



TO: Katie Rosenberg – Mayor, City of Wausau
Wausau City Council

FROM: Eric Lindman, P.E.
Director of Public Works & Utilities

DATE: July 15, 2020

SUBJECT: 1300 Cleveland Ave – Environmental Document Review Summary

I have reviewed dozens of multiple page documents found in City archive files and also downloaded from the WDNR website related to environmental and use history of the above mentioned property. I have attempted to summarize my findings of the significant documents in chronological order.

It is important to state the goal of this summary is to provide information on the history of this property and determine if additional testing/action should be completed on the site and to assist in making an informed decision based on facts and data. I have attached information/documentation which I feel are the most relevant and significant documents related to the known history of this site. Please refer to these documents as you read through the summary below for more specific information.

Past operations and practices by Connor Forest Industries (CFI) is checkered with non-compliance issues, mainly during the years of 1981 through 1987 based on the records that have been reviewed. There are references in the records that dumping of waste onsite had been taking place during years prior to this but minimal documentation was found about earlier year practices.

The Wausau CFI site was a cabinet manufacturing operation and their primary waste was related to glue which was used to bond veneer to wood for making cabinets. There were three primary operations to create the cabinets; Hot Press, Jointer, and Core Press. Each of these operation stations created waste which was collected in barrels. This waste was tested by the WDNR and determined not be hazardous waste but contained “heavy metals” (Aluminum, barium, cadmium, chromium, and lead). These containers of waste were dumped out on the property in the late 70’s and early 80’s. The WDNR estimated the dumping took place for at least 4-years, possibly more.

In Feb 1981 the WDNR and USEPA completed an onsite inspection of the facility and several violations related to CFI storing and documenting storage of waste; these violations were addressed in June 1981 according to USEPA & WDNR documents.

In June 1981 an anonymous informant notified the WDNR of illegal dumping of liquid waste on the site by CFI. The WDNR investigated the site and in July 1981 the WDNR took samples of liquid waste found ponded on the ground in the area dumping was taking place. At the same time the WDNR was able to take samples of the liquid process waste stored in barrels which came off of their process lines. In August of 1981 the results of the samples taken at the dump site matched the samples taken from inside the facility which confirmed CFI had been illegally dumping waste on site into the ground.

September 1981 the WDNR issued a Responsible Party Letter to CFI requiring the cleanup of the area dumping had been taking place. CFI hired a consultant to prepare a plan for testing and in January 1982 this soil testing was completed and a report submitted to the WDNR. In May 1982 the WDNR calculated and determined the estimated amount of heavy metals that was dumped at the site and made the determination both fill and native soils be tested for contaminants. The consultant's conclusion was that the dumping did not contaminate the soils and no further action was required. The soil samples did show heavy metal detections in the soil, all the same metals in the process waste. The WDNR did not agree with the recommendation from the consultant and required CFI to prepare a remediation plan for the dumping area on the property.

July 1982 CFI hired a consultant and prepared a remediation plan for the site. Sept 1982 the WDNR approved the remediation plan. The material was removed from the site according to the approved plan and brought to the marathon County Landfill. November 1982 the WDNR approved the method of cleanup and determined the site was adequately cleaned and no further action was necessary.

October 1983 CFI removed two buried storage tanks from the site, both removals were reviewed and approved the WDNR.

1984-1986 CFI had periodic inspections from the WDNR and EPA with documented violations (i.e. manifests not properly logged, containers not dated, contingency plans incomplete, Haz Waste storage exceedances, etc.). Appears each of these issues were documented and then addressed by CFI and investigated by the WDNR to ensure compliance.

July 1985 two underground buried storage tanks were reported as active. October 1985 these two tanks were properly removed.

November 1985 CFI prepared a Work Closure Plan for the WDNR as they were shutting down their operations. WDNR required this plan as they had an open investigation ongoing related to the CFI property.

January 1986, as part of the closure plan, six exploratory trenches were dug around the property to determine if any unseen buried waste was found. According to the March 1986 assessment report no buried storage or waste was found. December 1986 the WDNR closed the investigation. It should be noted that the WDNR, in the same notice, acknowledged there were VOC presence in both the groundwater and soils. The WDNR also noted any soils with the presence of VOC's should be removed from the site.

August 1986, prior to purchasing the property, City performed 4-soil borings/tests which confirmed soil contaminants related to VOC compounds and metals. Based on the results there are no high level amounts but metals are present. This round of testing was decided to be completed based on an unsubstantiated statement from a citizen/informant. Based on the testing results the City entered into

agreements with both SNE (Wauleco) and CFI holding the City harmless for environmental issues these properties have created.

December 1986 the WDNR responded to City concerns/questions related to the CFI final cleanup of the site. The WDNR concluded that CFI performed their duties according to the closure plan and no further action was required. The WDNR concluded their investigation of the CFI site

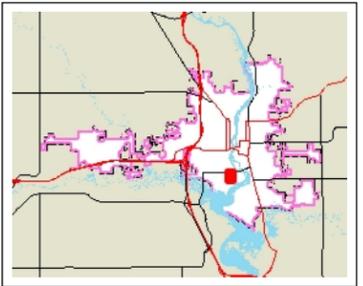
The City performed building demolition in 1988. In 1993 and 1994 the City removed a concrete slab where the previous above ground storage tanks were placed. Four buried pipes with liquid in them were discovered and it was unknown where they began or terminated. CFI was contacted and asked to address the issue of the piping and the potential of contaminated soils. CFI removed the liquid from the pipes, removed the piping and any soils that were identified as possibly contaminated. CFI removed the soils with identified VOC's and disposal was approved by the WDNR. CFI's consultant prepared a final report of work completed in October 1994.

The above is the history of information I have reviewed. There have been multiple instances of investigation and remedial action that has occurred on the site, the most recent was in 1994. All remediation was reviewed and overseen by the WDNR and they have concurred with all actions completed by CFI. For purposes of the WDNR and our most two recent Environmental Phase I Assessments this property has been determined to be remediated and no further action is required.

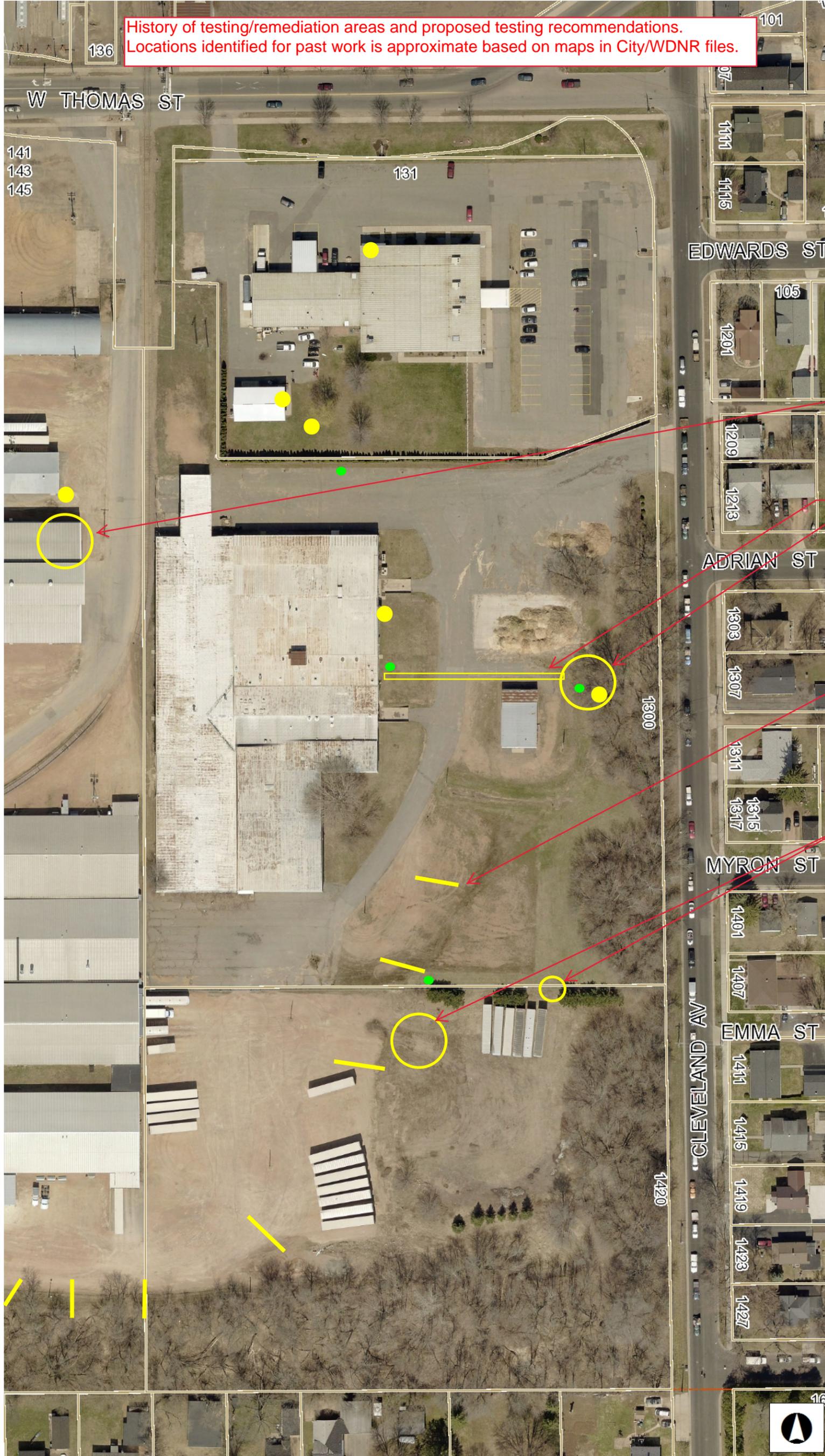
Based on the history of this property and the history of testing there are different approaches which may be taken. These actions would be solely the responsibility of the City of Wausau to fund and complete. Options for consideration:

1. Leave the property as is, sell or have the property redeveloped.
 - a. Recommend looking into if the indemnification from CFI and SNE could be transferred to the new owner.
 - b. Ensure the sale of the property releases the City from any liability related to the property.
 - c. Financial impact would be \$0.00
2. Perform a minimal number of soil borings around the site in areas documented previously for dumping. Borings taken down to native soils, collect samples at two depths and test samples for metals and VOC's.
 - a. If samples come back clean or below limits then determine site clean and ready for sale/reuse.
 - b. Any hits/exceedances will require notification to the WDNR and follow their process. CFI may be responsible.
 - c. Ensure the sale of the property releases the City from any liability related to the property.
 - d. Proposed budget would be \$10,000
3. Perform soil borings throughout the entire site. 18-20 borings, split samples down to groundwater every 2-3 feet and test for VOC's and metals and possibly other constituents.
 - a. If samples come back clean or below limits then determine site clean and ready for sale/reuse.
 - b. Take at least 3 groundwater samples and test for same in groundwater.
 - c. Any hits/exceedances will require notification to the WDNR and follow their process. CFI may be responsible.
 - d. Proposed budget would be \$60,000

Based on the data and history of the site I would recommend moving ahead with Option 2, map attached. The site over the years was confirmed to have had heavy metals dumped onsite and the operations and data records were not well kept. The WDNR was heavily involved with remediation of areas on this site and there were full infield assessments completed of the site after CFI shut down the operation. There is a question on the testing that took place in the past; my primary reason for testing would be to focus on the testing of the native soils below any fill material. I feel it would be good due diligence for the City conduct a small number of borings in the areas identified in the past as having detects. You will see on the map that we no longer own some of the property and we would just be testing City owned property. The soil testing conducted by the City in 1986 indicated there may be a presence of heavy metals and this should be verified. Samples would be taken within the native soils as WDNR indicated these contaminants are more likely to be present and settled in the native soils versus remaining in the fill material.



History of testing/remediation areas and proposed testing recommendations.
Locations identified for past work is approximate based on maps in City/WDNR files.



- Legend**
- Parcel
 - Section Line/Number
 - Municipality

Buried Tanks Removed 1985

Area of underground piping; removed 1986

1986 previous borings conducted; soils removed due to VOC's

- 1986 City Soil Test Locations
- Proposed Borings

Previous exploratory trenches

1981 previous borings conducted; due to illegal dumping



Map Created: 7/14/2020

50.00 0 50.00 Feet

NAD_1983_2011_WISCRS_Marathon_Feet

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THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes

Document 1

EPA/WDNR Violations

Hazardous Waste Dumping and Hazardous Waste Storage

North Central District Headquarters
Box 818
Rhinelander, Wisconsin 54501

4400

June 24, 1981

Mr. Lee Yach
Connor Forest Products, Inc.
131 Thomas Street
Wausau, Wisconsin 54401

Dear Mr. Yach:

The Department appreciates the cooperation given by Connor Forest personnel on June 17, 1981.

As you were informed at the time of our meeting, the disposal of industrial wastes on the ground behind Connor Forest buildings is a violation of NR 180.13 Solid Waste Management Regulations, State Statute 144.76, regarding hazardous substance spills and, possibly, NR 151 and Federal Regulation 40 CFR 261-265 regarding hazardous waste management regulations.

We have submitted to the State Lab of Hygiene at Madison the sample obtained from the waste deposit area on Connor Forest property. Results of this analysis will be made available to the Connor Forest Company as soon as possible.

National Casein has been contacted for a list of the chemicals Connor Forest uses in the glue processes which ultimately generated the wastes in question.

The Department would like Connor Forest to sample each of these waste streams at the point of generation and have each analyzed for hazardous characteristics according to 40 CFR 261. A Department representative will be present to split these samples with the Connor Forest Company. We will contact you to set up a date so someone can be there to split samples with you as soon as they come off the process line.

Until the chemical nature of these byproducts has been assessed, they must be contained and not discharged to the ground, sewer or environment. In the meantime, Connor Forest officials should be contemplating suitable waste management methods anticipating the analytical test results.

Concerning the related issue of EPA generator and storage facility requirements, the areas of inadequacy at the time of the EPA inspection in February were contingency plan, manifests, operating record and inspection schedule. At the time of our visit on June 17, 1981, Connor Forest's contingency plan appeared to be in order as did the manifests. Mr. Nest informed us Connor Forest no longer wants to be considered a storage facility and four months ago had denotified as such with EPA.

EPA in Chicago was contacted about this denotification but could find no communication of this from you. Resubmit a carbon copy of the original letter of your request for denotification to EPA, Attention Richard Karl, and forward a carbon copy to this office too.

Without storage facility status, hazardous wastes greater than small quantity exclusion limits must be manifested off site before they can accumulate for greater than 90 days. The Department was told, at the time of our visit, that this is now being done. However, any containers which are used to store waste on site must be clearly dated with the date waste accumulation begins in that container. At the time of our visit, six barrels of waste were on site and none were dated. This is a violation of Federal Regulation, Part 262.34(3) and proposed NR 181.21(5)(a)3.

If you need the requirements for generators of hazardous wastes, we will be glad to forward a copy to you.

If you have any further questions, please feel free to contact me.

Sincerely,



Pat Kandziora
Hazardous Waste Specialist

PK:da

Dave Degenhard called @ 1:30 on 7/14
EPA will be sending Conner Forest
a compliance violation. C-F doesn't
want to be a "Storer" anymore but
EPA seems to have misplaced or never
received this request. If storage loc.
is lifted then, the 6 barrels on site
have to be ≤ 90 days old. If
they still want to be "storer" then
they're in violation as the present
(but not yet sent^{to EPA}) compliance violation
states, this C.V. resulted from
our Feb. inspection w/ EPA. Also,
if stor. loc. is lifted, the barrels
had to have been dated - they
were not - on any of the 3
visits we've been there.

I called C-F's Gary Nest
he said they sent a ltr to EPA
to Δ their HW class from
FR 17 to K08 to D001. No response
was given them. I said I thought
they wanted to denotify as 'storer'.
He said no. So, I read off the
violations as an inventory sheet.

2 PM
7/14

C-F had each item NOW.
(since they've had 5 months to
write them up.) They're missing
the operating record totally &
have the inspection record but it's
not 'put together'. He'll do that
& send it to me.

Since the op. rec'd is not
even conceived in the least, I said
I'd be letting EPA in on that.
He agreed.

Called to relay msg to Dave 2nd
He'll call me when he's back.
2:40 → He'll let EPA know
we recommend issuing the original
compliance violation order.
We'll let C-F answer to them
for all violations & situations we
updating the order w/ EPA +
sending a new one just for the
of rec'd. That way C-F will
have to suit EPA's taste re:
exact wordings + such w/ their
documents.

