the site that plastic lined trench was located?

A. Typically I think that was about a couple hundred feet away from the drum yard into the area of the drumfill and I'm trying to remember if that was on top of old closed cells or on property that hadn't been developed yet.

Q. I have a map.

A. Oh, good.

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Q. Or actually a photograph.

MS. WOLFE: Why don't we mark this.

(Thereupon, Plaintiff's Exhibit 4 was marked for purposes of identification.)

Q. Showing you what has just been marked as Wallis Exhibit 4, do you recognize what this photocopied photograph is depicting?

A. Yes.

Q. What is it?

A. This is the operations of IWD Liquid Disposal.

Q. I'm just giving you the original exhibit because I'm going to ask you to mark on it. Does this appear the way you remember the site to have been laid out?

A. Yes. Yes. Though I'm curious to the date. This looks like it must be a fairly old picture.

Q. I believe it's from 1979 and it was found in -- or the original was found in a trailer on the site.

A. Oh, okay. I would say this picture is older than '79.

Q. Why would you say that?

A. Because the solid waste landfill

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down here isn't developed up into the area that a lot of this down in this corner (indicating) which is -- trying to remember my directions. Okay. Bottom left corner shows this to be a lot of green trees and stuff and from what I remember from '79, '80, that had already been developed into sanitary landfill, so -- and there's some things missing from up here (indicating), just little things that would indicate to me that this is prior to that time by some period.

Q. Does it appear from the picture that this was during -- this photo was taken during the time that the barrelfill was in operation?

A. Yes.

Q. Do you see the area on this photograph where the barrelfill cells were located?

A. Yes, but interestingly enough, I don't see an open cell.

Q. Would you take this blue pen and circle the area that you generally recall the barrelfill cells to be located at?

A. Well, let's see. In general, the

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permitted area is something like (indicating). That's kind of the permitted area for the drumfill. And then they had filled -- well, this is -- '79, trying to think. Most of the cells in this area (indicating) up here I think all the way back across here (indicating) had been filled and they were working in this general area (indicating) at the time.

Q. Well, for purposes of the court reporter --

A. Sorry.

Q. -- and so that we can understand what you're describing, would you draw circles with that pen and put an initial or a word in the middle of each one that indicates the areas that you're talking about?

A. Cells would have been typically something like this (indicating).

Q. You're drawing sort of --

A. They are rectangles.

Q. Rectangles. Okay.

A. And there were a number of them down -- and I don't remember the cell count that was down, but typically you dug these out and then backfilled in here with drums and then

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capped it off.
Q. So the areas where you have drawn rectangles where it says cells are general depictions of what the cells would have been?
A. General depictions of where the cells were.
Q. Initially we were talking about the trench that was used to react polyol and TDI. Can you mark -- here's a red pen. Can you mark where you think that trench was located in red?
A. It would have been somewhere in this area (indicating).
Q. Looks like that's somewhat beneath where you drew the cells or lower down on the picture.
A. It's certainly within the permitted area for the cells. I can't remember if the cells were filled from this direction that way or from this direction that way (indicating), so it was either on permitted ground that hadn't been used yet or it was over top of an already capped cell. I can't tell you which.
Q. Can you tell which direction is

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north on this picture based on your memory of the direction that things were laid out?
A. In general, north I think was kind of that way (indicating).
Q. Can you draw an arrow to what you think is north?
A. I think that's in general (indicating). North is kind of that direction (indicating).
Q. So you don't know where the cells were dug south to north or north to south?
A. I just don't remember right now which direction they went. I think they went north to south, but --
MS. WOLFE: Can we go off the record for just a minute?
(Thereupon, an off-the-record discussion was had.)
Q. Still looking at Exhibit 4, the photograph of the site, can you identify on that picture where the oil reclamation plant was located and circle it for me?
A. (Indicating.)
Q. And write underneath it oil.
A. Okay. (Indicating.)

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Q. And then what other structures do you recognize on that picture?
A. This is the wastewater plant (indicating).
Q. You have just circled something and you wrote WW under it?
A. Yes, wastewater plant there (indicating). This is the transportation (indicating).
Q. And you have circled another building, looks like it's to the right of the wastewater plant?
A. Yeah. Pond.
Q. Just above the --
A. There's a transportation building (indicating).
Q. Just above the transportation building was a pond you circled?
A. Yes. And then this up here (indicating), now, this has to be earlier. There's no fence around that I don't think.
Q. You're looking at an area just above the pond?
A. Yeah, an area just above the pond is where the drum yard was.

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Q. Can you tell from the pictures if there's any drums in the yard?
A. Yes, those stacks along there are drums (indicating). This has got to be an earlier picture because I -- or I'm not able to see it. Doesn't appear to be a fence around that and that area was also fenced, any time I've ever seen it fenced in.
Q. So what in this picture indicates to you the barrelfill was in operation at the time this was taken?
A. Well, there certainly are drums stacked back there. There are trucks in the areas, both drum trucks and a tanker sitting there, so they were definitely doing something at the time.
Q. Is this possible it was taken before the first cell was dug?
A. It's possible, I guess, but I can't -- I don't know the history going back far enough to know which came first. I thought the cells were fairly early in the history of the site.
Q. When did you think the first cell was dug based on your knowledge of the site?

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A. I don't know what year. I'm just -- kind of chronologically, I thought they had started with the drum fill and then added the other items in afterward. This would kind of indicate that you had a lot of those other things there first.

Q. Where you circled the oil treatment facility, are those six upright looking cylinders the tanks that you were describing earlier?

A. No. Those are storage tanks for the incoming and outgoing product oil. The kind of -- you can't tell it, but kind of a real dark looking area there (indicating), those are the six treatment tanks.

Q. Do you know when that facility began operating?

A. No.

Q. Do you know when it ceased operating?

A. It ceased operating in March of 2008 (sic) but they laid everybody off.

Q. Was it operational when you started working at the site?

A. Yes.

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Q. Do you know who was running the operation when you started?

A. You mean the workers who were actually there?

Q. Yes.

A. Well, John was doing most of the oil processing.

Q. John Budding?

A. Yeah. And Gary was running the wastewater plant and working in the lab. Jeannie, I can't think of her last name, was running the transportation company and Jack Wright was over all of it.

Q. Do you know if the oil treatment plant was running before the first cell was dug?

A. No, I don't know.

Q. Are you aware of any waste disposal that took place afterhours or at night?

A. We ran at least two shifts all the time, sometimes three shifts.

Q. So were all of the activities that took place during the day also taking place at night or just some activities?

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A. Most of the transportation was done on first shift, though some trucks on longer runs wouldn't get back until fairly late at night. The oil process was an ongoing operation. Wastewater plant, there was sometimes one, sometimes two shift operations. Drum yard was mostly in the days but could run second shift or more. The drum fill itself, a lot of that was two shifts and some of it really depended on the weather because if you were getting a lot of rain you didn't bury many drums but you pumped a lot of water.

Q. What shift did you work?

A. Days.

Q. Only days?

A. Yes, only days.

Q. Did anyone in the lab work nights?

A. Yes.

Q. Who?

A. I don't remember their names.

Q. Was there disposal of drums at night or just during the day?

A. Night as far as second shift, yeah, sometimes they would work fairly late to finish things up.

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Q. Was the drum disposal a constant process or were there times when there were no drums waiting to be disposed?

A. No, there were almost always drums waiting to be put into the landfill.

Q. Do you recall any waste material being referred to as ABS?

A. ABS? No. What -- well --

Q. Did you as part of your job have any dealings with government inspectors that came to the site?

A. Well, yeah. We had the Ohio EPA or regional landfill inspector Joe Moore, I believe his name was, who came by once every week, or once every two weeks he would come by to stop in and see how things were going. And most -- well, all of the drum logs and reports went to the county board of health.

Q. Do you know of any wastes ever being reported on the cell logs as pallets of waste?

A. If something was palletized, it would have to still be in some other kind of container. A pallet is just a flat wooden piece to be able to pick it up with a forklift

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so most of the drums weren't palletized coming in. Some of the drums were on pallets, depending on the company that was shipping them, but they would still have to have some other kind of material the drum was in.

Q. If it was on a drum with a pallet, would the pallet always be placed in the cell with the drum?

A. No, most of the time the pallets weren't put in the fill.

Q. Were they sometimes put in the cell then?

A. I don't remember any pallets going into the fill.

Q. Turning back to Plaintiff's Exhibit 1, I know you testified that this was just before you started working at the site?

A. Yes.

Q. But if you see on the first page which is a cell report for cell G-6, the first item listed is PPG Industries, pallets, parentheses, looks like it says paint sludge or PT, period, sludge, and then it says forty-two pallets. What do you think that indicates?

A. Sloppy recordkeeping.

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Q. Was sloppy recordkeeping typical at that site?

A. No. This particular cell report does not look typical of what you would expect to have seen there. Certainly it would have had to have -- whatever that material was, if it was any kind of sludge, it had to have been in some sort of a container to be on a pallet so whether they had three or four drums sitting on a pallet and rather than record hey, I put four drums in of this material, they just wrote down how many pallets they put in.

Q. How many drums would fit on one pallet?

A. You can put four drums on a pallet.

Q. So does forty-two pallets indicate to you that it would have been forty-two times four, the number of drums?

A. That's what I would have expected, yes.

Q. So a hundred and sixty-eight drums?

A. Yeah.

Q. Is there any other kind of

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container that you would find on a pallet other than a drum?

A. You could put a cardboard box on a pallet but you typically wouldn't put sludge into a cardboard box.

Q. What would you put into a cardboard box for disposal?

A. Something that was dry.

Q. Do you recall materials in cardboard boxes being placed in the cells?

A. No, because cardboard boxes would have been a real pain for them. They are a different size from the drums so the level in it wouldn't be good and the boxes wouldn't hold weight very well so I don't remember them ever putting cardboard boxes in.

Q. So you think just based on the speculation that the recording of forty-two pallets is probably just equivalent to four drums per pallet and somebody just being sloppy about the way they wrote it down?

A. I think so.

Q. You don't think that indicates any bulk waste?

A. Certainly you can't -- a pallet is

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not a bulk waste.

Q. Do you recall any material in buckets being placed in the barrelfill cells?

A. You mean like one gallon cans or something?

Q. Any kind of bucket. How about a five gallon bucket?

A. I don't remember it, but certainly you could palletize five gallon buckets and put them in that way.

Q. Do you remember any generators that would send waste in buckets?

A. I don't remember getting waste in five gallon buckets during my time, but it's possible.

Q. If something were recorded on a cell report as a box, do you have any idea what that would mean?

A. As a box?

Q. Yes.

A. I'm guessing that's cardboard box, but again, I don't --

Q. If it were stillbottoms in a box, what do you think that would indicate? Do you have any idea?

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A. If it's stillbottoms in a box I'll change my answer and say it's probably a roll-off box which is a bulk delivery then.
Q. So does that mean that that waste would have gone straight from that roll-off box into the cell in bulk form?
A. Possibly.
Q. You don't have any specific recollection of seeing that happen, but you're saying it's possible that could have happened?
A. It's certainly possible it could have happened.
Q. Do you know how big the roll-off boxes are that you are thinking about?
A. The box can be anywhere from three cubic yards to forty cubic yards and I think the -- we did not have any roll-off trucks, boxes or anything in our organization, but certainly Blaylock Trucking which was the trucking company for the sanitary landfill had a number of vehicles and boxes out there because that's typically the way the sanitary waste is handled.
Q. Did Blaylock Trucking haul waste to the site?

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A. Not that I know of. We did all of our own transportation.
Q. And you mean IWD Liquid?
A. Liquid, yeah.
Q. Did any of the generators have their own trucks that hauled waste to the site?
A. I think there may have been a couple of generators that provided their own transportation.
Q. Do you remember which ones?
A. No.
Q. Do you remember any generators that generated stillbottoms during the time that you were there?
A. No. I don't remember getting stillbottoms when I was there.
Q. Are you aware of any companies that generated any waste at the site that would have generated stillbottoms, even if they weren't brought to the site but that had an operation that would have generated stillbottoms?
A. Ashland Chemical had an operation where they generated some stillbottoms from a manufacturer of plastic resin, but I don't

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remember that that material ever came to that site. I think there were -- there were a couple of solvent reclaimers, one over in the Newark area -- what was the name of that place? But I don't remember that they ever shipped us anything and I'm not sure that we ever shipped them any solvents for reclamation. Most of the solvents that we had, the chlorinateds were sent to Inland reclamation in Kentucky, not the full name -- I can't remember what the full name is, but it was in Kentucky. The flammable solvents were shipped to IWD near Paducah, Kentucky or to an incinerator that was up in Michigan.
Q. Utica, Michigan?
A. Michigan Disposal.
Q. That's okay. It not that relevant.
A. Yeah, but -- so we really didn't deal with the people who were shipping out stillbottoms.
Q. One last question about the types of waste that you remember. Do you remember anything called ash water or that would have been recorded as ash water being disposed of at

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the site?
A. Got anything else you can give me about it?
Q. Well, we have cell reports that show it being disposed of in bulk at the site and I can tell you how many gallons. Twenty-five thousand gallons in one cell.
A. What kind of industry?
Q. We don't know. Would that ring any bells with you?
A. No. Does it have a waste number, code number on it?
Q. No.
A. What time frame are you talking about?
Q. 1977. It was before you were there.
A. 1977. Okay, so it's not the ash from the coal reclamation.
Q. Why do you say that?
A. Because that was after that.
Q. Do you remember ash water coming into the site from that generator while you were there?
A. I don't think they called it ash

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water but it was essentially the solid residual from making the synthetic oil and it was similar to fly ash type material.

Q. So is it something that might have been wetted down with water and then came into the site in that wet form?

A. That's what it sounds like. I don't know. It could have been a wet fly ash from a power plant or something like that. Or out of a scrubber. I don't know.

Q. Do you recall any bulk latex being disposed of in the barrelfill?

A. Not in the barrelfill. I do remember a bulk latex that came in a -- in a tank that was buried in the sanitary landfill and that was -- I don't remember the generator, but this material had solidified inside of the tank so they picked up the whole tank with a crane and shipped it over and they dug a big hole and rolled the tank into it and buried it.

Q. So is it possible that bulk materials that were buried in underground tanks were reported on the same cell logs as the cell materials?

A. No, I don't think so because

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those -- I remember that one -- I think that's the only tank that I can remember that came in and that was put in the sanitary part, not into the cell or the drumfill.

Q. Is it possible that any drummed material that was destined for disposal in the cell was emptied out of the drums before it went into the cell and then reported as bulk on the cell log?

A. I would find that very unlikely because that's an extra -- a lot of labor that they would have had to have been and then you would have ended up with dirty empty drums to dispose of, so it just doesn't make sense that that would have happened.

MS. WOLFE: I think that's all I can think of to ask you at this time. Do you have any questions, Dan?

MR. BROWN: I don't.

CROSS-EXAMINATION

BY MS. JALICS:

Q. I have just a few. I think a question was asked earlier but I just wanted to clarify. Did you ever communicate directly with the generators themselves?

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A. On occasion, yes. I would either meet with them at our site or go to their site for various reasons, basically to support the sales folks if they had particular questions or problems or needed help with something.

Q. Would these be questions or problems pertaining to the specific type of waste they were looking to dispose of?

A. Could be toward the type of waste or it could be we found something when we did the analysis that they didn't know about it or questioned and so you would have to go back and help them figure out why they ended up with something -- I remember a customer there in Springfield that wanted to ship us oil, we checked it and found a lot of chlorinated solvent in it and they immediately said we don't have any chlorinated solvent in our whole plant so it can't be, your test is wrong, and we took other samples and checked it again and no, it's chlorinated solvent, can't take your oil, and after a couple of those they said you come out to the plant and show us where this chlorinated solvent is coming from and the salesmen and I went and went through the plant,

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found the degreasing operation and explained to them that even though they bought it as white solvent, it was really chlorinated solvent and they were dumping it into their oil tank so they didn't know they had chlorinated solvent. They switched to something else and eventually we got a customer out of it.

Q. Did that happen often that you would, not necessarily that type of situation, but did it happen often that you would go with the salesmen to customers or generators?

A. I won't say -- it wasn't an everyday type of occurrence, but probably a couple times a month, something like that.

Q. Were you as the manager the main person who would do that or would other lab or lab techs also go?

A. For the most part I was the one who would go out.

Q. When you -- and correct me if I'm wrong. I think when we were going through the procedures earlier you said that you tested the samples first, long before the waste was ever brought, and I think that the example you just gave was an example of that?

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A. Yes.
Q. Who conveyed the test or the sample for the solvents to the generators, did that go from you directly to them or did that go through a salesperson?
A. That typically went through salespeople. The analysis would be done, the lab manager would double-check everything, make sure it looked like it made sense to him, he would sign off on it, it would come back to me and I would review it, make recommendations for what we could do with the material, that would go back to the salesman who would then contact the customer.
Q. And I think you have already answered my question, but the generators then would sometimes call if they did have questions and you would be the person to speak to them or explain the situation?
A. Well, normally they would talk to the salesman and the salesman, if he could answer, would take care of it. If it was technical in nature or something that he didn't have an answer to, then he would typically get me involved in it.

Page 123

Q. And I had a question in my notes that I just wanted to clarify. If the salesmen themselves bring the samples to the lab, those were collected from the generator?
A. Most of the time the salesmen went out to the customer, got the sample. We had a form for them to fill out, what kind of material is it, how much do you have, how often you going to ship it, what form, all that. That came back with the sample, went to the lab for analysis and then back through the system. Occasionally a customer, especially an ongoing customer, rather than wait for a salesman to come out would just send in a sample with the information and we would go through it that way.
Q. Okay. So then they would still have contact eventually at the back end with a salesman or was that --
A. Well, that was generally an ongoing customer that already had a contact but he's got a new waste stream that he wants to do something with.
Q. Okay. And I just wanted to clarify one thing that I had a question about

Page 124

in my notes. Gary Karas and Vaughn Arthur, when did those people actually work in the lab, were they there before you?
A. They were there when I came and we all left together.
Q. Do you know how long before you came they had started?
A. No, I don't know how long before.
MS. JALICS: That's all I have. Thank you.
MS. WOLFE: That concludes our deposition for today. The court reporter that's been taking down your testimony today will prepare a written hard copy of a transcript from today's deposition and you will have an opportunity, if you want, to read it and make any corrections to form or substance that you feel are necessary and then sign it and return it to the court reporter. Or if you choose, you can waive that opportunity if you feel that it's not necessary and then just it will go into the record as it is.
THE WITNESS: I probably ought to look at it. I don't know how awake I am today.
MS. WOLFE: Then it will be sent to you within a couple weeks and you can talk to your

Page 125

attorney about getting it signed and returned to the court reporter.
(Thereupon, the deposition was concluded at 12:27 p.m.)

Page 126

I, WAID NELSON WALLIS, do hereby certify that the foregoing is a true and accurate transcription of my testimony.

_____

Dated _____

Page 127

STATE OF OHIO)
COUNTY OF MONTGOMERY) SS: CERTIFICATE

I, Mary Jo Stevens, a Notary Public within and for the State of Ohio, duly commissioned and qualified,

DO HEREBY CERTIFY that the above-named WAID NELSON WALLIS, was by me first duly sworn to testify the truth, the whole truth and nothing but the truth; that said testimony was reduced to writing by me stenographically in the presence of the witness and thereafter reduced to typewriting.

I FURTHER CERTIFY that I am not a relative or Attorney of either party nor in any manner interested in the event of this action.

IN WITNESS WHEREOF, I have hereunto set my hand and seal of office at Dayton, Ohio, on this ____ day of _____, 2005.

_____
MARY JO STEVENS
NOTARY PUBLIC, STATE OF OHIO
My commission expires 9-10-2006

State of Ohio Environmental Protection Agency, Box 1049, 361 East Broad Street, Columbus, Ohio 43216 (614) 466-8565

Attachment 2 SW

Re: Clark County
German Township
Application for A Chemical Landfill for Disposal of Various Solids and Chemical Sludges
Received April 1, 1976
From I.W.D. Liquid Waste, Inc.

James A. Rhodes
Governor
Ned E. Williams, P.E.
Director

August 4, 1976

RECEIVED

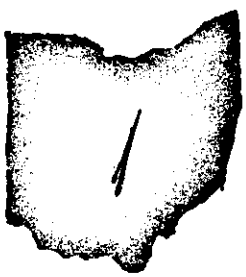
CERTIFIED MAIL

Ohio EPA

I.W.D. Liquid Waste, Inc.
3975 Wagner Ford Road
Dayton, Ohio 45414

5 AM '76

OHIO EPA
SOUTHWEST DIST.



Gentlemen:

Enclosed is the Ohio EPA Permit To Install which will allow you to install the described source in the manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

As indicated on the permit, you are required to pay a permit fee as provided for in Ohio EPA regulation EP-39-02. The exact amount of this fee is indicated on page 1 of the Permit To Install. This amount must be remitted within fifteen (15) days of the effective date of the Permit To Install. Checks should be made payable to: Treasurer, State of Ohio and sent to Ohio EPA, New Source Permit Records Section, 361 East Broad Street, Columbus, Ohio 43215.

Under Ohio Revised Code, Chapters 119 and 3734, this permit will take effect on the date indicated unless you or an objector requests an adjudication hearing within thirty (30) days of the date of issuance, as provided for by Ohio Environmental Protection Agency regulation EP-40-13. At an adjudication hearing you may appear in person, or be represented by your attorney, or by such other representative as is permitted to practice before this agency, or you may present your position, arguments, or contentions in writing. At the hearing you may present evidence and examine witnesses appearing for and against you. Requests for hearing shall be in writing and shall specify the issues of fact and law to be contested. Requests for hearing should be sent to the Hearing Clerk, Box 1049, 361 East Broad Street, Columbus, Ohio 43215.

The agency may withdraw this permit at any time before it takes effect.

If you have any questions, please contact the Ohio EPA District Office or local air pollution control agency to whom you submitted your application.

Very truly yours,

Jacqueline J. Nusbaum

Jacqueline J. Nusbaum, Chief
New Source Permit Records Section

JJN/bs

Copy to Mr. John C. Wright
" " Clark County Health Department
" " System Technology Corporation
" " Southwest District Office, Public Wastewater

OHIO ENVIRONMENTAL PROTECTION AGENCY

Permit To Install

Application No. 05-139

Applicants Name: I.W.D. Liquid Waste, Inc. Permit Fee: $ None

Address: 3975 Wagner Ford Road

City: Dayton State: Ohio 45414

Telephone: (513) 323-9382

Description of Proposed Source: A chemical landfill for disposal of various solids and chemical sludges, German Township, Clark County

Issuance Date: August 4, 1976

Effective Date: September 20, 1976

The above named entity is hereby granted a permit to install for the above described source pursuant to Chapter EP-30 of the regulations of the Ohio Environmental Protection Agency. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described source of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described source of pollutants will be granted the necessary operating permits. This permit is granted subject to the following conditions attached hereto:

Ohio Environmental Protection Agency

by Ned E. Williams, P.E.
Director
361 East Broad Street
Columbus, Ohio 43215

Substantial construction for installation must take place within eighteen months of the effective date of this permit. This deadline may be extended by up to twelve months, if application is made to the Director no less than sixty days before the expiration of this permit and the party shows good cause for any such extension.

The proposed source shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

The Director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, examining records or reports pertaining to the construction, modification or installation of the above described source of environmental pollutants.

A permit fee specified above must be remitted within 15 days of the effective date of this permit to install, to the Treasurer, State of Ohio.

This permit shall apply only to the source shown on the plans approved by the Ohio Environmental Protection Agency.

A report, which provides a technical appraisal of the results obtained during normal operating conditions of the new facilities shall be submitted to the appropriate District Office of the Ohio Environmental Protection Agency no later than three months after the new facilities are placed into operation.

Daily records of operation shall be maintained and submitted to the Ohio Environmental Protection Agency at the end of each month.

Monitor wells shall be installed by the owner or operator. Locations, depths, and other characteristics of such wells shall be as required by the Ohio Environmental Protection Agency.

The solid waste disposal site or facility shall be completed and ready for operation before the acceptance of solid wastes. Notification that this condition has been met, shall be submitted in writing, to the appropriate Ohio Environmental Protection Agency District Office at least thirty (30) days prior to the acceptance of any solid wastes.

State of Ohio Environmental Protection Agency, Box 1049, 450 East Town Street, Columbus, Ohio 43216 (614) 469-

✓ IWD Chem Waste Landfill
✓ Clark County
✓ Solid Wastes

A. RASHIDI
[redacted]
@ File

November 19, 1976

Mr. Jack Wright
701 Thrasher Street
Springfield, Ohio 45503

OhioEPA

Jim Lane

Governor
Director

Dear Jack,

I finally received the leachate data on the IWD sample IWD 083076 from Howard Laboratories on November 17, 1976. Abduhl Rashidi and I are agreed that this plastic waste from Monsanto should not be placed in your chemical waste landfill because of the high content of soluble phenol in the waste.

We cannot agree with the Addison recommendation of your operational panel to dispose of the Monsanto plastic waste #IWD 083076 in your chemical waste landfill at Tremont City, Ohio. Phenol is one of the more toxic industrial organic chemicals. For example the standard for drinking water is less than 0.001 ppm. It is also soluble in water and mobile through soils. For this reason it is not a candidate for landfilling unless the soils under the site are very impermeable and there is sufficient biological activity in the landfill to metabolize the phenol. The permeability of soils under your landfill are from 30 to 70 times greater than that desired for a hazardous waste facility. Also, no one can really say what microbiological activity might develop in your chemical waste landfill since it is quite different from conventional landfills.

I would now like to list the items I verbally approved in the November 16, 1976 meeting between myself and your operational panel. As time permits, I will be writing another draft of Dr. Howard's report so you will have a better idea of the kinds of information your operational should put together for review by OEPA. I gave verbal approval to the following wastes in our November 16 meeting:

C0004	H0021	F0016	J0030
E0006	J0025	J0031	Q0049
F0013	T0052	J0026	P0042 thru P0048
G0019	U0053	J0027	

You will also recall that N0041 and V0054 were to be buried by themselves and that waste of unknown composition will not be accepted from University laboratories in the future.

Abduhl cannot make a November 30, 1976 meeting. He will set up a meeting as soon as possible.

Sincerely,

Robert E. Brown
Public Health Engineer
Office of Land Pollution Control

REB/pam

cc: Abduhl Rashidi
cc: Don Day/file

Clark Co.
I.W.D.
Chemical
Landfill

HOWARD LABORATORIES, INC.

3601 S. DIXIE
DAYTON, OHIO 45439
(513) 294-6856

November 15, 1976

REVIEW OF MATERIAL AWAITING DISPOSAL

On November 10, 1976, a meeting was held for the IWD Chemical Landfill Operational Panel at the offices of the Ohio Environmental Protection Agency, 7 East Fourth Street, Dayton, Ohio, to discuss and describe the precedences in which certain waste materials will be placed in the IWD Chemical landfill disposal cell near Springfield, Ohio.

