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DARK SURVEY MAPS

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OVERSIZED DATA PRINTOUTS FROM COMPUTER; SOME SURVEY MAPS

[ ] Document is available at the EPA Region 5 Records Center.

Specify Type of Document(s) / Comments:

Rev. 07/10/02

CALKINS BRIDGE DAM (Allegan Hydro)
J.Bernier

INFORMATION REQUESTS

1. Identify all persons consulted in the preparation of your responses to these Information Requests.

   James R. Bernier, Sr. Natural Resource Manager – Hydro Operations
   Robert M. Neustifter, Attorney
   Judith A Schneider, Operations Supervisor – Hydro Operations
   Steven C. Sluka, Kalamazoo River Superintendent – Hydro Operations
   Steven H Hadley, Kalamazoo River Maintenance – Hydro Operations
   Margaret J. Kaiser, Corporate Records
   Ronald L. Fobes, Environmental Department
   James Vinoski, Operator – Calkins Bridge Plant
   Allen Coppock, Operator – Calkins Bridge Plant

2. Identify all documents consulted, examined, or referred to in the preparation of your responses to these Information Requests, and provide copies of all such documents. If, in lieu of or along with a textual response to any specific Request, you refer to a document that you believe contains information responsive to that Request, you must identify the specific location (page number, paragraph number) in the document where responsive information can be located.

   See general objections.

3. If you have reason to believe that there may be any person able to provide a more detailed or complete response to any Information Request, or who may be able to provide additional responsive documents, identify any and all such persons.

   None known.

K00000839

4. Identify and generally describe each Consumers Energy facility at or near the Site, as that term is define in Attachment 3 (Definitions). For each Consumers Energy facility, provide:

   Calkins Bridge (Allegan Hydro) Dam

   a. the address of the facility;

      4164 Allegan Dam Road
      Allegan, MI 49010

   b. past and present EPA ID numbers, RCRA numbers and NPDES numbers for the facility; and

      RCRA ID number MID 981 537 913 This number is maintained due to very small quantity of light bulbs, batteries and similar wastes generated occasionally. The facility is a Conditionally Exempt Small Quantity Generator.

   c. the current owner of the facility

      Consumers Energy Company (Consumers)

5. Identify all prior owners and operators of each facility, and their dates of ownership and/or operation.

   The City of Allegan from circa 1936 when the dam was constructed to May 20, 1968 when Consumers purchased it from the City

6. Provide copies of all local, state, and federal environmental permits ever granted for each facility or any part thereof (e.g., RCRA permits, NPDES permits, etc).

   Federal Energy Regulatory Commission (FERC) Hydro Project License #785 w/ Clean Water Act §401 waiver, issued September 10, 1980.

   Michigan Dept of Environmental Quality (MDEQ) Inland Lakes and Streams permit for Spillway Rehabilitation, issued April 23, 1999, expired December 31, 2000

   Allegan County Soil Erosion and Sedimentation Control Permit for Spillway Rehabilitation, issued February 11, 1999, expired December 31, 1999

7. For each facility, identify and describe all types of monitoring reports, monitoring data, and documentation sent to or received by federal or state regulatory authorities regarding any materials containing hazardous substances used, generated, stored, treated or disposed at or from the facility.

   See Consumers Energy PCB Handling Manifest for the retirement of three intact capacitors filled with oil that may have contained PCBs

8. Identify and describe the nature of all past and current operations and production processes at each facility. Identify, if available, all current and previous SIC codes associated with each facility.

   Facility has been exclusively used for hydroelectric power production, SIC code 4911.

9. Identify each product produced at the facility. Further identify the mass quantity of each product produced on an annual basis.

   The facility produces electricity. Average yearly output for period 1960 – 2003 is 12,152,000 kilowatt hours of electricity.

10. Identify and describe any and all activities or efforts to take production facilities out of operation, and include the dates of each such activity or effort.

    None.

11. For each facility, identify and provide any data, estimates, analyses or other information regarding any material used, treated, stored or disposed that contained or may have contained PCBs. To the extent available, provide all such data, estimates, analyses or other information on an annual basis.

    There are five oil circuit breakers, which were tested in February 1981. Four were non-detect for PCB. One, serial number 72E729F, showed a PCB level of 20 ppm.

    The three station transformers were tested in February 1981. Two were non-detect for PCB at a detection limit of 5 ppm. One, Serial number 603572 tested at 6 ppm.

    See question 7 for information on Oil filled capacitors.

12. For each facility, identify any data, estimates, analyses or other information regarding the concentration of PCBs in any material used, treated, stored or disposed there. To the extent available, provide all such data, estimates, analyses or other information on an annual basis.

    The Number 1 transformer, serial number 256999, was tested in February 1981, and no PCB was detected

    See questions 11 and 13.b. for further information.

K00000841

13. To the extent not already provided in response to Request #11, provide the following information:

a. the type and quantity, on an annual basis, of any oils or other lubricants used, treated, stored or disposed at each facility that are known or suspected to have contained PCBs;

See response to Q. 7.

b. the number, handling and disposition of all transformers and conductors at each facility; and

Station power transformers located in the basement of the powerhouse consist of three 50 kva oil-cooled units. Exact date of installation is unknown, but believed to be around 1945 when the City of Allegan, which owned the facility, applied to the Federal Power Commission (now FERC) to install an additional hydraulic turbine and indicated plans to replace the existing station transformers. The disposition by the City of the station power transformers in place prior to 1945, which included two 15kva and one 25 kva oil-cooled units, is unknown.

The Number 1 transformer, serial number 256999, located 17 feet west of the powerhouse is a 4800/2400-volt, 3 phase, oil-cooled outdoor pad mounted unit. The unit was purchased in 1973. The unit was tested in February 1981, and no PCB was detected. The disposition of the original transformers, which included six 333kva, 4800/2400 volt, single phase, oil-cooled, outdoor units installed by the City about 1937, is not known.

Two non-PCB pole mounted transformers were installed adjacent to the powerhouse in 1999, during the spillway rehabilitation project, to provide power to the spill gate openers.

There are no known leaks or spills from any of this equipment.

c. data, analysis and other information regarding leaks, discharges or other releases from any transformer, conductor or other equipment using oils or lubricants at each facility.

None known.

14. To the extent not already provided in response to Request #12, identify any data, estimates, analyses or other information regarding the concentration of PCBs in the materials identified in your response to Request #13.

None known.

K00000842

15. Describe the procedures used by you or anyone on your behalf to test PCB concentrations in the materials identified in your response to Requests #11 and #13, above. Include in your response test methods and dates.

Unknown.

16. Describe the procedures followed by you, or anyone on your behalf, to prevent, mitigate or address the release or threat of release of any material identified in your response to Requests #11 and #13, above.

The Company has standard practices for the prevention and response to releases. However, no releases are known to have occurred from such equipment.

17. Provide a figure delineating the groundwater flow direction on your property.

No information available.

18. Identify the depth(s) to groundwater at your property.

No information available.

19. For each production process at each facility, identify and describe each waste stream from its creation to final disposition.

Generator bearing oil is changed periodically. The used oil is placed in a barrel, and taken to the Consumers Energy Hydro West headquarters, near Newaygo, Michigan. There the oil is consolidated with used oil from other Hydro facilities and picked up by Crystal Flash Environmental Services, of Grand Rapids, for recycling. Approximately 25 gallons of used oil are generated annually at the Calkins Bridge Dam.

The facility has no other wastes from production processes.

20. For each facility, identify all past and present waste units (e.g., underground storage tanks, above ground storage tanks, waste piles, landfills, surface impoundments, lagoons, dry wells, septic systems, floor drains, ponds, pits, machine pits, container storage areas). For each such waste unit identified, provide the following information:

    a. The location of all past and present waste units whether currently in operation or not.

       None.

    b. The type of unit (e.g., underground storage tank, lagoon, dry well, etc).

       None.

    c. The dates that the unit was in use.

       None.

    d. The purpose of past and/or present usage (e.g., storage, spill containment, waste disposal).

       None.

    e. The quantity and type(s) of materials (e.g., manufacturing materials, wastes, hazardous substances, pollutants and contaminants) located in each unit.

       None.

    f. If the unit is no longer in use, describe how was such unit closed, and what actions were taken to prevent or address potential or actual releases of waste constituents from the unit(s). Include all analytical data from such closure.

       Not applicable

21. For each facility, identify any data, estimates, analyses or other information about the presence of PCBs in each waste stream created. To the extent available, provide such information on an annual basis.

    None.

22. For each facility, identify any data, estimates, analyses or other information about the concentration of PCBs in each waste stream created. To the extent available, provide such information on an annual basis.

    None.

K00000844

23. For each facility, describe the procedures used by you, your predecessor(s), or anyone on behalf of you or a predecessor, to test the PCB concentration in each waste produced, stored, treated or disposed at that facility. Include in your response test methods, media tested, and dates.

None

24. For each facility, identify each off-Site location at which wastes that contained or potentially contained PCBs were disposed. Further identify the dates of each such off-Site disposal, and the nature, quantity and PCB concentration of any such wastes.

Three capacitors noted in response to Q. 7 were disposed of at Environmental Recycling, 527 East Woodland Circle, Bowling Green, OH 43402, through Consumers' PCB Central Storage Site in Jackson, MI

25. For each facility, and for each waste produced, stored, treated or disposed at that facility:

a. identify the PCB concentration of any waste;

None except for the possible PCB in capacitors identified above.

b. if the waste contained detectable concentration of PCBs, describe each occasion on which a release of such waste occurred or threatened to occur; and

None.

c. describe the procedures and measures taken by you, or anyone on your behalf, to prevent, mitigate or address the release or threat of release of PCBs or other hazardous materials.

The Company has standard practices for the prevention and response to releases. However, no releases are known to have occurred.

26. For each release described in response to Request #25 above, describe the quantity of PCB-contaminated wastes that were released or threatened to be released, and state whether any PCBs contained in the wastes contributed to the presence, or threatened to contribute to the presence, of PCBs in the Kalamazoo River.

None

27. For each facility, identify any data, estimates, analyses or other information about the history of flooding, or any other infiltration of water, from the Kalamazoo River.

The dam is in the Kalamazoo River. There is no indication that the powerhouse has ever been flooded.

28. To the extent not provided in your response to Request #19, describe each wastewater stream, waste oil stream, and wastewater/waste oil mixture stream at each facility, from its creation in the production process to final discharge point. In your response include a complete description of the fate of any wastewater stream, waste oil stream, and wastewater/waste oil mixture stream produced at each facility (e.g., on-site treatment, discharge to a POTW, discharge to a storm sewer outfall, direct discharge to the Kalamazoo River).

No wastewater streams are associated with production processes. Wastewater from employee restroom facility consists of a septic tank with dry well. The exact quantity is unknown, but is believed to average less than 25 gallons per day.

29. To the extent not provided in response to Requests #19 and #28, identify the quantity of all (a) wastewater, (b) waste oil, and (c) wastewater/waste oil mixture produced, on a monthly basis, from each production process at each facility.

Not applicable.

30. To the extent not provided in response to Requests #21 and #22, identify any data, estimates, analyses or other information about the presence and/or concentration of PCBs in the wastewater, waste oil and wastewater/waste oil mixture produced from each production process at each facility. To the extent available, provide such information on a monthly basis.

None.

31. For each facility, identify any data, estimates, analyses or other information regarding the effectiveness of the treatment system(s) at that facility, if any, to remove PCBs from each wastewater stream, waste oil stream and wastewater/waste oil mixture stream.

No treatment system.

32. Identify any data, estimates, analyses or other information regarding procedures and measures taken by you, or by anyone on your behalf, to prevent, mitigate or address the release or threat of release of PCBs from wastewater, waste oils, or wastewater/waste oil mixtures to the Kalamazoo River.

The Company has standard practices for the prevention and response to releases. However, no releases are known to have occurred.

33. For any POTW identified in response to Request #28, provide, for each facility and on a monthly basis, all information regarding the amount of wastewater, waste oil and wastewater/waste oil mixture discharged to a POTW, the concentration of PCBs in the wastewater, waste oil and wastewater/waste oil mixtures discharged to the POTW from that facility and, to the extent such information is available, the PCB concentration in the effluent from the POTW.

Not applicable.

34. For each facility, identify each pipe, conduit, storm sewer, sewer line or other outfall that, directly or indirectly, terminates in the Kalamazoo River or its tributaries, past or present, into which treated, untreated or bypassed wastewater, waste oil, or any other waste (including wastewater/waste oil mixtures), from that facility was discharged. Include a figure identifying the source and location of each pipe, conduit, storm sewer, sewer line or other outfall.

None presently, none known in past operation.

35. For each pipe, conduit, storm sewer, sewer line or other outfall identified in your response to Request #34, identify dates of use and each outfall's source at the facility. Further provide, on a monthly basis, the volume of wastewater, waste oil or other waste (including wastewater/waste oil mixtures) discharged from the facility into each pipe, conduit, storm sewer, sewer line or other outfall.

Not Applicable

36. For each pipe, conduit, storm sewer, sewer line or other outfall identified in response to Request #34, identify all influent and effluent quality data. Include to the extent such information is available, the PCB concentration of all influent and effluent, on a monthly basis.

Not Applicable

37. For each pipe, conduit, storm sewer, sewer line or other outfall identified in response to Request #34, identify all bypasses or spills into the Kalamazoo River or its tributaries.

Not Applicable

38. For each facility, identify any data, estimates, analyses or other information regarding the mass quantity of PCBs disposed into the Kalamazoo River as a result of wastewater, waste oil or wastewater/waste oil discharges from the production processes. To the extent available, provide such information on an annual basis.

None.

39. For each facility, identify any data, analyses or other information regarding the nature and quantity of hazardous substances, including PCBs, in the sediments, soil, groundwater and surface water at that facility. Identify the concentration levels of PCBs for all samples collected at the facility or at any property abutting the facility.

None except for the data collected by the Michigan Department of Environmental Quality and the Kalamazoo River Study Group as part of the Remedial Investigation/Feasibility Study process.

40. For each facility, provide information regarding any environmental response activities involving or potentially involving PCBs or PCB-containing materials conducted at that facility, or on the Kalamazoo River, its tributaries, or other abutting property, at your direction or under your control. Indicate the date(s) on which such response activity was performed, what work was performed, the expenses incurred, the results of the response activity and, if it has not concluded, when the environmental response is expected to conclude.

None.

41. Have you incurred any costs associated with the investigation, remediation or other action to address contamination at the Site or any portion thereof? If yes, identify all costs incurred by you through the date of this Information Request.

No.

K00000848

LIBER 745 PAGE 69

ALLEGAN COUNTY 009178

STATE OF MICHIGAN Dept. of Taxation MAY 21 '68 REAL ESTATE TRANSFER TAX 990.90

DEED

THIS INDENTURE, made this 20th day of May, 1968, between the CITY OF ALLEGAN, a municipal corporation, Allegan County, Allegan, Michigan, as First Party, and CONSUMERS POWER COMPANY, a corporation duly authorized to do business in Michigan, with its principal office therein, at 212 West Michigan Avenue, Jackson, Michigan, as Second Party,

W I T N E S S E T H:

That the said party of the first part, for and in consideration of the sum of One Million Twenty-four Thousand Seven Hundred Fifty-six Dollars ($1,024,756.00) to it in hand paid by the said party of the second part, the receipt whereof is hereby confessed and acknowledged, does by these presents grant, bargain, sell, remise, release, alien and confirm unto the said party of the second part, and to its successors and assigns, Forever, all of the physical properties of the City of Allegan used in its operation of its Electric Department (electric utility business) located in the City of Allegan and the Townships of Valley and Allegan in the County of Allegan and State of Michigan, including land, easements, franchises, generating plants, distribution and transmission systems, street lighting, lights, poles and system, substations, generating stations and buildings, fixtures, tools and equipment, title papers, contracts, abstracts, maps and drawings of the electric utility department of the City, and all records and memoranda in possession of the City which show or tend to show the original cost of the property used in its electrical department, including, without in any way limiting the above general description, the following:

CITY SUBSTATION SITE

A parcel of land in the SE 1/4 of the SW 1/4 of Section 21, T2N, R13W, described as commencing at a point (marked by an iron pipe) 49 feet 9 inches due North of a point on the South line of Section 21, 267 feet 3 inches West of the West property line of the Pere Marquette Railroad right of way; thence due North 212 feet 3 inches to a point on elevation contour line 618 U.S.G.S., marked by a 1 1/4 inch round iron pipe, thence in a S'ly and W'ly direction along contour 618 a distance of 275 feet to a point marked by a 1 inch round iron pipe located on said contour 618 at a point 49 feet 9 inches North of the South line of Section 21; thence due East parallel to the South line of said section 128 feet to the place of beginning, subject to an agreement to enclose said land by a fence not less than 4 feet high, either of wood or wire construction.

STATE OF MICHIGAN Dept. of Taxation REAL ESTATE TRANSFER TAX 136.60

621600 ALLEGAN COUNTY

CALKINS BRIDGE DAM AND SITE

The dam, being the so-called Calkins Bridge Dam, together with the building, generating equipment, switchboard, turbine, wheels, gates and controls located in the NW 1/4 of Section 15, T2N, R14W, including the dam permit, as amended and supplemented, granted by the County of Allegan to the City of Allegan for the construction and operation of said dam, and the lands hereinafter more particularly described:

FACE PAGE ONLY INCLUDED; REMAINDER OF DEED W/SUBMERGED PROPERTY DESCRIPTIONS AVAILABLE ON REQUEST

RECORDED MAY 21 4 57 PM 1968

REGISTER OF DEEDS ALLEGAN COUNTY, MICH.

Commencing at the NW corner of Section 15, T2N, R14W, running thence East along the North line of said section to the Kalamazoo River; thence South along the river to a point far enough to enclose 10 acres by a line extended West to the West section line; thence West to the West section line of Section 15; thence North to the place of beginning, being premises formerly owned by James Crill.

K00000849

Form 842 1-98

CONSUMERS ENERGY
PCB HANDLING MANIFEST

ATTN Jim Bevnier

35583

DISTRIBUTION	
White	- Retained With Shipment by Driver
Green	- First Receiving Storeroom
Yellow	- Supvr - Central Storage Site
Pink	- Environmental Site Coordinator
Goldenrod	- Generator

TO PROVIDE LEGIBLE COPIES, PRESS FIRMLY ON HARD SURFACE WHEN COMPLETING THIS FORM.

WASTE GENERATOR

This section to be completed by the supervisor in charge of spill cleanup or waste generation at the appropriate site. Upon completion of this section, the supervisor shall remove and retain the goldenrod copy and deliver the waste and the remaining copies to Material Services at the work headquarters.

A. IDENTIFICATION OF SPILL CLEANUP OR WASTE GENERATION

Area: South

Facility Name: Allegan Hydro

Address/Location: 4164 Allegan Dam Road, Allegan MI 49010

Reporting Department: Energy Supply

B. PCB WASTE DESCRIPTION

☐ Damaged in Service ☑ Retired, Obsolete Equipment

Date Waste Generated: 6/18/01

Total Number of Barrels, Racks, Transformers: 1

Total Number of Capacitors: 3

Barrels Contents (Place the number of barrels in the appropriate space and the manifest number on each barrel label.)

_____ PCB Liquid Only	_____ Noncombustible Contaminants (Metal, Soil, Etc)	_____ Combustible Contaminants (Brush, Clothing, Etc)
_____ Ruptured or Drained Capacitors (Basically Without PCB Liquids)	1 Capacitors, Intact Filled With PCB Liquid	_____ Test Results (PPM)
		_____ Other _____

Supervisor's Signature: [signature]

Phone Number: (231) 652-6104

MATERIAL SERVICES

This section is to be completed by the supervisor in charge of Material Services at the first receiving storeroom. Upon completion, the white copy must be returned by the transport driver with additional Bill of Lading numbers added at successive receiving storerooms until delivered to Central Storage Site. Yellow and pink copies should be appropriately distributed prior to shipment. Green copy must be retained by supervisor.

Area: Direct P/U By Jackson (central Storage)

Date Received:

Facility Address:

Total Number of Barrels/Containers/Racks/Transformers:

Total Weight: _____ lb x 0.453 kg/lb = _____ kg

Date Shipped to Central Storage Site:

Supervisor's Signature:

Original Bill of Lading Number	Date	2nd Bill of Lading Number	Date
3rd Bill of Lading Number	**Date**	**4th Bill of Lading Number**	**Date**

CENTRAL STORAGE SITE

This section is to be completed by the supervisor in charge of Central Storage Site. The white copy should be retained by the Central Storage Site Supervisor.

Date Received	Total Number of Barrels/Containers/Racks/Transformers	Total Weight
7-26-01	1	169 lb x 0.453 kg/lb = 76.6 kg
Date Shipped for Disposal	**Disposal Manifest Number**	**Supervisor's Signature**
		[signature]

Consumers Energy Identification Number: 3 CAPS IN BL ON TAG * 11534

K00000850

PCB WASTE STORAGE/DISPOSAL OPERATING LOG
EPA ID# MID-052044496
Consumers Energy Company
Parnall Complex-JSC/CSF
1955 W. Parnall Road
Jackson, MI 49201

Log Page: 929

K00000851

CPCO Container ID Number	CPCO Manifest Number	Location	Date Waste Generated	Date Waste Received	Contents Type	# of Caps	Shipping LBS	Weight KG	Shipping Date	Uniform Manifest Number	Disposal Company/State
11530	32878	ELLERY ST JACKSON, MI	7/10/01	7/11/01	NON-COMBUSTIBLES (B)		484	219 3	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11531	32878	ELLERY ST JACKSON, MI	7/10/01	7/11/01	NON-COMBUSTIBLES (B)		488	221 1	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11532	32878	ELLERY ST JACKSON, MI	7/10/01	7/11/01	NON-COMBUSTIBLES (B)		447	202.5	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11533	32878	ELLERY ST JACKSON, MI	7/10/01	7/11/01	NON-COMBUSTIBLES (B)		425	192.5	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11534	35583	ALLEGAN HYDRO ALLEGAN, MI	6/18/01	7/26/01	CAPACITOR (B)	3	169	76.6	10/30/01	MI8249470	ENV RECYCLING/OH
11535	33986	BAY CITY	7/11/01	7/26/01	NON-COMBUSTIBLES (B)		475	215.2	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11536	34616	ALMA	7/17/01	7/26/01	TRANSFORMER		120	54.4	10/24/01	MI8249472	WAYNE DISPOSAL/MI
11537	34459	ELLERY ST JACKSON, MI	7/13/01	7/26/01	NON-COMBUSTIBLES (B)		482	218.3	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11538	34459	ELLERY ST JACKSON, MI	7/13/01	7/26/01	NON-COMBUSTIBLES (B)		480	417.4	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11539	34459	ELLERY ST JACKSON, MI	7/13/01	7/26/01	NON-COMBUSTIBLES (B)		520	235.6	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11540	34459	ELLERY ST JACKSON, MI	7/13/01	7/26/01	NON-COMBUSTIBLES (B)		554	251.0	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11541	34459	ELLERY ST JACKSON, MI	7/13/01	7/26/01	NON-COMBUSTIBLES (B)		600	271.8	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11542	34459	ELLERY ST JACKSON, MI	7/13/01	7/26/01	NON-COMBUSTIBLES (B)		466	211.1	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11543	34459	ELLERY ST JACKSON, MI	7/13/01	7/26/01	NON-COMBUSTIBLES (B)		540	244.6	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11544	34459	ELLERY ST JACKSON, MI	7/13/01	7/26/01	NON-COMBUSTIBLES (B)		290	131.4	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11545	34754	T Q MACHINE KUSKEGON	6/27/01	7/26/01	NON-COMBUSTIBLES (B)		500	226.5	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11546	34754	T Q MACHINE KUSKEGON	6/27/01	7/26/01	NON-COMBUSTIBLES (B)		684	309.9	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11547	34754	T Q MACHINE KUSKEGON	6/27/01	7/26/01	NON-COMBUSTIBLES (B)		630	285.4	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11548	34754	T Q MACHINE KUSKEGON	6/27/01	7/26/01	NON-COMBUSTIBLES (B)		708	320.7	8/13/01	MI8249178	WAYNE DISPOSAL/MI
11549	34754	T Q MACHINE KUSKEGON	6/27/01	7/26/01	NON-COMBUSTIBLES (B)		622	281.8	8/13/01	MI8249178	WAYNE DISPOSAL/MI

CITY OF ALLEGAN, MICHIGAN

PROJECT NO. 785

FEDERAL POWER COMMISSION

100-2 FORMAL
APPLICATION

FEDERAL POWER COMMISSION
FEB 14 1945
RECEIVED

REVISED EXHIBIT M

FEBRUARY 1945

Prepared by

AYRES, LEWIS, NORRIS & MAY
CONSULTING ENGINEERS
ANN ARBOR, MICHIGAN

SEE p.4
House Service Transformers

K00000852

CITY OF ALLEGAN, MICHIGAN

PROJECT NO. 785

EXHIBIT M

MECHANICAL, ELECTRICAL AND TRANSMISSION EQUIPMENT

General

A brief description of mechanical, electrical and transmission equipment of the City of Allegan Municipal electric system is presented below.

Hydraulic Turbines

The hydraulic turbines now installed consist of:

1- James Leffel & Co. 48", B2, 180 RPM, vertical, hydraulic turbine with steel plate draft tube and with oil pump and Woodward, Type HR governor of 8400 ft.-lbs. capacity
585 H.P. at 15 ft. head; 650 H.P. at 17 ft. head

1- James Leffel & Co. 69", B2, 120 RPM, vertical, hydraulic turbine with steel plate draft tube and with oil pump and Woodward, Type HR governor of 16300 ft.-lbs. capacity
1165 H.P. at 15 ft. head; 1320 H.P. at 17 ft. head

An additional unit, now under contract, to be installed is as follows:

1- James Leffel & Co. Type A, 112.5 RPM, vertical hydraulic turbine with steel plate draft tube and with oil pump and Woodward governor of 21500 ft.-lbs. capacity
1200 H.P. at 13 ft. head; 1580 H.P. at 16 ft. head; 1700 H.P. at 17 ft. head

All of the three turbines are in vacuum settings having steel pit liner from turbine to generator floor. All turbines are of the fixed blade type.

K00000853

Generators and Exciters

The electric generators, direct connected to the above turbines are as follows:

Now Installed

1- General Electric Co., Type ATB, 40 pole, 563 kva, 450 kw at .8 P.F., 4800 volt, 3 phase, 60 cycle, 180 RPM generator with direct-connected 16.5 kw, shunt wound, 125 volts D.C., exciter, exciter field rheostat and generator field discharge resistor.

1- General Electric Co., Type ATB, 60 pole, 1125 kva, 900 kw at .8 P.F., 4800 volt, 3 phase, 60 cycle, 120 RPM generator with direct-connected 21 kw, shunt wound, 125 volts, D.C. exciter, exciter field rheostat and generator field discharge resistor. The direct connected exciter is to be replaced by a 25 kw motor-generator exciter set now on order.

Under Contract to be Installed

1- General Electric Co., Type ATI-V- 64 pole, 1500 kva, 1200 kw at .8 P.F., 4800 volt, 3 phase, 60 cycle, 112.5 RPM generator, and generator field discharge resistor. Excitation is to be furnished at 125 volts D.C. by separate 40 kw motor-generator exciter set.

All three generators have amortisseur windings with leads brought out for differential relay protection.

450 kw
900
1200
2550 Kw = 3[illegible] Hp Installed
.3350 H.P licensed

K00000854

Switch Structure

The switch structure, after the installation of the equipment now under contract, will consist of the following, all of Westinghouse make:

1- Generator switch cubicle for 563 kva unit
1- " " " " 1125 " "
1- " " " " 1500 " "
2- Feeder " "
1- Regulator Cubicle
1- Swing Panel

All cubicles are of structural steel members and plates with front panels of stretcher-levelled steel for mounting instruments and relays. Panels are hinged to provide access to secondary wiring. Steel barriers are provided between the high tension equipment and the secondary wiring and oil circuit breaker mechanism. A horizontal steel barrier is placed between the disconnecting switches and the oil circuit breakers. Hinged doors are provided at the back of cubicles for access to the primary switch gear. All hinged doors are provided with suitable locks. Removable top plates and end covers provide access to the buses. Main bus consists of 3- 2" x 1/4" copper bars supported on porcelain insulators. A ground bus extends through the bottom of the cubicles for grounding the equipment.

Oil circuit breakers for generator and feeder cubicles are Westinghouse, Type F-122, 600 amp., 7500 volt with interrupting capacity of 25000 kva. Generator breakers are manually controlled and feeder breakers are solenoid operated-automatic reclosing. Tripping current for breakers is provided by 24 volt, 12 cell storage battery with 120 volt trickle charger.

For each generator and feeder breaker there are 3- Westinghouse, single phase, 600 amp., 7500 volt disconnect switches with insulating barriers between switches.

All necessary current and potential transformers are provided for each cubicle.

A complete set of switchboard instruments, relays and the like, of Westinghouse make is installed on the face of each generator and feeder cubicle and on the swing panel.

K00000855

A push button station for starter of motor generator exciter set is to be installed on front panel of cubicles for 1125 and 1500 kva generators.

The regulator cubicle houses a generator voltage regulator for each generator, all being Westinghouse "Silverstat" regulators. Necessary cross-current compensation resistors and line-drop compensators, regulator cut-off switches and other regulator accessories are installed in this cubicle. Also installed in the regulator cubicle are exciter field rheostats and controls.

A bus surge protection compartment of similar construction to that of the cubicles will be installed on top of the new 1500 kva generator cubicle and will contain 3 capacitors and arresters for bus surge protection.

4800 volt leads from switch structure to generator are 3-conductor paper and lead insulated cables suitable for 4800 volts. Low voltage wiring is rubber covered wire. All wires and cables are placed in rigid galvanized iron conduit, except cables leading from feeder cubicles to transmission line, which are placed in 4" fibre conduit.

House Service Transformers

House service transformers now consist of 2- 15 kva and 1- 25 kva, 4800-2400/240/120 volt single phase, oil cooled transformers. These transformers provide low voltage power for various power plant auxiliaries and for electric heating and lighting. The transformers are located in the basement at the west end of the building. 4800 volt primary fused cutouts are placed in the line leading from feeder switch cubicle to the high voltage line leading from feeder switch cubicle to the high voltage terminals of the house service transformers. The installation of the new unit with the governor oil pump and with the 40 kw motor generator-exciter set and the addition of the 25 kw motor-generator exciter set for the present 1125 kva unit will require larger house service transformers than those now installed. Until manufacturer's data on the new unit and accessories are more completely available, the size of the new house service transformers cannot be exactly determined but it is estimated that possibly 2- 50 kw and 1- 75 kw will be required.

K00000856

Power and Light Cabinets

The present power cabinet is fed from the low voltage side of the house service transformers through a 100 amp. fused safety switch. Power cabinet is an 8 circuit cabinet and panel board with three-wire mains, 250 volts and three wire branches, 250 volts and is located in the basement at the west end of the power house near the house service transformers. This power cabinet supplies current to a 10 H.P. air compressor motor, a 7½ H.P. tainter gate hoist motor, a 2 H.P. governor oil pump motor, a 5 H.P. governor oil pump motor and to building electric heaters and minor equipment. It is believed that the spare breaker position in this power cabinet will be suitable for the governor oil pump motor (7.5 H.P.) for the new 1500 kva unit. The starter for the new motor-generator, exciter set (40 H.P. motor) for the 1125 kva unit and a new 40 kw motor-generator exciter set (60 H.P. motor) for the 1500 kva unit will be fed through fused safety switch from the low voltage bus of the house service transformers.

The present light cabinet will not be affected by any new work now contemplated and is fed from the low voltage side of the house service transformers through a 60 ampere fused safety switch. Light cabinet is a 12 circuit lighting panel board and cabinet with three-wire mains, 125/250 volts, solid neutral, 125 volt, two-wire branches with 20 amp. protection. The lighting cabinet serves lighting fixtures and convenience outlets and miscellaneous small equipment.

Miscellaneous Equipment

In addition to the equipment previously described, there is installed at the east end of the power house

1- Air compressor - 45 C.F.M. at 40# discharge pressure- air cooled, vertical single stage, belt driven through V-belt drive by 10 H.P., 3 phase, 60 cycle induction motor. Compressor is tank-mounted on ASME tank for 100 pounds per square inch pressure and automatically controlled by pressure switch.

Air compressor is intended for general power plant use and to be used to prevent formation

K00000857

of ice along sides of tainter gates and to raise water logged debris from bottom of penstock racks.

Installed over the spillway is a traveling tainter gate hoist having 7½ H.P. motor and used for the operation of the tainter gates.

Miscellaneous Electrical Services

In addition to the auxiliary equipment served from the power cabinet as previously described, there is a 4800 volt service to a nearby Prisoner of War Camp which has 3- 4800 volt fused cutouts in basement at the west end of the building in the feeder line from the feeder switch cubicle.

Connected to the 100 ampere fused safety switch for the power cabinet is a 220 volt, 30 ampere fused safety switch for a small water supply pumping unit circuit.

A 30 ampere fused safety switch is connected to the lighting cabinet from which a feeder line extends to a nearby operator's cottage for electrical service.

Underground Feeder Cables steps in house

From each of the two feeder switch cubicles (one now installed and a second under contract) a 450,000 CM lead and paper 5000 volt cable extends in 4" fibre conduit through power house and in bridge concrete and underground in embankment fill to the east side of the dam and spillway and up a cable pole, terminating in a 3 conductor pothead. The cable pole is located about 200 feet east of the east end of the dam. From the potheads on the cables, connections are made through single pole disconnecting switches to 2 separate, 3 phase, 4800 volt, overhead circuits which are carried on one wooden pole line with separate wooden cross-arms for each circuit a distance of approximately 1000 feet to the step-up transmission line transformers. The 4800 volt overhead transmission line is of #4/0 T5.W.P wire, and a pole-top switch is placed in each overhead circuit at or close to the transformer station. revise

steps in house per J. Harvey 5/28/74

K00000858

There will then be two independent 4800 volt circuits from feeder switch cubicles in power plant to step-up transformer station, one of which is now completely installed and the underground cable from power plant to cable pole of the other is also now installed, leaving the construction of the second 4800 volt overhead circuit from cable pole to step-up transformer station to be constructed in connection with the new unit installation.

Step-up Transformer Station

The step-up transformer station located about 1200 feet east of the east end of the dam has 6- 333 kva, 4800/24000 volt, single phase, outdoor type, oil cooled transformers in two banks of three transformers each. Transformers are connected delta on the 4800 volt side and on the 24000 volt side. Transformers are set upon 6 x 8 inch oak ties placed in coarse gravel.

Two Western Red Cedar 35 foot poles, Class 2, 20 ft. apart with wood cross arms and with 8" steel channels between poles support the high and low voltage transformer bus. Low voltage bus (4800 volt) is of #4/0 TBWP wire and high voltage bus (24000 volt) is of #4 Bare copper wire. Lightning arresters are provided on both high and low voltage side. Ground mass consists of 21- 1/2" dia. x 16'-0" copper covered ground rods with #2 bare soft copper wire pigtails brazed to rods and with interconnections of #0 Bare copper wire.

A 5 kva, 4800/240/120 volt surge proof distribution transformer mounted on one of the poles provides service to two 500 watt flood lights for the lighting of the station and for a weatherproof convenience outlet. A 6 foot high galvanized chain link wire fence encloses the transformer station and has gate and removable sections. Floodlights are located at fence corners on fence posts 8'-0" high and are controlled from 30 ampere fused safety switch mounted on the pole at a convenient height for operation from the ground.

Transmission Line

A 24000 volt, 3 phase transmission line of #2 A.C.S.R. extends from step-up transformer station, above described, about 6 miles upstream to a step-down transformer station in

K00000859

the City of Allegan. The conductors are supported on 120" 3-3/4" x 4-3/4" Douglas Fir cross arms carried by wooden poles.

City Substation

The transformers at the City substation consist of 3- 500 kva, 24000/2400 volt, [illegible] phase, oil cooled transformers placed on oak ties in coarse gravel and with wood pole structure for mounting accessories and making connections similar to that previously described for the step-up transformer station near the dam.

Also installed at the City substation are two outdoor type switch houses set on 6" x 8" oak ties in gravel. Each switch house is rated 2400 volts, 300 ampere, 3 phase, 3 wire, 60 cycle, and each is a complete unit in itself, made of sheet steel and structural steel shapes to form a rigid unit and with hinged doors to provide access to the equipment. Each switch house has a 600 ampere, 7500 volt oil circuit breaker with interrupting capacity of 25000 kva at 7500 volts. Each switch is automatic reclosing for three reclosures. Three single pole 7500 volt, 600 ampere disconnecting switches with insulating barriers between for disconnecting oil circuit breaker and other apparatus from the bus are provided. remove

Each switch house is equipped with a swinging panel on which are installed instruments and relays.

The two switch houses feed the 2400 volt primary circuits of the City distribution system.

A fence encloses the City substation and has access gate and removable panels. The station is lighted from a 5 kva surge proof transformer mounted on one of the substation poles and the two 500 watt flood lights at 2 of the fence corners are controlled by a 30 ampere fused safety switch all in a manner similar to that described for the step-up transformer station.

K00000860

UNITED STATES OF AMERICA

BEFORE THE FEDERAL POWER COMMISSION

In the Matter of the Application of CONSUMERS POWER COMPANY for Amendment of License	Project No. 785 - Michigan (Calkins Bridge Project)

APPLICATION FOR AMENDMENT OF LICENSE

Consumers Power Company (hereinafter referred to as Consumers Power), a corporation organized under the laws of the State of Michigan and licensee for a power project, designated as Project No. 785 in the records of the Federal Power Commission, hereby makes application for an amendment of the license for said project in the manner and to the extent described herein.

1A. On April 11, 1930, the Commission issued to the City of Allegan (hereinafter referred to as Allegan), a municipality existing under the laws of the State of Michigan, a license for a term of 50 years under Part 1 of the Federal Power Act for a water power project, designated by the Commission as Project No. 785.

1B. The license for Project No. 785 now vests in Consumers Power by virtue of an order of the Commission dated January 29, 1963 authorizing the transfer of the license from Allegan to Consumers Power, and an order of the Commission dated January 29, 1968, in Docket No. E-7360, authorizing Consumers Power to acquire all of the municipal electric facilities of Allegan, including the property and facilities comprising Project No. 785, such latter order having been affirmed on April 29, 1969 by an order of the United Stated Court of Appeals for the District of Columbia.

1C. Communications to Consumers Power in connection with this application should be addressed to:

Mr. A. H. Aymond
Chairman of the Board
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

K00000861

2. Statement or description of changes desired:

Pursuant to Sections 4 and 6 of the Federal Power Act, 16 USC 797 and 16 USC 799, Consumers Power requests that the license for Project No. 735 (Calkins Bridge Project) be amended to remove from the license an 11-pole tie line from the hydro production plant to the hydro plant step-up substation east of the hydro production plant and the step-up substation. The step-up substation east of the hydro production plant has been replaced by a new step-up substation adjacent to the southwest corner of the hydro production plant.

Consumers Power also requests that the license be amended to delete a 24 kV transmission line and related poles and fixtures which formerly connected the Allegan hydro plant step-up substation to the former Allegan treatment substation, and related land and land rights for the transmission line. The diesel generating plant was used until December 31, 1972 when it was retired from service and dismantled.

Upon release of the transmission line from the project, Consumers Power proposes to upgrade the line as needed for safe and reliable operation at 24 kV, and to operate the line as part of its distribution system serving Allegan.

A brief description of the plant proposed to be released and its original installed cost as of December 31, 1974 is as follows:

Plant Account No.	Description	Original Installed Cost as of 12/31/74
350	Land and Land Rights for transmission line	$ 908.82
353	Station Equipment consisting of an 11-pole tie line from hydro production plant to hydro plant substation - 3 phase, 60 Hz, 4800 V - 1459 circuit feet	2,408.31
355	Poles and Fixtures consisting of 105 wood poles and fixtures, running from pole #9 at hydro plant substation to the air-break switch on pole #103 at the site of the former Allegan Treatment substation	3,425.33
356	Overhead Conductors and Devices consisting of 30,185 circuit feet of #2 ACSR conductor, 3 phase, 60 Hz, 24 kV and 1 air-break switch	6,860.65
	Total	$18,603.61

K00000862

The above-mentioned "Land and Land Rights for transmission line" in Account 350 to be deleted from the license was originally reported to the Commission by Consumers Power in FPC Form 6, showing "Actual Legitimate Original Cost and Estimated Accrued Depreciation" for Project 785, as of May 20, 1968 (the date of the acquisition of Allegan's electric system by Consumers Power). This submittal was dated November 1, 1968 and was filed November 11, 1968 with the Commission. The item in question appears on Schedule No. 6 at page 14 of the Form 6 submittal.

The above-mentioned "Station Equipment" in Account 353 is a portion of the total in that account of $8,972.90, shown on Schedule No. 6 at page 14 of the FPC Form 6.

The sum of $8,425.83 shown above in Account 355, "Poles and Fixtures," includes the $6,922.39 in that account shown on Schedule No. 6 at Page 14 of the FPC Form 6, plus subsequent additions.

The sum of $6,360.55 shown above in Account 356, "Overhead Conductors and Devices," is the amount shown in that account on Schedule No. 6 at page 14 of the FPC Form 6.

The above transmission line to be deleted from the license comprises approximately 5.71 circuit miles of conductor, from pole #9 at the hydro plant substation to the air-break switch on pole #100 at the site of the former Allegan Treatment substation.

The $18,604.00 original installed cost of the facilities proposed to be released from the license comprises a very small portion of the original installed cost of the total project, which at December 31, 1974 was $625,351.

Consumers Power Company accordingly proposed to make the following amendments to Article 2 of the license for Project No. 785:

a. Deleting sheet No. 4 of Exhibit K (FPC No. 785-12), entitled "Project Transmission Line," since this transmission line is to be removed from the license.

b. Redescribing the project works under paragraph B, so that Article 2, as amended, shall read:

"Article 2. The project covered by and subject to this license is located in Kalamazoo River at Calkins Bridge site approximately six miles below Allegan, Michigan, and consists of:

A. All lands constituting the project area and inclosed, or the location of which is shown, by the project boundary, and/or interests in such lands necessary or useful for the purposes of the project, whether such lands or interests therein are owned or held by the licensee or by the United States; such project area and project boundary being more fully shown and described by certain exhibits which accompanied the application for license or for amendment thereof and which are designated and described as follows:

Exhibit J: General map, entitled 'Project Boundary,' signed August 2, 1929, by Joseph L. Mosier, Mayor (FPC No. 785-2).

Exhibit K: Maps in three sheets, signed City of Allegan, Michigan, by P. H. Beauvais, Clerk, and R. A. Wilcox, Mayor, on May 29, 1950, comprising: Sheets 1A, 2A, 3A (FPC Nos. 785-9, -10,-11), entitled 'Project Boundary.'

B. All project works consisting of a dam with overall length of 1,335 feet comprising powerhouse, gated spillway, fishway, and earth embankment sections; a reservoir having an area of about 1,550 acres at normal pool; a power plant having installed one 450-kilowatt unit, one 900-kilowatt unit, and one 1,200-kilowatt unit aggregating 2,550 kilowatts; a step-up substation; and appurtenant facilities; the location, nature, and character of which are more fully shown and described by the exhibits hereinbefore cited and by certain other exhibits which accompanied the application for amendment of license and which are designated and described as follows:

Exhibit L: Plans in two sheets. Sheet 1B entitled 'Location Map' signed Consumers Power Company by S. H. Howell, Vice President, on March , 1976. Sheet 2A (FPC No. 785-14), entitled 'General Layout and Sections' signed City of Allegan, Michigan by P. H. Beauvais, Clerk, and R. A. Wilcox, Mayor, on May 29, 1950.

Exhibit L: A plan in one sheet (FPC No. 785-3), entitled 'General Layout and Sections, Showing Proposed New Generating Unit,' signed for the Licensee by Ayres, Lewis, Norris & May, Consulting Engineers, on December 12, 1944.

Exhibit M: A typewritten statement in seven sheets entitled 'Mechanical, Electrical and Transmission Equipment,' filed March , 1976 and certified by Consumers Power Company, A. H. Aymond, Chairman of the Board, under date of March , 1976.

C. All other structures, fixtures, equipment, or facilities used or useful in the maintenance and operation of the project and located upon the project area, including such portable property as may be used and useful in connection with the project or any part thereof, whether located on or off the project area, if and to the extent that the inclusion of such property as a part of the project works is approved or acquiesced in by the Commission; also all other rights, easements, or interests the ownership, use, occupancy or possession of which is necessary or appropriate in the maintenance and operation of the project or appurtenant to the project area."

3. The proposed changes are necessary or desirable for the following reasons:

A. Following acquisition by Consumers Power of the electric system of Allegan pursuant to the order of the Commission dated January 29, 1968, Consumers Power rehabilitated the system and

integrated it with its existing network. The system which was incorporated into the Consumers Power electrical system comprised the hydro production plant, the 11-pole tie line to the step-up substation; the step-up substation, a diesel generating plant, and the 24 kV transmission line connecting the step-up substation to the diesel generating plant.

B. Four and one-half years after Consumers Power acquired the facilities, the diesel generating plant was retired from service, and the Calkins Bridge transmission line has been used to supply electric power and energy to Allegan. Because the Allegan hydro generating station is incapable of supplying sufficient power to load the transmission line to its capacity, using the line as part of Consumers Power's distribution system conducting energy from other generating facilities of Consumers Power to Allegan, is a more efficient use of the line.

C. Since the time when the 24 kV line was installed as a transmission facility, transmission and distribution voltages have increased dramatically, so that distribution voltages now are comparable to what were transmission voltages a few years ago. Distribution voltages in the area (24.9 kV) are commensurate with the capacity of the line, and the power and energy needs of Allegan can be most efficiently met if the line is incorporated into Consumers Power's distribution system in the area.

D. If authorization to release the line from the project license and incorporate it into Consumers Power's distribution system is not granted, then in order to adequately serve the needs of Allegan it would be necessary for Consumers Power to essentially duplicate the line, at an estimated cost of $75,600 compared to the original installed cost of the line and associated facilities sought to be released of $19,000. This duplication would obviously be economically very wasteful and would increase the cost of service to Consumers Power's customers with no change in the nature of that service.

IN WITNESS WHEREOF, Consumers Power Company has caused its name to be hereunto signed by A. H. Aymond, Chairman of its Board, and its corporate seal to be hereto affixed by F. C. Baker, its Assistant Secretary, thereunto duly authorized, this th day of March, 1976.

Respectfully submitted,

CONSUMERS POWER COMPANY

Attest:

By _____
A. H. Aymond
Chairman of the Board

_____
F. C. Baker
Assistant Secretary

30 E P.O.

STATE OF MICHIGAN

NATURAL RESOURCES COMMISSION
CARL T. JOHNSON
E. M. LAITALA
DEAN PRIDGEON
HILARY F. SNELL
HARRY H. WHITELEY
JOAN L. WOLFE
CHARLES G. YOUNGLOVE

WILLIAM G. MILLIKEN, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING, BOX 30028, LANSING, MICHIGAN 48909
HOWARD A. TANNER, Director

RECEIVED
FEB 13 1978
ENVIRONMENTAL ACTIVITIES

February 9, 1978

Ronald Fobes
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Re: Allegan Hydro Plant

Dear Mr. Fobes:

This will acknowledge your letter of January 24, 1978, relative to the above facility. I understand that this facility is being considered for relicensing and that a 401 certification must accompany the relicensing application.

Our District staff members have inspected the facilities and have determined that there are no aspects of the hydroplant which would cause a violation of water quality standards. As example, there are no sanitary facilities located at the site, nor is oil or chemicals used to lubricate or clean turbine machinery. We are unaware of any operation procedures which would cause a deterioration of water quality.

We hereby certify that if the Allegan Hydro facilities continue to observe historical procedures in operation, there will not be a violation of water quality standards.

Very truly yours,

WATER QUALITY DIVISION

John M. Bohunsky

John M. Bohunsky
Chief of Field Operations

JMB:clp
cc: W. Denniston
C. Harvey
R. Basch

MICHIGAN
THE GREAT LAKE STATE

R1026 10/76

K00000868

12 FERC ¶62,172

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Consumers Power Company) Project No. 785

ORDER ISSUING LICENSE (MAJOR)

(September 10, 1980)

Consumers Power Company (Consumers) filed on April 8, 1977, an application under Part I of the Federal Power Act (Act) for a new major license to authorize the continued operation and maintenance of its licensed Calkins Bridge Project No. 785. 1/ The project is located on the Kalamazoo River, a navigable waterway of the United States, in Allegan County, Michigan.

Notice of the application was published in accordance with the Act. No protests or petitions to intervene have been received.

DESCRIPTION OF PROJECT

The Calkins Bridge Project consists of an earth dam with a concrete powerhouse-spillway section, a powerhouse with a total installed capacity of 2,550 kW, a reservoir, and electrical and other appurtenant facilities. The project works are more fully described in Ordering Paragraph (B).

The project generates an estimated average 11,400,000 kWh annually. 2/ Power generated at the project is used by Consumers in meeting its system load requirements.

SAFETY AND ADEQUACY

Project structures, machinery, and appurtenant facilities have been inspected by the Commission's staff and found to be adequately maintained and in good operating condition. The project works are considered safe and adequate.

1/ Authority to act on this matter is delegated to the Director, Office of Electric Power Regulation, under §375.308 of the Commission's regulations, 45 Fed. Reg. 21216 (1980)), amending 44 Fed. Reg. 46449 (1979) and 18 C.F.R. 3.5(g) (1979).

2/ Continued operation of the project, a renewable source of energy, would save the equivalent of approximately 18,700 barrels of oil or 5,300 tons of coal per year.

FEDERAL ENERGY REGULATORY COMMISSION
DOCKETED
SEP 11 1980
DOCKET SECTION

DC-A-34

K00000869

RECREATION AND LAND USE

The United States Department of the Interior (Interior) expressed concern that Consumers does not have adequate plans to protect existing recreational resources downstream of the project dam from degradation due to overuse or uncontrolled use. The Michigan Department of Natural Resources (DNR) and Consumers have entered into a lease agreement to provide for regulation of camping below the dam. DNR would also improve access to the east bank downstream from the dam when Consumers provides fencing, a pedestrian walkway across the dam, and other improvements. The Exhibit R does not include any proposal to provide a walkway across the dam. If pedestrian access across the dam should become necessary for management of downstream lands, the Exhibit R could be amended as provided by Article 17 of the license.

Interior also expressed concern about the effect of residential and second home development along the shoreline. Article 36 of the license requires Consumers to supervise and control the use and occupancy of project lands and waters.

FISHERY RESOURCES

Interior recommended that Consumers be required to develop and install a fish passage facility as a condition of the license. A fishway presently exists at the project dam, but it is inoperable and inadequately designed to be effective. Consumers believes that the present water quality of the Kalamazoo River upstream of the dam is inadequate to support salmonids. Staff and DNR concur that installation of a fish ladder may be desirable in the future, but that construction should be deferred until water quality improves. Article 15 of the license provides the means whereby DNR or Interior may request the construction of adequate fish passage facilities at the project.

MINIMUM FLOWS

Interior expressed concern that minimum flow releases below 150 cfs, recorded during the period 1930-1967, were inadequate and low flows could occur in the future. Exhibit S states that a minimum flow of 350 cfs would be maintained in the future to ensure aquatic life protection. Consumers states that this minimum flow (or reservoir inflow if less than 350 cfs) has been in effect since 1977. Article 29 of the license requires Consumers to maintain a minimum flow of 350 cfs from the project.

Consumers continues to confer with the DNR about the possibility of increasing the minimum flow. If an increase in minimum flow is determined to be necessary in the future, this could be required as provided for by Article 15.

ENVIRONMENTAL CONSIDERATIONS

DNR determined that a Water Quality Certificate would not be necessary for the project.

On the basis of the record, including staff's independent analysis, it is concluded that the issuance of this license for Project No. 785, as conditioned, is not a major Federal action significantly affecting the quality of the human environment.

COMPREHENSIVE DEVELOPMENT

It is concluded that the issuance of this license is in the public interest, and that the project is best adapted to the comprehensive development of the Kalamazoo River Basin, upon compliance with the terms and conditions of this license.

LICENSE TERM

The original license for Project No. 785 expired April 10, 1980. The project is operating under an annual license. The issuance of this license does not authorize any significant new project construction or change in project operation. Therefore, in accordance with the policy established in the order issuing license for Project No. 2301, 3/ this license for Project No. 785 will terminate 30 years from the expiration date of the original license.

It is ordered that:

(A) This license is issued to Consumers Power Company (Licensee) under Part I of the Federal Power Act (Act), for a period effective the first day of the month in which this order is issued and terminating April 10, 2010, for continued operation and maintenance of the Calkins Bridge Project No. 785 located on the Kalamazoo River in Allegan County, Michigan. The license is subject to the terms and conditions of the Act, which is incorporated by reference as part of this license, and to the regulations the Commission issues under the provisions of the Act.

3/ The Montana Power Company, Project No. 2301, "Order Issuing New License (Major)," (issued October 5, 1976).

(B) The Calkins Bridge Project consists of:

(i) All lands to the extent of the Licensee's interests in those lands, constituting the project area and enclosed by the project boundary, the project area and boundary being shown and described by certain exhibits which form part of the application for license and which are designated and described as:

Exhibit	FERC No. 785-	Showing
J	18	General Map of Project
K-1	25	Detail Map of Project
K-2	26	Detail Map of Project
K-3	27	Detail Map of Project

(ii) Project works consisting of: (A) a 1,330-foot long and 42-foot high dam comprising 1,100 feet of earth embankment and a 230 feet concrete powerhouse-spillway section, having six steel tainter gates; (B) a 1,550 acre reservoir; (C) a powerhouse containing three generating units with a total installed capacity 2,550 kW; (D) a 4.8/24 kV step-up transformer adjacent to the powerhouse; and (E) appurtenant facilities. The location, nature and character of these project works are generally shown and described by the exhibits cited above and are more specifically shown and described by certain other exhibits designated and described as:

Exhibit L	FERC No. 785-	Showing
1	22	General Layout of the Project
2	23	General Plans and Section of the Powerhouse, Fishway, Spillway, and Embankment

Exhibit M - Seven typewritten pages entitled "General Description of Project Equipment" filed as part of the application on April 8, 1977.