Document 2

WDNR Test Results

Waste Poned on Ground



State of Wisconsin / DEPARTMENT OF NATURAL RESOURCES
 North Central District Headquarters
 Box 818
 Rhinelander, Wisconsin 54501

Carroll D. Besadny
 Secretary

July 13, 1981

File Ref: 4400

Mr. Lee Yach
 Connor Forest Products
 131 Thomas Street
 Wausau, Wisconsin 54401

Wis. Dept. of Natural Resources
 JUL 14 1981
 ANTIGO AREA HEADQUARTERS
 ANTIGO, WISCONSIN

Dear Mr. Yach:

This letter is to document the conversations and events that occurred on July 7, 1981, when I and three representatives from the Bureau in Madison visited Connor Forest.

Thank you for the assistance in obtaining samples of the process wastes from the gluing operations. These samples have been sent to Madison for analysis and the results will be made available to you shortly after they are to us. Results from the waste found on the ground behind Connor Forest have been received. These results are:

pH	5.8
Al	340 ppm
Ba	20
Cd	.12
Cr	.7
Pb	1.9
Ag	< 80 ppb
(Total extraction)	

At this time, you are instructed not to cover the dump area. Wait until analyses have been received and we can use them to determine the best route to take care of this matter. Also with the results, we can determine the best legal and environmentally safe manner of disposing the barreled glue wastes and any that are generated in the future.

If you have any questions, please call me at (715) 362-7616.

Sincerely,

Pat Kandziora
 Pat Kandziora
 Hazardous Waste Specialist

PK:da

→ *An Klaim
 in Antigo*

Document 3

CFI Determined a Small Quantity Hazardous Waste Generator



State of Wisconsin

DEPARTMENT OF NATURAL RESOURCES

North Central District Headquarters
Box 818
Rhinelander, Wisconsin 54501

Wausau Plant
Carroll D. Besadny
Secretary

August 3, 1981

File Ref: 4400

Mr. John Mason
Division Manager
Conners Forest Industries
Laona, Wisconsin 54541

Dear Mr. Mason:

As a result of the Department's investigation of the unlicensed disposal site operated by Conners Forest Industries where both solid and hazardous wastes have been disposed of in violation of NR 180, the Department has reviewed the results of the hazardous waste plant survey and has come to the following conclusions concerning both the hazardous and solid waste practices of your company:

Hazardous Waste Conclusions

1. Conners Forest Industries qualifies as a small quantity generator of hazardous waste under the Federal RCRA guidelines. Conners Forest Industries will have to comply with the requirements of NR 181.13.
2. The waste from the paint shop (i.e., nitrocellulose paint waste) has been declared a hazardous waste by the EPA and the State of Wisconsin. As such it must be disposed of with Departmental approval at a licensed sanitary or hazardous waste landfill capable of accepting this type of waste. At present the Blackwell site is not licensed by the State of Wisconsin and will not be able to accept the waste from the paint shop.
3. There is still some question concerning the solvents being used by Conners Forest Industries. As such the volume and type of the solvents, paint thinners and waste oil presently being picked up by Rock Refinery of Stratford, Wisconsin, will have to be documented. This documentation shall include the types of material and the estimated amount of waste produced every month.

Solid Waste Conclusions

The solid waste disposal site is an unlicensed disposal area that is in violation of a number of requirements of NR 180.13. As such remedial action will be required. Enclosed is a copy of a memo, indicating the Department's position on the solid waste site.

Mr. John Mason - August 3, 1981

2.

Possible litigation will depend upon future actions taken by Conners Forest Industries to remedy the situation.

I strongly suggest that a meeting between Department personnel and Conners Forest Industries be held as soon as possible to discuss the situation and remedial action to be required. Please contact either Jim Anklam in Antigo at (715)627-4317 or Chuck Fitzgerald in Rhinelander at (715)362-7616 to schedule a meeting.

Sincerely,



Charles Fitzgerald, R.S.
Hazardous Waste Specialist

James A. Anklam
Solid Waste Specialist

CF:jn
Enc.

cc: Dale Urso, Rhinelander
Gary Kulibert, Rhinelander
Bureau of Solid Waste Management, SW/3

Document 4

Hazardous Waste Test Results

Samples Taken by the WDNR



State of Wisconsin / DEPARTMENT OF NATURAL RESOURCES
 North Central District Headquarters
 Box 818
 Rhinelander, Wisconsin 54501

→ Antigo
 Antigo

Carroll D. Besadny
 Secretary

August 3, 1981

File Ref: 4400 11

Mr. Lee Yach
 Connor Forest Products
 131 Thomas Street
 Wausau, Wisconsin 54401

Wis. Dept. of Natural Resources

AUG 6 1981

ANTIGO AREA HEADQUARTERS
 ANTIGO, WISCONSIN

Dear Mr. Yach:

The analyses for the three samples obtained from Connor Forest have arrived at our office. Results (below) show, although the material is not hazardous under the legal interpretation, the chemicals you have been dumping contain significant concentrations of harmful constituents. These results confirm illegal disposal of solid waste.

	<u>Hot Press</u>	<u>Jointer</u>	<u>Core Press</u>
pH	4.4	6.2	8.85
Al	< 1,000 ug/l	< 1,000 ug/l	6,000 ug/l
Ba	< 400 ug/l	< 400 ug/l	< 400 ug/l
Cd	< 20 ug/l	< 20 ug/l	< 20 ug/l
Cr	100 ug/l	< 100 ug/l	< 100 ug/l
Pb	1,300 ug/l	< 100 ug/l	< 100 ug/l

*[Metals] are total extraction results.

Since this is not an acceptable disposal practice, you should be considering disposal alternatives for this waste. These would include the possibility of discharge to the sewage treatment plant, in accordance with Wausau's sewer user ordinance. A possibility is landfilling; however, Ringle Landfill cannot accept this waste without there being some detrimental effect to the leachate system, due to the great amount of liquids that this waste is comprised of.

Since this practice has been going on for approximately four years, according to Gary Nest, environmental damage to the area is of concern. The Department has concluded contamination at that site needs to be assessed. We will require some type of site monitoring which would include determination of the extent of groundwater contamination. Please give these matters consideration prior to our next meeting.

The Department will be looking at the situation to decide whether litigation will be pursued.

Mr. Lee Yach - August 3, 1981

2.

We will set up a date to meet with you in the near future to discuss this situation and remedial action. If you have any questions, call me.

Sincerely,

Pat Kandziora

Pat Kandziora
Hazardous Waste Specialist

PK:da

LOCATION 374ISC DATE 810787 TIME 1515 DEPTH F000 LAB-SLIP-# 002899 END-DATE END-TIME 1530

TEST-# STORET-# TEST-NAME-AND-UNITS TEST-VALUE

EXTRA INFORMATION ABOUT SAMPLE: KANZIORA
 EXTRA INFORMATION ABOUT SAMPLE: F#2
 022 01002 ARSENIC AS, TOP UG/L <400
 031 01027 CADMIUM CD, TOP UG/L <20
 040 01034 CHROMIUM CR, TOP UG/L 100
 074 01051 LEAD PB, TOP UG/L 1300
 093 01105 ALUMINUM AL, TOP UG/L <1000
 097 00403 LAB PH SU 4.4

***** COMMENT: LIQUID-GLUING PROCESS WASTE-HOT PRESS

LOCATION 374ISC DATE 810787 TIME 1515 DEPTH F000 LAB-SLIP-# 002900 END-DATE END-TIME 1530

TEST-# STORET-# TEST-NAME-AND-UNITS TEST-VALUE

EXTRA INFORMATION ABOUT SAMPLE: KANZIORA
 EXTRA INFORMATION ABOUT SAMPLE: F#4
 022 01002 ARSENIC AS, TOP UG/L <400
 031 01027 CADMIUM CD, TOP UG/L <20
 040 01034 CHROMIUM CR, TOP UG/L <100
 074 01051 LEAD PB, TOP UG/L <100
 093 01105 ALUMINUM AL, TOP UG/L <1000
 097 00403 LAB PH SU 6.2

***** COMMENT: LIQUID-GLUING PROCESS WASTE-JOINTER

LOCATION 374ISC DATE 810787 TIME 1517 DEPTH F000 LAB-SLIP-# 002901 END-DATE END-TIME 1530

TEST-# STORET-# TEST-NAME-AND-UNITS TEST-VALUE

EXTRA INFORMATION ABOUT SAMPLE: KANZIORA
 EXTRA INFORMATION ABOUT SAMPLE: F#3
 022 01002 ARSENIC AS, TOP UG/L <400
 031 01027 CADMIUM CD, TOP UG/L <20
 040 01034 CHROMIUM CR, TOP UG/L <100
 074 01051 LEAD PB, TOP UG/L <100
 093 01105 ALUMINUM AL, TOP UG/L <1000
 097 00403 LAB PH SU 3.25

***** COMMENT: LIQUID-GLUING PROCESS WASTE-TORS PRESS

Document 5

CFI Issued a Responsible Party Notice

Antigo Area Headquarters
P. O. Box 310
Antigo, WI 54409

September 1, 1981

Mr. Lee Yach
Connor Forest Products
131 Thomas Street
Wausau, WI 54401

Wis. Dept. of Natural Resources

SEP 8 1981

ANTIGO AREA HEADQUARTERS
ANTIGO, WISCONSIN

Dear Mr. Yach:

Subject: Meeting on August 26 and In-Field Site Report Contents

This is a follow-up letter to our meeting at the Wausau Area office on Wednesday, August 26. At that time the Department pointed out that the disposal of the glue waste is not a Hazardous Waste violation but it is a violation of NR 180.13 of the Wisconsin Administrative Code covering Solid Waste. *In addition, the parameters found are not ~~totally~~ totally innocuous.*

The Department further clarified that the disposal practice must stop (which it has) and that the site used for this disposal must be abandoned. However, in order to determine the proper abandonment, a study detailing the site conditions must be completed. Abandonment may range from simple covering of the site to the excavation of the soil that ^{*has not been?*} ~~has~~ been contaminated along with ground water monitoring.

The in-field report which the Department is looking for should detail what site conditions exist now. Items such as soil type, surface water drainage, depth to groundwater, amount of waste disposed of at the disposal site, and a determination of the extent of groundwater contamination if any ^{*should be made*} ~~is~~ may be accomplished by analyzing the soil to ^{*The latter*} determine the amount of waste which passed through the soil or by moni-

Document 6

Estimated Volume of Material Dumped

4/5/82

Jim:

Your first question, how much waste has been disposed at the location, is the key issue to figuring further action. That, plus concentration of those wastes, will give us total loading values (estimates).

Sample from dump area (freshly dumped liquids) *totals

pH 5.9
 Al 340 ppm
 Ba 20
 Cd .12
 Cr .7
 Pb 1.9
 Ag Trace - undetected

According to Gary Nest of Connor Forest:

8 (55) gallon drums/week for four years assuming 52 weeks = 91,520 gallons

$$91.520 \text{ gal} \times \frac{4 \text{ qt}}{\text{gal}} \times \frac{1.06 \text{ l}}{\text{qt}} = 388,045 \text{ l}$$

Al $3.88045 \text{ l} \times 10^5 \times 340 = 131,935,300 \text{ ppm} = \underline{290.3 \text{ pounds}}$
Ba $3.88045 \text{ l} \times 10^5 \times 20 = 7.761 \times 10^6 \text{ ppm} = \underline{17.08 \text{ pounds}}$
Cd $3.88045 \text{ l} \times 10^5 \times .12 = 7.761 \times 10^6 \text{ ppm} = \underline{1.02 \text{ pounds}}$
Cr $3.88045 \text{ l} \times 10^5 \times .7 = 7.761 \times 10^6 \text{ ppm} = \underline{.6 \text{ pound}}$
Pb $3.88045 \text{ l} \times 10^5 \times 1.9 = 7.761 \times 10^6 \text{ ppm} = \underline{1.6 \text{ pounds}}$

Aluminum complexes with other ions and is stable in relatively acidic conditions. These complexes are mobile and migrate from upper to lower horizons where a net pH increase may result due to dissociation. A₂ horizon would be purged and materials tied up in B. Aluminum can chelate with metals, especially Fe, and consume some of the exchange capacity. If Fe is present at the interface of 3M and native soil, that is where Al would tie up providing conditions for deeper movement of other parameters.

If you look at what was found out there (at the site), the species are pretty evenly distributed. But the low concentrations suggest downward migration. In water (Al(OH)₃)_s (reaction of water + Al) solubility products are Al³⁺ + 3OH⁻¹. This may account for the rise in pH (relative to background) and chelation of some by M²⁺. (There's about a 1:2 relation of Al:Fe (Table 2). This could be why Ba and Pb dropped in the dump area - nothing to attenuate them. They might be with native soil interface or deeper.

The bottom line is what potential damage can these metals do?

Cr is found naturally at 46,000ppm in some soils. It is not real mobile according to some literature and it is a dietary requirement (to a small degree). I do not think Cr is a problem right now. In the fill Pb and Cd are both readily available for plant uptake, and are pretty hazardous to human health. I do not think these are a problem with the fill because of their concentrations and the duration of disposal. Ba is poisonous in aqueous solution. Looking at the drop from background and the loading from Al it would be nice to know whether this stuff went through to the real soil or complexed with Al in it. It seems as though it is a 3M material contaminant and being washed through by the dumping.

If we sample and find nothing in native soil, we can assume it is attenuated in the fill or else eluted to groundwater.

If we sample and find these parameters in native soil we will have to reevaluate the conditions. If Ba shows up in nearby wells someday, this source could be considered. I agree, we should find out whether their glue characteristics have changed in the last four years. You want to call them on this? If they have changed, we will have to find out what was used. Since we already are testing the biggies (heavy metals), we will be concerned with organics.

We ought to have an idea of what the fill is composed of.

A handwritten signature or set of initials, possibly 'P' or 'Pat', written in dark ink.

Document 7

WDNR Remediation Required



State of Wisconsin

DEPARTMENT OF NATURAL RESOURCES

Antigo Area Headquarters
P.O. Box 310
Antigo, WI 54409

Carroll D. Besadny
Secretary

September 10, 1982

File Ref: 4400

Mr. Lee Yach
Connor Forest Industries
P.O. Box 847
Wausau, WI 54401

Dear Mr. Yach:

Re: Soil Evaluation of the Connor Forest Industry's Disposal Area

The Department has completed its review of the Supplemental Soil Evaluation Report submitted by Soil Testing Services. The report does a good job of identifying what has occurred at the former glue resin disposal location. It is apparent from this report that the amount of potential contaminants disposed of at this site was quite small. Nevertheless, the introduction of any contamination to the environment can cause some degradation of the environment. For this reason, quantification of the problem and some type of proper abandonment of the disposal site are important. The Department, in general, agrees with your submitted proposal and conclusions. Implementation of the remedial measures in conjunction with the following recommendations and comments should properly close the site and clarify the extent of disposal.

1. The DNR has not made a request for groundwater monitoring at this time, contrary to the first paragraph of the STS report.
2. Subsequent filling since improper disposal practices were stopped should not have occurred. The placement of this new fill just complicates the clean up problem and adds to the material to be removed. Connors, at a minimum, should have checked with the Department before filling in this location.
3. Some items of clarification were needed in order to properly determine the materials balance. The answers were provided to the Department by a phone conversation with Paul Buszka of STS.
 - a. Table I - Connor Resin 1, 2, 3, were samples of glue resin collected at the disposal site.
 - b. Soil A - Soil samples taken adjacent to the disposal location.
 - c. Extent of glue migration was determined visually.
 - d. Reference to resin in and below the thin veneer of fill material means that 90% of the resin was in the top 1.2 ft. of soil determined by visual observation.
 - e. The resins disposed of were not hazardous.

Lee Yach, September 10, 1982

2

4. Removal of the resin contaminated soil and abandonment shall be completed before October 30, 1982.
5. The Department is of the opinion that this material can be disposed at the Marathon County Landfill. Jim Pellitteri, Marathon County Solid Waste Manager, shall be contacted and his approval obtained prior to hauling the waste to the site.
6. Abandonment of the site after soil removal should include topsoiling and seeding of the disposal site. Contact me after the material is removed so that an inspection of the area can be made.

Provided Connors complies with these requirements, the Department approves of the proposed remedial action.

If you have any questions, call Jim Anklam at 715-627-4317 or Gary Kulibert, 715-362-7616.