A list of the 54 different items were proposed for disposal by IWD. After some discussion it was agreed by the Ohio EPA and IWD that Howard Laboratories, Inc. would prepare in writing a list of materials from those 54 items for disposal and action necessary, if any, to investigate and describe more thoroughly the composition of the remaining items in question.

It was further agreed that this report should establish priorities listing those materials which could be disposed of without further investigation and in addition include particular questions which may be raised for the remaining items prior to their disposal.

In order to prepare a list of this nature, we have used the following criteria:

1. Material presently in the disposal cell.
    a. Safety
    b. Potential chemical reactions
2. Immediate hazards of material to be added.
    a. Individual safety
    b. Toxicity of wastes
    c. Immediate chemical reactions
3. Prolonged and potential hazards
    a. Delayed chemical reactions
    b. Physical and chemical characteristics of reactant products
    c. Safety

Each heading and subheading of the above criteria is further broken down in order to fully investigate the potential hazards which may exist. These latter criteria, however, are not established in a formal format for it is assumed that the individuals reviewing this report are sufficiently aware of the many questions raised under each heading.

After careful review of the waste material contained in the individual drums and indicated as a "material number" on the IWD material data sheet, we have determined that the following material numbers may be readily disposed of in the landfill cell without posing any serious or hazardous problems:

circled OK

A-0002	M-0037
C-0004	M-0038
E-0006	M-0040
F-0010	N-0041 — buried by self
F-0013	P-0042
F-0016	P-0043
G-0019	P-0044
H-0020	P-0045
H-0021	P-0046
H-0023	P-0047
J-0025	P-0048
J-0026	Q-0049
J-0027	R-0051
J-0028	T-0052
J-0029	U-0053
J-0030	V-0054 — buried by self
J-0031	W-0055

Statements for approving material for disposal are indicated as follows:

A-0002

This material is partially degraded cellulose and polyelectrolytes. The polyelectrolytes are now being used extensively in waste treatment and in agricultural applications with no adverse effects.

C-0004
E-0006
F-0013
G-0019
H-0021
J-0025
T-0052
U-0053

Paint sludges typically contain zinc, chromium, and a few other metals. However, in view of the polymerized and stable vinyl compounds, the percentage of free metals in such material is negligible. Further, these stable vinyl compounds have a tendency to bind many other metals and compounds which prevent such materials from leaching rapidly.

F-0010
M-0040
W-0055

Some ink wastes contain a good deal of lead, chromium, and zinc, but due to the high percentage of carbon black in such compounds, the metals are of little concern. In addition, almost all ink wastes contain a small quantity of organic material used as a solubilizer and these materials tend to chelate the metals.

F-0016
J-0031

Heavy oils and greases by their very chemical nature are slowly degraded by bacteria by the process of alpha, beta, and gamma oxidation. The process proceeds so slowly that no problems should exist in a landfill.

H-0020

Polyurethanes of this type are quite safe in such landfills. During the polymerization reaction, however, a few toxic chemicals may be driven off depending upon the particular reaction employed. For all practical purposes, these by-products have been released and are below toxic levels.

H-0023
J-0028
J-0029

Such material when exposed to free oxygen will polymerize upon volatilization of a low molecular weight hydrocarbon and in some cases, depending upon the manufacturer, many produce organic chemicals during the polymerization reaction. Such chemicals as acetic acid, however, pose no problems.

M-0038

Ethyl cellulose may also be placed in the same category as A-0002 because of its recalcitrant characteristics. The material may contain small quantities of ketones which should pose no problems because of the low quantities.

J-0026 J-0030
J-0027 Q-0049

These materials are in bulk and should be used to cover the drums which have been placed within the cell. The polyols, the polyethylenes, and the asbestos will not produce any hazardous chemical reactions nor will such materials tend to leach and may well be used as a sealant around the drums.

N-0041
V-0054

These materials would pose the most critical questions in trying to understand the chemical composition. However, since they are incapsulated in concrete, no problems should exist.

P-0042 thru P-0048

These materials are organic in nature, that is, they are chelated fatty acids in some cases containing a relatively inert solid which is used as an abrasive. Since they are organic fatty acids, they will in time produce large quantities of methane gas. The release of such methane gas would be relatively constant and should pose no explosive threats.

M-0037
R-0051

Heavy metal sludges, in bulk, could be either mixed or placed on the surface of bulk asbestos, polyols, etc. Such a procedure will allow the polyols and other metals to better seal air pockets around the drums. Such bulk metals should not be placed around the drums exclusively and for this reason we will recommend that the bulk heavy metals be placed in this particular cell along with the asbestos and bulk polyols.

It is our understanding that the metals are to be placed in a separate cell and with a few exceptions this material should pose no problems for immediate disposal. Because of the cation effect, such metals do not leach readily. We would recommend that the following material numbers be included in this group:

B-0003
D-0005
F-0008
H-0022
K-0033

With reference to No. F-0008, the barium hydroxide sludge, some question may arise as to the safety of disposing of barium in this manner. It should be kept in mind that natural deposits of barium within central and western Ohio do exist. However, solubility of barium is dependent, among other factors, upon the pH of the aqueous medium. With this factor in mind, we should have no question about the disposal of barium hydroxide sludge in such a landfill.

F-0011

Heavy metal chlorides are extremely soluble in water and because of the very toxic nature of cadmium, we would recommend this material not be disposed of in this particular landfill unless it is encased in concrete.

F-0015

This material should not be disposed of in this landfill until the quantity of chlorinated solvents has been determined.

Similarly we are recommending that the following material numbers be sampled and analyzed for the compound indicated prior to approval for disposal:

Material No.	Compound in Question
A-0001	Volatile Hydrocarbons
E-0007	Phenols
F-0009	Cyanide and phenols
F-0012	Cyanide
F-0014	Cyanide and phenols
G-0017	Percent Chlorinated Solvents
F-0018	Volatile Hydrocarbons
H-0024	" "
J-0032	" "
L-0034	(Phenols test completed.)
L-0035	Volatile Hydrocarbons PCB's
L-0036	Cyanide
M-0039	Silica Dioxide
Q-0050	Phenols and Cyanide

The concentration of each of the components listed in a particular sample should be determined. Since the chemistry employed in the production of those materials is so complex, there exists the potential for high concentrations of a number of toxic compounds. It may well be that the chemistry is not so involved and that the products produced and the by-products so formed may be harmless. However, we recommend as a matter of safety that the compound be investigated at the present time.

It is our recommendation that additional materials upon which approval is being requested for disposal in any particular landfill cell should be investigated for compatability with those materials presently in that cell. Our recommendations for disposal have considered such compatability.

It must also be kept in mind that absolute control upon selectively compiling material by the generator cannot be achieved. For this reason we must always maintain a margin of safety in accepting materials for disposal.

This report is respectfully submitted.

David L. Howard Ph.D.
President

DLH:jo

IWD Chemical Landfill

Operational Panel Meeting

November 10, 1976

Abdul Rashidi	Ohio EPA
Bob Brown	Ohio EPA
David L. Howard, PhD	Howard Laboratories, Inc.
Bob Wright	IWD Liquid Waste
Clyde E. Hill, Jr.	IWD Liquid Waste

Mr. Dennis
Mike Schmidt
Herb Eagen

Tremont Landfill Talk (South of Springfield)

1969 October - approved under Dept of Health
Satisfactory site based on geology
No monitoring wells required

Informational Meeting

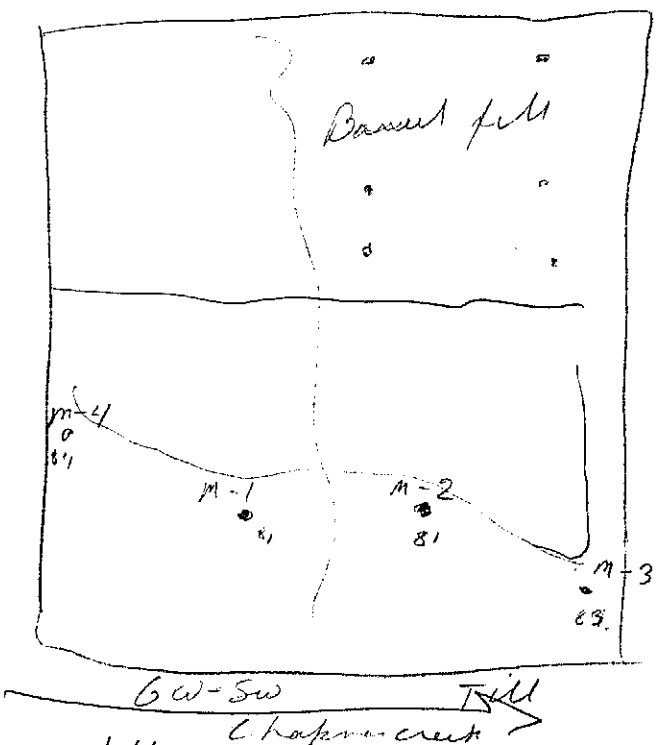
Mr. Dennis Jr. - monitoring?

Mike Schmidt - public pressure to get monitoring
- Landfill would not release the data
on monitoring wells and water chemistry

Tremont Shares data w/ EPA

? Location of Site

Herb Eagen - History => 4 monitoring wells + Detailed report
on the Landfill



Monitoring wells 1¼ pvc pipe

Base of landfill sets on interfedded sand silt and clay layers

Groundwater movement towards the Chapman creek
underlying sand outcrops into the creek => discharge

Groundwater discharges into the stream via the land +
Grand Grass

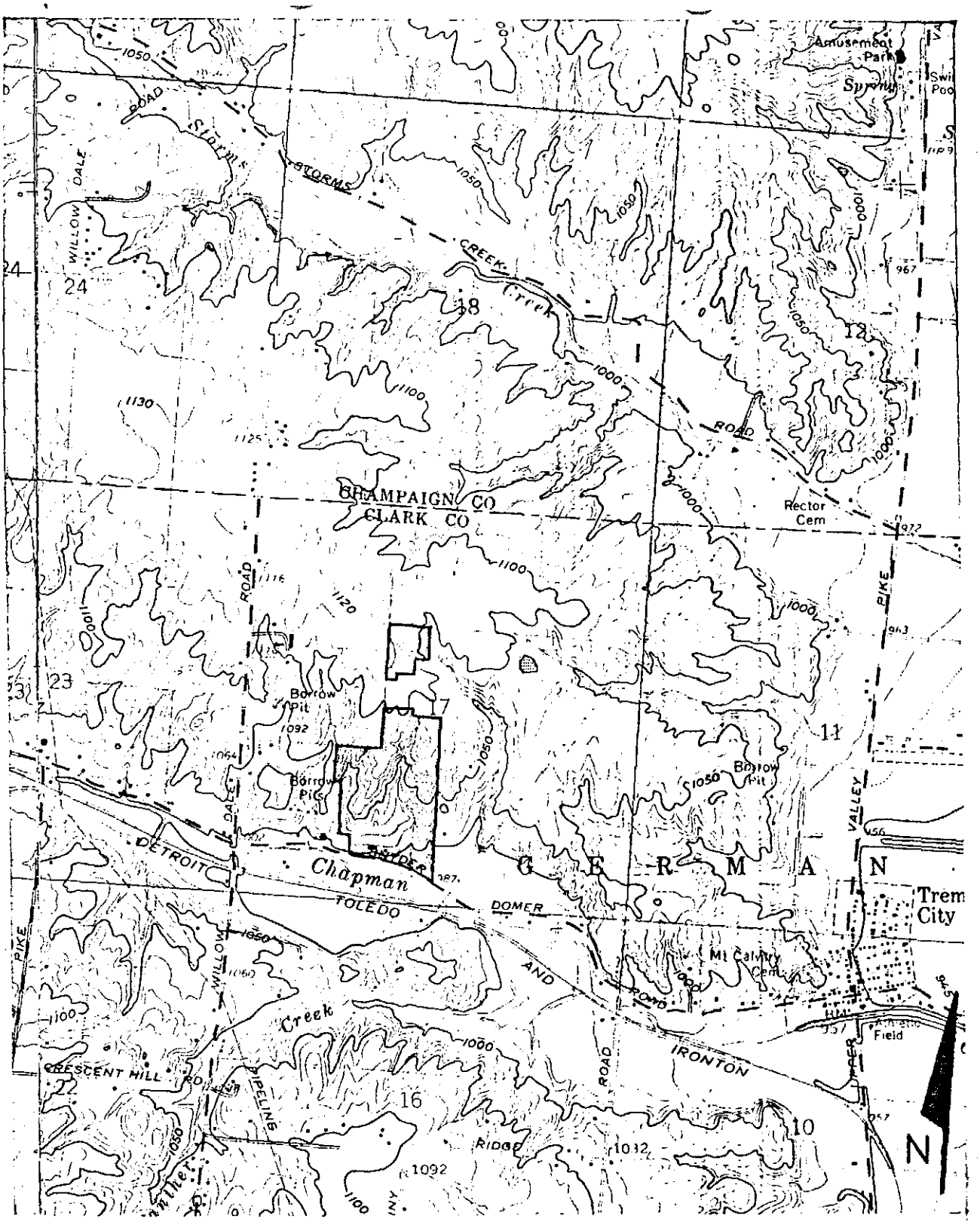
Buried Valley Underlying the sets + deepens to the East

Refuse is co-loc[illegible] well [illegible] on west portion of the site
> it is not known if the refuse is in the saturated zone

Need elevation of water table
Apparently down gradient flow to lower bedrock aquifer

Sand lenses 981 elev ∇
Limestone

Herb 1st impression => Semi-annual sampling
continue to monitor Residential well



SCALE 1" = 2000'

Figure 1. General Location Map

File
Clark County
IWD Chemical Landfill

SYSTECH®

specialists in environmental technology

SYSTEMS TECHNOLOGY CORPORATION
245 North Valley Road
Xenia, Ohio 45385
Area Code 513/372-8077

RECEIVED
'76 OCT 7 AM 10 17
OHIO EPA
SOUTHWEST DIST

6 October 1976

Ohio Environmental Protection Agency
Chief Land Pollution Control Section
7 East 4th Street
Dayton, Ohio 45402

ATTN: Mr. Abdul Rashidi

Dear Abdul,

This letter is to inform you that Systems Technology Corporation is withdrawing further participation and do not wish to be listed as the engineer of record for the chemical storage landfill of I.W.D. Liquid Waste Incorporated, Springfield, Ohio. This decision was based upon a mutual agreement between I.W.D. and Systems Technology Corporation.

Very Truly Yours,

SYSTEMS TECHNOLOGY CORPORATION

Melvin C. Eifert
Vice-President of Engineering

MCE/map

A JK

I.W.D. LIQUID WASTE, INC.

3975 Wagoner Ford Rd.
P. O. Box 1458
Dayton, Ohio 45414
(513) 278-0821

701 Thrasher St.
Springfield, Ohio 45503
(513) 323-9382

September 20, 1976

Abdul S. Rashidi, P.E.
Chief, Land Pollution Control
Southwest District Office
7 East Fourth Street
Dayton, Ohio 45402

Dear Mr. Rashidi:

I.W.D. Liquid Waste, Inc., will begin work on the new Chemical Landfill on Snyder-Domer Road in German Township, Clark County, on September 20, 1976. We would expect a 2-3 week construction period and we will inform you when we are ready for an inspection.

Regarding Mr. Bob Brown's inter-office communication dated June 25, 1976, I am enclosing our comments and answers to his questions of that day. I believe these will be self-explanatory and I am, of course, available for any further discussion regarding his communication.

A. Highly Toxic Waste:
It is our opinion that a definition for a "highly toxic waste" would not be beneficial for the program. You can ask for a definition of highly toxic wastes in the application from 50 different sources and obtain 50 different definitions. We believe that with the checks we have on the material to be landfilled (operation panel), and the final approval of waste by OEPA, that a definition for highly toxic waste is not necessary. We agree that all the materials to be placed in the landfill should be placed in a manner "to protect the landfill employees, nearby residents, and the environment from injury during the process of placing the waste in the landfill."

B. Monitoring:
The point that water movement through the cell might dissolve some of the wastes is well taken. However, it

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is our opinion that there will be little water movement in the area of the cells based on the following reasons.

1. The site is near the top of the hill so that there are no large areas above the site from which infiltrated water will flow laterally.

2. Since the permeability of the soil is low the infiltration rate is low. Therefore, only a very small portion of the rain moves vertically through the soil to become groundwater.

3. All surface water will be diverted around the site to reduce the amount of water available for infiltration.

4. The open cells will be pumped before disposal is started and will be diked to prevent the surface rain runoff from flowing in.

5. The water table is so far below (> 100 feet) the bottom of the cells that it would not rise to the bottom of the cells even in the wettest seasons.

6. The water bearing - highly permeable soils that appeared in the soil borings are only lenses or small channels which contain trapped water. In the plans it is stated that if these soils are encountered during the excavation of the cells the lense or channel shall be sealed with compacted earth.

We agree with the analysis for trace organics and metals. This is mentioned in the plans to be done quarterly.

As for the piezometers, the water gradient development (if any) can be monitored by the suction lysimeter wells. We would recommend this approach.

The analysis of soil cores, every 3 to 4 years to determine the extent of movement (if any) of the wastes will be performed.

C. We agree that erosion control is important but we do not believe that the soil testing is required immediately.

I.W.D. LIQUID WASTE, INC.

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It is required by the operation plans to cover each cell. with 5 feet of cover and seed immediately for erosion control. If the grass and plant cover does not develop then the soil test would be appropriate.

D. Sub-paragraph 2 on page 15a should read:

" The Southwest District office of the Ohio EPA will respond in writing within ten days with either a decision regarding the acceptability of the waste stream or a request for more information regarding specific properties of the waste stream. If more information is requested the Southwest District Office of the Ohio EPA will respond with a decision in writing within 10 days after all requested information is supplied. This procedure will be used for all those materials that do not fall into the classifications set forth in attachment 3 of this proposal.

E. Encapsulation
The only encapsulation method being employed initially is the encapsulation of some of the wastes in barrels. This is only a temporary encapsulation unless the bulk sludges that surround the barrels prevent the barrels from rusting.

F. Non-Compatible Waste
Waste will be segregated at the site into classes in order to prevent the following reactions in the disposal cell;

1. Liberation of enough heat to cause fire.
2. Generation of explosive pressure.
3. Liberation of toxic gasses.
4. Reaction which would tend to reverse pretreatments and increase the hazards of the waste after it is placed in the disposal cell.

G. A building exists at the sanitary landfill. Materials received in bulk form will be taken directly to the cells on constructed roads. We have never encountered a serious problem with blown dust from stock piled dirt. If however a problem occurs, screens or other appropriate techniques will be implemented to resolve the problem.

H. Springfield Facility
The Springfield Facility is not an essential part of the

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operation.

I. The paragraph on winter operation (p.13) should read:

" All traveled roads and the disposal site will be clear and well maintained during the winter by plowing with the use of on-site equipment including road graders and dozers."

J. Spills
Since wastes are of relatively low volume and high viscosity they would not flow fast or far. The on-site equipment could then be used to clean up the spill and place it in the cells.

I will be in close contact with your office as the construction proceeds, and hopefully we'll be in operation during the first half of October.

Sincerely,

Jack Wright,
Vice President - General Manager
I.W.D. Liquid Waste, Inc.

JCW:mrf

INTER-OFFICE COMMUNICATION

TO Abduhl Rashidi, Southwest District Office DATE June 28, 1976

FROM: BB Bob Brown, Office of Land Pollution Control, Central Office

SUBJECT: IWD Chemical Waste Landfill in Clark County -- Proposed Plans

I have reviewed the plans and find that for the most part they are satisfactory. Therefore, the plan approval red tape will be initiated. However, there are some additional points which should be added to the plans as outlined below. Also, I have some questions which I would like IWD to comment on. Hopefully, this can all be handled by letters from IWD which can be attached to the plans as a part thereof.

Additions to the plans

A. Highly toxic waste. Page 15 of the plan report indicates that no highly toxic waste will be accepted; however, many would consider asbestoes as highly toxic. Therefore, there is a need for IWD and OEPA to come to an agreement at this time as to the meaning of the phrase "highly toxic". A working definition of highly toxic should be added to the plans. A definition for consideration might be the following:

> "A highly toxic waste is a material which must be containerized in some fashion in order to protect the landfill employees, nearby residents, and the environment from injury during the process of placing the waste in the landfill. Also, because of the porisity of the soil and the existence of saturated soil conditions above the cell bottom during a portion of the year (pg. 45 of report) this additional restriction is required. The waste must not contain toxic components which are soluble enough in water to leach from the site in a quantity sufficient to threaten the quality of water in nearby wells or surface waters."

B. Monitoring. Contrary to the arguments presented in the report, in my judgement there is a significant potential for leachate problems. I agree, that the polyol and other viscous materials would leach very slowly; however, the important factor is the rate of water movement through the cell and what might be dissolved by this water. Therefore, it is recommended that the analysis of leachate be expanded to include analysis for solvents and other organics which might be dissolved from paint sludges, glues, and adhesives. Often only small quantities of such organics need be dissolved to adversely affect the taste of water and to have toxic effect on aquatic life. Secondly, it is recommended that a system of piezometers be placed in the initial cells, as they are completed so that we can observe the development (if any) of a hydraulic gradient across the cells. Such a system would provide very useful information when it is time to consider additions to the list of waste to be received at this site and also when liquid wastes and sludges are placed in the cell. It is also recommended that a few soil cores be taken every three or four years to determine the extent of movement (if any) of metals from plating waste and the more viscous materials through the cell walls. The soil cores would be analyzed for such materials. Again this information will be useful in acessing the full potential of the site when consideration is given to adding items to the list of acceptable wastes.

C. Abandonment. It is quite important to spell out in detail how vegetation will be established on the site. Certainly this is as important as any item in determining the long term security of the site. Therefore, it is recommended that the plans require a soil test for fertilizer and lime requirements of the final cover. This analysis can be performed for a nominal fee by the soil testing laboratory of the Ohio State University College of Agriculture. Lime and fertilizer will then be worked into the surface to six to twelve inches of final cover in accordance with application rates and methods as recommended by the Cooperative Extension Service of the Ohio State University. Tall fescue or a grass equivalent in hardiness and erosion control will be planted and if necessary replanted until a dense plant cover is obtained. This will protect the solid until that time that the land reverts back to forest or is brought into agricultural production with appropriate erosion control practices.

D. Additions to the list of accepted waste. The sub-paragraph 2 on page 15a should be rewritten. The current draft states "SWDO will determine acceptability of waste stream and will notify IWD in writing within 10 days of its decision." There will be times when not enough information is available for a decision Therefore it is recommended the paragraph be revised as follows:

> "The Southwest District Office of the Ohio EPA will respond in writing within ten days with either a decision regarding the acceptability of the waste stream or a request for more information regarding specific properties of the waste stream, etc."

E. A brief description of the encapsulation methods to be employed should be added to the plans so there will be no misunderstanding in the future.

F. Non-compatible waste. This phrase should be defined in more detail on page 12. The following language is recommended; waste will be segregated at the site into classes in order to prevent the following reactions in the disposal cell;

1. liberation of enough heat to cause fire
2. generation of explosive pressures
3. liberation of toxic gases
4. reactions which would tend to reverse pretreatments and increase the hazards of the waste after it is placed in the disposal cell.

Questions for IWD

A. How did you decide that you do not need a building for storage on the disposal site. I don't understand why rainfall would not cause handling problems for materials received in bulk form. Likewise would wind blown dust from stock piles would be a problem.

B. Is your storage facility in Springfield going to be an "essential" part of the operation of the chemical waste disposal facility. If so, a brief description of this building should be attached to the plans and comments should be made on how you can prevent the escape of waste from this facility in the event of spills, accidents, fires, etc.

C. The paragraph on winter operation on page 13 is not clear to me.

D. Is there a possibility that a spill might escape from the site via the small creek of intermittent flow on the northeast section (page 15)? I question whether or not a prohibition of not filling within 60 feet of the streams protects you in case of a spill.

REB/pam

File: Solid Waste Landfill
Clark Co.
IWD Chemical

INTER-OFFICE COMMUNICATION

TO Abdul Rashidi and Steve Severyn DATE May 6, 1976

FROM: Jeff Hosler

SUBJECT: IWD Liquid Waste Inc. proposed chemical waste disposal facility, Clark County

I have completed review of the final submission of detail plans for reference facility and have the following comments.

1. The geology as described in the plans is generally suitable for this type of facility.

2. The quality of ground water in reference area is adequately protected by the existing geology and by the precautions that will be taken by IWD Liquid Waste Inc.

3. The ground water monitoring program proposed in the detail plans is adequate to identify movement of waste materials through the site and to provide sufficient time for corrective measures to be taken should a significant problem of this type develop.

4. Given the types of waste for disposal, especially bulk wastes, it is questionable whether monthly analyses of lysimeters samples for conductivity, chlorides, and nitrates will be relevant. It may be more suitable to monitor COD, TOC, or some other parameter more closely related to the waste materials.

SUMMARY REPORT ON THE PROPOSED I.W.D. CHEMICAL LANDFILL, GERMAN TOWNSHIP, CLARK COUNTY.

Detail plans and an Application for Permit to Install were received on April 1, 1976. Additional information was received on May 10, 1976. Information pertaining to hydrogeology of the proposed site has been evaluated by Jeff Hosler of this office. He has indicated that the geology of the site is suitable for this type of facility and that the groundwater is adequately protected by the existing geology and by the precautions that will be taken by I.W.D. Liquid Waste Inc.

Clark County Health Department has reviewed the proposed plans and made no adverse comments. Clark County Regional Planning Commission also reviewed the proposed plan and has indicated that the German Township is not zoned, therefore, they have no control over approving or disapproving this project.

Concerning the need for this project, we feel there is a definite need for such facility in this area. At present there is no licensed chemical landfill in this area. Most of the chemical wastes generated end up in unauthorized landfills.

In summary, from a technical and environmental point of view, the project is acceptable and insofar as public acceptance of the site is concerned, we have received no objections from either the public officials or private citizens to this proposal.

Abdul S. Rashidi, P.E.
Public Wastewater Group

REPORT ON DETAIL PLANS OF PROPOSED I.W.D. LIQUID WASTE, INC. CHEMICAL LANDFILL, GERMAN TOWNSHIP, CLARK COUNTY.

Detail plans for the proposed I.W.D. Liquid Waste, Inc. chemical landfill, German Township, Clark County, were received on April 1, 1976 from John C. Wright, Vice President-General Manager, I.W.D. Liquid Wastes, Inc. The plans were prepared by Systems Technology Corporation, subsidiary of Systems Research Laboratories, Inc.

The plans detail the development of a landfill for the disposal of liquid chemical wastes. The chemical landfill will be located adjacent to the existing North Sanitary Landfill, operated by I.W.D. Initially, the wastes to be accepted will consist of metal sludges, asbestos, paint sludges, polyol, glues and adhesives. Polyol and asbestos will be in bulk form; the other materials will be in 55 gallon drums.