Exhibit R - Four pages of text filed as part of the application on April 8, 1977, and the following drawing:

Exhibit R	FERC No. 785-	Showing
1	24	Project Recreational Use Map

Exhibit S - Four pages of text filed as part of the application on May 17, 1978.

(iii) All of the structures, fixtures, equipment, facilities, used or useful in the maintenance and operation of the project and located within the project boundary, all portable property that may be employed in connection with the project, whether located within or outside the project boundary, as approved by the Commission, and all riparian or other rights which are necessary or appropriate for the maintenance or operation of the project.

(C) Exhibits J, K, L, M, R and S as designated and described in ordering paragraph (B) above are approved and made a part of the license.

(D) This license is also subject to Articles 1 through 28 set forth in Form L-3 (revised October 1975) entitled, "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States", attached to and made a part of this license. This license is also subject to the following special conditions which are set forth as additional articles:

Article 29. Licensee shall discharge from the project a continuous minimum flow of 350 cfs or the inflow to the reservoir, whichever is less, for the purpose of protecting and enhancing fishery resources in the Kalamazoo River. These flows may be modified temporarily, if required by operating emergencies beyond the control of the Licensee, and for short periods for fishery management purposes upon mutual agreement between the Licensee and the Michigan Department of Natural Resources.

Article 30. For the purpose of reimbursing the United States for the cost of administration of Part I of the Act, the Licensee shall pay the United States a reasonable annual charge as determined by the Commission in accordance with the provisions of its regulations in effect from time to time. The authorized installed capacity for that purpose is 3,400 horsepower.

Article 31. The Licensee shall implement, and modify when appropriate, the emergency action plan on file with the Commission designed to provide an early warning to upstream and downstream inhabitants, property owners, and recreational users if there should be an impending or actual sudden release of water caused by an accident to, or failure of, project works. That plan shall

include: instructions to be provided on a continuing basis to operators and attendants for actions they are to take in the event of an emergency; detailed and documented plans for notifying law enforcement agencies, appropriate Federal, State, and local agencies, operators of water-related facilities, and those residents, recreational users, owners of properties that could be endangered; actions that would be taken to reduce the inflow to the reservoir, if possible, by limiting the outflow from upstream dams or control structures; and actions to reduce downstream flows by controlling the outflow from dams located on tributaries to the stream on which the project is located. The Licensee shall also maintain on file with the Commission a summary of the study used as a basis for determining the areas that may be affected by an emergency, including criteria and assumptions used. Licensee shall monitor any changes in upstream or downstream conditions which may influence possible flows or affect areas susceptible to damage, and shall promptly make and file with the Commission appropriate changes in the emergency action plan. The Commission reserves the right to require modifications to the plan.

Article 32. The Licensee shall, to the satisfaction of the Commission's authorized representative, install and operate any signs, lights, sirens, barriers, or other safety devices that may reasonably be needed to warn the public of fluctuations in flow from the project, and to protect the public in its recreational use of project lands and waters.

Article 33. Prior to the commencement of any construction or development of any project works or other facilities at the project, the Licensee shall consult and cooperate with the Michigan Historic Preservation Officer (SHPO) to determine the need for, and extent of, any archeological or historic resource surveys and any mitigative measures that may be necessary. The Licensee shall provide funds in a reasonable amount for such activity. If any previously unrecorded archeological or historic sites are discovered during the course of construction, construction activity in the vicinity shall be halted, a qualified archeologist shall be consulted to determine the significance of the sites, and the Licensee shall consult with the SHPO to develop a mitigation plan for the protection of significant archeological or historic resources. If the Licensee and the SHPO cannot agree on the amount of money to be expended on archeological or historic work related to the project, the Commission reserves the right to require the Licensee to conduct, at its own expense, any such work found necessary.

Article 34. Pursuant to §10(d) of the Act, the rate, as computed below, shall be the specified rate of return on the net investment in the project for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. One-half of the project surplus earnings, if any, accumulated in excess of the specified rate of return per annum on the net investment, shall be set aside in a project amortization reserve account as of the end of each fiscal year: Provided, that, if and to the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year or years, the amount of such deficiency shall be deducted from the amount of any surplus earnings accumulated thereafter until absorbed, and one-half of the remaining surplus earnings, if any, cumulatively computed, shall be set aside in the project amortization reserve account; and the amounts thus established in the project amortization reserve account shall be maintained until further order of the Commission.

The annual specified reasonable rate of return shall be the sum of the weighted cost components of long-term debt, preferred stock, and the cost of common equity, as defined herein. The weighted cost components for each element of the reasonable rate of return is the product of its capital ratios and cost rate. The current capital ratios for each of the above elements of the rate of return shall be calculated annually based on an average of 13 monthly balances of amounts properly includable in the Licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rates for such ratios shall be the weighted average cost of long term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10-year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 35. (a) In accordance with the provisions of this article, the Licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain other types of use and occupancy, without prior Commission approval. The Licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the Licensee shall also have continuing responsibility to supervise and control the uses and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the Licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the Licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, cancelling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The types of use and occupancy of project lands and waters for which the Licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities; and (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the Licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The Licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the uses and occupancies for which it grants permission are maintained in good repair and comply with applicable State and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the Licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b), the Licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the Licensee's costs of administering the permit program. The Commission reserves the right to require the Licensee to file a description of its standards, guidelines, and procedures for

implementing this paragraph (b) and to require modifications of those standards, guidelines, or procedures.

(c) The Licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges and roads for which all necessary State and Federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the Licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The Licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary State and Federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary Federal and State water quality certificates or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary Federal and State approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile from any other private or public marina; (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from the edge of the project reservoir at normal maximum surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 45 days before conveying any interest in project lands under this paragraph (d), the Licensee must file a letter to the Director, Office of Electric Power Regulation, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G or K map may be used), the nature of the proposed use, the identity of any Federal or

State agency official consulted, and any Federal or State approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the Licensee to file an application for prior approval, the Licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraphs (c) or (d) of this article:

(1) Before conveying the interest, the Licensee shall consult with Federal and State fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the Licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved Exhibit R or approved report on recreational resources of an Exhibit E; or, if the project does not have an approved Exhibit R or approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include covenants running with the land adequate to ensure that: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; and (ii) the grantee shall take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project.

(4) The Commission reserves the right to require the Licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G or K drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G or K drawings would be filed for approval for other purposes.

(E) This order is final unless a petition appealing it to the Commission is filed within 30 days from the date of its issuance, as provided in Section 1.7(d) of the Commission's regulations, 18 C.F.R. 1.7(d) (1979), as amended, 44 Fed. Reg. 46449 (1979). The filing of a petition appealing this order to the Commission or an application for rehearing as provided in Section 313(a) of the Act does not operate as a stay of the effective date of this license or of any other date specified in this order, except as specifically ordered by the Commission. The Licensee's failure to file a petition appealing this order to the Commission shall constitute acceptance of this license. In acknowledgment of acceptance of this license and its terms and conditions, it shall be signed by the Licensee and returned to the Commission within 60 days from the date of this order.

(S E A L)

William W. Lindsay
Director, Office of Electric
Power Regulation

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
PERMIT

Consumers Energy Company
330 Chestnut Street
Cadillac, MI 49601

Permit No.	99-12-0015
Issued	April 23, 1999
Extended	
Revised	
Expires	December 31, 2000

Under the provisions of the Natural Resources and Environmental Protection Act 451, PA 1994 and specifically:

☒ **Part 301 Inland Lakes and Streams.**

☐ **Part 325 Great Lakes Submerged Lands**

☐ **Part 303 Wetland Protection**

☐ **Part 31 Floodplain/Water Resources Protection.**

☐ **Part 315 Dam Safety.**

Permission is hereby granted, based on permittee assurance of adherence to State requirements and permit conditions to:

Permit Activity

Install temporary steel sheet pile cofferdam immediately upstream of the Allegan dam. Remove and replace right abutment wall. Place approximately 19 cubic yards of granular fill and 9 cubic yards of rock riprap along approximately 25 feet of shoreline adjacent to right abutment wall. Install temporary concrete bulkhead immediately upstream of forebay. All work to rehabilitate the Allegan dam shall be completed in accordance with the attached plans and specifications dated April 23, 1999.

Water Course Affected: Kalamazoo River
Property Location: Valley Township **County,** Allegan, **Section** 15
Subdivision, Lot **Town** 2N **Range** 14W

Authority granted by this permit is subject to the following limitations:

A Initiation of any work on the permitted project confirms the permittee's acceptance and agreement to comply with all terms and conditions of this permit

B The permittee in exercising the authority granted by this permit shall not cause unlawful pollution as defined by Act 245 of the Public Acts of 1929, as amended

C This permit shall be kept at the site of the work and available for inspection at all times during the duration of the project or until its date of expiration

D All work shall be completed in accordance with the plans and the specifications submitted with the application and/or plans and specifications attached hereto

E No attempt shall be made by the permittee to forbid the full and free use by the public of public waters at or adjacent to the structure or work approved herein

F It is made a requirement of this permit that the permittee give notice to public utilities in accordance with Act 53 of the Public Act of 1974 and comply with each of the requirements of that act

G This permit does not convey property rights in either real estate or material, nor does it authorize any injury to private property or invasion of public or private rights, nor does it waive the necessity of seeking federal assent, all local permits or complying with other state statutes

H This permit does not prejudice or limit the right of a riparian owner or other person to institute proceedings in any circuit court of this state when necessary to protect his rights

I Permittee shall notify the Department of Environmental Quality within one week after the completion of the activity authorized by this permit, by completing and forwarding the attached, pre-addressed post card to the office addressed thereon

J This permit shall not be assigned or transferred without the written approval of the Department of Environmental Quality

K Failure to comply with conditions of this permit may subject the permittee to revocation of permit and criminal and/or civil action as cited by the specific State Act, Federal Act and/or Rule under which this permit is granted

L Work to be done under authority of this permit is further subject to the following special instructions and specifications

continued on next page

Project limited to area of permittee's ownership and riparian interest. Care shall be taken to minimize downstream siltation. Raw banks shall be sodded or riprapped to prevent erosion. It is understood that a fish ladder waiver and local government approval have been obtained. This permit does not authorize deterioration of downstream water quality or quantity.

Any modification or revision to the approved design plans and/or specifications must be approved in writing by the Department of Environmental Quality.

The permittee shall provide passage of flow during and after construction. During periods of low stream flow the permittee shall provide a minimum flow release approximately equivalent to the stream flow into the impoundment.

The permittee shall furnish a written statement from Tor Hansen, P.E. certifying that he/she has supervised the rehabilitation of the dam and that it was repaired in accordance with the plans and specifications approved by the Land and Water Management Division of the Department of Environmental Quality.

All slurry resulting from any dewatering operation shall be pumped to a sump located away from the watercourse and allowed to filter through natural vegetation or gravel filters for a sufficient distance to remove suspended particles.

Prior to the removal of the existing abutments, cofferdams of steel sheet piling, sand bags, straw bales, or gravel dikes shall be installed in a fashion to isolate all construction activities from the stream flow.

Permittee covenants not to sue the State of Michigan, or any of its departments, boards, commissions, officers, employees, or agents for any claim, whether legal or equitable, arising under or in any manner related to the privileges granted in this Permit. Permittee hereby releases, waives, and discharges the State of Michigan and all of its departments, boards, commissions, officers, employees, and agents from any and all liability to permittee arising under or in any manner related to the privileges granted under this Permit.

Permittee agrees to indemnify the State of Michigan and all of its departments, agencies, boards, commissions, officers, employees, and agents from any and all liability arising under or in any manner related to the issuance of the Permit or the privileges granted under this Permit.

All riprap shall be clean rock or broken concrete free of any rerod, asphalt or other polluting materials.

Authority granted by this permit does not waive permit requirements under Part 91, Soil Erosion and Sedimentation Control, PA 451 of 1994, or the need to acquire applicable permits. Contact Patrick Hudson, Michigan Township Services, 111 Grand Street, Allegan, MI 49010, phone 616-673-3239.

During the removal of any portion of the existing structure, measured MUST be taken to ensure that debris does not fall into the waterway. Debris which has inadvertently fallen into the waterway during the removal/construction operation must be removed the same day. However, disturbance of the bottom of the waterway may be as harmful as the debris itself, therefore, PREVENTIVE MEASURES should be STRINGENTLY followed.

If the project, or any portion, is stopped and lies uncompleted for any length of time other than that encountered in a normal work week, every precaution shall be taken to protect the uncompleted work from erosion, including the placement of temporary sandbag riprap or other acceptable temporary protection.

No work shall be done in the stream during periods of above-normal flows except as necessary to prevent erosion.

continued on next page

The property owner, contractor, and any agent, in obtaining this permit, are held responsible to insure project is constructed in accordance with all drawings and specifications contained in this permit.

The permittee shall notify the State Archaeologist, John Halsey at 517-373-6358, if any artifacts are found during construction.

The **black redhorse** has been recorded in the Kalamazoo River. The black redhorse inhabits the swiftly flowing section of small-to medium-sized streams. It is found in clear water over gravel, bedrock, and sand where siltation is at a minimum. Biology on the species is limited. Specimens that have collected in Minnesota were ready to spawn in May. Spawning occurs in shallow, gravelly areas in streams. A bottom feeder, the black redhorse eats a variety of small aquatic organisms and debris.

The **spotted gar** has also been known to occur in the Kalamazoo River. It has been known to decrease in abundance or disappear with the decrease or disappearance of aquatic vegetation.

If construction activities are limited to September and October, impacts to these fish species will be minimized by the project. Both species spawn in late spring so construction activities then or soon after could negatively impact larvae and juveniles.

Contact Lori Sargent, Department of Natural Resources, Wildlife Division, at telephone 517-373-9418 if there are any questions regarding these species.

Steel sheetpile cofferdam and concrete bulkhead shall be removed upon completion of rehabilitation of the dam.

Russell J. Harding, Director
Department of Environmental Quality

By _____
Luis Saldivia
Land and Water Management Division

cc: Allegan CEA
Valley Twp.
LWMD, PCU
LWMD, Plainwell Dist.

K00000882

Allegan Spillway Rehabilitation
FERC No. 785
Consumers Energy Company

K00000883

RECEIVED
APR 16 1999
LWMD - PLAINWELL

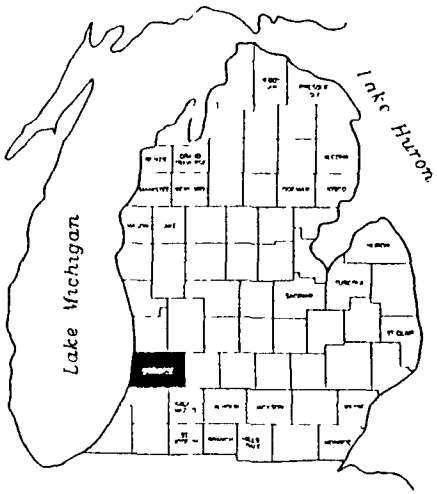
DEQ File 99 12-15
Page 1 of 21
April 23, 1999

REFERENCING

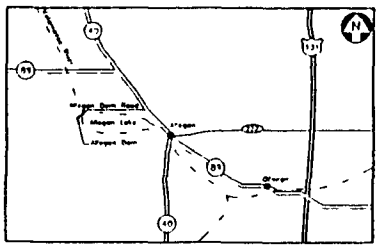
SECTION GRAPHICS STANDARDS

LEGEND OF PROJECT MATERIALS

- Existing Concrete
- New Concrete Removed and Replaced Concrete
- Grout
- Fill
- Steel
- Grade
- Reinforcing Steel Mat
- Steel Grating



STATE MAP



LOCATION
N.T.S

DRAWING INDEX

Title	Sheet No.
Cover Sheet, Index, and Location Map	S-00
Site Plan	S-01
Right Abutment Rehabilitation Plan, Sections, and Details	S-02
Right Abutment Rehabilitation Plan and Sections	S-03
Spillway Rehabilitation Plan and Sections	S-04
New Spillway Piers Sections and Details	S-05
Spillway Sill and Side Plate Heaters Sections and Details	S-06
Spillway Operator's Bridge Plan, Sections, and Details	S-07
Fish Ladder Rehabilitation Plan and Sections	S-08
Forebay Rehabilitation Plan, Sections, and Details	S-09
Left Abutment and Trashbay Rehabilitation Plan and Sections	S-10
Standard/Miscellaneous Details	S-11
Cofferdam Plan and Sections	ST-01
Roadway Bridge Shoring Plan and Sections	ST-02
Roadway Bridge Shoring Sections and Details	ST-03
Tainter Gate Plan, Sections, and Details	ST-04
Trunnion Assemblies	ST-05
Trunnion Assembly Details	ST-06
Miscellaneous Steel Details	ST-07
Electrical General Plan	E-01
Spillway Operator's Bridge Electrical	E-02

TOR HANSEN

ISSUED FOR CONSTRUCTION
DATE 4/24/99

NO	BY	CHK	APP	DATE	REVISION DESCRIPTION
	TSH	SH	SH	4/1/99	ISSUED FOR CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN
DATE 3/24/99 REG. NO. 44429

CLIENT
BID
CONSTRUCTION
RELEASED TO/FOR A B C 0 1 2 3
DATE RELEASED

Barr Engineering Company

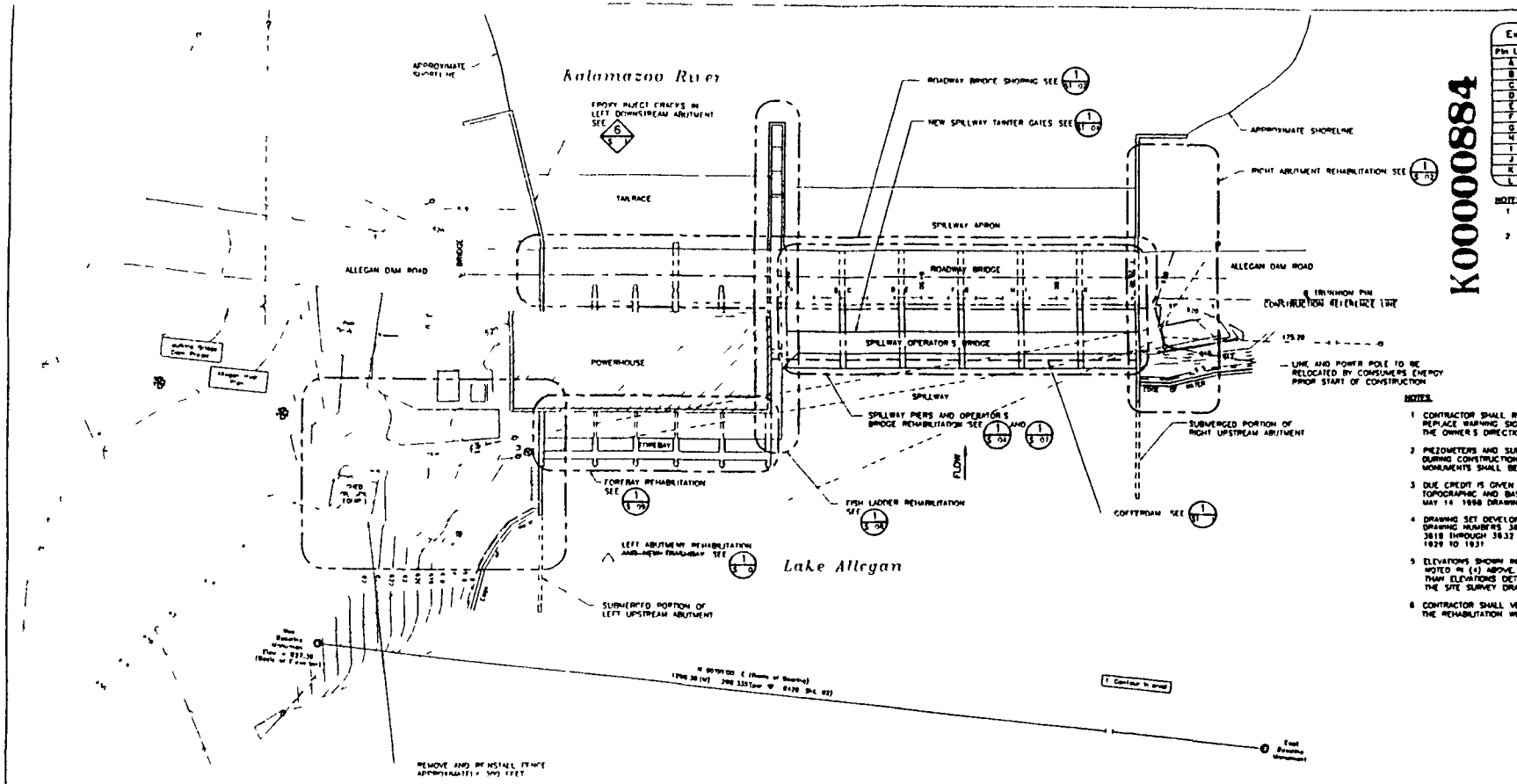
Scale	AS SHOWN
Date	8/12/98
Drawn	TSH
Checked	TSH
Designed	TSH
Approved	

CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN

COVER SHEET, INDEX, AND LOCATION MAP

BARR PROJECT No. 2203001TSH
CLIENT PROJECT No.
SHEET No. S-00
REV. No. 1



1 PLAN, SITE PLAN
1"=20'

0 20 40
SCALE IN FEET

Existing Trunnion Pin Alignment			
Pin Loc.	Station	Offset (ft)	Dev
A	0+00.00	+0.00	608.47
B	0+10.57	-0.03	608.50
C	0+32.07	-0.08	608.48
D	0+40.53	-0.08	608.49
E	0+44.03	-0.07	608.50
F	0+82.50	-0.08	608.50
G	0+86.07	-0.04	608.52
H	0+94.58	-0.03	608.54
I	0+98.08	+0.02	608.49
J	1+06.58	-0.08	608.48
K	1+10.08	-0.02	608.48
L	1+28.48	+0.09	608.43

K00000884

NOTES:

1 EXISTING DRAWINGS INDICATE TRUNNION PIN AT EL. 609.50

2 TRUNNION PIN ALIGNMENT SURVEYED BY SHERIDAN SURVEYING IN MAY 1998

NOTES:

1 CONTRACTOR SHALL REMOVE, TEMPORARILY RELOCATE, AND REPLACE WARNING SIGNS AND OTHER SAFETY DEVICES AT THE OWNER'S DIRECTION

2 PIEZOMETERS AND SURVEY MONUMENTS SHALL BE PROTECTED DURING CONSTRUCTION. ANY DAMAGE TO PIEZOMETERS OR MONUMENTS SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.

3 DUE CREDIT IS GIVEN TO SHERIDAN SURVEYING CO. FOR TOPOGRAPHIC AND BASE MAP OF EXISTING CONDITIONS DATED MAY 14 1998 DRAWING NUMBER SF 19019

4 DRAWING SET DEVELOPED USING AYRES LEWIS NORRIS AND MAY DRAWING NUMBERS 3602 3607 3609 3612 3614 3618 THROUGH 3632 3635 AND 3638 DATED FROM 1929 TO 1931

5 ELEVATIONS SHOWN IN DRAWING SET ARE BASED ON DRAWINGS NOTED IN (4) ABOVE. THE ELEVATIONS GIVEN ARE 1.0 ± HIGHER THAN ELEVATIONS DETERMINED FROM THE SHERIDAN SITE SURVEY. THE SITE SURVEY DRAWING IS INCLUDED WITH THIS DRAWING SET

6 CONTRACTOR SHALL VERIFY ALL ELEVATIONS PERTINENT TO THE REHABILITATION WORK

LEGEND

- -- Section Corner
- -- Monument Found
- -- Set Rebar W/ Cap "DEE 29245"
- (M) -- Measured
- -- Power Pole
- -- Light Pole
- -- Down Guy
- -- Sign (as noted)
- -- Phone Riser
- -- Monitoring Well
- -- Steel Grate
- -- Tree (as noted)
- -- Chain Link Fence
- Railing
- -- Baseline Monument

DEQ File 99-12-15
Page 2 of 21
April 23, 1999

TOR HANSEN
ENGINEER
No. 29245
LICENSED PROFESSIONAL ENGINEER
STATE OF MICHIGAN

ISSUED FOR CONSTRUCTION
DATE 3/24/99

MO	BY	CHK	APP	DATE	REVISION DESCRIPTION
		TSH		3.1.99	ISSUED FOR CONSTRUCTION

HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN
DATE 3/18/99 REG NO 29245

CLIENT
BID
CONSTRUCTION
RELEASED TO/FOR
A B C D 1 2 3
DATE RELEASED

Barr Engineering Company
4300 MARSH CENTER DRIVE
MINNEAPOLIS, MINNESOTA 55416
300 WEST 27TH STREET
MINNEAPOLIS, MINNESOTA 55411

Scale	AS SHOWN
Date	8/18/98
Drawn	TSH
Checked	TSH
Designed	TSH
Approved	

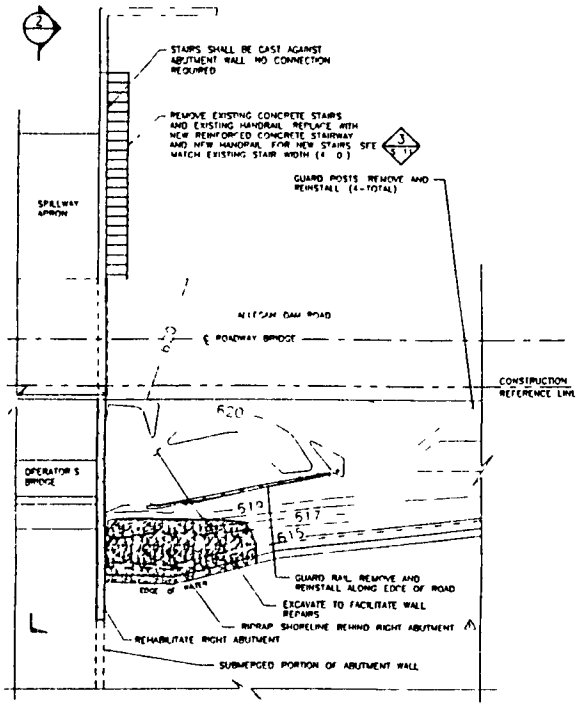
CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN

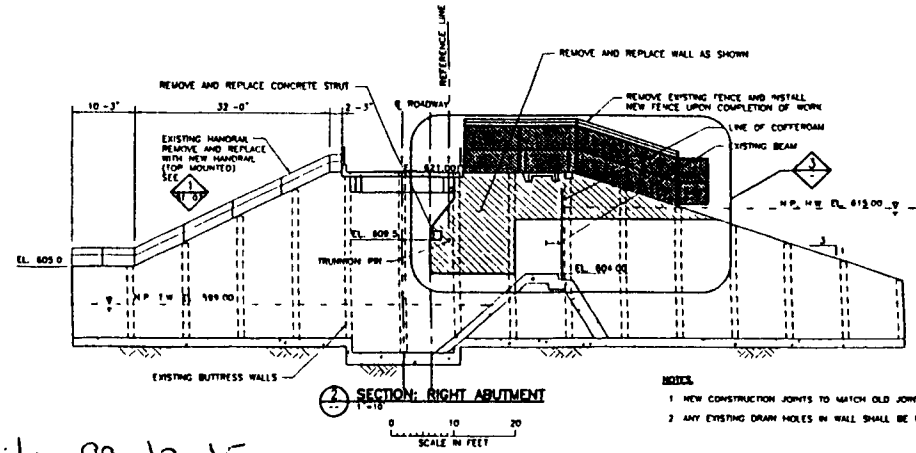
SITE PLAN

BARR PROJECT No. 2203001TSH
CLIENT PROJECT No.
SHEET No. S-01
REV No. 1

K00000885



1 S-01 PLAN: RIGHT ABUTMENT
1"=10'
0 10 20
SCALE IN FEET



2 S-01 SECTION: RIGHT ABUTMENT
1"=10'
0 10 20
SCALE IN FEET

NOTES:
1 NEW CONSTRUCTION JOINTS TO MATCH OLD JOINTS
2 ANY EXISTING DRAIN HOLES IN WALL SHALL BE REINSTALLED

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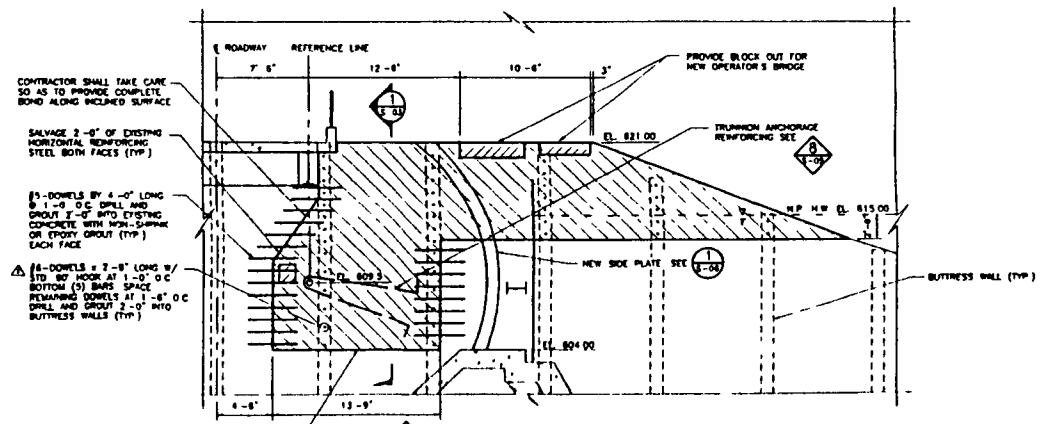
Page 3 of 21
April 23, 1999



3 S-01 DETAIL: RIGHT ABUTMENT REHABILITATION
1"=5'
0 5 10
SCALE IN FEET

NOTES:
1 NEW FENCE NOT SHOWN
2 WALL MUST BE SHORED IN ORDER TO INSTALL SIDE PLATE BELOW DEMOLITION LINE

NOTES:
1 BUTTRESS WALLS BEHIND ABUTMENT SPACED 8'-0" ON CENTER BUTTRESS WALLS NOT SHOWN IN PLAN VIEW
2 INSTALL SILT CONTROL MEASURES ALONG EXCAVATION TO FILTER RUNOFF
3 LOCAL COFFERDAM BY CONTRACTOR WILL BE REQUIRED FOR REPAIRS UPSTREAM OF OPERATOR'S BRIDGE
4 DEWATERING WITHIN EMBANKMENT WILL BE REQUIRED DUE TO THE EXCAVATION EXTENDING BELOW NORMAL POOL HEADWATER ELEVATION
5 PORTION OF ROADWAY REMOVED FOR EXCAVATION SHALL BE REPLACED IN KIND
6 ~~FOR PIPING DEEP SEE~~ 2 S-01
7 CONTRACTOR TO PROVIDE TEMPORARY SHORING FOR EXCAVATION AND DEWATERING OF EMBANKMENT TO FACILITATE RIGHT ABUTMENT REHABILITATION
8 TEMPORARY SHORING SHALL BE DESIGNED BY REGISTERED PROFESSIONAL ENGINEER SHORING SHALL BE DESIGNED SO AS TO INSURE EMBANKMENT STABILITY THROUGHOUT CONSTRUCTION THE SHORING SHALL BE DESIGNED TO INSURE EXCAVATION STABILITY AND PREVENT WASHOUT OF THE EMBANKMENT
9 EMBANKMENT SOIL BORINGS ARE AVAILABLE FROM CONSUMERS ENERGY

STATE OF MICHIGAN TOR HANSEN No. 34000 REGISTERED PROFESSIONAL ENGINEER

ISSUED FOR CONSTRUCTION
DATE 3/24/99

NO	BY	CHK	APP	DATE	REVISION DESCRIPTION
1	JW	TJH	TSH	3/11/99	REMOVED TIMBER DECK AND REPLACED WITH REINFORCED CONCRETE STAIRWAY
2	JW	TJH	TSH	3/11/99	ISSUED FOR CONSTRUCTION MODIFIED NOTE AT DETAIL 3 AND DELETE REFERENCE TO NEW SUPPORT BEAM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN
Tor Hansen
DATE 3/24/99 REG. NO. 34000

CLIENT: BID / CONSTRUCTION / RELEASED TO/FOR
DATE RELEASED: A B C 0 1 2 3

Bart Engineering Company

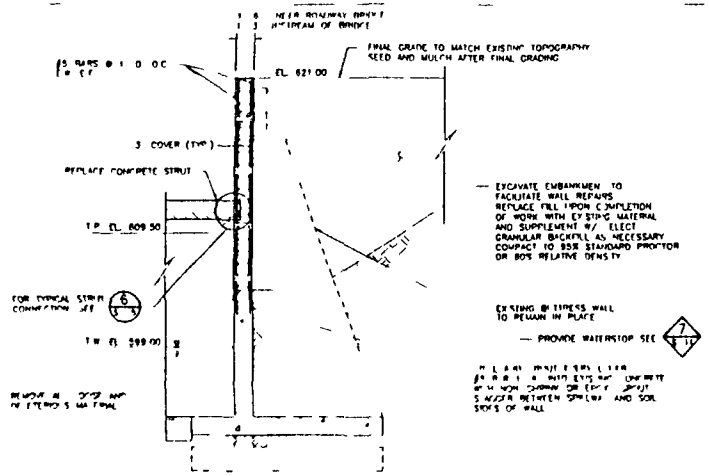
Scale	AS SHOWN
Date	8/18/98
Drawn	TJH
Checked	TSH
Designed	TSH
Approved	

CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

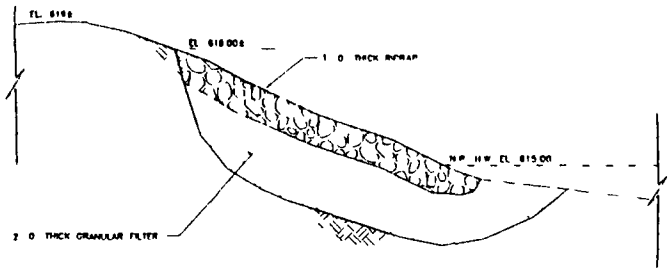
ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN

RIGHT ABUTMENT REHABILITATION
PLAN, SECTIONS, AND DETAILS

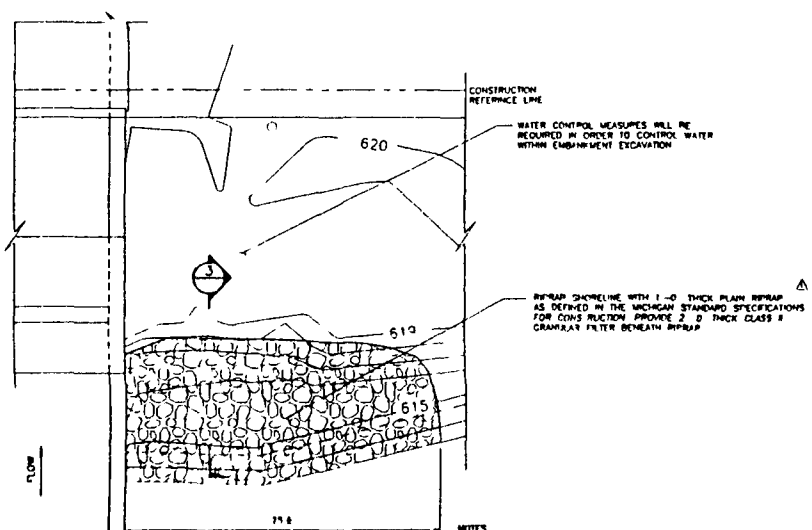
BART PROJECT No. 2203001TSH
CLIENT PROJECT No.
SHEET No. S-02
REV No. 2



1 SECTION RIGHT ABUTMENT
SCALE IN FEET



3 SECTION SHORELINE RIPRAP
SCALE IN FEET



2 PLAN RIGHT ABUTMENT
SCALE IN FEET

NOTES:

1. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING FOR EXCAVATION AND DEWATERING TO FACILITATE RIGHT ABUTMENT REHABILITATION SHORING AND DEWATERING SYSTEMS SHALL BE DESIGNED BY REGISTERED PROFESSIONAL ENGINEER.
2. NECESSARY EMBANKMENT INFORMATION IS AVAILABLE FROM CONSUMERS ENERGY

TOR HANSEN

DEQ File 99-12-15
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April 23, 1999

K00000886

ISSUED FOR CONSTRUCTION
DATE 3/24/99

NO	BY	CHK	APP	DATE	REVISION DESCRIPTION
1	TSH	TSH	TSH	3/1/98	REMOVED FORM DECK AND REPLACED W/ RIPRAP BEHIND ABUTMENT. RE-ISSUED FOR BID
2	TSH	TSH	TSH	3/1/98	ISSUED FOR CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN

DATE 3/24/99 REG. NO. 49529

CLIENT							
BID							
CONSTRUCTION							
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

Barr Engineering Company

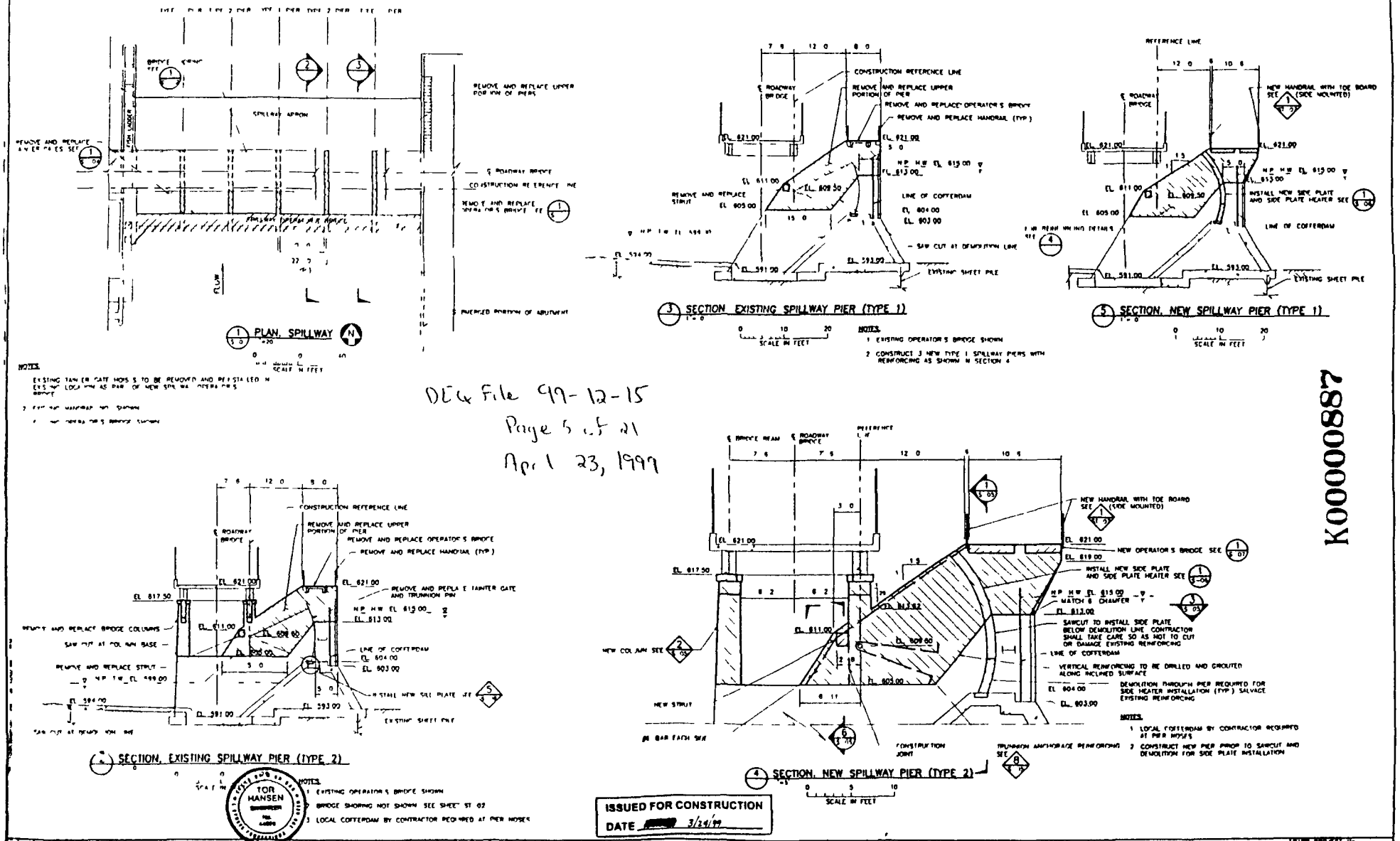
Scale	AS SHOWN
Date	8/4/98
Drawn	TSH
Checked	TSH
Designed	TSH
Approved	

CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN

RIGHT ABUTMENT REHABILITATION
PLAN AND SECTIONS

BARR PROJECT No. 2203001TSH
CLIENT PROJECT No.
SHEET No. S-03
REV No. 2



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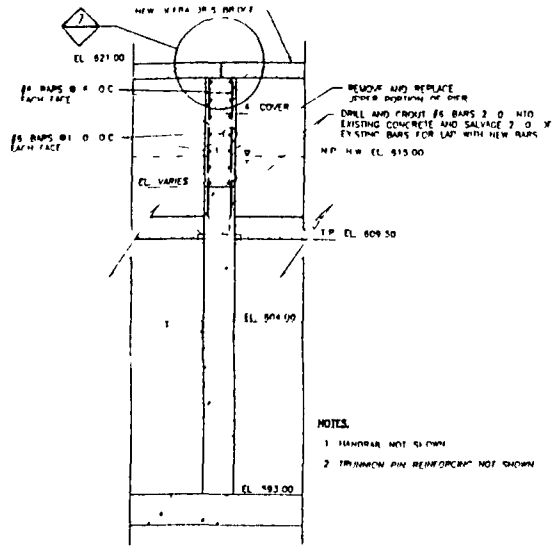
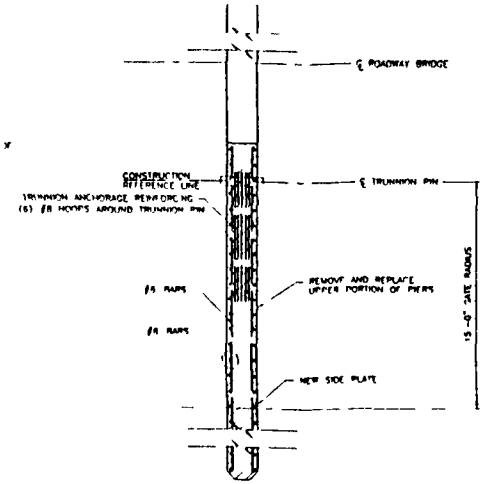
April 23, 1999

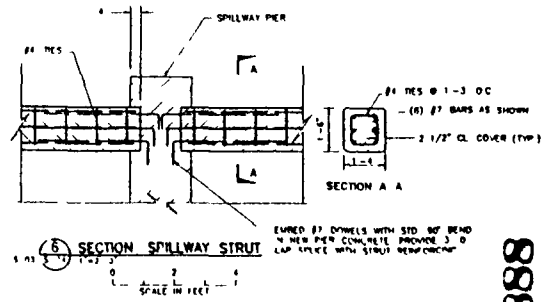
K00000887



1 SECTION, SPILLWAY PIER



3 SECTION, SPILLWAY PIER



6 SECTION SPILLWAY STRUT

SCALE IN FEET

K000000888

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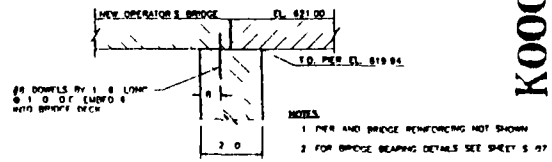
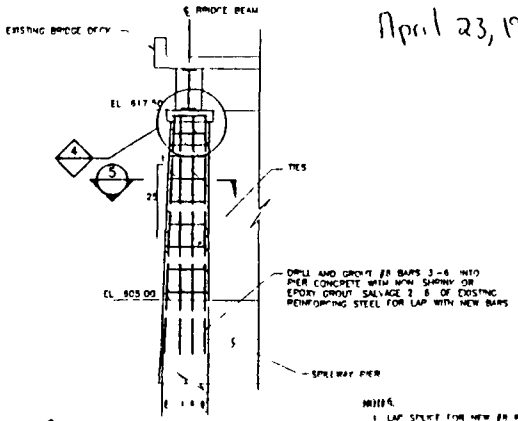
April 23, 1999



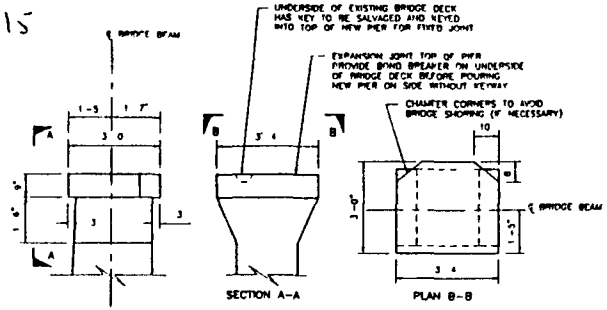
7 DETAIL, BRIDGE CONNECTION TO PIER

SCALE IN FEET



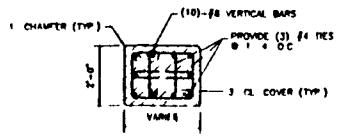
2 DETAIL, NEW BRIDGE COLUMN (TYP.)

SCALE IN FEET



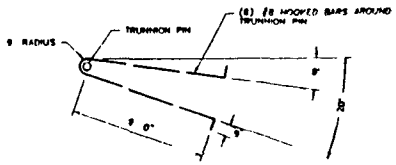
4 DETAIL, COLUMN CAP (TYP.)