Sincerely,
North Central District



James Anklam
Area Solid Waste Specialist

JA:bb

cc: Paul Buszka, STS Consultant, 540 Lambeau, Green Bay, WI 54304
Bureau of SW Mgmt - GEF II/SW III
Foley & Lardner, First Wisconsin Center, 777 E. Wisconsin Center,
Milwaukee, WI 53202

Document 8
WDNR Approved Cleanup

Antigo Area Headquarters
P. O. Box 310
Antigo, WI 54409

November 22, 1982

4400

Lee Yach
Connors Forest Industries
P. O. Box 847
Wausau, WI 54401

Dear Mr. Yach:

Re: Abandonment of Connors Disposal Site

This is a follow-up letter to my inspection of the waste disposal site on the Connors property. On November 15, I met with you to look at this area behind the Connor Wausau Plant. The entire area where the glue waste was disposed has been excavated. The excavation was approximately 3-4 feet deep in an area approximately 100' x 50'. The excavated material was taken to the Marathon County Landfill. The area remains rather rough and unvegetated. You indicated that next spring this area will be leveled and vegetated.

When the final grading and seeding work is complete, Connors abandonment of the glue waste disposal site will be done. The Department appreciates the cooperation Connors has shown in this matter.

If you should have any questions concerning this or other matters, call me at 715-627-4317.

Sincerely,
North Central District

JAA
James A. Anklam
Area Solid Waste Specialist

JAA:bjs
cc: G. Kulibert - Rhinelander
Bureau of S.W. Mgmt., GEF II/SW III
Pat Kandziora Rhinelander

Document 9

WDNR Exploratory Trenches

Closure Plan

Hazardous Waste - SW/3

CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: January 13, 1986

File Ref:

4400

To: Gary Kulibert

JAN 14 1986

From: K.D. Markart *KDM*

Subject: Connor Forest Industries, Wausau Cabinet Shop, Wausau, WI

On January 7, 1986, exploratory trenching was conducted at the Connor Forest Industry's Cabinet Plant in Wausau, WI, to look for possible buried hazardous waste. CFI's contractor, Geraghty and Miller, Inc., was represented by Mr. Tony Pirelli. CFI's representatives were Mr. E. R. Corolewski and Mr. J. Shebuski.

Six trenches were dug about 150 feet apart. Lengths of the trenches were variable from 30-125' with an average depth of 12 feet. Geraghty and Miller documented the activity by physical measurements, soil sampling, photography and measurements for organic vapors.

In summary, no buried barrels were found. Concrete, demolition material, crushed barrels and metal observed along the bank were only superficial material. Trenching indicated 3M tailings (rock flour) to be the ubiquitous and pervasive backfill component. In trenches one and six, some wood and sawdust were uncovered at the bottom. A brief description of each trench is as follows. A more detailed description should be provided in the contractor's report.

Trench 1: Approximately 12 feet deep and 30 feet long

Uncovered four soil profiles. Mostly sand-gravel backfill, a 1-foot zone near the base of the trench had rotten logs and burlap sacks. No metal was found.

Trench 2: Approximately 15 feet deep and 30 feet long

Some metal strapping and wood near surface; remainder is 3M backfill. Only one soil profile was present.

Trench 3: Approximately 15 feet deep and 30 feet long

Some concrete slabs, plastic and metal near surface; remainder is 3M backfill. Only one soil profile present.

Trench 4: This was placed in an open area of the tree line at my request. Area looked disturbed within last five years; three pits with one trench 10 feet deep and 20 feet long. Minor metal straps at surface; remainder was 3M backfill. Only one soil profile present.

Trench 5: Approximately 10 feet deep and 50 feet long

Rusted barrels on surface, some metal strapping on first 1-foot layer of soil at tree line; remainder is 3M backfill. Only one soil profile present.

Trench 6: Approximately 8-15 feet deep and 130 feet long

This was dug across the reported 1981 fill area. About 50 feet out from tree line is a 30-foot long, 3-foot thick sawdust layer; remainder is 3M backfill. No metal waste was found. Only one soil profile present.

KM:bb

Attach.

cc: Hazardous Waste - SW/3

Document 10
In-Field Assessment Results
Closure Plan

GERAGHTY & MILLER, INC.

March 1995

IN-FIELD ASSESSMENT
CONNOR FOREST INDUSTRIES, INC.
WAUSAU CABINET PLANT
WAUSAU, WISCONSIN

GERAGHTY & MILLER, INC.

IN-FIELD ASSESSMENT
CONNOR FOREST INDUSTRIES, INC.
WAUSAU CABINET PLANT
WAUSAU, WISCONSIN

March 4, 1986

Prepared for:
Foley & Lardner
777 East Wisconsin Avenue
Milwaukee, Wisconsin 53202

Prepared by:
Geraghty & Miller, Inc.
Ground Water Consultants
322 East Michigan Street
Milwaukee, Wisconsin 53202

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IN-FIELD CONDITIONS
CONNOR FOREST INDUSTRIES, INC.
WAUSAU CABINET PLANT
MARCH 4, 1986

INTRODUCTION

During a routine inspection of the Wausau Cabinet Plant property, Connor Forest Industries (CFI) personnel noted a number of drums and various metal debris along the southern fence line of the property. The Wisconsin Department of Natural Resources (DNR) was notified immediately of the site conditions. Shortly after noting this situation a more formal inspection (August 28, 1985) involving representatives of CFI, Geraghty and Miller, Inc., and Foley and Lardner was carried out. On September 3, 1985, representatives of the Wisconsin DNR carried out an inspection of the Wausau Cabinet Plant property in addition to inspecting the CFI Wausau Toy Plant.

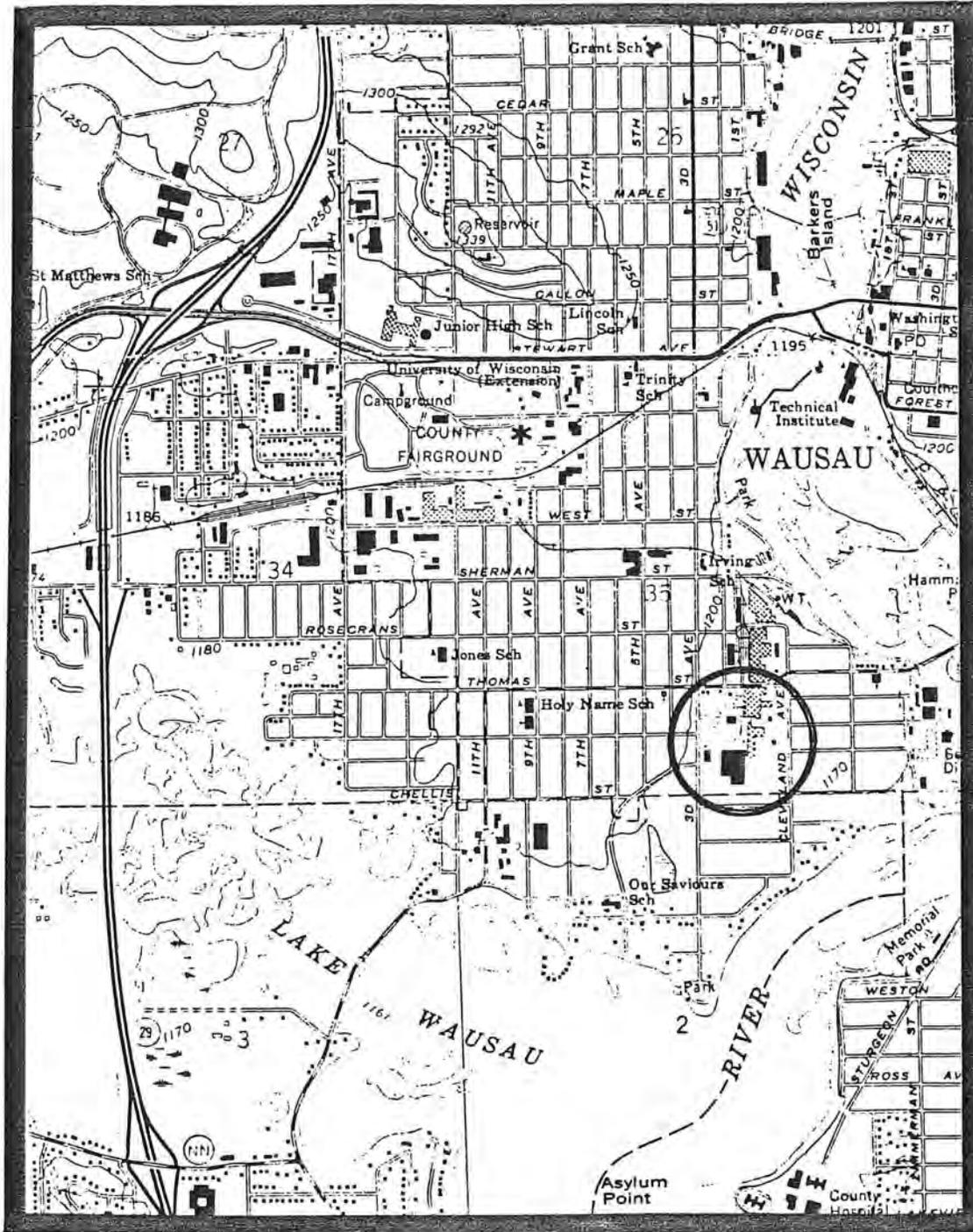
In response to a request by the Wisconsin DNR (letter to Mr. E.R. Corolowski, Connor Forest Industries, Inc., from Mr. Gary F. Kulibert, Wisconsin DNR, dated September 23, 1985), and based upon inspection of the site, a work plan was formulated. The goals of the work plan were to examine site conditions in areas where drums were found, assess whether soil or ground water contamination existed in these areas, and determine if any steps needed to be taken to protect health and the environment.

As part of the work plan prepared for the Connor Forest Industries Cabinet Plant, and submitted to and approved by the DNR, seven separate work tasks had been identified. It was stated in the explanation of these tasks that a review would be conducted after the completion of each task in order to determine if sufficient data had been assembled to terminate the investigation. The purpose of this report is to review the results of each work task up to this point, and to provide recommendations concerning the termination of the investigation at this site.

SITE DESCRIPTION

The CFI Wausau Cabinet Plant is located west of the Wisconsin River in Wausau, Wisconsin (Figure 1). The site is approximately 22 acres in size, and is located at the southwest corner of Thomas Street and Cleveland Avenue. The site is located on what may have been an old flood plain of the Wisconsin River, approximately 40-60 feet above the current flood plain. To the north of the plant is another wood manufacturing plant operated by the Crestline Company.

The southern 1/3 of the plant site is generally underlain by a thick fill layer of fine-grained rock flour, that appears to have originated from a nearby Minnesota Mining and Minerals (3M) facility that produces dyed, coarse grained, sand for roofing materials. The deposition of this fill material has resulted in a fairly steep slope along the far eastern and southern exposures of the property. Much of this sloped area (as shown on Figure 2) is thickly forested by opportunistic types of vegetation. It is in this sloped area that the exposed drums and construction debris had been found (Figure 2).



Scale 1:24,000



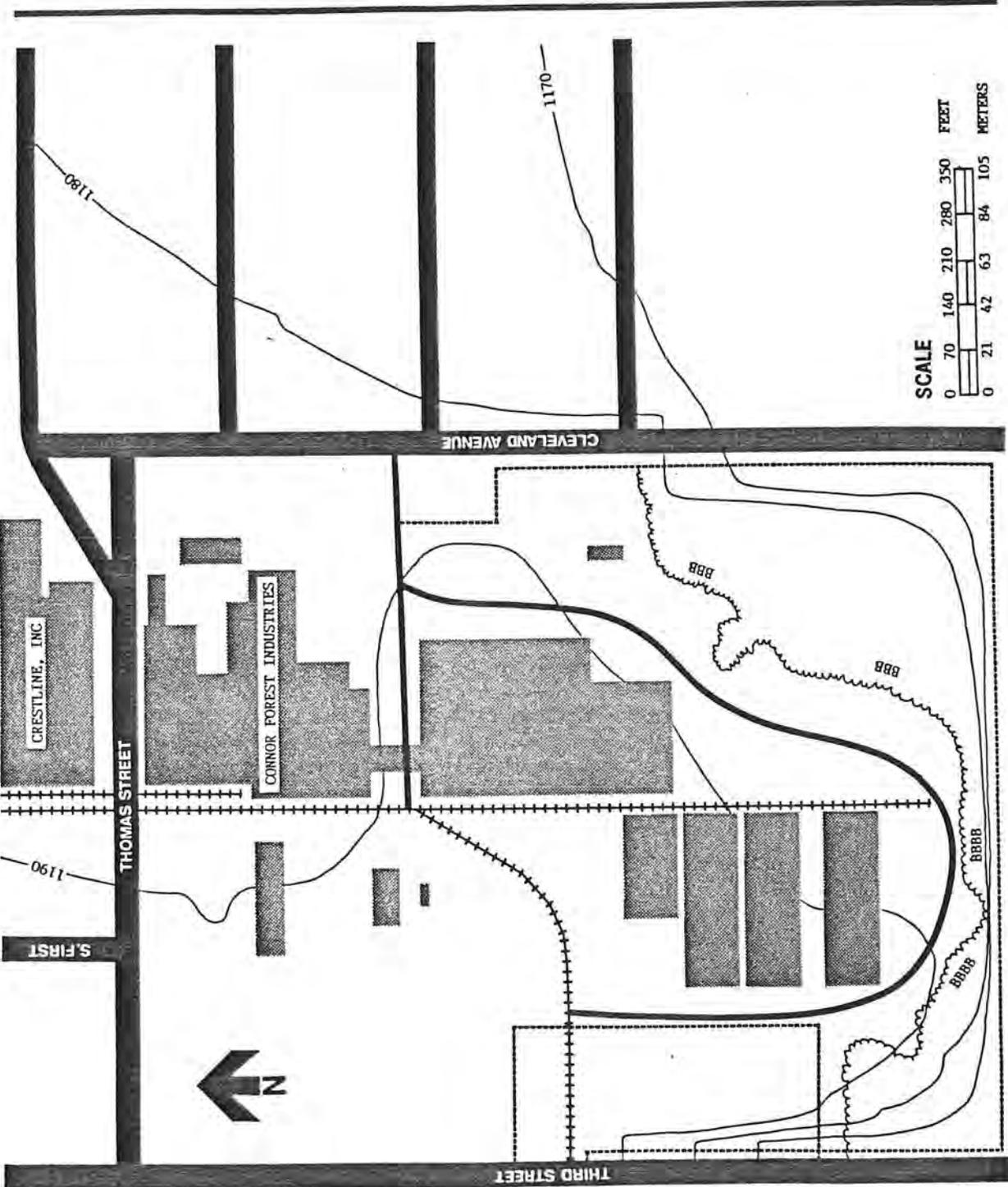
SITE LOCATION MAP
CONNOR FOREST INDUSTRIES
WAUSAU CABINET PLANT

FIGURE 1: LOCATION OF CONNOR FOREST INDUSTRIES, INC.
WAUSAU PLANT, WAUSAU, WISCONSIN

FIGURE 2.