The plans for the chemical landfill are satisfactory and it is recommended that they be approved.

Stephen A. Severyn
Southwest District Office

Abdul S. Rashidi, P.E.
Public Wastewater Group

Location

The existing North Sanitary Landfill is located in northern Clark County, one mile west of Tremont City, on the north side of Snyder-Domer Road. The proposed chemical landfill will be located immediately north of the existing sanitary landfill.

Site

The site consists of 14 acres located at the top of a hill. Because of that location, the only surface drainage problems will be those due to rainfall on the immediate site. The immediate topography slopes to the east. A small intermittent drainage course traverses the northeast corner of the site. No special precautions will be taken in that area, since no disposal will occur within 60' of the drainage course.

Design Basis

Attachment 3 of the Application for Permit to Install lists the types and quantities of wastes to be initially accepted:

Waste	Quantity	Disposal Method
Metal Sludges	10,000 gal/mo.	encapsulated
Asbestos	20,000 gal/mo.	bulk
Paint sludges	25,000 gal/mo.	encapsulated
Polyol	6,000 gal/mo.	bulk
Glues and adhesives	35,000 gal/mo.	encapsulated

The anticipated lifetime of the project is estimated at 15-20 years. It is expected, however, that additional types of wastes will be

accepted in the future. Because no such facility as this now exists in the area, it will be difficult to accurately forecast volumes of wastes. Naturally, the life of the landfill will be dependent on that factor.

Subsurface Geology

Five boreholes were drilled in and near the site of the proposed chemical landfill. The borings were made by Bowser-Morner Testing Laboratories, Inc., with evaluation and recommendations provided by Mr. Harlan H. Roepke, Geologist. In addition, Mr. Roepke has provided information in accordance with the Southwest District Office form, Hydrogeologic Report of Proposed Waste Disposal Facilities. The above mentioned information was evaluated by Jeff Hosler (SWDO Geologist). He has indicated that the geology of the proposed site is generally suitable for the proposed facility and that the ground water in this area will be adequately protected by the existing geology and by the precautionary measures proposed in the plans by I.W.D. Liquid Waste Inc.

Surface Water Control

Surface runoff from the site is to the east into a small intermittent creek located east of the proposed site. To control the surface runoff that originates from an area west of the site into and through the proposed site, the final grade along the west end of the site will be several feet above the existing grade. The

general slope of the final grade will be from west to east into the existing creek.

A temporary storage lagoon is also provided in the vicinity of the waste storage area. This lagoon will receive any surface runoff that results from the storage area. The wastewater collected in the lagoon will be pumped out and hauled away from the proposed site.

Leachate Control and Monitoring System

In general, formation of leachate will be minimal due to diversion of surface drainage and the combination of low permeable soils and high viscus waste. To monitor the surface and groundwater quality a network of monitoring wells is proposed. Groundwater quality monitoring will be accomplsihed by one deep well located in the south-west corner of the site. It is doubtful if groundwater contamination will occur in view of the fact that the maximum groundwater elevation is approximately 1,000 feet and the minimum cell elevation is 1085', providing about 85' of separation with many layers of clay in the separating stratum.

Horizontal migration of leachate through the soil, if occured, may effect surface water quality. In order to monitor this movement suction lysimeter observation wells will be installed. This will consist of early warning wells around the perimeter of this first set of cells and the long term monitoring wells around the perimeter of the landfill site.

Baseline samples will be taken and analyzed from all of the proposed wells. The parameters for which baseline analysis is to be performed will depend on the type of the waste material placed in the cells.

Monthly analysis for samples from the suction lysimeters and quarterly analysis for samples from the deep well for conductivity, chlorides and nitrates will be performed. Additional parameters may be analyzed for, if deemed necessary.

Access and On-Site Roadway

The main access to the site will be the existing two lane roadway from Snyder Domer Road to the sanitary landfill. Because of a limited traffic condition to the proposed sites, a one lane roadway will connect the main access roadway to the holding area. On-site roadways will also be one lane. These will be all-weather roads and be maintained during the winter by plowing with the use of on-site equipment.

Inclement Weather Operation

All incoming waste during the inclement weather will be stock-piled in the storage areas except for the bulk waste hauled by waste vehicles, owned and operated by I.W.D. which will take the waste material directly to the cell area. However, if weather conditions are very severe and do not permit on-site operation, the bulk waste will be temporarily stored at the I.W.D. liquid waste storage facility in Springfield.

Method of Operation

In general, method of operation will be that of a trench fill operation. Two to three cells will be opened at any one time to segregate the non-compatible waste. Each cell will be 40' x 40' and approximately 22' deep. Cell walls will be sloped to prevent landsliding. Also, wooden pallets will be placed on the bottom and sides of the cells so barrels will be encapsulated by bulk wastes. The barrels will then be placed in the cell in an organized manner and the voids between the barrels will be filled with the bulk waste. No intermediate cover material will be used between the successive barrel layers, however, a final cover layer of a minimum of 5.0' of clay material will be placed on the cell. The final cover will then be graded in accordance with the detail plans and will be seeded immediately. If a sand seam is encountered during the construction of the cell, the seam will either be removed totally, or removed so that it can be plugged with clay material available from the excavation of the cell. Total capacity of the landfill is estimated to be 100,000 cu. yd.

The equipment that will be available for preparing the site, the cell and operation and maintenance of this facility include: one 1 1/2 cu. yd Hydraulic Backhoe, one Fork Lift, and one D-8 Cat Dozer. Standby equipment will also be available at the adjacent sanitary landfill.

Future Use of the Site

The intended future use of the site is not known at this time. The site, however, will be graded to the final contour in accordance with the approved detail plans and will be seeded with grass and other shallow rooting vegetation to prevent erosion. As final cover will be a minimum of five feet layer of the topsoil and other material excavated, the site therefore could be used for agricultural purposes. If ponding of water or cracking of the cover occurs within five years after completion of landfill operation, the site will be regraded and/or additional cover material will be brought to the site to repair the undesired condition.

Safety Measures

First aid equipment will be available on site. Chemicals for fire fighting equipment will also be available on-site. Loose dirt, chemicals, and the water from the deep monitoring well will be used for fire protection. Fire is not anticipated to be a problem as most of the waste material will be encapsulated in steel drums and are not highly combustible. Additional safety measures include a permanent fence enclosing the storage area, a temporary fence enclosing the open cells, and a permanent 3' fence enclosing the entire proposed site.

Operations Panel

Prior to the commencement of the operation, an operational panel will be formed. Members of this panel will include representatives of I.W.D. and their consulting engineer. Ohio EPA will also be

invited on an informal basis. The panel will meet semi-monthly. The major functions of the panel include screening the waste material to determine their suitability for disposal at this site; establishing material logging and reporting requirements, preparing contingency plans for site defects, etc.

No material other than those stated previously, will be accepted at this site without prior consultation with the Southwest District of the Ohio EPA, in accordance with the following procedure:

1. I.W.D. will notify in writing, the Ohio EPA of the material to be disposed and the method of disposal.
2. The Southwest District Office of the Ohio EPA, will determine the acceptability of the waste stream and will notify I.W.D. in writing within 10 days of its decision for the disposal of the waste stream. This procedure will be used for all those materials that do not fall into the classifications set forth in Attachment 3 of this proposal.

Chemical Waste Storage

Chemical waste will be stored in segregated storage areas until sufficient quantities have accumulated or during inclement weather. These areas will be diked and enclosed by a fence. When sufficient quantities of waste have accumulated they will be taken to the landfill for final disposal during dry weather.

Building and Utility Facilities

The trailer office for the sanitary landfill will also be used for the proposed facility. A septic tank-leaching system, well water, electricity and telephone will also be available.

Estimated Cost

$400,000

sjw

6/4/76

IWD North Sanitary Sanitary Landfill Meeting

January 26, 1976

Abdul Rashidi	Ohio EPA - SWDO
Melvin Eifert	Systech
John D. Gedart	IWD
John C. Wright	IWD
Wndelll McElwee	Ohio EPA - Cols.
Dave Sharp	Ohio EPA - Cols.
Joe Moore	Ohio EPA - SWDO
Jeff Hosler	Ohio EPA - SWDO

Mr. Melvin Eiffert
Systems Technology Corp.
245 North Valley Road
Xenia, Ohio 45385

Dear Mel,

The following comments are keyed to the form "Hydrogeologic Characteristics of Proposed Waste Disposal Facilities" you sent me several weeks ago.

Page 1: paragraph 9: I believe that I.W.D. can furnish a more accurate map of their excavations than I can. The topographic map notes 3 other sites of excavation within 1 mile of the proposed site. Two pits are noted in the SW ¼ of Section 17, and a third is about ¼ mile northwest of Tremont City. Whether additional excavation has occurred in the vicinity, since the map was field checked in 1961, I have not determined. It would probably be easier to obtain verification from Ohio Division of Mines than for me to spend a day over there combing the hills & valleys for other excavations. I will do so, however, if you wish. I cannot swear to the extent or kind of quarrying in Clark Co. on the basis of my previous visits.

Page 1, paragraph 10: On the basis of what I have seen on the site, found on topographic and soils maps, and read in water well records, there are probably no rock outcrops within 1 mile of the I.W.D. site in Clark Co. Verification of this would require more waterwell records and/or field work.

Page 2, SUBSURFACE GEOLOGY

Paragraph 1 - United Soils Classification notation of the silt loam is ML or CL, probably ML. The sand in BH-2 and BH-3, the upper sand (at 15') in BH-4, and the lower sand (at 34') in BH-5 are SP. The lower sand in BH-4 (28.5 - 34") and the upper sand (5'-12') in BH-5 are SM. To be sure that the silt loam is in fact ML would require performing Atterburg Limit tests on the samples taken by Bowser & Morner. The appropriate notations ~~will be~~ have been added to the drilling logs (see enclosure)

Paragraph 2-5: These properties were described in the drilling logs submitted 14 January 1976.

Paragraphs 6,7: The water well records indicate that bedrock is fractured limestone lying at elevations of about 915' to 930', i.e. at depths on the order of 150-200' below the site.

Paragraphs 8,9: I cannot answer these questions; to do so would require excavation of considerable magnitude or conjecture based on outcrops seen some 6 - 8 miles to the south. These latter, along US 40, show thin to medium bedded carbonate rocks, with vertical joints in several directions spaced at a few inches to 3 or 4 feet, and weathered noticeably to depths of 6 feet or less.

Page 2, GROUND WATER GEOLOGY

Paragraph 1: Several water - bearing strata; moderately rapid to rapid in permeability, were intersected during drilling on the site. Clean, sorted sand at 8-10 feet in BH-3, and 5-12' in BH-5 may be related to the sandy mud at 7-12' in BH-1. These three bore-holes define a line trending NE-SW. BH-2 to the NW of this line, and BH-4, to the southeast of the line, do not have clean sand in this interval, suggesting a NE-SW trending stream channel or two separate lenses of sand. These thin shallow sands may be the causes of seasonal seeps in nearby gullies, but do not appear to be part of significant aquifers.

Similar sand at 30-31 feet in BH-2 and 29 to 34 feet in BH-4 may also be part of a linear sand body, trending NW-SE, or may be isolated sand lenses. Again, these sand bodies may be the sources of seeps in nearby gullies, but are not significiant aquifers.

There are no bore-hold data on the site below 40 feet. Nearby water well records indicate one or two thin sand beds in the upper 50 feet or so of glacial till, but drillers bypass these in favor of gravel-rich beds or fractural limestone bedrock depth of 70 feet or more, which are capable of yielding adequate water for household use.

Paragraph 2. The shallow sand beds are variable in thickness and depth. Bore-hold data indicate the shallowest sand may be intersected at depths ranging from 5'(BH-5) to 40+' (BH-1). These sand occurrences are overlain by glacial till. The till is a mixture of all sizes of particles, with silt (.0625 to .0039 mm) dominant, and is not very permiable(laboratory measurements of permiability yield values between 10^{-5} and 10^{-6} cm/sec.). The first sand is separated by as little as 12' and by as much as 28' + feet from still deeper sand layers. The material below the first sand is also glacial till, silt loam in texture and generally less permiable than the weathered till near the surface.

Paragraph 3. Piezometric surfaces occur at three or more levels. Bore-holes to 40 feet show standing water at elevations near 1090'. Three water wells completed nearby in gravels at 120-150' depths show water elevations between 930' and 1000'. Two wells completed in limestone bedrock along Chapman Creek have water levels between 968' - 975'. The deep gravel and the limestone aquifers may well be interconnected. There are insufficient data to map a piezometric surface for these aquifers.

Paragraph 4. Water levels noted when the 40' boreholes were completed were recorded by the Bowser & Morner drill crew, and should appear in their report to you. These levels do not meet the requirement that the hole be open ..."a sufficient amount of time to allow water level to stabilize". The holes were plugged by the drilling crew, as required by their company policy, so there is no way to check the levels now. I believe that records of present water levels, no matter how precise, are measures of transient values, at least in the vadose zone (the brown, oxidized, upper 10-12 feet). Monitoring wells peripheral to the land fill trenches would be good insurance; not so much for recording water table fluctuations as for sampling the quality of the ground water. They could even be rigged with simple ohmmeters to detect variations in resistance, generally correlative with dissolved salt content and therefore with pollution.

Paragraph 5. This requirement is met with the drilling logs.

Paragraph 6. Directions of groundwater flow may be surmised from the slope of the water table and by the presence of seeps and springs. If the watertable corresponds to the contact between brown, oxidized till and underlying gray, unoxidized till, as I believe it does, then the flow gradient in the upper 40+feet of the till is very low, less than 1 foot vertical to 10 horizontal, on the site. The gully on the east side of the site has cut down below the water table and meager seeps along it indicate groundwater movement from the upland areas of the site eastward toward the gully.

A spring in the valley leading south of T-1 and T-2 has been mentioned by Skip Jackel (Sp?), the I.W.D. landfill supervisor, which indicates groundwater movement to the south as well as east.

Flow directions in the deeper aquifers are unknown but it would be reasonable to expect them to be toward Chapman Creek also.

These observations are based on the limited data in hand. Where more detailed or more specific information are required it may be necessary to spend more time in the field. If piezometric maps are required it would be useful to have the people who put out the "Hydrogeologic Characteristics of Proposed Waste Disposal Facilities" paper spell out very precisely just what kind of data are acceptable for purposes of constructing such a map.

I hope these comments are useful. If they need to be restated in a more formal format, please let me know.

Regards,

Harlan H. Roepke

Harlan H. Roepke
Geologist

TO: Thomas J. Whittman, President
Systems Technology Corporation
Dayton, Ohio
FROM: Harlan H. Roepke, Geologist
4504 University Avenue West
Muncie, Indiana

REPORT OF BOREHOLE INVESTIGATIONS, I.W.D. CORP. WASTE DISPOSAL SITE,
CLARK COUNTY, OHIO
12 January 1976

Purpose of investigations: The investigations reported here were undertaken to supplement the investigations reported earlier (28 December 1975), on the suitability of the site for burial of certain industrial wastes.

Location: See map, Figure 1.

Topography: See site map, Figure 2.

Method of investigation: Bore holes 6 inches in diameter were drilled to a depth of 40.5 feet with a truck-mounted, continuous-flight auger owned and operated by Bowser and Morner Testing Laboratories, Toledo and Dayton. Samples were taken by split-spoon samplers driven, according to standard penetration test specifications, inside the hollow core of the auger.

Observations: The strata observed in the boreholes are recorded on the attached Drilling Logs. The sequence of brown oxidized glacial till, about 10 feet thick, overlying gray unoxidized glacial till which was found in the four back-hoe trenches described in the earlier report, holds true in a general way for the boreholes as well. In the boreholes, however, sand beds of relatively high permiability were recognized in two distinct depth zones.

Borehole #5 shows muddy coarse sand between 5 and 12 feet. At BH-3 an interval of brown medium sand lies between 8 and 10 feet depth. The brown sandy loam between 7 and 11 feet in BH-1 (which lies midway between BH-3 and BH-5) may be related to both of these.

Similarly, the lower gray till contains intervals of sand at 30-31 feet in BH-2, 28.5-34 feet in BH-4, and a 3 inch bed at about 40 feet in BH-5. This last is overlain by about 13 feet of dark brown silt loam.

Laboratory analyses: Three samples, taken during the preliminary investigations from Trenches T-3 and T-4, were analyzed for their particle size distribution. The results, figure 3, show that the upper and lower till samples from T-4 have similar particle size distributions; about 20% clay, 30-40% silt, 40-30% sand, and less than 10% gravel. The sample of upper till from T-3 shows 28% clay, 50% silt, 20% sand, and 2% gravel. While too few to define the range of sediment types present, these samples indicate that the till is well graded and contains significant amounts of clay minerals.

Interpretation: Cuttings and samples from the boreholes indicate the presence of a darker, slightly coarser till below 31' (elevation 1076') in BH-2, and below 25' (Elev. 1074') in BH-3. This is separated from the overlying grey till by a foot of sand at BH-2 and a possible sand layer at BH-3. At BH-4 brown sand occurs at 1069-1072'. And at BH-5 brown silt loam in the interval 1064-1076' elevation, with a thin sand bed at its base. The inference of these data is that a permiable sand and/or moderately slowly permiable silt loam lies in this elevation range, with the sand occupying a NW-SE trending zone that may extend to the flanks of the southeast-flowing gully near the southeast corner of the area studied.

A shallower sand bed about 3' thick occurs in BH-3, 1089-1092' elevation; a sandy loam interval was found at about the same elevations, 1090-1094', in BH-1; and 7' of sand lies at 1091-1098' in BH-5. The absence of similar beds in BH-2 and BH-4 seems to constrain the sand to a NE-SW trend, thickening toward the SW.

Neither the lateral limits nor, for that matter, the continuity between boreholes for either of the two sandy zones can be determined from the data in hand. Both could potentially carry leachate toward surface seeps, springs, or gullies if they became contaminated.

Recommendations: Initial trenching might best be started in the northwest part of the area, in the general vicinity of BH-2 and T-4, where shallow sand beds were not observed. Successive trenches might be prepared farther southeast, perhaps eventually as far as BH-4, but the thick sand at 5 to 12 feet in BH-5 is good reason to approach the SW part of the area with extreme caution. As excavation progresses care must be taken to seal off with compacted earth any occurrences of the shallow sand bed that might be exposed.

If excavations go no lower than an elevation of about 1085', there is little likelyhood of contaminating the lower sand, or any surface springs or wells that might intersect that sand.

Harlan H. Roepke

Harlan H. Roepke, Geologist

Attachment 3

James A. Rhodes
Governor
Ned E. Williams, P.E.
Director

Inter-Office Communication

OhioEPA

to Abduhl Rashidi, Southwest District Office

from BB
Bob Brown, Office of Land Pollution Control, CO

date 11/9/76

subject: The IWD Chemical Waste Landfill

As you will recall in my IOC of June 25, 1976 and during our meeting of July 12, 1976 with Jack Wright and Mel Eiffert, I suggested that a more precise definition be included in the plans for the IWD Chemical Waste Landfill for the wastes which would be received. Because of a breakdown in communications with Jack Wright this detail was not taken care of but no damage was done since we approve each individual waste received at the landfill. In this IOC I would like to state the position of the central office regarding the general types of wastes which should be accepted at IWD's Chemical Waste Landfill.

Director Williams has approved the general content of the criteria for hazardous waste landfills in my June 26, 1976 draft policy statement. In particular he urged us not to reduce the requirements. Therefore, the permeability limit of less than 10^{-7} cm/sec will be cutoff for sites which are to receive hazardous waste. The permeability of the IWD site was from 33 to 70 times greater than 10^{-7} cm per sec and it is therefore not suitable for hazardous waste. The definitions of hazardous waste of the June 26 policy statement will be employed for evaluating the waste which IWD would want to landfill. They will only be permitted to receive non-hazardous waste with a few rare exceptions such as the asbestoes waste.

BB/pam

OhioEPA

File

Re: Solid Waste
Clark County
IWD Chemical Landfill

Mr. Clyde Hill
Analytical Chemist
IWD Chemical Disposal Co.
3106 Snyder-Domer Road
Springfield, Ohio 45502

November 30, 1977

Dear Mr. Hill:

We have reviewed your request for the disposal of approximately 40 drums of Phenol Formaldehyde Polyol and 500 drums of polyester xylene resin. These materials are judged to be acceptable for disposal in your chemical landfill.

The Polyol has small amounts of Phenol, Formaldehyde and Triethylamine. The acceptance of the Polyol material should not be interpreted to mean that Phenols, Formaldehyde, Triethylamine, and other substances containing these chemicals have an open approval. New waste materials that contain these chemicals must receive formal approval through our Columbus, Central Office, Hazardous Waste review committee.

Please record the cell used for the disposal of these materials and include it in the monthly reports sent to this office. Thank you again for your cooperation in determining the safe disposal of various industrial wastes.

Sincerely yours,

M. Joe Moore
District Sanitarian

MJM:sjs

cc: Clark County Health Department
cc: Dan Redman, Joe Speakman, Ohio EPA

Chemical Disposal Co., Inc. of Ohio

3106 Snyder-Domer Road, Springfield, Ohio 45502 • (513) 969-8346

November 18, 1977

Mr. Joe Moore
OHIO ENVIRONMENTAL PROTECTION AGENCY
Southwest District Office
7 E. Fourth Street
Dayton, Ohio 45402

Dear Joe:

Koppers Chemical has approximately -500- drums of resin that has set-up. It is a polyester xylene resin containing less than 6% uncombined or free xylene and styrene, has a viscosity of 50,000 to 300,000 centipoise which is greater than the polyol from Inland. The material cannot be poured from the drums; I was able to burn a piece of the resin, it smokes and goes out when flame is removed.

Is this material exceptable or how should it be disposed of?

Sincerely yours,

Clyde Hill

Clyde Hill, Analytical Chemist
IWD Chemical Disposal - Ohio

CEH:mrf

Chemical Disposal Co., Inc. of Ohio

3106 Snyder-Domer Road, Springfield, Ohio 45502 • (513) 969-8346

November 17, 1977

Mr. Joe Moore
OHIO ENVIRONMENTAL PROTECTION AGENCY
Southwest District Office
7 East Fourth Street
Dayton, Ohio 45402

Dear Joe:

Owens-Corning has approximately -40- drums of Phenol Formaldehyde Polyol that has an outdated shelf life. It contains less than 1% free Phenol, Formaldehyde and Triethylamine, the viscosity is greater than 5,000 centipoise. This is similar to the polyol we are presently putting in the Chemical Landfill now, except it's clear in color. Is this material exceptable or how should it be disposed of?

Sincerely yours,

Clyde Hill /MRF

Clyde Hill
Analytical Chemist
IWD Chemical Disposal - Ohio

CH;mf

Re: Solid Waste
Clark County
IWD Chemical Landfill

File

Mr. Clyde Hill
Chemical Engineer
IWD Chemical Disposal Co.
3106 Snyder-Domer Road
Springfield, Ohio 45502

November 8, 1977

Dear Mr. Hill:

We have reviewed your request for the disposal of resorcinol-formoldehyde-latex (a textile adhesive) in the IWD Chemical Landfill. This material is judged to be within the resin and latex classification of wastes approved for disposal in your special chemical landfill. The material is not extremely toxic or hazardous and is therefore acceptable for disposal in your chemical landfill.

If you have further questions, please call me at (513) 461-4670.

Sincerely yours,

M. Joe Moore
District Sanitarian

MJM:sjs

cc: Clark County Health Department
cc: Dan Redman, Joe Speakman, Ohio EPA

Chemical Disposal Co., Inc. of Ohio

3106 Snyder-Domer Road, Springfield, Ohio 45502 • (513) 969-8346

October 25, 1977

Mr. Joe Moore
OHIO ENVIRONMENTAL PROTECTION AGENCY
Southwest District Office
7 East Fourth Street
Dayton, Ohio 45402

Dear Joe:

We would like permission to bury in our Chemical Landfill, a material similar to the laytex we are presently permitted to dispose of.

I am enclosing a copy of Uniroyal's analysis, which compares with ours. I have coagulated samples of the material and it behaves as they said. It will be coagulated and put in drums, they have found a polymer that will do the job without lowering the pH below 7.5. They estimate approximately 40 drums a week. Could you send me a letter of approval or your recommendation for disposal.

Sincerely,

Clyde Hill : MRF

Clyde Hill, Chemical Engineer
I.W.D. Chemical Disposal - Ohio

CH:mf

Enclosure

UNIROYAL INDUSTRIAL PRODUCTS
Division of UNIROYAL, Inc.
P.O. Box L
Port Clinton, Ohio 43452
419-635-2191

August 15, 1977

Mr. Clyde Hill
IWD Liquid Waste
3106 Snyder-Domer Road
Springfield, OH 45502

Dear Mr. Hill:

Under separate cover (UPS) we are sending you material representative of our liquid waste. It is basically a latex waste. This material I sent you is actually a sample of the actual resorcinol-formaldehyde-latex dip. Our waste material would differ from this in that the waste material which we would send you would typically have only one-half the solid content (10% normally versus 22% for what we sent you). If you dilute this material 1:1 with water you will have material typical of our waste.

This material is a textile adhesive system which is known in the rubber industry as a resorcinol-formaldehyde-latex (RFL) treatment. Our waste consists of this plus water from washing out equipment with which this adhesive comes in contact. It is not explosive. The flammability is quite low because of its high water content. Its low degree of flammability can be illustrated by the fact that in our process fabric saturated with this material is dried in a direct fired (open flame) oven at 300°-400° F. with no problems due to ignition of the treatment.

In addition to the components of this RFL adhesive system, the waste material may contain a small amount of threads of nylon and polyester fabric. Some of this material may contain some dried material which will appear to be a hard dark resin. This is just dried adhesive. When the adhesive dries it becomes hard, brittle, and difficult to re-dissolve.

At times this latex material will coagulate and separate into a water layer and a rubber plus resin layer. This is a normal occurrence for this material and it basically is not a exothermic process (that is there is no appreciable amount of heat given off when this happens). The change is quite noticeable since the material changes from a water-like material to a material which flows similarly to mayonnaise or catsup. Common things which cause this phenomenon are a pH below about 6.0, freezing, and the presence of inorganic salts (particularly polyvalent inorganic salts). Once this coagulation takes place, it cannot normally be reversed. Coagulated adhesive, depending on the rapidity with which it is dewatered, eventually drys out and forms a resinous material which is difficult to dissolve.

It is quite easy to ensure that the adhesive does not coagulate during shipment. This can be done simply by adding more ammonia water.

I have enclosed what I feel will be the range of the composition of our liquid waste together with what I would estimate to be its typical composition. I have listed resorcinol as an ingredient. I personally doubt whether there is any present since it reacts with formaldehyde to form a resin; however, I cannot exclude it from the list since it is conceivable that under some conditions it may be present.