SCALE IN FEET



5 SECTION, COLUMN (TYP.)

SCALE IN FEET



8 DETAIL, TRUNNION ANCHORAGE REINFORCING

SCALE IN FEET

NOTES:
1. PROVIDE 4 HOOKED BARS AROUND TRUNNION PIN AT ABUTMENT AND FISH LADDER WALL

ISSUED FOR CONSTRUCTION
DATE 3/24/99

TOR HANSEN

BY	CHK	APPD	DATE	REVISION DESCRIPTION
TSH	TSH	TSH	3/23/99	ISSUED FOR CONSTRUCTION

I HEREBY CERTIFY THAT THIS DRAWING WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN
DATE 3/24/99 REG. NO. 39529

CLIENT REVIEW / CONSTRUCTION — RELEASED TO/FOR
A B C D 1 2 3 — DATE RELEASED

Barr Engineering Company

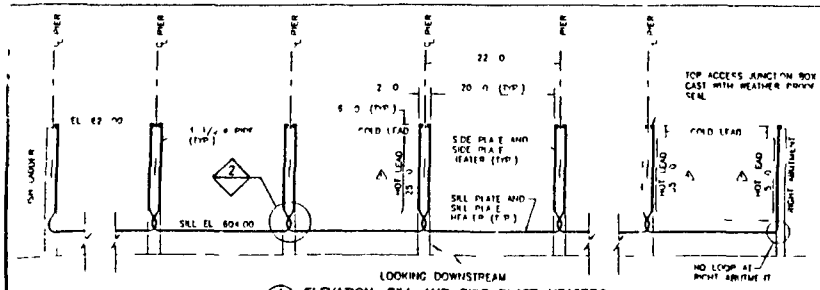
Scale	AS SHOWN
Date	8/4/98
Drawn	TSH
Checked	TSH
Designed	TSH
Approved	

CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN

NEW SPILLWAY PIERS
SECTIONS AND DETAILS

BARR PROJECT No. 2203001TSH
CLIENT PROJECT No.
SHEET No. S-05
REV. No. 1



1 ELEVATION, SILL AND SIDE PLATE HEATERS

NOTES

1 SILL AND SIDE PLATE HEATERS [illegible]

2 FURNISH TEST RESISTANCE [illegible] 3 MAXIMUM AMPS PER [illegible]

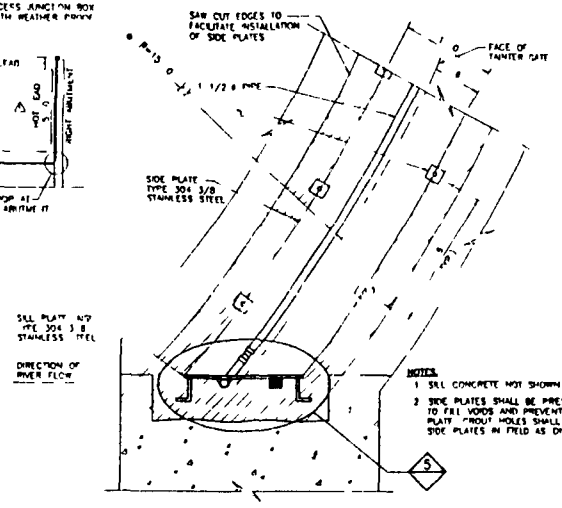
3 FURNISH 20 AMP 2 POLE DETACHABLE PROPERLY CONNECTED AT POWER DISTRIBUTION PANEL INCLUDE PIPE AND COLLAR AS REQUIRED FOR EACH HEATER ELEMENT (2 PER GATE)

4 SEE SHEET E 01 FOR ELECTRICAL SUPPLY AND HEATER CONNECTIONS

5 GRIND ALL SPLICE WELDS ON SIDE AND SILL PLATES FLUSH/SMOOTH

6 NO ELECTRICAL CONDUIT SHALL BE ALLOWED FOR HEATER ELEMENTS ALL PIPING SHALL BE WATER TIGHT

7 ALL HOLES IN THE PIPING SHALL BE MADE SO AS TO NOT RESTRICT HEATER CABLE INSTALLATION

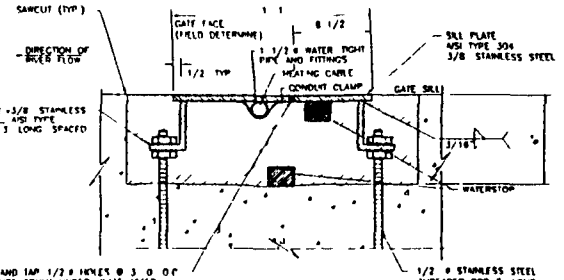


NOTES

1 SILL CONCRETE NOT SHOWN

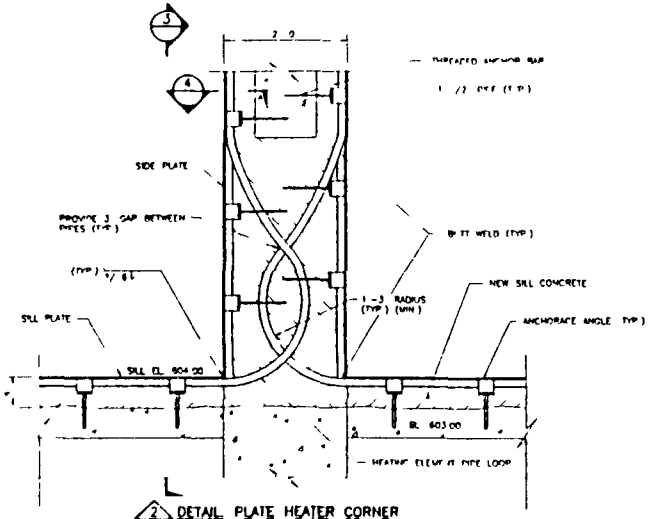
2 SIDE PLATES SHALL BE PRESSURE GROUTED TO FILL VOIDS AND PREVENT LEAKAGE BEHIND PLATE (ROUT HOLES SHALL BE DRILLED IN SIDE PLATES IN FIELD AS DIRECTED BY ENGINEER

3 SECTION, SIDE PLATE HEATER BOTTOM
NTS



5 DETAIL, SILL PLATE AND HEATER

SCALE IN INCHES



2 DETAIL PLATE HEATER CORNER

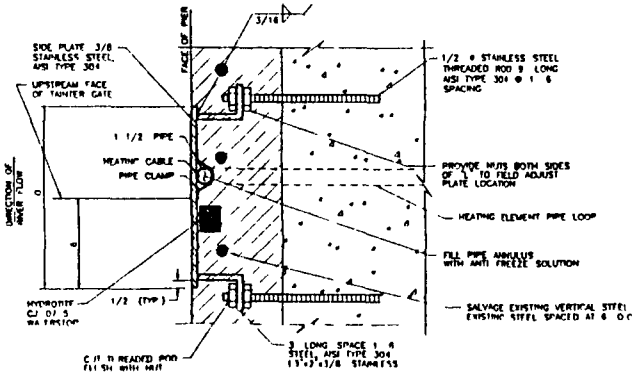
SCALE IN FEET

NOTES

1 FIELD LOCATE PIPE FIT UP AS NECESSARY TO FACILITATE INSTALLATION OF PIPE

2 LOCAL DEMOLITION THROUGH PIER CONCRETE WILL BE NECESSARY TO INSTALL HEATING ELEMENT LOOPS AS SHOWN

3 LOCAL PIER DEMOLITION SHALL NOT BE STARTED UNTIL NEW PIER CONCRETE IN PLACE



4 SECTION SIDE PLATE AND HEATER

SCALE IN INCHES

NOTE

1 ANTI FREEZE SHALL BE PRESTONE LOW TOX PROPYLENE GLYCOL FORMULA OR APPROVED ENVIRONMENTALLY SAFE EQUIVALENT

2 HEATING CABLE SHALL BE TWO ALLOY CONDUCTOR "DESIGN B" MINERAL INSULATED HEATING CABLE WITH AN "INCOLOY" SHEATH REVERSE GLAND AND PULLING EYE

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April 23, 1999

K00000889

ISSUED FOR CONSTRUCTION
DATE 3/24/99

TOR HANSEN

SYM	CHK	APP	DATE	REVISION DESCRIPTION
[illegible]	[illegible]	[illegible]	3/11/99	MODIFIED HOT LEADS FOR HEATERS AND [illegible]
[illegible]	[illegible]	[illegible]	3/ /99	ISSUED FOR CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN

DATE 3/24/99 REG NO 22772

CLIENT REVIEW
CONSTRUCTION
RELEASED TO/FOR
A B C 0 1 2 3
DATE RELEASED

Barr Engineering Company
8300 HIGHWAY SERVICE DRIVE MINNEAPOLIS, MINNESOTA
800 WEST 77TH STREET MINNEAPOLIS, MINNESOTA

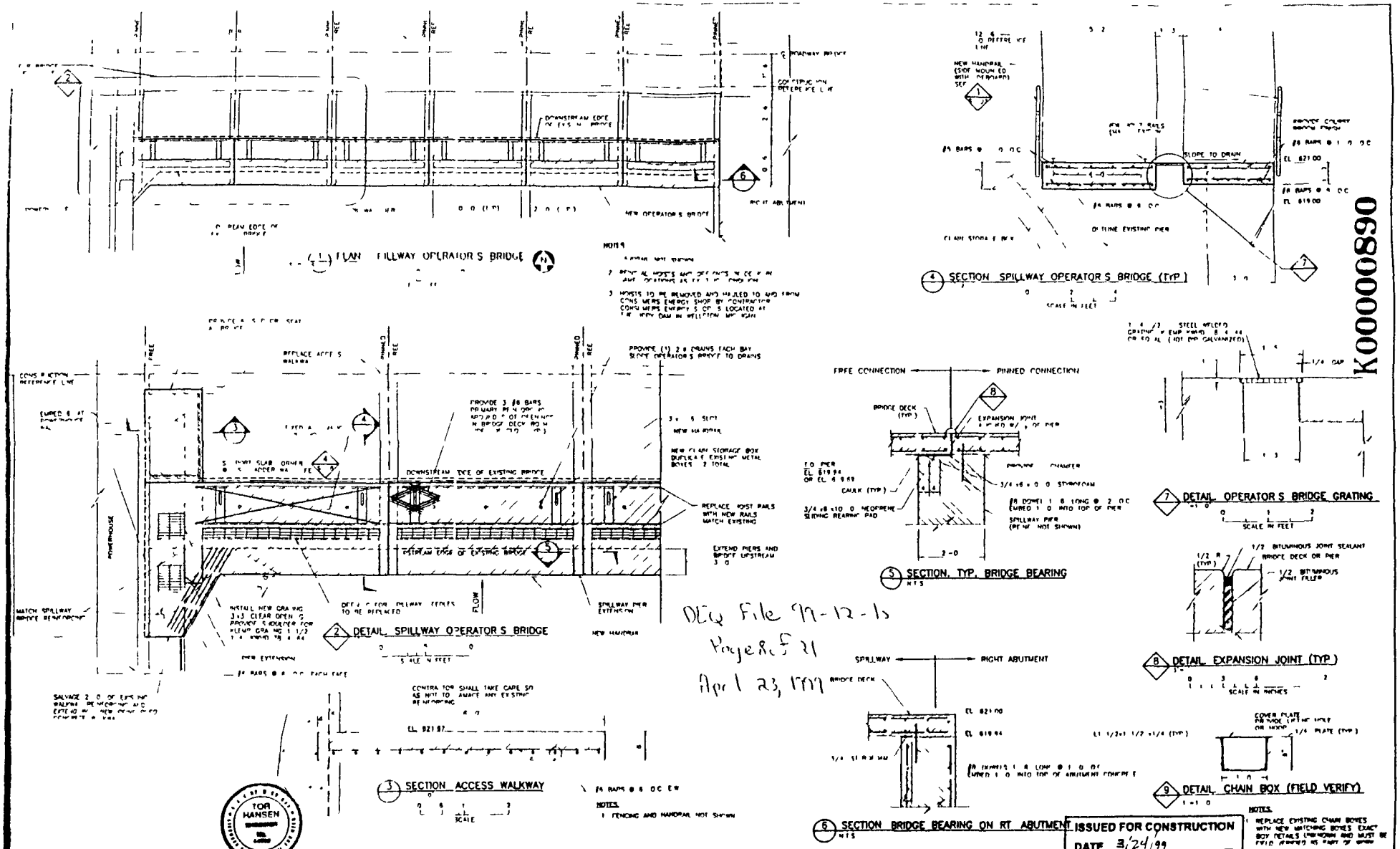
Scale	AS SHOWN
Date	
Drawn	TSH
Checked	TSH
Designed	TSH
Approved	

CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN

SPILLWAY SILL AND SIDE PLATE HEATERS
SECTIONS AND DETAILS

BARR PROJECT No 2203001TSH
CLIENT PROJECT No
SHEET No S-06
REV No 2



DEQ File 99-12-15
Page 8 of 21
April 23, 1999

K00000890

ISSUED FOR CONSTRUCTION
DATE 3/24/99

BY	CHK	APP	DATE	REVISION DESCRIPTION

Barr Engineering Company

Scale	AS SHOWN
Date	6/1/98
Drawn	TSH
Checked	TSH
Designed	TSH

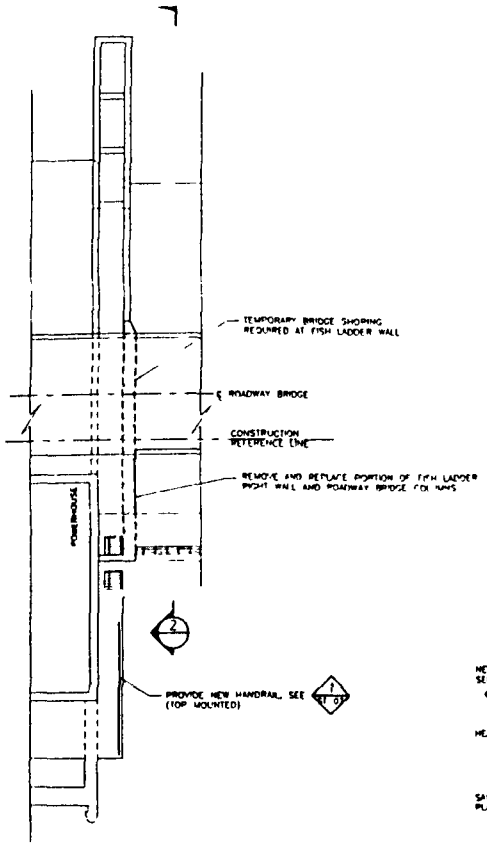
CONSUMERS ENERGY COMPANY
JACKSON MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN

SPILLWAY OPERATOR'S BRIDGE
PLAN, SECTIONS, AND DETAILS

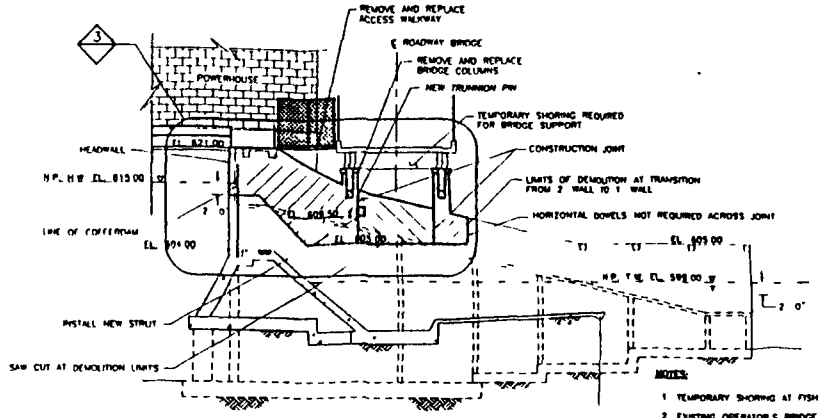
BARR PROJECT No 2203001TSH
CLIENT PROJECT No
SHEET No S-07
REV No 1

K00000891



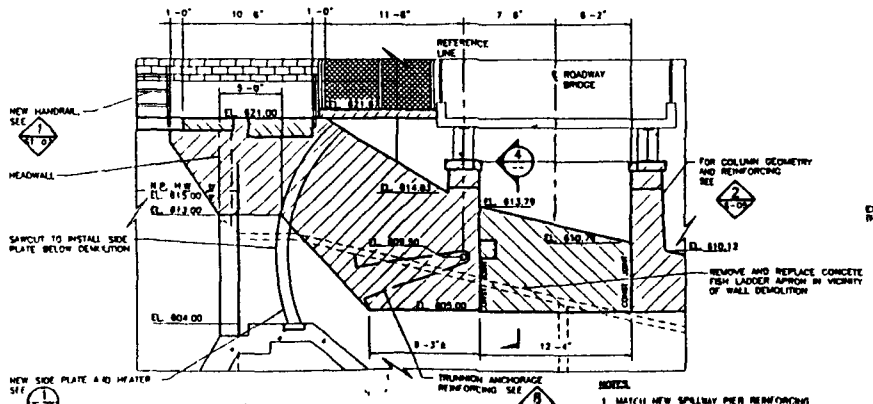
1 PLAN: FISH LADDER
1"=0'
0 10 20
SCALE IN FEET

NOTES:
1. EXISTING OPERATOR'S BRIDGE LAYOUT SHOWN
2. DEMOLITION AND REBUILDING OF FISH LADDER WALL WITH BRIDGE COLUMNS WILL NEED TO BE STAGED IN ORDER TO INSTALL AND REMOVE TEMPORARY BRIDGE SHORING
3. FISH LADDER REHABILITATION MUST BE COMPLETED DURING PHASE 2 OF THE WORK WHILE THE COFFERDAM IS IN FRONT OF BAYS 1, 2 AND 3



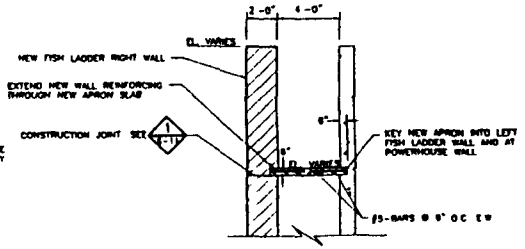
2 SECTION: FISH LADDER RIGHT WALL
1"=10'
0 10 20
SCALE IN FEET

NOTES:
1. TEMPORARY SHORING AT FISH LADDER PIER NOT SHOWN
2. EXISTING OPERATOR'S BRIDGE LAYOUT SHOWN
3. LOCAL COFFERDAM REQUIRED AT NOSE OF FISH LADDER RIGHT WALL



3 DETAIL: FISH LADDER RIGHT WALL
1"=5'
0 5 10
SCALE IN FEET

NOTES:
1. MATCH NEW SPILLWAY PIER REINFORCING IN 2'-0" WIDE PORTION OF RIGHT WALL OF FISH LADDER
2. SAWCUT FOR SIDE PLATE INSTALLATION TO BE COMPLETED AFTER PIER HAS BEEN RECONSTRUCTED



4 SECTION: FISH LADDER APRON
1"=4'
0 4 8
SCALE IN FEET

TOR HANSEN

ISSUED FOR CONSTRUCTION
DATE 3/24/99

BY	CHK	APP	DATE	REVISION DESCRIPTION
TSH	TSH	TSH	3/1/99	ISSUED FOR CONSTRUCTION
				DELETED NEW SUPPORT BEAM 4, SECTION 2 AND DETAIL 3

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN
DATE 3/24/99 REG. NO. 49529

RELEASED TO/FOR	A	B	C	D	1	2	3
DATE RELEASED							

Barr Engineering Company

Scale	AS SHOWN
Drawn	TSH
Checked	TSH
Designed	TSH

CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN

FISH LADDER REHABILITATION
PLAN AND SECTIONS

BARR PROJECT No. 2203001TSH
CLIENT PROJECT No.
SHEET No. S-08
REV No. 1

DEQ File 99-12-15
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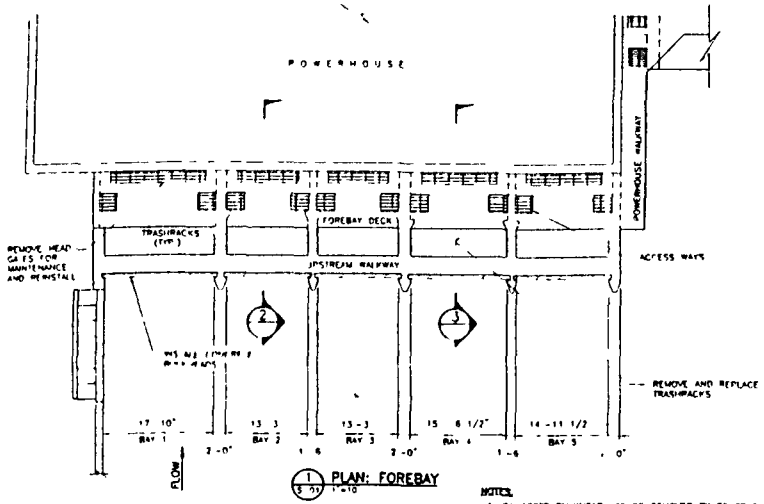
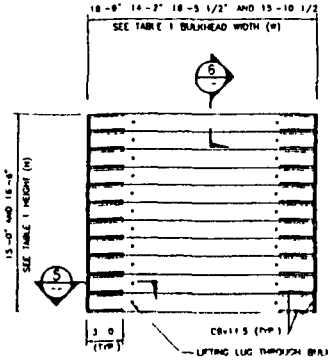
April 23, 1999



1 PLAN: FOREBAY
1"=10'
0 10 20
SCALE IN FEET

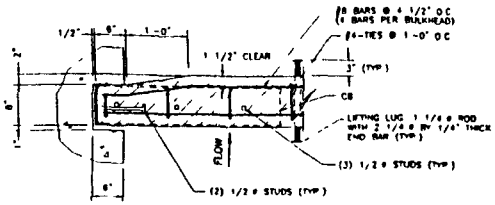
NOTES:
1 CONCRETE BULKHEADS TO BE REMOVED BY CONTRACTOR AND PLACED ON ADJACENT CONSUMERS ENERGY PROPERTY UPON COMPLETION OF FOREBAY REHABILITATION WORK
2 DIFFERENTIAL HEAD ACROSS FOREBAY WALLS SHALL BE LIMITED TO 2 0 THICK WALLS BAYS 2 AND 3 MUST BE DEWATERED SIMULTANEOUSLY BAYS 4 AND 5 MUST BE DEWATERED SIMULTANEOUSLY AS WELL



4 DETAIL: BULKHEADS (LOOKING DOWNSTREAM)
1"=5'
0 5 10
SCALE IN FEET

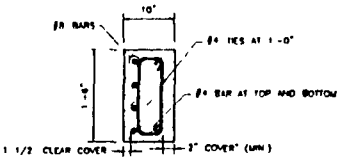
NOTES:
1 BULKHEADS SHALL BE CONSTRUCTED TO DIMENSIONS SHOWN TO WITHIN A TOLERANCE OF 1/16" THIS IS TO ENSURE LEAKAGE ACROSS JOINTS IS MINIMIZED
2 BULKHEADS SHALL BE ON-SITE PRIOR TO HEADGATE REMOVAL

TABLE 1 - BULKHEAD DIMENSIONS		
BAY NUMBER	BULKHEAD WIDTH (W)	HEIGHT (H)
1	18 -9"	15 -0"
2	14 -2"	15 -0"
3	14 -2	15 -0"
4	18 -5 1/2"	16 -6"
5	15 10 1/2"	16 6



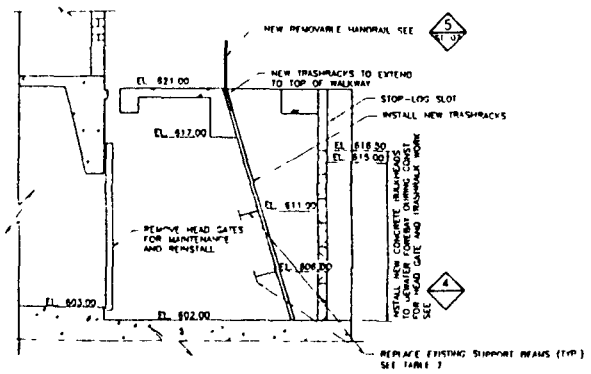
5 SECTION, BULKHEADS (TYP.)
1"=1'-0"
0 1 2
SCALE IN FEET

NOTES:
1 BULKHEADS SHALL BE MARKED TO INDICATE UPSTREAM AND DOWNSTREAM FACES MARKINGS SHALL BE PERMANENT (I.E. EMBEDMENT PLATE OR SIMILAR)



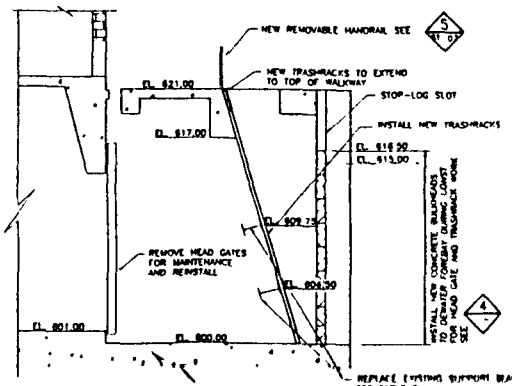
6 SECTION, BULKHEADS (TYP)
1"=1'-0"
0 1 2
SCALE IN FEET

K00000892



2 SECTION FOREBAY (BAYS 1,2, AND 3)
1"=5'
0 5 10
SCALE IN FEET

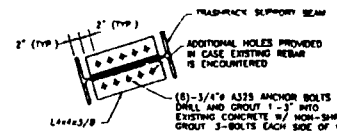
NOTES:
1 HEADGATES MADE WITH 6" AND 8" TIMBERS WITH METAL PLATE FASTENERS
2 HEADGATES TO BE REMOVED HAULED TO CONSUMERS ENERGY SHOP AND REINSTALLED BY CONTRACTOR
3 FOR SUPPORT BEAM END CONNECTIONS SEE 7



3 SECTION: FOREBAY (BAYS 4 AND 5)
1"=5'
0 5 10
SCALE IN FEET

NOTES:
1 HEADGATES MADE WITH 6" AND 8" TIMBERS WITH METAL PLATE FASTENERS
2 HEADGATES TO BE REMOVED, HAULED TO CONSUMERS ENERGY SHOP HAULED BACK AND REINSTALLED BY CONTRACTOR CONSUMERS ENERGY SHOP LOCATED AT TIPPY DAM IN WELLSTONE MICHIGAN
3 FOR SUPPORT BEAM END CONNECTIONS SEE 7

TABLE 2 - TRASH RACK SUPPORT BEAMS		
BAY NUMBER	TOP BEAM	BOTTOM BEAM
1	W18X55	W21X62
2	W18X40	W18X45
3	W18X40	W18X45
4	W18X55	W21X62
5	W18X55	W21X62



7 DETAIL: TRASHRACK SUPPORT BEAM TYPICAL END CONNECTION
1"=1'-0"
0 9" 1 2'
SCALE

GENERAL NOTES.

1 TRASH RACKS TO BE REPLACED WITH NEW NONMETALLIC TRASH RACKS
2 TRASH RACK ARRANGEMENT TO CONFORM TO THE FOREBAY STRUCTURE AS SHOWN
3 THE TRASH RACK WILL BE DESIGNED TO BE STRUCTURALLY ADEQUATE UNDER A HYDRAULIC LOADING OF 8 -8' OF DIFFERENTIAL HEAD BETWEEN THE UPSTREAM AND DOWNSTREAM SIDE OF THE TRASH RACKS AT A NORMAL HEADWATER ELEVATION
4 THE TRASH RACK MAIN BAR SPACING SHALL MATCH EXISTING TRASH RACK BAR SPACING
5 THE PROPOSED TRASH RACK SYSTEM SHALL BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL TO INSURE NO LOSS IN HYDRAULIC CAPACITY OF THE INTAKE
6 NONMETALLIC TRASH RACK BARS AND SPACERS SHALL BE MANUFACTURED OF EXTRA HIGH STRENGTH MOLECULAR WEIGHT (EHMW-HD) POLYETHYLENE AS MANUFACTURED BY HYDROTHANE OR APPROVED EQUAL.
7 SHOP DRAWINGS FOR TRASH RACK SYSTEM SHALL BE SUBMITTED TO ENGINEER FOR REVIEW
8 TRASH RACKS SHALL BE CONNECTED TO CONCRETE SUPPORT AT TOP AND TO STEEL SUPPORT BEAMS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS
9 NONMETALLIC TRASH RACKS SHALL BE SHIPPED STORED AND INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS

ISSUED FOR CONSTRUCTION
DATE 3/24/99

STATE OF MICHIGAN TOR HANSEN

REV	DATE	REVISION DESCRIPTION
0	3/1/99	ISSUED FOR CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN
DATE 3/24/99 REG NO 44139

CLIENT
JOB
CONTRACTOR
RELEASED TO/FOR: A B C D 1 2 3
DATE RELEASED

Barr Engineering Company

Scale	AS SHOWN
Date	
Drawn	TSH
Checked	TSH
Designed	TSH
Approved	

CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN

FOREBAY REHABILITATION
PLAN, SECTIONS, AND DETAILS

BARR PROJECT No 2203001TSH
CLIENT PROJECT No
SHEET No S-09
REV No 1

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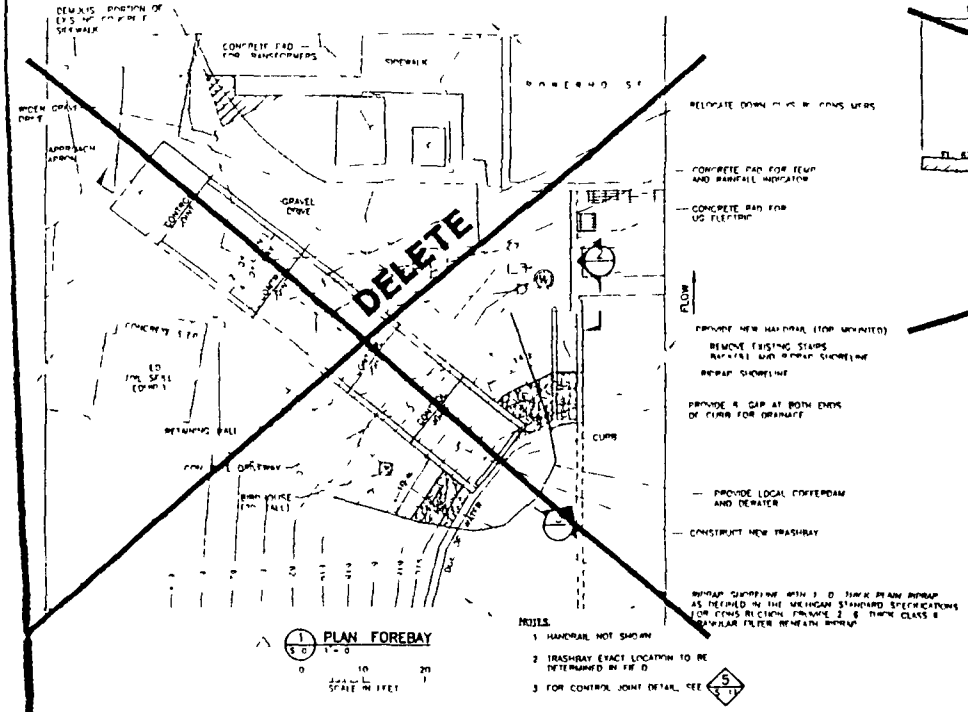
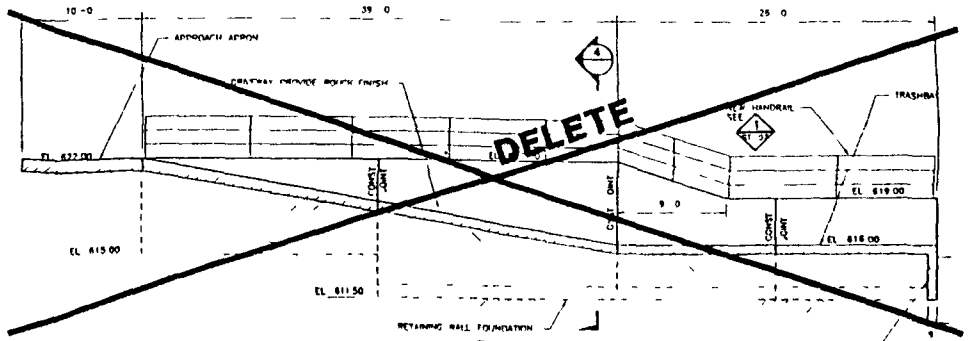
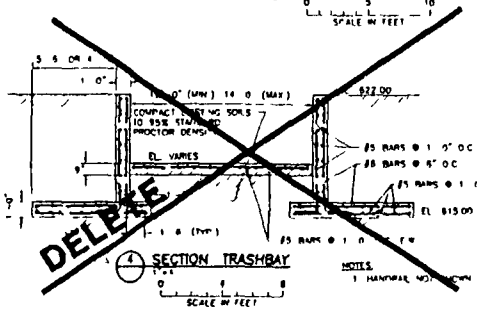
April 23, 1999



1 PLAN FOREBAY
1/S-0 1"=10'
0 10 20
SCALE IN FEET

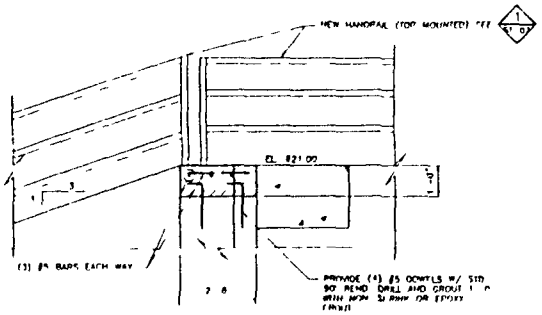


3 SECTION, TRASHBAY
0 5 10
SCALE IN FEET

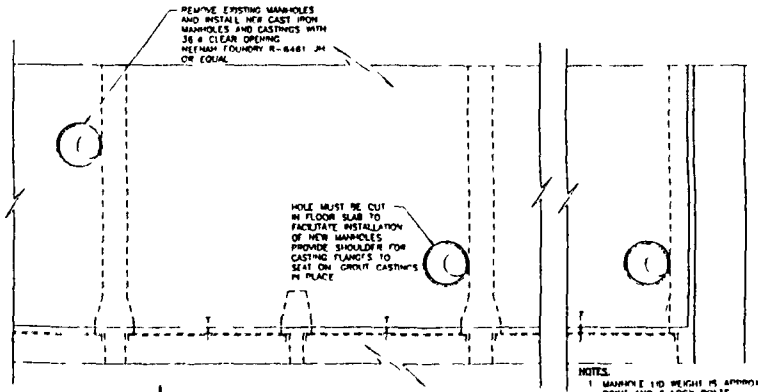


4 SECTION TRASHBAY
0 4 8
SCALE IN FEET

K00000893



2 SECTION LEFT ABUTMENT CAP
0 2 4
SCALE IN FEET



5 PLAN, POWERHOUSE ACCESS HOLES
1"=10'
0 10 20
SCALE IN FEET

NOTES:
1 MANHOLE LID WEIGHT IS APPROXIMATELY 370 LBS WITH SINGLE PICK POINT AND 8 LOCK BOLTS
2 EXISTING POWERHOUSE FLOOR CONDUIT LAYOUT IS SHOWN ON EXISTING PROJECT DRAWING NUMBER 38148-7. IT IS POSSIBLE CONDUITS MAY NOT BE LOCATED EXACTLY AS SHOWN ON DRAWING; THEREFORE, CONTRACTOR SHALL TAKE CARE SO AS NOT TO CUT THROUGH EXISTING CONDUIT IN FLOOR SLAB

TOR HANSEN
STATE OF MICHIGAN
REGISTERED PROFESSIONAL ENGINEER
No. 44099

ISSUED FOR CONSTRUCTION
DATE 1/24/00

REV	CHK	APP	DATE	REVISION DESCRIPTION
			1/21/00	ISSUED FOR CONSTRUCTION
				TRASHBAY DETAILS FROM SCHEM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN
DATE 1/21/00 REG. NO. 44099

CLIENT
IPO
CONTRACTORS
RELEASED TO/FOR A B C 0 1 2 3
DATE RELEASED

Barr Engineering Company

Scale	AS SHOWN
Drawn	TSH
Checked	TSH
Designed	TSH
Approved	

CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN

LEFT ABUTMENT AND TRASHBAY REHABILITATION
PLAN AND SECTIONS

BARR PROJECT No 2203001TSH
CLIENT PROJECT No
SHEET No S-10
REV No 1

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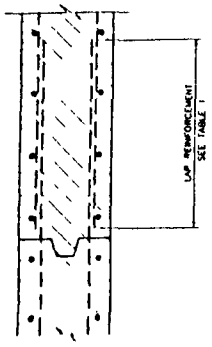
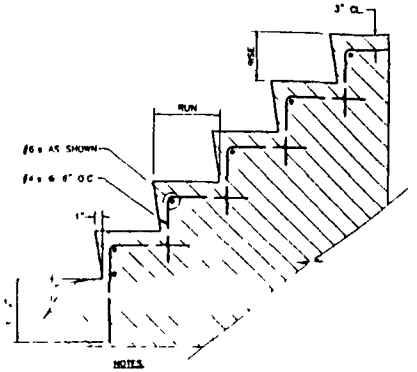


NOTE: THE LOCATION OF CONSTRUCTION JOINTS ARE AS SHOWN ON THE DRAWINGS OR DETERMINED BY THE CONTRACTOR'S CONSTRUCTION SEQUENCE

1 DETAIL: NEW CONSTRUCTION JOINT
1-2 0

0 2 4
SCALE IN FEET

TABLE 1	
REBAR SPLICE REQUIREMENTS	
BAR SIZE	MINIMUM REQUIRED LAP SPLICE LENGTH
#4	20"
#5	25
#6	30
#7	35
#8	40



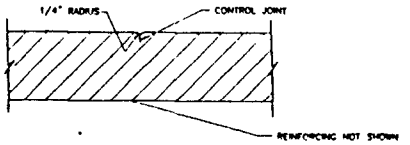
NOTES:

1 FOR REPLACED CONCRETE STAIR RISE AND RUN SHALL MATCH EXISTING DIMENSIONS

2 FOR NEW CONCRETE STAIRS USE 6" TO 7" RISE AS NECESSARY AND 11" RUN

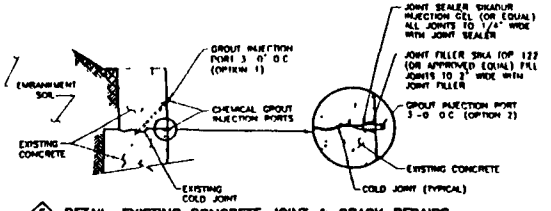
3 DETAIL: CONCRETE STAIRS
S-02 1-0 1-0

0 6" 1 2
SCALE



5 DETAIL: TYPICAL CONTROL JOINT
S-10 1 1/2"=1'-0"

0 3" 6" 9" 1 2
SCALE



6 DETAIL: EXISTING CONCRETE JOINT & CRACK REPAIRS
S-01

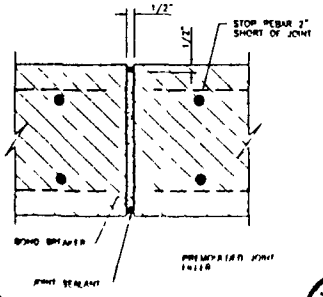
N.T.S.

NOTES:

1 GROUTING OPTION WILL BE AS DIRECTED BY OWNER IN THE FIELD

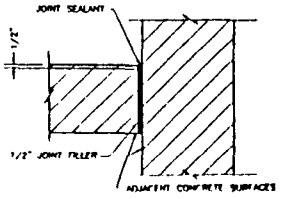
2 FOR OPTION 1, INSTALL GROUT PORT AT MOUTH OF CRACK AND INJECT GROUT THROUGH PORT

3 FOR OPTION 2 DRILL HOLE TO INTERSECT COLD JOINT AT APPROXIMATE CENTER OF THE WALL AT CRACK ELEVATION INJECT GROUT THROUGH PORT



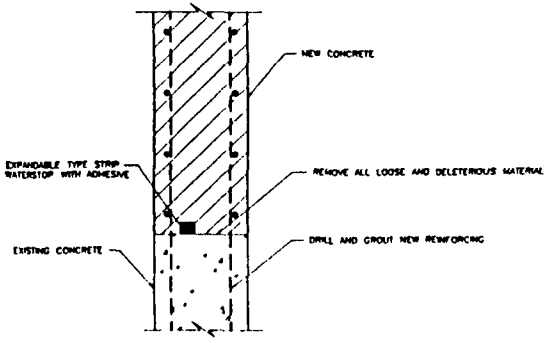
2 DETAIL: TYPICAL EXPANSION JOINT
3"=1'

0 3 6 12
SCALE IN INCHES



4 DETAIL: TYPICAL EXPANSION JOINT
S-10 1 1/2"=1'-0"

0 3 6" 9 1 2
SCALE



NOTE: THE LOCATION OF CONSTRUCTION JOINTS ARE AS SHOWN ON THE DRAWINGS OR DETERMINED BY THE CONTRACTOR'S CONSTRUCTION SEQUENCE

7 DETAIL: CONSTRUCTION JOINT NEW TO EXISTING CONCRETE
S-02 1 03 1'-3"=1'-0"

0 2 4
SCALE IN FEET

STATE OF MICHIGAN
TOR HANSEN
ENGINEER
No. 43000
LICENSED PROFESSIONAL ENGINEER

ISSUED FOR CONSTRUCTION
DATE 3/24/99

DWN	CHK	CHK	3/1/99	ISSUED FOR CONSTRUCTION
DWN	CHK	APP	DATE	REVISION DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN
Tor Hansen
DATE 3/24/99 REG. NO. 43000

CLIENT REVIEW
CONSTRUCTION
RELEASED TO/FOR
A B C 0 1 2 3
DATE RELEASED

Barr Engineering Company

	AS SHOWN
Drawn	TSH
Checked	TSH
Designed	TSH
Approved	

CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN

STANDARD/MISCELLANEOUS DETAILS

BARR PROJECT No. 2203001TSH
CLIENT PROJECT No.
SHEET No. S-11
REV. No. 1

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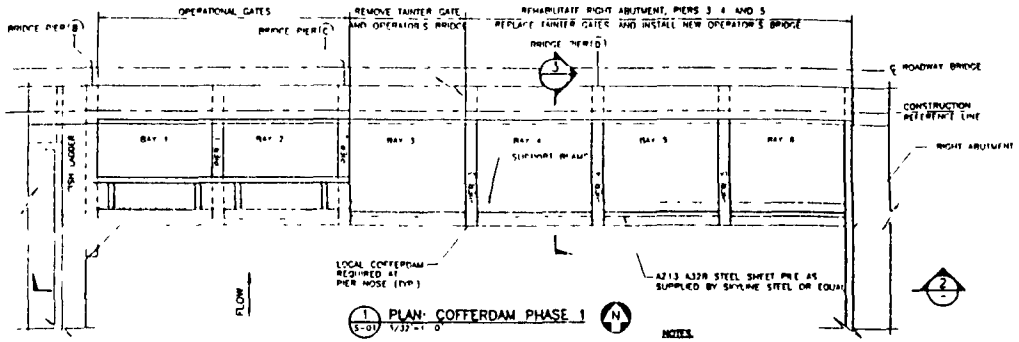


1 (S-01) PLAN: COFFERDAM PHASE 1

NOTES:

1 NEW SPILLWAY OPERATOR'S BRIDGE NOT SHOWN

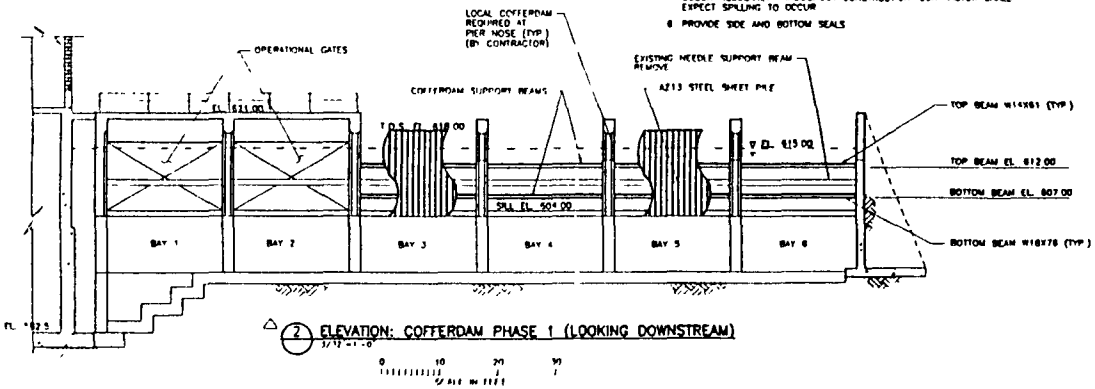
2 PULL COFFERDAM SHEET PILE AS DIRECTED BY OWNER WHEN HEADWATER ELEVATION REACHES EL. 817.00 AND IS STILL RISING PULL SHEETS AS NECESSARY TO STABILIZE HEADWATER ELEVATION CONTRACTOR SHALL HAVE CRANE WITH APPROPRIATE CAPACITY ADJACENT TO THE COFFERDAM AT ALL TIMES TO PULL SHEET PILE IN THE EVENT OF AN EMERGENCY

3 FOR PHASE 2 COFFERDAM WILL BE IN FRONT OF BAYS 1 THROUGH 3 DESIGNED WILL BE AVAILABLE THROUGH BAYS 4 THROUGH 6

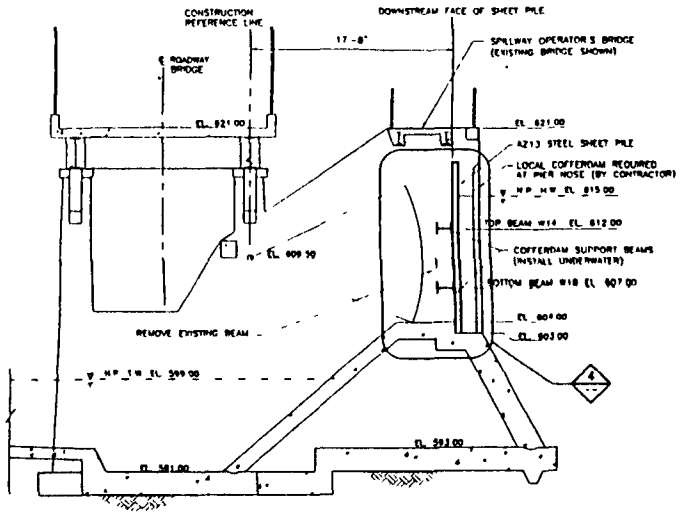
4 EXISTING AUTOMATIC GATE HOIST LOCATED OVER BAY 1 DURING PHASE 2, AUTOMATIC GATE HOIST SHALL BE REMOVED FROM BAY 1 AND MOVED TO BAY 4, 5 OR 6 FOR OPERATION

5 THE DISCHARGE OF WATER THROUGH THE SPILLWAY GATES WILL OCCUR REGULARLY THROUGHOUT CONSTRUCTION CONTRACTOR SHALL EXPECT SPILLING TO OCCUR

6 PROVIDE SIDE AND BOTTOM SEALS

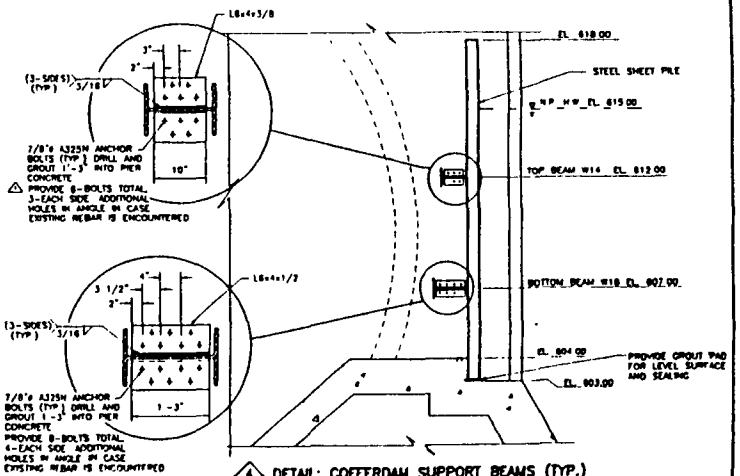


2 ELEVATION: COFFERDAM PHASE 1 (LOOKING DOWNSTREAM)



3 SECTION: COFFERDAM

SCALE IN FEET



4 DETAIL: COFFERDAM SUPPORT BEAMS (TYP.)

SCALE IN FEET

K00000895

TOR HANSEN ENGINEER NO. 44820

ISSUED FOR CONSTRUCTION
DATE 3/24/99

BY	CHK	APP	DATE	REVISION DESCRIPTION
			3/24/99	ISSUED FOR CONSTRUCTION

Barr Engineering Company

Scale	AS SHOWN
Date	8/4/98
Drawn	TSH
Checked	TSH
Designed	TSH

CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN

COFFERDAM
PLAN AND SECTIONS

BARR PROJECT No. 2203001TSH
CLIENT PROJECT No.
SHEET No. ST-01
REV. No. 1

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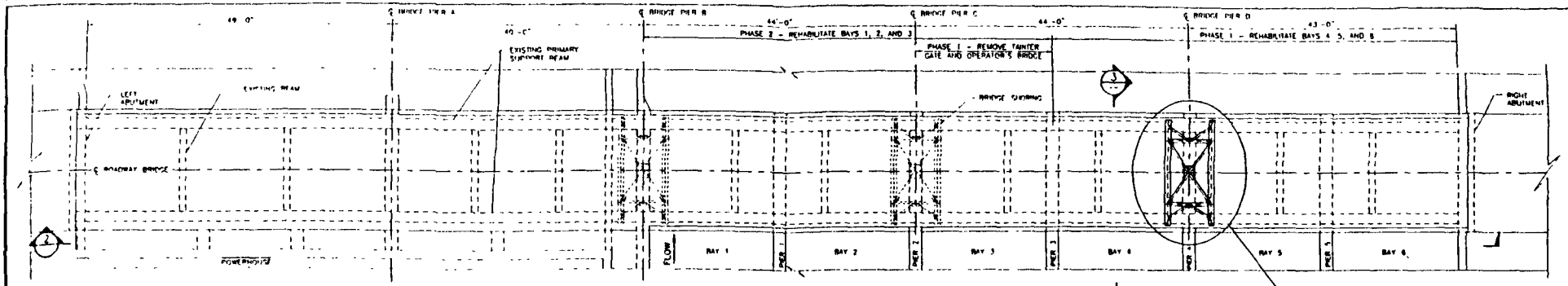
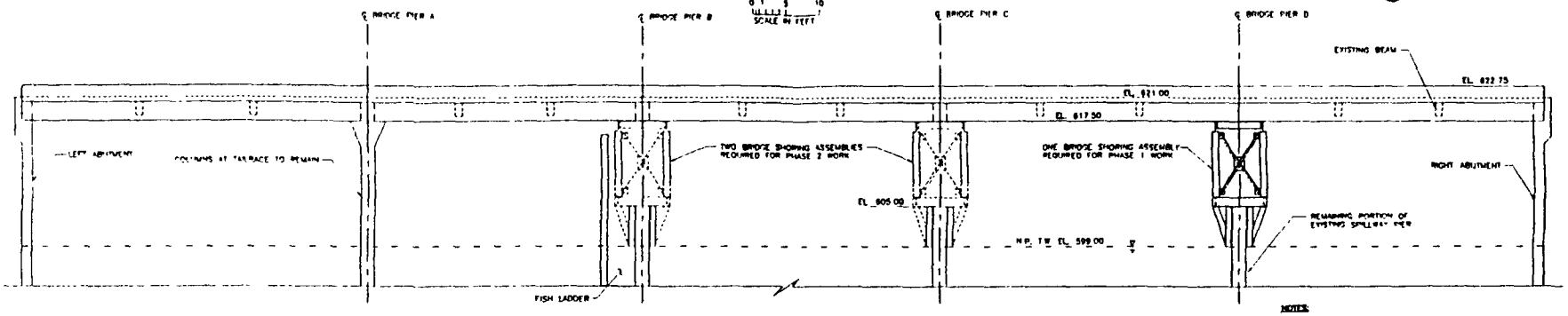


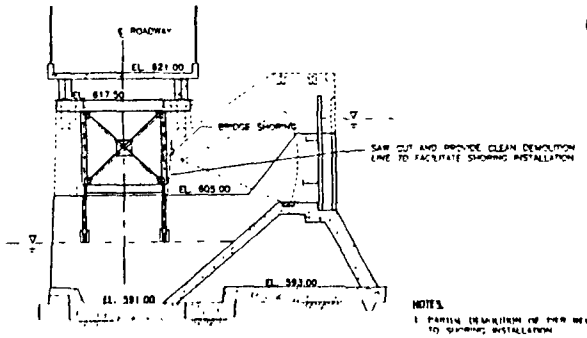
1 PLAN: ROADWAY BRIDGE
S-01 S-04 1/8"=1'-0"
0 1 5 10
SCALE IN FEET



2 SECTION: ROADWAY BRIDGE SHORING (LOOKING UPSTREAM)
1/8"=1'-0"
0 1 5 10
SCALE IN FEET

NOTES:

1. EXISTING BRIDGE DECK JOINTS LOCATED ALONG CENTERLINE OF PIERS
2. INTERMEDIATE SPILLWAY PIERS NOT SHOWN
3. CONSTRUCTION VEHICLES AND EQUIPMENT WILL NOT BE ALLOWED ON THE BRIDGE DECK SUPPORTED BY TEMPORARY SHORING DURING CONSTRUCTION. BRIDGE DECK SHORING DESIGNED FOR 10,000 LBS PICK-UP TRUCK LOAD ONLY
4. BRIDGE WILL BE CLOSED TO PUBLIC TRAFFIC UNTIL NEW BRIDGE SUPPORT PIER CONSTRUCTION IS COMPLETE



3 SECTION: ROADWAY BRIDGE SHORING
1/8"=1'-0"
0 1 5 10
SCALE IN FEET

NOTES:

1. PARTIAL DEMOLITION OF PIER REQUIRED PRIOR TO SHORING INSTALLATION
2. PIER CONSTRUCTION WILL REQUIRE CONSTRUCTION JOINT IN VICINITY OF BRIDGE SHORING. SEE SHEET S-04

TOR HANSEN

ISSUED FOR CONSTRUCTION
DATE 3/24/99

BY	CHK	APP	DATE	REVISION DESCRIPTION
TSH	TSH	TSH	3/1/99	ISSUED FOR CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN
DATE 3/24/99 REG. NO. 49529

RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

Barr Engineering Company

Scale	AS SHOWN
Drawn	TSH
Checked	TSH
Designed	TSH
Approved	

CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN

ROADWAY BRIDGE SHORING
PLAN AND SECTIONS

BARR PROJECT No. 2203001TSH
CLIENT PROJECT No.
SHEET No. ST-02
REV No. 1

K00000896

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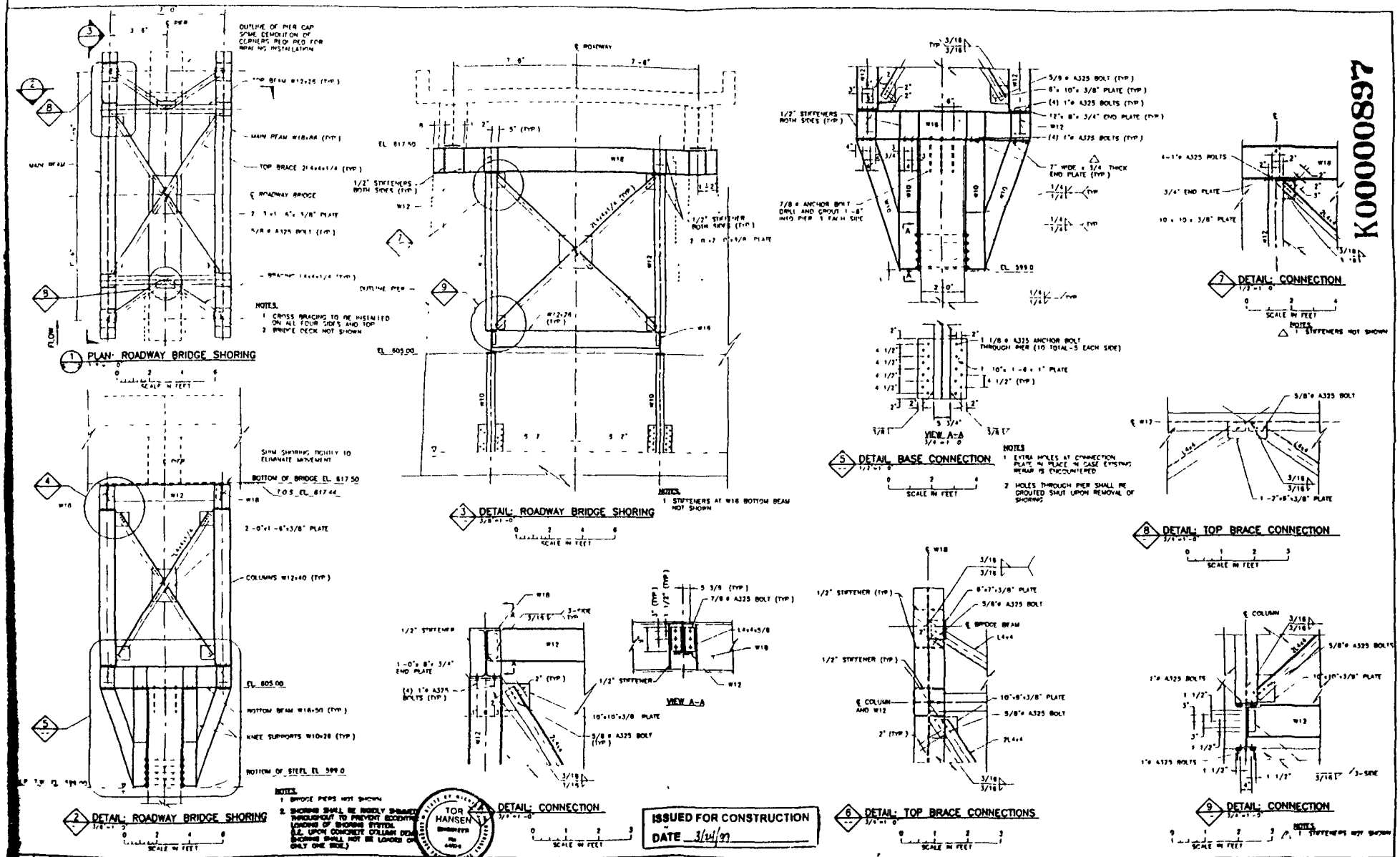

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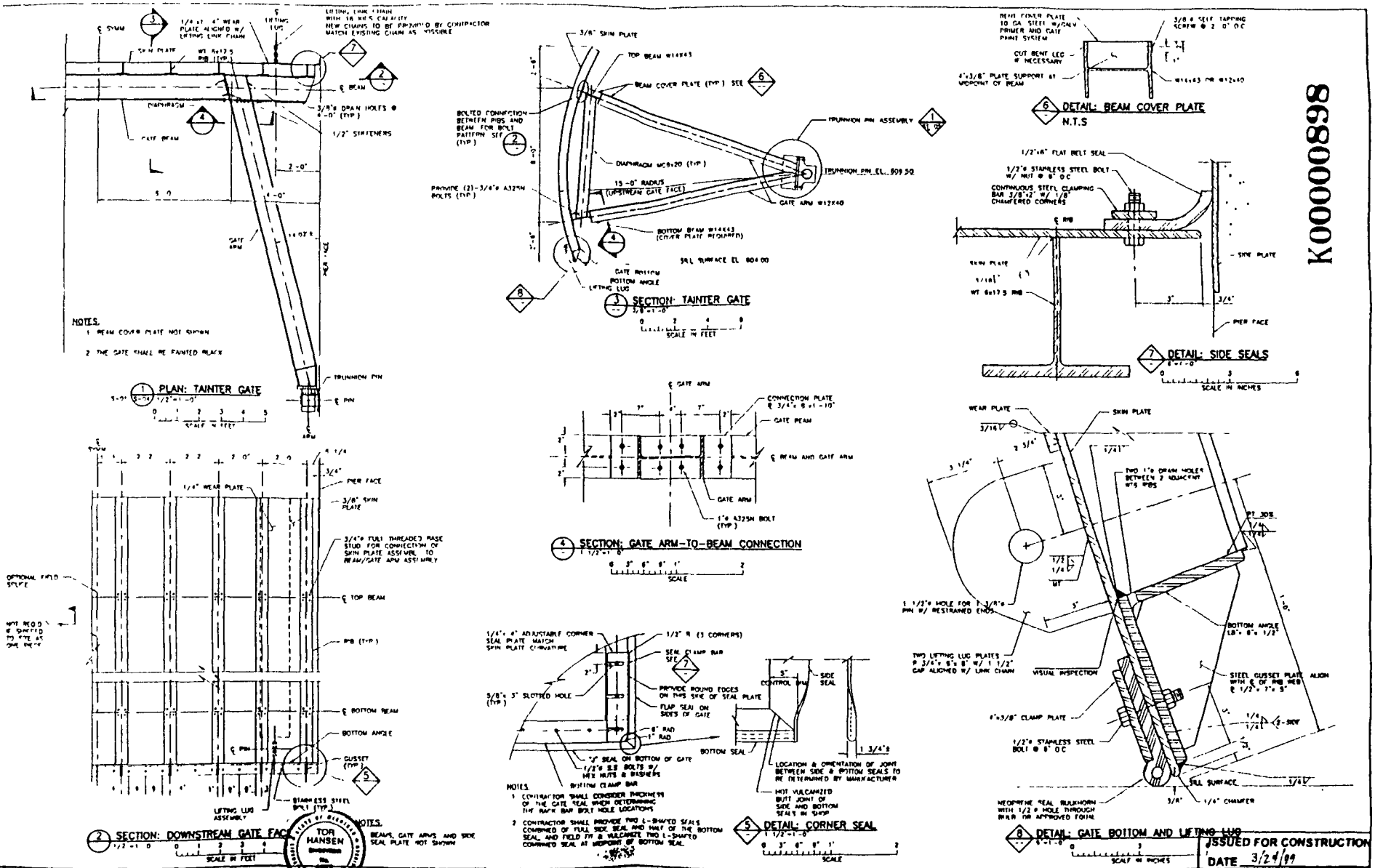