CONNOR FOREST INDUSTRIES, INC
WAUSAU PLANT
WAUSAU, WI

- KEY**
- +++++ RAILROAD
 - FENCE
 - ===== ROAD
 - ~~~~~ TREELINE
 - █ BUILDING
 - BBB EXPOSED DRUMS
 - TOPOGRAPHIC CONTOUR (FT ABOVE MSL)



SITE HISTORY

The CFI facility is no longer operating, but was once the site of an extensive cabinet making operation. The operation consisted of the entire cabinet making process: the production of the plywood for the cabinets, construction of the cabinets, and the various phases of finishing the final product. The cabinet operation was closed in July, 1985, and the plant is permanently closed down. Prior to the CFI operation (1951) the property was owned by the Underwood Veneer Company and was the site of a plywood and veneer manufacturing operation.

Waste products generated at the plant consisted primarily of spent glue resin, and the scrapings and solid portion of machine cleaning operations. The primary chemicals used at the site include:

- o Various glues
- o Paints, stains, finishes and solvents for cleanup
- o Petroleum products

In the past, glue residues and scrapings from machine cleaning operations were disposed of on-site in a shallow pit to the southeast of the plant. This disposal area was investigated by the DNR and by CFI in 1981 and 1982. The area has since been excavated and regraded. Contamination of soils at this site was minor and it was determined by the DNR that in the future these non-hazardous wastes were to be disposed of in the Marathon County Sanitary Landfill. Landfill disposal of wastes was carried out until the plant closure in 1985.

During inspection of the CFI site numerous drums and construction debris were noted along the toe of a slope along the southern fence line of the site (Figure 2). The drums were rusted, crushed, and partially buried. The condition of the drums, and the age of the trees growing among them, indicated that the drums had been in place for an estimated 15-25 years. Many of the drums appeared to have been covered at one time, and have subsequently been exposed by erosion along the toe of the slope and along drainages perpendicular to the slope. The drums have not been inventoried, but it was estimated that 50-75 of them were distributed along the site boundary. Many of the drums were inspected to see if they contain solids, liquids, or if they were empty. A few drums contained some liquid, however, based on their condition it is probable that the liquid was rain water. Other drums contained solids; either soil or in some cases glue resins were identified.

Construction debris was also identified along the slope. This debris included wood, metal strapping, stone, and other

GERAGHTY & MILLER, INC.

material. The soil matrix surrounding much of the waste, and around the site, is sand. This sand was brought to the site and was used as fill material. This fill material is tailings (rock flour) from a local 3M operation. The sand is mined for roofing material and is often dyed, therefore much of the sand at the site is colored.

March
1986

RESULTS OF IN-FIELD ASSESSMENT

The following tasks were proposed to address, in a phased approach, the concerns of the Wisconsin DNR and CFI in evaluating the impact of waste disposal activities at the Wausau Cabinet Plant. It was expected that review would occur at the completion of each task in order to determine if sufficient data had been assembled to terminate the investigations or if further investigations were necessary.

TASK 1: PREPARATION OF SITE MAP

Several maps exist that cover the area around the CFI plant site in Wausau. A base map was prepared that combined features from the available sources (Figure 2). The maps and sources of information used included: a CFI plant drawing, the USGS Wausau West 7.5' topographic quadrangle, an area map prepared for an on-going investigation at the Crestline Cabinet Plant adjacent to the site, and on-site observations.

The base map depicts site topography, the location of buildings and key facilities, roads and trails, and the location of past and present waste disposal activities. It is important to note that the property is relatively flat with the exception of a bluff or ridge along the southern and eastern boundaries of the site.

TASK 2: DOCUMENTATION OF CHEMICAL USAGE

Five groups of industrial chemical products were used at the Connor Forest Industries Wausau Plant Site during the manufacturing of plywood and kitchen cabinets and are described below.

Finishes and Additives

This group of products includes a long list of various wood stains, toners, topcoats, glazes, sealers, and paints, most of which were spray-applied during the manufacture of kitchen cabinets. Also included are a group of catalysts and reducers which were used to decrease or increase the cure time of the various finishes. The quantity of finishes and additives used at the Wausau Plant Site is estimated to be 6000 gallons/month.

The disposal practices for this group of products varied with each finish or additive, but if there was a residue from use of the product, (and often there was none), the residue or waste

material was generally dealt with by one of three methods: 1) the residue was collected in cloth rags which were picked-up by Industrial Towel & Uniform of Neenah, Wisconsin, for cleaning and reuse; 2) solidified material, including ash from the boiler, was stored in drums after cleanup, then removed for disposal, or; 3) cheese-cloths, which were used to wipe frames, were burned when dirty.

The chemical composition of each of the various finishes or additives differs from product to product. A typical product, lacquer sealer, contains:

1. Toluene
2. Isopropanol
3. BIS Phthalate
4. 2-Butanone
5. 2-Butoxyethanol
6. Butanol
7. Methyl Alcohol
8. Dimethyl Ketone

A compendium of information related to chemicals used at the Wausau Plant is included in "Materials Used at Connor Forest Industries, Inc., Wausau, Wisconsin, Cabinet Division." The following paragraphs summarize information from the report.

Glues and Additives

Two different types of glues were used in the manufacturing operations. Urea formaldehyde resin was used to laminate wood veneer to core stock in the manufacture of plywood, and polyvinyl acetate was used as an assembly glue in the manufacturing process. Any residue of the glues was collected in drums and analyzed for proper disposal.

Additives added to the glues included an ammonium salt compound (used to speed curing time of the glue) containing 100 ppm of ammonia and 500 ppm of ammonium thiocyanate, and furfuryl alcohol (used to slow curing time of the glue). These additives were consumed in the manufacturing process. Approximately 815 gallons of glues and additives were used each month.

Petroleum Products

Petroleum Products used at the Wausau Plant site include motor oils used as engine and transmission lubricants for all gasoline and diesel powered vehicles, lubricants for air compressors, bearing grease, pipe cutting fluid, gear lubricants, brake fluids and antifreeze. Any residues or used fluids which were not sent to a recycling center on Town Line Rd., were generally small

*See only
recycled
oil*

GERAGHTY & MILLER, INC.

amounts which were swept up with sawdust and burned. Approximately 240 gallons of petroleum products were used each year.

Boiler Chemicals

Chemicals were added to the boiler water at the Wausau Plant site in order to inhibit scale precipitation, oxygen corrosion, and condensate-line acidic corrosion. No residues were produced in the use of these products since the boiler operations were a closed system. An example of a chemical which was added to the boiler water to inhibit scale precipitation was a sodium hydroxide polymer, of which a major component was sodium hydroxide. Another chemical added to the boiler water was catalyzed sodium sulfite, which was used to protect the boiler from oxygen corrosion. Approximately 7400 pounds of boiler chemicals were used each year.

Booth Coating

An aqueous emulsion of oil and paraffin wax was used to prevent glue build-up on work tables ahead of electronic gluers. Any residue produced during clean-up was collected and burned with sawdust. Approximately 20 gallons of booth coating was used each year.

TASK 3: AIR PHOTO ANALYSIS

An analysis of air photos covering the Connor Forest Industries site in Wausau was carried out and consisted of studying sets (stereo pairs) of air photos for the years 1960, 1968, and 1978. The primary goal of the assessment was to determine the probable source, the time of emplacement, and extent, of the 55-gallon drums and construction debris. Interpretations of the photos are shown in three maps for the site: Figure 3 (1960), Figure 4 (1968), and Figure 5 (1978). The features of the site for the three time periods are described below:

1960 - The site consists of one major building in the northeast corner of the property, a parking lot, an outside wood storage area, and two small out buildings. The southern half of the site is grass-covered with two small cleared areas. The southern perimeter of the property is wooded. These trees appear to be along the toe and base of the bluff along the southern part of the site. The top and face of the slope appear to be covered with grass or small brush. There are no obvious piles of fill material and there is little topographic relief other than the bluff along the southern part of the site.

FIGURE 3.

CORROR FOREST INDUSTRIES, INC.
WAUSAU PLANT
WAUSAU, WI

1960 SITE CONDITIONS
BASED ON AIR PHOTO INTERPRETATION
(8/16/60 PHOTO)

KEY

- +++++ RAILROAD
- ROAD
- HOODED AREA
- CLEARED AREA (LITTLE OR NO GRASS/BRUSH)
- SLOPE

322 East Michigan Avenue
Suite 200
Milwaukee, Wisconsin 53202

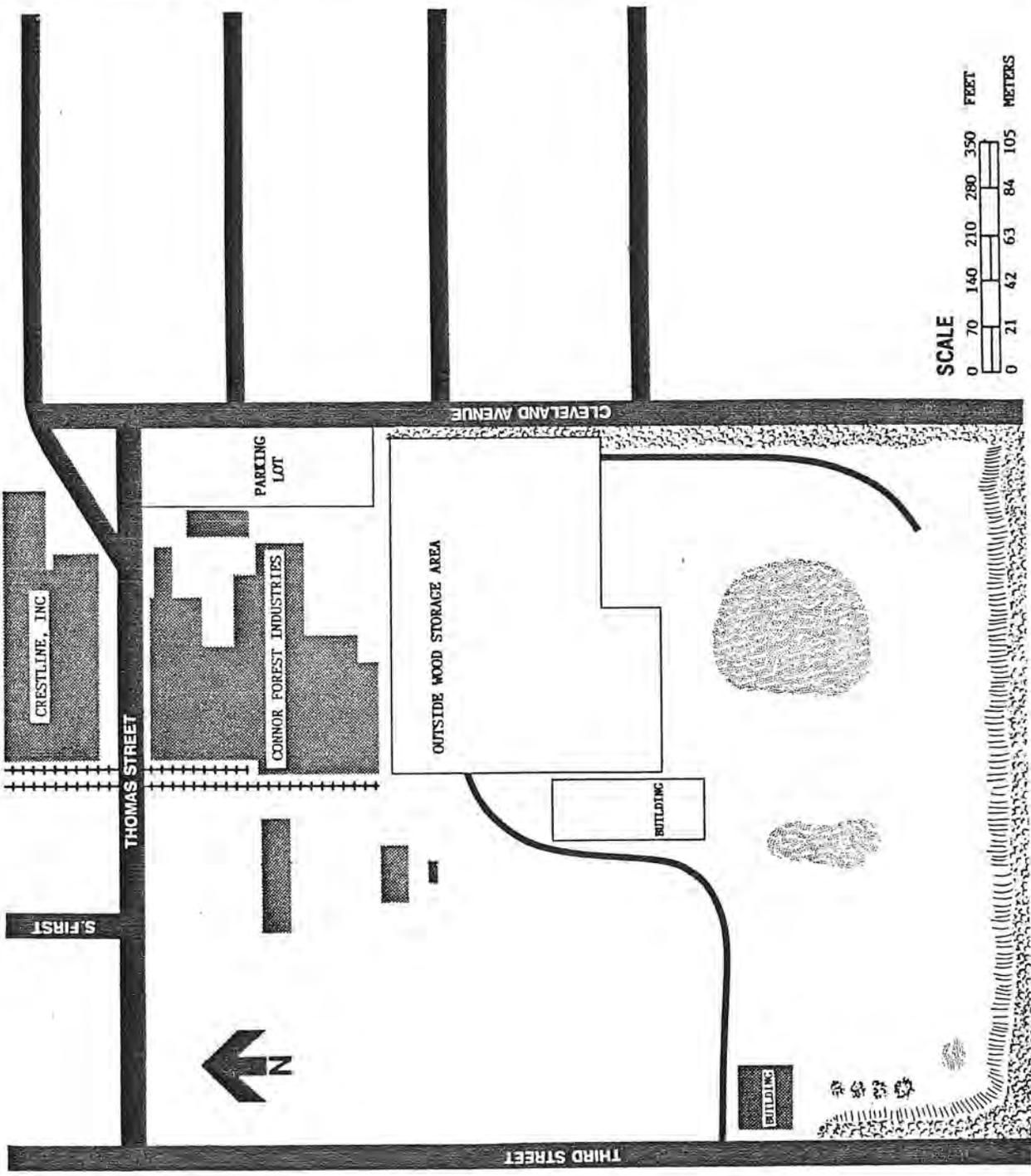


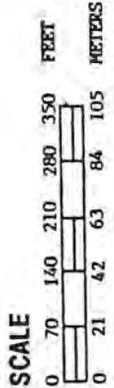
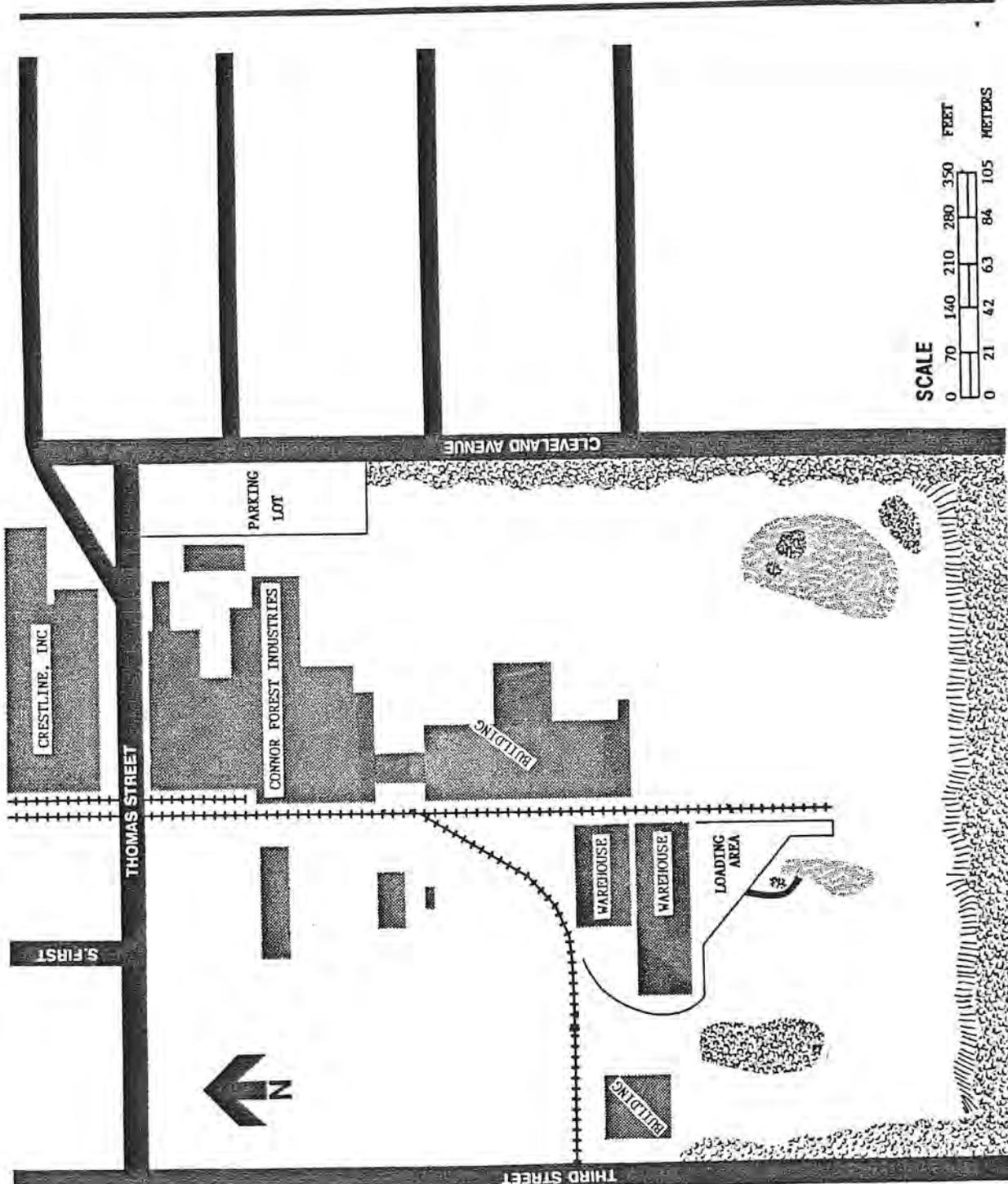
FIGURE 4.

CONNOR FOREST INDUSTRIES, INC.
WAUSAU PLANT
WAUSAU, WI

1968 SITE CONDITIONS
BASED ON AIR PHOTO INTERPRETATION
(5/15/68 PHOTO)

KEY

- +++++ RAILROAD
- ROAD
- WOODED AREA
- CLEARED AREA (LITTLE OR NO GRASS/BRUSH)
- ||||| SLOPE



322 East Michigan Avenue
Suite 200
Milwaukee, Wisconsin 53202

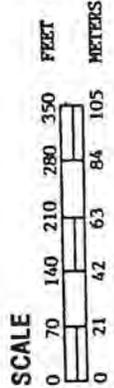
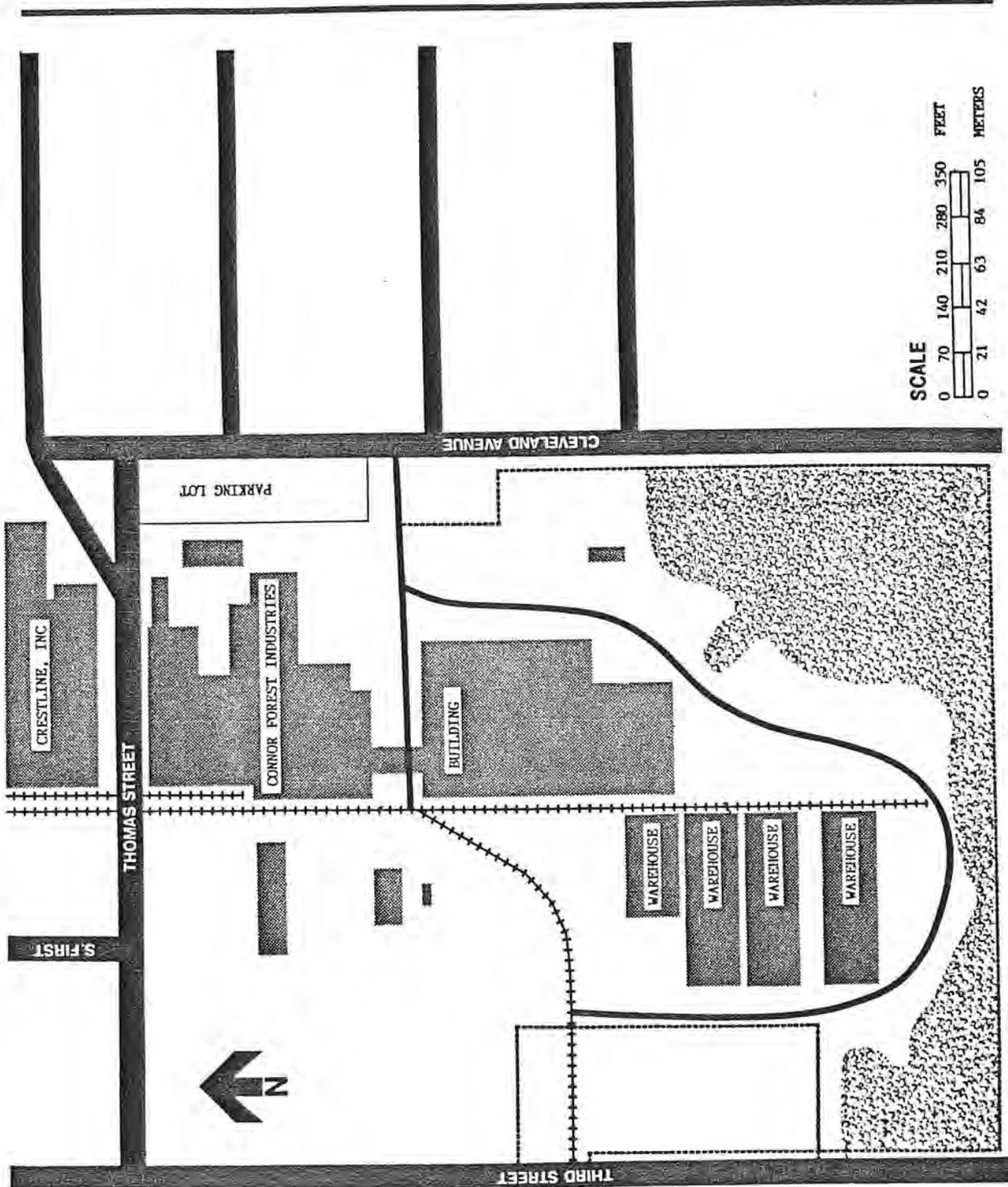
FIGURE 5.

CONNOR FOREST INDUSTRIES, INC
WAUSAU PLANT
WAUSAU, WI

1978 SITE CONDITIONS
BASED ON AIR PHOTO INTERPRETATION
(9/23/78 PHOTO)

KEY

- +++++ RAILROAD
- FENCE
- ROAD
- ▨ WOODED AREA
- BUILDING



1968 - The site consists of the main plant building in the northeast corner of the site, a parking lot, four out buildings, and a loading area. The southern half of the property is grass covered with a single cleared area and several small wooded areas. The extreme southern boundary of the site is wooded (along the toe and base of the bluff) and the slope along the southern perimeter is covered with grass and small brush. The slope in the 1968 photo is very apparent due to the bright southern sun. The two out buildings present in 1960 have been removed as have the wood piles stored outside.

1978 - The site is essentially the same as current conditions. The building south of the main plant has been expanded, the small storage area previously identified (cleared area) has been replaced by two large warehouses, the area is now fully wooded south of the on-site buildings. The heavy vegetation covers all aspects of the slope as well as a significant portion of the flat areas of the site (southeast and southwest corners of the property).

Interpretation of Results

It is evident from the air photos that several on-site changes occurred between 1960 and 1978. One important change is that the pair of buildings that were present in 1960 had been removed prior to 1968 to make room for two new warehouses. The removed buildings were located in the central portion of the property and along the western perimeter of the property. It is possible that the drums and construction debris recently identified on-site may be a result of the removal of these buildings.

An additional change in site conditions that is important to note is the destruction of the small cleared area (storage area) and the construction of the two large warehouses. This operation is reported to have required grading and filling (fill from the nearby 3M operation is evident in this area). The very minor changes in site topography indicate that fill thickness was not extensive and is probably thickest immediately behind the southernmost warehouse.

Both phases of new construction may have yielded debris that was likely to have been pushed "south" towards the bluff behind the plant. The USGS quadrangle, and the general pattern of tree growth in the area, indicate that this bluff is not a recent addition to the landscape, but is a geomorphic feature related to the nearby Wisconsin River.

The extent and age of the trees in the southern portion of the site is also important. The majority of the trees appear to have grown around the drums and debris. Many of the trees are 4 to 8 inches in diameter.

Based on the air photo interpretation, the extent of the waste is not great. The areal distribution is uncertain, but the areas of greatest waste concentration are likely to be those currently exposed (four major areas). The thickness of waste is probably not greater than 3 to 10 feet. Waste deposition probably occurred between 1968 and 1978, most likely in the early 1970's. The source of the waste may have been from material stored from earlier construction activities (pre-1968), but is more likely to have been from post-1968 activities (such as the clearing that appears to have been used for outside storage since 1960). In general, it does not appear that deposits of drums, other than those already identified, are likely to be found on the property. The above interpretations are based upon the following:

1. Site topography has not been significantly altered since 1960.
2. The base of the slope has been wooded since 1960.
3. Grading was likely to occur during the final construction phase on-site (southern warehouses).
4. Heavy tree growth on the slope, and remainder of the property, occurred after 1968.

TASK 4: SOIL SAMPLING

Soil sampling activities described in Task 4 of the work plan were not carried out. During a meeting held on December 5, 1985, by personnel from CFI, DNR, Geraghty & Miller, and Foley and Lardner, it was concluded that initial exploration by soil trenching would be appropriate. The use of a backhoe to explore the areas of identified waste was recommended and approved.

Task 5: GEOPHYSICS

Geophysical methods were not utilized at the Wausau Plant Site because it was determined that the probable lateral extent of waste burial was not great. This was determined by use of the air photo analysis, and later verified by the exploratory trenching.

TASK 6: EXPLORATORY TRENCHING

In order to determine the lateral and vertical extent of on-site waste and to verify the interpretation of the air photos, a number of excavation sites were identified, and submitted for approval to the DNR. On the morning of January 7, Geraghty & Miller personnel met at the Wausau Plant Site with representatives from: Connor Forest Industries; Ken Marquardt from the Antigo Office of the Wisconsin Department of Natural Resources; and the local contractor hired by Connor Forest Industries to conduct the trenching. The preliminary selection of trenching sites was reviewed, changes or additions were made as deemed necessary, and the final locations were approved by the DNR representative. An example of a change which had to be made was the location of Trench #1, which had to be altered slightly to ensure that no damage would occur to a nearby fire-hydrant line. The location of trenches dug at the CFI site are shown in Figure 6.

The six trenches were dug at distances that averaged between 150 and 200 feet apart along the tree line on the southern edge of the Wausau Plant Site. Geraghty & Miller personnel and the DNR representative were on site to oversee the trenching operation, collect samples of the earth material from the trenches, and to ensure that evidence of any extensive deposits of buried drums was not overlooked. No buried drums, no visible soil contamination, nor any material indicative of buried drums, were uncovered at any of the trench locations.

As an additional assessment method, a portable "Total Ionizables Present" vapor analyzer was utilized at each of the trench locations to evaluate the amount of volatile organic chemicals present in the soil material. None of the trench locations contained any indications of volatile organic chemicals at a concentration higher than background levels. Soil samples were also collected from each trench location to be taken back to the lab and tested with the vapor analyzer after the samples had equilibrated to room temperature. The concentration of volatile organic chemicals in each soil sample at room temperature was equal to or lower than background level concentrations.

Detailed Description of Exploration Trenches

Trench #1 : Located approximately 105 feet east-southeast of the Assembly building (Figure 6), Trench #1 was 41 feet long, 12 feet deep, and 5 feet wide. This is the only trench which contained evidence of multiple backfill operations. Three separate intervals of rock flour were visible, separated by what appeared to be local surface soil material. This rock flour material is the fill material deposited from the nearby 3M plant. No evidence of buried drums or contaminated material was uncovered at this pit location.

Trench #2 : Located approximately 84 feet south of the fire hydrant (Figure 6), Trench #2 was 69 feet long, 6 to 8 feet deep, and 5 feet wide. This trench was not identified on the trench location map submitted to the DNR, but was requested by Ken Marquardt of the Wisconsin DNR in the field. Rock flour was the predominate material present in the pit except for a section of the trench which cut through a portion of the glue resin landfill. In this section, a lens of what appeared to be sawdust and glue resins was present. No evidence of buried drums or contaminated material was uncovered at this pit location.

Trench #3 : Located approximately 104 feet east-southeast of Warehouse #4 (Figure 6), Trench #3 was 28 feet long, 12 feet deep, and 5 feet deep. Rock flour was the predominate material of the trench, with some cement scraps present. No evidence of buried drums or contaminated material was uncovered at this pit location.

Trench #4 : Located 1 foot south of the road, directly south of the southeast corner of Warehouse #4 (Figure 6), Trench #4 was 31 feet long, varied from 7 to 11 feet deep, and was 5 feet wide. Rock flour was the only material exposed throughout the entire pit, indicating the probability of a single fill occurrence. No evidence of buried drums or contaminated material was uncovered at this pit location.

Trench #5 : Located 119 feet directly south of Warehouse #5 and 140 feet west of Trench #4 (Figure 6). The main trench at Trench #5 was 24 feet long, 9 feet deep, and 5 feet wide. Two smaller trenches were also dug, at angles off to either side. These trenches were 13 feet long, 13 feet deep, and 5 feet wide. Rock flour was the only material exposed throughout the entire pit, indicating the probability of a single fill occurrence. No evidence of buried drums or contaminated material was uncovered at this pit location.

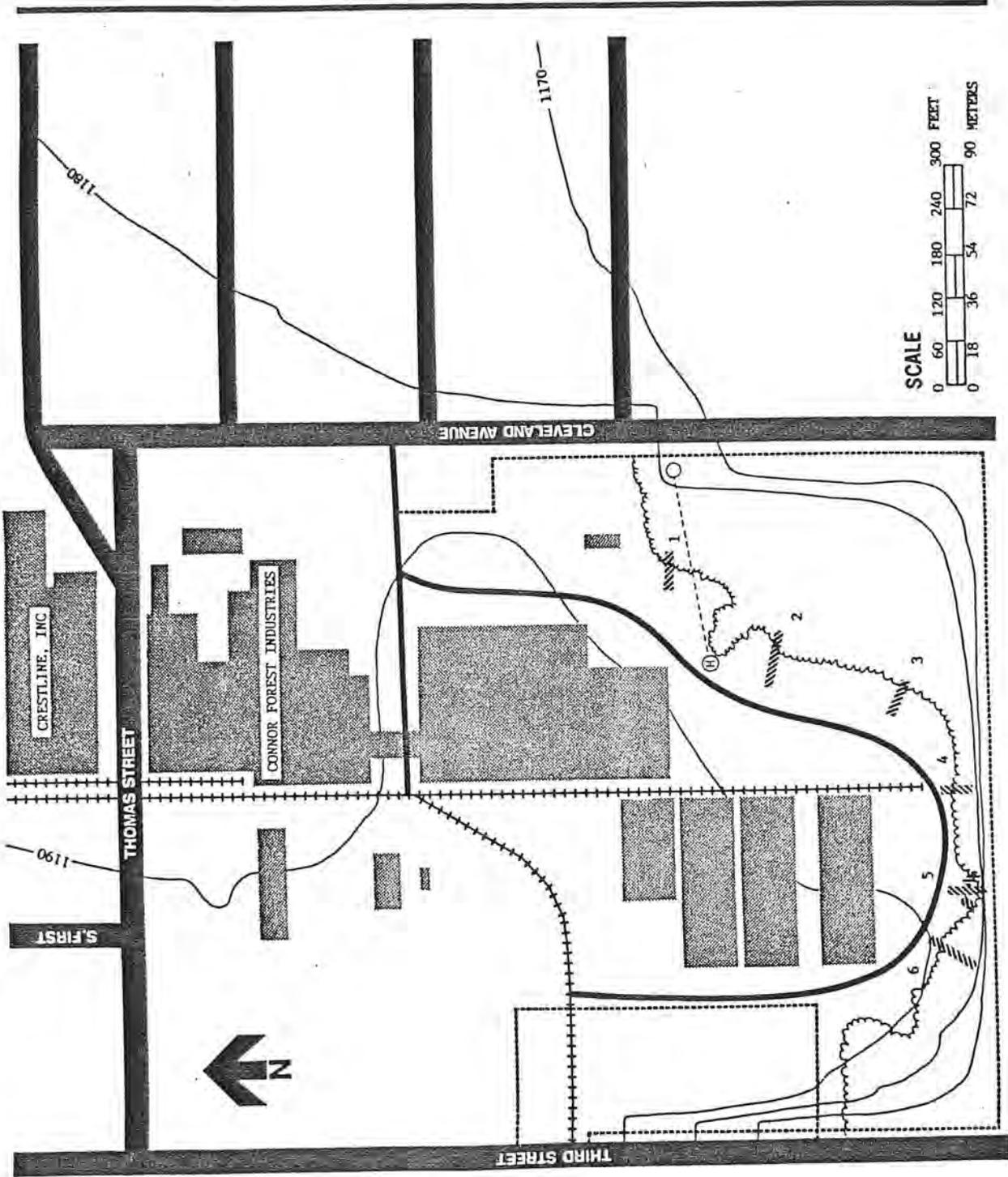
Trench #6 : Located 102 feet south-southeast of the southwest corner of Warehouse #4, and 67 feet west of Trench #5, Trench #6 is 69 feet long, 8 feet deep, and 5 feet deep (Figure 6). This trench was not identified on the trench location map submitted to the DNR, but was requested by Ken Marquardt of the Wisconsin DNR in the field. Rock flour was the only material exposed throughout the entire pit, indicating the probability of a single fill occurrence. No evidence of buried drums or contaminated material was uncovered at this pit location.

FIGURE 6.

CONNOR FOREST INDUSTRIES, INC.
MAUSAU PLANT
MAUSAU, WI
LOCATION OF TRENCHES
JANUARY 7, 1986

KEY

- +++++ RAILROAD
- FENCE
- ===== ROAD
- ~~~~~ TREELINE
- █ BUILDING
- ▨ TRENCH
- TOPOGRAPHIC CONTOUR (FT ABOVE MSL)
- ⊙ HYDRANT AND WATER LINE