Our procedure for making up the adhesive treatment is as follows: Formaldehyde (37% in water with some methanol) is diluted with water to make solution A which has a formaldehyde content of about 9½%. Concentrated (28%) ammonia in water is mixed with Kopper's resorcinol-formaldehyde resin (R-2200 which is typically 30% water, 14% free resorcinol, and 56% resorcinol-formaldehyde resins) and water to give a solution (solution B) containing about 2% ammonia and 17% resorcinol and resorcinol resins. Solution A, solution B, Pyratex J-1904 (a latex consisting of 40% styrene-butadiene-vinyl pyridine terpolymer and 60% water plus some soaps and surface-active agents as stabilizers), and water is mixed to give the final adhesive.

I have attempted to describe the properties of this material as fully as possible. I would be happy to answer any questions you might have concerning this waste material.

At present, I would estimate that we would dispose of 1000-2000 gallons of this material per week (the actual amount produced is too variable to predict with certainty). We can ship it to you either in bulk or in drums. approx. 40 drums

We would like you to notify us as soon as possible if you can handle this material, and also when we could start shipping to you. We would also need to have a quote of the cost per gallon of disposing of this waste.

Sincerely yours,

J. KELLGREN
Technical Superintendent

JK:lc

1 Incl.

August 16, 1977

Approximate Percentages for the Various Components in our Liquid Waste

	Range	Typical
Water	78-96	90
Styrene-butadiene-vinyl pyridine terpolymer rubber (dry weight) **, ***	3.5-22	8
Ammonia (pure gas) *	near 0-0.3	0.2
Resorcinol-formaldehyde resin	0.5-4.5	1.4
Formaldehyde (as pure material)	0-1.8	0.2
Methanol	near 0-1.5	0.3
Soaps and surface-active agents **	near 0-0.6	0.1
Resorcinol	0-0.9	0

* If calculated as the normal concentrated ammonia solution (28% in water) the values would be near 0-1.1 and 0.7% for the range and typical values, respectively.

** From latex.

*** If calculated on the basis of latex used, this is 9-55% and 20% for the range and typical values respectively. The value for the water is now reduced to 90-45% and 78% for the range and typical values, respectively. The latex is typically 40% by weight of dry rubber and 60% by weight of water.

pH for uncoagulated waste is 8-10 (lower values are possible but the limitation is pH 5.5-6.0 where the latex coagulates).

Incl 1.

Inter-Office Communication

OEPA

James A. Rhodes
Governor
Ned E. Williams
Director

to Robert Brown

from M. Joe Moore &M File: Solid Waste Clark Co

date June 22, 1977

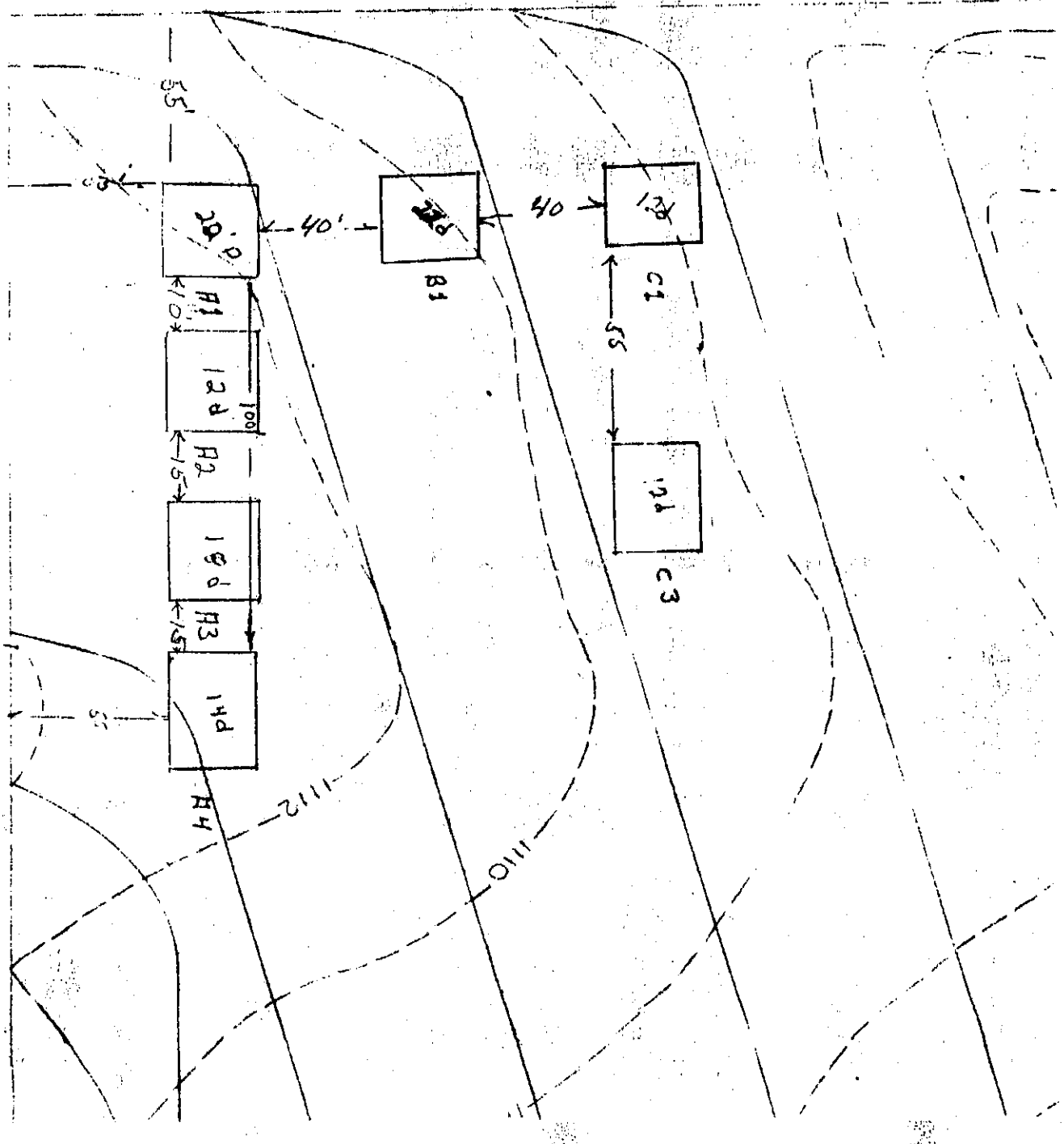
subject: IWD Liquid Waste Chemical Landfill

Thank you for the list of waste classes approved for disposal at this special landfill.

I have reviewed Mr. Wright's monthly reports of materials disposed on the site. They are in agreement except for one item - W0056 Systech - Still Bottoms 120 cu yds. This material was disposed bulk in Cell B-2. What is the status of this material? Is it acceptable for disposal in the chemical landfill? Please contact Mr. Wright directly if you need further specific information about the waste - (513) 969-8346.

mlk

NW Corner



ATTACHMENT 3

TYPES OF WASTE

An estimate of the amount of waste liquid to be landfilled on a monthly basis are the following:

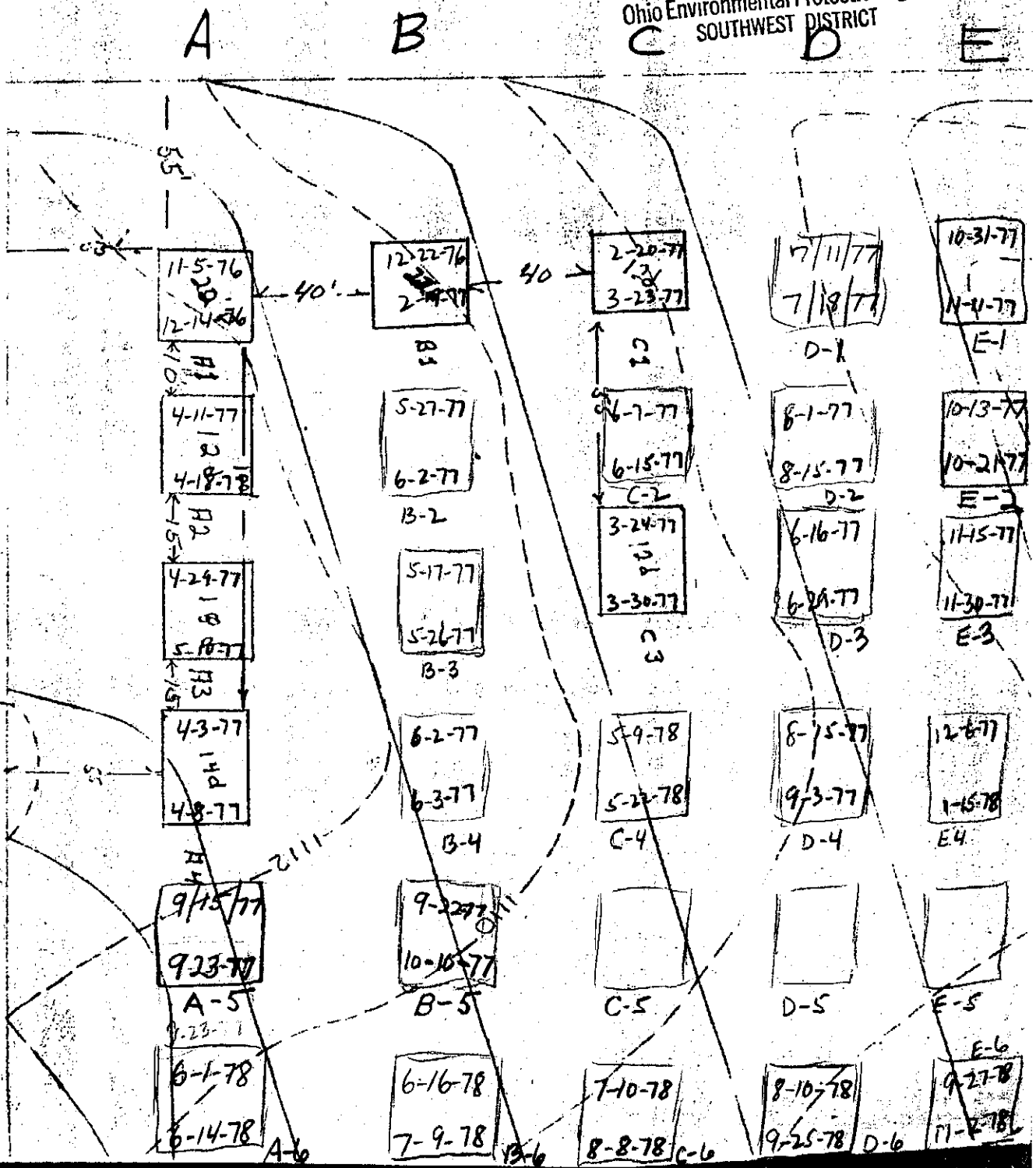
GROUP 1 - Encapsulated Metal Sludges
- Approximately 10,000 gal/month
- Residual sludges resulting from the pre-treatment required from the proper disposal of industrial solutions such as plating solutions, acids, and precipitated salts resulting from the removal of pollutants from these solutions.

GROUP 2 - Bulk Asbestos And Water
- Approximately 20,000 gal/month
- Asbestos obtained from air cleaning systems mixed with water for safety and handling purposes.

- Polyol
- Approximately 6,000 gal/month
- A high viscous (molasses) long chain polyfunctional alcohol produced as a by-product in the manufacture of urethane foams.

GROUP 3 - Encapsulated Paint Sludges
- Approximately 25,000 gal/month
- Encapsulated glues and adhesives
- Approximately 35,000 gal/month
- Above materials are sludges derived from the use and manufacture of paints and coatings, glues, and adhesives. Typically they will include waste paints, adhesives, and inks; paint spray booth skimmings; surplus unusable paint, glues and adhesives; and sludges from the reclamation of solutions used in the application and manufacture of paints, inks, glues, and adhesives.

NW Corner

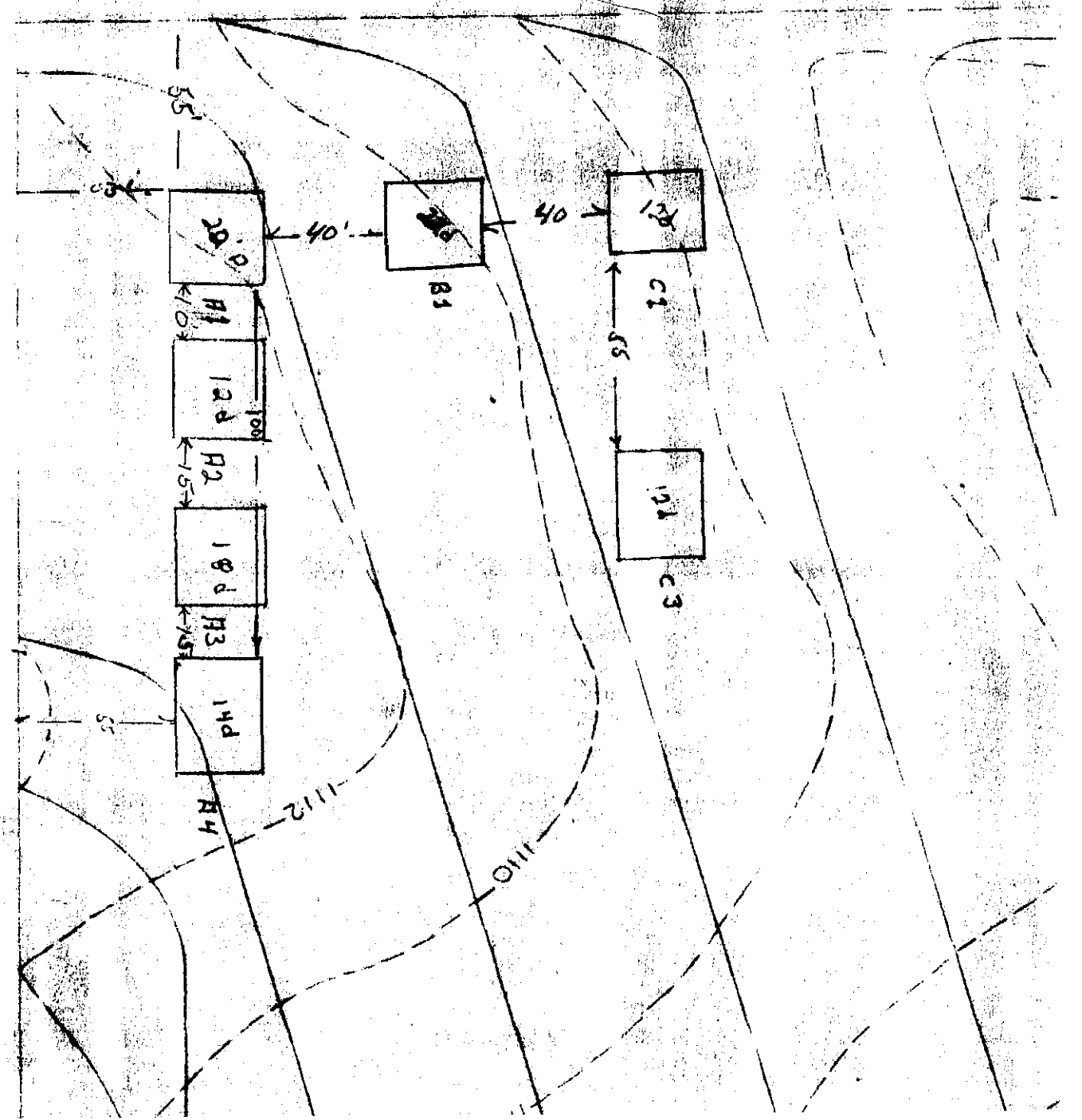


N W Corner

RECEIVED

MAY 12 1977

Ohio Environmental Protection Agency
SOUTHWEST DISTRICT



File: IWD Chemical Landfill, Clark County

OhioEPA Inter-Office Communication

TO: Joe Moore, Southwest District Office **DATE:** May 12, 1977

FROM: Bob Brown, Office of Land Pollution Control, CO

SUBJECT: Disposal of paint sludge and diatomaceous earth by Systech

I received a letter from Bob Reitz (Systech Corporation), requesting permission to dispose of oil base paint sludge and diatomaceous earth, vegetable oil sludge at the IWD Chemical Waste landfill. Bob Reitz also visited my office to discuss the problem.

The diatomaceous earth sludge is divided into two batches. One is simply diatomaceous earth used by P & G to filter soybean oil. The second batch is the same except for contamination with some metal oxide sludge. The analysis Bob Reitz supplied to me shows that the heavy metal is relatively low. The sludge is presently in holding tanks under water which Bob Reitz states is necessary to hold down severe odors. In my opinion, this sludge could go to any well managed landfill in a good geologic location provided the excess water is drained from the sludge. Bob Reitz stated that they can drain this water easily. The sample Bob Reitz showed me was a stiff solid under a water layer. I would like for you to check this sludge after it is drained and prior to transport to IWD's site. Bob Reitz also mentioned that they may take this sludge to the CER landfill. The metal contaminated sludge would go in the hazardous waste section since this is CER's preference. The remainder could go to the conventional portion of CER.

The oil base paint sludge is more of a problem. The pigment and metal content are not hazardous but the solvent could present a fire hazard and leachate hazard. Bob Reitz assures me that most of this material is dried in the storage drums and is a solid or a jell. Reitz proposes to remove the solid and jell material from drums and take it to IWD as a solid waste. This should be acceptable since the solvent will have evaporated if the material is a solid or jell. I requested that Bob set aside the drums which contain more fluid material. These drums would be handled when a long range solution is developed for the disposal of the approximately 10 cu. yds. of this material which is generated every two weeks. Thus, we must make it clear to Jack Wright of IWD that OEPA has only approved the portion of Systech's paint sludge waste which is a jell or solid.

As a long term solution I suggested that this paint sludge waste be handled in bulk form and spread on a well managed conventional landfill. Hopefully this would result in metabolism of the small amount of solvent in the waste by the landfill organism. However, Dan Redman felt that this waste is a significant fire hazard in the conventional landfill. Dan recommends that Systech incinerate the waste prior to disposal. These points will have to be evaluated more carefully when Systech comes back to us requesting approval of their long term disposal plan.

REB/pam

Called Jack Wright
5/20/77
Passed this information on to him.

– Call Joe Moore

SYSTECH®

specialists in environmental technology

SYSTEMS TECHNOLOGY CORPORATION
245 North Valley Road
Xenia, Ohio 45385
Area Code 513/372-8077

10 May 1977

Mr. Bob Brown
Ohio EPA
Office of Land Pollution Control
P.O. Box 1049
Columbus, Ohio 43216

Dear Mr. Brown:

Per our phone conversation of 9 May 1977, we would like to request your permission to dispose of the following sludges at I.W.D.'s Springfield landfill:

+ toners

Pigment	95%
Titanium dioxide	31%
Silicates	56%
Calcium Carbonate	13%
Vehicle	5%
Soya Alkyd Resins	26%
Linseed Oil	24%
Metallic Driers	2%
Mineral Spirits	41%

Fe salts
Co salts
Cu salts

fatty acid oil

straight chain organics

We presently have 300-500 yds^3 of this sludge generated as a result of distilling paint solvents via thin film evaporation. The sludge is further subjected to steam distillation to remove most volatile solvents. The above analysis will vary due to variations in the types of solvents and paints reclaimed.

We also have 950 yds^3 of a sludge consisting primarily of diatomaceous earth which has been used as a vegetable oil filler media. We tested a composite of 6 core samples taken from the storage tank containing the material:

≤ 10 yds per two weeks.

Material on hand is largely solids
It would be removed from drums and handled in bulk.

Solids (wt).	49.6%
Fe* (total)	108 mg/l
Cr* (total)	223 mg/l
Cr^{+6}	-0-
Cd**	25 mg/l
Zn**	98 mg/l
Pb**	42 mg/l
Ni**	5 mg/l

*Present as $M(OH)_3$
**Present as $M(OH)_2$

We do not anticipate generating this material again.

We would appreciate a speedy reply on this matter.

Sincerely,

SYSTECH WASTE TREATMENT CENTERS

Robert D. Reitz
Technical Representative

RDR/hbs

Re: IWD Chemical Landfill
Clark County - German Twp.
Solid Waste

Mr. George Degenhart
3035 Columbus Avenue
Springfield, Ohio 45503

April 25, 1977

Dear Mr. Degenhart:

Enclosed please find the information that you requested per our telephone conversation.

According to my telephone discussion with Bob Brown on April 25, 1977, no new substances have been approved for disposal at this site since the original plan approval.

Should you have any questions or comments, please feel free to contact this office.

Sincerely,

Gary M. Bramble

Gary M. Bramble, P.E.
Industrial Wastewater Group

GMB/sjg

Enclosures

State of Ohio Environmental Protection Agency
Southwest District Office
7 East Fourth Street, Dayton, Ohio 45402 • (513) 461-4670

James A. Rhodes, Governor
Ned E. Williams, P.E., Director

April 4, 1977

Industrial Waste,
3112 Snyder Domer Road,
Tremont City, Ohio

Mr. Menda:

Find enclosed the inspection report of the Landfill facility, located at 3112 Snyder Domer Road, Clark County, Springfield, Ohio.

This is not a letter of reprimand, but to caution you against bad operating procedures and if not corrected grave problems could arise.

Your co-operation would be appreciated in correcting these violations.

Sincerely,
Mrs. Mary Mitch, R. N.,
Acting Health Commissioner

Howard Leist,
Sanitarian
HL/mmc

#706

I.W.D. LIQUID WASTE, INC.

3975 Wagoner Ford Rd.
P. O. Box 1458
Dayton, Ohio 45414
(513) 278-0821

701 Thrasher St.
Springfield, Ohio 45503
(513) 323-9382

Joe

Here is a copy of the data sheet we have the new customers fill out on new waste material, as per our discussion on Tue 18 Jan 77. Additions or comments on this form will be appreciated.

Thanks Again

Clyde Hill

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF OHIO
* * *

RESA,

Plaintiff,

vs. CASE NO. 1:04-CV-013

WASTE MANAGEMENT, INC.,
et al.,

Defendants.

* * *

Deposition of CLYDE E. HILL, JR., Witness herein, called by the Plaintiff for cross-examination pursuant to the Rules of Civil Procedure, taken before me, Mary Jo Stevens, a Notary Public in and for the State of Ohio, at Thompson Hine, 2000 Courthouse Plaza, 10 West Second Street, Dayton, Ohio, on Friday, the 16th day of December, 2005, at 1:21 p.m.

* * *

APPEARANCES:

On behalf of the Plaintiff:
Walter & Haverfield LLP
By: Leslie G. Wolfe
Attorney at Law
The Tower at Erieview
1301 East Ninth Street
Suite 3500
Cleveland, Ohio 44114-1821

On behalf of the Defendant Waste Management, Inc.:
Tucker Ellis & West LLP
By: Courtenay Y. Jalics
Attorney at Law
1150 Huntington Building
925 Euclid Avenue
Cleveland, Ohio 44115-1475

On behalf of the Defendant Systech:
Frost Brown Todd LLC
By: Daniel A. Brown
Attorney at Law
300 North Main Street
Suite 200
Middletown, Ohio 45042-1919

* * *

CLYDE E. HILL, JR.

of lawful age, Witness herein, having been first duly cautioned and sworn, as hereinafter certified, was examined and said as follows:

CROSS-EXAMINATION

BY MS. WOLFE:

Q. Would you please state your full name for the record and spell your last name?

A. Clyde Ewing Hill, Jr., H I L L.

Q. Good afternoon, Mr. Hill. My name is Leslie Wolfe and you and I had spoken before. I'm the attorney for the plaintiff in this case and do you understand that you're here for a deposition today?

A. Yes.

Q. Did you receive a subpoena telling you to be here today? I see you're pulling it out of your breast pocket.

A. Yes.

Q. So you did receive the subpoena?

A. Yes.

Q. And you received the check with that?

A. Yes.

Q. And thank you for coming today.

Are you -- do you understand that you're here for a deposition in connection with the work that you did in the late '70s at the Tremont landfill Superfund site in Clark County?

A. I guess. I wasn't there in the late '70s.

Q. You were not there in the late '70s?

A. No. It was May of '75 is when I left and went to Greene Memorial Hospital.

Q. You were not there from -- any time during the operation of the barrelfill at the site?

A. Yes, they were -- yeah, they had had, what, three cells open and they were -- they had filled one and were filling the second one when I left.

Q. So what year do you think it was that they had the three cells open?

A. That was -- they started in '74. I think they got all the paperwork completed in about '73. It was '73, '74 when they finally started doing it. They had enough drums on hand to start doing something with. They were held up for permits for quite a while.

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Q. Well, we're going to talk about that a little bit more, but first before we get started I'm just going to go through a few preliminary matters. Have you ever had your deposition taken before?
A. On this?
Q. On anything.
A. Yes.
Q. What was that in connection to?
A. It was an injury at Greene Memorial Hospital. One of the employees got shot and he worked in the hospital and so they were finding out what he did and if he knew anybody that disliked him or anything at the hospital.
Q. How long ago was that?
A. It was about '78.
Q. So that was quite a while ago?
A. Yes.
Q. Well, the rules that applied to that deposition are probably the same rules that apply now, but I'm going to go over them to make sure that we are on the same page. Most important thing is to give me verbal responses to the questions and that way the

Page 7

court reporter can take down your answers.
A. She can't see me nodding my head. Hear that.
Q. Right, she can't see you nodding your head and it will also make it easier for the court reporter if you wait until I ask the question before you give an answer and I'll wait for you to give a complete answer before I have gone to the next question. Agreed?
MS. JALICS: I'm sorry, Mr. Hill. I think that fan is making it difficult for me to hear.
Q. If you don't understand a question, please tell me and I'll rephrase it in a way that hopefully you will be able to understand.
A. Okay.
Q. If you do answer a question, though, I'll assume that means you understood the question. Okay?
A. Yes.
Q. If you need a break, please let me know.
A. Yes.
Q. And if you get thirsty there is

Page 8

coffee and water available in the room for you to help yourself to at any time.
A. Okay.
Q. Did you review any documents to prepare for your deposition today?
A. No.
Q. Did you talk to anyone to prepare for your deposition today?
A. Just you.
Q. Are you represented by counsel today?
A. No, I'm not. You said I had an opportunity for that, but --
Q. Right. I said that you had an opportunity for that and I think I probably told you that the attorney representing Waste Management which is a primary defendant in this case, Waste Management and Chemical Waste Management, was representing some of the former IWD employees but I wasn't sure which ones and as it turns out I think that they -- based on the dates of your employment that they determined that they would not offer representation to you. If Miss Jalics wants to say anything further about that, she can do so.