ISSUED FOR CONSTRUCTION
DATE 3/24/99

BY	CHK	APP	DATE	REVISION DESCRIPTION
			3/1/99	ISSUED FOR CONSTRUCTION

RELEASED TO/FOR: A B C 0 1 2 3
DATE RELEASED

Barr Engineering Company

Scale	AS SHOWN
Drawn	8/5/98
Checked	TSH
Reviewed	TSH
Approved	TSH

CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN

TAINTER GATE
PLAN, SECTIONS AND DETAILS

CLIENT PROJECT No. 2203001TSH
SHEET No. ST-04
REV No. 1

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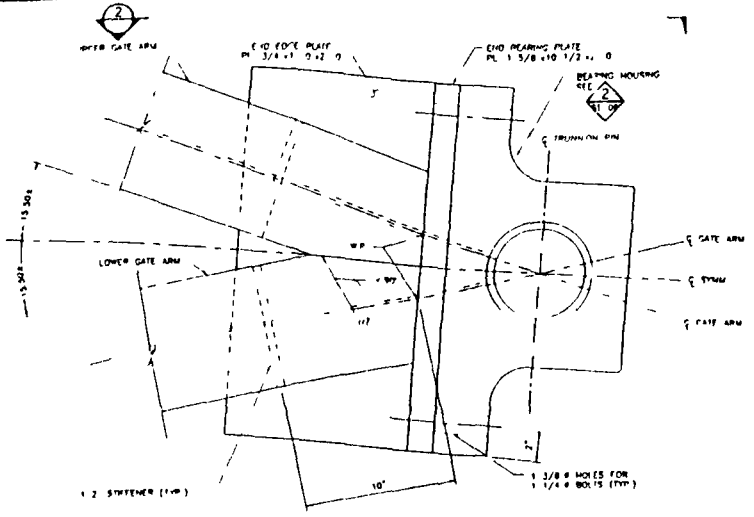
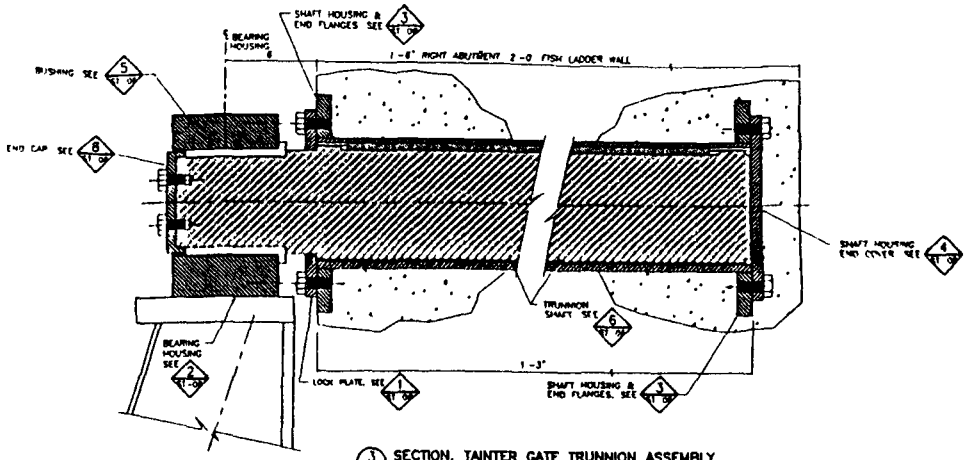
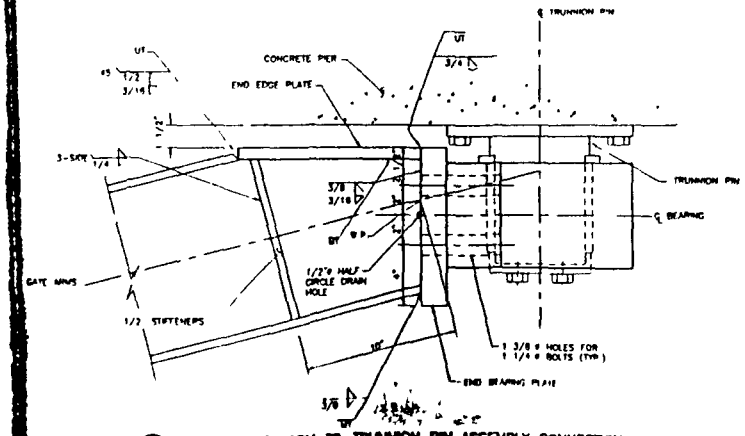
April 23, 1999



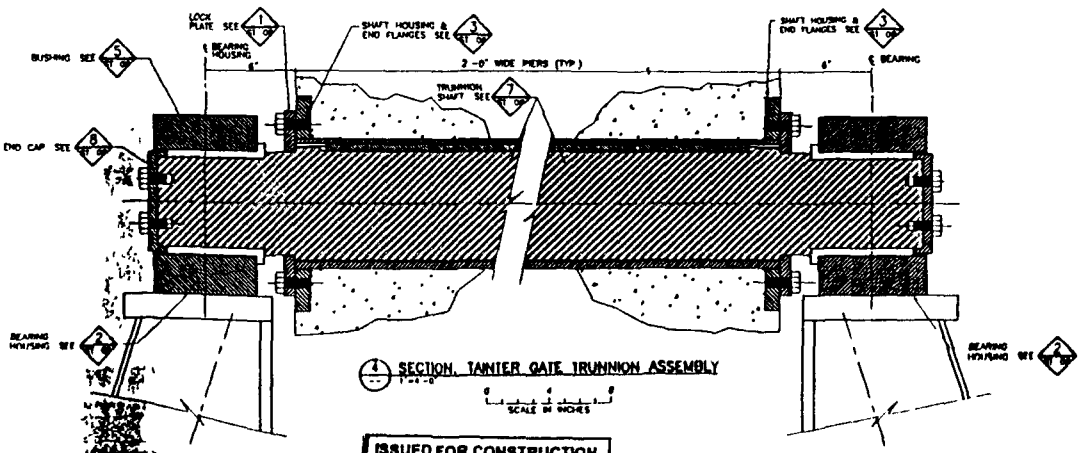
1 DETAIL GATE ARM-TO-TRUNNION PIN ASSEMBLY CONNECTION



3 SECTION, TAINTER GATE TRUNNION ASSEMBLY



2 SECTION GATE ARM-TO-TRUNNION PIN ASSEMBLY CONNECTION



4 SECTION, TAINTER GATE TRUNNION ASSEMBLY

ISSUED FOR CONSTRUCTION
DATE 3/24/99

1	3/1/99	ISSUED FOR CONSTRUCTION	
No.	DATE	REVISION DESCRIPTION	

RELEASED TO/FOR: A B C D 1 2 3
DATE RELEASED

Bart Engineering Company

Scale	AS SHOWN
Drawn	TSH
Checked	8/3/98
Designed	TSH

CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN

TRUNNION ASSEMBLIES

BART PROJECT No. 2203001TSH
CLIENT PROJECT No.
SHEET No. ST-05
REV. No. 1

K00000899

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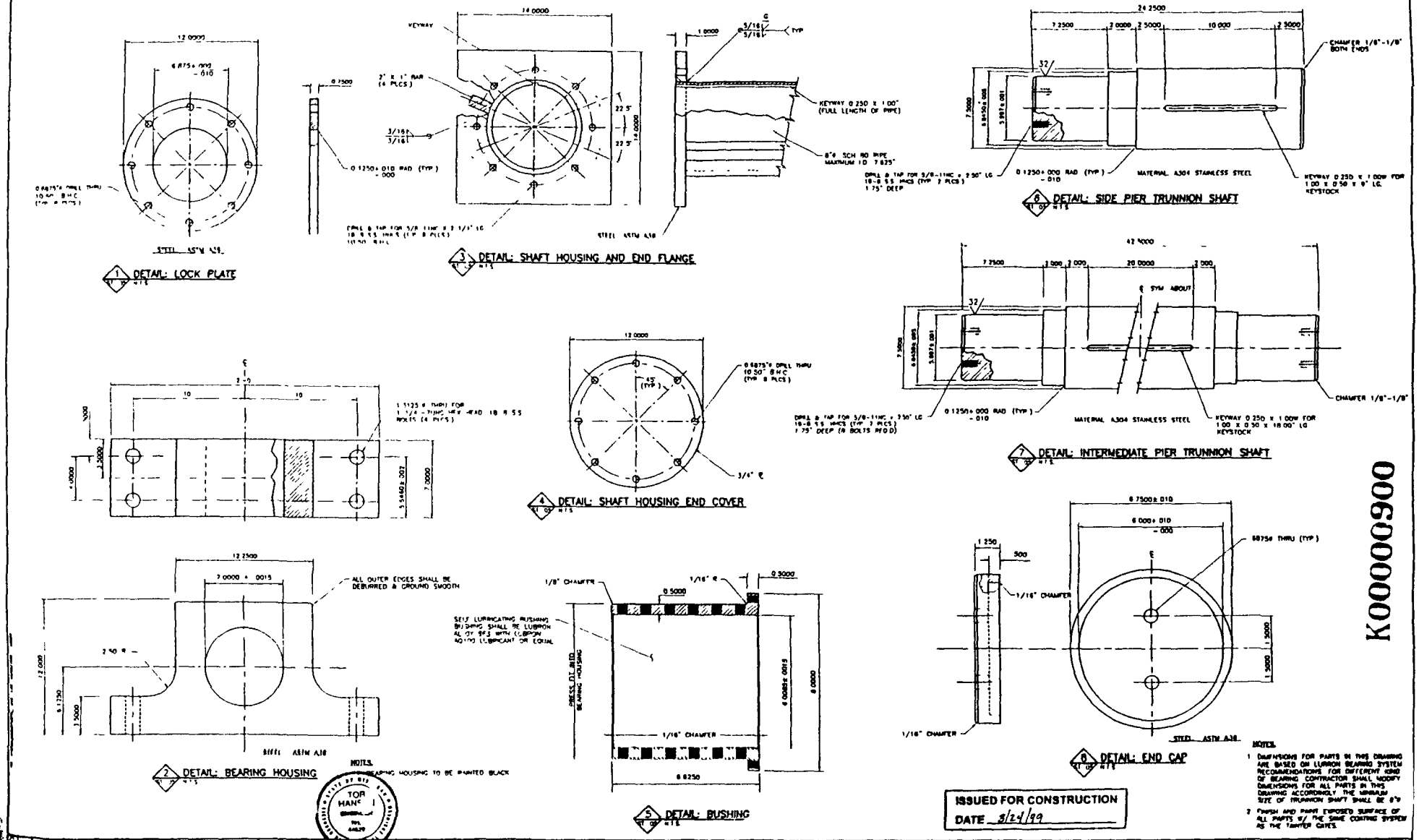

K00000900

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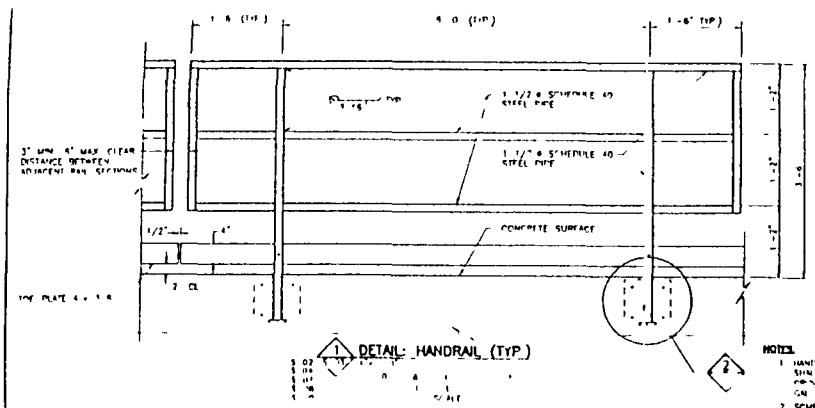
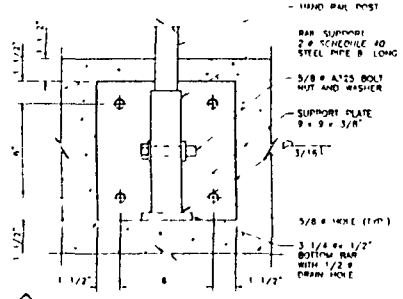


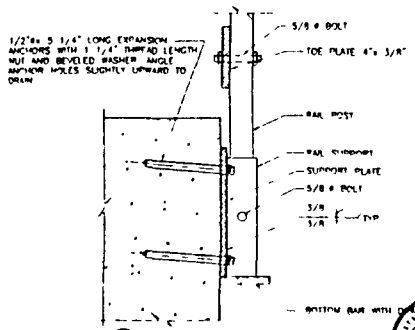
1 DETAIL: HANDRAIL (TYP.)

NOTES:
1. HANDRAILING AND MOUNTING BRACKETS SHALL BE HOT DIP GALVANIZED. PROVIDE DRAIN HOLES IN PIPE FOR GALVANIZING.
2. SOME HANDRAIL WILL NOT HAVE TOE BOARD. VERIFY HANDRAIL NOT TO RECEIVE TOE BOARD.
3. TWO DIFFERENT TYPES OF MOUNTS FOR HANDRAIL TO BE PROVIDED. VERIFY TOP MOUNTED AND SIDE MOUNTED SECTIONS.



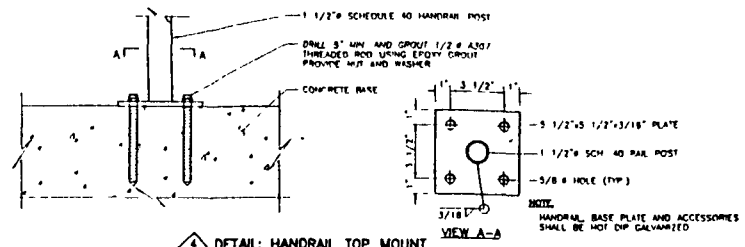
2 DETAIL: HANDRAIL SIDE MOUNT

SCALE IN INCHES



3 SECTION HANDRAIL SIDE MOUNT

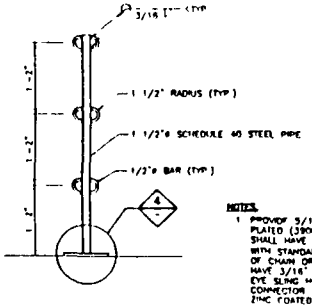
SCALE IN INCHES



NOTE:
HANDRAIL, BASE PLATE AND ACCESSORIES SHALL BE HOT DIP GALVANIZED

4 DETAIL: HANDRAIL TOP MOUNT

SCALE IN INCHES



NOTES:
1. PROVIDE 5/16" GRADE 40 CHAIN ZINC PLATED (3900 lb WORKING LOAD). ONE END SHALL HAVE THREADED CHAIN CONNECTOR WITH STANDARD JAW OF SAME CAPACITY OF CHAIN OR GREATER. OTHER END SHALL HAVE 3/16" GRADE 80 LATCH N LOCK EYE SLING HOOK AND THREADED CHAIN CONNECTOR. ALL HARDWARE SHALL BE ZINC COATED.
2. LOCATE COLUMNS TYPICALLY 8 NOMINAL ON CENTER COORDINATE WITH OWNER FOR COLUMN LOCATION.

5 DETAIL: FOREBAY UPSTREAM HANDRAIL

SCALE

TOR HANSEN ENGINEER

ISSUED FOR CONSTRUCTION
DATE 8/24/99

K00000901

REV	BY	CHK	APP	DATE	REVISION DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN

RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

Barr Engineering Company

Scale	AS SHOWN
Date	8/19/99
Drawn	TSH
Checked	TSH
Designed	TSH
Approved	

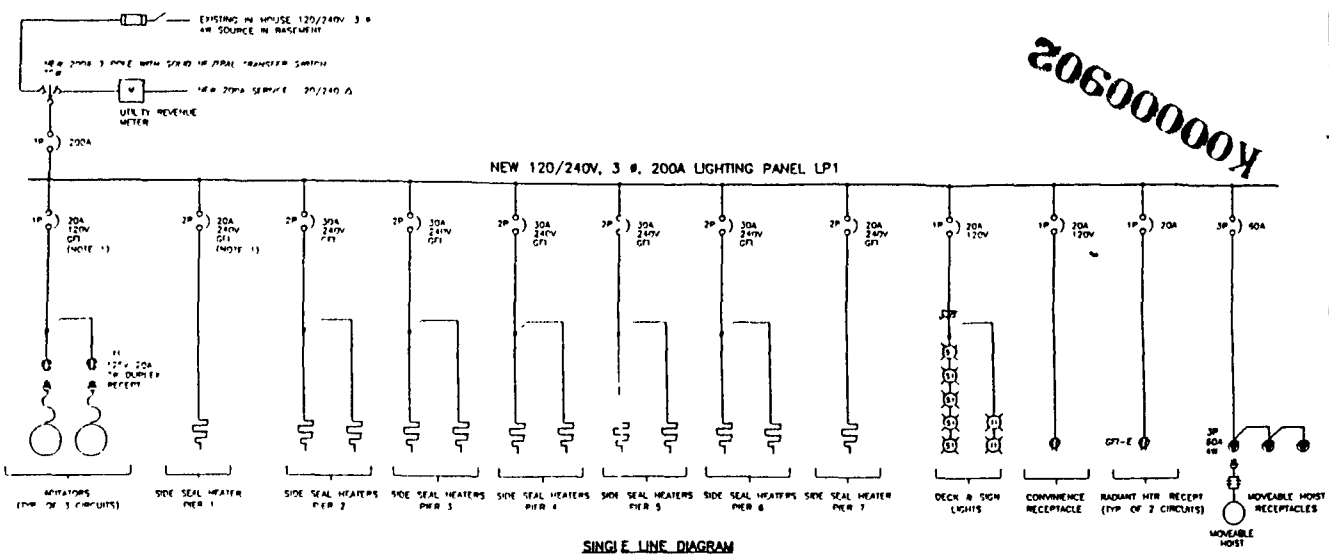
CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN

MISCELLANEOUS STEEL DETAILS

BARR PROJECT No 2203001TSH
CLIENT PROJECT No
SHEET No ST-07
REV No 1

DEQ File 99-12-15
Page 19 of 21
April 23, 1999



SINGLE LINE DIAGRAM

PANEL NO	MAIN CB 200 AMPS	MAIN LUGS ONLY ☐	LOCATION DWG
LP1	BUS AMPS 225 / PHASE 3	WIRE 4 / VOLTS 120/240	FED FROM DWG / MFG / TYPE

CIRCUIT DESCRIPTION	CKT NO	BREAKERS				BREAKERS			CKT NO	CIRCUIT DESCRIPTION
			PHASE				PHASE			
AUTO-SPILL GATE RADIANT HEATER #1	1	20	1			30	2		2	SIDE-SEAL HTR PIER 6
AUTO-SPILL GATE RADIANT HEATER #2	3	20	1				-		4	SIDE-SEAL HTR. PIER 6
SIDE-SEAL HTR PIER 1	5	20	2			20	1		6	AGITATORS GATES 1 & 2
SIDE-SEAL HTR PIER 1	7		-			20	1		8	AGITATORS GATES 3 & 4
SIDE-SEAL HTR PIER 2	9	30	2			20	2		10	SIDE-SEAL HTR PIER 7
SIDE-SEAL HTR PIER 2	11		-			20	-		12	SIDE-SEAL HTR PIER 7
SIDE-SEAL HTR PIER 3	13	30	2			30	3		14	GATE HOIST RECEPTACLES
SIDE-SEAL HTR PIER 3	15		-			-	-		16	GATE HOIST RECEPTACLES
SIDE-SEAL HTR PIER 4	17	30	2			-	-		18	GATE HOIST RECEPTACLES
SIDE-SEAL HTR PIER 4	19		-			20	1		20	AGITATORS GATES 5 & 6
SIDE-SEAL HTR PIER 5	21	30	2			-	-		22	NOT USABLE AS 18
SIDE-SEAL HTR PIER 5	23		-			30	1		24	CONVENIENCE RECEPTACLE BY LP1
SPARE	25	20	1			20	1		26	OPERATOR'S BRIDGE LIGHTS
NOT USABLE AS 18	27								28	NOT USABLE AS 18
SPACE	29		-			20	1		30	SPARE
SPACE	31		-			20	1		32	SPARE

NOTE: SEPARATE NEUTRAL BAR - PHASE Ø HIGH 10 000 AIC

BILL OF MATERIAL

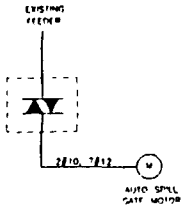
ITEM	QTY	DESCRIPTION
S1	5	LIGHTING FIXTURE WITH CANDY CANE STYLE POLE AND FIXTURE MOUNTED AT 9 FEET 100 WATT 120V HIGH PRESSURE SODIUM (HPS) FURNISH IN FACTORY STANDARD COLOR AS APPROVED BY OWNER STERNBERG NUMBER RLM18/#50FT/BAG/100HPS-120V (OR APPROVED EQUAL)
I1	2	SIGN LIGHTING FIXTURE 120V INCANDESCENT HUBBLE #103-72 WITH PAR-38 90 WATT BULB. (OR APPROVED EQUAL)
TSW	1	TRANSFER SWITCH, 3 POLE DOUBLE THROW 200 AMP FACTORY INSTALLED SOLID NEUTRAL U.L. LISTED WITH SERVICE GROUNDING KIT NEMA 1 ENCLOSURE, SQUARE D CAT NO DTU324N-DT10050 (OR APPROVED EQUAL)
SW	1	FUSED SWITCH 3 POLE 200 AMP NEMA 1 ENCLOSURE HEAVY DUTY RATED WITH TIME LAG FUSES

LEGEND

SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE 125V 20AMP
WP GFI	DUPLEX RECEPTACLE OUTLETS 125V, 30A CAST BOX WITH WEATHER PROOF COVER CONNECTED TO PERSONNEL GROUND FAULT INTERRUPTOR CIRCUIT BREAKER FOR DE-ICER AGITATORS
	3 PHASE RECEPTACLE, 4 WIRE 60 AMP, BACK BOX AND SNAP-ON CAP CROUSE HINDS CAT NO WRE4064 (OR APPROVED EQUAL)
	PHOTO CONTROL, NITELIGHTER SPT15 (OR APPROVED EQUAL)
	GROUND ROD 3/4" X 10 LONG COPPER CLAD OR OTHER CODE APPROVED ELECTRODE

NOTE:

1 GFI - RATED FOR EQUIPMENT PROTECTION (30mA) ON HEATERS
RATED FOR PERSONNEL PROTECTION (60mA) ON AGITATORS



ISSUED FOR CONSTRUCTION
DATE 3/24/99

~~ISSUED FOR BID~~
~~DATE 1-21-99~~

NO	BY	CHK	APR	DATE	REVISION DESCRIPTION
A	TJF	TMS	TM	3/24/99	Revised Per construction Dwgs No Comments

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN

DATE 3 APR 99 REG NO

CLIENT
BID
CONSTRUCTION
RELEASED TO/FOR
A B C D 1 2 3
DATE RELEASED

Barr Engineering Company

Scale	AS SHOWN
Date	3/8/98
Drawn	LHB
Checked	
Reviewed	
Approved	

CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN
ELECTRICAL

BARR PROJECT No 2203001TSH
CLIENT PROJECT No
SHEET No E-01
REV No

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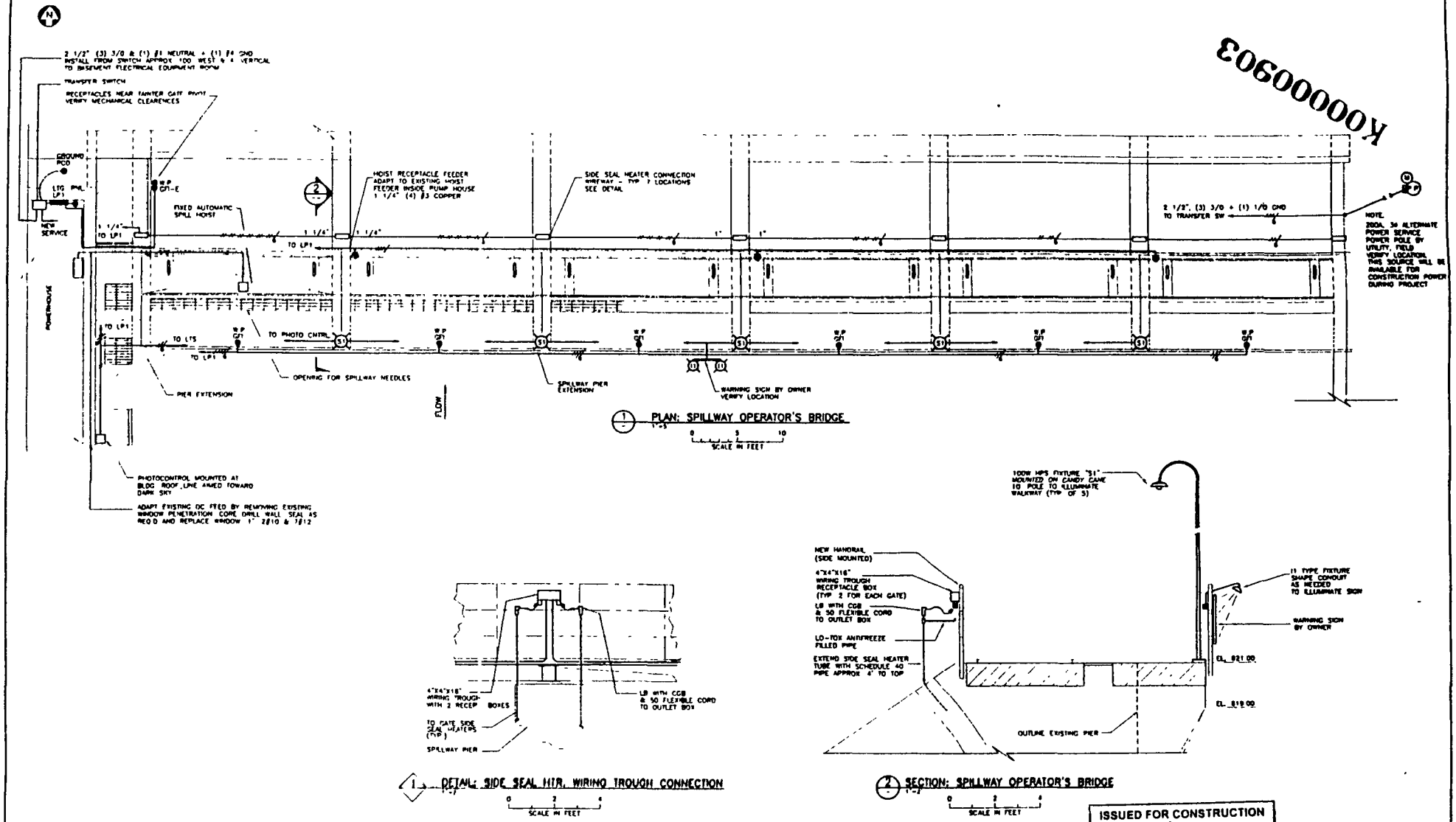
April 23, 1999

K00000903



1 PLAN: SPILLWAY OPERATOR'S BRIDGE
1"=5'
0 5 10
SCALE IN FEET

1 DETAIL: SIDE SEAL HTR. WIRING TROUGH CONNECTION
1"=2'
0 2 4
SCALE IN FEET

2 SECTION: SPILLWAY OPERATOR'S BRIDGE
1"=2'
0 2 4
SCALE IN FEET

ISSUED FOR CONSTRUCTION
DATE 3/24/99

NO	BY	CHK	APP	DATE	REVISION DESCRIPTION
2	PLE	PLE	PLE	3/24/99	Issued for Construction - No Consultant
1	LHS	PLE		1/3/99	REVISE LOCATION OF WIRING TROUGH

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN

DATE ____ REG. NO. ____

CLIENT
BID
CONSTRUCTION
RELEASED TO/FOR: A B C 0 1 2 3
DATE RELEASED

Barr Engineering Company
5300 NORMAN CENTER DRIVE MINNEAPOLIS, MINNESOTA
500 WEST 27TH STREET HIBBING, MINNESOTA

Scale	AS SHOWN
Date	8/26/98
Drawn	LHS
Checked	PLE
Designed	
Approved	

CONSUMERS ENERGY COMPANY
JACKSON, MICHIGAN

ALLEGAN SPILLWAY REHABILITATION
ALLEGAN, MICHIGAN
SPILLWAY OPERATOR'S BRIDGE
ELECTRICAL

BARR PROJECT No. 2203001TSH
CLIENT PROJECT No.
SHEET No. E-02
REV No. 1

DEQ File 99-12-15
Page 21 of 21
April 23, 1999

EARTH CHANGE PERMIT

Consumers Energy
Pattie O. Smith
330 Chestnut
Cadillac MI 49601

[PART 91 OF P.A. 451 OF 1994]
ALLEGAN COUNTY, MICHIGAN

Valley Twp. - Allegan Dam Road

Permit: № 3665
Date Issued: 02-11-99
Expiration Date: 12-31-99

Under the provisions of Part 91 of P.A. 451 of 1994, authority is herby granted to: Rehabilitation of spillway
(Section 15 T 2N R 14W)
Sub. _____ Lot Number _____

Work to be done under authority of this permit is subject to the following special restrictions, limitations and instructions: All work to be done as per submitted plans with all necessary erosion control precautions to be taken to prevent silting of adjancet properties and/or waters

This instrument does not convey property rights in either real estate nor material, nor does it authorize any injury to private property or invasion of public rights, nor does it waive the necessity of seeking federal assent, all local permits, or complying with other applicable state statutes.

This permit shall be kept at the site of the work and available for inspection at all times during the duration of the project or until its date of expiration.

All work shall be completed in accordance with the plans and specifications submitted and attached hereto.

This permit does not prejudice or limit the right of a land owner to institute proceedings in any circuit court of this state against any person when necessary to protect his rights.

Patrick Hudson
County Enforcing Agent
Michigan Township Services
111 Grand Street
Allegan MI 49010

Permit fee $80.00
Review 25.00
Inspections $225.00
Paid check no 813537 at 25.00
Paid check no 813542 at 305.00

K00000904

CRA100 Rev 5/86

Permit Number 9922153349

Issuance Date

APPLICATION AND PERMIT

to construct, operate, maintain
use and/or remove within a county
road right-of-way

BOARD OF COUNTY ROAD COMMISSIONERS of ALLEGAN County, Michigan

ADDRESS: 1308 Lincoln Rd., Allegan, MI 49010

PHONE: 673-2184

If applicant hires a contractor to perform the work, BOTH must complete this form and BOTH assume responsibility for the provisions of this Application and Permit.

APPLICANT	CONTRACTOR
NAME: GRAYCOR INDUSTRIAL CONST.	NAME: SAME
MAILING ADDRESS: ONE GRAYCOR DR. HOMEWOOD ILL. 60430	MAILING ADDRESS:
TELEPHONE NO. 1-708-206-0500 1-616-686-8668	TELEPHONE NO.
Applicant's Signature Title PROJECT SUPERINTENDENT Date: 5/20/99	Contractor's Signature Title Date:

FINANCIAL REQUIREMENTS		ATTACHMENTS REQUIRED
Application Fee	$	Plans and Specs.
Permit Fee	$	
Est. Inspect. Fee	$	
Bond	$	Bond
Deposit	$	Proof of Insurance
Other	$	Yes No
To Be Billed	$	
Receipt Number		P.I. $ P.D. $
Dated		Other

APPLICATION

Applicant and/or Contractor request a Permit for the purpose indicated in the attached plans and specifications at the following location:

CITY VALLEY TOWNSHIP or TOWNSHIP _____ SECTION _____

NAME OF ROAD ALLEGAN DAM RD. between AT DAM. and _____

for a period beginning 4 JUNE and ending 4 OCTOBER

and agrees to the terms of the permit.

SIGNING BY PATRCO

PERMIT

A permit is granted in accordance with the foregoing application for the period stated above, subject to the following terms agreed to by the Permit Holder. *When Applicant hires a Contractor the "Permit Holder" is the Applicant and the Contractor.*

RECOMMENDED FOR ISSUANCE:

_____ Investigator

_____ Date 5-27-99 Title

BOARD OF COUNTY ROAD COMMISSIONERS
ALLEGAN COUNTY, MICHIGAN

By _____

By _____

By _____

K00000905

MAIL THE COMPLETED FORM TO:	MIGHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
Waste Management Division Mich Dept. of Environmental Quality Notification Unit PO BOX 30241 Lansing MI 48909-7741	WASTE MANAGEMENT DIVISION **SITE IDENTIFICATION VERIFICATION** Required under authority of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended Failure to submit this information may result in civil or criminal penalties.

I. Site's ID Number

A. Identification (ID) Number: MID981537913

II. Name of Site

A. Legal company name: CONSUMERS ENERGY CO ALLEGAN HYDRO PLT

B. Site Specific Name (d/b/a): CONSUMERS ENERGY CO ALLEGAN HYDRO PLT

III. Correct the Name of Site or add missing information. (TYPE OR PRINT CLEARLY)

A. Legal company name:

B. Site Specific Name (d/b/a):

IV. NAICS Code(s) for the Site

221111 - Hydroelectric Power Generation

IV. Correct the NAICS Code(s) for the Site or add new codes. (TYPE OR PRINT CLEARLY)

A. B.

C. D.

V. Site Location Information

Street Address:	3140 ALLEGAN DAM		
City, Town or Village:	ALLEGAN	State:	MI
Province or Subdivision:		Country:	U.S.A.
County Name (MI only):	ALLEGAN	Zip Code or Postal Code:	49010
Site Tax Identification Number:	38XXXXXX10	Number of Employees:	2

V. Correct the Site Location Information or add missing information. (TYPE OR PRINT CLEARLY)

Street Address:			
City, Town or Village:		State:	
Province or Subdivision:		Country:	
County Name (MI only):		Zip Code or Postal Code:	
Site Tax Identification Number:		Number of Employees:	

VI. Site Mailing Information

Street or P O Box	~~212 W MICHIGAN AVENUE~~		
City, Town or Village	~~JACKSON~~		
State:	~~MI~~	Province or Subdivision:	
Country:	~~U.S.A.~~	Zip Code or Postal Code:	~~49201~~

VI. Correct the Site Mailing Address or add missing information. (TYPE OR PRINT CLEARLY)

Street or P.O. Box:	1945 W. Parnall Road		
City, Town or Village:	Jackson		
State:	MI	Province or Subdivision:	
Country:	U.S.A.	Zip Code or Postal Code:	49201

K00000906

VII. Site Contact Person

First Name: WARD MI: Last Name: WILSON

Phone Number: (517) 788-1969 Phone number extension:

VII. Correct the Site Contact Person. (TYPE OR PRINT CLEARLY)

First Name: MI: Last Name:

Phone Number: Phone number extension:

VIII. Indian Reservation

Facility on Indian Reservation Land ☐ yes ☑ no

VIII. Correct the Indian Reservation Status

Facility on Indian Reservation Land ☐ yes ☐ no

IX. Owner and/or Operator of Site

Cross out any person who is no longer an owner and/or operator and write in the date this occurred.

1 Name of Site's Legal Name: ☑ Owner ☐ Operator — Date became owner and/or operator (mm/dd/yyyy): 1/1/1970

~~CONSUMERS ENERGY~~

Type (check one): ☑ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other

2 Name of Site's Legal Name: ☐ Owner ☑ Operator — Date became owner and/or operator (mm/dd/yyyy): 1/1/1970

~~NAME NOT REPORTED~~

Type (check one): ☑ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other

IX. Correct the Owner and/or Operator of Site information or add any new Operator and/or Owner information. (TYPE OR PRINT CLEARLY)

Name of Site's Legal Name: ☑ Owner ☑ Operator — Date became owner and/or operator (mm/dd/yyyy):

Consumers Energy

Type (check one): ☑ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other

Name of Site's Legal Name: ☐ Owner ☐ Operator — Date became owner and/or operator (mm/dd/yyyy):

Type (check one): ☐ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other

K00000907

X. Please check the appropriate box(es) for the type of regulated waste activity at this Site.

A. Hazardous Waste Activity(ies) at this location

1 Generator of hazardous waste (choose only one of the following three categories)

- [ ] a LQG (Large Quantity Generator) Greater than 1,000 kg/mo (2,200 lbs.) of non-acute hazardous waste
- [ ] b SQG (Small Quantity Generator) 100 to 1,000 kg/mo (220 - 2,200 lbs.) of non-acute hazardous waste
- [x] c. CESQG (Conditionally Exempt Small Quantity Generator) Less than 100 kg/mo of non-acute hazardous waste

For items 2 through 8, check all that apply

2. Transporter of hazardous waste

- [x] a. Transport hazardous waste
- [x] b Commingle waste
- [ ] c. Offloads during transportation

3 Designated facility (hazardous waste received from off-site)

- [x] a. Treats waste on-site
- [x] b Stores waste on-site
- [ ] c. Disposes of waste on-site
- [x] d Recycles recyclable materials on-site

- [ ] 4 Underground injects waste on-site
- [x] 5. Import agent for hazardous waste
- [ ] 6 Generate mixed radioactive waste
- [ ] 7 Accepts waste from CESQG accumulates over 1000 kg

8 Exempt boiler and/or Industrial Furnace

- [x] a. Smelting, melting, and refining furnace exemption
- [x] b. Small quantity on-site burner exemption

B. Used Oil Activity(ies) at this location, check all that apply:

1 Used Oil Fuel Marketer

- [x] a. Marketer who directs shipments of off-specification used oil to used oil burner
- [x] b. Marketer who first claims the used oil meets the specifications

- [ ] 2. Off-specification Used Oil Burner

3 Used Oil Transporter (check one only)

- [ ] a. Transporter Only
- [ ] b Transporter with transfer facility

- [ ] 4 Used Oil Processor
- [ ] 5 Used Oil Re-refiner
- [ ] 6 Used Oil Collection or Aggregation Point
- [ ] 7 Collection Center or Aggregation Point that accepts DIY Used Oil

C. Universal Waste Activity(ies) at this location, check all that apply:

1 Large Quantity Handler

Type of universal waste		generating over 5,000 kg	accumulating
a.	Batteries	[x]	[ ]
b.	Thermostats	[x]	[ ]
c.	Mercury Thermometers	[x]	[x]
d.	Devices containing elemental mercury	[ ]	[ ]
e	Mercury Switches	[ ]	[ ]
f	Pesticides	[ ]	[ ]
g.	Electric Lamps	[ ]	[ ]

- [ ] 2 Destination Facility of Universal Waste (a hazardous waste permit may be required for this activity)

K00000908

D. Liquid Industrial Waste Activities at this location, check all that apply:	E. Generation of waste ceased or Site closed at this location, check one:
☐ 1. Liquid Industrial Waste Transporter	☐ 1. No longer generating waste; still in business
☑ 2. Liquid Industrial Waste Generator	☐ 2. No longer generating waste; out of business
☐ 3. Liquid Industrial Waste Designated Facility	Date:

XI. Certification:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

Signature of owner, operator, or authorized representative	Name and Official Title (type or print)	Date Signed (mm-dd-yyyy)
Ward Wilson	WARD WILSON SENIOR ENV. PLANNER	04-15-2003

K00000909

MAIL THE COMPLETED FORM TO:
Waste Management Division
Mich Dept of Environmental Quality
Notification Unit
PO BOX 30241
Lansing MI 48909-7741

MIGHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTE MANAGEMENT DIVISION
SITE IDENTIFICATION VERIFICATION

Required under authority of the Natural Resources and Environmental Protection Act 1994 PA 451, as amended Failure to submit this information may result in civil or criminal penalties

I. Site's ID Number

A. Identification (ID) Number MID981537913

II. Name of Site

A. Legal company name. CONSUMERS ENERGY CO ALLEGAN HYDRO PLT

B. Site Specific Name (d/b/a) CONSUMERS ENERGY CO ALLEGAN HYDRO PLT

III. Correct the Name of Site or add missing information. (TYPE OR PRINT CLEARLY)

A. Legal company name:

B. Site Specific Name (d/b/a):

IV. NAICS Code(s) for the Site

000000 - No NAICS Value Reported To Date

IV. Correct the NAICS Code(s) for the Site or add new codes. (TYPE OR PRINT CLEARLY)

A. 221111 B.

C. D.

V. Site Location Information

Street Address: 3140 ALLEGAN DAM

City, Town or Village: ALLEGAN State: MI

Province or Subdivision: Country: U.S.A.

County Name (MI only): ALLEGAN Zip Code or Postal Code: 49010

Site Tax Identification Number: 8 Number of Employees:

V. Correct the Site Location Information or add missing information. (TYPE OR PRINT CLEARLY)

Street Address:

City, Town or Village: State:

Province or Subdivision: Country:

County Name (MI only): Zip Code or Postal Code:

Site Tax Identification Number: 38-0442310 Number of Employees: 2

VI. Site Mailing Information

Street or P.O. Box: 212 W MICHIGAN AVENUE

City, Town or Village: JACKSON

State: MI Province or Subdivision:

Country: U.S.A. Zip Code or Postal Code: 49201

VI. Correct the Site Mailing Address or add missing information. (TYPE OR PRINT CLEARLY)

Street or P.O. Box:

City, Town or Village:

State: Province or Subdivision:

Country: Zip Code or Postal Code:

K00000910

VII. Site Contact Person

First Name: WARD MI: Last Name: WILSON

Phone Number: (517) 788-1969 Phone number extension:

VII. Correct the Site Contact Person. (TYPE OR PRINT CLEARLY)

First Name: MI: Last Name:

Phone Number: Phone number extension:

VIII. Indian Reservation

Facility on Indian Reservation Land [ ] yes [✓] no

VIII. Correct the Indian Reservation Status

Facility on Indian Reservation Land [ ] yes [ ] no

IX. Owner and/or Operator of Site

Cross out any person who is no longer an owner and/or operator and write in the date this occurred.

1 Name of Site's Legal Name: [✓] Owner [ ] Operator — Date became owner and/or operator (mm/dd/yyyy): 1/1/1970

CONSUMERS ENERGY

Type (check one): [✓] Private [ ] County [ ] District [ ] Federal [ ] Indian [ ] Municipal [ ] State [ ] Other

2 Name of Site's Legal Name: [ ] Owner [✓] Operator — Date became owner and/or operator (mm/dd/yyyy): 1/1/1970

NAME NOT REPORTED

Type (check one): [✓] Private [ ] County [ ] District [ ] Federal [ ] Indian [ ] Municipal [ ] State [ ] Other

IX. Correct the Owner and/or Operator of Site information or add any new Operator and/or Owner information. (TYPE OR PRINT CLEARLY)

Name of Site's Legal Name: [✓] Owner [✓] Operator — Date became owner and/or operator (mm/dd/yyyy):

CONSUMERS ENERGY

Type (check one): [✓] Private [ ] County [ ] District [ ] Federal [ ] Indian [ ] Municipal [ ] State [✓] Other

Name of Site's Legal Name: [ ] Owner [ ] Operator — Date became owner and/or operator (mm/dd/yyyy):

Type (check one): [ ] Private [ ] County [ ] District [ ] Federal [ ] Indian [ ] Municipal [ ] State [ ] Other

K00000911

X. Type of Regulated Waste Activity

Currently, the Type of Regulated Waste activity information the DEQ has on your facility is the following...

A. Hazardous Waste Activity(ies): CESQG-Conditionally Exempt Small Qty Generator

B. Used Oil Activity(ies):

C. Universal Waste Activity(ies):

D. Liquid Industrial Waste Activity(ies):

E. Generation of waste ceased or Site closed:

X. Please check the appropriate box(es) for the type of regulated waste activity at this Site.

A. Hazardous Waste Activity(ies) at this location

1 Generator of hazardous waste (choose only one of the following three categories)

- [ ] a. LQG (Large Quantity Generator) Greater than 1,000 kg/mo (2,200 lbs.) of non-acute hazardous waste
- [ ] b SQG (Small Quantity Generator) 100 to 1,000 kg/mo (220 - 2,200 lbs.) of non-acute hazardous waste
- [x] c. CESQG (Conditionally Exempt Small Quantity Generator). Less than 100 kg/mo of non-acute hazardous waste

For items 2 through 8, check all that apply

2. Transporter of hazardous waste

- [ ] a. Transport hazardous waste
- [ ] b. Commingle waste
- [ ] c. Offloads during transportation

3. Designated facility (hazardous waste received from off-site)

- [ ] a Treats waste on-site
- [ ] b. Stores waste on-site
- [ ] c. Disposes of waste on-site
- [ ] d. Recycles recyclable materials on-site

- [ ] 4. Underground injects waste on-site
- [ ] 5. Import agent for hazardous waste
- [ ] 6. Generate mixed radioactive waste
- [ ] 7. Accepts waste from CESQG accumulates over 1000 kg
- 8. Exempt boiler and/or Industrial Furnace
  - [ ] a. Smelting, melting, and refining furnace exemption
  - [ ] b. Small quantity on-site burner exemption

B. Used Oil Activity(ies) at this location, check all that apply:

1. Used Oil Fuel Marketer
   - [ ] a. Marketer who directs shipments of off-specification used oil to used oil burner
   - [ ] b. Marketer who first claims the used oil meets the specifications
- [ ] 2 Off-specification Used Oil Burner
- 3 Used Oil Transporter (check one only)
  - [ ] a Transporter Only
  - [ ] b Transporter with transfer facility
- [ ] 4. Used Oil Processor
- [ ] 5 Used Oil Re-refiner
- [ ] 6 Used Oil Collection or Aggregation Point
- [ ] 7 Collection Center or Aggregation Point that accepts DIY Used Oil

C. Universal Waste Activity(ies) at this location, check all that apply:

1. Large Quantity Handler

Type of universal waste		generating over 5,000 kg	accumulating
a.	Batteries	[ ]	[ ]
b	Thermostats	[ ]	[ ]
c.	Mercury Thermometers	[ ]	[ ]
d.	Devices containing elemental mercury	[ ]	[ ]
e.	Mercury Switches	[ ]	[ ]
f.	Pesticides	[ ]	[ ]
g.	Electric Lamps	[ ]	[ ]

- [ ] 2. Destination Facility of Universal Waste (a hazardous waste permit may be required for this activity)

D. Liquid Industrial Waste Activities at this location, check all that apply:	E. Generation of waste ceased or Site closed at this location, check one:
☐ 1. Liquid Industrial Waste Transporter	☐ 1. No longer generating waste; still in business
☑ 2. Liquid Industrial Waste Generator	☐ 2. No longer generating waste; out of business
☐ 3. Liquid Industrial Waste Designated Facility	Date:

XI. Certification:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

Signature of owner, operator, or authorized representative	Name and Official Title (type or print)	Date Signed (mm-dd-yyyy)
	STEPHEN H. HADLEY HYDRO MAINT. SUPV/CROTON	9-17-02

Consumers Energy

A CMS Energy Company

Environmental & Lab
Services Department
1945 West Parnall Road
Jackson, MI 49201 8643

Fax 517 788 1064

September 23, 2002

Department of Environmental Quality
Waste Management Division
Constitution Hall, Atrium North
PO Box 30241
Lansing, Michigan 48909

RE: Site Identification Verification Form Update Submittal

To Whom It May Concern:

In reply to the MDEQ letter requesting Consumers Energy to review, verify and update, if necessary, the subject forms for the following facilities, a copy of the updated forms are attached for your records.

Allegan Hydro Webber Hydro

If you have any questions, please call me at 517-788-1969

Sincerely,

Ward Wilson

Ward Wilson
Environmental and Laboratory Services

K00000914

BCC: L Hannahs, Tippy Dam
S Hadley, Croton Hydro

Route
~~PCH~~ ~~MRP~~
WJW

April 25, 1988 P18.1.1

Allegan Hydro

Form IC
RCRA Activities
US EPA Region V
PO Box A3587
Chicago, IL 60609

Gentlemen

Consumers Power Company submits the attached 1987 RCRA Biennial Form IC Reports for the facilities listed in Attachment A.

If you have any questions, please call me at (517) 788-1969.

Yours very truly

Ward Wilson

Ward Wilson
Senior Environmental Advisor

BCC JPDickey, M-1019 (w/o forms)
PCHittle, P-12-237B (w/o forms)

K00000916

OC0488-0072A-EN02

ATTACHMENT A
1987 RCRA Biennial Report - Form IC

1. Consumers Power Company - Aviation Department, Hangar
2. Consumers Power Company - Alcona Hydro Plant
3. Consumers Power Company - Allegan Hydro Plant
4. Consumers Power Company - Bad Axe Service Center
5. Consumers Power Company - Big Rapids Service Center

6. Consumers Power Company - Boyne City Service Center
7. Consumers Power Company - Cadillac Service
8. Consumers Power Company - Cheboygan Service Center
9. Consumers Power Company - Clare Service Center
10. Consumers Power Company - B C Cobb Plant

11. Consumers Power Company - Cooke Hydro Plant
12. Consumers Power Company - Croton Hydro Plant
13. Consumers Power Company - East Tawas Service Center
14. Consumers Power Company - Five Channels Hydro Plant
15. Consumers Power Company - Foote Hydro Plant

16. Consumers Power Company - Frankfort Service Center
17. Consumers Power Company - Fremont Service Center
18. Consumers Power Company - Gaylord Combustion Turbine Plant
19. Consumers Power Company - Gaylord Service Center
20. Consumers Power Company - Central Steam Heating Plant

21. Consumers Power Company - Grand Rapids Service Center
22. Consumers Power Company - Greenville Service Center
23. Consumers Power Company - Hardy Hydro Plant
24. Consumers Power Company - Harrisville Service Center
25. Consumers Power Company - Hodenpyl Hydro Plant

26. Consumers Power Company - Howell Service Center
27. Consumers Power Company - Lapeer Service Center
28. Consumers Power Company - Livonia Service Center
29. Consumers Power Company - Loud Hydro Plant
30. Consumers Power Company - Ludington Service Center

31. Consumers Power Company - Macomb Service Center
32. Consumers Power Company - Manistee Service Center
33. Consumers Power Company - Marysville Gas Reforming Plant
34. Consumers Power Company - Mio Hydro Plant
35. Consumers Power Company - Morrow Combustion Turbine Plant

36. Consumers Power Company - Muskegon Service Center
37. Consumers Power Company - Northville Compressor Station
38. Consumers Power Company - Pontiac Service Center
39. Consumers Power Company - Prudenville Service Center
40. Consumers Power Company - Ray Compressor Station

K00000917

MI0488-0073A-EN02

41. Consumers Power Company - Rogers Hydro Plant
42. Consumers Power Company - Rose City Service Center
43. Consumers Power Company - Royal Oak Service Center
44. Consumers Power Company - St Clair Compressor Station
45. Consumers Power Company - Standish Service Center

46. Consumers Power Company - Straits Combustion Turbine Plant
47. Consumers Power Company - Thetford Combustion Turbine Plant
48. Consumers Power Company - Tippy Hydro Plant
49. Consumers Power Company - Webber Hydro Plant
50. Consumers Power Company - White Pigeon Compressor Station

51. Consumers Power Company - J R Whiting Plant
52. Consumers Power Company - Zeeland Service Center

WJW/mlp
4/25/88

OMB#: 2050-0024 Expires 12-31-88

MID981537913 S
CONS PWR CO ALLEGAN HYDRO PLT
HITTLE PAUL DIR ENV
3140 ALLEGAN DAM
ALLEGAN MI 49010

FORM **IC**

U.S. ENVIRONMENTAL PROTECTION AGENCY

1987 Hazardous Waste Report

IDENTIFICATION AND CERTIFICATION

WHO MUST COMPLETE THIS FORM? *Form IC must be completed by every site that received this package.*

INSTRUCTIONS: Please read the Instructions beginning on page 1 of this booklet before completing this form.

Complete Sections I through IV and Sections VI through IX immediately. Complete Section V, certification, after you have finished the full report package.

SEC. I. Site name and physical location which may differ from the mailing address. Complete items A through G.
Mark [X] for items A, B, C, D, F, and G if same as label; if different, enter corrections. If label is absent, enter information.

A. Site/company name	B. EPA ID No.
Same as label [X]	Same as label [X]
or →	or →

C. Address number and street name of physical location - If not known, enter industrial park, building name or other physical location description
Same as label [X]
or →

D. City, town, village, etc.	E. County	F. State	G. Zip Code
Same as label [X]	Allegan	Same as label [X]	Same as label [X]
or →		or →	or →

SEC. II. Mailing address of site.
Mark [X] for A, B, C, and D if same as label; if different, enter corrections.