CONCLUSIONS AND RECOMMENDATIONS

An in-field assessment program for Connor Forest Industries Wausau Plant Site has been carried out to examine site conditions in areas where drums were found, assess whether soil or ground water contamination existed in these areas, and determine if any steps are needed to protect health and the environment.

The following conclusions can be made from the results of the on-site exploration trenches, the soil sample analyses, the air photo analysis, and the site history:

- o The occurrence of abandoned drums at the Wausau Plant Site is limited to the surface or near surface, and no extensive deposits of buried drums are likely to be present.
- o No evidence of soil contamination related to the drums identified on-site was found.
- o The extent and age of the identified drums, and the lack of visible soil contamination, would likely preclude the existence of extensive ground water contamination beneath the site.

Representatives of the Wisconsin DNR were on-site during the trenching and sampling operations and have indicated that the Wisconsin DNR is satisfied that the Wausau Plant Site has been sufficiently investigated and concur that no unidentified deposits of buried drums or related areas of contaminated soil or ground water are present.

Based upon available on-site investigations, Geraghty & Miller recommends that the in-field assessment of the Connor Forest Industries Wausau Plant Site be terminated. However, it is recommended that the exposed drums at the CFI Wausau Plant Site be removed for both safety and aesthetic concerns.

Respectfully Submitted,

Geraghty & Miller, Inc.