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A. They hadn't bought the company at that time. They were negotiating when I left.
Q. And you represented to me that you were never employed by Waste Management, Inc. or Chemical Waste Management, Inc.?
A. No, just IWD, Industrial Liquid Waste or Liquid Waste.
MS. JALICS: And as far as I know, that's what our records show as well.
Q. And if I didn't already indicate, Miss Jalics represents Waste Management and Chemical Waste Management. So that's why she's here. Did you do anything at all to refresh your memory or prepare for the discussion that we're going to have today?
A. No.
Q. Would you please state your current address?
A. 2770 Wyoming Drive, Xenia, Ohio, 45385.
Q. How long have you lived at that address?
A. Since October, 1969.
Q. That is a long time to be living at one address. Do you live alone there?

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A. No, I don't.
Q. Who do you live with?
A. My wife.
Q. And, Mr. Hill, what is your date of birth?
A. It's 5 August of '39.
Q. Where did you go to high school, Mr. Hill?
A. I went to Central High School in Oklahoma City, Oklahoma.
Q. Did you go to college after that?
A. Yes, I did.
Q. And did you graduate from high school?
A. Yes.
Q. Where did you go to college?
A. I started at Central State University and when I graduated it was the -- well, it was Central State College and when I graduated it was University of Central Oklahoma.
Q. What year did you graduate?
A. 1965.
Q. Did you go on to postgraduate school?

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A. I did some, let's see, courses at Wright State.
Q. What was your undergraduate degree in?
A. I got a BS in chemistry, minor in math and physics.
Q. And the courses at Wright State, what area were those in?
A. Advanced and organic chemistry, and what was the other one, instrumental analysis.
Q. Did you receive any degrees from Wright State?
A. No, I didn't.
Q. Did you receive any other degrees from any other institutions?
A. No.
Q. Did you go through any other training in any of the fields that you were involved in, chemistry or any other scientific fields?
A. When I was in the Air Force I went to the Air Force Tech School, electronic tech school and that's what I did was electronic engineering in the Air Force.

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Q. What years were you in the Air Force?
A. From April of '62 to June of '67.
Q. Where were you stationed?
A. First was Lackland and then I went to tech school at Keesler. Then I went to Iwakuni, Japan and then was transferred to Fuji Air Base in Japan. Then I came back to Offutt Air Force Base, got my final semester TDY where the Air Force sent me back to get my last semester of college in Oklahoma City at Edmund and then went back to Offutt and then was assigned six months in Vietnam, came back to Offutt and was discharged there.
Q. So you were discharged in June of '67?
A. Right.
Q. And at that point you had received your undergraduate degree?
A. Yes.
Q. And what did you do at that time when you were discharged, what did you do next?
A. I went to work for Systems Research Lab as an associate engineer, electronic engineer. But -- yeah. No, wait.

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I was -- I started at SRL. We had a one year contract doing neutron activation analysis out at Wright-Patt, and when that contract was up, then I was on a contract designing a translucent partial measuring device for models at flight dynamics lab at Wright-Patt and then I was working on projects for the foreign technology division at Wright-Patt.
Q. Were all of these contracts through System Research Labs?
A. Yes.
Q. Were you employed there?
A. Yes, for, what, ten years.
Q. Were you a salaried employee?
A. Yes.
Q. And so after the ten years, would that have brought it to about '97 when you left Systems Research Lab?
A. No.
Q. When did you leave Systems Research Lab?
A. It was -- wait a minute. They gave me -- the last part of the '70s I was working for Systech for a couple of years.
Q. Was there some time in between

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working for Systech in the late '70s and working for Systems Research Lab in the late '60s when you worked for IWD? When did you work for IWD?
A. About -- it was about '73 to April of '75, best that I remember.
Q. And where --
A. There was five years at Isotech -- I don't mean Isotech. I mean SRL.
Q. Five years total at Systems Research?
A. Right. And when the government contracts quit, then I shifted over and went to work at Systech for about a year and a half, I guess.
Q. And then after that year and a half, where did you go?
A. To IWD Liquid Waste.
Q. And you're fairly sure that that was about 1973 when you started at IWD?
A. '73, '74, around there. They were on Lagonda, the plant over just off of Lagonda is where I first started until they had moved to Tremont. Whatever date they moved up there is --

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Q. So what was the actual company name that hired you when you worked at Lagonda when you first started?
A. It was IWD Liquid Waste.
Q. How long do you think you worked at that Lagonda location?
A. It was about six or eight months before we went up to the site of Tremont, got the building built and everything.
Q. What were you hired on as?
A. Chemist.
Q. And at some point did you become the chemist at the Tremont site?
A. Yes.
Q. And when you first were hired by IWD Liquid, was that the plan, that you would -- were you hired for the purpose of going over to Tremont eventually?
A. I was to be their chemist wherever they were but they had talked about that this was just a temporary location and eventually when they get the permits and everything, then they were going to build a building up at the Tremont site.
Q. But when you were hired by IWD

Page 16

Liquid Waste, had that company just come into existence or had it been around for a while?
A. IWD Liquid Waste was probably three or four months old and they were bringing waste to Systech down at the Franklin, Ohio plant and Jack Wright -- well, when they were bringing their waste in, he was just getting started picking up, mostly oil/water waste and stuff and was coming in and dumping it there and he told me that they had plans and that they would like for me to consider coming to work for them.
Q. And those plans were related to the Tremont operation?
A. Yeah, Tremont where they were going to expand and start treating more things, disposing of more waste.
Q. Were you involved in any of the permit application processes for the Tremont barrelfill?
A. No, other than asking -- you know, they would ask me what I thought of the plan and it looked like the same, like it was legal, what they wanted to do.
Q. What aspects of the plan did they

Page 17

consult with you on?
A. What tests they would need to do and how they would need to like put the test that I was in, make sure the cells were sealed and if they put all the drums in and then backfilled with polyol between the drums if that would be feasible or not.
Q. Who was asking you, was it IWD Liquid people asking you?
A. Jack Wright primarily.
Q. Would you say that you were -- played a large role in consulting with them on those issues?
A. He would run what -- run by me whatever he had figured out, if that would be feasible and see what I thought of it.
Q. Do you know when the permit for the barrelfill was issued by EPA, Ohio EPA, or actually by Clark County, I think it was?
A. For using the cells?
Q. Yes.
A. Because they had a permit for the plant before they had -- using the cells.
Q. Are you --
A. I'm guessing it was in '74.

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Q. When you refer to the plant, what plant are you talking about?
A. The one on Tremont. They had a plant that they would -- a garage for the trucks and oil/water separation and bulk storage tanks set up to handle the large volumes of liquid waste and they processed the oil/water waste where it split the oil out and recovered that to make cold spray and treat the water. The only problem they wound up with was the water was loaded with a lot of organics that wouldn't come out of it that were biodegradable so if you didn't treat it it would smell and they were still having to dispose of that.
Q. Were they chlorinated organics?
A. No. Chlorinated organics wouldn't dissolve, I mean, they won't biodegrade very good.
Q. When did that oil/water separation process begin at the Tremont site, if you know?
A. It was within three or four months after they moved everything up there from the Lagonda site. It was being done over off of Lagonda. There's a side street where the

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hardware store is where they were doing the oil/water separations and then they moved that up there and we got it set up, brought a boiler in to heat the water to separate itself.
Q. What else was taking place at the Lagonda site before the move to the Tremont site?
A. Storing drums of paint sludge and polyol and stuff that they were going to eventually hope to bury.
Q. Were there drums stored at the Lagonda site already at the time that you were hired?
A. Part of the problem is finding out which ones had paint sludge in them and which ones had oil/water and we pumped the oil/water waste from the cutting machines where they dumped the emulsion. That's what we had and then those drums were sold to Cincinnati Barrel, I believe.
Q. I'm going to ask you some more questions about that a little later on, but I want to just -- I just want to be clear about when you refer to the operation being moved to Tremont, which aspects of the operation were

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moved from Lagonda to Tremont? You said they were doing the oil separation process at the Lagonda site?
A. Right.
Q. And then they transferred all of that equipment and the facility over to the Tremont site?
A. Right.
Q. So can you estimate about the time that that move to Tremont happened? Was it about six to eight months after you started you said; is that correct?
A. Yes. Probably in -- they built the garage and were storing the trucks out there, the vacuum trucks and -- you know, the vacuum trucks, and then they had some tank trucks that were vacuum trucks that they usually moved waste or vacuum so that you could pump drums or tanks or whatever and put it in the six thousand gallon trailer where you can haul it.
The waste is not clean and they throw rags and stuff and the suction will usually pull just about everything. It's like a vacuum cleaner, it will suck everything out

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of there and then you have to figure out how to get the sludge out of your truck later.
Q. You're talking about vacuuming --
A. They put a vacuum on the trailer. They have an air blower on the back of the cab and it sucks in through a tank and then they reverse the valve and push it into the trailer so it still dumps about a two hundred gallon tank on the back of the trailer.
Q. Two hundred gallon tank. That's not a very big tank.
A. No, you can do about three or four drums and then you got to reverse it and dump it. They found out that if they just -- you can't get a trailer that would hold a vacuum very well. It's too much surface area so it tends to want to collapse so you have a small tank and you pull it and then if you get something in there that messes up and you can't transfer it, well, then you just got a small tank you have to clean out and it seemed to work pretty good for us.
Q. Now, where did that process take place of using that small tank and the vacuum?
A. Wherever you were picking up your

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waste.
Q. So there was a small two hundred gallon tank on a trailer that was --
A. On the back.
Q. Let me finish asking the question just so we can make it easier for the court reporter. You're talking about a vehicle with a trailer and a tank that would go to the generators and pick up waste and suck it out of whatever container it was in at the generator's facility?
A. Yes. It was mounted on the back of the tractor and the tractor could hook up, depending on what kind of waste you're getting, to a stainless steel tank, or if you're getting oil/water, you can put an iron tanker on there, or if you're picking up acid waste, you use a stainless steel.
Q. Are you describing a process that went on once the Tremont operation was up and running?
A. Correct.
Q. Are you describing a process that took place with respect to oil/water waste that went into the Tremont oil recovery plant?

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A. Yes. That was one of the -- most bulk waste, that's how it was handled.
Q. And were there also larger tanks used, larger than a two hundred gallon tank?
A. On three of the trucks they had a four thousand gallon tank truck and that's what they started with where they could just pull it into that and they were getting stuff, they kept piling it up and so they -- on a semi you can't do that, you can't just suck up all the waste into one tank because of the trailer. So they had to go to the small tank and air pump to pump whatever and a lot of times you would pick up slurries and whatever and you had to add water where it could suck it up, but that was another way of kind of measuring your volume to know how much waste you're picking up and putting in the big tanker.
Q. I would like to ask you some more questions about this in a few minutes, but first I want to backtrack just a little bit to the time when the Tremont operation was just getting underway. Were you involved in any meetings to discuss the proposed plan for the barrelfill at the Tremont site?

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A. Well, define -- you mean a meeting where it was other than Jack Wright and myself?
Q. Yes.
A. Just discussing things, no.
Q. Were you ever involved in a meeting with anyone from Ohio EPA to discuss the proposed barrelfill?
A. The people I met from Ohio EPA, I met them and talked to them but I was never in a meeting with them.
Q. Do you know who John Gedart was, G E D A R T?
A. The name sounds familiar but I'm not -- I don't have any idea what he looks like.
Q. Were you involved in any meetings with anyone from Systech to discuss the Tremont barrelfill before it began operation?
A. No. I didn't realize that they were doing that.
Q. I'm trying to focus in on the time frame that you began work at Tremont because my records show that it was more -- it started in '76 and closed in '79 and that doesn't agree with some of your earlier testimony about your

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employment history.
A. Yeah, I started at the hospital in June of '75 so I had left IWD, but that sounds like the time frame that Waste Management -- that's when Waste Management took over, wasn't it?
MS. JALICS: No, it was later.
THE WITNESS: Okay, they were talking about it, but --
Q. When you worked at the Tremont site, did you work at the sanitary landfill or at the drum --
A. Oh, no, I didn't work for IWD Waste -- Industrial Waste. That's who was running the landfill, the sanitary landfill. I worked only for IWD Liquid Waste which was the drum and liquid waste operation.
Q. And you're sure that you were working for IWD Liquid at the time that the barrelfill was operating and accepting drums and burying them in the cells?
A. Yes.
Q. And when you -- were you the first chemist that was hired by IWD Liquid?
A. That's correct.

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Q. And when you first moved over to Tremont, did you have an office there?
A. Eventually. I was in the boiler room where they had the coalescers and where -- the water from the oil/water separation.
Q. At some point was there a laboratory on site?
A. Eventually they got one of B.G. Danis' construction trailers and set it up out beside the building and started wanting to set up a lab where you could analyze things.
Q. And did you work in the lab?
A. Some.
Q. Where else did you work?
A. Mostly sorting the drums to make sure what they said was in there.
Q. You mentioned sorting the drums earlier at the Lagonda Avenue location. Were those drums destined for disposal at the Tremont barrelfill?
A. The ones that we didn't process. Some of them, if it had TDI, which is toluene diisocyanate, catalyst for polyol for making urethane foam, they would kill it with water and then it was a cyanide waste that we had to

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take up to Michigan, Bay City, Michigan to get that treated with chlorine.
Q. What do you mean by kill it with water?
A. It's a catalyst and when you add water to it, then it's not reactive. It won't metalize polyol anymore and it's not gross. It's just a cyanide waste.
Q. So there were drums of TDI waiting for disposal at Lagonda when you started?
A. There may or may not have been. There wasn't a lot of drums on the Lagonda site. Most of them were at Inland. Inland used to just load all their drums up on a roll-on and take them out to the landfill and dump them. And that's what IWD Liquid Waste was trying to provide a safer method for getting rid of some of this stuff.
(Thereupon, Plaintiff's Exhibit 1 was marked for purposes of identification.)
Q. Mr. Hill, handing you what has just been marked as Deposition Exhibit 1 for identification purposes, would you please take a look at this document and tell me if you have seen it before?

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A. Okay. Maybe -- maybe that was -- I worked part-time at the hospital for a while. I started -- okay. I started part-time in '75.
Q. Now, let's go through this. This was dated -- this document is dated November 30th, 1977, correct?
A. So I was still working there, yeah.
Q. And this is addressed to you from Ohio EPA?
A. Yeah, Joe Moore, I remember him.
Q. And it says Mr. Clyde Hill, analytical chemist, IWD Chemical Disposal Company, so does that refresh your recollection as to the date that you worked or at least to the time period that you worked at the Tremont site in 1977?
A. Yeah. I was working part -- I have forgotten how long I was working part-time at the hospital before I started full-time. Yeah, I think I remember talking to Joe about this stuff.
Q. So this letter appears to be a letter from Joe Moore of Ohio EPA?
A. Right.

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Q. That is communicating to you that certain materials have been acceptable to be disposed in the chemical landfill?
A. That's correct.
Q. And would that indicate the barrelfill?
A. Yes.
Q. So would this letter have been a response to a letter that you wrote him?
A. I'm not sure if I wrote him or Jack wrote him.
Q. Based on the date of this letter, when do you think you worked at the site as a chemist, is there --
A. It was -- again -- I remember I broke my kneecap when I started working part-time at the hospital and that was June of '75.
Q. And was the hospital before or after you worked at IWD?
A. Both. I was working part-time at the hospital to start with and then -- I was doing electronic technician at the hospital helping maintain all their monitors and stuff.
Q. Did you continue to work at the

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hospital when you started working at IWD?
A. I was working for IWD before I started working at the hospital. I was working there evenings and -- boy.
Q. Let me ask you this: We know that you were working for IWD in 1977?
A. Yes.
Q. And you left before Chemical Waste took over?
A. That's correct.
Q. How many months or years did you leave before Chemical Waste took over? Was it -- do you think it was less than six months before Chemical Waste purchased the company?
A. Let's see. I left before they had decided, but they were pretty sure that Waste Management was interested in definitely buying the company. I'm guessing that it must have been roughly years that I worked part-time at the hospital so probably '78. Let's see, '85 --
Q. How about this, let me ask you this question: You remember Nelson Wallis?
A. He had started, was doing -- he was setting up the atomic absorption unit and

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had it pretty much running before I left.
Q. Was he there working at the same time that you were there working?
A. Yes.
Q. If I represent to you that he started in early 1979, then does that help refresh your memory as to when you left?
A. That -- let's see. I left the hospital in '85 and it was --
Q. Well, if you can't remember --
A. Well, it would probably be like March or April of '79 then.
Q. That you left?
A. Yeah. It was before they had taken over because it was IWD Liquid Waste. My last paycheck, that's what --
Q. And going back to when you started at the Tremont site, when you first started reporting to work at that location, had there already been any cells completed or do you remember --
A. Oh, no.
Q. Do you remember what cell they were on at that time?
A. When I started there was no cell.

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Q. So you were there from the very first cell?
A. Yes.
Q. So at least we know you were there from the beginning up until at least March or April of '79?
A. Yes.
Q. And if I represent to you that the first cell was completed in 1976 -- at the end of 1976, does that sound about right?
A. That sounds right, yeah.
Q. So then that would mean that you were there about a little over two years total. Does that sound about right?
A. Two -- yeah. It wasn't -- two, two and a half, something like that.
Q. So late '76 until early '79?
A. Yeah.
Q. You were there for almost the entire operating period of the barrelfill then?
A. Well, they had -- they only had three cells that had -- they had two cells open and were -- yeah, they didn't have three cells filled. I don't know how many cells they wound up with.

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Q. You mean when you left or what time period?
A. Yeah, when I left. There was like only three cells that were open and one and almost finished the second one before I left.
Q. When you say open, you mean complete?
A. No. Open means it's a hole in the ground with barrels sitting in it.
Q. Well, there must have been more than three cells that were fully covered then, complete and covered, am I correct?
A. I don't remember seeing any of them covered.
Q. You mean they would fill a cell and just leave it open once it was full?
A. Until they got all the polyol poured around the drums.
Q. Now, we discussed that in our phone conversation so let's talk a little bit about that polyol. What do you remember about polyol being placed in the barrelfill cells?
A. What they did, when they would load a cell, they had a guy that was taking the drums off the trailer and setting them down and

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then he would go back for another load of drums and they had one guy that was running the backhoe that had a framework on there with angle iron and you would take the drums that are going in the cell and make sure the number that was on the drum and they would tip them off and then the guy would pick it up and set it down.

Q. Let me stop you right there. You're motioning with your arms sort of like a forklift. Are you saying they used a forklift?

A. No, it was a backhoe.

Q. To lift the drums from the yard over to the cell?

A. Right, pick it up and set them down in the hole and then tip it and they would roll off in the correct location.

Q. So that the backhoe picked them up horizontally and carried them over and rolled them off in a horizontal direction.

A. Correct, all the drums are horizontal.

Q. Was there a man actually in the cell straightening the drums?

A. Sometimes.

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Q. How else would they line the drums up vertically?

A. They didn't.

Q. Oh, they left them horizontal?

A. Correct.

Q. Was that the standard procedure for placing the barrels in the cells?

A. They tried to stack them but they wouldn't stack. The bottom of the cell is not perfectly flat. You're not stacking them up on concrete. In fact, if you set two drums on top of each other, the way it's made, the lips won't let it sit, one the lid won't go inside each other. Well, some tin cans you can't stack up. Others they made the bottom smaller and they'll stack. And they would fall over and they were afraid they were going to bust, so they left them horizontal.

Q. Was this the case the entire time you were there or did that change at some point as far as --

A. As far as I saw, that was it.

Q. Let me finish that. As far as whether the drums went in stacked neatly or whether they went in horizontally, did that

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change at any point?

A. I didn't see any change.

Q. So the whole time you were there your recollection is that they were always placed lying down in the cells?

A. Correct.

Q. And they were not stacked?

A. That's right, because they wouldn't stack. You start stacking them up and they would fall over. You got one drum sitting this way tilted (indicating) and then you got another one sitting on a dirt clod and it's tilted the other way and you can't stack on top of that, it falls over, so they wound up being placed horizontally.

Q. Do you remember whether there was more than one level of drums in any given cell?

A. Oh, yes. There was probably four or five levels in there.

Q. And did that depend on the size of the cell?

A. The cells they had open were of the same dimension. I don't remember exactly what that dimension was, but it was enough to one layer -- let's see. Probably ten or eleven

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drums because a lot of times there was odd shaped and you use a shorter drum, it wouldn't make a full row or some dirt caved in and you would have a vacant spot that would have held a drum and then they would stack the next row on top of it. And then while the forklift was placing it down here, after you got a couple of rows, then they would take a bung off and dump over a drum with polyol and let it be pouring in the other cell and then you would go back when the backhoe came back for another load and put two on that, so he was kind of going back and forth adding the polyol once you got over the bottom layer.

Q. So let me just make sure this is clear for the record. Once the first layer was in, then before the next layer was placed, bulk polyol would be poured in?

A. Huh-uh.

Q. Why don't you correct me.

A. You would have one and two, maybe by the third layer, otherwise, if you poured polyol on there and you had to get down and rearrange the drum because it had rolled off between those and you had to push it over in

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its own row where it belonged, then you would be wading in polyol so they got it up to where it was full or, you know, full enough that you could walk around on the drums without stepping in anything.
Q. So would they pour the polyol along the edges so it wasn't actually on top of the drum?
A. Oh, yeah, it would flow. Usually get -- I imagine it came pretty much over. Some of the polyol was almost set up and --
Q. Do you mean almost solidified?
A. It was real thick and wouldn't flow very good.
Q. Was this done with the polyol from the very first cell?
A. Yes.
Q. Was it done with every cell?
A. Two of them I know.
Q. Do you know which two?
A. The first two. In the northwest corner was the first cell and the then the next cell was right next to it. Here, I can show you on that picture.
MS. WOLFE: Who don't we mark this as

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Exhibit 2.
(Thereupon, Plaintiff's Exhibit 2 was marked for purposes of identification.)
Q. Handing you what has just been marked as Exhibit 2, would you take this blue pen or that green pen is just fine and circle -- well, first of all, tell me what you recognize.
A. Yes.
Q. What does this photograph depict?
A. This is the maintenance (indicating) --
Q. The whole thing.
A. The whole thing is the IWD Liquid Waste part of the landfill.
Q. Can you tell whether this photo -- and this is a photograph of a photo. Can you tell whether this was taken while the barrelfill was in operation or not?
A. Can't tell. This is the drum storage area.
Q. Why don't you put a DR where you see the drum storage area so we can see?
A. (Indicating.) And this is the truck maintenance building (indicating).

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Q. Put a TR for truck maintenance building.
A. And this is where the boiler room and the water coalescing --
Q. Why don't you put a BR for boiler room.
A. (Indicating.) And right here is the lab (indicating).
Q. Why don't you just write lab there. Was that a trailer?
A. Yes.
Q. So is it behind the boiler room building?
A. That's correct.
Q. You can't really see it in that picture?
A. No, you can't, because it was beside the building and the building is kind of hiding it. This is the oil/water separation (indicating).
Q. Why don't you put oil slash water. So the building right above the word oil/water is that facility?
A. Yeah, that's the -- see, these are the roll-ons that there was about six of them

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they processed the water. The waste would come in here (indicating) and we would dump it in a tank to get the sludge and rags and all that stuff out of it and then we would pump the oil/water into these process tanks.
Q. Let's save that for a little bit later on because there's so many more things I want to ask you about this polyol first. Can you identify on this picture where the cells were located?
A. Right up starting up here (indicating), about approximately twenty feet from the edge is where the first cell was.
Q. Why don't you put a one where you think the first cell was.
A. (Indicating.)
Q. And then do you know what direction they went from there on after the first cell? I see you're putting another box and that's got a two in it.
A. They started across like that (indicating).
Q. So you're going from left to right starting on that page?
A. Right. From west to east on that

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north end is where they started. Now, this drum sorting area is where you would -- whenever there was enough drums to make it worthwhile, then they would pick up that area and transport them on this trailer here.
Q. Were you involved in -- I'm sorry.
A. They would put about twenty drums on this trailer and then the forklift would take them up here (indicating) and unload them along --
Q. Why don't you put an arrow where the truck starts and where it unloads.
A. Okay. They take the trailer in here and load the drums on with the forklift, take them up here (indicating).
Q. Just draw with your pen an arrow.
A. (Indicating.)
Q. So that's the direction where the truck goes to unload the drums?
A. Right. The barrel trailer or whatever.
Q. So the beginning of that arrow is where the drum yard would be where they stored the drums?
A. Right -- yeah, right in here

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(indicating). And they would sort them by what they were.
Q. Why don't you put a circle around where the drum yard was.
A. (Indicating.)
Q. And they would also do the sorting within that area?
A. Right. When the truck, trailer, truck, whatever they came in on, they would come up here (indicating), and then we would check to see what they were and put them in the correct location so that -- but we had to check every drum because if it's waste that means -- whatever I throw in there doesn't make any difference and that was the hardest thing was trying to get your customers to sort it because then they give you a conglomeration of mess you can't do anything with except incinerate the whole drum and that's --
Q. Was that a big problem in the beginning?
A. Oh, yeah.
Q. And then did it become less of a problem later on?
A. Yeah. We told them if they didn't

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sort it and quit mixing them up, then it's yours, we're not going to touch it.
Q. Do you remember what generators didn't do a good job sorting it?
A. Well, Inland at first. They had a whole bunch of drums at the downtown main plant and a few at the Vandalia plant that's just sitting there. You got a drum and open it up.
Q. You told me on the phone you went out there and actually had to go through each drum?
A. Yeah. And it took almost three weeks to sort out.
Q. Did you do that before the first cell was dug?
A. Yes. Yes.
Q. So was that one of the first things you did in connection with the Tremont site?
A. Right.
Q. Did anyone go with you?
A. Usually the guy with the pumper truck, and then we had another guy, I would get some sorted out that was paint sludge, polyol or something that wasn't going to handle bulk,

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mainly we were going through and getting the oil/water out of it because that was the biggest amounts of waste and we would set the other drums aside. And when I would get a load, then the barrel truck would come down there and they would load the drums on it and take them out and put them in the storage area.
Q. Are you still talking about that three week period in the beginning?
A. Yes. The drum truck wasn't there every day but the bulk truck was. I would sort and then when the drum truck had time from doing his other runs, they would come down there and I would have all the rolled water over here stacked up and then they would take them down because they had to operate the forklift and then we would suck the oil/water out.
Q. So those drums were at Inland?
A. Yeah.
Q. And after you sort them, were they taken in the drums to the waste -- taken in the drums to Tremont?
A. The waste that had like paint sludge and polyol and TBI that had to stay in

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drums, yes, chlorinated solvent was another one. They were mixing chlorinated solvents and toluene and acetone, flammable and nonflammable together so we couldn't treat that so it had to go to Bay City and they made an expensive run, and we finally got them to put the toluene and acetone in separate drums so they could be incinerated bulk but we had to work with them to get them to sort out their waste to where it could be handled efficiently.

Q. So which waste was pumped out of drums at Inland into a tanker truck and hauled back to Tremont?

A. The oil/water.

Q. Only the oil/water?

A. Right, at first. Because the others, if it was a solvent they just threw it in the same drum and you can't process flammable solvents and chlorinated solvents the same way.

Q. After you finished that three week process of sorting and identifying all of that waste, did they continue to -- did Inland continue to mix their waste types or did they stop doing that?