A. Number and street name of mailing address
Same as label
or → 212 W MICHIGAN AVENUE

B. City, town, village, etc.	C. State	D. Zip Code
Same as label	Same as label	Same as label
or → JACKSON	or → MI	or → 49201 -

SEC. III. Name, title, and telephone number of the person who should be contacted if questions arise regarding this report.

A. Please print: Last name	First name	M.I.	B. Title	C. Telephone
Wilson	Ward	J	Senior Environmental Advisor	517 788 - 1969 Extension

SEC. IV. Enter the Standard Industrial Classification (SIC) Code that describes the principal products, group of products, produced or distributed, or the services rendered at the site's physical location. Enter more than one SIC Code only if no one industry description includes the combined activities of the site. SIC codes are listed beginning on page 3 of the Instructions.

A.	B.	C.	D.	E.	F.
4911					

SEC V. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Please print: Last name	First name	M.I.	Title
Smith	Charles	J	Hydro Plt Superintendent

B. Signature	Date of signature
Charles J Smith	4-12-88

K00000919

SEC. VI. Does this site's EPA ID authorize hazardous waste generation?

- ☐ NO ⟶ SKIP TO SECTION VII.
- ☒ YES ⟶ Did this site generate any hazardous waste during 1987?
  - ☐ YES ⟶ READ PAGE 9 OF THE INSTRUCTIONS FOR ACUTE AND ACCUMULATION LIMITS. MARK ☒ NEXT TO THE HAZARDOUS WASTE GENERATION QUANTITY CATEGORY THAT APPLIED TO THIS SITE DURING 1987.
    - ☐ Category 1: More than 1000 kg (2,200 lb) in one or more months
    - ☐ Category 2: More than 100 kg (220 lb) but no more than 1000 kg (2,200 lb) in any single month
    - ☐ Category 3: No more than 100 kg (220 lb) in any single month
      - ☐ Mark ☒ if this site changed from Category 1 to Category 2 or 3 due to waste minimization activity conducted during 1986 or 1987.
  - ☒ NO ⟶ CONTINUE BELOW, MARK ☒ NEXT TO ALL THAT APPLY.
    - ☐ Generated, excluded or delisted wastes
    - ☐ Generated hazardous waste prior to 1987 but do not expect to generate in the future - MARK ☒ FOR REASON IN ONE BOX BELOW
      - ☐ Waste was from one-time event(s) (e.g. spills, remedial actions, etc.)
      - ☐ Waste minimization activity undertaken during 1986 or 1987
      - ☐ Out of business
    - ☐ Generated hazardous waste prior to 1987 and expect to generate in the future
    - ☐ Never generated before but expect to generate in the future
    - ☒ Never generated and do not expect to generate in the future - MARK ☒ FOR REASON IN ONE BOX BELOW
      - ☒ Protective notifier only
      - ☐ Misunderstood the requirements
      - ☐ Notified to secure transportation services
      - ☐ Other EXPLAIN REASON FOR GENERATOR NOTIFICATION IN COMMENTS

SEC. VII. Does this site have RCRA Interim Status or a RCRA permit to treat, store, or dispose hazardous waste?

- ☒ NO ⟶ SKIP TO SECTION VIII
- ☐ YES ⟶ Did the site treat, store, or dispose (T/S/D) hazardous waste in RCRA-regulated units during 1987?
  - ☐ YES ⟶ SKIP TO SECTION VIII
  - ☐ NO ⟶ CONTINUE BELOW, MARK ☒ NEXT TO ALL THAT APPLY
    - ☐ T/S/D excluded waste during 1987
    - ☐ T/S/D hazardous waste in exempt units during 1987
    - ☐ T/S/D hazardous waste prior to 1987 but did not T/S/D waste during 1987. MARK ☒ IN ONE BOX BELOW
      - ☐ T/S/D will resume in the future
      - ☐ Have notified of planned closure
      - ☐ Site is in closure or post closure
    - ☐ Never T/S/D hazardous waste prior to 1987 but: MARK ☒ IN ONE BOX BELOW
      - ☐ Expect to T/S/D hazardous waste in the future
      - ☐ Do not expect to T/S/D hazardous waste in the future - EXPLAIN REASON FOR INTERIM STATUS OR PERMIT IN COMMENTS

SEC. VIII. Do you wish to withdraw this site's generator notification or EPA Part A permit application?

Withdraw generator notification	☐ Yes	☒ No
Withdraw Part A permit application	☐ Yes	☐ No

SEC. IX. Does this site have an area not requiring a RCRA Part A or Part B permit that is used exclusively for the short term accumulation of hazardous waste?

- ☒ NO
- ☐ YES ⟶ DOES THE AREA HAVE:

Containers	☐ No	☐ Yes	ENTER THE NUMBER OF TANKS AND THEIR TOTAL CAPACITY IN GALLONS.
Tanks	☐ No	☐ Yes ⟶	____ Number ____ Gallon capacity

Comments:

K00000920

OMB#: 2050-0024 Expires 12-31-88

MID981537913 S
CONS PWR CO ALLEGAN HYDRO PLT
HITTLE PAUL DIR ENV
3140 ALLEGAN DAM
ALLEGAN MI 49010

U.S. ENVIRONMENTAL PROTECTION AGENCY

1987 Hazardous Waste Report

FORM **IC**

IDENTIFICATION AND CERTIFICATION

WHO MUST COMPLETE THIS FORM? Form IC must be completed by every site that received this package.

INSTRUCTIONS: *Please read the Instructions beginning on page 1 of this booklet before completing this form.*

Complete Sections I through IV and Sections VI through IX immediately. Complete Section V, certification, after you have finished the full report package.

SEC. I. Site name and physical location which may differ from the mailing address. Complete items A through G.
Mark [X] for items A, B, C, D, F, and G if same as label; if different, enter corrections. If label is absent, enter information.

A. Site/company name	B. EPA ID No.
Same as label [X]	Same as label [X]
or →	or →

C. Address number and street name of physical location - If not known, enter industrial park, building name or other physical location description
Same as label [X]
or →

D. City, town, village, etc.	E. County	F. State	G. Zip Code
Same as label [X]	Allegan	Same as label [X]	Same as label [X]
or →		or →	or →

SEC. II. Mailing address of site.
Mark [X] for A, B, C, and D if same as label; if different, enter corrections.

A. Number and street name of mailing address
Same as label
or → 212 W MICHIGAN AVENUE

B. City, town, village, etc.	C. State	D. Zip Code
Same as label	Same as label	Same as label
or → JACKSON	or → MI	or → 49201 -

SEC. III. Name, title, and telephone number of the person who should be contacted if questions arise regarding this report.

A. Please print: Last name	First name	M.I.	B. Title	C. Telephone
Wilson	Ward	J	Senior Environmental Advisor	517 788 - 1969 Extension

SEC. IV. Enter the Standard Industrial Classification (SIC) Code that describes the principal products, group of products, produced or distributed, or the services rendered at the site's physical location. Enter more than one SIC Code only if no one industry description includes the combined activities of the site. SIC codes are listed beginning on page 3 of the Instructions.

A.	B.	C.	D.	E.	F.
4911					

SEC V. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Please print: Last name	First name	M.I.	Title
Smith	Charles	J	Hydro Plt Superintendent

B. Signature	Date of signature
Charles J Smith	4-13-88

K00000919

Foote

February 6, 1990 P18.1.2

Allegan Hydro

US EPA Region V
Att: Biennial Report
RCRA Activities
Waste Management Division
PO Box A-3587
Chicago, IL 60690

In accordance with the instructions contained in the "1989 Hazardous Waste Report" instructions and forms packet (page 2), copies of the postcard requested to be submitted for the below-listed Consumers Power Company/Michigan Gas Storage Company facilities which are not required to submit the "Hazardous Waste Report" are attached.

Allegan Hydro Plant
Five Channels Hydro Plant
Foote Hydro Plant
Hardy Hydro Plant
Hodenpyl Hydro Plant
Loud Hydro Plant
Mio Hydro Plant
Rogers Hydro Plant
Tippy Hydro Plants
Webber Hydro Plant
Straits Peaker
B E Morrow Peaker
Thetford Peaker
Gaylord Peaker
Croton Hydro Plant
Cooke Hydro Plant
Alcona Hydro Plant

Sincerely

Ward Wilson

Ward Wilson
Senior Environmental Advisor

BCC DCCrips, P-11-051
PMO'Connell, Kemnitz Trailer

K00000921

OC0290-0038A-EN02

This site is exempt from the requirement to file the 1989 Hazardous Waste Report because:

- the site was not a RCRA Large Quantity Generator in 1989,

  AND

- the site did not treat, store, or dispose of RCRA hazardous wastes on site in units subject to RCRA permitting requirements in 1989.

It is expected that this site will remain exempt from the requirement to file the Hazardous Waste Report:

Check one:

- ☐ For 1989 only
- ☒ Permanently
- ☐ Other (Explain: _____)

EPA ID M|I|D|9|8|1|5|3|7|9|0|5

Site Name CONSUMERS POWER COMPANY - ALCONA HYDRO

Site Location Address BAM FIELD ROAD, GLENNIE MICHIGAN 48737

Site mailing Address 212 W. MICHIGAN, JACKSON MICHIGAN 49201

Contact Name: WARD WILSON

Phone Number of Contact: (517) 788-1969

This site is exempt from the requirement to file the 1989 Hazardous Waste Report because:

- the site was not a RCRA Large Quantity Generator in 1989,

  AND

- the site did not treat, store, or dispose of RCRA hazardous wastes on site in units subject to RCRA permitting requirements in 1989.

It is expected that this site will remain exempt from the requirement to file the Hazardous Waste Report:

Check one:

- ☐ For 1989 only
- ☒ Permanently
- ☐ Other (Explain: _____)

EPA ID M|I|D|9|8|1|5|3|7|9|1|3

K00000922

Site Name CONSUMERS POWER COMPANY - ALLEGAN HYDRO

Site Location Address 3140 ALLEGAN DAM ROAD ALLEGAN MICHIGAN 49010

Site mailing Address 212 W. MICHIGAN AVENUE JACKSON MICHIGAN 49201

Contact Name: WARD WILSON

Phone Number of Contact: (517) 788-1969

Consumers Power
POWERING MICHIGAN'S PROGRESS
General Offices 212 West Michigan Avenue, Jackson, MI 49201 • (517) 788-0550

February 28, 1992

P18.1.2

ALLEGAN Hydro

US EPA Region V
Att: Mary Villarreal
PO Box A-3587
Chicago, IL 60690

The purpose of this letter is to submit copies of the EPA's modified report form (postcard) for the Consumers Power Company or Michigan Gas Storage Company facilities listed in Attachment A. These forms are being submitted in response to EPA's request for information pertaining to those facilities which have received an EPA RCRA Identification Number, but were not either a RCRA Large Quantity Generator or RCRA authorized treatment storage or disposal facility in 1991.

If you have any questions, please call me at (517) 788-1969.

Sincerely

Ward Wilson

Ward Wilson
Environmental & Technical Services

BCC JP Dickey M1019 (w/o attached forms)
PO Smith PE B203

K00000923

OC0292-62WJW-EN03

This site is exempt from the requirement to file the 1991 Hazardous Waste Report because:

- the site was not a RCRA Large Quantity Generator in 1991

  AND

- the site did not treat, store, or dispose of RCRA hazardous wastes on site in units subject to RCRA permitting requirements in 1991.

It is expected that this site will remain exempt from the requirement to file the Hazardous Waste Report:

Check one:

- ☐ For 1991 only
- ☒ Permanently
- ☐ Other (Explain: _____)

EPA ID M I D 9 8 1 5 3 7 9 0 5

Site Name CONSUMERS POWER COMPANY - ALCONA HYDRO

Site Location Address BAM FIELD ROAD

City: GLENNIE State: MICH Zip 48737

Contact Name: WARD WILSON

Phone Number of Contact: (517) 788-1969

This site is exempt from the requirement to file the 1991 Hazardous Waste Report because:

- the site was not a RCRA Large Quantity Generator in 1991

  AND

- the site did not treat, store, or dispose of RCRA hazardous wastes on site in units subject to RCRA permitting requirements in 1991.

It is expected that this site will remain exempt from the requirement to file the Hazardous Waste Report:

Check one:

- ☐ For 1991 only
- ☒ Permanently
- ☐ Other (Explain: _____)

EPA ID M I D 9 8 1 5 3 7 9 1 3

Site Name CONSUMERS POWER COMPANY - ALLEGAN HYDRO

Site Location Address 3140 ALLEGAN DAM ROAD

City: ALLEGAN State: MICH Zip 49010

Contact Name: WARD WILSON

Phone Number of Contact: (517) 788-1969

Consumers Power
POWERING MICHIGAN'S PROGRESS
Environmental & Technical Services Department: 1945 West Parnall Rd, Jackson, MI 49201 • FAX (517) 788-2329

February28,1994

ALLEGAN
Hydro

MS Mary Villareal
US Environmental Protection Agency
RCRA Activities
PO Box A-3587
Chicago Illinois 60690

1993 HAZARDOUS WASTE REPORT

A copy of the 1993 Hazardous Waste postcard report form for Consumers Power Company and Michigan Gas Storage Company facilities and locations are attached. These facilities and locations are exempt from the requirement to file the 1993 Hazardous Waste Report because the site was not a RCRA Large Quantity Generator in 1993.

If you need more information, please call me at (517) 788-1969.

Ward Wilson

Ward Wilson
Environmental and Technical Services

BCC P.O Smith - Cadillac

K00000925

This site is exempt from the requirement to file the 1993 Hazardous Waste Report because:

- ■ the site was not a RCRA Large Quantity Generator in 1993

AND

- ■ the site did not treat, store, or dispose of RCRA hazardous wastes on site in units subject to RCRA permitting requirements in 1993.

It is expected that this site will remain exempt from the requirement to file the Hazardous Waste Report:

Check one:

- ☐ For 1993 only
- ☒ Permanently
- ☐ Other (Explain: _____)

EPA ID M I D 9 8 1 5 3 7 9 0 5

Site Name ALCONA Hydro

Site Location Address BAM FIELD Road

City: GLENNIE State: MI Zip 48737

Contact Name: WARD WILSON

Phone Number of Contact: (517) 788-1969

This site is exempt from the requirement to file the 1993 Hazardous Waste Report because:

- ■ the site was not a RCRA Large Quantity Generator in 1993

AND

- ■ the site did not treat, store, or dispose of RCRA hazardous wastes on site in units subject to RCRA permitting requirements in 1993.

It is expected that this site will remain exempt from the requirement to file the Hazardous Waste Report:

Check one:

- ☐ For 1993 only
- ☒ Permanently
- ☐ Other (Explain: _____)

EPA ID M I D 9 8 1 5 3 7 9 1 3

Site Name ALLEGAN Hydro

Site Location Address 3140 ALLEGAN DAM Road

City: ALLEGAN State: MI. Zip 49010

Contact Name: WARD WILSON

Phone Number of Contact: (517) 788-1969

K00000926

5 - LRD
2 - TSD
100 - CEQ/SQ

Consumers Power
POWERING MICHIGAN'S PROGRESS
Environmental & Technical Services Department: 1945 West Parnall Rd, Jackson, MI 49201 • FAX (517) 788-2329

March 1, 1996

P18.1.2

ALLEGAN Hydro

US Environmental Protection Agency
Region 5
PO Box A-3587
Chicago, IL 60690
Attn: Ms Mary Villarreal

**1995 HAZARDOUS WASTE POSTCARD NOTICES-
MICHIGAN GAS STORAGE COMPANY AND CONSUMERS POWER COMPANY FACILITIES**

The Postcard Notices requested by the US EPA in the Instructions for the 1995 Hazardous Waste Report for 100 Michigan Gas Storage Company and Consumers Power Company facilities and locations which have been assigned an EPA ID Number as a hazardous waste generator are attached for your records.

If you have any questions pertaining to the information provided, please call me at (517) 788-1969.

Sincerely

Ward Wilson

Ward J Wilson
Environmental & Technical Services

K00000927

O0296-20.WJW

If this site is NOT required to file the 1995 Hazardous Waste Report, complete and return the attached postcard. The card indicates you are exempt from the report requirement. EPA will use the postcards to distinguish sites exempt from reporting from those sites out of compliance. Return the card to the address listed for your State or Regional office beginning on page vi of the instructions.

This site is exempt from the requirement to file the 1995 Hazardous Waste Report because:

- the site was not a RCRA Large Quantity Generator in 1995

AND

- the site did not treat, store, or dispose of RCRA hazardous wastes on site in units subject to RCRA permitting requirements in 1995.

It is expected that this site will remain exempt from the requirement to file the Hazardous Waste Report:

Check one:

- [ ] For 1995 only
- [x] Permanently
- [ ] Other (Explain: _____)

EPA ID M I D 9 8 1 5 3 7 9 1 3

Site Name CONSUMERS POWER COMPANY - Allegan Hydro

Site Location Address 3140 Allegan Dam Road

City: Allegan State: MI 49010

Contact Name: Ward Wilson

Phone Number of Contact: (517) 788-1969

K00000928

Consumers Energy

A CMS Energy Company

Environmental & Technical
Services Department
1945 West Parnall Road
Jackson, MI 49201-8643

Fax: 517 788 1064

February 25, 1998

ALLEGAN
14:pdw

U.S. EPA Region 5
P.O. Box 3587
Chicago, Illinois 60690
ATTN: Mary Villareal

P18.1.2

POSTCARD REPORTS FOR A CONSUMERS ENERGY COMPANY FACILITIES NOT REQUIRED TO SUBMIT 1997 HAZARDOUS WASTE REPORTS

Copies of the subject modified reports (copy of postcard contained in 1997 Hazardous Waste Report (EPA Form 8700-13A/B (Revised (07-97))) are attached for your records. These copies are being submitted because the facilities were not large quantity generators in 1997.

If you have any questions regarding this submittal or the information contained in the reports, please call me at (517) 788-1969.

Sincerely

Ward Wilson

Ward Wilson
Environmental and Technical Services

K00000929

hw-bien7.sub

This site is not required to file the 1997 Hazardous Waste Report because:

- The site was not a RCRA Large Quantity Generator in 1997;

  AND

- The site did not treat, store, or dispose of RCRA hazardous wastes on site in units subject to RCRA permitting requirements in 1997.

It is expected that this site will not have to file the Hazardous Waste Report (CHECK ONE):

- [ ] For 1997 only
- [x] Permanently
- [ ] Other (Explain: _____)

EPA ID No. MID 981 537 905

Site Name CONSUMERS ENERGY COMPANY – ALCONA HYDRO

Site Location Address BAM FIELD ROAD

City: GLENNIE State: MI Zip 48737

Contact Name: WARD J WILSON

Telephone Number of Contact: (517) 788 1969

This site is not required to file the 1997 Hazardous Waste Report because:

- The site was not a RCRA Large Quantity Generator in 1997;

  AND

- The site did not treat, store, or dispose of RCRA hazardous wastes on site in units subject to RCRA permit requirements in 1997.

It is expected that this site will not have to file the Hazardous Waste Report (CHECK ONE):

- [ ] For 1997 only
- [x] Permanently
- [ ] Other (Explain: _____)

EPA ID No. MID 981 537 913

Site Name CONSUMERS ENERGY COMPANY – ALLEGAN HYDRO

Site Location Address 3140 ALLEGAN DAM ROAD

City: ALLEGAN State: MI Zip 49010

Contact Name: WARD J WILSON

Telephone Number of Contact: (517) 788-1969

K00000930

Consumers Energy *Memorandum*

To: Distribution List

From: WJ Wilson, P24-509 Ward Wilson

Date: April 5, 2000

Subject: 1999 Hazardous Waste Report Postcard Submittal

CC: File P18.1.2 (w/o attachments)

Copies of the subject postcard(s) submitted for your facility(ies) are attached for your records. Since the facilities did not meet the Part 111 criteria to be categorized as a Large Quantity Hazardous Waste generator in 1999, the complete 1999 Hazardous Waste Report was not required to be submitted. This submittal of the postcard(s) is in response to the MDEQ request for information.

If you have any questions, please contact me at 81696.

ALLEGAN Hydro

K00000931

This site is not required to file the 1999 Hazardous Waste Report because:

- The site was not a RCRA Large Quantity Generator in 1999:

  AND

- The site did not treat, store, or dispose of RCRA hazardous wastes on site in units subject to RCRA permitting requirements in 1999.

It is expected that this site will not have to file the Hazardous Waste Report (CHECK ONE):

- ☐ For 1999 only
- ☒ Permanently
- ☐ Other (Explain: _____)

EPA ID No. MI D 9B1 537 913

Site Name CONSUMERS ENERGY - ALLEGAN DAM

Site Location Address 3140 ALLEGAN DAM ROAD

City: ALLEGAN State: MI Zip 49010

Contact Name: WARD WILSON

Telephone Number of Contact: (517) 788-1969

K00000932

CITY OF ALLEGAN DAM
J.Bernier

INFORMATION REQUESTS

1. Identify all persons consulted in the preparation of your responses to these Information Requests.

   James R. Bernier, Sr. Natural Resource Manager – Hydro Operations
   Robert M. Neustifter, Attorney – Regulatory Section
   Margaret J. Kaiser, Corporate Records

2. Identify all documents consulted, examined, or referred to in the preparation of your responses to these Information Requests, and provide copies of all such documents. If, in lieu of or along with a textual response to any specific Request, you refer to a document that you believe contains information responsive to that Request, you must identify the specific location (page number, paragraph number) in the document where responsive information can be located.

   See general objections.

3. If you have reason to believe that there may be any person able to provide a more detailed or complete response to any Information Request, or who may be able to provide additional responsive documents, identify any and all such persons.

   The following entities may be able to provide additional information
   City of Allegan, 112 Locust Street, Allegan, MI 49010
   Imperial Carving Co., Milling District, Allegan, MI 49010

4. Identify and generally describe each Consumers Energy facility at or near the Site, as that term is define in Attachment 3 (Definitions). For each Consumers Energy facility, provide:

   City of Allegan Dam

   a. the address of the facility;

      Milling District, Allegan, MI 49010

   b. past and present EPA ID numbers, RCRA numbers and NPDES numbers for the facility; and

      None known.

K00000933

c. the current owner of the facility

City of Allegan
112 Locust Street
Allegan, MI 49010

5. Identify all prior owners and operators of each facility, and their dates of ownership and/or operation.

Numerous entities owned shares in the output of the dam at one time or another. In 1899, 14 individuals and companies owned shares of the output. The shares were portions of the "40 run of stone" which made up the entire amount of impounded water power available. (Each of the 14 owned one or more of the 40 "stones.") In 1899, they formed the Allegan Water Power Association to own and operate the dam. The list of owners represented at meetings of the Association from 1899 to 1927 are shown on the attached list Over that time 54 different entities owned one or more stones.

In 1933, the Association's ownership of the dam and associated water rights were divided as follows:

Consumers Power Company	25 shares
City of Allegan	6 shares
Baker Furniture Factories	5 shares
Oliver Company	3 shares
Imperial Wood Carving Company	1 share
	40 shares

By 1939, ownership was divided as follows:

Consumers Power Company	25 shares
Imperial Carving Company	6 shares
City of Allegan	6 shares
W. J. Oliver	3 shares
	40 shares

By 1966, Consumers Power Company still had 25 shares, the City of Allegan had 9 shares, and Imperial Carving Company had 6 shares. In 1966, The City of Allegan agreed to sell its municipal electric operations (including its 9 shares in the Dam) to Consumers. On September 28, 1966 Consumers transferred its 25 shares to Imperial Carving Company. After they were conveyed to Consumers along with the rest of the City's municipal electric operations, Consumers conveyed the final 9 shares to Imperial Carving Company in approximately late 1969. The Allegan Water Power Association also deeded to Imperial Carving Company whatever interests it had in the dam. Imperial retained ownership until about 1993. Consumers does not know the exact date on which the present owner, the City of Allegan, acquired the Dam.

K00000934

6. Provide copies of all local, state, and federal environmental permits ever granted for each facility or any part thereof (e.g., RCRA permits, NPDES permits, etc).

   None known.

7. For each facility, identify and describe all types of monitoring reports, monitoring data, and documentation sent to or received by federal or state regulatory authorities regarding any materials containing hazardous substances used, generated, stored, treated or disposed at or from the facility.

   None

8. Identify and describe the nature of all past and current operations and production processes at each facility. Identify, if available, all current and previous SIC codes associated with each facility.

   Facility began to produce hydro-mechanical power in about 1840. Production of hydro-mechanical power continued until at least 1936. Use of part of the water power for generating electricity had begun at least by 1911 and probably at least by 1901, when the "Allegan Electric Co." appears as an owner of part of the water power potential of the dam. Facility was taken out of production about 1993. SIC code – 4931

9. Identify each product produced at the facility. Further identify the mass quantity of each product produced on an annual basis.

   Since both hydro-mechanical and hydroelectric energy were produced simultaneously for decades, the hydro-electrical capacity and output varied over time, with the dam having a capacity as high as 900 kW (1933). The last 650 kW of hydroelectric capacity owned by Consumers Energy was retired December 29, 1965. Imperial Wood Carving Company continued electric production at the site, subsequent to that time, but production was then halted in the early 1990s.

10. Identify and describe any and all activities or efforts to take production facilities out of operation, and include the dates of each such activity or effort.

    Unknown. The facility was taken out of production after Consumers sold the plant in 1966. See response to Q. 3.

11. For each facility, identify and provide any data, estimates, analyses or other information regarding any material used, treated, stored or disposed that contained or may have contained PCBs. To the extent available, provide all such data, estimates, analyses or other information on an annual basis.

    None known

K00000935

12. For each facility, identify any data, estimates, analyses or other information regarding the concentration of PCBs in any material used, treated, stored or disposed there. To the extent available, provide all such data, estimates, analyses or other information on an annual basis.

None known

13. To the extent not already provided in response to Request #11, provide the following information:

    a. the type and quantity, on an annual basis, of any oils or other lubricants used, treated, stored or disposed at each facility that are known or suspected to have contained PCBs;

    None known.

    b. the number, handling and disposition of all transformers and conductors at each facility; and

    Unknown

    c. data, analysis and other information regarding leaks, discharges or other releases from any transformer, conductor or other equipment using oils or lubricants at each facility.

    None known.

14. To the extent not already provided in response to Request #12, identify any data, estimates, analyses or other information regarding the concentration of PCBs in the materials identified in your response to Request #13.

None known.

15. Describe the procedures used by you or anyone on your behalf to test PCB concentrations in the materials identified in your response to Requests #11 and #13, above. Include in your response test methods and dates.

None.

16. Describe the procedures followed by you, or anyone on your behalf, to prevent, mitigate or address the release or threat of release of any material identified in your response to Requests #11 and #13, above.

Not applicable

17. Provide a figure delineating the groundwater flow direction on your property.

No information available.

K00000936

18. Identify the depth(s) to groundwater at your property.

No information available.

19. For each production process at each facility, identify and describe each waste stream from its creation to final disposition.

Unknown

20. For each facility, identify all past and present waste units (e.g., underground storage tanks, above ground storage tanks, waste piles, landfills, surface impoundments, lagoons, dry wells, septic systems, floor drains, ponds, pits, machine pits, container storage areas). For each such waste unit identified, provide the following information:

a. The location of all past and present waste units whether currently in operation or not.

Unknown

b. The type of unit (e.g., underground storage tank, lagoon, dry well, etc).

Unknown

c. The dates that the unit was in use.

Unknown

d. The purpose of past and/or present usage (e.g., storage, spill containment, waste disposal).

Unknown

e. The quantity and type(s) of materials (e.g., manufacturing materials, wastes, hazardous substances, pollutants and contaminants) located in each unit.

Unknown

f. If the unit is no longer in use, describe how was such unit closed, and what actions were taken to prevent or address potential or actual releases of waste constituents from the unit(s). Include all analytical data from such closure.

Unknown

K00000937

21. For each facility, identify any data, estimates, analyses or other information about the presence of PCBs in each waste stream created. To the extent available, provide such information on an annual basis.

None known.

22. For each facility, identify any data, estimates, analyses or other information about the concentration of PCBs in each waste stream created. To the extent available, provide such information on an annual basis.

None known.

23. For each facility, describe the procedures used by you, your predecessor(s), or anyone on behalf of you or a predecessor, to test the PCB concentration in each waste produced, stored, treated or disposed at that facility. Include in your response test methods, media tested, and dates.

None

24. For each facility, identify each off-Site location at which wastes that contained or potentially contained PCBs were disposed. Further identify the dates of each such off-Site disposal, and the nature, quantity and PCB concentration of any such wastes.

None known.

25. For each facility, and for each waste produced, stored, treated or disposed at that facility:

    a. identify the PCB concentration of any waste;

    None known

    b. if the waste contained detectable concentration of PCBs, describe each occasion on which a release of such waste occurred or threatened to occur; and

    None known

    c. describe the procedures and measures taken by you, or anyone on your behalf, to prevent, mitigate or address the release or threat of release of PCBs or other hazardous materials.

    Unknown

26. For each release described in response to Request #25 above, describe the quantity of PCB-contaminated wastes that were released or threatened to be released, and state whether any PCBs contained in the wastes contributed to the presence, or threatened to contribute to the presence, of PCBs in the Kalamazoo River.

None

K00000938

27. For each facility, identify any data, estimates, analyses or other information about the history of flooding, or any other infiltration of water, from the Kalamazoo River.

The dam is in the Kalamazoo River.

28. To the extent not provided in your response to Request #19, describe each wastewater stream, waste oil stream, and wastewater/waste oil mixture stream at each facility, from its creation in the production process to final discharge point. In your response include a complete description of the fate of any wastewater stream, waste oil stream, and wastewater/waste oil mixture stream produced at each facility (e.g., on-site treatment, discharge to a POTW, discharge to a storm sewer outfall, direct discharge to the Kalamazoo River).

Unknown

29. To the extent not provided in response to Requests #19 and #28, identify the quantity of all (a) wastewater, (b) waste oil, and (c) wastewater/waste oil mixture produced, on a monthly basis, from each production process at each facility.

Unknown.

30. To the extent not provided in response to Requests #21 and #22, identify any data, estimates, analyses or other information about the presence and/or concentration of PCBs in the wastewater, waste oil and wastewater/waste oil mixture produced from each production process at each facility. To the extent available, provide such information on a monthly basis.

None.

31. For each facility, identify any data, estimates, analyses or other information regarding the effectiveness of the treatment system(s) at that facility, if any, to remove PCBs from each wastewater stream, waste oil stream and wastewater/waste oil mixture stream.

None.

32. Identify any data, estimates, analyses or other information regarding procedures and measures taken by you, or by anyone on your behalf, to prevent, mitigate or address the release or threat of release of PCBs from wastewater, waste oils, or wastewater/waste oil mixtures to the Kalamazoo River.

Unknown.

33. For any POTW identified in response to Request #28, provide, for each facility and on a monthly basis, all information regarding the amount of wastewater, waste oil and wastewater/waste oil mixture discharged to a POTW, the concentration of PCBs in the wastewater, waste oil and wastewater/waste oil mixtures discharged to the POTW from that facility and, to the extent such information is available, the PCB concentration in the effluent from the POTW.

Not applicable.

34. For each facility, identify each pipe, conduit, storm sewer, sewer line or other outfall that, directly or indirectly, terminates in the Kalamazoo River or its tributaries, past or present, into which treated, untreated or bypassed wastewater, waste oil, or any other waste (including wastewater/waste oil mixtures), from that facility was discharged. Include a figure identifying the source and location of each pipe, conduit, storm sewer, sewer line or other outfall.

None known.

35. For each pipe, conduit, storm sewer, sewer line or other outfall identified in your response to Request #34, identify dates of use and each outfall's source at the facility. Further provide, on a monthly basis, the volume of wastewater, waste oil or other waste (including wastewater/waste oil mixtures) discharged from the facility into each pipe, conduit, storm sewer, sewer line or other outfall.

Not Applicable

36. For each pipe, conduit, storm sewer, sewer line or other outfall identified in response to Request #34, identify all influent and effluent quality data. Include to the extent such information is available, the PCB concentration of all influent and effluent, on a monthly basis.

Not Applicable

37. For each pipe, conduit, storm sewer, sewer line or other outfall identified in response to Request #34, identify all bypasses or spills into the Kalamazoo River or its tributaries.

Not Applicable

38. For each facility, identify any data, estimates, analyses or other information regarding the mass quantity of PCBs disposed into the Kalamazoo River as a result of wastewater, waste oil or wastewater/waste oil discharges from the production processes. To the extent available, provide such information on an annual basis.

None known.

39. For each facility, identify any data, analyses or other information regarding the nature and quantity of hazardous substances, including PCBs, in the sediments, soil, groundwater and surface water at that facility. Identify the concentration levels of PCBs for all samples collected at the facility or at any property abutting the facility.

None.

40. For each facility, provide information regarding any environmental response activities involving or potentially involving PCBs or PCB-containing materials conducted at that facility, or on the Kalamazoo River, its tributaries, or other abutting property, at your direction or under your control. Indicate the date(s) on which such response activity was performed, what work was performed, the expenses incurred, the results of the response activity and, if it has not concluded, when the environmental response is expected to conclude.

None.

41. Have you incurred any costs associated with the investigation, remediation or other action to address contamination at the Site or any portion thereof? If yes, identify all costs incurred by you through the date of this Information Request.

No.

K00000941

DISPOSITION OF MINOR HYDRO, DIESEL AND STEAM PLANTS

Retirements Since 1950
As of June 27, 1973

Plant	Nameplate Rating Kw	Official Retirement Date	Last Operating Date	Disposition of: Dam	Equipment	Building and Land
East Jordan Hydro	240	Sept 11, 1950		City of East Jordan	Removed - Junked	City of East Jordan
Greenville Hydro	300	Apr -, 1951	5-12-50	City of Greenville	Removed - Sold	CP Co. Use
Maple River Hydro	192	Dec -, 1951	11- 8-51	Ionia County	Removed - Junked	Ionia County
Hesperia Diesel	330	Oct -, 1952	3-15-51		Removed - Sold	Village of Hesperia
West Branch Hydro	75	Nov -, 1952	3-29-52	Demolished	Removed - Junked	Powerhouse - Demolished Land - CP Co.
Morley Hydro	150	Nov -, 1952	11-26-51	Village of Morley	Removed - Sold	Village of Morley
Albion Hydro	150	Dec -, 1952	2-21-51	City of Albion	Generator - Removed & Sold	Land South of Erie Street to City of Albion
White Cloud Diesel	576	Dec -, 1952	8-11-52		Removed - Sold	City of White Cloud
Blissfield Steam	1,250	Dec -, 1952	11- 1-50		Generator - Removed & Sold	Office Space
Stover Hydro	120	Dec 30, 1952	12-31-52	Bellaire Conservation Club	Turbine - Junked Generator - Sold as Motor	Bellaire Conservation Club
Montague Diesel	3,480	Dec -, 1952	10-17-52		Removed - Sold	Muskegon Distribution Dept
Hesperia Hydro	200	Dec -, 1952	12-31-52	Village of Hesperia	Removed - Junked	Village of Hesperia
Grayling Hydro	90	Jan 2, 1953	12-31-52	Sold - Salling Hanson Co.	Removed - Sold	Sold - Salling Hanson Co.
Bellaire Diesel	148	Feb 4, 1953	CP Co. Never Operated		Removed - Sold	City of Bellaire
Rugg Hydro	160	Mar 26, 1953	3-25-53	Kalkaska County	Removed - Junked	Kalkaska County
Reed City Hydro	150	May 11, 1953	3-23-53	Reed City	Removed - Junked	Reed City
North Monroe Street Hydro	150	July 9, 1953	12-15-52	City of Battle Creek	Removed - Sold	City of Battle Creek
Baldwin Diesel	330	Aug 19, 1953	8-18-53		Removed - Sold	CP Co. Distribution Dept
Shiawassee Hydro	150	Aug 26, 1953	1-29-53	Shiawassee and Vernon Townships	Removed - Sold	Shiawassee and Vernon Townships
Stronach Hydro	800	Sept 14, 1953	8- 7-53	CP Co. - Dam Intact	Removed - Junked	House - Sold Land - CP Co. Powerhouse - Demolished
Ceresco Hydro	600	Nov 16, 1953	7-19-52	Sold - R.M. and F.D. Lutz	Removed - Junked	Sold - R.M. and F.D. Lutz
Centreville Hydro	150	Feb 18, 1954	2-17-54	Village of Centreville	Removed - Junked	Village of Centreville
[illegible] Hydro	80	Apr 16, 1954	4-13-54	Village of Boyne Falls	Removed - Junked	Village of Boyne Falls
[illegible]		[illegible]	1-29-53		Removed - Junked	Consumers Power Company

K00000942

Plainwell No. 5 Hydro	150	May 7, 1956	5- 7-56	Michigan Paper Co.	Michigan Paper Co.	City of Plainwell
Bayrne Hydro	240	June 1, 1956	6-10-56	Township of Otisco	Generator - Sold in Mexico Other Equipment - Junked	Township of Otisco
Hubbardston Hydro	240	Nov 12, 1956	11-10-56	Village of Hubbardston	Removed - Junked	Village of Hubbardston
Nagar Hydro	450	Nov 12, 1956	7- 5-56	Demolished	Removed - Junked	Raymond Robinson
Lyons Hydro	450	Oct 2, 1957	4-30-56	Village of Lyons	Removed - Sold	Village of Lyons
Elm St. Stm (Boilers 1-6)	20,000	Apr 18, 1957	4-17-57		Removed - Sold	Consumers Power Company
Elm St. Stm (Units 2 & 3)	-	Oct 1, 1958	12-12-57		Removed - Sold	Consumers Power Company
Beaverton Hydro	970	Feb 20, 1961	2-20-61	City of Beaverton	Removed - Sold	City of Beaverton
Chappel Hydro	430	Feb 16, 1962	2-14-62	Gladwin County	Removed - Sold or Junked	Gladwin County
Grayling Diesel	2,550	Feb 19, 1962	2-19-62		Removed - Sold or Junked	City of Grayling
Mills Street Steam	7,600	Mar 16, 1962	5-24-56		Removed - Sold	Auto-Ion Chemical Company
Cheboygan Diesel	2,400	June 15, 1962	5-25-62		Removed - Sold	Consumers Power Company
Belding Hydro	400	July 27, 1962	7-27-62	City of Belding	Removed - Junked	City of Belding
Boyne Diesel	4,098	July 31, 1962	7-31-62		Removed - Sold	Consumers Power Company
Boyne River Hydro	500	Jan 4, 1963	10-12-62	Boyne Mountain Lodge, Inc.	Removed - Sold	Boyne Mountain Lodge, Inc.
Homestead Hydro	600	Dec 1, 1963	11-30-63	Sold - G. A. Derks	Generator - Junked Turbine - Left	Sold - G. A. Derks
Fulton Street Steam	1,500	Apr 20, 1964	4-19-64		Removed - Junked	Consumers Power Company
Saginaw River No. 4 Boiler	-	Aug 1, 1965	3-10-65		See Below, February 1972	Consumers Power Company
Central Plant Hydro	400	Dec 27, 1965	12-26-65	Demolished	Removed - Junked	
LaBarge Hydro	700	Dec 27, 1965	12-27-65	•	Generator - Sold or Junked Turbine - Left	
Lowell Hydro	900	Dec 27, 1965	12-27-65	Kent County	Generator - Sold as Motor Turbine - Left	Kent County
Newaygo Hydro	1,880	Dec 27, 1965	12-27-65	Michigan Department of Conservation	Generators #3, 4 - Sold Generators #1, 2 & Turb - Left	Michigan Dept of Conservation
Plainwell Hydro	900	Dec 27, 1965	12-27-65	Michigan Department of Conservation	Generator - Junked Turbine - Left	Michigan Dept of Conservation
Otsego Hydro	1,700	Dec 28, 1965	12-28-65	Michigan Department of Conservation	Generator - Junked Turbine - Left	Michigan Dept of Conservation
Allegan Hydro	650	Dec 29, 1965	12-29-65	Imperial Wood Carving Co.	Left	Imperial Wood Carving Co.
Cheboygan Hydro	1,100	Dec 29, 1965	12-29-65	Michigan Waterways Commission	Generator - Junked Turbine - Left	Charmin Paper Company
Elk Rapids Hydro	1,050	Dec 29, 1965	12-29-65	Antrim County	Generator - Junked Turbine - Left	Antrim County
Alverno Hydro	800	Dec 30, 1965	12-30-65	•	Generator - Junked Turbine - Left	
Troubridge Hydro	1,500	Dec 30, 1965	12-30-65	Michigan Department of Conservation	Generator - Junked Turbine - Left	Michigan Dept of Conservation
Saginaw River Boilers No. 1, 2, 3, 5 & 6, Turbines No. 1, 2, & House Unit A	40,000	Feb 28, 1968	12-21-68		See Below, February 1972	Consumers Power Company

K00000943

18

76-5-267

QUITCLAIM DEED

THIS INDENTURE, Made this 28th day of September, 1966, Between CONSUMERS POWER COMPANY, a corporation duly authorized to do business in Michigan and having its principal office therein at 212 West Michigan Avenue, Jackson, Michigan, party of the first part, and IMPERIAL CARVING COMPANY, a Michigan corporation, of Allegan, Michigan, party of the second part,

WITNESSETH:

That the said party of the first part, for and in consideration of the sum of One Dollar ($1.00) and other valuable considerations to it in hand paid, and the assumption of the proportionate share of the obligations and liabilities arising out of the operation and maintenance of the so-called Allegan Water Power Association Dam as hereinafter conveyed, does by these presents bargain, sell, remise, release and forever QUITCLAIM unto the party of the second part, and to its successors and assigns Forever, all those certain properties situate in the City of Allegan, Township of Allegan, County of Allegan and State of Michigan, hereinafter more particularly described:

A parcel of land in the original plat of the City of Allegan, being a part of Section 28, T2N, R13W, described as part of the so-called mill lots and more particularly described as follows: To find the place of beginning commence at the intersection of the center line of Bridge Street and the center line of Water Street; running thence S 39° 15' E along the center line of Water Street 269.32 feet; thence N 50° 45' E 149.32 feet; thence N 73° 10' E 29.88 feet to the place of beginning of this description; running thence N 26° 17' W to the Kalamazoo River; thence E'ly along said river to a line which bears N 26° 34' W from a point N 73° 10' E 171.7 feet from the place of beginning; thence SW'ly 26° 34' E to the N'ly edge of the mill race; thence W'ly along the N'ly edge of the mill race to a line which bears S 26° 17' E from the place of beginning; thence N 26° 17' W to the place of beginning.

Intending hereby to convey all of First Party's interest in the so-called mill lots lying E'ly of the E'ly line of what was formerly known as the Oliver factory property and West of the W'ly line of the former Baker mill property, together with all interest in the mill race, flumes and rights in the Kalamazoo River adjacent to said lands.

Also 25 run of stone of water power connected with said property above described as created by the existence of the so-called Allegan Water Power Association Dam located in Section 28 of T2N, R13W.

Also all of First Party's interest in and to the dam located in Section 28 of T2N, R13W, being the so-called Allegan Water Power Association Dam, all water rights and flowage rights held by First Party used or usable in the operation of said dam at its existing height whether said flowage rights have been obtained by grant or prescription, together with such flowage rights on other lands, not herein described, now owned by Consumers Power Company which are necessary for the operation of said dam at its now existing height.

K00000944

Also all of First Party's interest in and to that part of the unnumbered lots lying N'ly of Prospect Street, bounded on the Northwest by the produced SE'ly line of Lot 850, and on the East by the produced W'ly line of Lot 860 of the original plat of the City of Allegan, and on the North by the Kalamazoo River, and on the South by Lots 852 to 859 inclusive, together with any interest which First Party may have in the reversion or remainder interests in Prospect Street adjacent to said unnumbered lots.

Also all of First Party's interest in the buildings, generating equipment, turbines, switches, and other electric facilities located within said buildings on the lands first above described and used or usable in the production and generation of electricity.

The land, dam, run of stone, flowage rights and other interests herein described are herein conveyed expressly subject to the rights of the City of Allegan, its successors and assigns, to operate and maintain its so-called Calkins Bridge site dam to its now existing head, being Contour 618 U.S.G.S. Datum, as established by the City of Allegan.

Together with all and singular the hereditaments and appurtenances thereunto belonging or in anywise appertaining, TO HAVE AND TO HOLD the said premises unto the said party of the second part and to its successors and assigns to the sole and only proper use, benefit and behoof of said party of the second part, its successors and assigns, Forever.

IN WITNESS WHEREOF, said party of the first part has caused this instrument to be executed in its corporate name and by its duly authorized officers as of the day and year first above written.

Signed, Sealed and Delivered in the Presence of:

Frances S. Schafer
Frances S. Schafer

Lucille M. Darling
Lucille M. Darling

CONSUMERS POWER COMPANY

By W. C. Schmidt
W. C. Schmidt
Senior Vice President

Attest:
W. R. Boris
W. R. Boris
Secretary

STATE OF MICHIGAN)
) SS.
COUNTY OF JACKSON)

On this 28th day of September, 1966, before me personally appeared W. C. Schmidt, to me personally known, who, being by me first duly sworn, did depose and say that he is Senior Vice President of CONSUMERS POWER COMPANY, the corporation named in and which executed the within instrument, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said W. C. Schmidt acknowledged said instrument to be the free act and deed of said corporation.

My Commission Expires:

Sept. 7, 1970

Willoween R. Smith
Willoween R. Smith
Notary Public, Jackson County, Michigan

APPROVED AS TO FORM
C.E.M.
CONSUMERS POWER COMPANY
LEGAL DEPT. W.L.R.

K00000945

CONSUMERS POWER COMPANY

RETIRED HYDRO PLANTS AND DAM SITES

1969

NAME OF PLANT	LOCATION Section	Town & Range	County	River	Built	CP Co. Acquisition and Disposition	Retire
ADA	34	T 7N R10W	Kent	Thornapple	1926	Built by Mich. Water Pwr Co. Acquired 1934 from Lower Peninsula Power Co. Operation ceased 12/30/68 Sold to Thornapple Asso. Inc.	1969
ALBION	2 Vill of Albion	T 2S. R3W	Calhoun	Kalamazoo	1903	Acquired 1914 from Village of Albion Sold to City of Albion 1952	1952
ALLEGAN	28 City of Allegan	T 2N. R13W	Allegan	Kalamazoo	1840	Acquired 1911 Rebuilt 1913 and 1928 Sold to Imperial Carving Co. 10/21/66	1965
ALVERNO	36	T37N R 1W	Cheboygan	Black	1904	Acq. 1950 Mich. Publ Serv. Co.	1965

K00000946

ear, Oct. 1950

CONSUMERS POWER COMPANY
ALLEGAN PROPERTY

Street Lighting, December 7, 1898

On December 7, 1898, W. A. Foote entered into a contract with the village of Allegan to construct a Street Lighting System, and the Kalamazoo Electric Company entered into a contract to supply electric current for same. This W. A. Foote Contract is now in the Consumers Power Company General Files.

A transmission line from Trowbridge Dam was built and street lighting service supplied, which service has continued to the present time.

Purchase of Distribution System and Hydro Plant, December 1911

The purchase of the Allegan Distribution System is entered on the books of the Commonwealth Power Company in December, 1911 at $20,000.00 per J.E. No. 2210 which Journal entry was based on, and refers to a letter of J. Hekma dated December 15, 1911. This letter has been destroyed and is not available. The Commonwealth Power Company gave a note payable to W. M. Eaton covering the purchase price.

The purchase of the Allegan Water Power property is entered on the books of the Economy Power Company in December 1911 per J.E. No. 286 which entry covers the purchase of Hoag Mill Property, Battle Creek Generating Station, Water Power at Allegan, Steam Station at Pontiac, all at a price of $385,000.00. This Journal entry was also based on and refers to a letter of J. Hekma dated December 15, 1911, which has been destroyed and is not available. The Economy Power Company gave a note payable to W. M. Eaton covering the purchase price.

Allegan Water Power Association

The minute book of this corporation states that a meeting of the Allegan Water Power Owners was called on July 12, 1899, at which time the articles of association of the Allegan Water Power Association were adopted.

The attached statement shows the ownership of the 40 run of stone comprising the Association as of the meeting of July 12, 1899 and also shows ownership as of subsequent corporate meetings all as given in the minute book of the corporation.

Due to the fact that it was not always the practice of the secretary to list the ownership of all run of stone including those not represented at a given meeting, a complete ownership list can not be compiled from the minute book for all meetings and for this reason the total run of stone shown on the attached statement as of a given date does not total to the entire 40 run of stone comprising the association.

K00000947

From this statement can be traced, however, in a general way the changes in ownership of the various water power holdings.

It will be noted that the village of Allegan owned two (2) run of stone at the time the Association was formed.

K00000948

EXHIBIT SHOWING OWNERSHIP OF THE VARIOUS RUN OF STONE COMPRISING THE ALLEGAN WATE
AS SHOWN ON MINUTE BOOK OF THAT COMPANY OF DATES OF VARIOUS CORPORATE

Date of Meeting	8/3/99	7/13/00	8/6/00	6/12/01	8/11/02	8/3/03	8/1/04	9/7/05	8/6/06	9/6/07	9/7/08	9/10/09	5/18/10	8/7/11	8/5/12	8/13/13
Newman Johnson Paper Co.	9	9	9	9												
Fred A. Sawyer	1	1	1	1	1	1	1	1								
E. B. Born	2	2	2	2	2	1	1	1	1	1	1					
B. B. Sutphen & Co.	1	1	1	1												
Osmond Fairfield Co.	4	4	4	4												
Oliver & Co.	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Cooke Baker & Co.	3	3	3	3												
A. E. Calkins	2	2	2	2												
J. M. Heath	1															
A. B. Surey	1	1	1	1	1	1	1				1	1	1	1	1	
Village of Allegan	2	2	2	2	2	2	2	2	3		3		3	3	3	3
J. E. Young	3	3	3				3									
H. M. Olney	6	6	6		6											
Julius Tomlinson	1	1	1													
Allegan Electric Co.				6												
Allegan Wheel Co.		1	1	1	1											
Allegan Lt. & Pr. Co.						7	8	8	8	10	10	10	10	10		
Fairfield & Kalvoord					4			4	4	4	4	4	4	4	4	
Dayton Allegan Par. Co.					9	9										
Young Stratton Bros.				3	3	3		3	3	3	3	3	3		3	
K. B. Jewett					1											
S. A. Guard						1	1	1			1	1	1	1	1	1
Allegan Foundry & Mach. Co.						1	1		1							
Dayton Folding Box Co.							8			8						
Baker & Co.					3		3	3	3	3	3	3	3	3	3	3
Fairfield & Kalwood							4									
Rome Bros.Mfg. Co.							1									
Farmers Milling Co.								2								
Rowe Brom. Mfg. Co.								1	1							
Baines & Mosier Co.											1	1	1	1	2	2
Phoenix Mfg. Co.													1			1
Stratton Brom. Co.														3		
Allegan Milling Co.																7
Commonwealth Power Co.																
Consumers Power Co.																
Chas. Weny																
Handy Elect. Mills																
Weny & Mosher																
Imperial Curving Co.																
Jewett Phonograph Co.																
	40	40	40	39	37	30	38	30	28	33	31	27	31	30	21	21

K0000949

THE VARIOUS RUN OF STONE COMPRISING THE ALLEGAN WATER POWER ASSOCIATION
BOOK OF THAT COMPANY OF DATES OF VARIOUS CORPORATE MEETINGS

7	9/7/08	9/10/09	5/18/10	8/7/11	8/5/12	8/13/13	8/20/14	8/30/15	8/8/16	8/13/17	8/12/18	8/26/19	8/4/20	8/12/21	8/28/22	9/4/24	9/9/25	10/5/26	9/27/27
	1																		
	4	4	4	4	4	4	4	4	4	3	3	3	3	3	3	3	3	3	3
	1	1	1	1	1														
	3		3	3	3	3	3	3		5	5	5	5	5	5	5	5	6	6
	10	10	10	10															
	4	4	4	4	4														
	3	3	3		3														
	1	1	1	1	1	1													
	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4
	1	1	1	1	2	2	1	1	1	1	1								
			1			1		1	1	1	1								
				3															
						7	7	7	7	7	7	7	7	7	7	7			
							18												
								18	18	18	18	18	18	18	18	18	25	25	25
								1	1	1	1		1	1	1	1	1	1	
									1	1			1	1	1	1	1		
											1	2							
													1	1	1	1	1	1	1
													1	1	1	1	1	1	1
	31	27	31	30	21	21	36	38	36	40	40	38	40	40	40	40	40	40	40

K00000950

DEPARTMENT CORRESPONDENCE

Jackson, Michigan
October 25, 1933

ALLEGAN WATER POWER ASSOCIATION
Allegan, Michigan

Mr. D. E. Karn,
Building

The purpose of this letter is to set up the economic value of the water rights at Allegan, not owned by the Consumers Power Company.

The Water Power Association owns the dam and all water rights at Allegan and the ownership is divided as follows:

Consumers Power Company	25	Shares
City of Allegan	6	"
Baker Furniture Factories*	5	"
Oliver Company	3	"
Imperial Carving Company	1	"
Total	40	"

*May be owned by Chamber of Commerce, Holland

In making this study the proposed development gives consideration to ownership of all shares by the Consumers Power Company.

In 1928 the Consumers Power Company installed at Allegan, a new 500 kw. vertical unit.

Estimated Cost	$120,000
Actual Cost	$105,955

In setting up the proposition we advised that we had made a study covering:

(1) The construction of a 31 foot head dam - which project could not be started until all water rights at Allegan are owned.

(2) Install 2 - 500 kw. units at site of present dam, one of which has been installed and the other to be installed when all rights at Allegan are owned and then at a future time build a 20 foot head plant instead of the 31 foot head plant (Robinson hospital site).