Edward R. Rothschild
Senior Scientist



William Seevers
Vice-President

Document 11
City Testing Detection

DEPARTMENT OF NATURAL RESOURCES
NORTH CENTRAL DISTRICT

SEP 05 1986

FROM: JAN DOBIZL *Bary Kulibert* Date: 9/2/86

<u>NC DISTRICT</u>	<u>GEF II-SW/3</u>	<u>SYSTEMS MGT. SEC.</u>	<u>RESIDUALS MGT. SEC.</u>
<u>G. Kulibert</u>	<u>P. Didier</u>	<u>R. Fischer</u>	<u>R. Schuff</u>
<u>J. Kreitlow</u>	<u>B. Schultz</u>	<u>S. Haidinger</u>	<u>G. Mitchell</u>
<u>M. Miller</u>	<u>K. Thompson</u>	<u>D. Charles</u>	<u>D. Sopcich</u>
<u>K. Markart</u>		<u>E. Updike</u>	
<u>M. Johnson</u>	<u>HAZ. WASTE MGT.</u>	<u>W. Rinquist</u>	
<u>D. O'Malley</u>		<u>L. Polczinski</u>	
<u>D. Urso</u>	<u>R. O'Hara</u>		
<u>B. Smith</u>	<u>B. Eckdale</u>		
<u>T. Bashaw</u>	<u>D. Stensby</u>		
<u>D. Daniels</u>	<u>X M. Giesfeldt</u>	<u>AREA DIRECTORS</u>	
<u>M. DeBrock</u>	<u>B. Zellmer</u>	<u>D. K. Tyler</u>	
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<u>G. Egtvedt</u>		<u>R. Smith</u>	
<u>A. Wilson</u>			
<u>C. Weister</u>			
<u>Written Comments by</u>		<u>J. Miller-WCD</u>	
<u>File</u>		<u>S. Glor-SED</u>	
<u>Note and return</u>		<u>D. Rossberg-LMD</u>	
<u>For your information</u>		<u>J. Brusca-SD</u>	
<u>Please see me by</u>		<u>G. LeRoy-NWD</u>	
<u>Please follow through</u>			
<u>Note and toss</u>			

TO:

① ~~O'Hara FYI~~ 9/3/86
 ② ~~Zelner FYI~~
 ③ ~~Edelstein~~ cross reference with SNE
 ④ Connors Forrest Indust. File
 → - Wausau location
 cc in SNE file



August 25, 1986

Mr. Bill Nagle
Wausau City Attorney
City Hall
Wausau, WI 54401

Re: Connors Forest Industries Test Results

Dear Mr. Nagle:

Attached are results for the samples collected on Friday, August 22, 1986 at the Connors site. Table 1 summarizes the samples received by Zimpro as well as a general description of location and depth. Table 2 lists results for total solids and alkalinity. The alkalinity was found to be quite high in two samples, TBl-4 and TBl-5. These values appear to indicate the presence of contaminants.

RCRA metals are summarized in Table 3. There appears to be no high level contamination due to tested metals in any of the samples.

Organic analyses included the testing for penta-chlorophenol (PCP), mineral spirits, and VOCs. PCP and mineral spirits are given in Table 4 and VOCs in Tables 5-8. Traces of volatile aromatics were detected in samples from test boring #1. Low levels of tetrachloroethylene (Perc) were detected in a sample from test boring #3.

Although no PCP or mineral spirits were detected, there appears to be other forms of contaminants in some of the samples. A GC-MS profile performed on TBl-2 indicated the presence of volatile aromatics and long chain alcohols and acids (i.e. $C_{10}-C_{20}$). This may possibly

Mr. Bill Nagle
August 25, 1986
Page 2

be due to lacquers or other solvents. Sample TB3-1 from the debarking area presented difficulties for the analysis of mineral spirits. The sample would polymerize in the syringe needle upon injection into a gas chromatograph. We were informed that samples from this area may contain glue resins which would explain the polymerization upon heating.

If there are any questions concerning these results, please give me a call.

Sincerely,

ZIMPRO INC.


David L. Schumacher
Instrumentation Chemist

DLS/lis

cc: J.W. Barr
J.R. Salkowski
Bruce Cutright - Geraghty & Miller
Gary Kulibert - DNR Rhinelander

Enclosures

Table 1

Sample Summary

<u>Sample</u>	<u>Depth (ft)</u>	<u>Location</u>	<u>Analytical No.</u>
TB1-1	0 - 1.5	Storage Tank 1	21158
TB1-2	1.5 - 3.0		21159
TB1-3	3.0 - 4.5		21160
TB1-4	4.5 - 6.0		21161
TB1-5	10.0		21162
TB1-6	15.0		21163
TB1-7	20.0		21164
TB1-8	22.5 - 24.5		21165
TB2-1	0.5 - 2.5	Compressor Room	21166
TB2-2	2.5 - 4.5		21167
TB2-3	4.5 - 6.0		21168
TB3-1	0 - 1.0	Debarking Area	21169
TB4-1	0.0 - 2.0	Machine Shop	21170
TB4-2	2.0 - 3.0		21171

Table 2

Extractable Metals (mg/l)
EP Tox. Procedure

<u>Sample</u>	<u>Ag</u>	<u>As</u>	<u>Ba</u>	<u>Cd</u>	<u>Cr</u>	<u>Hg</u>	<u>Pb</u>	<u>Se</u>	<u>Analytical No.</u>
TB-1 #1	0.013	0.2	0.094	0.018	X	X	X	X	21158
TB-1 #2	0.007	0.3	0.398	0.016	X	X	0.06	X	21159
TB-1 #3	0.007	0.2	0.181	0.010	X	X	X	X	21160
TB-1 #4	0.007	0.3	10.7	0.012	X	X	X	X	21161
TB-1 #5	0.016	X	5.21	0.008	X	X	X	X	21162
TB-1 #6	0.009	X	0.116	X	0.019	X	X	X	21163
TB-1 #7	X	0.3	0.117	X	X	X	X	X	21164
TB-1 #8	0.010	0.3	0.037	X	X	X	X	X	21165
TB-2 #1	0.008	0.2	0.082	0.007	X	X	X	X	21166
TB-2 #2	0.012	0.3	0.095	X	X	X	X	X	21167
TB-2 #3	0.008	0.2	0.146	0.007	X	X	X	X	21168
TB-3 #1	0.008	0.4	0.042	0.007	X	X	X	X	21169
TB-4 #1	X	X	0.083	0.006	X	X	X	X	21170
TB-4 #2	0.008	0.3	0.111	0.005	X	X	X	X	21171
Detection Limit	0.005	0.2	0.002	0.004	0.009	0.08	0.05	0.2	

X = Analyzed but not detected

Table 3

Solids and Alkalinity

<u>Sample</u>	<u>% Solids</u>	<u>Alkalinity, ug/g as CaCO₃</u>
TB1-1	98.2	70
-2	51.0	5690
-3	62.1	1120
-4	44.0	56880
-5	80.7	21830
-6	93.8	190
-7	94.3	420
-8	95.4	310
TB2-1	92.0	2500
-2	90.7	1850
-3	90.6	2030
TB3-1	38.0	930
TB4-1	90.3	195
-2	91.9	230

Table 4

PCP & Mineral Spirits (ppm)

<u>Sample</u>	<u>PCP</u>	<u>Mineral Spirits</u>	<u>Analytical No.</u>
TB1-2	X	X	21159
TB1-4	X	X	21161
TB1-6	X	X	21163
TB1-8	X	X	21165
TB2-1	X	X	21166
TB2-3	X	X	21168
TB3-1	X	X**	21169
TB4-1	X	X	21170
Detection Limit	0.2	2.0	

X = Analyzed but not detected

** Detection limit 250 ppm due to possible glue resin

Table 5

VOC Analysis (ng/g)

	<u>Detection Limit</u>	<u>TB1-1</u>	<u>TB1-3</u>
Benzene	1.0	X	1.6
Bromoform	2.5	X	X
Bromomethane	5.0	X	X
Carbon Tetrachloride	0.5	X	X
Chlorobenzene	0.5	X	X
Chloroethane	5.0	X	X
2-Chloroethylvinyl Ether	10.0	X	X
Chloroform	0.5	X	1.0
Chloromethane	30.0	X	X
Dibromochloromethane	0.5	X	X
1,2-Dichlorobenzene	1.5	X	X
1,3-Dichlorobenzene	1.5	X	X
1,4-Dichlorobenzene	1.5	X	X
Dichlorobromomethane	0.5	X	X
1,1-Dichloroethane	0.5	X	X
1,2-Dichloroethane	1.5	X	X
1,1-Dichloroethylene	2.5	X	X
1,2-Dichloroethylene	1.5	X	X
Dichloromethane	1.0	X	X
1,2-Dichloropropane	2.5	X	X
cis-1,3-Dichloropropene	1.5	X	X
trans-1,3-Dichloropropene	5.0	X	X
Ethylbenzene	1.0	X	66.2
1,1,2,2-Tetrachloroethane	0.5	X	X
Tetrachloroethylene	0.5	3.7	1.6
Toluene	0.5	X	2.1
1,1,1-Trichloroethane	0.5	X	X
1,1,2-Trichloroethane	0.5	X	X
Trichloroethylene	0.5	X	X
Vinyl Chloride	10.0	X	X
Trichlorofluoromethane	1.0	X	X
Dichlorodifluoromethane	10.0	X	X
m-Xylene	2.5	2.7	230.
o & p-Xylene (as o-Xylene)	2.5	6.4	245.
Zimpro Analytical No.		21158	21160

X = Analyzed but not detected

Table 6
VOC Analysis (ng/g)

	<u>Detection Limit</u>	<u>TB1-5</u>	<u>TB1-6</u>	<u>TB1-7</u>	<u>TB1-8</u>
Benzene	0.6	X	X	X	X
Bromoform	1.5	X	X	X	X
Bromomethane	3.0	X	X	X	X
Carbon Tetrachloride	0.3	X	X	X	X
Chlorobenzene	0.3	X	X	X	X
Chloroethane	3.0	X	X	X	X
2-Chloroethylvinyl Ether	6.0	X	X	X	X
Chloroform	0.3	0.3	X	X	X
Chloromethane	18.0	X	X	X	X
Dibromochloromethane	0.3	X	X	X	X
1,2-Dichlorobenzene	0.9	X	X	X	X
1,3-Dichlorobenzene	0.9	X	X	X	X
1,4-Dichlorobenzene	0.9	X	X	X	X
Dichlorobromomethane	0.3	X	X	X	X
1,1-Dichloroethane	0.3	X	X	X	X
1,2-Dichloroethane	0.9	X	X	X	X
1,1-Dichloroethylene	1.5	X	X	X	X
1,2-Dichloroethylene	0.9	X	X	X	X
Dichloromethane	0.6	X	X	X	X
1,2-Dichloropropane	1.5	X	X	X	X
cis-1,3-Dichloropropene	1.5	X	X	X	X
trans-1,3-Dichloropropene	3.0	X	X	X	X
Ethylbenzene	0.6	X	X	X	X
1,1,2,2-Tetrachloroethane	0.3	X	X	X	X
Tetrachloroethylene	0.3	0.6	X	X	X
Toluene	0.3	X	X	X	X
1,1,1-Trichloroethane	0.3	X	X	X	X
1,1,2-Trichloroethane	0.3	X	X	X	X
Trichloroethylene	0.3	X	X	X	X
Vinyl Chloride	6.0	X	X	X	X
Trichlorofluoromethane	0.6	X	X	X	X
Dichlorodifluoromethane	6.0	X	X	X	X
m-Xylene	1.5	6.4	X	X	X
o & p-Xylene (as o-Xylene)	1.5	6.1	X	X	X
Zimpro Analytical No.		21162	21163	21164	21165

X = Analyzed but not detected

Table 7
VOC Analysis (ng/g)

	<u>Detection Limit</u>	<u>TB1-2</u>	<u>TB1-4</u>	<u>TB3-1</u>
Benzene	2.0	X	12.2	X
Bromoform	5.0	X	X	X
Bromomethane	10.0	X	X	X
Carbon Tetrachloride	1.0	X	X	X
Chlorobenzene	1.0	X	X	X
Chloroethane	10.0	X	X	X
2-Chloroethylvinyl Ether	20.0	X	X	X
Chloroform	1.0	X	X	X
Chloromethane	60.0	X	X	X
Dibromochloromethane	1.0	X	X	X
1,2-Dichlorobenzene	3.0	X	X	X
1,3-Dichlorobenzene	3.0	X	X	X
1,4-Dichlorobenzene	3.0	X	X	X
Dichlorobromomethane	1.0	X	X	X
1,1-Dichloroethane	1.0	X	X	X
1,2-Dichloroethane	3.0	X	X	X
1,1-Dichloroethylene	5.0	X	X	X
1,2-Dichloroethylene	3.0	X	X	X
Dichloromethane	2.0	X	X	X
1,2-Dichloropropane	5.0	X	X	X
cis-1,3-Dichloropropene	3.0	X	X	X
trans-1,3-Dichloropropene	10.0	X	X	X
Ethylbenzene	2.0	3.8	24.4	X
1,1,2,2-Tetrachloroethane	1.0	X	X	X
Tetrachloroethylene	1.0	11.5	X	18.6
Toluene	1.0	X	4.0	2.4
1,1,1-Trichloroethane	1.0	X	X	X
1,1,2-Trichloroethane	1.0	X	X	X
Trichloroethylene	1.0	X	X	X
Vinyl Chloride	20.0	X	X	X
Trichlorofluoromethane	2.0	X	X	X
Dichlorodifluoromethane	20.0	X	X	X
m-Xylene	5.0	11.5	5.0	X
o & p-Xylene (as o-Xylene)	5.0	34.6	X	X
Zimpro Analytical No.		21159	21161	21169

X = Analyzed but not detected

Table 8
VOC Analysis (ng/g)

	<u>Detection Limit</u>	<u>TB2-1</u>	<u>TB2-3</u>	<u>TB4-1</u>
Benzene	0.6	X	X	X
Bromoform	1.5	X	X	X
Bromomethane	3.0	X	X	X
Carbon Tetrachloride	0.3	X	X	X
Chlorobenzene	0.3	X	X	X
Chloroethane	3.0	X	X	X
2-Chloroethylvinyl Ether	6.0	X	X	X
Chloroform	0.3	X	X	X
Chloromethane	18.0	X	X	X
Dibromochloromethane	0.3	X	X	X
1,2-Dichlorobenzene	0.9	X	X	X
1,3-Dichlorobenzene	0.9	X	X	X
1,4-Dichlorobenzene	0.9	X	X	X
Dichlorobromomethane	0.3	X	X	X
1,1-Dichloroethane	0.3	X	X	X
1,2-Dichloroethane	0.9	X	X	X
1,1-Dichloroethylene	1.5	X	X	X
1,2-Dichloroethylene	0.9	X	X	X
Dichloromethane	0.6	X	X	X
1,2-Dichloropropane	1.5	X	X	X
cis-1,3-Dichloropropene	1.5	X	X	X
trans-1,3-Dichloropropene	3.0	X	X	X
Ethylbenzene	0.6	X	X	X
1,1,2,2-Tetrachloroethane	0.3	X	X	X
Tetrachloroethylene	0.3	X	1.0	3.4
Toluene	0.3	X	X	X
1,1,1-Trichloroethane	0.3	X	X	X
1,1,2-Trichloroethane	0.3	X	X	X
Trichloroethylene	0.3	X	X	X
Vinyl Chloride	6.0	X	X	X
Trichlorofluoromethane	0.6	X	X	X
Dichlorodifluoromethane	6.0	X	X	X
m-Xylene	1.5	X	X	X
o & p-Xylene (as o-Xylene)	1.5	X	X	X
Zimpro Analytical No.		21166	21168	21170

X = Analyzed but not detected

Document 12

WDNR Closes Investigation



State of Wisconsin

DEPARTMENT OF NATURAL RESOURCES

Antigo Area Headquarters
P.O. Box 310
Antigo, WI 54409

Carroll D. Besadny
Secretary

December 5, 1986

4430

Mr. E. R. Corolewski
Connor Forest Industries, Inc.
330 Fourth St.
Wausau, WI 54401

Dear Mr. Corolewski:

The Department of Natural Resources has reviewed the data submitted by your consultant, Geraghty & Miller, concerning the recent soil and groundwater investigation at the Connor Forest Industries Cabinet Shop in Wausau. This information was submitted in two parts; October 30 and November 11, 1986, respectively.

Based on the work completed, the Department in part concurs with the interpretations reached by your consultant. Although volatile organic compounds are present in the groundwater and soils, according to the District Hydrogeologist, Mr. Ed Kreul, they do not appear to be a significant problem at this time. However, the volatile organic contaminants found in the drywell in the maintenance building (Area 1) should be removed and properly disposed as hazardous waste. If this drywell does not have a concrete base, then the drywell base soil should be retested to determine if any soils have a significant contaminant level. If VOC contaminants are present in the soil, then the Department of Natural Resources recommends this soil be removed and properly disposed.

Hopefully this should conclude the investigation at the Connor Forest Industry Cabinet Plant. However, if at a later date, any additional information is brought forward concerning past waste disposal practices at this facility, the Department would have to assess this new information.

If you have any questions regarding this letter, please contact me at 715-627-4317 or Gary Kulibert at 715-362-7616.

Sincerely,
North Central District

A handwritten signature in cursive script, appearing to read "Kenneth D. Markart".

Kenneth D. Markart
Area Solid Waste Specialist

KDM:bb

cc: Gary Kulibert

James Lonsdorf, 610 Jackson St., P.O. Box 372, Wausau, WI 54401

→ Mayor John Kannenberg, City of Wausau, 407 Grant St., Wausau, WI 54401

Document 13

CFI Final Report of Piping Removal

**SOIL AND ABOVEGROUND
STORAGE TANK
PIPING REMOVAL
ACTIVITIES REPORT**

October 4, 1994

Geraghty & Miller, Inc. is submitting this report to Connor Forest Industries, Inc. for work performed at the City of Wausau incubator property in Wausau, Wisconsin. The report was prepared in conformance with Geraghty & Miller's strict quality assurance/quality control procedures to ensure that the report meets the highest standards in terms of the methods used and the information presented. If you have any questions or comments concerning this report, please contact one of the individuals listed below.