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A. They almost all -- because we have got a difference of twenty dollars a drum or a hundred and fifty dollars a drum and they decided that it would be easier to retrain their people to sort stuff out and then quit just throwing it away in whatever drum was handy and they eventually -- but occasionally somebody would pour some acetone in a chlorinated solvent drum or vice versa and then the whole drum was messed up and you had to use chlorinated solvent.

Q. Did you test every single drum that was at Inland during that period?

A. We would do spot tests and then for the most part knowing what they are, acetone smells different than chlorinated solvent. You can smell trichloroethane. It smells a lot different than acetone or toluene. Toluene smells different too.

Q. So you used your judgment to determine based on the smell and appearance what certain --

A. Right. And then spot checked to make sure there wasn't a trace of something. If I could smell any chlorinated solvent in

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there, Trichlor or 111 trichloroethane, if I could smell any of that, then I called it chlorinated solvent.

Q. So it might have had some portion of a chlorinated solvent and something else mixed together because you would consider it all to be chlorinated solvent?

A. Right. That's the worst case.

Q. Describe the spot checking process to me.

A. Okay. When we got back to the lab, we would take a sample of some of them and run a GC to see what else is in there.

Q. What's a GC?

A. Gas chromatograph. And you can see your different solvent beads come in. It's the same thing you see on CSI when they get the little pieces. It's the same instrument and you can identify your different solvents and as long as it was pretty much what we thought it was, there wasn't anything that would mess it up and make it hard to process, wouldn't get treated like that. A lot of times there would be very much chlorinated but there's some and the chlorinated solvent won't burn and if you

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pump that into an incinerator it would shut it off, so it had to be disposed of as a chlorinated solvent.

Q. What did you do with the chlorinated solvent from Inland or from other generators?

A. They went up to Bay City. The cyanide waste and the chlorinated solvents would go to Bay City, Michigan. Some of the first ones that were mostly flammable went up to Fremont to be injected in the deep wells and then we were getting too much flammable solvents in so they had to go to Bay City and would be disposed of.

Q. Was there any waste disposed in the drumfill and the barrelfill that contained any chlorinated solvents?

A. Not that I know of.

Q. Was there any waste disposed of in the barrelfill that contained any PCB's?

A. No.

Q. Did you ever come across any wastes with PCB's that you had to determine what to do?

A. Yeah. Trying to remember where we

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got that. I don't remember if it was DP&L or somebody had some transformer oil and we sent that to Bay City because it had PCB's.

Q. Getting back to your three weeks that you spent at Inland at the beginning of the barrelfill operation, was -- did you continue to visit Inland after the barrelfill got underway to examine their waste?

A. Most of the time after we caught up they had -- the reason I went down there was they had a whole parking lot full of drums because IWD, Industrial Waste had cut them off because they had been just loading all their waste in a roll-on, take it out to the landfill and just dump it.

Q. In the solid waste landfill?

A. Yes. And they ran over -- the terracks (phonetic) that they push the dirt around and level out the trash, ran over one of these drums of acetone and toluene and it caught on fire and burned up their hundred and fifty thousand dollar terracks so they said no more. So they were just stacking up their waste until IWD Liquid Waste got set up where they could handle it and start bringing the

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drums, but there were so many drums that it was easier to sort them down there and pump the ones that you could, because, oh, gosh, you get about a hundred and twenty drums of oil and water and we could put those all in a tank truck and leave the drums there and let them worry with cleaning them up and disposing of them.

But the ones, the open-head drums that they would shovel out, paint sludge from the paint and spray booth had like a wall of water coming down and overspray hits that and goes down and then they have this big sump that they shovel out and fill up the drum, and that was kind of a slurry and they didn't want that in the landfill, because if you dump that, then you got this gooey mess that you're driving through.

And the polyol, they didn't want that in the landfill because it makes a big slimy mess and it would get all over the equipment and you couldn't walk around in there. And that was the kind of stuff that was started out trying to get rid of for them is just things that are hard to handle in a

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landfill.

Q. Do you remember going out to any other generators to examine waste?

A. I started going with the salesmen to new customers to see what they had in the way of waste stream and how they were separating it and explaining to them that you have got all these mixed drums that we can't do anything with and you will have to sort this in one drum, this in another drum, this in another drum and label them and then we will take them.

Q. Was this also before the barrelfill began operating or after it had begun operating, if you remember?

A. Okay. This is -- I don't think they were -- at first they weren't burying drums just, you know, because we didn't have enough to get a cell pretty full and if you leave it open for months and months and months, then it's going to get rainwater in there and then you have got something that will leach and so they would wait until they had enough drums in the yard to get it pretty much full and then they would start -- they would dig a cell out and start burying drums so it wouldn't be

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sitting open.

Q. Do you remember how they identified each cell?

A. Some kind of a numbering system.

Q. Do you remember there being letters and numbers like A-1, A-2, A-3?

A. Okay, yeah, the numbers were going across the north side on -- numbers run from west to east and the letters run from north to south. That's the way they said they were going to do it anyway.

MS. WOLFE: Will you mark this?

THE WITNESS: I don't know if they continued.

(Thereupon, Plaintiff's Exhibit 3 was marked for purposes of identification.)

Q. Showing you what has just been marked for identification purposes as Hill Exhibit 3, would you take a look at that single page document and tell me if you have seen it before?

(Pause in proceedings.)

THE WITNESS: I haven't seen all those.

Q. You have not seen it before,

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but --
A. No. No.
Q. I'll represent to you this is a representative depiction of the location of each cell at the barrelfill which is not to scale but generally attempts to show where the different rows are located.
A. Okay. It looks --
Q. You do recognize the layout based on what this shows?
A. Yeah, it would be -- I can't imagine those down here -- okay. Evidently they decided to -- this, I'm pretty sure, is probably the northwest corner (indicating).
Q. It doesn't actually say northwest corner at the bottom of the drawing. It's hard to read.
A. Okay.
Q. You're pointing at the corner where A-1 is?
A. Yes, that's the first cell.
Q. A-1 was the first cell.
A. Yes, and B-1 was the second cell.
Q. I'm going to ask the court reporter to mark another exhibit while you look

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at this.
A. This was first --
MS. WOLFE: Let's give the court reporter a chance to mark this.
(Thereupon, Plaintiff's Exhibit 4 was marked for purposes of identification.)
Q. Handing you what has just been marked at Hill Exhibit 4, I'll represent that this is the cell report for cell A-1. Would you take a look at it and tell me if you have seen this before?
A. It looks like -- yeah. This is a report of the first -- yeah, it's the first cell because I remember it had Inland drums in it.
Q. What is the date that it says the cell was completed?
A. Completed in December 14th of 1976.
Q. And it says it was started November 5th, 1976?
A. Yes.
Q. Does that sound about right to you based on what you recall?
A. Right. It didn't take two months

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to fill it because we had -- the drum yard was full of all these drums. We had enough to pretty much fill a cell with what we had on hand.
Q. Well, if the first cell was begun November 5, 1976, then can you estimate how much time was spent prior to that collecting drums so there would be enough for this cell? If you don't know, that's okay.
A. I'm guessing it was probably over a year that we were -- or close to a year.
Q. So you probably spent most of 1976 preparing for the first cell?
A. Yes. Yes. I'm not sure that they had the permit to put drums in the ground because they -- we were storing and sorting drums and, man, there was a bunch of drums. This yard was really full and they finally did get the okay and then they dug that cell and then we tried to get it full so we wouldn't have a lot of rainwater in there because that would be bad. If you have got rainwater, then you have got something that will leach out. In the paint sludge you got a little bit of water that didn't drain away. It was mostly water

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and dry paint.
Q. Did you have any responsibility for preparing these cell reports?
A. No, other than I see what you were talking about that they coded it -- the guys burying the drums couldn't spell the chemical name so they gave them a sheet and down here we sorted the drums and put this number on the drum so they would know what it was when they buried it and they were just keeping count and they had to -- a similar, well, it was a big piece of paper and they would --
Q. If you flip that over, I think you might see the document you're talking about which I think you're referring as to the barrel log; is that correct?
A. Yes.
Q. You're looking at the third page of the exhibit now?
A. Okay, yes, that's it. And they were -- the one they were working with they did like Roman numerals. They would put I, II, III, IV, V, I, II, III, IV, V.
Q. Just a tick mark sometimes -- or they actually would put a Roman numeral across

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the row of numbers?
A. Well, instead of fifteen of this compound, they would go I, II, III, IV, V in this box and after they got that they would convert them to real numbers, but they was on a clipboard up there and as they would put it in they would mark it.
Q. How about if you look at the -- I don't have any another copy of this so I'm sorry I have to reach over, but if you look at the third page --
MS. WOLFE: I'm sorry, I don't have copies of this one, but we can copy it later.
Q. Does this look familiar?
A. Yeah. I --
Q. Do you know who filled this out? This was the first cell.
A. Charlie Goings probably. He was running the backhoe and -- who was helping him?
Q. Does Lester Slaughter ring a bell, Butch Slaughter or one of Charlie's sons perhaps?
A. Yeah, it was one of his sons was helping. He was unloading the trucks down in the barrel sorting area.

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Q. Do you know if that was Shorty or Rick?
A. I'm guessing it was Rick.
Q. Do you remember Shorty and Rick?
A. Yeah.
Q. Do you know whether Rick worked with Charlie at the cells more than Shorty did?
A. Yeah, I think so.
Q. Do you know if Rick worked at the cells the whole time that Charlie was there?
A. Pretty much. As I remember they would get a -- you know, a rhythm going and he was strong enough to keep the barrels and then he would get on the backhoe and they would let him down to scoot one over if it rolled off cockeyed or something because a lot of times the drums, when you pump them, they don't fall in the slots, they roll across here and you got to roll it back and to the slot where it belonged, but I don't remember the X's. I think this was not the original one. This was a copy, I think, somebody filled out to make it neat enough to turn in, I think, because I don't remember the X's.
Q. What do you remember instead of

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X's?
A. Roman numerals.
Q. Do you know whether after the log was initially filled out, whether it was usually copied over to make it neater?
A. Well, this one was.
Q. You're referring to the third page. That looks like a summary where somebody totaled it up.
A. Right.
Q. And it looks like they totaled up all the pages underneath?
A. Okay. And apparently this is just one level and he's keeping track, but it doesn't indicate which corner because he started across there and then he would -- they would start with one kind of waste and load a whole row with it and then start with the next row over and start loading until he got done with the rest of it. But this looks like it kind of made it -- the other one would get goo from your gloves and stuff on it. But that's what it looks like, he's indicating that -- but I'm assuming that this is probably the northwest corner (indicating).

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Q. You're marking on there NW?
A. This was the first -- the northwest corner is the way that these were laid out.
Q. So that was the northwest corner of that particular cell?
A. Right.
Q. Were the cells square?
A. Yes. Yes, they were square.
Q. So this document was actually like a map where the actual barrels were indicated in the same position that they were laid in the cell?
A. That's correct.
Q. Now, you had testified earlier that polyol was poured in there around the edges of the drums in the first two cells?
A. Now, wait. I think the second cell they might have had some rusty paint sludge drums that they took the lid off and dumped because the drum had been setting around and was rusting out and wasn't, you know, couldn't do much with it.
Q. So they took the lid off and poured the content of the drums directly into

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the cell?
A. Yes.
Q. And you think that was the second cell that they filled?
A. That they wound up with paint sludge in it because what was it, it was -- gosh. The plant up in Troy, they had a bunch of drums that they had sitting out behind their plant that they had been putting paint sludge in.
Q. What company was that?
A. Gosh.
Q. Was it a big company or small company?
A. It was a pretty good sized building. It was across -- Copeland was on the east side of the highway and it was off on -- back about a couple of blocks off of 75. Trying to think. Stolle. Stolle Corporation. Stolle. Stolle.
Q. Stolle?
A. Yeah. And they had a bunch of paint sludge that they had cleaned out and put in drums and just -- because we had looked at them a year earlier and they didn't want to pay

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the price. They said well, we'll see somebody else that will dispose of them cheaper and they just set out there until they got rusty and started leaking so --
Q. How many drums were there if you can estimate? Was it more than --
A. I would say probably eighty drums maybe because there was two truckloads that they picked up, Stolle Corporation.
Q. And did all of those eighty drums go into the same cell?
A. As far as I know.
Q. And your recollection of the rusty drums were the lids were taken off, would that have been all eighty or all of the rusty drums or just some of them?
A. It was most of them because the bottom of the drum, a lot of them when you started to go like that (indicating), you didn't have to take the lid off.
Q. It just fell apart?
A. That's right. And went down in the cell.
Q. So they just let the contents pour directly into the cell?

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A. Yeah.
Q. Do you know if that ever happened at any other times with paint sludge?
A. I don't remember another batch being that bad.
Q. I would like to figure out exactly which cell it was based on the --
A. Okay. I didn't --
Q. -- photograph -- let me just finish the question. Let me just ask you a question and then you can answer it for me. We agreed that the northwest corner of the diagram which is Exhibit 3 is where you wrote the words first cell with a little arrow here?
A. Yeah.
Q. And then we agreed that the corner of the property that's at the northwest corner is where you have the little one on Exhibit 2?
A. Um-hum. And the second --
Q. Then would you say the second one --
A. Was right next to it.
Q. -- which is right next to it would have been this one that I'm pointing to here that has this as B-1 on the diagram?

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A. Correct.
Q. Let me put a little star there where that one is. So it looks as though it would have gone A-1, B-1, C-1, D-1, E-1?
A. That was the plan.
Q. Is that what you remember?
A. Yes.
Q. So this way (indicating). Okay. So then that second cell where you recalled the paint sludge from the rusty drums being dumped in, would that have been B-1?
A. Correct. That's the one I remember, yeah. They were going to try to bury them, but the drums were collapsing and coming apart.
MS. WOLFE: I'm going to have the court reporter mark another exhibit and then we'll continue.
(Thereupon, Plaintiff's Exhibit 5 was marked for purposes of identification.)
Q. Handing you what has just been marked as Hill Exhibit 5 for identification purposes, would you please take a look at this document which indicates that it is the cell report for cell B-1?

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A. Yes.
Q. And you believe that was the second cell to be --
A. Right.
Q. -- completed?
A. Yes.
Q. If you turn to -- let's see. The fourth page of this stapled document, would you look at the fourth page, Mr. Hill -- yeah, it's the fifth page actually. On the upper right-hand corner it says -- it has some words handwritten in, do you see that, the upper right? I think you might have gone one page too far. Why don't you flip back a page. There you go. The upper right-hand corner looks like it says bulk, twenty-five thousand and then it says something else that might be A S H water. Do you know what that says?
A. Asbestos water.
Q. Is that asbestos water?
A. Yes, that's from Inland. When they grind the brake shoes to size to make brake pads on the shoes at Inland, they have a scrubber that sprays water to filter all the asbestos out of it and then it's asbestos water

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slurry. It's as dry as they can get it and we would suck it up and then back the truck up and blow that in. I forgot about the asbestos water.
Q. So you have a specific recollection of bulk asbestos water being blown --
A. Yes.
Q. -- into the cells?
A. Right. They sucked it up with a vacuum truck and then drove out there and dumped the -- opened the valve on the back of it and poured it in after the cell was full enough that they would go down in between the barrels.
Q. Did that happen on more than one cell?
A. That's the only cell I remember seeing.
Q. Do you remember it specifically happening with respect to cell B-1?
A. Yes.
Q. And you don't think it was in any other cells?
A. I didn't see any put in any other

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cells. That latex is -- now, that's some of that paint sludge.
Q. And so where it says ten thousand latex, that was the paint sludge we were talking about earlier from the rusty cans -- rusty drums?
A. Part of it. And they might possibly have put it from another customer. I don't remember, but I do remember the paint sludge from Stolle Corporation, latex paint sludge.
Q. If it was eighty drums and they were fifty-five gallon drums, that would be forty-four hundred total gallons, so do you know where the ten thousand that -- gallon figure on this cell report would have come from? You think there was something else in there that was also latex?
A. Most of the latex glue that we got from Inland was in drums. Okay? Now, see, it's showing that these drums of latex glue and asbestos water were in drums, but as best I remember it was dumped in bulk, especially the rusty drums from Stolle Corporation. They weren't intact enough to bury in the drums and

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that was dumped around it. Now, the volume, I don't know where that came from. But it was dumped in after we had the cell almost full.
Q. The rusty paint drums that we were talking about, do you think that that came from any of the generators that are identified on the front of the cell report for B-1?
A. No, I don't see it.
Q. If material was brought into the site in a drum and then it was opened up and poured into the cell, would the material be recorded based on the number of drums on the cell report, would it be included in the drum total, if you know?
A. I don't recall. It kind of looks like it may have been, but the volumes don't match up.
Q. But you don't know whether the bulk material identified on the fifth page is some of the same material identified in this total?
A. No, I don't. You would have to count up the drums to get a total to see if it matches up.
Q. Do you remember what kind of

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paperwork was used to keep track of bulk material that came in in tankers?
A. Other than -- it would have had to have been each driver would make a log of what he had picked up from the customer and he'd give that -- gosh, can't think of the kid's name that was the accountant, but he would log it down that he picked up so many gallons of whatever from the customer and then they would figure out, you know, he would look and see what the charge was and write out the billing and whatever was done with it, if it was sent to Bay City or put in the drum storage area -- he had a spreadsheet that he listed what had come in on this truckload and from what customer.
Q. That was the accountant that kept track of it?
A. Yes.
Q. He was an on-site accountant?
A. Yeah. He did -- he didn't do the -- well, he filled out timecards on the hourly people and turned them in to Danis which cut the checks and he kept track of the stuff to send in for billing to bill the customers.

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Q. Mr. Hill, do you want to take a break for a few minutes? We've been going for a while now.
A. Well, if you do, then I'll have to leave shortly. I have got to be back in Xenia about 4:00.
Q. I'm not sure we're going to be done by then. But we won't take a break then. We'll just keep going and see, but I can't guarantee that we will be done.
So you said earlier that you remember asbestos water being picked up from Inland?
A. Right, or Vandalia.
Q. Do you remember any other generators of asbestos water?
A. No, nobody else made -- it's just the scrubber waste from -- it used to be dry and they would just dump it in a landfill and bury it, but that's pretty hazardous because it will blow around and everything and so they started using a water scrubber and then we would pick up the slurry in covered roll-ons and a vacuum truck. We would come up and open up the hatch and suck it out and then take it

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down and we wouldn't pick it up until we were ready to dump it because we didn't have any place to store that stuff. Once you got it out it would settle and then you couldn't pump it or anything.
Q. So how many occasions do you remember doing this? Was it a regular thing?
A. I'm not for sure how long it took to fill up the hopper over there, depending on what their production schedule is, how much they were running, but it was -- it was like every two or three weeks they would -- seems to me, or two weeks to a month to get it full and then we would pick it up when we had enough drums in the cell to where they could just dump it in without -- because if it floods up over the top of the cell, you can't finish filling it.
Q. Do you remember what size truck was used to pick it up?
A. About a six thousand gallon tanker, vacuum truck.
Q. Do you remember any other bulk waste that was picked up in a tanker and then brought directly to the site and poured into

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the cells like the asbestos water?
A. No, because they were putting the polyol in drums.
Q. The polyol was never handled in that fashion?
A. No, it was never bulk because it would take them several days to fill drums. When they are making the foam cushions, you have polyol and TDI in the machine and at the end of their shift whatever -- four or five gallons of whatever it was got dumped out of the machine into the drum. The TDI they would put in a drum and rinse everything out and that went in the drum and then the polyol.
Q. So when polyol was poured from the drums into the cells in those early cells, how many gallons would be treated in that fashion?
A. Gosh, there would be over two hundred barrels.
Q. You mean empty barrels at the end to dispose of?
A. Yeah, because they would have to put them -- let's see. This is the pond (indicating) just southeast of the drum storage area and then they would wind up out in -- kind

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of south of the boiler room they would wind up stacking all these drums, empty ones for Cincinnati Barrel to pick up. They would take most of the drums that they could clean up that were -- check them over and if they didn't have any holes or things that they could clean up, they would take them back down to Cincinnati to reprocess and the bad ones had to be smashed and put in the landfill.

Q. In the barrelfill or in the solid waste landfill?

A. I'm not sure. Because there was a stack of them down there. I'm not sure if they laid them on top or put them in the other landfill. I really don't remember. There was a whole bunch of empty drums when I left.

MS. WOLFE: I'm just going to take a minute to ask the reporter to mark another exhibit.

(Thereupon, Plaintiff's Exhibit 6 was marked for purposes of identification.)

Q. I'm handing you what has just been marked as Hill Exhibit 6 for identification purposes and this is the solid report for cell A-2. Have you seen this before?

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A. I'm not sure of that one.

Q. If you turn to the fourth page of the exhibit, at the top right where it says bulk sludges --

A. Must have gone too far again.

Q. Right there (indicating). Do you see some handwriting there?

A. Yes.

Q. Where it says it looks like it says ten thousand?

A. Ten thousand gallons.

Q. And if you continue to page through in the same area, you will see it says ten thousand dollars on the next page.

A. Yes.

Q. And then it says twelve.

A. Twelve thousand.

Q. And then it says ten thousand.

A. Ten thousand.

Q. Ten thousand, ten thousand and ten thousand. So we have seven pages, six of them say ten thousand and one of them says twelve thousand.

A. Okay.

Q. Now, do you know what those

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figures indicate?

A. No.

Q. Do you remember any cell where that amount of polyol was dumped in bulk in the cell?

A. That's -- there wouldn't be any room for drums. They couldn't have put ten thousand gallons of sludge in each layer. It would have filled up and spilled out. There's not that much volume. I think we figured somewhere between twenty and twenty-five gallons should have pretty much filled it up. If you had all the drums in there, you didn't have enough volume to put a hundred thousand gallons of sludge in there.

Q. You figured that the most bulk you would put in between the drums was twenty thousand to twenty-five thousand gallons, is that what you're saying, if you know? You don't have to guess.

A. Well, I would have to -- because the first cell according to the log sheet, it looked like there was about thirty thousand gallons. No, that was the second cell. And it was up -- it was up to at least the third or

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second from the top layer of drums, the best I remember.

Q. You're talking about cell B-1 that had one thousand nine hundred and eighty drums?

A. Yes.

Q. And if those were each fifty-five gallon drums, then that's a hundred and eight thousand nine hundred gallons, although they are in drums so there's going to be some empty space?

A. Yeah, around it, but the first cells, there wasn't a lot of -- now, if they didn't put as many drums and didn't get, you know -- if they had more room around there and didn't put as many drums in it, then you could put more bulk.

Q. Do you remember with those early cells whether the drums were packed tightly together?

A. Pretty much.

Q. How much space would there be from the end of the row of drums until the dirt wall at the edge of the cell?

A. Okay. With the drum laying down horizontal, the ends were maybe --

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Q. Half a foot, ten inches?
A. Yeah, maybe that much. It was almost against the sides. We were trying to get as many drums in there as we could and he dug the cell to -- as close in dimension as he could and tried to get the walls straight and so there wasn't a lot of empty place to put anything.
Q. But you remember being -- putting polyol in the first two cells in that narrow space?
A. Right.
Q. Between the drums and the wall?
A. Right. And it was up at least to the third -- there's two layers of drums still that weren't covered. We didn't run it up to the top.
Q. How many drums do you think it took to empty to fill the space that remained in that cell after the drums were put in?
A. Let's see. Gosh, seemed to me like it was over two hundred, two hundred twenty drums of polyol.
(Pause in proceedings.)
THE WITNESS: But the cells that are

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filled up later, I don't know how close they got.
Q. So with regard to Exhibit 6, do you think -- do you have any recollection of ten thousand gallons of polyol or of any bulk waste being put in each level of a cell that had seven levels?
A. I tend to guess that -- because they would fill the cell almost half full before we ever added -- when I was there before we added any bulk because otherwise you would be, you know, walking in the stuff and you couldn't handle any drums if they skidded around because I'm not sure if they meant that that's what they put in the cell or -- it just doesn't make sense to have that much each level. Now, if they came back later and did it -- that's a lot of bulk.
Q. Were the cell logs usually accurate?
A. At -- well, that's what I was saying is what I remember seeing had smudges and -- you know, when you're writing and you get stuff on, goo on your hands, and this looks to me like somebody went back to the office, took his original copy and recopied it to make

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it legible.
Q. So you actually saw those initial --
A. Yeah.
Q. -- logs and you saw that they were smudged and dirty?
A. Right. And that's what I'm wondering, you know, somebody made it legible and clean because when you're out there rolling drums off the stuff you get -- it was on a clipboard and they would get dog-eared.
Q. Was it always the same person unloading the drums that would mark down on the clipboard the drum locations or was there ever a different person doing it?
A. Okay. Charlie Goings started doing that, but in running the backhoe he couldn't verify -- you couldn't see the drum and so the guy on the ground, I think it was his son Rick that was helping him, would -- was keeping the log and it was kept on a clipboard and that's what I'm saying, he was marking them but now this one looks kind of close, that it wasn't identified other than the row, the layer and it looks like -- see, something caved in

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and it looks like those drums weren't there.
Q. You're looking at level four for Exhibit 6 which is cell A-2?
A. Right. And this probably -- well, I don't know. That's a good question.
Q. So when you count the number of horizontal marks across, is that actually the number of drums in the row?
A. Well, should be, but if the hole tapered, then this row would not exist and maybe this row didn't exist because of cave-ins or whatever (indicating).
Q. You mean maybe the first row would have more drums in it than the subsequent layers, the bottom layer would have the most drums or the least?
A. The least.
Q. The least?
A. If you do a super good job of square, then you would have the same number in every cell, but if you have a cave-in and you have already got drums, you can't go digging because you will hit the drums and break them, so there would be places that there really -- they were going to put drums but they couldn't

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because it wasn't big enough.
Q. Were there a lot of cave-ins?
A. If you weren't careful where you unloaded the drums beside the cell, you would sit them down too close and you would cave in part of the wall.
Q. Now, did they use a dirt ramp to drive into the cell?
A. No.
Q. Did that happen later on at that time that you know of?
A. I didn't -- it was all set in there with the backhoe with this angle iron framework that holds two drums at a time.
Q. How deep were the cells?
A. Probably no more than twenty foot because it's all that a backhoe could reach.
Q. So the backhoe had an arm that could actually reach down twenty foot and lay the drums down?
A. Right, fifteen, twenty foot, yeah.
Q. You don't remember any time that a dirt ramp was used so they could drive the backhoe into the cell?
A. No.