K00000951

The installation of an additional 500 kw. vertical unit at Allegan will cost, it is estimated (preliminary) $122,500

Reconstruction of present dam (Cochran) 20,000

$142,500

It is estimated that the installation of an additional 500 kw. vertical unit with all water owned will produce 5,900,000 kw-hrs. annually from the 1,000 kw. plant.

Total power available	5,900,000	kw-hrs.
Developed from present 500 kw. installation	3,500,000	"
Est. from proposed 500 kw. installation	2,400,000	"

Evaluating this power: -

	.563¢	.600¢	.650¢	.700¢	.800¢
2,400,000 kw-hrs.	$13,512	$14,400	$15,600	$16,800	$19,200
Operating Expenses (Credit)	1,325	1,325	1,325	1,325	1,325
Total Gross Value	$14,837	$15,725	$16,925	$18,125	$20,525
Capitalize at 10%	148,370	157,250	169,250	181,250	205,250
Cost of New Plant	142,500	142,500	142,500	142,500	142,500
Balance to allocate to purchase additional water rights	$5,870	$14,750	$26,750	$38,750	$62,750

The construction of a 20' future plant at the Hospital site will set up as follows:

Complete plant	$625,000
Substation for same	37,700
Transmission line	6,050
	$668,750

Estimated output 9,000,000 kw-hrs.

Evaluating this power: -

	.563¢	.600¢	.650¢	.700¢	.800¢
9,000,000 kw-hrs.	$50,670	$54,000	$58,500	$63,000	$72,000
Operating Expenses*	3,000	3,000	3,000	3,000	3,000
Balance	47,670	51,000	55,500	60,000	69,000
Capitalize at 10%	476,700	510,000	555,000	600,000	690,000
Cost to develop	668,750	668,750	668,750	668,750	668,750
Balance to allocate to purchase new rights	192,050	158,750	113,750	68,750	21,250

*Based upon a semi-automatic plant - similar to Otsego or controlled from Allegan Plant

The Consumers Power Company's hydraulic plant at Allegan is made up of two sections: -

Total plant capacity	900 Kw.
1 - New section (vertical)	500 "
2 - Old section (crown wheel)	400 "

The old section is in poor condition and is only operated during high flow periods or when vertical is out for inspection or repairs. The maintenance of this old section averages $1,325 more per year than if the plant consisted of two vertical units. If additional rights are acquired and the second vertical not installed, this $1,325 will be increased, offset however, by an increase in kilowatt hour production. The life of the old section (2) will depend on use of same.

We are trying to bring out here that the acquirement of additional water rights will increase the output at this plant; will therefore shorten the life of section (2) and hasten the expenditure required in connection with the second unit.

This study has brought out that it may never be economical to go ahead with the construction of the 20 ft. head dam at Allegan. It will therefore be desirable sometime to give consideration to the 31 foot head dam before installing the second 500 kw. vertical at present site. We say this because the 31 ft. head plant calls for a large pond and 4200 Kw. in capacity. Sometime in the future, the 4200 Kw. may be a desirable acquisition to generating capacity.

CONCLUSIONS:

(a) If the rights owned by the City of Allegan are acquired, all property in connection with the ownership of the Allegan Water Power Association, some scattering lots owned by the City of Allegan and required before dam at Hospital site can be constructed, should be included.

(b) The value of the water rights should be held to a minimum value in order to keep future taxes at a minimum.

(c) The property (land) owned by the City of Allegan in connection with their new dam below city should become the property of Consumers Power Company. The ownership of this property may permit at some future time the construction of a new dam at Manlius site and therefore has an economic value.

(d) The ownership of all rights will allow more flexible operation of present plant and at greater operating head with consequent increased output.

K00000953

We are attaching a report of a meeting held in Detroit on November 3, 1932 at which we offered $150,000 for certain property and rights required from Allegan.

We are also attaching a report by Engineering Department (1926) in which is set up that remaining rights at Allegan would, it was estimated, cost $6,000 each.

Yours very truly,

Manager
Production & Transmission
Department

BEM:VOT
Attach. (2)

K00000954

DEPARTMENT CORRESPONDENCE

Jackson, Michigan,
July 15, 1938.

CITY OF ALLEGAN
Power Generation Study

Mr. F. G. Boyce,
Building.

The City of Allegan, by constructing a dam on the Kalamazoo River at Calkins Bridge, and maintaining its headwater elevation about .09 feet below tops of spillway gates, has seriously affected the power available at dam of Allegan Water-Power Association in Allegan, be reducing former normal operating head of 12:5 to 11:0 ±.

Converting power available at dam of Allegan Water-Power Association into kwh, we find:

Available output fully developed 12:5 head	6,900,000 kwh
" " " " 11:0 "	6,080,000 "
Loss in output due to reduction in head	820,000 "
Consumers Power Company's proportion	512,500 "
Valuing power at 5/10¢ per kwh equals	$2,562.50 per yr

Consumers Power Company's rights at Allegan (Allegan Water-Power Association) are underdeveloped at present time, as there is available for service only the 500 kw vertical unit. Therefore, the above loss is not so serious as set up in the foregoing.

The Allegan Water-Power Association is made up of the following:

Consumers Power Company	25 shares
City of Allegan	6 "
Others	9 "
Total	40 shares

The question has been asked as to the value of the City's six shares.

In 1936 Baker Furniture Company offered its five shares in Allegan Water-Power Association, a 125 kw hydroelectric plant

K00000957

and certain parcels of land to Consumers Power Company for $7500. On the same basis, provided City of Allegan would sell their six shares in Allegan Water-Power Association together with, at least, the right to utilize its 150 kw generating plant for $9000.

The Consumers Power Company could afford to pay $9000. for the six runs of stone owned by the City of Allegan provided the purchase included the 150 kw generator with building flume, etc., installed in City's plant at Allegan Water-Power Company's, if this unit was in operating condition.

We quote from report made by Mr. Noyes:

"The City of Allegan owns six runs of stone in the Allegan Water-Power Association. At their Allegan Plant they have installed two water wheels; one being 56" and the other a 48" wheel. The 56" wheel is a very old wheel and it is direct-connected through gearing and shafting to City Pump. The other wheel, 48", is about ten years old and is belt connected to a 150 kw generator, 2300 volt. The plant itself appears to be in obsolete condition. It is evident that the units have not been in operation for over a year. The roof leaks very badly; the flume leading from the headwater to the plant is also in need of repair.

"Under no condition would I recommend that this present plant be utilized for the generation of power."

The capacity of the City of Allegan's new plant at Calkins Bridge site on the Kalamazoo River and utilization of electrical output is shown in the following:

Generator capacity	450 kw	- 4800 volts
	900 kw	- 4800 "
Total	1350 kw	

Power is generated at 4800 volt and stepped up to 24,000 volts through 3 - 333 kva transformers, and reduced to 2500 volt through a similar bank in their substation in City of Allegan. As far as we know power distribution in Allegan is unregulated and 2500 volts.

It is our understanding that City of Allegan has developed to a high saturation point its electrical distribution business in Allegan, special rates, water heaters, stoves and even some house heating. We have no information regarding switchboard requirements at substation to supply leads, but from a study of Consumers Power Company's load history in Allegan from 1931 to date City load may be as high as 3,000,000 kwh at substation equivalent to 3,340,000 kwh at generating plant (90% transformer and transmission efficiency). An attempt has been made to prorate these requirements - see Exhibits A and B.

Exhibit A - A statement showing the estimated output at City of Allegan's Hydro Plant basis 17:5 head, and estimated surplus for sale.

Estimated Output	8,673,000 kwh
Delivered to Substation	7,806,000 "
Substation Requirements	3,000,000 "
Available for Sale	4,806,000 "

Exhibit B - A statement similar to the foregoing basis 15:0 head

Estimated Output	7,656,000 kwh
Delivered to Substation	6,900,000 "
Substation Requirements	3,000,000 "
Available for Sale	3,900,000 "

Preliminary studies have been made as to the best method of utilizing surplus power from City of Allegan on Consumers Power Company's system.

The City of Allegan's City substation is located about one mile from Consumers Power Company's substation.

(a) Consumers Power Company accept delivery of excess power at its substation. This would mean a 2500 volt circuit from City's substation.

(b) Put power into Consumers Power Company's system by building a 44,000 volt line south from Calkins Bridge (City of Allegan's Hydro Plant) a distance of approximately six miles to the Pullman line. This would mean a step up substation at City's hydraulic plant also.

(c) Put power into Consumers Power Company's system at Fennville 24,000 volt transmission from there to Saugatuck.

A study of the foregoing leads us to believe that A is most practical particularly with a buy and sell arrangement.

In order to follow out the above A arrangement consideration will have to be given to the following:

<u>City of Allegan</u>

Hydro Plant and Substation - Replace present transformer banks with 3 - 500 kva or 3 - 667 kva units at each location.

At its downtown substation install two additional low voltage oil circuit breakers, one on transformer bank the other on a proposed 2500 volt lead to Consumers Power Company's substation.

Build a double circuit 4/0 copper line from City's substation to Consumers Power Company's substation.

Consumers Power Company

At its Allegan substation, Consumers Power Company to replace present 3 - 333, 44,000 - 2500 volt transformers with 3 - 500 kva or 3 - 667 kva transformers together with minor station changes; also install necessary metering equipment. Preliminary estimated cost - $15,000.

The question of handling reactive power between the two systems must receive consideration. This is something that will require further study, as necessary information is not available now.

The question of what Consumers Power Company should pay for this power, delivered at its Allegan substation has been studied rather briefly.

A suggested rate is as follows:

One dollar ($1.00) per kw per month for the average kwh received during period 6:00 A.M. to 6:00 P.M., Mondays to and including Fridays, exclusive, Holidays considered as a Saturday or Sunday load, plus an energy charge of 1/4¢ per kwh.

or

Our dollar ($1.00) per kw per month for the average kwh received during the month, plus an energy charge of 1/4¢ per kwh.

The operation of City's hydro plant to be under direction of Consumers Power Company's Load Despatcher with proviso head not to be drawn more than twenty (20%) per cent.

Sale of Energy to City of Allegan

The generating and substation capacity of City of Allegan has been set up. Loads as high as 1000 kw are expected in September, 1938.

Loss of 900 kw unit will mean curtailment of service.

Loss of transformer equipment at either substation will mean interruption to service.

It is our understanding that certain of the customers of City of Allegan have taken out insurance as protection against failure of service, therefore anticipated troubles are predicted, which must be the result of past service failures.

K00000960

Low Water Periods - Kalamazoo River

A study of monthly outputs on the Kalamazoo River shows that the following conditions have existed:

Plant	Month and Year	Output	Head
Otsego	August, 1934	240,928 kwh	-
"	July, 1936	287,521 "	-
"	August, 1936	260,508 "	

It is safe to assume that effective head at Otsego during the above three months averaged 15.5 feet. Under same conditions the City of Allegan's plant would probably average 17.5 feet. Otsego plant operated under a load cycle that meant highest efficiency. The City of Allegan plant operated on a twenty-four hour basis with resultant loss in efficiency. However, the monthly outputs should compare as follows:

	Otsego kwh	City of Allegan Kwh
Month similar to August, 1934	240,928	290,000
" " " July, 1936	287,521	346,000
" " " August, 1936	260,508	313,000

When it is considered that the above covers a monthly period, there are bound to be certain shorter periods in which daily output would be less than average. There is no question but what City of Allegan will have very little surplus for sale during June, July, August and September in future years.

The question of speed regulation must be a problem for City of Allegan, since hydraulic governors are not as sensitive as steam or Diesel engine governors. A tie in with Consumers Power Company would mean best possible speed regulation.

In order to take care of the foregoing the City of Allegan could build a Diesel engine plant downtown and thus provide an alternate source of power.

A Diesel engine plant would cost approximately as follows:

600 kw	$ 78,000
750 "	95,000
1000 "	116,000

Minimum operation - no generation - would be at least $7500. per year.

Assuming that U. S. Government would contribute 45% to

such a plant and loan balance at 4% - we have the following set up:

750 kw plant	$ 95,000.00
U. S. contribution	42,750.00
Balance	52,250.00
Interest at 4%	2,090.00
Depreciation & Obsolescence 6½%	6,175.00
Taxes	-o-
Insurance 1%	950.00
Fixed charges	9,215.00
Operation	7,500.00
Total Minimum	$ 16,715.00

Consumers Power Company - Suggested Rate for Breakdown Power

The Consumers Power Company will hold 500 kw ready to serve City of Allegan for which the monthly minimum charge will be $334.00. Included in this minimum charge will be 66,667 kwh, and for kwh in excess of this amount, energy charge of .7¢ per kwh will be added. For demands in excess of 500 kw, charge will be $2.00 per kw, this to include 133 kwh for each $2.00 additional.

We believe that if Consumers Power Company should enter into a buy and sell arrangement with City of Allegan - following may occur:

(a) An immediate loss in present Consumers Power Company's sales - City of Allegan's rates are lower than Consumers Power Company's rates, and best inducements Consumers Power Company has to offer are continuity of service and speed regulation.

(b) If a contract should be entered into - a clause should be inserted that City of Allegan will not purchase for resale to another utility. (It is our understanding that Ottawa-Allegan County R.E.A. has constructed its lines to within a mile of City of Allegan's new hydro plant.)

A number of exhibits are attached to this letter which are self-explanatory.

Yours very truly,

P. P. Mooney

P. P. Mooney

PPM:FP

Attach.

K00000962

Mr Holmes
Suggestions please
DEK

DEPARTMENT CORRESPONDENCE

Kalamazoo, Michigan
March 4th, 1936

Personal

Mr. D. E. Karn
Consumers Power Company
Jackson, Michigan

Dear Mr. Karn:

Yesterday, in Allegan, Mr. Stafford was in conversation with Mr. Ernest Dalman and Mr. T. R. Ward. Mr. Dalman, as you will remember, was one of the Aldermen in the Council of 1934 and 1935; Mr. T. R. Ward is the lumber dealer in Allegan, and, while very friendly to us, has taken about the same attitude as other men we know there in connection with the City's operations.

During the course of conversation, Mr. Dalman mentioned that he was part owner in the Allegan Water Power Company; in fact I think he claims ownership of one run of stone. Mr. Dalman told Mr. Stafford that he would like to sell his interest in the Water Power Company either to Consumers Power Company or to the City; in fact, Mr. Stafford understands that he is or has been dickering with the City.

In case Mr. Dalman does not sell his interest, he claims it is his plan to buy a generator and generate his own power, which will supplement a water wheel which he now has to run his machinery directly from a line shaft.

Mr. Dalman uses very little power from the Power Company, and he evidenced a willingness to make some kind of deal for his future power with us, in case we were interested in buying his rights.

K00000955

There is another man in Allegan that has been anxious to sell his holdings in the Water Power Association: Mr. Will Oliver. He owns five run of stone. I have also heard that Hollis Baker, of the Baker Furniture Company, has approached the Jackson Office with regards to selling the portion he owns.

In view of the situation in Allegan, I am wondering what we should tell Mr. Dalman.

Yours very truly,

F. P. Cope

FPC:FM

K00000956

CITY OF OTSEGO DAM
J.Bernier

INFORMATION REQUESTS

1. Identify all persons consulted in the preparation of your responses to these Information Requests.

   James R. Bernier, Sr. Natural Resource Manager – Hydro Operations
   Robert M. Neustifter, Attorney – Regulatory Section
   Margaret J. Kaiser, Corporate Records

2. Identify all documents consulted, examined, or referred to in the preparation of your responses to these Information Requests, and provide copies of all such documents. If, in lieu of or along with a textual response to any specific Request, you refer to a document that you believe contains information responsive to that Request, you must identify the specific location (page number, paragraph number) in the document where responsive information can be located.

   See general objections.

3. If you have reason to believe that there may be any person able to provide a more detailed or complete response to any Information Request, or who may be able to provide additional responsive documents, identify any and all such persons.

   None known.

4. Identify and generally describe each Consumers Energy facility at or near the Site, as that term is define in Attachment 3 (Definitions). For each Consumers Energy facility, provide:

   Otsego Dam

   a. the address of the facility;

      SW¼, SE¼, Section 17, and NW¼, NE¼, Section 20, T1N, R12W, Otsego Township, Allegan County, MI

   b. past and present EPA ID numbers, RCRA numbers and NPDES numbers for the facility; and

      None known.

K00000963

c. the current owner of the facility

State of Michigan, Department of Natural Resources (MDNR)
Stevens T. Mason Building
P O Box 30028
Lansing, MI 48909-7528

5. Identify all prior owners and operators of each facility, and their dates of ownership and/or operation.

Originally, the ownership was divided into shares of the total of "8,400 inches of water" at the dam. By 1914 the owners had formed the Otsego Water Power Company to own and operate the dam. In 1917 Consumers Power Company first obtained rights to "850 inches." The remaining 7550 inches were owned by the following:

Bardeen Paper Company, Otsego	5950 inches
Otsego Power & Manufacturing Co., Otsego	1150 inches
Village of Otsego	450 inches
Total	7550 inches

(Note: In 1914 the Otsego Power & Manufacturing Co.'s inches had been owned by Otsego Chair Co. (550 inches) and Ross Mfg. Co. (600 inches)).

By the completion of the 1925 rebuild of the generating plant, it appears that all or most of the rights to the plant and dam were controlled by Consumers, but the acquisition details are not known. Consumers then held these rights until September 29, 1967, when it transferred them to the MDNR

6. Provide copies of all local, state, and federal environmental permits ever granted for each facility or any part thereof (e.g., RCRA permits, NPDES permits, etc).

None known.

7. For each facility, identify and describe all types of monitoring reports, monitoring data, and documentation sent to or received by federal or state regulatory authorities regarding any materials containing hazardous substances used, generated, stored, treated or disposed at or from the facility.

None

8. Identify and describe the nature of all past and current operations and production processes at each facility. Identify, if available, all current and previous SIC codes associated with each facility.

The facility was used exclusively for the production of hydroelectric power until December 28, 1965, SIC code 4911.

9. Identify each product produced at the facility. Further identify the mass quantity of each product produced on an annual basis.

Electricity was produced.
Installed capacity was 1700 kw after 1925.
Annual generation from 1905 through 1924 ranged from almost 3,800 MWh to almost 5,700 MWh. After the 1925 rebuild of the plant, annual generation is believed to have averaged 7,600 MWh

10. Identify and describe any and all activities or efforts to take production facilities out of operation, and include the dates of each such activity or effort.

Available information indicates that the generator was disposed in 1966 or 1967, after production ceased and prior to the sale to MDNR. The turbines were left in place, but MDNR is believed to have undertaken subsequent demolition activities. The disposition of station transformers and other equipment is unknown.

11. For each facility, identify and provide any data, estimates, analyses or other information regarding any material used, treated, stored or disposed that contained or may have contained PCBs. To the extent available, provide all such data, estimates, analyses or other information on an annual basis.

None known

12. For each facility, identify any data, estimates, analyses or other information regarding the concentration of PCBs in any material used, treated, stored or disposed there. To the extent available, provide all such data, estimates, analyses or other information on an annual basis.

None known

13. To the extent not already provided in response to Request #11, provide the following information:

    a. the type and quantity, on an annual basis, of any oils or other lubricants used, treated, stored or disposed at each facility that are known or suspected to have contained PCBs;

    None known.

    b. the number, handling and disposition of all transformers and conductors at each facility; and

    Unknown

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c. data, analysis and other information regarding leaks, discharges or other releases from any transformer, conductor or other equipment using oils or lubricants at each facility.

None known.

14. To the extent not already provided in response to Request #12, identify any data, estimates, analyses or other information regarding the concentration of PCBs in the materials identified in your response to Request #13.

None known.

15. Describe the procedures used by you or anyone on your behalf to test PCB concentrations in the materials identified in your response to Requests #11 and #13, above. Include in your response test methods and dates.

None.

16. Describe the procedures followed by you, or anyone on your behalf, to prevent, mitigate or address the release or threat of release of any material identified in your response to Requests #11 and #13, above.

Not applicable

17. Provide a figure delineating the groundwater flow direction on your property.

No information available.

18. Identify the depth(s) to groundwater at your property.

No information available.

19. For each production process at each facility, identify and describe each waste stream from its creation to final disposition.

Used oil from generator bearings is believed to have been recycled.

20. For each facility, identify all past and present waste units (e.g., underground storage tanks, above ground storage tanks, waste piles, landfills, surface impoundments, lagoons, dry wells, septic systems, floor drains, ponds, pits, machine pits, container storage areas). For each such waste unit identified, provide the following information:

a. The location of all past and present waste units whether currently in operation or not.

None known

b. The type of unit (e.g., underground storage tank, lagoon, dry well, etc).

None known

c. The dates that the unit was in use.

None known

d. The purpose of past and/or present usage (e.g., storage, spill containment, waste disposal).

None known

e. The quantity and type(s) of materials (e.g., manufacturing materials, wastes, hazardous substances, pollutants and contaminants) located in each unit.

None known

f. If the unit is no longer in use, describe how was such unit closed, and what actions were taken to prevent or address potential or actual releases of waste constituents from the unit(s). Include all analytical data from such closure.

None known

21. For each facility, identify any data, estimates, analyses or other information about the presence of PCBs in each waste stream created. To the extent available, provide such information on an annual basis.

None known.

22. For each facility, identify any data, estimates, analyses or other information about the concentration of PCBs in each waste stream created. To the extent available, provide such information on an annual basis.

None known.

23. For each facility, describe the procedures used by you, your predecessor(s), or anyone on behalf of you or a predecessor, to test the PCB concentration in each waste produced, stored, treated or disposed at that facility. Include in your response test methods, media tested, and dates.

None

24. For each facility, identify each off-Site location at which wastes that contained or potentially contained PCBs were disposed. Further identify the dates of each such off-Site disposal, and the nature, quantity and PCB concentration of any such wastes.

None known.

25. For each facility, and for each waste produced, stored, treated or disposed at that facility:

a. identify the PCB concentration of any waste;

None known

b. if the waste contained detectable concentration of PCBs, describe each occasion on which a release of such waste occurred or threatened to occur; and

None known

c. describe the procedures and measures taken by you, or anyone on your behalf, to prevent, mitigate or address the release or threat of release of PCBs or other hazardous materials.

None known

26. For each release described in response to Request #25 above, describe the quantity of PCB-contaminated wastes that were released or threatened to be released, and state whether any PCBs contained in the wastes contributed to the presence, or threatened to contribute to the presence, of PCBs in the Kalamazoo River.

None

27. For each facility, identify any data, estimates, analyses or other information about the history of flooding, or any other infiltration of water, from the Kalamazoo River.

The dam was in the Kalamazoo River.

28. To the extent not provided in your response to Request #19, describe each wastewater stream, waste oil stream, and wastewater/waste oil mixture stream at each facility, from its creation in the production process to final discharge point. In your response include a complete description of the fate of any wastewater stream, waste oil stream, and wastewater/waste oil mixture stream produced at each facility (e.g., on-site treatment, discharge to a POTW, discharge to a storm sewer outfall, direct discharge to the Kalamazoo River).

No known waste water streams except employee sanitary waste.

29. To the extent not provided in response to Requests #19 and #28, identify the quantity of all (a) wastewater, (b) waste oil, and (c) wastewater/waste oil mixture produced, on a monthly basis, from each production process at each facility.

None known.

30. To the extent not provided in response to Requests #21 and #22, identify any data, estimates, analyses or other information about the presence and/or concentration of PCBs in the wastewater, waste oil and wastewater/waste oil mixture produced from each production process at each facility. To the extent available, provide such information on a monthly basis.

None.

31. For each facility, identify any data, estimates, analyses or other information regarding the effectiveness of the treatment system(s) at that facility, if any, to remove PCBs from each wastewater stream, waste oil stream and wastewater/waste oil mixture stream.

None.

32. Identify any data, estimates, analyses or other information regarding procedures and measures taken by you, or by anyone on your behalf, to prevent, mitigate or address the release or threat of release of PCBs from wastewater, waste oils, or wastewater/waste oil mixtures to the Kalamazoo River.

Unknown.

33. For any POTW identified in response to Request #28, provide, for each facility and on a monthly basis, all information regarding the amount of wastewater, waste oil and wastewater/waste oil mixture discharged to a POTW, the concentration of PCBs in the wastewater, waste oil and wastewater/waste oil mixtures discharged to the POTW from that facility and, to the extent such information is available, the PCB concentration in the effluent from the POTW.

Not applicable.

34. For each facility, identify each pipe, conduit, storm sewer, sewer line or other outfall that, directly or indirectly, terminates in the Kalamazoo River or its tributaries, past or present, into which treated, untreated or bypassed wastewater, waste oil, or any other waste (including wastewater/waste oil mixtures), from that facility was discharged. Include a figure identifying the source and location of each pipe, conduit, storm sewer, sewer line or other outfall.

None known.

35. For each pipe, conduit, storm sewer, sewer line or other outfall identified in your response to Request #34, identify dates of use and each outfall's source at the facility. Further provide, on a monthly basis, the volume of wastewater, waste oil or other waste (including wastewater/waste oil mixtures) discharged from the facility into each pipe, conduit, storm sewer, sewer line or other outfall.

Not Applicable

36. For each pipe, conduit, storm sewer, sewer line or other outfall identified in response to Request #34, identify all influent and effluent quality data. Include to the extent such information is available, the PCB concentration of all influent and effluent, on a monthly basis.

Not Applicable

37. For each pipe, conduit, storm sewer, sewer line or other outfall identified in response to Request #34, identify all bypasses or spills into the Kalamazoo River or its tributaries.

Not Applicable

38. For each facility, identify any data, estimates, analyses or other information regarding the mass quantity of PCBs disposed into the Kalamazoo River as a result of wastewater, waste oil or wastewater/waste oil discharges from the production processes. To the extent available, provide such information on an annual basis.

None known.

39. For each facility, identify any data, analyses or other information regarding the nature and quantity of hazardous substances, including PCBs, in the sediments, soil, groundwater and surface water at that facility. Identify the concentration levels of PCBs for all samples collected at the facility or at any property abutting the facility.

None.

40. For each facility, provide information regarding any environmental response activities involving or potentially involving PCBs or PCB-containing materials conducted at that facility, or on the Kalamazoo River, its tributaries, or other abutting property, at your direction or under your control. Indicate the date(s) on which such response activity was performed, what work was performed, the expenses incurred, the results of the response activity and, if it has not concluded, when the environmental response is expected to conclude.

None.

41. Have you incurred any costs associated with the investigation, remediation or other action to address contamination at the Site or any portion thereof? If yes, identify all costs incurred by you through the date of this Information Request.

No.

T65-269 Extra Copies

14

THIS INDENTURE, Made this 29th day of September, 1967, Between CONSUMERS POWER COMPANY, a corporation duly authorized to do business in Michigan, with its principal office therein at 212 West Michigan Avenue, Jackson, Michigan, as first party, and the STATE OF MICHIGAN, Lansing, Michigan, as second party,

WITNESSETH:

That said first party, for and in consideration of the sum of One Dollar ($1.00) and other good and valuable considerations, the receipt thereof is hereby confessed and acknowledged by first party, first party does by these presents bargain, sell, remise, release and QUITCLAIM unto the said second party, all those certain pieces or parcels of land situate in the Township of Otsego, County of Allegan and State of Michigan, known and described as follows, to wit:

Parcel 1. (Straight)

That part of Sections seventeen (17) and twenty (20) Town one (1) North Range twelve (12) West, commencing in the center of the highway, on line between Sections seventeen (17) and twenty (20) Town one (1) North Range Twelve (12) West one hundred and forty seven (147) rods East of the corner of Sections seventeen (17) eighteen (18) nineteen (19) and twenty (20); thence northwesterly in the center of highway to the land owned by Wasson; thence northeasterly along Wasson's land to Kalamazoo River; thence along river up stream thirty two and three quarters (32 3/4) chains more or less to land conveyed by Shaw to Merriam by deed recorded in Liber 37, page 368; thence South forty nine (49) degrees west along Merriam's land nine and thirty four one hundredths (9.34) chains to center of highway; thence Northwesterly in center of highway to place of beginning.

The area of the parcel hereby intended to be conveyed being twenty and fifty six one hundredths (20.56) acres, said land being similarly described in that certain deed given by Curtis E. Straight and Rhoda Straight to Charles W. Frisbee dated October 23, 1899 and recorded November 15, 1899 in Liber 141 page 77, Allegan County records.

Parcel 2. (Vawter)

Commencing on the south line of Section seventeen (17) Town one (1) North Range twelve (12) West, at a point fifteen hundred twenty one (1521) feet South, eighty seven and one-half (87 1/2) degrees West, along the Section line from the South East corner of said Section, thence running North fifty six and three quarters (56 3/4) degrees West four hundred (400) feet; thence North twenty eight (28) degrees West along

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the ridge five hundred eighteen (518) feet, thence south sixty two (62) degrees West four hundred ten (410) feet to the Kalamazoo River, thence along the river up stream to the south line of said Section, thence North eighty seven and one half (87 1/2) degrees East one hundred eighty (180) feet to place of beginning. Also conveying a strip of land three (3) rods in width along said River extending from the Northwesterly line of above described strip down stream thirty-six (36) rods.

The whole of said description containing five (5) acres of land.

Parcel 3. (Briggs)

The three and twenty one hundredths (3.21) acres of land on Section seventeen (17), Township one (1) North Range twelve (12) West, commencing on the south line of said section at a point south eighty seven and one-half (87 1/2) degrees West one thousand five hundred and twelve and six tenths (1512.6) feet, from South east corner of said section, running thence along section line South eighty seven and one-half (87 1/2) degrees west, eight and four tenths (8.4) feet to the southeasterly corner of land heretofore conveyed by H. H. Vawter and wife to Ed J. Anderson, by deed recorded in Liber 149 of Deeds, at page 617. Thence along said land so conveyed by Vawter and wife North fifty six and three quarter (56 3/4) degrees West four hundred (400) feet, thence north twenty eight (28) degrees west five hundred eighteen (518) feet to the north east corner of land so conveyed, thence north sixty two (62) degrees East two hundred (200) feet, thence south twenty eight (28) degrees East eight hundred seventy three (873) feet to place of beginning, said land being similarly described in that certain Deed given by C. A. Briggs and Amelia Briggs to Commonwealth Power Company dated March 21, 1905 and recorded March 29, 1905 in Liber 162 on page 142 and by subsequent deed conveyed to Consumers Power Company.

Parcel 4. (Merriam)

So much of the following described land as lies between the Kalamazoo River and the center of the highway, being ten and eighty nine one hundredths (10.89) acres, off the northeast end of following description, to-wit,- Commencing nine and three one hundredths (9.03) chains North of the South west corner of the east half of the North west quarter of Section twenty (20) in Town one (1) North Range twelve (12) West; running thence North forty nine degrees (49) East forty one and seventy four one hundredths (41.74) chains to Kalamazoo River, thence up said River to North west corner of land conveyed by Lamoreaux to L. D. Nichol, March 1874; thence on Nichols Northwest line to East and West quarter line of said Section twenty (20) thence West on said quarter line to one eighth line North and South; thence North on one eighth line nine and three one hundredths (9.03) chains to place of beginning.

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Parcel 5. (Holman)

Ten and one-half (10 1/2) acres more or less on the South fractional part of the North east quarter of Section twenty (20) Town one (1) North Range twelve (12) West, bounded on the north east by Kalamazoo River, on south east by lands of Calvin Burlingham, on the south west by Otsego and Allegan River Road, on the North west by lands heretofore conveyed by L. H. Lamoreaux to L. D. Nichols by deed recorded in Liber 66, page 476, being lands conveyed to Jacob Holman by Charles L. Schumacher and wife by deed recorded in Liber 136, page 575.

Parcel 6. (Burlingham)

Six and twenty one one-hundredths (6.21) acres on the South fraction of the North east quarter Section twenty (20) Town one (1) North Range twelve (12) West, bounded on the North east by the Kalamazoo River, on the east by the east line of said Section, on the South west by a line along the slope at an elevation of seventeen (17) feet, Otsego Village Datum, on North west by land conveyed by Charles L. Schumacher to J. K. Holman by deed recorded in Liber 136, page 575.

Parcel 7. (Stuck-Smith)

A strip of land off the Southwest end of following described lands and being all the land included therein which lies below an elevation of seventeen (17) feet Otsego Village Datum. Commencing at a point on the North line of Section twenty-one (21) Town one (1) North Range twelve (12) West, which said line crosses the highway leading from Otsego to Allegan twenty two (22) rods and twenty (20) links East from the Northwest corner of said Section twenty one (21); thence South thirty two (32) degrees East in the center of said highway forty seven (47) rods eight (8) links; thence South seventy three (73) degrees West eighty five (85) rods and fifteen (15) links to the center of the Kalamazoo River; thence down stream of said river to a point where the North line of Section twenty (20) intersects same; thence East on said Northerly line of Section twenty (20) one hundred three (103) rods and twenty (20) links to the Northeast corner of said Section twenty (20); thence easterly on North line of said Section twenty one, twenty two rods twenty (20) links to place of beginning, a strip of land comprising about three and one-half (3 1/2) acres.

Parcel 8. (Geib)

So much of the following described land which lies below a level of seventeen (17) feet Otsego Village Datum, and comprises a flowage area of about two (2) acres, commencing on the North east fractional quarter of Section twenty-one (21)

Town one (1) North Range twelve (12) West on the east line of lands formerly owned by A. W. Richard, at its junction with the North bank of the Kalamazoo River, about ten (10) chains fifty (50) links east of the quarter line, running thence North along said East line fifteen (15) chains eighty-one (81) links; thence West twenty-nine (29) chains ninety four (94) links to the East line of a lane running North and South from the highway from Otsego to Allegan to the highway running East and West between Sections sixteen (16) and twenty-one (21); thence South eight (8) chains and eighteen (18) links to the center of the highway from Otsego to Allegan; thence southeasterly along the center of said highway to the North bank of the Kalamazoo River, thence easterly along the North bank of the Kalamazoo River to place of beginning, being a part of the land conveyed to George E. Bardeen by Urias Geib and wife by Deed recorded in Liber 131 of Deeds page 101, Allegan County records.

Parcel 9. (Wood)

So much of the following described parcel in Town one (1) North Range twelve (12) West as lies along the Northerly Bank of the Kalamazoo River, below an elevation of seventeen (17) feet, Otsego Village Datum,- The North east fraction of Section twenty (20) and the West one-half (1/2) of North west quarter of Section twenty-one (21) and all that part of the East half of the North west quarter of said Section twenty-one (21) lying West of the Allegan Road; excepting and reserving forty (40) acres off the North side, West of said Allegan Road heretofore deeded to T. V. Charles, all the said lands being in Town one (1) North Range twelve (12) West, being a part of the land conveyed to George E. Bardeen by Willis Wood by Deed recorded in Liber 126 of Deeds, page 29, Allegan County records.

Parcel 10. (Hathaway)

Nine and fourteen hundredths (9.14) acres of the following description which lies along the northerly bank of the Kalamazoo River and below an elevation of seventeen (17) feet, Otsego Village Datum,- Commencing at the Northeast corner of Section twenty one (21) Town one (1) North Range twelve (12) West, running thence West along Section line eight and fifty three hundredths (8.53) chains, thence South no degrees twenty four (24) minutes East sixteen and fifty hundredths (16.50) chains; thence West twenty and seventy five hundredths (20.75) chains; thence South no degrees twenty four (24) minutes East ten and eighty two hundredths (10.82) chains more or less to the Kalamazoo River; thence northeasterly along the river to the East line of said Section; thence North no degrees twenty-eight (28) minutes East thirteen and twenty seven hundredths (13.27) chains to place of beginning, subject to Right of Way dated October 23, 1930 granted by Consumers Power Company to Grover C. Dillman, State Highway Commissioner of the State of Michigan.

Parcel 11. (Tunison)

The following parcel in Town one (1) North Range twelve (12) West,- Commencing at a point at high water mark on the North Bank of the Kalamazoo River where the Section line between Sections twenty one (21) and twenty two (22) crosses said River; thence easterly along the North bank of said River at high water mark eighty (80) rods to quarter line; thence North one-half (1/2) rod; thence Westerly parallel with said first described line eighty (80) rods to West line of Section twenty two (22); thence South one-half (1/2) rod to place of beginning, containing one quarter (1/4) of an acre of land.

Parcel 12. (Morter)

So much of the following described parcel as lies below an elevation of seventeen (17) feet Otsego Village Datum, commencing in the center of highway leading from Otsego Village to Pine Creek, where said highway crosses the North and South quarter line of Section twenty one (21) Town one (1) North Range twelve (12) West, thence North along said quarter line forty five and forty four one hundredths (45.44) rods to bank of Kalamazoo River, thence down said river bank to corner of land set off to Alfred S. Tompkins from the estate of Samuel Tompkins deceased; thence South twenty degrees (20) east on the East line of land so set off to A. S. Tompkins, twenty six (26) rods to center of highway, thence easterly along the center of said highway thirteen and fifty six one hundredths (13.56) rods to place of beginning, being a part of the land conveyed to George E. Bardeen by George W. Morter by Deed recorded in Liber 131 of Deeds, page 173, Allegan County records.

Parcel 13. (Shayler)

All that part of the West half of the East half of Section twenty one (21) Town one (1) North Range twelve (12) West, and south of the Kalamazoo River, and North of the Otsego and Allegan plank road.

Parcel 14. (Lindsey)

All the right, title and interest in and to the islands in Kalamazoo River, lying along and adjacent to land formerly belonging to C. E. Lindsey being in Section twenty one (21) Town one (1) North Range twelve (12) West, containing two (2) acres of land more or less, which latter land was conveyed from Calysta E. Lindsey to George E. Bardeen by deed recorded in Liber 123, page 554.

Parcel 15. (Lindsey)

The following described land in Town one (1) North

Range twelve (12) West, commencing at low water mark on the south side of the Kalamazoo River on Section line between Sections twenty one (21) and twenty two (22) and running thence south on said section line to first high bank or bluff; thence along said bank or bluff in a southwesterly direction to low water mark on the south side of the Kalamazoo River, thence easterly on the line of low water mark to place of beginning, and containing three fourths (3/4) of an acre of land more or less, all in Section twenty one (21) Town one (1) North Range twelve (12) West, being land conveyed by Calysta E. Lindsey to George E. Bardeen, by deed recorded in Liber 131, page 9, subject to Right of Way dated October 23, 1930 granted by Consumers Power Company to Grover C. Dillman, State Highway Commissioner of the State of Michigan.

Parcel 16. (Stickney)

The following parcel of land situate in Town one (1) North Range twelve (12) West, commencing at a point on South bank of Kalamazoo River where the west line of Section twenty two (22) Town one (1) North Range twelve (12) West intersects said river, thence east along south bank of said river about sixteen (16) rods more or less to land formerly owned by Catherine Payne, thence south on west line of said land about twelve (12) rods more or less, to the bank at the edge of dry land, thence westerly along said bank about sixteen (16) rods more or less to the west line of said Section twenty two (22); thence North on said Section line to place of beginning, containing one and one quarter (1 1/4) acres more or less, being the same land conveyed to George E. Bardeen by Elias R. Stickney by Deed recorded in Liber 131 of Deeds, page 191, Allegan County records.

Parcel 17. (Payne)

So much of the following described land as lies below a level of seventeen (17) feet Otsego Village Datum,- a strip containing two and twelve one hundredths (2.12) acres of land along the South bank of the Kalamazoo River, and being off of the north end of the following described six (6) acres of land, commencing at a point in the center of highway leading from the Village of Otsego to Pine Creek, on South side of the Kalamazoo River, fifteen (15) rods three and one-half (3 1/2) links east of West line of Section twenty two (22) thence North parallel with said Section line to the South bank of the Kalamazoo River, thence east along the bank of said River to the northwest corner of lands formerly belonging to R. C. Eaton, thence south along the west line of said Eaton's land to the center of the highway; thence westerly along the center of the said highway to the place of beginning; such described land is in Section twenty-two (22) Town one (1) North Range twelve (12) West and an area intended to be conveyed hereby is one and two

thirds (1 2/3) acres, being a part of the land conveyed to George E. Pardeen by Catharine A. Payne by Deed recorded in Liber 131 of Deeds, page 158, Allegan County records.

Parcel 18. (Allendorf)

So much of the following described land situate in Town one (1) North Range twelve (12) West, as lies below an elevation of seventeen (17) feet Otsego Village Datum; a strip of land containing two and fifty seven one hundredths (2.57) acres along the south bank of the Kalamazoo River and being off of the north end of the following described land, to-wit,- Commencing at a point in the center of the highway running from the Village of Otsego to Pine Creek, on the south bank of the Kalamazoo River, fifteen (15) rods three and one half (3 1/2) links due east of the west line of Section twenty two (22) thence north parallel with said Section line to south bank of the Kalamazoo River, thence East along the bank of said River to the North west corner of lands formerly owned by R. C. Eaton, thence south along the west line of said Eaton's land to the center of said highway, thence westerly along the center of said highway to the place of beginning, intending to convey hereby an area of two and twenty two one hundredths (2.22) acres, being a part of the land conveyed to George E. Pardeen by Fred L. Alenduff and wife by Deed recorded in Liber 131 of Deeds, page 139, Allegan County records.

Parcel 19. (Smith)

The following described land lying below an elevation of seventeen (17) feet Otsego Village Datum,- Commencing at a point in the western boundary of Martin Spery's land four hundred twenty eight (428) feet north of the south west corner of said Martin Spery's land, thence southwesterly seven hundred ninety nine (799) feet to the east line of lot formerly owned by Joseph Chapman, thence north six hundred fifty two (652) feet to Kalamazoo River, thence East along the south side of said river to the west line of lot owned by Martin Spery, thence south on said line six hundred forty five (645) feet to the place of beginning, intending hereby to convey an area of ten and fifty seven one hundredths (10.57) acres, all on the northwest quarter of Section twenty two (22) Town one (1) North Range twelve (12) West, being a part of the land conveyed to George E. Pardeen by Emily Smith and Elsie Springstead by Deed recorded in Liber 129 of Deeds, page 211, Allegan County records.

Parcel 20. (Sperry)

So much of the following described land as lies below an elevation of seventeen (17) feet Otsego Village Datum,- One and one eighth (1 1/8) acres of land off the north part of lot

half of east half of North west fraction south of river, in Section twenty-two (22) Town one (1) North Range twelve (12) West, being the same land as was conveyed by Martin and Sophia Spery to George E. Bardeen, by deed recorded in Liber 129, page 600; intending to convey in this parcel an area of seventy five one hundredths (.75) of an acre.

Parcel 21. (Albert Holman)

Commencing in the center of the Otsego and Allegan River Road (so-called) where the Pine Creek intersects said road; thence Westerly in said road to West line of Section twenty-one (21); Town one (1) North, Range twelve (12) West; thence North on section line to Kalamazoo River; thence up-stream along Kalamazoo River to mouth of Pine Creek; thence up Pine Creek to beginning.

Parcel 22. (Albert Holman)

Six and five-tenths (6.5) acres, more or less, in Section twenty-one (21), Town one (1) North Range twelve (12) West, bounded on the North by Otsego and Allegan River Road, so-called; on the East by West Pine Creek road, so-called; on the South by land conveyed by Chauncey Scott to Louisa Shears by deed in Liber 145, page 209, excepting therefrom a parcel of land described as being bounded on the West by the West line of said section, on the North by the center line of 104th Avenue, so-called, formerly known as Otsego and Allegan River Road, on the East by the center line of 21st Street, so-called, as presently located and existing, and on the South by the Northerly line of land conveyed by Chauncey Scott to Louisa Shears by a deed recorded in Liber 145 of Deeds on page 209 of Allegan County records.

Parcel 23. (Albert Holman)

Nine (9) acres more or less in Section twenty-one (21), Town one (1) North Range twelve (12) West, bounded on the North and East by the Nevin's Mill land (the Nevin's Mill land being more particularly described by deed conveying said land to George C. Nevins recorded in Liber 129, page 400, Allegan County records) and bounded on the South and West by land conveyed to L. Shears by deed recorded in Liber 145, page 209, excepting therefrom five and eighty-four one hundredths (5.84) acres more or less located in the West one-half (1/2) of the Southwest one-quarter (1/4) of Section twenty-one (21), bounded on the Northeast by the Commonwealth Power Company's pond, at elevation of seventeen (17) feet, Otsego Village Datum, on the South by land conveyed to Louisa Shears, by deed recorded in Liber 145, page 209, on the West by the West Pine Creek Road, so-called.

Parcel 24. (Shears)

Two and sixty one hundredths (2.61) acres off the east end of that part of the South thirteen (13) chains in width of the West half of the South west quarter of Section twenty-one (21) Town one (1) North Range twelve (12) West lying west of Pine Creek Mill Pond, the West boundary of said two and sixty-one hundredths (2.61) acres being a line along the slope at an elevation of seventeen (17) feet Otsego Village Datum.

Parcel 25. (Chauncey Scott)

Thirteen and nine tenths (13.9) acres of bottom land on west part of east half of south west quarter Section twenty one (21) Town one (1) North Range twelve (12) West, bounded on north by land conveyed by Andrew W. Richard to Hermann Jungnitsch by deed recorded in Liber 118, page 37, on the easterly side by line along the bluff at an elevation of seventeen (17) feet Otsego Village Datum, on the south by the south line of said quarter section, on the west by the old Pine Creek Mill Pond; also conveying seven one-hundredths (.07) acres in South west corner of said east half of south west quarter of Section twenty one (21) lying West of Pine Creek Mill Pond and making in all thirteen and ninety-seven one hundredths (13.97) acres of land.

Parcel 26. (George C. Nevins)

Commencing at the North east corner of a lot known as Samuel Town lot, on South west quarter of Section twenty-one (21) Town one (1) North Range twelve (12) West on the line of the highway leading across said quarter section, thence westerly along said highway across Pine Creek to center of highway leading South on the West side of Pine Creek, thence South along said highway about eighteen (18) rods more or less as far as this land runs; thence easterly to the mill pond; thence up west bank of pond at waters edge at high water mark and down East edge of said pond to intersect south west corner of said Town lot; thence east on the south line of said Town lot to the south east corner of said lot; thence north on the East line of said lot about thirteen (13) rods more or less to the point of beginning; together with all the water power and privileges, races and tail races, also a strip of land eighty (80) feet in width leading from said mill pond to the Kalamazoo River, heretofore surveyed and platted for mill race, comprising in all sixteen and fifty four one-hundredths (16.54) acres of land.

Parcel 27. (O. Norter-Carroll Heirs)

All that parcel of land in Section twenty one (21) Town one (1) North Range twelve (12) West described as follows, to-wit:

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Commencing at North west corner of a parcel of land conveyed by Chauncey Scott and wife to the Otsego Grange No. 364 by deed recorded in Liber 85, page 152, running from thence southerly along said Grange land to the highway known as the Otsego and Allegan Road, thence westerly along said highway to Pine Creek, thence Northerly along Pine Creek to Kalamazoo River, thence up said river to place of beginning, being about one and three-fourths (1-3/4) acres.

Parcel 28. (Jungnitch)

So much of the following described parcel situate in Town one (1) North Range twelve (12) West, as lies below an elevation of seventeen (17) feet Otsego Village Datum. All that part of Section twenty one (21) Town one (1) North Range twelve (12) West, described as follows,- Commencing one hundred twenty eight and thirty one one-hundredths (128.31) rods North of the South line of said Section and twenty eight and sixty six one-hundredths (28.66) rods West of the North and South quarter line of said Section, running thence North twenty (20) degrees east eight and ninety two hundredths (8.92) rods, thence North forty five and three quarters (45 3/4) degrees East, eighteen and thirty two one hundredths (18.32) rods to center of highway; thence westerly on highway ninety two one hundredths (.92) of a rod; thence north twenty and one fourth (20 1/4) degrees west twenty six rods to Kalamazoo River, thence westerly along river to center of Otsego and Allegan plank road so-called, thence south nine degrees (9) east thirty one and ninety one hundredths (31.90) rods, thence west to easterly side of mill at Pine Creek, thence southeasterly along water's edge of mill pond to point one hundred ten (110) rods North of South line of Section twenty one (21), thence northeasterly to beginning, excepting therefrom land conveyed by John J. Norter to George W. Norter by deed recorded in Liber 114, page 629, comprising six and fourteen one hundredths (6.14) acres.

Parcel 29. (Otsego Grange #364)

The following described land in Town one (1) North Range twelve (12) West,- Commencing at the point in Section twenty one (21) Town one (1) North Range twelve (12) West, where the westerly line of Otsego and Allegan plank road intersects the river road, so-called, in the Village of Pine Creek, also called New Rochester, thence northerly along said Otsego and Allegan Plank Road to the Kalamazoo River, thence westerly along the river down stream forty feet (40); thence southerly parallel with the plank road to river road; thence easterly along the river road forty (40) feet to beginning, being twenty two one hundredths (.22) of an acre in area.

Parcel 30. (Piischel)

The following described parcel of land situate in Town one (1) North Range twelve (12) West,- The forty one hundredths (40/100) of an acre of land off the North part of the west half of east half of the south fraction of the north east quarter of Section twenty one (21) Town one (1) North Range twelve (12) West, said forty hundredths (.40) of an acre being bounded on the North by the Kalamazoo River, on South by a line along bluff at elevation of seventeen (17) feet Otsego Village datum.

Parcel 31. (Elisha L. Welch)

One and sixty six hundredths (1.66) acres of land on the East half of the East half of the North East quarter of Section twenty one (21) Town one (1) North Range twelve (12) West, lying south of the Kalamazoo River. Said one and sixty six (1.66) hundredths acres of land being bounded on the North and West by the Kalamazoo River, on the East by the East line of said Section and on the southerly side by a line along the slope at an elevation of seventeen (17) feet Otsego Village datum, excepting therefrom three fourths (3/4) of an acre of land heretofore conveyed by Calysta E. Lindsey to George E. Bardeen by deed dated March 9th, 1896 and recorded in Liber 131 page 9. The land hereby conveyed being ninety three hundredths (0.93) of an acre, subject to Right of Way dated October 23, 1930 granted by Consumers Power Company to Grover C. Dillman, State Highway Commissioner.

Parcel 32. (Bardeen-Gorham A. Sherwood et al.)

The right for flowage and soakage purposes only below an elevation of seventeen (17) feet, Otsego Village Datum, on the following described land formerly owned by Martin and Sophia Sperey, located on the north part of the west half (1/2) of the east half (1/2) of the northwest fraction south of the Kalamazoo River in section twenty-two (22) Town one (1) North Range twelve (12) West, said land being bounded on the north by the Kalamazoo River, on the east by land now or formerly owned by Botsford, on the south by the first highway south of the river, on the west by lands of the Lane Estate, containing nineteen (19) acres of land more or less except one and one eighth (1-1/8) acres on north end of above description heretofore conveyed by said Spereys to Geo. E. Bardeen by deed recorded in Liber 129 page 600, being the same rights in land conveyed by Gorham A. Sherwood et al. to Commonwealth Power Company by deed dated December 12, 1906, recorded December 20, 1906 in Liber 167 of Deeds on page 191, Allegan County records, and subsequently conveyed to Consumers Power Company.

K00000981

Parcel 33. (Botsford)

Twenty three one hundredths (.23) of an acre of land lying below elevation of seventeen (17) feet Otsego Village Datum, off the Northerly side of the East half of the east fractional half south of River, on the Northwest quarter Section twenty two (22) Town one (1) North Range twelve (12) West, said twenty three hundredths (.23) of an acre being bounded on the North by the Kalamazoo River on the east by quarter section line, on the south by line along the slope of bluff, at an elevation of seventeen (17) feet Otsego Village Datum, on the West by Spery's land, being the same land conveyed by Elton S. Botsford and wife to Pine Creek Power Company, Ltd. by Deed dated December 8, 1902, recorded December 12, 1902 in Liber 152, page 191, Allegan County records.

Parcel 34. (Livingston)

Eighty five one hundredths (85/100) of an acre of land off the South part of the East half of the North west fractional quarter North of the Kalamazoo River of Section twenty two (22) Town one (1) North Range twelve (12) West, bounded on the South by the Kalamazoo River, on the northerly side by a line along the bluff at an elevation of seventeen (17) feet Otsego Village Datum.

Parcel 35. (Waber)

Two and seventy six one hundredths (2.76) acres of land, comprising a strip of land along the Kalamazoo River from one (1) rod to six (6) rods in width, and also a strip three (3) rods to four (4) rods in width extending parallel with the river and about three hundred (300) feet distant from same, all of which land lies below an elevation of seventeen (17) feet Otsego Village Datum, on the South part of the following described parcel of land,- Commencing on the quarter line running North and South, through Section fifteen (15) Town one (1) North Range twelve (12) West, where the K.A. and G.R. Railroad crosses the same; thence South on said quarter line to Kalamazoo River, thence easterly along said Kalamazoo River thence to land owned by Henry Pierce; thence North on West line of said Pierce's land to center of highway leading from Otsego to Allegan on the North side of the Kalamazoo River; thence easterly along center of the highway to one eighth line running North and South through Section fifteen (15) thence North on one eighth line to where railway crosses same, thence along southerly line of Railroad with Northwesterly course to beginning, which said parcel of land has a river frontage of about nine hundred (900) feet, being the same land conveyed by Ernestine Waber to Pine Creek Power Company, Ltd. by Deed dated November 20, 1902, recorded December 2, 1902 in Liber 152 of Deeds, page 154, Allegan County records.

K00000982

Parcel 36. (Grable)

That portion of the North west quarter of Section twenty eight (28) in Town one (1) North Range twelve (12) West, lying West of Pine Creek and east of a line along the west bluff of Pine Creek Valley at an elevation of seventeen (17) feet, Otsego Village Datum.

Containing thirty one and sixty eight one-hundredths (31.68) acres.