Respectfully submitted,
GERAGHTY & MILLER, INC.

Stephen Hjort
Scientist

Eric Carman
Project Manager/
Project Hydrogeologist

Jeffrey Hosler
Senior Associate/
Manager, Milwaukee Office



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TABLES

1. Results of Soil Samples Screened with an Organic Vapor Analyzer.

FIGURES

1. Site Location.
2. Site Details.
3. Location of Initial Hand-Auger Borings Completed by CFI on April 28, 1994.
4. Location of Soil Samples Screened by Geraghty & Miller on May 26, 1994.
5. Location of Confirmation Samples Collected on July 25, 1994.



APPENDICES

- A. Laboratory Reports from Soil Samples and Groundwater Sample Collected During Initial Investigation.
- B. Soil Boring Log and Borehole Abandonment Log.
- C. Photographs.
- D. Laboratory Reports from Confirmatory Soil Samples.



**SOIL AND ABOVEGROUND
STORAGE TANK
PIPING REMOVAL
ACTIVITIES REPORT**

INTRODUCTION

At the request of Connor Forest Industries, Inc. (CFI), Geraghty & Miller, Inc. has completed soil and piping removal activities at the City of Wausau incubator property in Wausau, Wisconsin (Figure 1). The purpose of the activities was to determine the extent of soil affected with ethylbenzene, toluene, and xylene and to remove the affected soil and accessible piping associated with former aboveground storage tanks (ASTs) at the facility. This report summarizes the site background, describes the activities completed at the property to delineate the extent of affected soil; describes the excavation and removal of AST piping and affected soil; and additionally, presents Geraghty & Miller's recommendation for no additional action within the area of the AST piping.

BACKGROUND

SITE DESCRIPTION

The property is located at 131 West Thomas Street in Wausau, Wisconsin. Site details are presented in Figure 2. The property is approximately 22 acres in area and consists of several buildings and parking areas. Site topography is generally flat, at an elevation of approximately 1,185 feet above mean sea level (ft msl) to 1,190 ft msl. Land surface in the vicinity of the property slopes to the east, toward the Wisconsin River that is located approximately 2,000 feet to the east of the property at an elevation of approximately 1,160 ft msl.

Land use in the vicinity of the property is a mix of industrial and residential. Kolbe & Kolbe Millworks is located to the west of the property; a former window manufacturer



(Wauleco) is located to the north of the property across Thomas Street; and private residences are located to the east and south of the property. Water for domestic use in the area is furnished by the City of Wausau.

Several environmental problems have been documented on properties that are proximal to the city of Wausau incubator property. The former Wauleco facility, located to the north of Thomas Street is the focus of an ongoing soil and groundwater investigation and remediation project. As a result of investigation activities at the Wauleco facility, Keystone Environmental Resources, Inc. has documented the presence of pentachlorophenol (PCP) and mineral spirits in soil and groundwater, as well as the presence of trichloroethylene (TCE) in groundwater (Keystone Environmental Resources, Inc., 1990). An ongoing soil and groundwater investigation and remediation project is also being conducted at the 3M facility, located approximately 2,000 feet north of the city of Wausau incubator property. Results from that investigation also indicate the presence of hydrocarbon constituents in soil and groundwater, as well as detectable concentrations of TCE in groundwater (Geraghty & Miller, Inc. 1991).

REGIONAL GEOLOGY

Bedrock in Marathon County is predominantly Precambrian-age igneous and metamorphic rocks with scattered outliers of Paleozoic-age sandstone that unconformably overlie the Precambrian-age rocks (Laberge and Myers 1983). At least three glacial advances into Marathon County have been defined (Laberge 1971) and as much as 120 feet of sandy and clayey glacial till overlie the bedrock in some areas. Melt water from receding Pleistocene-age glaciers deposited stratified glacio-fluvial sands and gravel outwash in the river valleys. Although the sands and gravels are not laterally extensive, in places the deposits are over 150 feet (ft) thick. Bedrock near the property is anticipated to be present at depths between 50 ft below land surface (bls) and 100 ft bls.

Surface soils near the property consist of Dunnville fine sandy loam. The soil is gently sloping (1 to 4 percent slope) and is moderately well-drained (Soil Conservation Service 1989).



Based on regional hydrogeologic information, groundwater flow near the site is expected to be westerly to southwesterly, toward the Wisconsin River (Keystone Environmental Resources, Inc. 1990, and Kendy 1986).

SITE HISTORY

Between 1951 and 1985, CFI operated a cabinet assembly plant on the property at 131 West Thomas Street in Wausau, Wisconsin. CFI's former operations at the plant consisted of extensive cabinetmaking processes including: the production of plywood for the cabinets, construction of the cabinets, and various phases of finishing the final product. The City of Wausau currently uses the property as an industrial park, known as Wausau Incubator, and leases the buildings to small businesses including The Shuttery (Figure 2).

Stains and finishes, used by CFI for cabinet finishing, were historically stored in several ASTs on the eastern portion of the property (Figure 2). The ASTs are known to have been removed prior to 1986 although the specific date for the removal is unknown. During April 1994, piping that was apparently associated with the former ASTs was exposed during on-site excavation activities near the eastern portion of the property. In general, the piping consisted of four 2-inch diameter pipes, oriented in a horizontal position. Based on the position, it was believed that the piping extended in a westerly direction, toward The Shuttery (Figure 2). An occupant of Wausau Incubator believed there were tanks in the vicinity. Therefore he retained an excavator to excavate the area and found the soil to exhibit odors. The Wisconsin Department of Natural Resources (WDNR) was then notified of the piping and of the apparent odors.

Previous environmental activities, including the installation of a monitoring well associated with the former ASTs, have been completed at the property. The monitoring well, located approximately 20 feet to the north of the former AST piping, was sampled by CFI personnel as part of initial investigation activities associated with the AST piping.



INITIAL INVESTIGATION ACTIVITIES

CFI initiated investigative activities on April 28, 1994 to verify the presence of affected soil, characterize the nature of the constituents in the soil, and determine the potential presence of affected groundwater. Activities completed by CFI personnel included the following:

- Completion of seven shallow hand-auger borings near former AST piping and collection of nine soil samples for field screening and laboratory analysis.
- Collection and laboratory analysis of one groundwater sample from the existing monitoring well located near the piping.

Hand-auger borings were completed to a depth less than 3 feet bls, and one soil sample was collected from each of the borings. In addition, two composite soil samples were collected from two small soil piles near the piping, for a total of nine samples. Each of the soil samples was submitted to Trace Analytical Laboratories (Trace) of Muskegon, Michigan for laboratory analysis of volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method 8260. The locations of the hand-auger borings completed by CFI are presented on Figure 3, and laboratory reports for the soil samples are presented in Appendix A.

In general, the results of the soil sampling activities completed by CFI confirmed the presence of detectable concentrations of VOCs including ethylbenzene, toluene, and xylene in soil samples near the piping. Concentrations of ethylbenzene ranged from below detection to 270 milligrams per kilogram (mg/kg), which is equal to parts per million (ppm), concentrations of toluene and xylene ranged from below detection to 4,600 ppm, respectively. The highest concentrations of the VOCs were detected in soil samples collected adjacent to the piping. VOCs were not detected in samples collected from the soil piles adjacent to the piping.

A groundwater sample was collected by CFI from Monitoring Well MW-1 on April 28, 1994 to aid in determining the presence in groundwater near the piping of VOCs that may have



been related to the former ASTs. The groundwater sample was submitted to Trace for analysis of VOCs using Method 8260. The laboratory report for the groundwater sample is presented in Appendix A. Depth to groundwater recorded in Monitoring Well MW-1 on April 28, 1994 was 26.4 feet below the top of casing (approximately 23.5 ft bls), and the total depth of the monitoring well was 34.3 feet below top of casing.

The groundwater sample collected from the monitoring well did not contain detectable concentrations of xylene, ethylbenzene or toluene but did contain TCE at a concentration of 1.1 micrograms per liter ($\mu\text{g/L}$), which is approximately equal to parts per billion (ppb), and tetrachloroethylene at a concentration of 2.1 $\mu\text{g/L}$. However, detectable concentrations of TCE, and other VOCs are documented on adjacent properties, and TCE and tetrachloroethylene were not detected in soil samples collected near the piping. The TCE and tetrachloroethylene detected in the groundwater sample is, therefore, believed to be ubiquitous in the area and not related to piping associated with former ASTs on the property.

Based on the results of the initial investigation activities, CFI retained Geraghty & Miller to determine the lateral and vertical extent of affected soil and to complete the necessary soil remediation activities. The soil investigations and remedial activities completed by Geraghty & Miller are described in the following sections.

FIELD ACTIVITIES

On behalf of CFI, Geraghty & Miller completed additional activities at the property to aid in determining the lateral and vertical extent of affected soil, to remove remaining piping and to remediate the affected soil. Activities completed by Geraghty & Miller included the following:

- Collection of nine shallow soil samples and the completion of one deep soil boring near the piping.



- Definition of the lateral and vertical extent of affected soil through field screening of soil samples.
- Oversight of the removal of the accessible piping and excavation of affected soil associated with the former ASTs.
- Collection of confirmation soil samples following the piping removal and excavation activities.

SHALLOW SOIL SAMPLING AND SOIL BORING

Geraghty & Miller collected nine shallow soil samples (SS-1 through SS-9) in the vicinity of the former ASTs and piping runs on May 26, 1994 (Figure 3). The purpose of the shallow soil sampling was to supplement the preliminary activities performed by CFI and to define the lateral extent of affected soil near the exposed AST piping.

Each shallow soil sample was collected using a long-bladed shovel, which was decontaminated between each location, to a minimum depth of 3 ft bls. Soil samples were collected from each of the locations and field screened with a Foxboro Organic Vapor Analyzer (OVA) Model 108 photoionization detector (PID). The results of the field screening are presented in Table 1. In general, the results of the field screening indicated that the lateral extent of affected soil was limited to an approximately 6 by 8 foot area, near the eastern end of the piping runs where the piping formerly connected with the former ASTs. Soil Samples SS-1 through SS-5, SS-7, and SS-8 did not appear affected. Soil Samples SS-6, SS-6B, and SS-9 did have detectable concentration levels. Note that Soil Samples SS-6 and SS-6B did not visually appear to be affected and were collected from an organic rich layer of soil containing wood chips. To determine the potential for elevated sample readings to be related to methane, a charcoal tip filter was added to the OVA to filter out all organics except methane. Readings collected using the charcoal tip filter indicated the elevated concentrations were attributed to



methane in Samples SS-6 and SS-6B and were not related to constituents from the AST piping.

On June 21, 1994, a soil boring was advanced to a depth of 26.0 ft at the eastern end of the piping runs to gain additional information on subsurface stratigraphy and to determine the vertical extent of affected soil. The location of Soil Boring GMSB-1 is presented on Figure 4. The boring was completed by WTD Environmental of Schofield, Wisconsin using hollow stem augers American Society of Testing Methods (ASTM Method 1452) with continuous split-spoon sampling techniques (ASTM 1586). Each split-spoon sample was field screened visually and using an OVA to determine the vertical extent of affected soil. The soil boring log and borehole abandonment log, along with the field screening results are presented in Appendix B. Based on the field screening of soil samples collected during completion of Soil Boring GMSB-1, the affected soil apparently extended to a depth of approximately 8 ft bls. The approximate depth of fill material in this area is also approximately 8 ft bls. The borehole was abandoned with Holeplug bentonite chips as required by NR 141.

The results of the field screening of shallow soil samples collected using the long-bladed shovel and soil boring indicated that the affected soil was limited in extent both laterally and vertically. Based on these results, Geraghty & Miller recommended that the piping and affected soil be excavated and removed and that the piping be abandoned by a qualified contractor. This general approach was verbally presented to Ms. Laurel Sukup of the WDNR during a telephone conversation on July 12, 1994. Ms. Sukup verbally approved the general approach during the conversation.

PIPING AND SOIL REMOVAL

The excavation and removal of the piping runs was completed on July 25, 1994 by SGS, Inc. of Merrill, Wisconsin with oversight by Geraghty & Miller. Selected photographs of the piping and soil removal activities are presented in Appendix C. SGS began the removal activities by barricading the excavation area and removing the asphalt needed for the piping removal. The excavation was started from the eastern end of the piping runs and progressed



westward toward The Shuttery. The SGS crew began removing product/water within the four 2-inch piping runs in 24-foot sections to coincide with pipe joints, and the contents of each pipe were separately contained in 55-gallon drums for future disposal. The source of water within the piping is believed to be surface infiltration, apparently the piping was upturned and uncapped adjacent to the storm sewer. The upturned piping is shown in photograph 5 of Appendix C. The total volume of product/water removed from the piping was approximately 120 gallons. The piping runs on the eastern end of the excavation were 3.5 to 4.0 feet bls and were about 6.0 bls at the western end of the excavation. The piping showed no evidence of corrosion or leakage at either the pipe joints or mid-span. The piping runs were capped off at the last joint before the piping runs ran underneath the footings of The Shuttery about 10 to 12 ft to the east of the side of the building. Upon completion of the excavation and piping removal, the SGS crew restored the land surface to previous grade and arranged for the repair of damaged asphalt.

Geraghty & Miller field screened soil samples and collected soil samples for laboratory analysis at 24-foot intervals along the piping runs corresponding with the pipe joints (Figure 5). The soil samples were collected using a stainless-steel trowel that was decontaminated between samples. The samples were analyzed by National Environmental Testing, Inc., of Watertown, Wisconsin (WDNR Certification No. 128053530 for VOCs by USEPA Method 8260). Soil Samples ES-1 through ES-13 correlate to the sample locations presented on Figure 5.

In general, the fill material surrounding the piping consisted of sand and gravel, appeared visually free of impacts, and did not exhibit odors. A north-south oriented storm sewer which intersected the AST piping approximately 10 to 12 ft to the east of the building foundation is located on the eastern side of the building. To determine if a release had occurred at the intersection point, a soil sample was collected on each side of the sewer line (see photographs in Appendix C). Because the AST piping was proximal to the building foundation and because excavation westward could potentially disturb the structural integrity of the building, the AST piping was subsequently capped off at the storm sewer line.



In addition, SGS excavated the affected soil which had been delineated with the shallow soil samples and deep soil boring near the east end of the piping runs. A total of approximately 10 cubic yards of affected soil was excavated and stockpiled on-site. Two confirmation samples (ES-11 and ES-12) were collected from the bottom of the excavation at a depth of 10 ft bls. The excavated soil was then stockpiled on plastic, and a soil sample (Soil Sample ES-14) was collected for laboratory analysis of VOCs to aid in determining proper disposal of the soil.

RESULTS

SITE-SPECIFIC GEOLOGY

The subsurface geology at the property consists of fill material overlying native sand and gravel. The fill material consists of silty sand, sand, gravel and wood fragments and varies from 2 to 7 ft across the site. In the former AST area, the fill consists of mostly silty sand and gravel with wood fragments (see Appendix B). The fill material changes toward the west to a coarse sand and gravel with a 1- to 3-foot layer of light gray sand spoils. Below the fill is coarse-to-fine sand and gravel.

RESULTS FROM CONFIRMATION SOIL SAMPLES

Soil samples collected during the removal of the piping runs and soil excavation were screened visually and with the OVA. In general, the soil and fill material below the piping runs and below the excavated soil did not visually appear affected and did not exhibit elevated concentrations of photoionizable organic compounds as measured with the OVA.

The laboratory reports for confirmation soil samples collected during the removal of the piping and from below the excavated soil are contained in Appendix D. The results from the analyses were below detection limits for VOCs in each of the soil samples, indicating that affected soil in the area of the piping has been removed.



Sample ES-14, the sample collected from the stockpiled soil, contained 59,000 micrograms per kilogram ($\mu\text{g}/\text{kg}$) xylenes; 2,000 $\mu\text{g}/\text{kg}$ 1,2,4 trimethylbenzene; and 3,900 $\mu\text{g}/\text{kg}$ 1,3,5 trimethylbenzene. WDNR Form 4400-149 Application to treat or dispose contaminated soil in an asphalt plant or other type of thermal treatment unit is currently being prepared, and the soil will likely be treated in a local asphalt plant or portable soil treatment unit. The samples of recovered product/water collected by SGS from the piping runs were sent to Wausau Chemical for analysis. Upon completion of laboratory analysis, the product/water will be recycled or properly disposed by Wausau Chemical.