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Q. And throughout the time that you worked there, did you always observe the placement of drums in the cells?
A. I would on my rounds checking on the oil process, what the customer -- what they are picking up, drivers are picking up, making sure whether to unload it and stuff, I would go up there and see how they were coming, just kind of make sure they were doing the safe way and stuff, but I didn't -- there was nobody except Charlie Goings and whoever was helping were picking up the drums and unloading them.
Q. Do you remember any waste in buckets being placed in the cells?
A. Occasionally we would get waste in five gallon containers, but as far as I know they didn't bury any of them.
Q. What did they do with them?
A. Usually you put them together in a drum.
Q. Do you know whether the empty buckets might have been thrown in the cells?
A. I have no idea. I don't recall that.
Q. The five gallon bucket that you

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remember --
A. In fact, I don't remember them burying anything out of five gallon buckets.
Q. Do you remember what came in those five gallon buckets?
A. We got some that had grease, wax, some paint, paint sludge, used paint, paint sludge.
Q. Do you know where it came from?
A. Paint sludge mostly was Inland. Worthington Cylinder had some paint sludge. The Stolle Corporation had paint sludge. Those were the bigger producers. Procter & Gamble a lot of times would have like you were talking about, toothpaste, shampoo, their test samples, they would be thrown in a five gallon bucket when the lab got done with them. They would pull one out for quality control and check it to do their test and then pitch it in a bucket because we would usually dump them together into a five gallon drum.
Q. Fifty-five gallon drum, you mean?
A. Yeah, fifty-five gallon drum from a five gallon.
Q. Did that happen often that you

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would get that from Procter & Gamble?
A. I'm guessing every four to six months they would send a state bed truck down there from the testing lab. It wasn't a large quantity. They would have fabric softener, detergent, toothpaste, Crest, and shampoo.
Q. So would those buckets be filled with a mixture of different miscellaneous substances?
A. No, they pretty much sorted it out.
Q. So there might be a bucket of toothpaste samples?
A. Toothpaste samples, another bucket of shampoo, another bucket of fabric softener, another bucket of detergent.
Q. Is there any other generator that would send over five gallon buckets that you recall?
A. I don't remember anybody else.
Q. Do you remember any latex glue in bulk being disposed of in the cells?
A. When Inland makes their seat cushions, they will mold this piece and this piece and then they put this latex glue to glue

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the rounded piece to the straight pieces to make seats and that was normally in fifty-five gallon drums.
Q. Do you remember ever emptying drums of latex glue in the same way you emptied drums of polyol into the cell?
A. I think so. I think so. It was drummed over. I don't recall how many drums, but it was several that were poured in I think the first or second cell.
Q. First cell was A-2 -- or the first cell was A-1 and the second B-2. B-1 was the one where you said there was some paint from the rusty drums?
A. Yeah, and they poured some glues. Well, they say it was in drums.
Q. But this is the one we saw the note in the corner that said ten thousand latex?
A. That could have been -- I don't know.
Q. You testified it could have been the paint from the rusty drums, but now you're saying it could have been glue?
A. Well, they poured some glue. Man,

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I couldn't swear if it was the first or second cell. The latex from the paint was in the second cell. I remember that. And they could have poured latex glue in with it if the volume adds up.
Q. What would you expect the volume to have been from pouring latex glue in? What do you remember that volume to be?
A. It wasn't two hundred drums. It was less than that. Somewhere around a hundred and fifty, a hundred and sixty, something like that, drums that were down in the storage area and they decided to put that in there.
Q. And you remember that as being one of the early cells? Could it have been maybe not one of the first few cells, but later on in 1977? Do you remember the time frame of that?
A. No. It was one of the earlier cells.
Q. There was a cell in May of '77, cell A-3, that had some latex glue but that was identified as Roberts glue. Could that be what you're thinking of?
A. Okay. That might have been, yeah.
Q. So you're not sure whether it was

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from Inland or not?
A. Inland and Roberts.
Q. It's okay if you don't remember.
A. But it was -- yeah, it was in drums and it wasn't -- it was like a hundred and fifty, a hundred and sixty, something like that, drums. It wasn't a huge amount.
Q. Do you remember any bulk that would have been listed on the cell report as in tubs, tubs of some kind of bulk sludge? Do you have any idea what tub would refer to?
A. I don't know if that's what they are calling the -- it's like a thirty gallon -- it's about half a fifty-five gallon drum. Now, we've got some of those, but I don't remember -- I didn't know they buried any of those because it would mess up your spacing.
Q. Where did those come from, those smaller tubs that you're talking about?
A. It's just one customer.
Q. If I go through a list of customers, do you think that would help you remember?
A. It might.
Q. Well, let's give it a try. Can't

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hurt, right?
A. It's been a day or two.
Q. Well, if you don't remember, that's perfectly fine. I don't want you to try to --
A. Yeah, just some of the little details.
Q. Well, do you remember -- I'll just name the generator and you can tell me if you remember what kind of waste they used to generate. Okay?
A. Okay.
Q. Astro Container?
A. It was -- I think it was glue.
Q. Was it in bulk?
A. It wasn't a big one, I don't think. It was a small quantity, just a few drums, I believe.
Q. Do you remember waste from Systech?
A. I think the waste from Systech that we got was -- occasionally we went down there when they would get overloaded with pickle liquor or sulfuric acid that they would dissolve to rust off iron from AK Steel or it

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was Armco at the time in Newport, Kentucky, Inland Steel. We would get some of that sometimes when Systech would get overloaded with too much acid waste and they would use that to split the oil and water. I think that was mostly the only thing we got from Systech.
Q. Was there anything that you got from Systech that went into the barrelfill?
A. Paint sludge when they were -- from their solvent reclamation process. They distilled the solvents out of the paint sludge and then we would water paint sludge. That's the only thing I remember in barrels.
Q. Is that what would be referred to as stillbottoms?
A. Yes, that's the sludge that come out of the still.
Q. Did that ever come in barrels?
A. Yes.
Q. Do you remember it ever coming in anything that would be recorded as a box on the cell log?
A. I don't know, unless they figured out -- later on figured out a way of driving it out where they could get the mostly just dry

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sludge. It was little -- had some water in it, but if they got -- if you do a real good job, then you opened up the bottom of the still and you get this big glob of goo out of there.
Q. Do you remember any other generator of stillbottoms besides Systech?
A. No, I don't remember anybody else reclaiming anything.
Q. Do you remember how often you would get Systech stillbottoms?
A. No, because they would kind of save it up until they had a bunch of it or something. That way they cut their costs so you made one trip and picked up the whole batch out of there.
Q. So each time it was picked up from Systech, about how much was in that load, if you remember?
A. It was -- I can't remember if they did it with the semi trailer truck or the small state bed truck about half as big as I -- I don't think it was a huge quantity. Came from the Franklin plant where they had the still and they would steam distill the sludge or solids, waste solids, and you would get all the paint,

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the dried paint and everything. It was pretty inert.
Q. Was there more than one occasion when stillbottoms were picked up from Systech and brought to Tremont?
A. I think so.
Q. You think it was more than five times while you were there?
A. Oh, no.
Q. It was less than five times?
A. Yes.
Q. Do you think it was somewhere between one and five times?
A. It may have been two because they would -- like I say, they would save it until they had pretty close to a truckfull because your pick up and delivery charge was the same whether you picked up one drum or fifteen so they would wait until they had pretty much a truckfull. I wasn't aware of it being in boxes though.
Q. Do you know if it was ever picked up in lugger boxes or in roll-off boxes?
A. I'm not aware of that. They probably could. I think there was -- well,

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they would have had to dumped it out of a still and poured it in there to get it in there.
Q. Did you ever go out to Systech to pick up waste?
A. No.
Q. Do you know whether the waste, the stillbottoms we're talking about, were dumped into drums at Systech?
A. Yes, that's the way that I remember it.
Q. You remember it --
A. You would get an open-head drum that was sealed up.
Q. And what did the stillbottoms consist of as far as their chemical component, do you know?
A. Mostly dried paint. They would cook it pretty good but if they put it in a roll-on and kept the roll-on covered, it probably would dry out to where it's not much of a sludge.
Q. Do you know whether that was done?
A. No. You said that they were putting in it roll-ons and that sounds like a good process to let it finish drying.

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Q. So that would make sense to you if they did do that?
A. Yes. Because it's primarily dried paint or glue. Whatever they were using the solvent for, it would be in there. There would probably be some synthetic rubber if they were reclaiming the toluene from Inland because they used it to clean the neoprene off of motor mounts and if they got a bad cast, they would cut the neoprene off and soak it in the toluene to get rid of all the rubber. And then once it got pretty saturated, then they would dispose of it. They called it neoprene solid and that would be taken to Systech and it was cheaper for them to recover it than for us to pay the incinerator. So I think that they were -- that neoprene solvent was taken to Systech for recovery. They were talking about doing that and I said that sounds like a good idea instead of burning it, recover it and sell it back to Inland. Tony Cowen was -- he was pretty much running that solid recovery.
Q. At Systech?
A. Yes. He was pretty successful at it. He had the solvent recovery plant in

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Beavercreek, Patterson and Grange Hall. I called it a barrel factory but that's what it was doing, recovering solvent.
Q. Do you know of any waste that was hauled to Tremont in a lugger box or a roll-off box for disposal in the cells?
A. If there was, it was in drums. I don't recall anything bulk that way. Roll-ons, you could stack drums up too high, you know, in a big one and if the company had roll-ons, they would do it for -- IWD Liquid Waste didn't have any roll-on trucks so it had to be either an IWD Solid Waste or somebody else would have had to brought it in because they didn't have any roll-on trucks, or at least when I was there they didn't.
Q. I would like to ask you some questions about the oil reclamation facility that was at the Tremont site. What was your responsibility as far as that process went?
A. To check the waste to make sure that it was just oil/water.
Q. You mean the incoming waste?
A. Yes. Before they would pump it into the process they would empty a truck

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into -- well, it was a modified roll-on that was welded shut and then they would pump it, but they would check it to see what was in there and try to leave -- let the trash sit out and make sure it was oil/water, not oil/water solvent. If it was, then you had to pump it back into the truck for incineration.
Q. Now, did it matter how much solvent was in with it as far as whether it would be acceptable or not acceptable?
A. Well, if it was less than I would say four or five percent, if it was less than that, or it was just a little solid in there, then you could process -- if you had too much solvent, then your oil/water split won't work.
Q. So some oil/water waste with small amounts of solvent were processed at the site?
A. Yeah.
Q. And can you quantify the proportion of the oil/water processing that had some solvents in it versus the waste that didn't have solvents in it? Let me ask it a different way. Was it very rare that that would happen?
A. Yeah. Occasionally you would get

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where somebody admits something else in there but if you have got a chlorinated solvent in there, it wouldn't all go away, you would still have -- it would keep the oil in suspension and it wouldn't work. You could try to split it and it wouldn't split and some of the synthetics, you know, it would come in and they said it was oil/water, well, it was synthetic oil, coolant that they used on the tools and it wouldn't split so they would have to pump that back out and haul it off for other disposal.
Q. Is that at percent levels of chlorinated solvent?
A. It might have been. It could have been acetone. If it's -- you can catch a sample, they would bring it in to the lab and we would check it to see if -- put some acid in it and see -- do a jar test to see if it would separate. And if it wouldn't, then we would try to do another GC or some -- if you couldn't identify the solvent by smell or whatever, you could see it's going to have to be handled as a -- well, a lot of the water that you incinerate had almost the same BTU value as just the solvent, there was so much of it in

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there, but most of the oil/water is from a machining operation and it didn't have a lot of solvent but the small generators were the biggest problem because here's a fifty-five gallon drum and I got this two gallons of stuff -- oh, here we go.

Q. And they would just dump the bucket or container, whatever it was, right into the drum?

A. Where they were dumping all their coolant from the tool machines and somebody had this bucket of solvent that he was cleaning something off and dump it in there.

Q. Now, when oil/water was picked up from generators, were vacuum trucks used to pick up oil/water?

A. Generally, yes.

Q. What other kind of trucks were used?

A. If it was in fifty-five gallon drums, they normally get pumped out, it would be in a -- four thousand or six thousand gallon vacuum truck. Or if there was a lot of it, it would be done with a semi that had the pumper on the back of it and it would be blown into a

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gravity bottom tank where all the stuff would -- you just run it out into your holding tank to see what it was.

Q. Now, if there were generators of smaller volumes of oil/water or of coolant waste or whatever with the end of their manufacturing process like you were just referring to, would that be picked up along with other oil/water waste from other generators and mixed together or were the generators' wastes kept separate?

A. Normally it would be separate. I can't think if they ever -- I think normally they would just go to one generator and bring it back to the plant.

Q. And once it was brought back to the plant and it was processed, would oil/water from different generators be mixed together in the process?

A. After it was processed, yes. Not usually during the process unless they were real compatible because we had six tanks that we could put one batch in there and get it -- if you start mixing things, then you wind up with ten or fifteen thousand gallons of

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something you can't do something with. So usually you would process one. If it went fine, get it out of there, get the waste out of there and then put something else in there. You get in trouble when you start mixing things and assuming that they are all compatible and all this.

Q. So you processed each batch at a time separately from the next batch?

A. Yes.

Q. And did you have to clean out the tanks or the boxes in between each batch?

A. Well, John --

Q. Budding?

A. Yeah. He was the one that did that.

Q. He cleaned out the tank?

A. Yeah, he ran the oil/water separation. He was pretty conscientious and he always -- if he smelled something funny, he'd come and ask me what I thought it was before he did something with it because these tanks up here at thirty thousand gallons and you're putting oil in there and if it doesn't smell right or look right, then don't put it in there

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and ruin the whole thing so you made sure that anything funny or unusual, he would usually come down and ask me what I thought it was.

Q. What kind of funny or unusual substances?

A. Oh, it would change colors. Instead of being -- it would have a reddish color to it or kind of -- it wouldn't look like, you know, clear oil. Have a bluish color if it was motor oil. Motor oil you had to track with sodium hydroxide so you had to process that different than you would cutting oil. And the synthetics, that's something else. They are -- organics are not really boiled. It's a coolant.

Q. So after the oil and water were separated and removed, was there something left that was a waste product at the end of the process?

A. Most of the time not. Most of your sludge you get over here when you dump the truck. Anything they picked up, trash, whatever, would be in that preprocessing tank and then you would suck off what you could and then you shovel out the other stuff and put it

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in a drum.
Q. So you're talking about the first tank that it would be pumped into from the truck?
A. Right.
Q. You're calling that the preprocessing tank?
A. Right, where you find out what you got and then decide what to do with it.
Q. So that trash or that leftover material, what did that consist of?
A. It was usually rags, gloves, just trash. Grease. It would be kind of a gooey, greasy mess, but it usually took several drums before -- I mean, it would take quite a bit of time before you finally got a drum full of it. It was usually no more than three or four gallons of sludge, junk, trash.
Q. And did you always put that in a drum?
A. Usually.
Q. What else would you do with it besides putting it in a drum?
A. They had a -- they finally started putting it instead of a drum in a small like

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dumpster, you know, maybe a six yard -- four to six yard dumpster because they could sit that there instead of having to mess with drums.
Q. And then what did they do with the dumpster when it was full?
A. I'm not real sure. They would usually try to figure out is there anything hazardous in there and that -- Wallis, that was -- he was checking it for heavy metals and stuff to see if there was any heavy metals with the AA, anatomic absorption, and make sure that there wasn't anything toxic in it. Run a GC and map on it. Atomic absorption on it and make sure there wasn't any heavy metals, and if there wasn't -- I don't remember if they were going to dump it or put it in drums, I really don't remember, to bury that. I'm not sure.
Q. Did they ever bury it in the cells without putting it in drums?
A. I don't remember. They either put it in drums and buried it or -- may have.
Q. Either way, did it go into the cells or do you think they took it somewhere else? And we're still talking about the --
A. This oil, processing oil.

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Q. The trash from the preprocessing --
A. Right.
Q. -- step.
A. I think it depended on what it was. If there were heavy metals in it that were soluble, then it had to be drummed up and taken up to Bay City. They would have a conveyor and they would lay the whole drum on there and it (indicating), went to the incinerator.
Q. At Tremont?
A. No. No.
Q. At Bay City?
A. Yeah, Bay City, Michigan. They would incinerate just about anything.
Q. So moving on from the preprocessing tank that we've discussed, after the oil/water was fully separated and had gone through all stages of that process until the end, was there any by-product other than oil and water that had to be disposed of at the end of that process?
A. No. The -- well --
(Thereupon, the Court Reporter

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interrupted the proceedings.)
(Pause in proceedings.)
THE WITNESS: The -- we would have to neutralize if we did an acid split where you added sulfuric acid to it and then it separated your oil emulsion and you would have this acid that you would have to neutralize in the water, and if you were processing motor oil, that was done in a big -- one of the big tanks. You would heat it up with sodium hydroxide in there and that would give you -- you would separate the oil and it would have some sludge in with the sodium hydroxide and usually we would take the water from that process, they would -- sodium hydroxide kind of sucks the water out of the motor oil and then you can blend them and neutralize it. And if there was any solid in there that you didn't catch in the preprocessing, that would go into the same hopper and that was --
Q. Then what happened to those solids that went into that hopper?
A. They would be tested for heavy metals and any solids to see if it was inert trash that you had or if there was anything -- any heavy metals in there, then it would have

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to be incinerated.
Q. Was it tested for PCB's?
A. Only the oil that we got that was transformer oil was the only thing that we ever checked on PCB's. When you run the GC for chlorinated solvents, PCB's would tend to show up a little later because it's a big heavy molecule so it would come show up later but it would show up as chlorinated solvents. If it had a lot of them -- but the only one that really had a lot of PCB's was the transformer oil and they knew it was -- it was a PCB. It was aerocore or something they called it and it's chlorinated solvent so it's nonflammable.
Q. How long would it take to generate enough of that sludge or solids in the hopper to have to remove it from the hopper?
A. I would say it would take probably four to six months before it would get full.
Q. Was that something that had to be scraped out or could you pump it out?
A. No, you couldn't pump it out. You had to dump it or pick it up and shovel it over and take a hoe and scrape it into a drum.
Q. Did you assist with that or you

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just saw other people doing it?
A. Yeah, just saw them. They would bring us a sample to test. About every so often they would catch another sample and we would check to see what was in the sludge and if it looked like it was safe and inert then -- I thought they were burying them in the drums but -- because I saw them raking it out. They picked the hopper up with a forklift and then tip it and take a hoe and --
Q. Scrape it into the cells?
A. No, into drums, fifty-five gallon drums.
Q. Was there any by-product of the oil -- oil separation process that was put in the drums -- or in the cells of the barrelfill?
A. Not to my knowledge.
Q. But you didn't -- did you directly work in that area of the site so that you would have known if that has happening?
A. Probably would have seen them taking it up there and dumping it, but I don't recall seeing that dumped in there.
Q. Could they have pumped anything out of that and then pumped it into the cells?

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A. Oh, boy. It was mostly trash, very little water because they kept it covered so it didn't get rainwater in it. And it was -- there was probably some grease and oil that was mixed in with the trash, but for the most part it was just debris. You probably had some oil stick to it but it wasn't other than kind of greasy, gooey mess.
Q. Do you remember any other generators of polyol besides Inland?
A. No. That was -- they were the big sponge rubber thing. Now, there was some other companies that fabricated things with sponge rubber but it was mostly what we got from them was adhesives where they cut it up and glued it together and that's what they cleaned out of their machines and stuff.
Q. Was there any cyanide waste disposed of in that cell?
A. Oh, no, not that I know of. Cyanide you had to haul to Preston to have it chlorinated.
Q. Was there any waste that might have contained any amounts of cyanide, even trace amounts that was buried in the cells?

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A. If you would detect cyanide, if any of the TDI or toluene diisocyanate, if there was some of that that was mislabeled polyol and got poured in there, that's the only thing that I could think of.
Q. Do you recall that that happened where you had TDI that was labeled as polyol?
A. At Systech, I do. Oh, man, it made a big mess. It plugged up everything.
Q. You mean, was this waste generated by Systech that you're referring to?
A. No, no, it was waste that Systech took in.
Q. When you worked there?
A. Yes. They brought in -- they were hauling or pumping TDI and cyanide waste into a truck from Jones Chemical and they got a drum of TDI pumped in with the polyol and, boy, it went (indicating) and we had a trailer full of Styrofoam or polyurethane foam that instead of carbon dioxide contents it was hydrogen cyanide and that was one big mess trying to dig that out of that tank. Jones Chemical wanted the truck back and it was full of urethane foam and so that was the only incident I know. And it

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was labeled polyol and it was a load they got the day before and they were going to add to it so I didn't have a chance to check the drums to make sure.

(Thereupon, the Court Reporter interrupted the proceedings.)

Q. Do you remember any pallets being put in the cells with the drums?

A. The first cell they did, they tried to -- they put a layer of pallets on the bottom trying to level it up so the drums would sit level. They might have done it on the second. And then they finally decided that that wasn't a big help and then they roll over in the crack between the two boards on the pallet and then it doesn't roll anymore and it's too hard to handle, so they were going to quit putting the layer of pallets in the bottom.

Q. Do you know how many drums would fit on a pallet?

A. Four max if it's a full size pallet. If it's small, then you only get three.

Q. If the barrel log said that

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certain number of pallets were dumped in the cells, what would that indicate to you? Why would it be reported that way?

A. They were trying to stack them is the only thing I could think of. They were trying to make a flat surface so that you could put four drums on a pallet, set another one and if the drums are cockeyed or whatever, then you could set another one on top but you will wind with space between the pallets that you can't put a drum. I don't know if they -- if you had a -- if they did put a ramp in there then you could put a forklift and then you could stack them upon pallets but you would have to have them on pallets.

Q. You think they only put pallets down on the first couple cells and then they abandoned that idea?

A. As far as I know because it was too much of a hassle. It was taking too many man-hours to try to get the drums in there.

Q. Did you in any way assist with the operation at the cells or did you just observe what was going on?

A. Well, I did some. I helped

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them -- the heavier drums I helped them roll them over onto the frame on the backhoe.

Q. You mean in the yard?

A. Yeah. Well, at the cell we would take them off with a forklift and set them down on the ground and then you had to dump them over and if it was sitting on the dirt like this (indicating) and the frame is here, sometimes it's more than what one guy could do so if I was up there checking to see how they were coming, I would help him roll them over onto the backhoe to sit down in there to dump them out.

Q. So it took actual men to get the drums onto the backhoe?

A. Yes.

Q. To get them down in there?

A. Yes.

Q. Were you as a chemist at the site, did you direct which cells or which drums were going to go into which cells?

A. No.

Q. Did the --

A. We sorted them out by what they were and these are drums that you can put in

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the cell and these are drums you can't that we're going to have to haul off or process some other way.

Q. So of all the drums that were set aside to be put in the cells, did it matter which drums went in a cell together or did the guys just take the first drums they saw and just put them right in the cell, whatever was closest?

A. I'm guessing that that's probably what happened. You would pull your trailer in to there and these -- this row of drums and this row of drums and this row of drums are to be buried until they started loading until they ran out of these and go to the next one and start loading so they would have --

(Thereupon, the Court Reporter interrupted the proceedings.)

MS. WOLFE: I'm just going to say for the record that we're having some problems with the court reporter's equipment. The computer keeps shutting off and this has happened two or three times already. We're attempting to finish the deposition, although Mr. Hill's testimony has been interrupted a few times. If necessary, he

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will repeat himself, but we will try to get to the last few questions as long as the equipment is working.
Q. You were just saying, Mr. Hill, with how the drums were in the yard and they would be taken to the cells?
A. Right. It's my guess that you take the path of least resistance, so you come in, get the first row, get them up there and then go down and go to the next row or actually there's probably two or four rows of one thing and that's why the log has got different things, depending on how many you have got stacked up when you start burying them as to how many you will have in that cell.
Q. So that's why the log shows certain types of wastes grouped together in rows?
A. Probably because that's where they got them. If I was going down there I wouldn't pick up one drum from here and then drive and pick up a drum from here (indicating).
Q. You would try to take them in groups you're saying?
A. Right. Because that's the easier.

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You got a forklift. You pick the drum up and set it on a cart and go back and once you get that, you move over and you start picking up other drums and putting them on there.
Q. What type of drums do you remember being put in cells as far as material?
A. Drums of paint sludge --
Q. Actually let me just interrupt you. Maybe I wasn't clear enough. I mean metal drums versus other types of drums. Do you remember anything other than metal drums?
A. No, they were almost all two bung steel drums and some of the paint sludge, if it was too dry, was put in open-head drums that had a seal, but it was pretty much tried to make sure when you took it over to put it on the forklift, the backhoe, we would make sure that it wasn't leaking, and it was sealed good and if it was, we would stand it back up and tighten up the bungs so they were not leaking, otherwise if you have to go down there and the stuff is pouring out, it's a mess to make it safe for the handler.
Q. Do you remember that happening on occasion where the drums would be leaking after

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you put them in the cell?
A. No, they would leak when you turned it over to put it on the backhoe and then you would have to tighten it up to where it was not leaking.
Q. So then did that mean waste would collect in the backhoe that had to be washed out or scooped out?
A. No, it was an angle iron frame and there's nothing to catch it except whatever leaked on the metal. There was no bottom to it or anything. It was just angle iron and then the drum was between the two pieces of angle iron and it had a small angle iron lip so it wouldn't roll off while you were lowering it until you dumped it off.
Q. So anything that leaked would just leak onto the ground, is that correct?
A. Yeah. Yeah. And usually it wasn't very much because, like I say, tighten the drum -- the problem is when you sample it, whoever sampled the drum to bring it in, a lot of times you would stick a clear plastic PVC pipe and then put your thumb over it to bring it up and drop it in a jar. And then you're

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supposed to tighten the drum back down tight and that didn't always get done, so when you turn it you will notice something leaking and you tighten it up and it quit.
Q. What about drums that were sorted in the yard to be sent off site that couldn't be buried in the cells, was there ever any leaking from those drums?
A. The only time I recall anything ever spilling was when the guy putting the forklift, setting the drums in there and he backs out and turns --
Q. Hits the drums?
A. -- and hit a drum, and then we would have a mess to clean up.
Q. Was that in the yard?
A. Yeah.
Q. How often did that happen?
A. I would say two or three times a year.
Q. Do you remember what the substances were that spilled?
A. One was -- was a paint thinner I think of some sort, had acetone in it because we had to shovel a bunch of dirt up to get that

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all in a fifty-five gallon drum?
Q. Did the entire drum spill on that occasion?
A. Not the entire. He hit it about this far off the ground (indicating) and it shot out.
Q. You're indicating about six inches off the ground?
A. Okay, yeah, about six inches off the ground. When he was backing up the fork hit the side of the drum and it come spraying out and he jumped off the forklift, went over and pushed it down so the hole was up and, I don't know, maybe ten or fifteen gallons may have sprayed out and he had to shovel up all that dirt and put it in an open-head drum to incinerate it.
Q. Does acetone contain solvents?
A. Acetone is a solvent.
Q. So that's not something you would want to leave on the ground?
A. I had them shovel it up anyway because we didn't know what else was in there. It was paint thinner is what it was labeled and it's mostly acetone and probably some alcohol,

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ethanol or methanol.
Q. Do you recall any of the other occasions when the forklift would puncture or -- puncture a drum or --
A. It happened occasionally when they would get in a big hurry trying to -- usually because the truck was there at 5:30 and they are trying to get it unloaded where they can go home is when they would generally -- two of them were just about quitting time and so you had a mess you had to clean up before you could get home.
Q. How far would you estimate the yard was from these cells in feet? Do you have any idea of that?
A. The first cell, I would say it's probably two or three hundred yards because it was right off behind the pond and they had to go clear up to the corner, but as they filled the cells, it would get closer because they were working their way back towards it.
Q. Do you remember where approximately in the yard that acetone spill happened? Why don't you take my blue pen on Exhibit 2 and if you could mark it where you

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think that happened?
A. If I can remember where they put -- the flammable solvents, he was not messing with it. It was in a row and it was just stored and it was probably -- it was in the first or second section, probably in here (indicating).
Q. Why don't you put an X. You're marking a green X in the drum yard with a circle around it where you think that happened?
A. Yeah, because the flammables would have to be taken -- you can pull the tanker truck in and get to them without having to get way back into the yard so you could pull it up and pump them or -- generally they would save them in the drums until they got enough to make a six thousand gallon tank load to Bay City or Fremont. Fremont? Yeah.
Q. Do you know whether any dumping in the barrelfills took place at night?
A. If it did, it would be hard because there were no lights. You would be doing it with a flashlight and I wouldn't do it standing over the hole in the dark.
Q. So you just recall it taking place

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during the day?
A. Right. Right. Because it would be -- I mean, there's no light other than the sun and if you're up there walking around this hole -- I wouldn't want to mess with it.
Q. Was there any work that took place at the site at night?
A. The only thing that would happen at the site at night would be, say the guy going to Bay City, he would take the drums up there and dump them and then he would come back, park the truck and get out and go home.
Q. So you would have trucks coming in and out?
A. At night. That's the only thing that happened at night was trucks. If they were taking a load to Bay City, he usually liked to go up there like 4:00 in the morning so he can get up there without having to come home at midnight.
Q. Was there any unloading or loading of drums at night?
A. Well, the only reason that would ever happen is if the trucks brought in a load of drums and he had to go get some more the

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next day, they would usually have somebody come back in and help him unload the truck so it would be ready to go the next day, but most of the time they had several trucks and so they could just drop the trailer and pick up an empty trailer and go on. But there was only two flatbed trailers so they had to have one unloading if they were going to use it the next day, but most of the time the tank trucks and stuff, if the driver came in with oil/water at 7:00, picked it up over in Indiana or something, he would put it in the preprocessing tank and then go park his truck so he would be ready to go in the morning. But that's the only activity I can recall at night.