Parcel 37. (J. J. Horter)

Ten and three hundredths (10.03) acres lying below an elevation of seventeen (17) feet Otsego Village Datum, in the West part of that portion of the North half of the North west quarter of Section twenty eight (28) Town one (1) North Range twelve (12) West, which is east of Pine Creek.

Parcel 38. (A. Shears)

Five and one half (5 1/2) acres off the West part of the North twenty (20) acres of that part of the South half of the North west quarter of Section twenty eight (28) Town one (1) North Range twelve (12) West, lying east of Pine Creek, the eastern boundary of said five and one-half (5 1/2) acres being a line along the slope at an elevation of seventeen (17) feet Otsego Village Datum.

Parcel 39. (Hattie Tice)

Eight and three tenths (8.3) acres of land lying below an elevation of seventeen (17) feet Otsego Village Datum, on the west part of that part of the South half of the North west quarter of Section twenty eight (28) Town one (1) North Range twelve (12) West, east of Pine Creek, excepting from said South half of the North west quarter of Section twenty eight (28) east of the Creek, the North twenty (20) acres thereof.

Parcel 40. (Lake)

All that part of the North west quarter of the South west quarter of Section twenty eight (28) Town one (1) North Range twelve (12) West, lying below an elevation of seventeen (17) feet Otsego Village Datum, hereby conveying nine and eighty one one-hundredths (9.81) acres of land.

Parcel 41. (Ruthrauff)

That portion off the south east corner of the north east 1/4 of Sec. 29 Town 1 North range 12 West, lying below elevation seventeen feet, Otsego Village Datum, being one hundredth of an acre in and along Pine Creek.

K00000983

Parcel 42. (F. W. Warner)

So much of the following described parcel of land which lies below an elevation of seventeen (17) feet Otsego Village Datum. All that part of the North East quarter of South east quarter of Section twenty nine (29) Town one (1) North Range twelve (12) West lying south east of the top of the bluff on the westerly side of Pine Creek Valley, containing sixteen and seventy six one hundredths (16.76) acres, which is bounded on East and South sides by boundary of said forty (40) acres and on the westerly side by line at top of bluff extending from a point near the North east corner of said forty (40) acres about thirty six (36) rods East of South east corner of said forty (40) acres.

The parcel hereby intending to be conveyed being eleven and forty one hundredths (11.40) acres.

Parcel 43. (Bristol)

So much of the following described parcel of land which lies below an elevation of seventeen (17) feet Otsego Village Datum. The South east quarter of south east quarter Section twenty nine (29) and the East half of the North east quarter Section thirty two (32) Town one (1) North Range twelve (12) West, excepting from the last described eighty (80) acres about fifteen (15) acres off the west side. Also excepting about five acres lying east of the highway running to Pine Creek from where said highway crosses the highway leading to the saw mill on Section thirty two (32), being the same lands which were heretofore conveyed by Mary Hofacker to K. E. Bristol, by deed recorded in Liber 113, page 30, intending hereby to convey fifteen and forty two one hundredths (15.42) acres of land.

Also conveying and transferring the dam, waste gates, flume, power house and other buildings, water wheels, turbine, turbine gates and controls, and all other equipment used or usable in connection therewith at, on or about the premises known as the Otsego Dam located in the S 1/2 of Section 17, T1[illegible], R12W, excepting and reserving, however, to Grantor herein all electric generating equipment, switches, transformers, circuit breakers, and other electric equipment used or usable in connection with the generation and transmission of electric energy, together with the right to remove same on or before July 1, 1967. Also conveying all water power developed by said dam, and the right to flow, percolate, saturate and injure by alluvial deposit all lands lying upstream from said dam, whether such rights have been acquired by grant, adverse possession or otherwise, which are necessary and appurtenant to the operation of said dam at its present [illegible], now owned or held by Grantor.

K00000984

Also conveying and transferring all the right, title and interest of first party in, and the rights and privileges under that certain grant or franchise granted by the Board of Supervisors of Allegan County, Michigan, on the sixteenth day of January, A.D. 1903 to William A. Foote, his successors and assigns, to construct a dam across the Kalamazoo River on Section seventeen (17) of Otsego Township.

Also conveying and transferring all the right, title and interest of first party in and its rights and privileges under that certain grant or franchise granted to William A. Foote of Jackson, Michigan, January 21, 1903, by the Township Board of the Township of Otsego, Allegan County, Michigan, to raise the grade of certain highways in said Township known as the Otsego and Allegan River Road and the Otsego and Allegan Plank Road.

EXCEPTING AND RESERVING to First Party, its successors and assigns, Forever, from the lands herein conveyed, as hereinafter more specifically set forth, the easement and right to erect, lay and maintain lines consisting of towers, pole structures, poles, wires, cables, conduits and other fixtures and appurtenances for the purpose of transmitting and distributing electricity and/or conducting a communication business on, over, under and across said parcels of land, including all public highways upon or adjacent to said parcels of land, as follows:

One line of towers, pole structures, poles, wires, cables and conduits in an Easterly and Westerly direction on, over, under and across Parcels 22 (Albert Holman) and 25 (Chauncey Scott).

One line of towers, pole structures, poles, wires, cables and conduits in an Easterly and Westerly direction on, over, under and across Parcel 40 (Warner), the center line being more particularly described as beginning at a point on the East line of Section 29, approximately 1455 feet North of the Southeast corner of Section 29, and running thence Westerly to a point 380 feet East of the West line of the NE 1/4 of the SE 1/4 of said Section 29 at a point 250 feet North of the South line of the NE 1/4 of the SE 1/4 of said Section 29.

One line of towers, pole structures, poles, wires, cables and conduits generally in an Easterly and Westerly direction on, over, under and across Parcels 1 (Straight), 2 (Vawter) and 3 (Briggs), the center line of said poles, towers, pole structures, wires, cables and conduits being more particularly described as beginning at a point on the South line of Section 19, T[illegible], [illegible], 1519 feet East of the Southeast corner of said section; running thence N 25° 30' W 597 feet to the center line of an existin

K00000985

transmission line; running thence N 87° 30' W 17 feet; thence N 67° 00' W 261 feet; thence S 75° 50' W to a point on the West side of the Otsego and Allegan River Road on the Southwest side of the Kalamazoo River.

With full right and authority to First Party, its successors, licensees, lessees or assigns, and its and their agents and employees, to enter at all times upon said parcels over and across which said lines of towers, pole structures and poles are located, as set forth above, for the purpose of patrolling, constructing, repairing, removing, replacing, improving, enlarging and maintaining such wires, cables, conduits, structures, towers, pole structures, poles and other supports with all necessary braces, guys, anchors, manholes and transformers and stringing thereon and supporting and suspending therefrom lines of wires, cables or other conductors for the transmission of electrical energy and/or communication, and to trim, remove, destroy or otherwise control any trees and brush which may now or hereafter be standing or growing on the lands herein conveyed for a distance of 100 feet on either side of the center line of said transmission lines. It is understood that no buildings or other structures will be placed under such wires and/or over such cables without the written consent of First Party. It is further understood that nonuse or a limited use of this easement by First Party shall not prevent First Party from later making use of the easement to the full extent herein reserved.

Also EXCEPTING AND RESERVING to First Party, its successors and assigns, the easement and right to construct, maintain, repair and enlarge all existing electric distribution lines, as the same are now located on the premises herein conveyed, whether said lines are herein specifically described or not, together with the right to enter upon the premises where such existing distribution electric lines may be located for the purposes of maintaining, repairing and enlarging same and the right to cut and trim such trees and brush as may interfere or threaten to interfere with the use, operation and maintenance of said lines.

Together with all and singular the hereditaments and appurtenances thereunto belonging or in anywise appertaining: TO HAVE AND TO HOLD the said above-described premises unto the said second party and to its successors and assigns to the sole and only proper use, benefit and behoof of the said second party, its successors and assigns, Forever.

IN WITNESS WHEREOF, the said first party has caused this instrument to be executed in its corporate name and by

its duly authorized officers as of the day and year first above written.

Signed, Sealed and Delivered
in Presence of:

Frances S. Schafer

LUCILLE M. DARLING

CONSUMERS POWER COMPANY

BY W. C. Schmidt
W. C. Schmidt
Senior Vice President

Attest: P. A. Perry
P. A. PERRY ASST. Secretary

APPROVED AS TO FORM

STATE OF MICHIGAN)
) SS
County of Jackson)

On this 29th day of September, 1967, before me, a Notary Public in and for said County, personally appeared W. C. Schmidt, to me personally known, who being by me duly sworn, did say that he is a Senior Vice President of Consumers Power Company, the corporation named in and which executed the within instrument, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors; and said W. C. Schmidt, acknowledged said instrument to be the free act and deed of said corporation.

Willoween R. Smith
Notary Public, Jackson County,
Michigan

My Commission Expires September 7, 1970.

K00000987

DISPOSITION OF MINOR HYDRO, DIESEL AND STEAM PLANTS

Retirements Since 1950
As of June 27, 1973

Plant	Nameplate Rating Kw	Official Retirement Date	Last Operating Date	Disposition of Dam	Disposition of Equipment	Disposition of Building and Land
East Jordan Hydro	240	Sept 11, 1950		City of East Jordan	Removed - Junked	City of East Jordan
Greenville Hydro	300	Apr -, 1951	5-12-50	City of Greenville	Removed - Sold	CP Co Use
Maple River Hydro	192	Dec -, 1951	11-8-51	Ionia County	Removed - Junked	Ionia County
Hesperia Diesel	330	Oct -, 1952	3-15-51		Removed - Sold	Village of Hesperia
West Branch Hydro	75	Nov -, 1952	3-29-52	Demolished	Removed - Junked	Powerhouse - Demolished Land - CP Co
Morley Hydro	150	Nov -, 1952	11-26-51	Village of Morley	Removed - Sold	Village of Morley
Albion Hydro	150	Dec -, 1952	2-21-51	City of Albion	Generator - Removed & Sold	Land South of Erie Street to City of Albion
White Cloud Diesel	516	Dec -, 1952	8-11-52		Removed - Sold	City of White Cloud
Bliesfield Steam	1,250	Dec -, 1952	11-1-50		Generator - Removed & Sold	Office Space
Stover Hydro	120	Dec 30, 1952	12-31-52	Bellaire Conservation Club	Turbine - Junked Generator - Sold as Motor	Bellaire Conservation Club
Montague Diesel	3,480	Dec -, 1952	10-17-52		Removed - Sold	Muskegon Distribution Dept
Hesperia Hydro	200	Dec -, 1952	12-31-52	Village of Hesperia	Removed - Junked	Village of Hesperia
Grayling Hydro	90	Jan 2, 1953	12-31-52	Sold - Salling Hanson Co.	Removed - Sold	Sold - Salling Hanson Co.
Bellaire Diesel	148	Feb 4, 1953	CP Co. Never Operated		Removed - Sold	City of Bellaire
Rugg Hydro	160	Mar 26, 1953	3-25-53	Kalkaska County	Removed - Junked	Kalkaska County
Reed City Hydro	150	May 11, 1953	3-23-53	Reed City	Removed - Junked	Reed City
North Monroe Street Hydro	150	July 9, 1953	12-15-52	City of Battle Creek	Removed - Sold	City of Battle Creek
Baldwin Diesel	330	Aug 19, 1953	8-18-53		Removed - Sold	CP Co. Distribution Dept
Shiawassee Hydro	150	Aug 26, 1953	1-29-53	Shiawassee and Vernon Townships	Removed - Sold	Shiawassee and Vernon Townships
Stronach Hydro	800	Sept 14, 1953	8-7-53	CP Co. - Dam Intact	Removed - Junked	House - Sold Land - CP Co. Powerhouse - Demolished
Ceresco Hydro	600	Nov 16, 1953	7-19-52	Sold - R.M. and F.D. Lutz	Removed - Junked	Sold - R.M. and F.D. Lutz
Centreville Hydro	150	Feb 18, 1954	2-17-54	Village of Centreville	Removed - Junked	Village of Centreville
Boyne Falls Hydro	80	Apr 16, 1954	4-13-54	Village of Boyne Falls	Removed - Junked	Village of Boyne Falls
Ludington Steam	2,500	Apr 20, 1954	1-29-53		Removed - Junked	Consumers Power Company
				Tecumseh Products	Removed - Junked	Tecumseh Products

K00000988

Plainwell No. 2 Hydro	150	May 7, 1956	5- 7-56	Michigan Paper Co.	Michigan Paper Co.	City of Plainwell
Dayton Hydro	240	June 1, 1956	6-10-56	Township of Otisco	Generator - Sold in Mexico Other Equipment - Junked	Township of Otisco
Hubbardston Hydro	240	Nov 12, 1956	11-10-56	Village of Hubbardston	Removed - Junked	Village of Hubbardston
Wager Hydro	450	Nov 12, 1956	7- 5-56	Demolished	Removed - Junked	Raymond Robinson
Lyons Hydro	450	Oct 2, 1957	4-30-56	Village of Lyons	Removed - Sold	Village of Lyons
Elk St. Stm (Boilers 1-6)	20,000	Apr 18, 1957	4-17-57		Removed - Sold	Consumers Power Company
Elk St. Stm (Units 2 & 3)	-	Oct 1, 1958	12-12-57		Removed - Sold	Consumers Power Company
Beaverton Hydro	970	Feb 20, 1961	2-20-61	City of Beaverton	Removed - Sold	City of Beaverton
Chappel Hydro	430	Feb 16, 1962	2-14-62	Gladwin County	Removed - Sold or Junked	Gladwin County
Grayling Diesel	2,550	Feb 19, 1962	2-19-62		Removed - Sold or Junked	City of Grayling
Mills Street Steam	7,600	Mar 16, 1962	5-24-56		Removed - Sold	Auto-Ion Chemical Company
Cheboygan Diesel	2,400	June 15, 1962	5-25-62		Removed - Sold	Consumers Power Company
Belding Hydro	400	July 27, 1962	7-27-62	City of Belding	Removed - Junked	City of Belding
Boyne Diesel	4,098	July 31, 1962	7-31-62		Removed - Sold	Consumers Power Company
Boyne River Hydro	500	Jan 4, 1963	10-12-62	Boyne Mountain Lodge, Inc.	Removed - Sold	Boyne Mountain Lodge, Inc.
Homestead Hydro	600	Dec 1, 1963	11-30-63	Sold - G. A. Derks	Generator - Junked Turbine - Left	Sold - G. A. Derks
Fulton Street Steam	1,500	Apr 20, 1964	4-19-64		Removed - Junked	Consumers Power Company
Saginaw River No. 4 Boiler	-	Aug 1, 1965	3-10-65		See Below, February 1972	Consumers Power Company
Central Plant Hydro	400	Dec 27, 1965	12-26-65	Demolished	Removed - Junked	
LaBarge Hydro	700	Dec 27, 1965	12-27-65	•	Generator - Sold or Junked Turbine - Left	
Lowell Hydro	900	Dec 27, 1965	12-27-65	Kent County	Generator - Sold as Motor Turbine - Left	Kent County
Newaygo Hydro	1,880	Dec 27, 1965	12-27-65	Michigan Department of Conservation	Generators #3, 4 - Sold Generators #1, 2 & Turb - Left	Michigan Dept of Conservation
Plainwell Hydro	900	Dec 27, 1965	12-27-65	Michigan Department of Conservation	Generator - Junked Turbine - Left	Michigan Dept of Conservation
Otsego Hydro	1,700	Dec 28, 1965	12-28-65	Michigan Department of Conservation	Generator - Junked Turbine - Left	Michigan Dept of Conservation
Allegan Hydro	650	Dec 29, 1965	12-29-65	Imperial Wood Carving Co.	Left	Imperial Wood Carving Co.
Cheboygan Hydro	1,800	Dec 29, 1965	12-29-65	Michigan Waterways Commission	Generator - Junked Turbine - Left	Charmin Paper Company
Elk Rapids Hydro	1,050	Dec 29, 1965	12-29-65	Antrim County	Generator - Junked Turbine - Left	Antrim County
Alverno Hydro	800	Dec 30, 1965	12-30-65	•	Generator - Junked Turbine - Left	
Trowbridge Hydro	1,500	Dec 30, 1965	12-30-65	Michigan Department of Conservation	Generator - Junked Turbine - Left	Michigan Dept of Conservation
Saginaw River Boilers No. 1, 2, 3, 5 & 6, Turbines No. 1, 2, & House Unit A	40,000	Feb 28, 1968	12-21-68		See Below, February 1972	Consumers Power Company
		[illegible]	[illegible]		Removed - Sold	City of Paxton

K00000989

CONSUMERS POWER COMPANY

RETIRED HYDRO PLANTS AND DAM SITES

NAME OF PLANT	LOCATION Section	Town & Range	County	River	Built	CP Co. Acquisition and Disposition	Retired
MAPLE RIVER (Pellston)	10	T36N, R 4W	Emmet	Maple River		Acq. 1950 from Michigan Public Service Co. Sold to Emmet County 1952	1951
MORLEY	25 30 Village of Morley	T13N, R10W T13N, R 9W	Mecosta	Little Muskegon	1916	Acq. 1928 from Western Hydro Elec. Co. Sold to Village of Morley 1953	1952
MOUNT PLEASANT	15	T14N, R 4W	Isabella	Chippewa	1903	Acq. 1923 Shut down 1926 Sold to Jack York 1945	1933
NEWAYGO	19	T12N, R12W	Newaygo	Muskegon	1900	Rebuilt in 1916. Acq 1922 from Newaygo Portland Cement Co. Sold to Dept Natural Resources 1968	1965
OTSEGO	17	T 1N, R12W	Allegan	Kalamazoo	1903-4	Acq. 1925, rebuilt Sold to Dept Nat. Resources 1967	1965

K00000390

INTER COMPANY CORRESPONDENCE

October 13, 1917.

OTSEGO WATER POWER COMPANY.

Mr. Robert Davey,
Building.

Dear Mr. Davey:-

I have your letter of recent date requesting information regarding Otsego Water Power Company. While in Lansing recently I went to the Secretary of State's office and secured copy of the original Articles of Association which covers, I believe, substantially all of the information requested by Mr. Bourne. As indicated by the Articles of Association the organization is an incorporation, but without capital stock, being organized under special Act which is specifically referred to in the Articles.

I understand that the owners and their respective interests are as follows:

Hardeen Paper Company, Otsego	5,950	inches
Otsego Power & Manufacturing Co., Otsego	1,150	"
Village of Otsego	450	"
Consumers Power Company	850	"
Total	8,400	"

Mr. Luther is a member of the Board of Directors and under date of August 24th, 1917, he advised me that at a meeting of the Board of Directors held on that date, the following officers were elected:

Mr. Monroe	President
Mr. Cobb	Vice-president
Mr. Simpson	Water Inspector
Mr. Keene	Secretary and Treasurer

K00000991

INTER COMPANY CORRESPONDENCE

Mr. [illegible] 2. 10/13/17.

I understand that all of these officers, except Mr. Simpson, are connected with the Bardeen Paper Company and that Mr. Simpson is a Village Official and represents the Village of Otsego upon the Board of Directors.

Yours very truly,

[illegible]

TDK HM
Copy to Mr. G.E.L.

K00000992

Org
articles of ass'n

GEORGE E. LUTHER
LAND TITLES
JACKSON, MICHIGAN

August 31, 1917.

CONSUMERS POWER COMPANY
Otsego Water Power Co.
Ownership.

Mr. Robt. Davey,

Building.

Dear Mr. Davey:

Enclosed herewith I hand you copy of letter dated August 13, 1917, to the Secretary of the Otsego Water Power Company of Otsego, Michigan, signed by Ida W. Foote, Ethel F. Tefft and Edna T. Bootes, sole and only heirs of W. A. Foote, deceased, requesting and directing the Secretary of said Company to transfer to the Consumers Power Company the holding of W. A. Foote in the property of said Otsego Water Power Co. as shown by its books, namely, 850 inches of water.

I also enclose you a copy of letter of Florence Geib Bardeen, dated October 24, 1914, in reference to the transfer of holdings in that company. There is also enclosed a copy of letter from the Secretary of the Company showing that the letter of Ida W. Foote, et al, of August 13, 1917, has been received by him and the change in ownership noted on the books of the company.

Mrs. Bardeen, who was the Secretary of the Company, says that Mr. W. A. Foote a couple of years ago asked that I be put on the Board of Directors. This was done, but I was never notified of such election and did not receive notice of any meetings. However, meetings of the directors were rare, not being held oftener than one in a year or two.

Mr. Kline attended the annual meeting of the company held August 13, 1917, and he advises that at that meeting I was re-elected a director, as was also Mr. B. E. Morrow. At this meeting an assessment of $20.00 per 100 inches of water was levied according to the usual custom, the Secretary being authorized to collect such proportion of the assessment as is required.

At the adjourned meeting of the directors held August 23, 1917, officers were elected as follows:

Mr. Monroe	President
Mr. Cobb	Vice President
Mr. Simpson	Water Inspector
Mr. C. A. Kean, Jr.	Secretary & Treasurer

These persons are all connected one way or another with the Bardeen Paper Co., although Mr. Simpson also attended the meeting as a representative of the

K00000993

Village of Otsego. Mr. Bardeen declined re-election as President and Mrs. Bardeen declined re-election as Secretary and Treasurer.

If any action on the part of the Board of Directors of the Consumers Power Company is necessary, please present the enclosed correspondence for such action as it should have.

Very truly yours,

George E. Luther

ME

Encl.

Copy to Mr. Wolff

C O P Y

BARDEEN PAPER COMPANY

Otsego, Mich. Oct. 24, 1914.

Mr. George E. Luther,

Jackson, Mich.

Dear Sir:

I am sorry that on accountof my absence your former letter was mislaid unanswered.

There never have been any atock certificates issued by the Otsego Water Power Co. It simply stands on the books of the company as so many inches of water -

Bardeen Paper Co.	5950	inches
Otsego Chair Co.	550	"
Ross Mfg. Co.	600	"
Village of Otsego	450	"
W. A. Foote	850	"

Assessments are voted at annual stockholders meetings - a certain amount per 100 inches and called for as needed.

When a transfer is made the party making transfer notifies the Secretary and the transfer is made on books of company. This authority is what we asked from Mr. Foote.

Trusting you will pardon delay.

Very truly,

Florence Geib Bardeen

K00000995

OTSEGO DAM

The following report is a short history of Otsego hydraulic station showing outputs and operating costs for a number of years together with such information as is useful in determining the increase in output and decrease in operating expense of the new installation.

This plant was constructed in 1903 on the Kalamazoo River and at that time had installed capacity of 1500 kw. in one General Electric Type ATB, 60 cycle, 3 phase, 2000 volt, 225 r.p.m. alternating current generator. The water wheel equipment consisted of eight Leffel Company 56" vertical Sampson wheels. The dam consisted of three earth embankments on concrete core walls with a 118 foot spillway structure with four timber gates operated by portable motor. This dam flooded approximately 340 acres and made possible an operating head of 17 feet. The power house structure and wheel pits was practically all of wood construction except for the bulkhead wall and supporting piers.

The value of the plant according to Commonwealth Power Company appraisal of 1910 was $274,302.00 and miscellaneous expenditures until 1924 bring the investment figure to $295,935.73.

Between 1917 and 1924 no changes were made in the plant so that the following outputs are for the plant described.

1905 - 3,796,356	1916 - 4,807,500
1906 - 3,919,424	1917 - 4,623,500
1907 - 4,698,080	1918 - 3,889,500
1908 - 5,331,842	1919 - 5,143,200
1909 - 5,690,512	1920 - 4,380,600
1910 - 5,336,624	1921 - 4,794,600
1911 - 5,297,264	1922 - 4,787,300
1912 - 5,309,264	1923 - 4,178,600
1913 - 3,984,728	1924 - 4,424,300
1914 - 4,662,171	
1915 - 5,371,250	

Estimated average yearly output was 4,770,000 kw-hr.

During the foregoing years the operating and maintenance expenses were high but our records are rather incomplete and it would entail considerable work to get same together. However since 1923 we have very good accounting records and we place the operating expenses in 1923 at $13,800 and in 1924 $10,970.

In 1924, it was decided that the estimated saving in expenses and increased output would justify plant changes, the following being the request for appropriation found in the 1925 Annual Estimate Book.

K00000996

Otsego (Pine Creek) New Generators
Estimated Cost $149,000

"It is proposed to install modern vertical wheels at the Otsego hydraulic plant - Estimated Cost $149,000.00.

"The wheels and foundations at Otsego are in bad shape, and it will be necessary to spend approximately $20,000 for repairs this year in order to put the plant in reasonable condition. After these repairs are made, there will be no particular gain in efficiency nor will the high operating expense which the present wooden construction entails be in any way reduced. The present repairs consist in replacement of a portion of the laminated wooden walls of the penstock, new runners for six of the present turbines, replacement of all posts and struts underneath the wheel house floor and miscellaneous governor and water wheel repairs. If the new wheels are installed, it will increase the annual kw-hr. output of Otsego Dam 2,000,000 kw-hr. which at .6¢ amounts to $12,000 or 8% on the total investment. A saving in repairs of $6,000 annually will be effected making a return of 12% on the investment. Making these changes will also involve a retirement of $38,000 worth of property."

Construction was started on the job (C-1221) in May 1925 and completed in November 1925 with a total expenditure of $177,159.12, the cost going 18.7% over the estimate. Retirements made in connection with the work totaled $86,984.00. The rebuilt plant is fully automatic with a capacity of 1700 kw. in two 1050 kv-a. Westinghouse 60 cycle, 2500 volt units direct connected to 2- S. Morgan Smith 110" diameter single vertical wheels. Steel tainter gates were installed in place of the old wooden ones and other work carried out as provided in the proposal. The operating head is now 14.6 ft.

As construction work was being carried on for a great part of 1925, the output for that year is not comparable with other results, although in four months operation of the old plant and two months operation of the new plant, 2,763,490 kw-hr. were generated.

With the plant in normal operation for the past two years, the estimated increase in output has been more than realized. Outputs for 1926 and 1927 are shown below:

1926 - 8,947,120 kw-hr.
1927 - 8,161,200 kw-hr.

It is interesting to note that the 1926 output is 3,256,608 kw-hr. more than the highest year of record for the old plant.

Inasmuch as the past few years have been abnormal in hydraulic conditions, the above outputs cannot be taken as the generation to be expected every year from this plant. For the same years, the outputs at Trowbridge, also on the Kalamazoo River, were 11,209,200 kw-hr. and 10,115,600 kw-hr., exceeding the average estimate of 9,067,000 kw-hr. by 23.6% and 11.6% respectively.

K00000997

Applying these percentages to the outputs at Otsego, the normal output of the plant is found to be

	7,230,000
	7,310,000
Average	7,270,000

However, this figure does not take into account the value of water wasted which at all Kalamazoo River plants in 1926 and 1927 amounted to quite an appreciable amount. In a normal year therefore it is predicted that the Otsego plant output will be 7,600,000 kw-hr., assuming conditions under which very little water will have to be spilled.

Using the figure of 4,770,000 kw-hr. as the normal output of the old plant, the additional kw-hr. available from the new plant is as follows:

	New Plant Output	Increase Over Old Plant
1926 Actual -	8,947,120 kw-hr.	4,177,120 kw-hr.
1927 Actual -	8,161,200 kw-hr.	3,391,200 kw-hr.
Average 1926-27 reduced to normal conditions -	7,270,000 kw-hr.	2,500,000 kw-hr.
Estimated average output	7,600,000 kw-hr.	2,830,000 kw-hr.

These figures show that the estimated increase of 2,000,000 kw-hr. used for economics of the proposal was very conservative and should be exceeded materially a greater part of the time. Assuming again the value of power at 0.6¢ per kw-hr., the 2,830,000 kw-hr. additional is worth $16,980 and this amounts to 9.6% on the actual investment of $177,159.12.

Operating costs for the past two years have been very materially reduced in the new plant. Automatic operation has cut down the labor item approximately two-thirds while the new construction has done away with a great deal of maintenance expense. In 1926 the operating costs per kw-hr. was 0.13¢ and in 1927 this figure was further reduced to 0.08¢ per kw-hr. This decrease between 1926 and 1927 is largely due to the plant going on fully automatic operation in 1927 while in 1926 an additional operator was required. The operating costs then, have been reduced to one-third what they were by this change in the plant, the total costs in 1927 being $6375.00 while in 1924 the operating expense was $10,970.00 approximately. Assuming these figures as typical, the annual saving in operating expense is $4600, which is $1400 less than the figure assumed in the original proposal.

K00000998

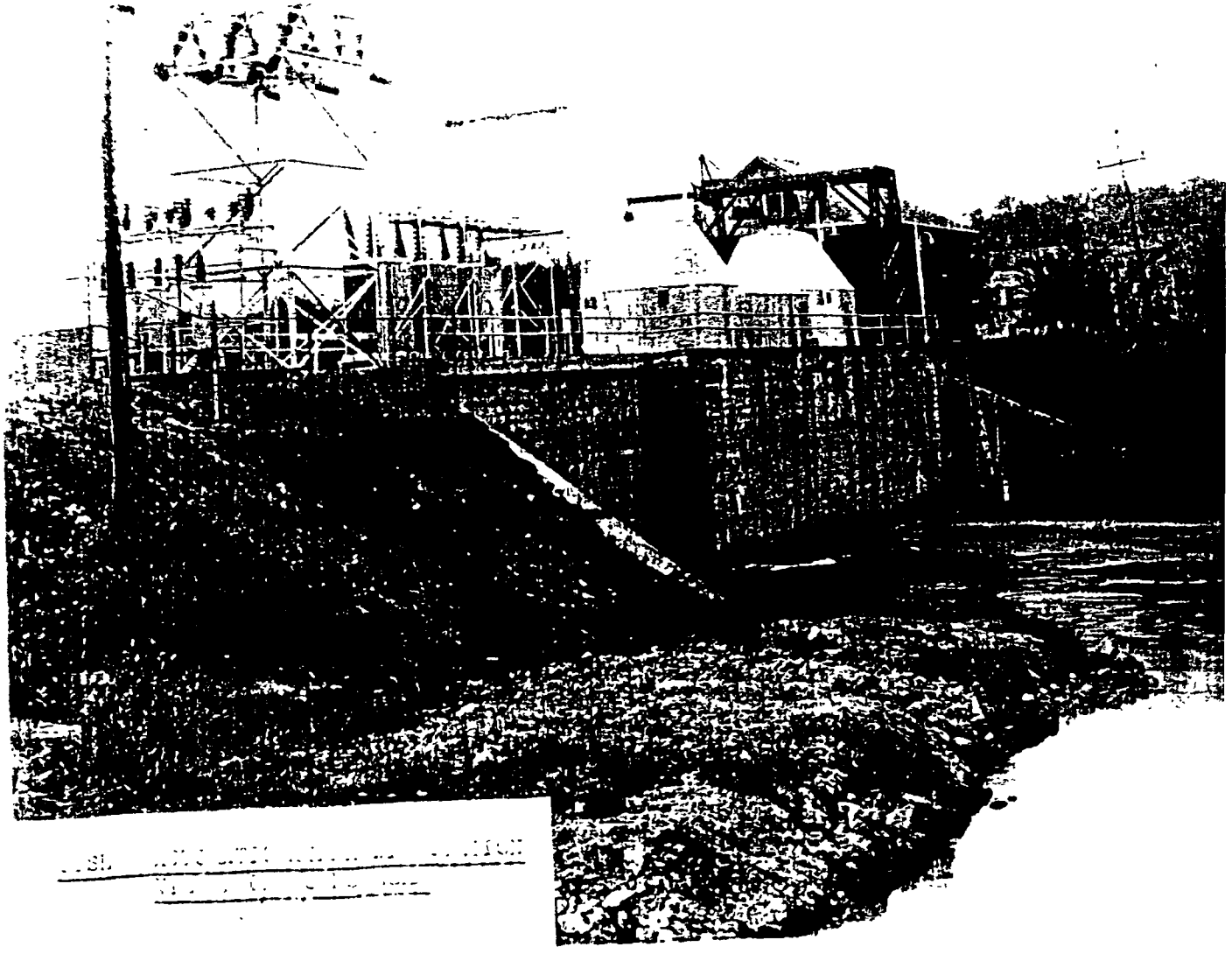
With the value of additional kw-hr. $16980 and the saving in operating costs of $4600, the total return on the investment of $177,159.12 is $21,500 or 12.15%. This is 0.15% higher than the return predicted on the original estimate of $149,000.

The total investment at Otsego up to the present time has been $383,877.34. This figure includes the rebuilding of the plant, building an operator's house and allows for the retirements mentioned before in this report. Assuming power to be valued at 0.6¢ the annual output is worth $45,600.00. Operating expenses are further reduced in 1928 and will be only $4500. The net return on the investment for an average year is then $41,100 or 10.7%.

From the above figures it is seen that predictions accompanying the request for appropriation for rebuilding the plant have been exceeded while the present conditions show a very good return on the total investment.

Compiled by H.G.H.
Compiled on September 25, 1928
Compiled at Jackson, Michigan.

K00000999



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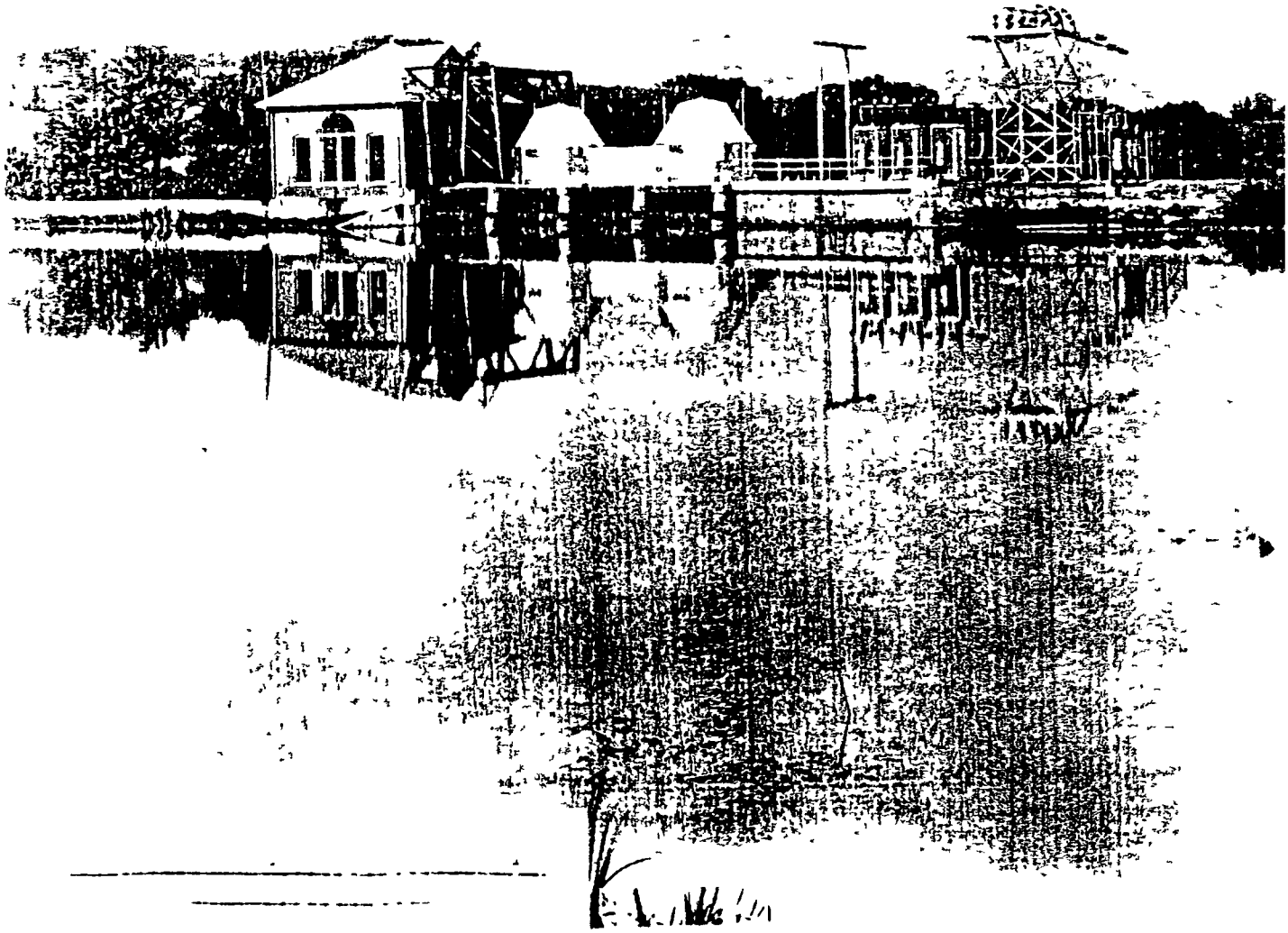

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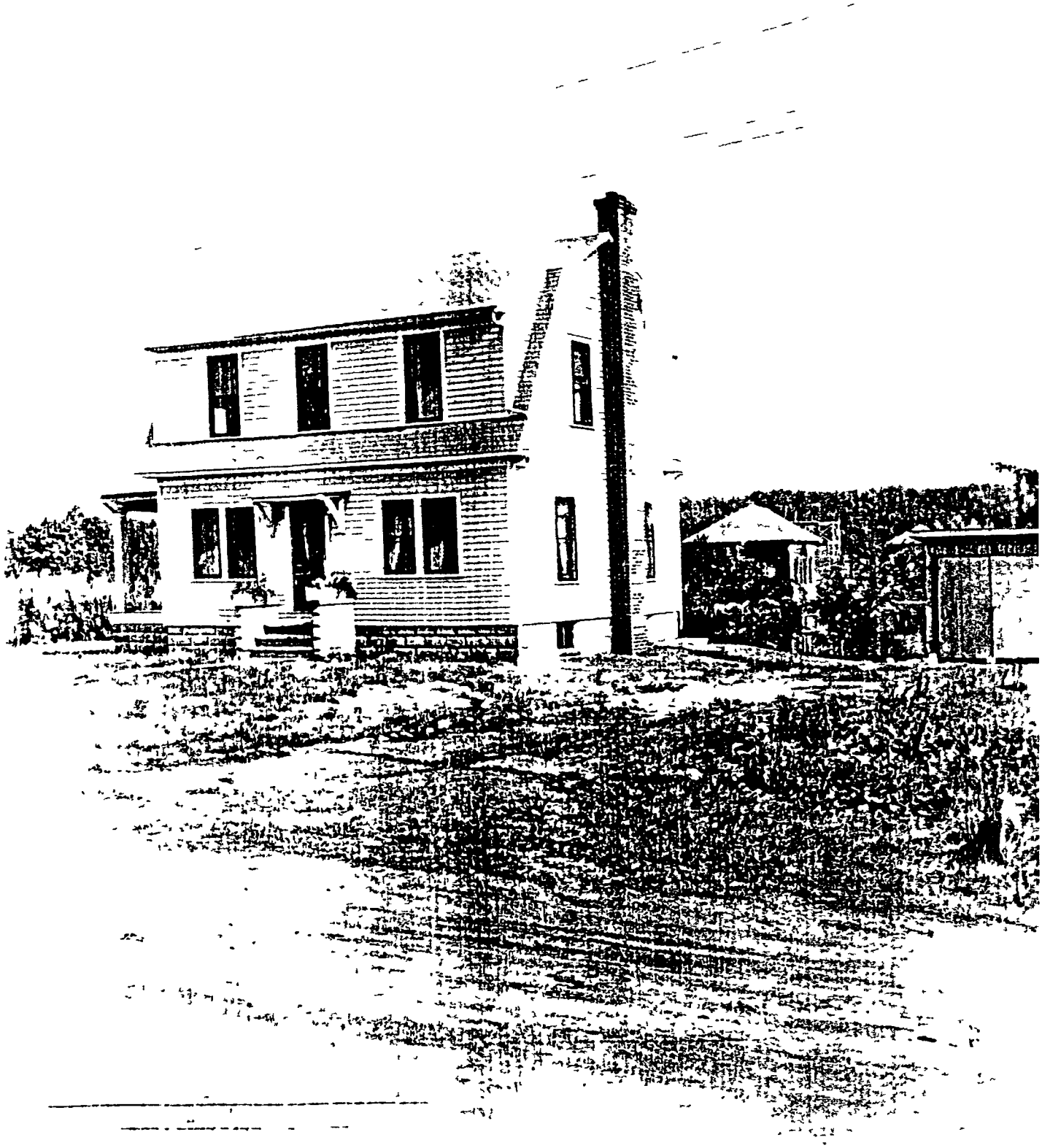

K00001002

K00001003

PLAINWELL DAM #1
J.Bernier

INFORMATION REQUESTS

1. Identify all persons consulted in the preparation of your responses to these Information Requests.

   James R. Bernier, Sr. Natural Resource Manager – Hydro Operations
   Robert M. Neustifter, Attorney – Regulatory Section
   Margaret J. Kaiser, Corporate Records

2. Identify all documents consulted, examined, or referred to in the preparation of your responses to these Information Requests, and provide copies of all such documents. If, in lieu of or along with a textual response to any specific Request, you refer to a document that you believe contains information responsive to that Request, you must identify the specific location (page number, paragraph number) in the document where responsive information can be located.

   See general objections.

3. If you have reason to believe that there may be any person able to provide a more detailed or complete response to any Information Request, or who may be able to provide additional responsive documents, identify any and all such persons.

   None known.

4. Identify and generally describe each Consumers Energy facility at or near the Site, as that term is define in Attachment 3 (Definitions). For each Consumers Energy facility, provide:

   Plainwell Dam #1

   a. the address of the facility;

      SE¼, Section 24, T1N, R12W, Otsego Township, Allegan County, MI

   b. past and present EPA ID numbers, RCRA numbers and NPDES numbers for the facility; and

      None known.

K00001004

c. the current owner of the facility

State of Michigan, Department of Natural Resources (MDNR)
Stevens T. Mason Building
P O Box 30028
Lansing, MI 48909-7528

5. Identify all prior owners and operators of each facility, and their dates of ownership and/or operation.

Plainwell Power Company, from about 1902 to about 1920
Consumers Power Company (now Consumers Energy),
about 1920 to September 29, 1967

6. Provide copies of all local, state, and federal environmental permits ever granted for each facility or any part thereof (e.g., RCRA permits, NPDES permits, etc).

None known.

7. For each facility, identify and describe all types of monitoring reports, monitoring data, and documentation sent to or received by federal or state regulatory authorities regarding any materials containing hazardous substances used, generated, stored, treated or disposed at or from the facility.

None

8. Identify and describe the nature of all past and current operations and production processes at each facility. Identify, if available, all current and previous SIC codes associated with each facility.

The facility was used exclusively for the production of hydroelectric power until December 27, 1965, SIC code 4911.

9. Identify each product produced at the facility. Further identify the mass quantity of each product produced on an annual basis.

Electricity was produced. Annual quantity is unknown. Installed capacity was 900 kw.

10. Identify and describe any and all activities or efforts to take production facilities out of operation, and include the dates of each such activity or effort.

Available information indicates that the generator was disposed in 1966 or 1967, after production ceased and prior to the sale to MDNR. The turbines were left in place, but MDNR is believed to have undertaken subsequent demolition activities. The disposition of station transformers and other equipment is unknown.

11. For each facility, identify and provide any data, estimates, analyses or other information regarding any material used, treated, stored or disposed that contained or may have contained PCBs. To the extent available, provide all such data, estimates, analyses or other information on an annual basis.

None known

12. For each facility, identify any data, estimates, analyses or other information regarding the concentration of PCBs in any material used, treated, stored or disposed there. To the extent available, provide all such data, estimates, analyses or other information on an annual basis.

None known

13. To the extent not already provided in response to Request #11, provide the following information:

    a. the type and quantity, on an annual basis, of any oils or other lubricants used, treated, stored or disposed at each facility that are known or suspected to have contained PCBs;

    None known.

    b. the number, handling and disposition of all transformers and conductors at each facility; and

    Unknown

    c. data, analysis and other information regarding leaks, discharges or other releases from any transformer, conductor or other equipment using oils or lubricants at each facility.

    None known.

14. To the extent not already provided in response to Request #12, identify any data, estimates, analyses or other information regarding the concentration of PCBs in the materials identified in your response to Request #13.

None known.

15. Describe the procedures used by you or anyone on your behalf to test PCB concentrations in the materials identified in your response to Requests #11 and #13, above. Include in your response test methods and dates.

None.

K00001006

16. Describe the procedures followed by you, or anyone on your behalf, to prevent, mitigate or address the release or threat of release of any material identified in your response to Requests #11 and #13, above.

    Not applicable

17. Provide a figure delineating the groundwater flow direction on your property.

    No information available.

18. Identify the depth(s) to groundwater at your property.

    No information available.

19. For each production process at each facility, identify and describe each waste stream from its creation to final disposition.

    Used oil from generator bearings is believed to have been recycled.

20. For each facility, identify all past and present waste units (e.g., underground storage tanks, above ground storage tanks, waste piles, landfills, surface impoundments, lagoons, dry wells, septic systems, floor drains, ponds, pits, machine pits, container storage areas). For each such waste unit identified, provide the following information:

    a. The location of all past and present waste units whether currently in operation or not.

       None known

    b. The type of unit (e.g., underground storage tank, lagoon, dry well, etc).

       None known

    c. The dates that the unit was in use.

       None known

    d. The purpose of past and/or present usage (e.g., storage, spill containment, waste disposal).

       None known

    e. The quantity and type(s) of materials (e.g., manufacturing materials, wastes, hazardous substances, pollutants and contaminants) located in each unit.

       None known

f. If the unit is no longer in use, describe how was such unit closed, and what actions were taken to prevent or address potential or actual releases of waste constituents from the unit(s). Include all analytical data from such closure.

None known

21. For each facility, identify any data, estimates, analyses or other information about the presence of PCBs in each waste stream created. To the extent available, provide such information on an annual basis.

None known.

22. For each facility, identify any data, estimates, analyses or other information about the concentration of PCBs in each waste stream created. To the extent available, provide such information on an annual basis.

None known.

23. For each facility, describe the procedures used by you, your predecessor(s), or anyone on behalf of you or a predecessor, to test the PCB concentration in each waste produced, stored, treated or disposed at that facility. Include in your response test methods, media tested, and dates.

None

24. For each facility, identify each off-Site location at which wastes that contained or potentially contained PCBs were disposed. Further identify the dates of each such off-Site disposal, and the nature, quantity and PCB concentration of any such wastes.

None known.

25. For each facility, and for each waste produced, stored, treated or disposed at that facility:

a. identify the PCB concentration of any waste;

None known

b. if the waste contained detectable concentration of PCBs, describe each occasion on which a release of such waste occurred or threatened to occur; and

None known

c. describe the procedures and measures taken by you, or anyone on your behalf, to prevent, mitigate or address the release or threat of release of PCBs or other hazardous materials.

None known

26. For each release described in response to Request #25 above, describe the quantity of PCB-contaminated wastes that were released or threatened to be released, and state whether any PCBs contained in the wastes contributed to the presence, or threatened to contribute to the presence, of PCBs in the Kalamazoo River.

None

27. For each facility, identify any data, estimates, analyses or other information about the history of flooding, or any other infiltration of water, from the Kalamazoo River.

The dam was in the Kalamazoo River.

28. To the extent not provided in your response to Request #19, describe each wastewater stream, waste oil stream, and wastewater/waste oil mixture stream at each facility, from its creation in the production process to final discharge point. In your response include a complete description of the fate of any wastewater stream, waste oil stream, and wastewater/waste oil mixture stream produced at each facility (e.g., on-site treatment, discharge to a POTW, discharge to a storm sewer outfall, direct discharge to the Kalamazoo River).

No known waste water streams except employee sanitary waste.

29. To the extent not provided in response to Requests #19 and #28, identify the quantity of all (a) wastewater, (b) waste oil, and (c) wastewater/waste oil mixture produced, on a monthly basis, from each production process at each facility.

None known.

30. To the extent not provided in response to Requests #21 and #22, identify any data, estimates, analyses or other information about the presence and/or concentration of PCBs in the wastewater, waste oil and wastewater/waste oil mixture produced from each production process at each facility. To the extent available, provide such information on a monthly basis.

None.

31. For each facility, identify any data, estimates, analyses or other information regarding the effectiveness of the treatment system(s) at that facility, if any, to remove PCBs from each wastewater stream, waste oil stream and wastewater/waste oil mixture stream.

None.

32. Identify any data, estimates, analyses or other information regarding procedures and measures taken by you, or by anyone on your behalf, to prevent, mitigate or address the release or threat of release of PCBs from wastewater, waste oils, or wastewater/waste oil mixtures to the Kalamazoo River.

Unknown.

33. For any POTW identified in response to Request #28, provide, for each facility and on a monthly basis, all information regarding the amount of wastewater, waste oil and wastewater/waste oil mixture discharged to a POTW, the concentration of PCBs in the wastewater, waste oil and wastewater/waste oil mixtures discharged to the POTW from that facility and, to the extent such information is available, the PCB concentration in the effluent from the POTW.

Not applicable.

34. For each facility, identify each pipe, conduit, storm sewer, sewer line or other outfall that, directly or indirectly, terminates in the Kalamazoo River or its tributaries, past or present, into which treated, untreated or bypassed wastewater, waste oil, or any other waste (including wastewater/waste oil mixtures), from that facility was discharged. Include a figure identifying the source and location of each pipe, conduit, storm sewer, sewer line or other outfall.

None known.

35. For each pipe, conduit, storm sewer, sewer line or other outfall identified in your response to Request #34, identify dates of use and each outfall's source at the facility. Further provide, on a monthly basis, the volume of wastewater, waste oil or other waste (including wastewater/waste oil mixtures) discharged from the facility into each pipe, conduit, storm sewer, sewer line or other outfall.

Not Applicable

36. For each pipe, conduit, storm sewer, sewer line or other outfall identified in response to Request #34, identify all influent and effluent quality data. Include to the extent such information is available, the PCB concentration of all influent and effluent, on a monthly basis.

Not Applicable

37. For each pipe, conduit, storm sewer, sewer line or other outfall identified in response to Request #34, identify all bypasses or spills into the Kalamazoo River or its tributaries.

Not Applicable

38. For each facility, identify any data, estimates, analyses or other information regarding the mass quantity of PCBs disposed into the Kalamazoo River as a result of wastewater, waste oil or wastewater/waste oil discharges from the production processes. To the extent available, provide such information on an annual basis.

None known.

39. For each facility, identify any data, analyses or other information regarding the nature and quantity of hazardous substances, including PCBs, in the sediments, soil, groundwater and surface water at that facility. Identify the concentration levels of PCBs for all samples collected at the facility or at any property abutting the facility.

None.

40. For each facility, provide information regarding any environmental response activities involving or potentially involving PCBs or PCB-containing materials conducted at that facility, or on the Kalamazoo River, its tributaries, or other abutting property, at your direction or under your control. Indicate the date(s) on which such response activity was performed, what work was performed, the expenses incurred, the results of the response activity and, if it has not concluded, when the environmental response is expected to conclude.

None.

41. Have you incurred any costs associated with the investigation, remediation or other action to address contamination at the Site or any portion thereof? If yes, identify all costs incurred by you through the date of this Information Request.

No.

K00001011

T65-278

THIS INDENTURE, Made this [illegible] day of [illegible], 1967, Between CONSUMERS POWER COMPANY, a corporation duly authorized to do business in Michigan, with its principal office therein at 212 West Michigan Avenue, Jackson, Michigan, as first party, and the STATE OF MICHIGAN, Lansing, Michigan, as second party,

WITNESSETH:

That said first party, for and in consideration of the sum of One Dollar ($1.00) and other good and valuable considerations, the receipt thereof is hereby confessed and acknowledged by first party, first party does by these presents bargain, sell, remise, release and QUITCLAIM unto the said second party, all those certain pieces or parcels of land, rights and privileges, situate and being in the Village of Plainwell, the Township of Otsego and the Township of Gun Plains, in the County of Allegan and State of Michigan, known and described as follows, to wit:

Parcel 1. (Enzian)

Those certain pieces or parcels of land situate and being in the Township of Otsego, County of Allegan, State of Michigan, known and described as follows, to wit:

Commencing on the east line of Section twenty four (24) in town one (1) North Range twelve (12) west, five hundred fifteen (515) feet South of the east quarter post of said section and three hundred sixty five (365) feet North of the Kalamazoo River, from which point of commencement a cedar tree eight (8) inches in diameter bears North seventy four (74) degrees East two hundred twenty seven and one half (227 1/2) feet and a black walnut tree thirty six (36) inches in diameter bears South thirty four and one-half (34 1/2) degrees east one hundred thirty five and one-half (135 1/2) feet, running thence south eighty nine and three quarters (89 3/4) degrees west one hundred twenty three (123) feet, thence south one quarter (1/4) degree east two hundred twenty two (222) feet, thence south forty one and one half (41 1/2) degrees west one hundred twelve and eight tenths (112.8) feet, thence south seventy six and one-quarter (76 1/4) degrees west three hundred thirty six and two tenths (336.2) feet, thence north seventy nine and one-half (79 1/2) degrees west one hundred seventy eight and four tenths (178.4) feet, thence north one quarter (1/4) degree west four hundred fifty five (455) feet, thence south eighty nine and three quarters (89 3/4) degrees west ten hundred twenty (1020) feet to the Kalamazoo River, thence along the Kalamazoo River up stream to the east line of said section twenty four (24) thence north one and one-quarter (1 1/4) degrees west on the section line to the place of beginning, containing twenty seven

K00001012

and three quarters (27 3/4) acres of land. Including all those islands, if any, in the Kalamazoo River, southerly and westerly of said twenty seven and three quarters (27 3/4) acres of land as well as the bed of said river, in the center thereof, along the land so conveyed, being the same rights and premises conveyed by deed from William Enzian and wife to Charles H. Frisbie dated June 5, 1902, recorded in Book 126, page 234, records of Allegan County.