SUMMARY AND RECOMMENDATIONS

During April 1994, piping associated with former ASTs that contained stains and finishes was exposed at 131 Thomas Street in Wausau, Wisconsin. Following notification of the WDNR of a possible release from the piping, investigation activities were completed by CFI and Geraghty & Miller (on behalf of CFI). The results of the activities indicated that a small localized area of soil affected by ethylbenzene, toluene, and xylene was present near the end of the piping runs. Groundwater near the piping is apparently unaffected by stain and finishing constituents within the piping.

On July 25, 1994, piping removal and soil excavation activities were completed at the property. Approximately 210 ft of accessible piping was exposed and removed from the site. Soil from beneath the piping did not appear affected or exhibit elevated OVA readings. Confirmation soil samples that were collected along the piping runs did not contain detectable concentrations of VOCs. Approximately 10 to 12 ft of the piping was not removed during the activities due to its proximity to a building foundation. The ends of the piping were capped off as close to the building as was practical without posing a possible structural threat to the building. Soil samples collected from below the piping were screened and submitted for laboratory analysis. These samples did not appear affected or to contain detectable concentrations of VOCs.



On the eastern end of the piping run, approximately 10 cubic yards of affected soil were removed and stockpiled on plastic. Two confirmation samples were collected from the base of the excavation. The samples did not contain detectable concentrations of VOCs.

Based on the results of the field screening and laboratory results from confirmation samples collected during the piping removal and soil excavation activities, Geraghty & Miller recommends closure of the piping and no further action be taken in relation to the release from the piping. In addition, Geraghty & Miller recommends that containerized product be recycled by Wausau Chemicals, and on-site soil be thermally treated in a local asphalt plant.



REFERENCES

- Geraghty & Miller, Inc. 1991. Soil and Groundwater Investigation at Former UST Sites, 3M Downtown Wausau and Greystone Facilities, Wausau, Wisconsin, 46 pages.
- Kendy, Elois. 1986. Hydrogeology of the Wisconsin River Valley in Marathon County, Wisconsin, Unpublished MS thesis, University of Wisconsin - Madison.
- Keystone Environmental Resources, Inc. 1990. Hydrogeological Investigation Report, Wauleco Wausau Site, Wausau, Wisconsin.
- Laberge, G.C. 1971. Geology of the Marathon County Volcanic Belt (abs): Institute on Lake Superior Geology Proceedings and Abstracts, Duluth, Minnesota.
- Laberge, G.C. and P.E. Meyers. 1983. Precambrian Geology of Marathon County, Wisconsin: Wisconsin Geological and Natural History Survey Information Circular No. 45.
- Soil Conservation Service. 1989. Soil Survey of Marathon County, Wisconsin.

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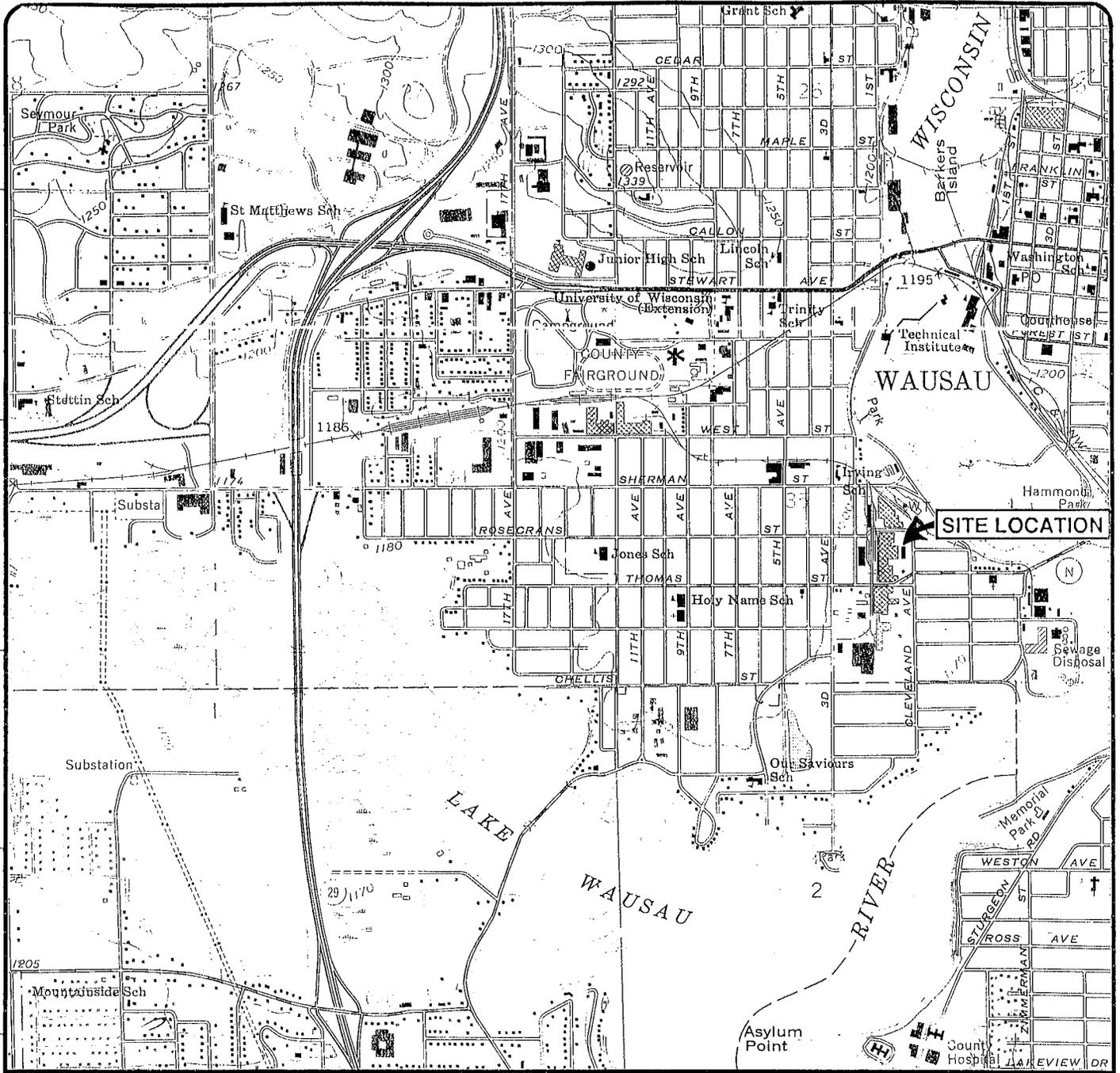
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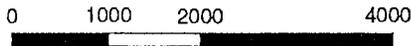
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PRJCT NO.: W10426.001

DWG DATE: 27SEP94



SOURCE: USGS 7.5 Minute Topographic Map, WAUSAU WEST, WISCONSIN Quadrangle, 1978



SCALE IN FEET



WISCONSIN



GERAGHTY & MILLER, INC.
Environmental Services

A Heidemij Company

SITE LOCATION MAP

CITY OF WAUSAU INCUBATOR PROPERTY
131 WEST THOMAS STREET
WAUSAU, WISCONSIN

FIGURE

1

DRAFTER: ELS

APPROVED: EC

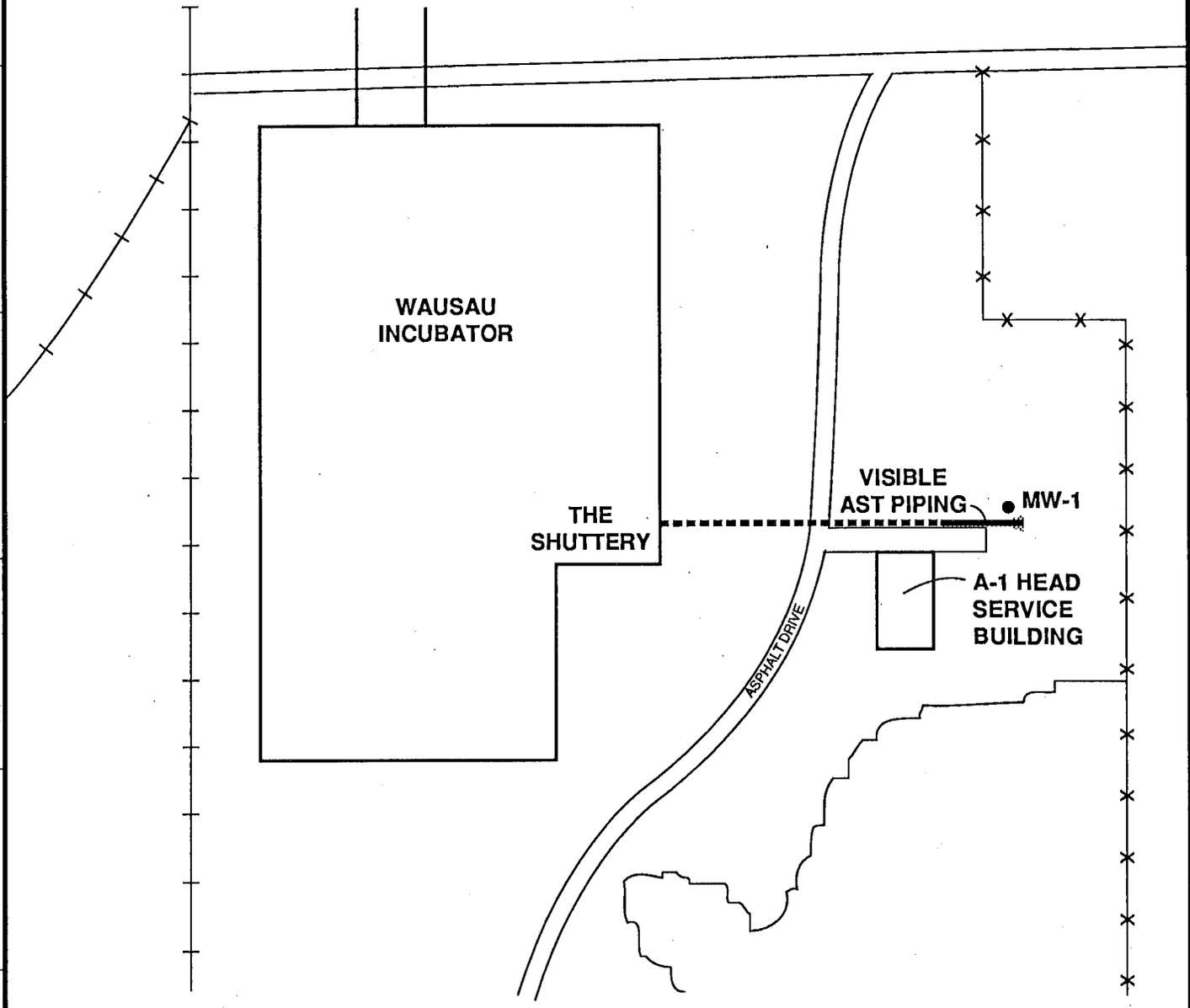
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LEGEND

● MW-1 EXISTING MONITORING WELL LOCATION

NOTE: Piping dashed where buried.



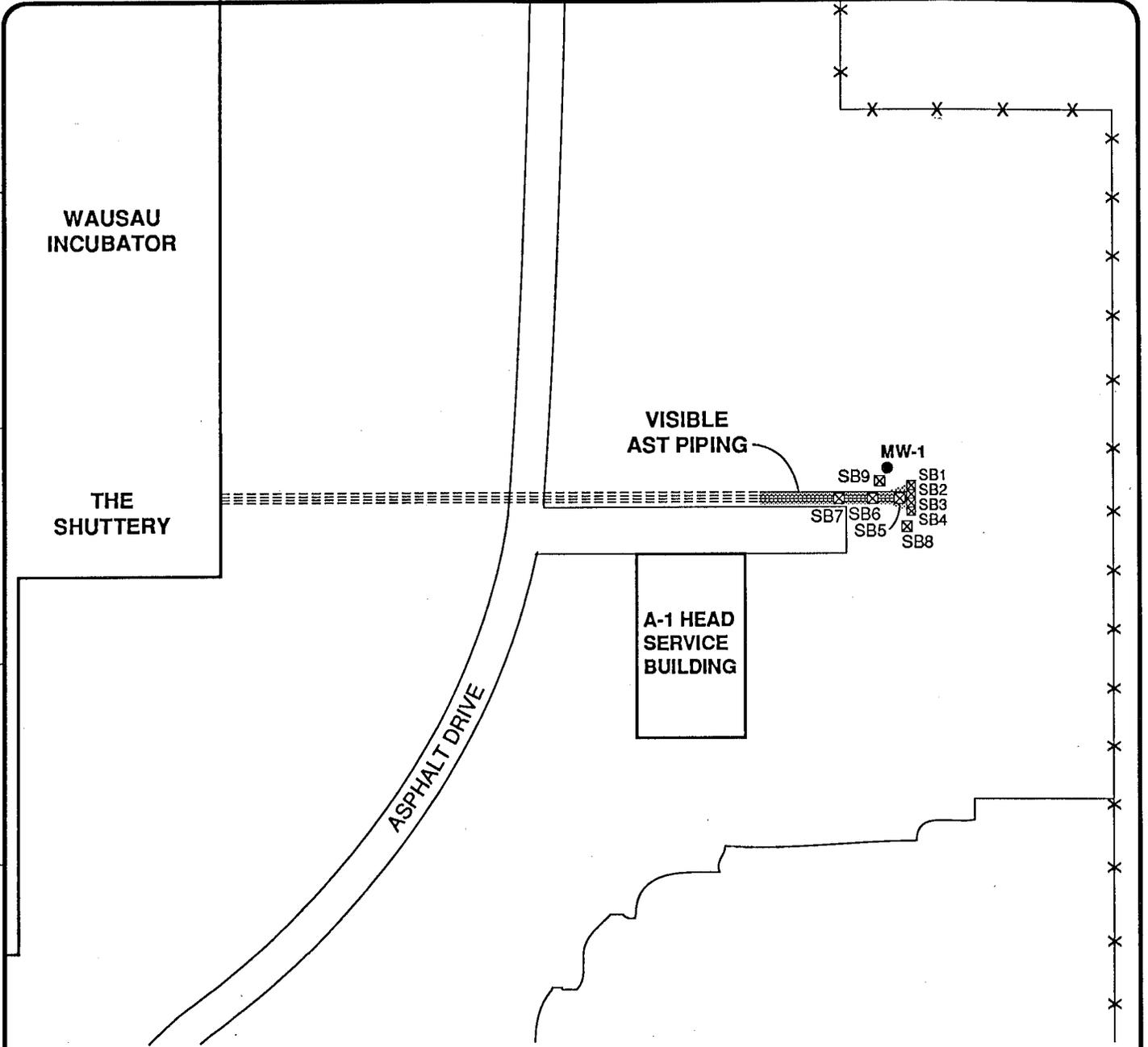
SITE DETAILS

CITY OF WAUSAU INCUBATOR PROPERTY
131 WEST THOMAS STREET
WAUSAU, WISCONSIN

FIGURE

2

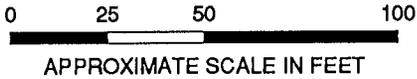
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LEGEND

- MW-1 MONITORING WELL LOCATION
- ☒ SB1 HAND AUGER BORING COMPLETED BY CFI

NOTE: Piping dashed where buried.
 Sample locations SB8 and SB9 denote composite samples of soil piles.



LOCATION OF INITIAL HAND AUGER BORINGS COMPLETED BY CFI ON APRIL 28, 1994

CITY OF WAUSAU INCUBATOR PROPERTY
 131 WEST THOMAS STREET
 WAUSAU, WISCONSIN

FIGURE

3

DRAFTER: ELS

APPROVED: EC

CHECKED: SH

DRAWING: 03

FILE NO.: 1400

PRJCT NO.: W0426.001

DWG DATE: 27SEP94

WAUSAU INCUBATOR

THE SHUTTERY

VISIBLE AST PIPING

ASPHALT DRIVE

A-1 HEAD SERVICE BUILDING

SS-9 MW-1 ⊕ SS-6 & 6B
 ⊕ SS-5 GMSB1
 ⊕ SS-7
 ⊕ SS-4
 ⊕ SS-8
 SS-1 SS-2 SS-3



0 25 50 100

APPROXIMATE SCALE IN FEET

LEGEND

- MW-1 MONITORING WELL LOCATION
- ⊕ SS-8 SOIL SAMPLE LOCATION
- ⊕ GMSB-1 LOCATION OF DEEP SOIL BORING

NOTE: Piping dashed where buried.



LOCATION OF SOIL SAMPLES SCREENED BY GERAGHTY & MILLER ON MAY 26, 1994

CITY OF WAUSAU INCUBATOR PROPERTY
131 WEST THOMAS STREET
WAUSAU, WISCONSIN

FIGURE

4