MS. WOLFE: Let's just take a few minutes off the record and then I'll come back on and wrap it up.

(Pause in proceedings.)

Q. Mr. Hill, do you remember any other process that might have taken place at the site that would generate sludge that would be dumped in the barrelfill cells?

A. I can't think of anything that would be dumped.

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Q. Well, why don't we start with whether you can think of any sludge that was generated on site. I know we've talked about the preprocess.

A. The oil process, yeah.

Q. How often were you over there at the oil processing facility to see what was done with that?

A. Generally two, maybe three times a day. Just making rounds around to see what was going on. I'm curious to know what they are doing and stuff.

Q. Do you know whether there was any point in time as the years went by that the process of the oil separation changed in any way where they started doing things differently over there?

A. Not while I was there. They didn't change anything.

Q. Are you aware of anything that changed after you left?

A. No. I don't know what they were doing or how long they stayed in business after I left. I was glad to be inside and not have to be working outside in the cold and hot.

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Q. So going back to the question of where sludge might have been generated on site, can you think of anything?

A. Not generated, but picked up. In the garage we had some square pans that they put underneath -- if you went to a generator and sucked out a tank and it wound up that after driving back to the plant it settled out, this big round tank is flat on top and then the sides, it's like a cone that funnels down and that's where your valve is, and the sludge would get down in there and then you can't get anything out and so you would have to put a hose in through the lid, suck all the liquid out and then take the valve apart and dig the goo or whatever out into a pan and then put it in a drum.

Q. How often did those tanks have to be cleaned out in that fashion?

A. If a driver was careful when he was sucking it out of the generator's tank, he could feel the -- and know and pull it up higher.

Q. Feel the pull from the gunk at the bottom starting to pull on the pump?

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A. Not the gunk in the bottom. The stuff he's sucking out of the tank, if he's getting a lot of -- well, it's like a vacuum cleaner. If you have got this hose going across there, as soon as it hits a piece of paper or a carpet or something, it will clog it up and it will (indicating) and it will feel different. Then you pull it up and try to stay away from that and leave it and try to make sure you're just pulling liquid, then you don't have that problem, but if you're not paying attention you will wind up sucking some of the rags and gloves and things.

Q. So solid materials would sometimes collect in those tanks?

A. Right.

Q. You have to clean them out?

A. Right.

Q. And then what would happen to that material that you cleaned out of the tanks?

A. It would usually -- if it was oil/water, it would get taken up there and put in with the sludge you would get that you blew out of the truck and then tested before we did something with it to see whether it was inert

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or not.
Q. Was it always tested?
A. As far as I know. They may or may not have.
Q. Was that your job?
A. No.
Q. Whose job was it?
A. Well, okay, to test it, but I would test. When it would get real full, they would sample it and bring it down to the lab and then we would check it. I don't -- they were supposed to kind of sample it, you know, not just this corner, but maybe this one and the middle to try to see what all is there and would generally check it for solvents and if it was a good volatile solvent, but if it was -- it would usually evaporate if there's any of that, but the grease and oily mess, that usually stayed, but normally we didn't find any -- I can't even be sure if we have ever found any metals in it.
Q. We were talking earlier about when you started at the Tremont site and we agreed that it was somewhere in 1976.
A. Yeah.

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Q. Does that sound about right? Well, you were there for --
A. I was there when I left -- when did I leave? I was at the Lagonda site to start with. That was when IWD first started, that was their first site, and then they moved up to Tremont City.
Q. And you testified earlier that the first cell was dug in late '76 and it took about a year prior to that to collect enough drums for that cell?
A. Yeah.
Q. So --
A. It was nine months to a year.
Q. So would it be fair to say you were probably at Tremont for that nine months to a year before the first cell was built?
A. Probably, because we had moved the operation up there before we even had the permit to use the cell. That was still a proposition that I don't know whether we were doing environmental studies or something.
Q. When you started working out of the Tremont location, was the oil separation process already in operation?

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A. Yeah. In fact two of the tanks that were -- we had two roll-ons at the Lagonda site where we were processing oil/water and they built two new ones and got the boiler going. Then they moved the two process tanks from Lagonda out there. They had IWD Solid Waste pick them up and carry them out there for us.
Q. Do you know exactly when the oil separation process started at Tremont though, was it -- do you remember if that had been going on for a long time when you started there or if it was a new process?
A. No, it was new out there, but it was being done over on Lagonda site. They had -- were processing oil/water at the Lagonda site -- man, that was at least I would say four months before we started out at Tremont. They built the maintenance building and then they started working on the pads to do the oil/water process and that was -- while that was going on they were keeping the trucks out there and stuff and I was still over at the Lagonda until they moved the oil/water process from there because we were still doing the lab tests on it

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during the building. Then they moved the process and John started going out there and then they -- I was -- I had set up a lab on the side of the boiler room building and where the boiler and coalescer tanks were.
Q. Do you remember any bulk aluminum hydroxide and carbonate sludge being disposed of at the site?
A. Aluminum hydroxide and what?
Q. Carbonate sludge from --
A. Drackett in Urbana, right?
Q. I don't know about that. Is that what you remember?
A. Yeah. That's the only place that -- that was hard to pump because they would let it sit in a tank and drain, drain, drain, drain, and then want you to pump the almost dry solids out of there. They made -- what was -- Drano, Windex. It was Drackett, but they would throw all their waste and let it settle out and then they would process the water but they would leave all the sludge over there. Had steel wool in it. Aluminum hydroxide -- that's the only sludge stuff that was like an organic sludge they had.

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Q. And was that disposed of in the barrelfill?
A. Don't know.
Q. You don't know?
A. I know that they picked it up from Drackett.
Q. How about from Kiser Aluminum, do you remember that?
A. That was sodium hydroxide.
Q. Aluminum hydroxide?
A. Okay. You take sodium hydroxide and you stick aluminum down it in, it comes out shiny. Well, what it produces is aluminum hydroxide. That's the sludge that settles out. There was some of that and what they were doing with it, it was a -- to neutralize the sulfuric acid from the oil/water split. We were adding it to that and -- okay, that would be another where you wound up with a lot of sludge but it wasn't a process -- the sulfuric acid was loaded with iron oxide and the aluminum or the sodium hydroxide was loaded with aluminum. In fact, they got it in a tank car.
Q. Was that from Kiser Aluminum or from Drackett that you're recalling now?

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A. Okay, Drackett was dry sludge and they would add enough water to where they could pump it.
Q. And let's just talk about the Drackett material, the Drackett sludge. They would pump it and then bring it to Tremont?
A. Yeah, and I think they transferred it to fifty-five gallon drums and let it dry out again and then I'm not sure where it was disposed of.
Q. Do you know whether any of that sludge was dumped in the cells in bulk?
A. I don't know for sure.
Q. What was the waste that you remember from Kiser Aluminum?
A. Okay. When you neutralize the sulfuric acid, all of a sudden all this rust drops out of it and all the aluminum drops out of the sulfuric acid and then you have got water.
Q. So those are metals that drop out?
A. Right, they precipitate and you got this solid sludge and you got a bunch of it.
Q. And there was a lot of that

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sludge?
A. Yeah, so we didn't process any. It was a good idea that you take a sulfuric acid waste and use it and then you take this sodium hydroxide waste, but when you put the two together all this sludge is created, this iron oxide, aluminum oxide, aluminum carbonate.
Q. Was that sludge disposed of at Tremont?
A. I think they put it in fifty-five gallon drums and I'm not sure where they hauled it to. Might have gone to Bay City or someplace else. Not real sure. It could have been -- did it list it as being buried?
Q. Do you remember any copper chrome carbonated sludge from Square D in Oxford?
A. Yeah. It was from their plating waste where have they plating, they did chrome plating for switchboxes and things and it was mostly copper sulfate. That went up to Fremont to be deep welled. It wasn't really a sludge so much as it was a kind of a liquid, but they were hauling it to up to Fremont for deep well injection because it had heavy metals in it.
MS. WOLFE: Okay, Mr. Hill. I think

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that will do it for now. I don't have any other questions for you right now. I don't know if any of the other attorneys do.
MR. BROWN: I have some follow-up.
CROSS-EXAMINATION
BY MR. BROWN:
Q. Mr. Hill, I'm Dan Brown and I'm here on behalf of Systech Environmental Corporation and so my interests really are geared toward some of the things that you said regarding Systech, especially your previous employment at Systech or Systems -- one of the Systech companies, so I want to go back and see if I can get the timeline a little bit better on when you worked for Systech. You said you worked for Systems Research Lab from '66 to sometime in early '70s, is that right?
A. Right.
Q. And you told us that you were working at the base on a couple different contracts?
A. Right. I started July of '67 -- or -- '67, and I was with Systech --
Q. You were with SRL from July of '67 through --

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A. It was summer when I switched to Systech. Do you know when Systech built their building on Valley Road?
Q. You just tell me what you can tell me.
A. Was that -- because right after I started, they built that building.
Q. Right after you started with --
A. Systech. I switched from SRL to Systech, they built the office building on Valley Road. And I was -- they didn't have a lab there so I was working out of the Franklin plant. They had purchased the -- or leased the old waste treatment plant in Muskegon, Michigan and then shortly after that they had the waste treatment plant in Hillard -- or no, the other way around. They had the Hillard plant before they had the Muskegon plant. And about the time I left they had just been putting in the solvent distillation, the solvent recovery building, so whatever -- they would probably know when those were. Tim Cates was the plant manager at Franklin.
Q. Cates with a C or a K?
A. C, I believe. C A T E S.

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Q. So you were at Franklin the entire time?
A. Except when Tony took me up to Hillard to help them with the -- their operation.
Q. And you meant Tony Cowen.
A. Cowen, right.
Q. Earlier I think right as the computer was crashing you said that something had happened and Tony -- and that's when you stopped talking. So do you remember --
A. That was when Tony's son and his friend were killed cleaning that trailer out.
Q. Were you working in Franklin when that accident occurred?
A. Yes.
Q. Do you remember when that was? You were working there at that time?
A. Yes.
Q. And were you trying to explain something about the process that happened at that time?
A. Right. They had mixed up a drum of TDI that was labeled polyol and it got pumped into the trailer so it reacted and made

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urethane foam, but instead of being bubbles of carbon dioxide it was bubbles of hydrogen cyanide because they had pumped cyanide waste in there and were trying to add TDI to it but that was a drum of polyol that was labeled TDI and it wasn't so it got in there with the catalyst and reacted.
Q. And that was a mislabeled drum from Inland, you say?
A. All right.
Q. So that kind of explains what you were trying to say about the one time that you saw --
A. Right, a mix-up. That was labeled wrong.
Q. Now, can you ballpark how many months or years after that incident occurred that you left Systech?
A. It was less than a year.
Q. And then you went right from Systech to IWD Liquid?
A. IWD Liquid Waste, yes. And that was within, I would say three or four months of IWD Liquid Waste starting. Jack Wright was driving the truck kind of with customers.

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Q. So you left Franklin and went to IWD Liquid at the -- what was the name of the street there, Lagonda location?
A. Yeah, it's close to Lagonda.
Q. Lagonda Road?
A. Lagonda Avenue, I believe. It goes right by Robbins & Myers. We were on a little side street there right next door to Graff Hardware.
Q. So when you said that you left near in time to when Systech started their solvent recovery process, did you take part in designing that process in any way?
A. No. Tony did all that.
Q. And you just kind of knew about it because you worked there?
A. Right. Right.
Q. Did you work in the wastewater treatment part of the Franklin facility?
A. Okay. Okay. What are you deeming the wastewater treatment? Because Franklin had a wastewater plant across the road from us and a -- a solid waste. What we were doing was processing the water from the waste and pumping it over there. Now, that part is the Systech

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part, not the Franklin Municipal Waste.
Q. Right, I understand there were two separate facilities.
A. Right.
Q. And do you remember a distinction between a company called Systems Technology Corporation as opposed to Systech?
A. Tom and Mel had an engineering company where they did environmental engineering stuff and Systech was the waste treatment process I thought. Is that --
Q. Tom and Mel being -- do you know either of their full names?
A. Tom Whitman and Mel is the vice-president. Gosh, I didn't see him very much. Tom was the one that pretty much -- Tom and Tony Cowen. Tony had got together with Tom and promoted the idea of processing the waste.
Q. Now, earlier you said something about Tony Cowen and then you said something about Beavercreek?
A. Okay, he --
Q. I just want to be clear. Was the Beavercreek location you were talking about, was that a Systech location or something else?

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A. No, absolutely not.
Q. Do you remember what that was?
A. It was Tony Cowen -- what did he call it?
Q. Lammers Barrel Factory.
A. Yeah, and Lammers. They were doing solvent recovery there.
Q. At Lammers?
A. Right.
Q. At Beavercreek?
A. Right.
Q. But that was not a Systech facility?
A. Right. Had nothing to do with Systech. When that blew up, then they started talking to Systech about something --
Q. So his first connection with Systech would have been after the Lammers Barrel Factory fire?
A. Right. There wasn't any -- so he was still trying to get in waste disposal or solvents and so he worked out a deal with Tom Whitman.
Q. Let me look at your Exhibit Number 3, Plaintiff's Exhibit Number 3 --

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A. Um-hum.
Q. -- and the Exhibit Number 2, if we put these side-by-side, I just want to make sure, are we looking at it the same way (indicating)?
A. Exactly.
Q. And when I'm looking at Plaintiff's Exhibit Number 2, kind of in the upper left corner would have been the northwest corner of the barrelfill site?
A. Right.
Q. All right. And then the same thing on Plaintiff's Exhibit Number 3, at the top left corner would be the northwest corner of the site?
A. If you're calling this the top (indicating).
Q. Top left.
A. Numbers are getting --
Q. But if I look at it this way (indicating)?
A. Yes, that's exactly right.
Q. So cell number A-1 is in the northwest corner, top left, as we look at it?
A. Right.

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Q. And it appears that the cells are numbered one, two, three -- I'm sorry, A, B, C, D and E going east along the north boundary of the site, is that right?
A. That's correct.
Q. Any first question is why isn't there an F cell here in the first row?
A. I don't know if those are lagoons. When they dug it, instead of being clay it was sand or something. I really don't know why these are not just like this (indicating). This was on the plan that Jack Wright had -- originally had straight across. None of this stuff (indicating) that's funny shaped and everything. It was all little squares.
Q. If you look at the aerial photo and I think you had kind of outlined where you thought the barrelfill was located. Go ahead and put a square or a circle around the area that you thought was the barrelfill.
A. It was supposed to come down and then go across here (indicating) and go back up kind of like that (indicating).
Q. So if the diagram as opposed to the aerial photo depicts the same area that you

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had shown on the aerial photo, when you get to cell E-1, you're not close to the woods or anything so are you just saying that was not a suitable location to put a couple more cells?
A. Apparently not. I don't know, I wasn't there when they were digging it, but they were starting up in here (indicating), starting to get a lot of cave-ins and stuff, the sides would fall in because it wasn't as much -- this was all clay where they did the PERC test (indicating), they took a fifty-five gallon drum, filled it up full of water, had a little graduated cylinder on it, filled it up full of water and let it set there for a week and seen how much soaked in so this was really packed solid clay, but apparently there could have been something out in here (indicating) because it's a landfill and I don't know how much backfill they put on top of it, but if it didn't pass the PERC test, they were supposed to test each cell to make sure that it's still --
Q. All right. So on that first line along the northern boundary, there's just the five cells, A, B, C, D and E, and then they

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didn't continue to go to the east, at least according to this diagram?
A. Yes.
Q. But on the second row, A, B, C, D, E, F, G and H in the second row, right?
A. Um-hum. Right.
Q. How many of the cells were at the site when you were there? How many had been dug during the time that you worked there?
A. (Indicating.)
Q. Was all of the first row, A, B, C, D and E-1, were they all dug while you were there?
A. I don't think so. To the best of my knowledge it was like four cells.
Q. Were they built in that order or possibly --
A. These were done --
Q. Could A-2 could have been done before, let's say C --
A. Okay, it could have. These two and then it was either this one or this one (indicating).
Q. When you say these two, I think you said before that A-1 was clearly the first

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cell. So let's just assume A-1 was the first cell.
A. Right.
Q. Was B-1 the second cell?
A. Yes.
Q. And was C-1 the third cell dug in order chronologically?
A. I'm thinking that's correct and then they come back here for some reason (indicating). I don't remember if they were having problems or something but they started back over here (indicating).
Q. Over here being row two?
A. B-2.
Q. This would be A-2, I believe?
A. Okay, A-2, that's right. But they didn't keep on with their plan of just doing like that I don't think.
Q. My next question is if you look at the diagram, some cells are much larger than others, for example, A-1 is a little box. If you look at the bottom of the diagram, there's some huge cells.
A. I have no idea.
Q. So you're really only familiar

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with the cells --
A. The first five or six.
Q. The cells in the northwest corner of the barrelfill?
A. That's correct. What they did after that, I don't know.
Q. So let's just focus on those because those are the only ones you know about. What were the typical cell dimensions? Do you know how deep they were, how wide they were and how long they were?
A. They were no more than -- I'm guessing probably somewhere between fifteen and twenty feet because the backhoe would not go any deeper.
Q. Fifteen to twenty feet deep?
A. Yeah, probably closer to fifteen.
Q. How wide and how long?
A. Probably seven or eight barrels wide. That would be about twenty-four, twenty-five feet and they were trying to make them square but they had more drums in a row because they were laying down sideways.
Q. So it would be seven or eight drums wide which would be twenty-four to

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twenty-five feet and it would be a similar length long because you're trying to make them square, not rectangular?
A. Right. Drums two and a half foot in diameter, something like that.
Q. When you said fifteen to twenty feet deep, I noticed that some of the cells had six or seven layers and one of them had up to ten layers?
A. Yes. Eleven layers.
Q. So depending on how many layers are in the cell report would tell you how deep the hole was?
A. Yes. Yes, it would. Except you have got a two and a half foot and then you sit a drum -- they are side-by-side and then when you sit this other one, if they scoot any, then it's not a full two and a half foot. It may be only two foot so a cell could hold more drums depending on how they are arranged.
Q. And would the depth of the cell depend on the soil that they were digging into?
A. No.
Q. What would determine the depth of the --

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A. The depth of the hole was determined how deep the backhoe could reach in there and he went as deep as he could go.
Q. What would be the reason for one cell only getting seven layers and another one being eleven layers?
A. Let's say you're going down and you hit some sand or debris or rock that you can't move, these big rocks, and you have got a rock sitting there, then you have to put the drums around it, you can't --
Q. Can't go any deeper than what the rocks at the bottom?
A. Right, rocks or sand or whatever it was in there when they backfilled it.
Q. I was just curious. When we were talking about levels, let's say there were eleven levels in a cell. Is level one the bottom cell or the top cell?
A. Should be the bottom.
Q. So level eleven would be the top?
A. Yes. That's the way they were originally supposed to be. Because you put them in and you write level one until you get that full and then you start off the next

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level. And so the highest number would be at the top. If that changed later on, I don't know.
Q. You said earlier there really was like one -- let me back up. You said earlier that most of the operations happened during the day?
A. Right.
Q. So in wintertime it gets dark at 5:30, 6:00, so there wouldn't be any second shift or third shift operations out at the site?
A. No. There was -- usually in the wintertime there was a -- if you lost steam pressure, then the steam return lines would freeze up and everything so they did have kind of like he was a maintenance man and he would be in the boiler room and kind of, you know, check periodically to make sure the boiler didn't shut down because when it froze up, it takes three days to dig up the pipes and get them thawed out and everything. So they had him there -- he come in about 4:30 to 5:00 and stayed to around 12:00 or 1:00, something like that, and periodically check on the weekend and

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stuff to make sure that it didn't freeze up. And then when the weather would get nicer, then he was back on the day shift, but they would occasionally do that when it really got cold because the boiler wouldn't take care of itself. If it lost return and started freezing up, it would shut down.
MR. BROWN: That's all the questions I have.
FURTHER CROSS-EXAMINATION
BY MS. WOLFE:
Q. I just have a couple quick questions for you, Mr. Hill, to clarify the time frame when you were working at the site. If we could measure it against when Nelson Wallis was there, I just want to clarify whether you were there working at the same time that he was employed there or whether you left before he became employed there.
A. No, he was working, I'm guessing maybe two three or four months before I left.
Q. So if he was there -- if he began in earlier 1979, then that would mean that you were there until mid 1979?
A. Let's see. Yeah, May or June.

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Q. So whichever cells were dug during the time frame from the beginning in '76 through May or June, '79, those were dug while you were there?
A. Yeah. Yeah.
Q. And how much time did you spend actually at the cells themselves observing what was taking place there?
A. The first two or three, I was there probably once or twice for maybe fifteen, twenty minutes and then I got busier trying to handle the samples were coming in too fast and I would get up there -- oh, three or four times a week. Once I saw how they were doing it and it looked like it was all -- they were doing it safe and everything, then I didn't bother to walk way up there to see what they were doing.
Q. So as they progressed with more and more rows of cells, you didn't always observe the drum disposal every day?
A. No, not -- usually I tried to get up there at least once a day or every other day, depending on sometimes I was gone all day with the salesmen to Gallipolis or Galion to check on a new customer and then I would come

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back. What they did that day, I wasn't there at the plant, I didn't know.
Q. So would you agree that the operation of the barrelfill closed in late 1979? Does that sound about right if you know?
A. Well, I don't see how they got all these big cells. I never saw a big cell.
Q. Well, I don't know how accurate the dimensions are in what's represented on that exhibit, Exhibit 2. I can't --
A. I don't remember --
Q. Exhibit 3 actually. I can't say that those cells at the bottom are actually that size --
A. Okay.
Q. -- in comparison with the top cells.
A. Okay. Because I don't remember anything being funny shaped like that and right next to each other and stuff. They were like this (indicating).
Q. So when you testified earlier that you were only there for the first few cells, is that because you don't recognize how these are depicted in the diagram with respect to the

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bottom cells being so large?
A. Well, it could be because they were all like this (indicating), a cell and then they were separated by eight, ten feet between cells and they had test wells PVC pipe stuck down in the ground down to the bottom of the cell and we periodically had samples if there was anything in there.
MS. WOLFE: Okay. I have no further questions. Thank you very much, Mr. Hill, and that will be all for now. I just want to explain since you don't have an attorney here to explain this to you today, I want to explain to you what's going to happen with the transcript of your deposition. The court reporter who has been taking down the deposition today will prepare a written transcript and you can choose whether you want to read that or whether you want to waive that opportunity. If you choose to read the transcript, the court reporter will send it to you and you can read it over and you can make any corrections that you feel are necessary in form or substance and then you have to have it signed and notarized and returned back to the court reporter. Or if you don't think that's necessary and you

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don't want to read the transcript, you can waive that right. It's completely up to you. But if you choose not to read the transcript, then I believe after thirty days the court reporter will sign it on your behalf. So either way, if you have it sent to you, then at least you get the option of reading it. If you never send it back then the court reporter will go ahead and do it for you.
THE WITNESS: Probably because I can dig up a resume and correct the dates that I've given you with more exact dates because I had dates of employment on my resume, but I haven't used that in twenty some odd years.
MS. WOLFE: Well, if you make any corrections to any part of the testimony that you have given today, then the rules do require that you give some kind of a reason why you're changing what your testimony is.
THE WITNESS: It would be dates is what --
MS. WOLFE: Okay. If you want to do that, then you just prepare a list with what the change is and what the error was and --
THE WITNESS: Put them together and

send them back. Okay. Yeah.

(Thereupon, the deposition was concluded at 5:08 p.m.)

I, CLYDE E. HILL, JR., do hereby certify that the foregoing is a true and accurate transcription of my testimony.

_____

Dated _____

STATE OF OHIO)
COUNTY OF MONTGOMERY) SS: CERTIFICATE

I, Mary Jo Stevens, a Notary Public within and for the State of Ohio, duly commissioned and qualified,

DO HEREBY CERTIFY that the above-named CLYDE E. HILL, JR., was by me first duly sworn to testify the truth, the whole truth and nothing but the truth; that said testimony was reduced to writing by me stenographically in the presence of the witness and thereafter reduced to typewriting.

I FURTHER CERTIFY that I am not a relative or Attorney of either party nor in any manner interested in the event of this action.

IN WITNESS WHEREOF, I have hereunto set my hand and seal of office at Dayton, Ohio, on this ____ day of _____, 2005.

_____
MARY JO STEVENS
NOTARY PUBLIC, STATE OF OHIO
My commission expires 9-10-2006