A strip of land three (3) rods in width the center line of which is described as follows,- Commencing on the North line of land on the south east quarter of Section twenty four (24) in said Township, conveyed by the deed running from Enzian and wife to Frisbie, dated June 5th, 1902, at a point seven hundred fifty nine (759) feet west of the east line of said section, thence north parallel with said Section line thirteen hundred fifty seven and one-half (1357 1/2) feet, thence north twenty three (23) degrees east ten hundred eighty eight (1088) feet to a point on the south line of the first highway, three hundred forty five (345) feet westerly measured along the highway from the east line of said section, subject however, to a perpetual right of way over such strip of land, heretofore granted to William Crispee and wife, their heirs, executors, administrators and assigns, and subject to a Right of Way dated September 13, 1957, granted by Consumers Power Company to Texaco-Cities Service Pipe Line Company.

A strip of land three (3) rods east and west and nine and two thirds (9 2/3) rods North and South along the east side of the Kalamazoo River commencing at the north west corner of lands heretofore conveyed by said Enzian to Frisbie by said deed dated June 5th, 1902, extending thence northerly nine and two thirds (9 2/3) rods.

Together with all the right, title and interest of and to that portion of the Kalamazoo River with its islands, adjoining said property, being the same rights and premises conveyed by William Enzian and wife to Charles H. Frisbie, by deed recorded in Book 145 of Deeds, on page 427, records of Allegan County.

That certain piece or parcel of land described as commencing on the North East fraction of the south east quarter of Section twenty four (24) forty nine and one-half (49 1/2) feet easterly of the north west corner from the river bank of lands heretofore conveyed by said William Enzian and wife to Charles H. Frisbie by deed recorded in Liber 126, on page 234, and in the northerly line of said lands and thence easterly along said northerly line to the [illegible] of land described in said deed given by William Enzian and wife to Frisbie recorded in Liber 145 of Deeds, page 427, thence northerly along the west line of said strip one hundred [illegible] (1[illegible]) [illegible] thence westerly parallel with south line to the north east corner of lands also conveyed by said deed recorded in Liber 145, page 427, thence southerly in a direct line to the place of beginning, being the same

K00001013

rights and premises conveyed by William Enzian and wife to Plainwell Power Company, Limited, by deed recorded in Book 145, on page 539, records of Allegan County.

All the exclusive right and privilege to perpetually overflow to any height desired by said party of the second part, its successors and assigns, all that certain piece or parcel of land situate and being in the Township of Otsego, County of Allegan and State of Michigan, known and described as follows, to-wit:- lying and being on the east half of Section number twenty four (24) and commencing at a point seven hundred thirty four (734) feet south, Eighty nine and one quarter (89 1/4) degrees west, and two hundred fifty five (255) feet south, one and one quarter (1 1/4) degrees west, from the quarter corner on the east line of said Section twenty four (24); and running thence north one and one quarter (1 1/4) degrees west, two hundred eighty (280) feet; thence north twenty nine (29) degrees fifty (50) minutes east, Two hundred thirty eight (238) feet, thence north, sixteen (16) degrees thirty five (35) minutes east two hundred (200) feet; thence north four (4) degrees five (5) minutes west two hundred twenty one and five-tenths (221.5) feet; thence north, twenty seven (27) degrees ten (10) minutes west, one hundred forty one and five tenths (141.5) feet; thence north fifty seven (57) degrees fifty (50) minutes west, one hundred ninety eight and five tenths (198.5) feet; thence south fifty six (56) degrees forty two (42) minutes west, one hundred seventy six and five tenths (176.5) feet; thence south sixty seven (67) degrees fifty seven (57) minutes west, six hundred thirty eight and five tenths (638.5) feet; thence south six (6) degrees thirty three (33) minutes east, two hundred fifty (250) feet, thence south three (3) degrees fifty eight (58) minutes east, five hundred forty eight (548) feet; thence north eighty nine (89) degrees fifty five (55) minutes east, seven hundred fifty (750) feet to the place of beginning; and all land adjacent thereto and between said land and the center of the Kalamazoo River; and all islands in the Kalamazoo River opposite said premises.

Parcel 2. (William Crisp)

One and six-tenths (1.6) acres in the Southeast corner of the North seven and one hundred thirty six one hundred sixtieths (7 13/160) acres of the south west fraction of the South east quarter of Section twenty four (24) Town one (1) North, Range twelve (12) west, more particularly bounded as follows,- Commencing on the south line of the seven and one hundred thirty six one hundred sixtieths (7 136/160) acres at a point three hundred seventy seven (377) feet east of the west line thereof, thence north two hundred sixty four (264) feet, thence east two hundred fifty five (255) feet to Kalamazoo River, thence southerly along the Kalamazoo River to south line of seven and one hundred thirty six one hundred sixtieths

K00001014

(7 136/160) acres, thence west along said land three hundred two (302) feet to place of beginning, together with all the right, title and interest in and to that portion of the Kalamazoo River running adjacent to said land herein described. Also granting to the said second party any islands or part thereof, in the said river opposite the land hereby conveyed, being the same rights and privileges conveyed by William Crispee and wife to Charles H. Frisbie by deed recorded in Book 149 at page 335, Allegan County records.

Parcel 3. (Thomas C. Warrant)

Two and one-fortieth (2 1/40) acres of land in the North east corner of the South west fraction of the South east quarter of Section twenty four (24) Town one (1) North Range twelve (12) West; except the North Seven and one hundred thirty six one hundred sixtieths (7 136/160) acres of said fraction, said two and one fortieth (2 1/40) acres commencing at the north line of above described lands four hundred forty (440) feet East of the west line thereof, thence south at right angles to North line three hundred (300) feet, thence east to Kalamazoo River, thence Northerly along the river to North line of said land, thence West to beginning. Also a strip of land three (3) rods in width along North and West sides of said south west fraction of section twenty four (24); excepting the North seven and one hundred thirty six one hundred sixtieths (7 136/160) acres on the west of said two and one fortieth (2 1/40) acres.

Also conveying one and eighty three one hundredths (1 83/100) acres, along the bluff on northerly side of said south west fraction of Section twenty four (24) extending from said two and one fortieth (2 1/40) acres to the east line of said Section twenty four (24) and lying below elevation forty six and seventy one hundredths (46 70/100) feet Otsego Village datum, said one and eighty three one hundredths (1 83/100) being such land as would be flooded by head of fifteen (15) feet on said quarter section.

Also, all right, title and interest in that portion of the Kalamazoo River adjacent to above described premises, being the same premises conveyed by T. C. Warrant and wife to Charles H. Frisbie by deed recorded in Book 149 at page 317, Allegan County records.

Parcel 4. (Charles Warrant)

That certain piece or parcel of land situate and being in the Township of Gun Plains, County of Allegan, State of Michigan, known and described as follows, to-wit,- Fifteen and ninety eight one-hundredths (15 98/100) acres of land off the northerly side of the South West fraction of the South half of Section nineteen (19) Town one (1) North Range eleven (11) West,

Consumers Power Company to State of Michigan dated October 19th, 1959, pertaining to electric transmission and distribution operations of said company.

Parcel 5. (Sara E. Whitcomb)

That certain piece or parcel of land situate and being in the Township of Gun Plains, County of Allegan, and State of Michigan, known and described as follows, to-wit,- So much of the North fraction of the south west quarter of Section nineteen (19) Town one (1) North Range eleven (11) West, as lies below an elevation of forty six and seventy hundredths (46 70/100) feet, Otsego Village Datum.

Also a strip of land twenty (20) feet wide along the north side of above described lands, together with all, the right, title and interest in and to the Kalamazoo River with its islands adjacent to said above described lands, containing, with said twenty (20) foot strips and the islands, thirteen and two hundredths (13 2/100) acres.

Being the same rights and premises conveyed by deed from Sarah E. Whitcomb to Plainwell Power Company, Limited, recorded in Book 149 of Deeds, page 372, Allegan County records.

Parcel 6. (Wilcox - Andrew Stamp)

All that part of the following described parcels of land lying below an elevation of forty-six and seventy hundredths (46.70) feet, Otsego Village Datum: West Half (W 1/2) of the Southeast Quarter (SE 1/4) of Section Nineteen (19), Township One (1) North, Range Eleven (11) West; and a parcel of land described as commencing eighty-six (86) rods West of the Northeast corner of Section Thirty (30), Town One (1) North, Range Eleven (11) West, thence South ten (10) rods, thence West to the Kalamazoo River, thence northwesterly along the river to the Section line, thence East to the place of beginning, containing two and one-half (2 1/2) acres and being part of the Northeast fraction of said Section 30; and Lots Forty-one (41) and Forty-four (44) of Batchelor and [illegible]'s Addition to Village of Plainwell, in Section 30, Town 1 North, Range 11 West.

Also conveying the same rights and premises conveyed by Deed from Andrew J. Stamp and wife to Plainwell Power Company, Limited, by Deed recorded in Liber 149, page 374, excepting all that part of the South 3[illegible] feet of the Southwest Quarter (SW 1/4) of the Southeast Quarter (SE 1/4), Section 19, Township 1 North, Range 11 West, [illegible] of the Kalamazoo River, which lies above contour line forty-six and seventy hundredths (46.70) feet, Otsego Village Datum. Also conveying any islands [illegible] of islands in the Kalamazoo River [illegible] said premises.

Parcel 7. ([illegible])

The right and privilege to permanently overflow to the center of the Kalamazoo River [illegible]

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land situate and being in the Township of Gun Plains, County of Allegan, State of Michigan, known and described as follows, to-wit,- Commencing at the North west corner of the East half of the North west quarter of Section thirty (30) thence running east on the section line to Kalamazoo River, thence up said river to the east line of lands formerly owned by Nathanael Seeley and Sophia Seeley, thence south westerly along the east line of said lands to the center of the highway, thence north westerly along the center of the highway to the west line of said East half of the North west quarter of Section thirty (30), thence North to the place of beginning. Sufficient at all times to maintain a fifteen (15) foot head of water at the dam constructed and maintained across the said river of the South east quarter of Section twenty four (24) in the Township of Otsego, in said County, being the same rights and premises conveyed by the Union Agricultural and Industrial Society of Allegan County to the Plainwell Power Company, Limited, by deed recorded in Book 152, at page 637 of the records of Allegan County.

Parcel 8. (Lewis Feller)

The right and privilege to perpetually overflow to the center of the Kalamazoo River that part of a piece of land commencing at a point in the center of highway running from Plainwell to Otsego, North fifty eight (58) degrees twenty three (23) minutes west, one hundred seventy one and eighty two one-hundredths (171 82/100) rods from the quarter post on the East side of Section thirty (30) thence North thirty one degrees (31) thirty seven (37) minutes east fifty one (51) rods to the south bank of the Kalamazoo River; thence down said river twenty nine and fifty one-hundredths (29 50/100) rods to land owned by Union Agricultural Society of Plainwell, Michigan, thence Southerly along the West line of lands formerly belonging to estate of Hiram W. Anderson, to the center of said highway, thence South fifty eight (58) degrees twenty three (23) minutes East twenty five and seventy six one-hundredths (25 76/100) rods to the place of beginning in the Village of Plainwell, Michigan; sufficient at all times to maintain such a head of water as the second party, its successors and assigns may desire, by means of the dam constructed and maintained across the Kala azoo River, on or near the South east quarter of Section twenty four (24) in the Township of Otsego, Allegan County, Michigan, not to exceed, however, fifteen (15) feet head of water at the dam, being the same rights conveyed by Louis Feller and wife to Plainwell Power Company, Limited by deed recorded in Liber 1[illegible], page [illegible], Allegan County.

Parcel 9. (Jacob M. Prindle)

The right and privilege to perpetually overflow to the center of the Kala azoo River, that part of the piece of

land commencing in the center of Allegan Street, at the South West corner of Lasher's Addition to the said Village of Plainwell, Allegan County, Michigan, thence Northwesterly along the center of Allegan Street to land owned and occupied by Louis Feller, thence running Northeasterly at right angles to Allegan Street to Kalamazoo River, thence running up the said river to the said Lasher's Addition, thence Southwesterly to place of beginning on Section thirty (30) Town one (1) North Range eleven (11) West, sufficient at all times to maintain such a head of water as the second party, its successors and assigns, may desire, by means of the dam constructed and maintained across the Kalamazoo River, on or near the South east quarter of Section twenty four (24) in the Township of Otsego, Allegan County, Michigan; and all right and privilege to so flow any island or part thereof, in the Kalamazoo River, opposite said premises, if there are any, Being the same rights and premises conveyed by Jacob M. Brining and wife to said Plainwell Power Company, Limited, by deed recorded in Book 145 of Deeds, at page 508, records of Allegan County.

Parcel 10. (William J. Keeler)

The perpetual right and privilege to overflow Lots forty two (42) and forty three (43) of Bachelor and Dunham's Addition to the said Village of Plainwell, Allegan County, as may be sufficient to maintain a head of twelve (12) feet of water in the Kalamazoo River at the Township line between the Townships of Gun Plains and Otsego, even though the dam in said river is placed below that point. Said right and privilege to so flow to extend to the center of the Kalamazoo River opposite and adjacent to said lands and to cover any islands in said river, if any, being the same rights and premises conveyed by William C. Keeler and wife to Plainwell Power Company, Limited, by deed recorded in Book 145, page 510, Allegan County Records.

Parcel 11. (David R. Lamb)

The right and privilege to perpetually overflow to the center of Kalamazoo River that part of Lots thirty eight (38) and thirty nine (39) and forty (40) and forty seven (47) of Bachelor and Dunham's Addition to the said Village of Plainwell, sufficient at all times to maintain such a head of water as the said party of the second part its successors and assigns may desire, by means of the dam constructed and maintained across the Kalamazoo River on or below the south east corner of Section twenty four (24) Otsego Township, Allegan County, not to exceed a fifteen (15) foot head of water at the dam, and the said right and privilege to so overflow any island's or part thereof, in the Kalamazoo River, opposite said premises, if there are any, being the same rights and premises conveyed to Plainwell Power Company, Limited, by David R. Lamb by deed recorded in Book 142, page 395, Allegan County records.

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Parcel 12. (Joseph F. Derhammer)

The right to flow the E 2/3 of Lot 40 of Batchelor and Dunham's Addition to the Village of Plainwell by a dam across the Kalamazoo River on the E 1/2 of the SE 1/4 of Section 24, Township of Otsego, Allegan County, Michigan, and the right to maintain said dam and to overflow all of Lot 40 of said Addition and the river bed adjacent thereto, as was reserved in a certain Deed from Commonwealth Power Company to James E. Botsford dated the 7th day of September, 1912 and recorded in Liber 180 of Deeds, on page 317, Allegan County Records.

Parcel 13. (Iosco Land Company)

The perpetual right to flow, percolate, saturate, wash away, injure by alluvium deposits or damage in any other manner those certain parcels of land situated in the Village of Plainwell, County of Allegan and State of Michigan, known and described as follows:

> Lot Sixteen (16), except the South two (2) rods, of Lasher's Addition to the Village of Plainwell according to the recorded plat thereof lying below an elevation of forty-seven and seventy-hundredths (47.70) feet, Otsego Village Datum; also a strip of land six (6) feet wide off the northerly or northeasterly end of Lot Fifteen (15) of Lasher's Addition to the Village of Plainwell, according to the recorded plat thereof, together with riparian rights to center of the Kalamazoo River,

or any part thereof, including the improvements upon and the products of the said premises by the construction, maintenance and/or operation of a dam or dams across the Kalamazoo River so as to flow said land to an elevation not to exceed fifty-five (55) feet Plainwell Plant Datum (equals forty-six and seventy hundredths (46.70) feet, Otsego Village Datum.) Also the right to raise or lower the water in said Kalamazoo River or its tributaries and/or in any manner to affect the flow of water in said Kalamazoo River and its tributaries by the operation of any dam or dams which will cause said land to be flowed to the aforesaid elevation.

Parcel 14. (Eliza E. Scott)

The right and privilege to perpetually overflow to the center of the Kalamazoo River that part of Lot forty nine (49) of Whitney's Addition to the Village of Plainwell, Allegan County, Michigan, sufficient at all times to maintain such a head of water as the said Scott party, its successors and assigns, may desire, by means of the dam constructed and maintained across the Kalamazoo River, at or below the South East quarter of Section twenty four (24) in the Township of Otsego,

Allegan County, Michigan, being the same rights and premises conveyed to Plainwell Power Company, Limited, by deed from Eliza E. Scott, recorded in Book 149 of Deeds, at page 390, records of Allegan County.

Parcel 15. (Ralph Richmond)

The right and privilege to perpetually overflow to the center of Kalamazoo River, that part of Lot forty eight (43) of the Corporation plat of the Village of Plainwell, Allegan County, Michigan, sufficient at all times to maintain such a head of water as the said party of the second part, its successors and assigns may desire, by means of the dam constructed and maintained across the Kalamazoo River on or below the South East quarter of Section twenty four (24) in the Township of Otsego, Allegan County, Michigan, but not to exceed fifteen (15) feet head of water at the dam; and such right and privilege to so flow any island or part thereof in the Kalamazoo River belonging to first parties, opposite said premises, if there are any.

Together with all and singular the hereditaments and appurtenances thereunto belonging or in any wise appertaining, being the same rights and premises conveyed to Plainwell Power Company, Limited, by deed running from Ralph Richmond and Sarah H. Richmond, his wife, recorded in Volume 145 of Deeds, page 511, records of Allegan County, Michigan.

Also conveying and transferring the dam, waste gates, flume, powerhouse and other buildings, water wheels, turbine, turbine gates and controls and all other equipment used or usable in connection therewith at, on or about the premises known as the Plainwell Dam located in the E 1/2 of the SE 1/4 of Section 24, T1[illegible], R12[illegible], Otsego Township, Allegan County, Michigan, excepting and reserving, however, to the Grantor herein all electric generating equipment, switches, transformers, circuit breakers and other equipment used or usable in connection with the generation and transmission of electrical energy, together with the right to remove same on or before July 1, 1957. Also conveying all water power developed by said dam, and the right to flow, percolate, saturate and injure by alluvial deposit all lands [illegible] upstream or downstream from said dam, whether such rights have been acquired by grant, adverse possession or otherwise which are necessary and appurtenant to the operation of said dam at its present height and now owned or held by the Grantor herein.

Also conveying and transferring all of the right, title and interest of [illegible] rights and privileges to construct [illegible] Kalamazoo River on the E 1/2 of the SE 1/4 of Section 24, T1[illegible], R12[illegible], Otsego Township, Allegan County, Michigan, as granted by the Board of Supervisors of

K00001020

Allegan County to James B. Botsford on January 10, 1900.

EXCEPTING AND RESERVING to First Party, its successors and assigns. Forever, from the lands described herein as Parcels 2 and 3, a parcel of land described as follows:

To find the place of beginning commence at the South 1/4 post of Section 24; running thence East along the South line of said section a distance of 24.75 feet; thence N 00° 35' W parallel with the North and South 1/4 line of said section a distance of 2070.5 feet; thence N 89° 37' 20" E 414.3 feet; thence S 33° 12' 40" E 73.05 feet to the place of beginning of this description (said point being the NW corner of the substation site); running thence S 13° 24' 40" E 47.7 feet; thence S 71° 32' 40" E 51.85 feet; thence N 77° 02' 20" E 47.7 feet to the SE corner of the substation site; thence N 12° 54' 40" W 74.75 feet; thence S 77° 00' 20" W 92.4 feet to the place of beginning, including all equipment and structures located on said premises, which premises are hereinafter referred to as the "substation site".

Also reserving an easement for driveway purposes as a means of ingress and egress to the above-described substation site, said easement being 49.5 feet wide,

the center line of which will commence at a point on the South line of said Section 24, T1N, R12W, 24.75 feet East of the South 1/4 post of said section; running thence N 00° 35' W and parallel to the North and South 1/4 line a distance of 2070.5 feet; thence N 89° 37' 20" E 303.1 feet; thence N 79° 02' 20" E 124.9 feet; thence S 01° 29' 40" E 25 feet; thence S 54° 29' 40" E 25 feet; thence S 39° 00' 40" E 25 feet; thence S 22° 15' 40" E 25 feet; thence S 37° 53' 40" E 54.65 feet; thence N 13° 27' 20" E a distance of 25.52 feet to the S'ly line of the substation site as described above.

It is understood that the roadway easement herein reserved shall be non-exclusive from its point of beginning to a point 327.05 feet East of the North and South 1/4 line of said Section 24, but shall be exclusive from said point Eastward to the substation site.

Also EXCEPTING AND RESERVING to First Party, its successors and assigns, Forever, from Parcels 1, 2 and 3 as herein above described, the easement and right to erect, lay and maintain lines of towers, pole structures, poles, wires, cables, conduits and other fixtures and appurtenances for the purpose of

K00001021

transmitting and distributing electricity and/or conducting a communication business on, over, under and across said Parcels 1 to 3 inclusive, including all public highways upon or adjacent to said parcels of land. The routes to be taken by said lines of towers, pole structures, poles, wires, cables, and conduits on, over, under and across said lands being more specifically described as follows:

One line to extend from a point on the W'ly line of the substation site, as above described, at a point S 13° 24' 40" E 23.2 feet from the NW corner of said substation site, as above described; running thence S 80° 55' 20" W along the existing transmission line 80.4 feet; thence S 87° 33' 20" W 201 feet; thence N 88° 57' 40" W to the North and South 1/4 line of Section 24, T1N, R12W, to a point of terminus.

Also one line to run in an E'ly and W'ly direction beginning at a point on the S'ly line of the substation site, as above described, to find the place of beginning of which commence at the NW corner of said substation site; thence S 13° 24' 40" E along the West line of said substation property 47.7 feet; thence S 71° 32' 40" E a distance of 51.85 feet; thence N 77° 02' 20" E a distance of 5.3 feet to the place of beginning of this transmission line; running thence S 36° 17' W along said transmission line a distance of 4 feet; thence S 82° 40' 20" W a distance of 110 feet to a point hereinafter described as Point "A"; thence N 91° 47' 40" W a distance of 238 feet to a point of juncture with the last above-described transmission line easement; also beginning at Point "A" and running thence S 23° 04' 40" E to the S'ly line of Parcel 3.

Also one line described as beginning at a point on the E'ly line of the substation site at a point N 12° 54' 40" W 3 feet from the SE corner of said substation site; and running thence N 79° 50' 20" E a distance of 19 feet; thence N 67° 55' 20" E 279 feet; thence S 89° 16' 40" E to the E'ly line of Parcel 1 as herein described.

Together with the full right and authority to First Party, its successors, licensees, lessees or assigns, and its and their agents and employees, to enter at all times upon said Parcels 1, 2 and 3 for the purpose of patrolling, constructing, repairing, removing, replacing, improving, enlarging and maintaining such wires, cables, conduits, towers, pole structures, poles and other supports, with all necessary braces, guys, anchors and transformers, and stringing thereon and suspending therefrom lines of wire, cables or other conductors for the transmission of electrical energy and/or communication, and to trim, remove, destroy or

otherwise control any trees or brush now growing or hereafter growing upon a strip of land 95 feet wide on each side of the center line of said electric lines, as the same now exist and as described herein. It is agreed that no buildings or other structures will be placed under such wires and/or over such cables without the written consent of First Party. It is further understood and agreed that nonuse or a limited use of the rights herein reserved shall not prevent First Party from later making use of the easement to the full extent herein reserved.

Also EXCEPTING AND RESERVING to First Party, its successors and assigns, Forever, the easement and right to lay, construct, maintain, repair, substitute for, remove, enlarge, patrol and replace two or more pipelines, with the usual services, valves, connections and accessories, for the purpose of transmitting gas in, through, along and across a strip of land 99 feet wide over and across Parcels 1 and 2 as hereinabove described, the W'ly line of said 99-foot easement to begin at a point on the South line of Section 24 at a point 390 feet West of the SE corner of said section; and running thence North parallel with and 390 feet distant from the East line of Section 24 to the N'ly line of Parcel 1 as herein described, together with the right to trim, remove, destroy or otherwise control any trees, brush and other vegetation now or hereafter standing or growing upon said 99-foot easement. No buildings or other structures will be placed on said strip of land by Second Party without the written consent of First Party. It is further understood and agreed that the complete exercise of the rights herein reserved may be gradual and not fully completed for some time in the future, and that none of the rights herein reserved shall be lost by nonuser or limited use for any length of time.

Also EXCEPTING AND RESERVING to First Party, its successors and assigns, the easement and right to construct, maintain, repair and enlarge all existing distribution lines, as the same are now located on the premises herein conveyed, whether said lines are herein specifically described or not, together with the right to enter upon the premises where such distribution electric lines may be located for the purpose of maintaining, repairing and enlarging same, and the right to cut, trim, remove or otherwise destroy any trees and brush as may, in the opinion of First Party, interfere or threaten to interfere with the use, operation and maintenance of said lines.

Together with all and singular the hereditaments and appurtenances thereunto belonging or in anywise appertaining: TO HAVE AND TO HOLD the said above-described premises unto the said Second Party and to its successors and assigns to the sole and only proper use, benefit and behoof of the said Second Party, its successors and assigns, Forever.

K00001023

IN WITNESS WHEREOF, the said first party has caused this instrument to be executed in its corporate name and by its duly authorized officers as of the day and year first above written.

Signed, Sealed and Delivered in Presence of:

Frances S. Schafer

LUCILLE M. DARLING

CONSUMERS POWER COMPANY

By W. C. Schmidt

W. C. Schmidt
Senior Vice President

Attest: P. A. Perry

P. A. PERRY
ASST. Secretary

APPROVED AS TO FORM

STATE OF MICHIGAN)
) SS
County of Jackson)

On this 29th day of September, 1967, before me, a Notary Public in and for said County, personally appeared W. C. Schmidt, to me personally known, who being by me duly sworn, did say that he is a Senior Vice President of Consumers Power Company, the corporation named in and which executed the within instrument, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors; and said W. C. Schmidt, acknowledged said instrument to be the free act and deed of said corporation.

Willoween R. Smith
Notary Public, Jackson County, Michigan

My Commission Expires September 7, 1970.

K00001024

DISPOSITION OF MINOR HYDRO, DIESEL AND STEAM PLANTS

Retirements Since 1950
As of June 27, 1973

Plant	Nameplate Rating Kw	Official Retirement Date	Last Operating Date	Disposition of Dam	Disposition of Equipment	Disposition of Building and Land
East Jordan Hydro	240	Sept 11, 1950		City of East Jordan	Removed - Junked	City of East Jordan
Greenville Hydro	300	Apr -, 1951	5-12-50	City of Greenville	Removed - Sold	CP Co. Use
Maple River Hydro	192	Dec -, 1951	11- 8-51	Ionia County	Removed - Junked	Ionia County
Hesperia Diesel	330	Oct -, 1952	3-15-51		Removed - Sold	Village of Hesperia
West Branch Hydro	75	Nov -, 1952	3-29-52	Demolished	Removed - Junked	Powerhouse - Demolished Land - CP Co.
Morley Hydro	150	Nov -, 1952	11-26-51	Village of Morley	Removed - Sold	Village of Morley
Albion Hydro	150	Dec -, 1952	2-21-51	City of Albion	Generator - Removed & Sold	Land South of Erie Street to City of Albion
White Cloud Diesel	576	Dec -, 1952	8-11-52		Removed - Sold	City of White Cloud
Blissfield Steam	1,250	Dec -, 1952	11- 1-50		Generator - Removed & Sold	Office Space
Stover Hydro	120	Dec 30, 1952	12-31-52	Bellaire Conservation Club	Turbine - Junked Generator - Sold as Motor	Bellaire Conservation Club
Montague Diesel	3,480	Dec -, 1952	10-17-52		Removed - Sold	Muskegon Distribution Dept
Hesperia Hydro	200	Dec -, 1952	12-31-52	Village of Hesperia	Removed - Junked	Village of Hesperia
Grayling Hydro	90	Jan 2, 1953	12-31-52	Sold - Selling Hanson Co.	Removed - Sold	Sold - Selling Hanson Co.
Bellaire Diesel	160	Feb 4, 1953	CP Co. Never Operated		Removed - Sold	City of Bellaire
Bugg Hydro	160	Mar 26, 1953	3-25-53	Kalkaska County	Removed - Junked	Kalkaska County
Reed City Hydro	150	May 11, 1953	3-23-53	Reed City	Removed - Junked	Reed City
North Monroe Street Hydro	150	July 9, 1953	12-15-52	City of Battle Creek	Removed - Sold	City of Battle Creek
Baldwin Diesel	330	Aug 19, 1953	8-18-53		Removed - Sold	CP Co. Distribution Dept
Shiawassee Hydro	150	Aug 26, 1953	1-29-53	Shiawassee and Vernon Townships	Removed - Sold	Shiawassee and Vernon Townships
Stronach Hydro	800	Sept 14, 1953	8- 7-53	CP Co. - Dam Intact	Removed - Junked	House - Sold Land - CP Co. Powerhouse - Demolished
Ceresco Hydro	600	Nov 16, 1953	7-19-52	Sold - R.M. and F.D. Lutz	Removed - Junked	Sold - R.M. and F.D. Lutz
Centreville Hydro	150	Feb 18, 1954	2-17-54	Village of Centreville	Removed - Junked	Village of Centreville
Boyne Falls Hydro	80	Apr 16, 1954	4-13-54	Village of Boyne Falls	Removed - Junked	Village of Boyne Falls
Ludington Steam	2,500	Apr 20, 1954	1-29-53		Removed - Junked	Consumers Power Company
				Tecumseh Products	Removed - Junked	Tecumseh Products

K00001025

Plainwell No. 2 Hydro	150	May 7, 1956	5-7-56	Michigan Paper Co.	Michigan Paper Co.	City of Plainwell
Dayton Hydro	240	June 1, 1956	6-10-56	Township Otisco	Generator - Sold in Mexico Other Equipment - Junked	Township of Otisco
Hubbardston Hydro	240	Nov 12, 1956	11-10-56	Village of Hubbardston	Removed - Junked	Village of Hubbardston
Wager Hydro	450	Nov 12, 1956	7-5-56	Demolished	Removed - Junked	Raymond Robinson
Lyons Hydro	450	Oct 2, 1957	4-30-56	Village of Lyons	Removed - Sold	Village of Lyons
Elk St. Stm (Boilers 1-6)	20,000	Apr 18, 1957	4-17-57		Removed - Sold	Consumers Power Company
Elk St. Stm (Units 2 & 3)	-	Oct 1, 1958	12-12-57		Removed - Sold	Consumers Power Company
Beaverton Hydro	970	Feb 20, 1961	2-20-61	City of Beaverton	Removed - Sold	City of Beaverton
Chappel Hydro	430	Feb 16, 1962	2-14-62	Gladwin County	Removed - Sold or Junked	Gladwin County
Grayling Diesel	2,550	Feb 19, 1962	2-19-62		Removed - Sold or Junked	City of Grayling
Mills Street Steam	7,600	Mar 16, 1962	5-24-56		Removed - Sold	Auto-Ion Chemical Company
Cheboygan Diesel	2,400	June 15, 1962	5-25-62		Removed - Sold	Consumers Power Company
Belding Hydro	400	July 27, 1962	7-27-62	City of Belding	Removed - Junked	City of Belding
Boyne Diesel	4,098	July 31, 1962	7-31-62		Removed - Sold	Consumers Power Company
Boyne River Hydro	500	Jan 4, 1963	10-12-62	Boyne Mountain Lodge, Inc.	Removed - Sold	Boyne Mountain Lodge, Inc.
Homestead Hydro	600	Dec 1, 1963	11-30-63	Sold - G. A. Derks	Generator - Junked Turbine - Left	Sold - G. A. Derks
Fulton Street Steam	1,500	Apr 20, 1964	4-19-64		Removed - Junked	Consumers Power Company
Saginaw River No. 4 Boiler	-	Aug 1, 1965	3-10-65		See Below, February 1972	Consumers Power Company
Central Plant Hydro	400	Dec 27, 1965	12-26-65	Demolished	Removed - Junked	
LaBarge Hydro	700	Dec 27, 1965	12-27-65	•	Generator - Sold or Junked Turbine - Left	
Lowell Hydro	900	Dec 27, 1965	12-27-65	Kent County	Generator - Sold as Motor Turbine - Left	Kent County
Newaygo Hydro	1,880	Dec 27, 1965	12-27-65	Michigan Department of Conservation	Generators #3, 4 - Sold Generators #1, 2 & Turb - Left	Michigan Dept of Conservation
Plainwell Hydro	500	Dec 27, 1965	12-27-65	Michigan Department of Conservation	Generator - Junked Turbine - Left	Michigan Dept of Conservation
Otsego Hydro	1,700	Dec 28, 1965	12-28-65	Michigan Department of Conservation	Generator - Junked Turbine - Left	Michigan Dept of Conservation
Allegan Hydro	650	Dec 29, 1965	12-29-65	Imperial Wood Carving Co.	Left	Imperial Wood Carving Co.
Cheboygan Hydro	1,800	Dec 29, 1965	12-29-65	Michigan Waterways Commission	Generator - Junked Turbine - Left	Charmin Paper Company
Elk Rapids Hydro	1,050	Dec 29, 1965	12-29-65	Antrim County	Generator - Junked Turbine - Left	Antrim County
Alverno Hydro	800	Dec 30, 1965	12-30-65	•	Generator - Junked Turbine - Left	
Trowbridge Hydro	1,500	Dec 30, 1965	12-30-65	Michigan Department of Conservation	Generator - Junked Turbine - Left	Michigan Dept of Conservation
Saginaw River Boilers No. 1, 2, 3, 5 & 6, Turbines No. 1, 2, & House Unit A	40,000	Feb 28, 1968	12-21-68		See Below, February 1972	Consumers Power Company
[illegible]	[illegible]	[illegible]	[illegible]		Removed - Sold	City of Canton

K00001026

PLAINWELL DAM #2
J.Bernier

INFORMATION REQUESTS

1. Identify all persons consulted in the preparation of your responses to these Information Requests.

   James R. Bernier, Sr. Natural Resource Manager – Hydro Operations
   Robert M. Neustifter, Attorney – Regulatory Section
   Margaret J. Kaiser, Corporate Records

2. Identify all documents consulted, examined, or referred to in the preparation of your responses to these Information Requests, and provide copies of all such documents. If, in lieu of or along with a textual response to any specific Request, you refer to a document that you believe contains information responsive to that Request, you must identify the specific location (page number, paragraph number) in the document where responsive information can be located.

   See general objections.

3. If you have reason to believe that there may be any person able to provide a more detailed or complete response to any Information Request, or who may be able to provide additional responsive documents, identify any and all such persons.

   None known.

4. Identify and generally describe each Consumers Energy facility at or near the Site, as that term is define in Attachment 3 (Definitions). For each Consumers Energy facility, provide:

   Plainwell Dam #2. The Plainwell Mill (or Head) Race was created by Plainwell #2 Dam, the origin of which dates to approximately 1865. The rights to use the 6,250 square inches of water in the Mill Race were held by three parties. This response refers to the 2,625 sq. in. (or 42%) used in the "Eesly" or "Plainwell #2" power generating plant. Other parties having an interest in the water were the Michigan Paper Co. and its successors (42%) and the Village, later City, of Plainwell (16%). Consumers has no information that would indicate how the other two parties utilized their portion of the water rights.

   a. the address of the facility;

      At the downstream end of the City Mill Race, Plainwell, MI 49080

K00001027

b. past and present EPA ID numbers, RCRA numbers and NPDES numbers for the facility; and

None known.

c. the current owner of the facility

unknown

5. Identify all prior owners and operators of each facility, and their dates of ownership and/or operation.

Early break downs of ownership of Plainwell Water Power Co. (PWPC) shown in attached undated ownership tables.
August 31, 1926, Lower Peninsula Power Company (LPPC) acquired former Eesley L&P Co. 42% ownership in PWPC.
June 6, 1934, Consumers Power Company, acquired the 42% from LPPC.
May 31, 1956 Consumers' 42% interest was conveyed to the Hamilton Paper Co., a successor of the Michigan Paper Co., which had already owned 42% of the PWPC.

6. Provide copies of all local, state, and federal environmental permits ever granted for each facility or any part thereof (e.g., RCRA permits, NPDES permits, etc).

None known.

7. For each facility, identify and describe all types of monitoring reports, monitoring data, and documentation sent to or received by federal or state regulatory authorities regarding any materials containing hazardous substances used, generated, stored, treated or disposed at or from the facility.

None

8. Identify and describe the nature of all past and current operations and production processes at each facility. Identify, if available, all current and previous SIC codes associated with each facility.

The facility was used for the production of hydroelectric power until 1965, SIC code 4911.

9. Identify each product produced at the facility. Further identify the mass quantity of each product produced on an annual basis.

Electricity was produced. A 1943 document shows the average yearly output of Consumers Power as 943 mWh. Consumers Power installed capacity was 200 kW.

K00001028

10. Identify and describe any and all activities or efforts to take production facilities out of operation, and include the dates of each such activity or effort.

Consumers does not know what happened after it sold its share of the facility to the Hamilton Paper Co in 1956.

11. For each facility, identify and provide any data, estimates, analyses or other information regarding any material used, treated, stored or disposed that contained or may have contained PCBs. To the extent available, provide all such data, estimates, analyses or other information on an annual basis.

None known

12. For each facility, identify any data, estimates, analyses or other information regarding the concentration of PCBs in any material used, treated, stored or disposed there. To the extent available, provide all such data, estimates, analyses or other information on an annual basis.

None known

13. To the extent not already provided in response to Request #11, provide the following information:

    a. the type and quantity, on an annual basis, of any oils or other lubricants used, treated, stored or disposed at each facility that are known or suspected to have contained PCBs;

    None known.

    b. the number, handling and disposition of all transformers and conductors at each facility; and

    Unknown

    c. data, analysis and other information regarding leaks, discharges or other releases from any transformer, conductor or other equipment using oils or lubricants at each facility.

    None known.

14. To the extent not already provided in response to Request #12, identify any data, estimates, analyses or other information regarding the concentration of PCBs in the materials identified in your response to Request #13.

None known.

K00001029

15. Describe the procedures used by you or anyone on your behalf to test PCB concentrations in the materials identified in your response to Requests #11 and #13, above. Include in your response test methods and dates.

None.

16. Describe the procedures followed by you, or anyone on your behalf, to prevent, mitigate or address the release or threat of release of any material identified in your response to Requests #11 and #13, above.

Not applicable

17. Provide a figure delineating the groundwater flow direction on your property.

No information available.

18. Identify the depth(s) to groundwater at your property.

No information available.

19. For each production process at each facility, identify and describe each waste stream from its creation to final disposition.

Used oil from generator bearings is believed to have been recycled.

20. For each facility, identify all past and present waste units (e.g., underground storage tanks, above ground storage tanks, waste piles, landfills, surface impoundments, lagoons, dry wells, septic systems, floor drains, ponds, pits, machine pits, container storage areas). For each such waste unit identified, provide the following information:

    a. The location of all past and present waste units whether currently in operation or not.

    None known

    b. The type of unit (e.g., underground storage tank, lagoon, dry well, etc).

    None known

    c. The dates that the unit was in use.

    None known

    d. The purpose of past and/or present usage (e.g., storage, spill containment, waste disposal).

    None known

K00001030

e. The quantity and type(s) of materials (e.g., manufacturing materials, wastes, hazardous substances, pollutants and contaminants) located in each unit.

None known

f. If the unit is no longer in use, describe how was such unit closed, and what actions were taken to prevent or address potential or actual releases of waste constituents from the unit(s). Include all analytical data from such closure.

None known

21. For each facility, identify any data, estimates, analyses or other information about the presence of PCBs in each waste stream created. To the extent available, provide such information on an annual basis.

None known.

22. For each facility, identify any data, estimates, analyses or other information about the concentration of PCBs in each waste stream created. To the extent available, provide such information on an annual basis.

None known.

23. For each facility, describe the procedures used by you, your predecessor(s), or anyone on behalf of you or a predecessor, to test the PCB concentration in each waste produced, stored, treated or disposed at that facility. Include in your response test methods, media tested, and dates.

None

24. For each facility, identify each off-Site location at which wastes that contained or potentially contained PCBs were disposed. Further identify the dates of each such off-Site disposal, and the nature, quantity and PCB concentration of any such wastes.

None known.

25. For each facility, and for each waste produced, stored, treated or disposed at that facility:

a. identify the PCB concentration of any waste;

None known

b. if the waste contained detectable concentration of PCBs, describe each occasion on which a release of such waste occurred or threatened to occur; and

None known

K00001031

c. describe the procedures and measures taken by you, or anyone on your behalf, to prevent, mitigate or address the release or threat of release of PCBs or other hazardous materials.

None known

26. For each release described in response to Request #25 above, describe the quantity of PCB-contaminated wastes that were released or threatened to be released, and state whether any PCBs contained in the wastes contributed to the presence, or threatened to contribute to the presence, of PCBs in the Kalamazoo River.

None

27. For each facility, identify any data, estimates, analyses or other information about the history of flooding, or any other infiltration of water, from the Kalamazoo River.

The dam was in the Kalamazoo River.

28. To the extent not provided in your response to Request #19, describe each wastewater stream, waste oil stream, and wastewater/waste oil mixture stream at each facility, from its creation in the production process to final discharge point. In your response include a complete description of the fate of any wastewater stream, waste oil stream, and wastewater/waste oil mixture stream produced at each facility (e.g., on-site treatment, discharge to a POTW, discharge to a storm sewer outfall, direct discharge to the Kalamazoo River).

No known wastewater streams except employee sanitary waste.

29. To the extent not provided in response to Requests #19 and #28, identify the quantity of all (a) wastewater, (b) waste oil, and (c) wastewater/waste oil mixture produced, on a monthly basis, from each production process at each facility.

None known.

30. To the extent not provided in response to Requests #21 and #22, identify any data, estimates, analyses or other information about the presence and/or concentration of PCBs in the wastewater, waste oil and wastewater/waste oil mixture produced from each production process at each facility. To the extent available, provide such information on a monthly basis.

None.

31. For each facility, identify any data, estimates, analyses or other information regarding the effectiveness of the treatment system(s) at that facility, if any, to remove PCBs from each wastewater stream, waste oil stream and wastewater/waste oil mixture stream.

None.

32. Identify any data, estimates, analyses or other information regarding procedures and measures taken by you, or by anyone on your behalf, to prevent, mitigate or address the release or threat of release of PCBs from wastewater, waste oils, or wastewater/waste oil mixtures to the Kalamazoo River.

Unknown.

33. For any POTW identified in response to Request #28, provide, for each facility and on a monthly basis, all information regarding the amount of wastewater, waste oil and wastewater/waste oil mixture discharged to a POTW, the concentration of PCBs in the wastewater, waste oil and wastewater/waste oil mixtures discharged to the POTW from that facility and, to the extent such information is available, the PCB concentration in the effluent from the POTW.

Not applicable.

34. For each facility, identify each pipe, conduit, storm sewer, sewer line or other outfall that, directly or indirectly, terminates in the Kalamazoo River or its tributaries, past or present, into which treated, untreated or bypassed wastewater, waste oil, or any other waste (including wastewater/waste oil mixtures), from that facility was discharged. Include a figure identifying the source and location of each pipe, conduit, storm sewer, sewer line or other outfall.

None known.

35. For each pipe, conduit, storm sewer, sewer line or other outfall identified in your response to Request #34, identify dates of use and each outfall's source at the facility. Further provide, on a monthly basis, the volume of wastewater, waste oil or other waste (including wastewater/waste oil mixtures) discharged from the facility into each pipe, conduit, storm sewer, sewer line or other outfall.

Not Applicable

36. For each pipe, conduit, storm sewer, sewer line or other outfall identified in response to Request #34, identify all influent and effluent quality data. Include to the extent such information is available, the PCB concentration of all influent and effluent, on a monthly basis.

Not Applicable

37. For each pipe, conduit, storm sewer, sewer line or other outfall identified in response to Request #34, identify all bypasses or spills into the Kalamazoo River or its tributaries.

Not Applicable

38. For each facility, identify any data, estimates, analyses or other information regarding the mass quantity of PCBs disposed into the Kalamazoo River as a result of wastewater, waste oil or wastewater/waste oil discharges from the production processes. To the extent available, provide such information on an annual basis.

None known.

39. For each facility, identify any data, analyses or other information regarding the nature and quantity of hazardous substances, including PCBs, in the sediments, soil, groundwater and surface water at that facility. Identify the concentration levels of PCBs for all samples collected at the facility or at any property abutting the facility.

None.

40. For each facility, provide information regarding any environmental response activities involving or potentially involving PCBs or PCB-containing materials conducted at that facility, or on the Kalamazoo River, its tributaries, or other abutting property, at your direction or under your control. Indicate the date(s) on which such response activity was performed, what work was performed, the expenses incurred, the results of the response activity and, if it has not concluded, when the environmental response is expected to conclude.

None.

41. Have you incurred any costs associated with the investigation, remediation or other action to address contamination at the Site or any portion thereof? If yes, identify all costs incurred by you through the date of this Information Request.

No.

30—150M—6-53

COPY

Jackson, Michigan
January 11, 1954

PLAINWELL DAM
City of Plainwell - Allegan County

Mr. C. E. Merritt
Building

I have made a careful examination of all the records and correspondence available in the files of the Land and Title Department relative to Plainwell Dam and associated property in the City of Plainwell, Allegan County. I have found the rights, interests and obligations of Consumers Power Company relative to said property to be as follows:

Consumers Power Company holds a public utility franchise granted by the City of Plainwell under which the Company has the right, power and authority to construct and maintain electric lines in the streets, alleys and public places of the city and to do an electrical business in the city for a period of thirty years from and after August 13, 1934.

I am unable to find a dam permit for the maintenance of Plainwell Dam. By a quitclaim deed, dated September 5, 1865, the Plainwell Hydraulic Association received from John McMartin the right to erect and maintain a dam across the Kalamazoo River below the head of the mill race, together with the right to enter on the lands of McMartin to repair the dam and to make embankments above the dam along the bank. The abstracts and papers which are in our files do not show any conveyance out of the Plainwell Hydraulic Association. However, indications that the Plainwell Water Power Company subsequently acquired ownership of the dam appear in a conveyance dated June 6, 1901 in which Plainwell Water Power Company conveyed to a successor corporation its "dams in the Kalamazoo River," and by a decree dated October 25, 1909 in which the Plainwell Water Power Company was named defendant in a suit for damages for overflowing certain lands by operation of a dam described as being in approximately the same location as the present Plainwell Dam. It is possible that the Plainwell Water Power Company, which will be discussed later in this report, is the successor to the Plainwell Hydraulic Association and that the ownership of the Plainwell Dam passed from the Plainwell Hydraulic Association to the Plainwell Water Power Company.

The decree mentioned above provided that the dam could be maintained at the same height as at the time of this hearing, provided that assessed damages were paid. I have no information as to whether this money judgment was satisfied.

COPY

Consumers Power Company holds good title to the following described parcels of land, which are colored in red on Map A which is attached hereto. My opinion as to the validity of this title is based upon an abstract certified to June 28, 1934 and upon title papers in our files Limitations or additions to the Company's ownership of the parcels appear immediately after the descriptions.

I

Lot 27 on the Corporation Plat of the Village of Plainwell according to the recorded plat thereof.

II

The west one-quarter of Lot 26 of the Corporation Plat of the Village of Plainwell according to the recorded plat thereof.

III

Lot 125 of the Corporation Plat of the Village of Plainwell according to the recorded plat thereof.

IV

A parcel of land bounded on the North by the Kalamazoo River, on the East by Lot 27 of the Corporation Plat of the Village of Plainwell and South and West by the mill race and waste weir being all the lands lying between Lot 27 of said Corporation Plat and said mill race and waste weir.

V

Lot 24 of the Corporation Plat of the Village of Plainwell according to the recorded plat thereof.

On October 28, 1952 Consumers Power Company granted to the City of Plainwell the easement and right to construct a 30-inch water well and well house on Lots 24 and so much of Lot 25 as is described in VI below This easement provided for the well to be located approximately 17 feet East and 35 feet North of the West and South lines of this property. By the same instrument, an easement was granted for an 8-inch water main across this property. These two lots were also made subject to an easement for a 6-inch water main granted to the City of Plainwell by Consumers Power Company on September 15, 1943.

By an instrument dated October 27, 1941, Consumers Power Company conveyed to the State of Michigan an easement for highway purposes over the East 12 feet of the North 32 feet of Lot 24

VI

Lot 25 of the Corporation Plat of the Village of Plainwell according to the recorded plat thereof, except a strip of land 24 feet in width off of the whole length of the west side of said Lot 25

K00001036

COPY

Lot 25 as above described was conveyed to Consumers Power Company from Lower Peninsula Power Company by a deed dated June 6, 1934. As conveyed to the Lower Peninsula Power Company, this lot was described as Lot 25 of the Corporation Plat of the Village of Plainwell, except the West 24½ feet thereof. Therefore, the conveyance by the Lower Peninsula Power Company to Consumers Power Company exceeded the ownership of Lower Peninsula Power Company by one-half foot. It is likely, however, that this deficiency in title has been remedied by continuous use and occupation of this area by Consumers Power Company for longer than the statutory limit.

VII

"All that part of Lot number 26 Corporation Plat of the Village of Plainwell upon which is erected the East wall of the machinery building of said Eesley Light and Power Company as the same now exists, said building being next to and adjoining a part of the West side of the water works building owned and occupied by said Village of Plainwell on said Lot 26.""

This description appears in a deed running to the Eesley Light and Power Company from the Village of Plainwell dated May 10, 1910. The property was subsequently conveyed to Consumers Power Company by a series of general conveyances. Since the buildings are described as they appeared at the time of the 1910 conveyance, it is impossible for me to determine at this time exactly what parcel of land was conveyed by this deed; however, it is likely that this property is adjacent to the West one-quarter of Lot 26 which was owned by Consumers Power Company's predecessors in title at the time of this deed.

By an easement dated May 20, 1910, the Village of Plainwell conveyed to the Eesley Light and Power Company the right to discharge exhaust steam through pipes located across Lot 26. This right was subsequently conveyed to Consumers Power Company by general deeds. At the time of the granting of the easement, the Village of Plainwell owned the East three-quarters of Lot 26. This permit was granted only for so long as the operation of said pipes should not interfere with the use of the lot by the Village. I have no information as to whether the Village has terminated this permit in the intervening 43 years.

Consumers Power Company also has title to 2,625 inches of water in the mill race at Plainwell. The title to this amount of water dates back to deeds dated September 11, 1912, January 13, 1904 and February 11, 1909. From the information which I have available it is impossible to trace the title to these water rights back beyond these dates, or to determine whether there have been any subsequent conveyances which might affect this title. However, this is the number of inches of water which has been used by Consumers Power Company and its predecessors and which is accepted as the basis for determining participation in the Plainwell Water Power Company. I believe that title to these water rights has probably been perfected in Consumers Power Company by adverse possession.

COPY

By the aforementioned conveyance, dated June ., 1934, from Lower Peninsula Power Company, which conveyed the 2,625 inches of water above mentioned, Consumers Power Company also acquired a proportionate interest in the Plainwell Water Power Company. This company was established for the purpose of maintaining and improving the race in the City of Plainwell, maintaining and repairing the dam on the Kalamazoo River, maintaining and repairing a waste weir at the foot of the race, and "to increase and improve for manufacturing and electrical purposes the water power thereby created."

The members of this company and their proportionate interests are as follows:

Name	Square Inches	Per Cent
Consumers Power Company	2,625	42
Michigan Paper Company	2,625	42
City of Plainwell	1,000	16
Total	6,250	100

40 YR. AFF'T.
RECORDED 1954

By a conveyance dated July 16, 1901 the Plainwell Water Power Company conveyed to the Plainwell Water Power Company, apparently a successor corporation, the "land through which the water in the mill race runs for the transmission of water and the creation of water power thereby, for manufacturing uses at Plainwell, Allegan County." The abstract containing this entry is certified to June 27, 1906, so I have no information regarding subsequent transactions affecting this race; however, I believe that this entry would serve to establish title to the mill race in the Plainwell Water Power Company as of June 27, 1906, and I have no reason to believe it has since been conveyed.

I find that the Plainwell Water Power Company had fee title as of June 27, 1906 to the property listed in paragraphs I and II below. Paragraphs numbered III, IV, V, VI, and VII below contain other land or interests which were acquired at a later date. I have no information which would lead me to believe that the Plainwell Water Power Company has conveyed away any of these interests. The ownership of these properties and interests is, of course, shared by Consumers Power Company in the proportion previously set forth.

I

Commencing at a point in the North line of Section 32, Township 1 North, Range 11 West, 2 chains East of the Northwest corner of said Section 32, thence South 32 degrees East 5 chains and 60 links, thence South 43 degrees East 4 chains and 65 links, thence South 48½ degrees East 7 chains and 87 links, thence South 58¼ degrees East 6 chains and 81 links, thence South 46½ degrees East 4 chains and 72 links to a maple tree 12 inches in diameter, thence North 71 degrees East 2 chains and 9 links, thence North 38 degrees West 4 chains and 50 links, thence North 55¾ degrees West 9 chains, thence North 49¾ degrees West

40 YR. AFF'T.
RECORDED 1954

COPY

9 chains and 60 links, thence North 37 degrees West 5 chains and 89 links to the section line, thence West 2 chains and 14 links to the place of beginning, except a strip of land 106 feet in width running lengthwise of said description (The mill race). Also, the right to use in common with first party (Josiah Woodhams) the road running from the highway across lands of first party to the bridge and head gates of the race. Also, the right to enter on lands of Josiah Woodhams for the purpose of constructing embankments. This property is colored in red and labeled 1 on Map B attached hereto, and cross-hatched in red on Map C.

II

All that part of the South one-half of the Northeast one-quarter of Section 32, Township 1 North, Range 11 West described as commencing at a point in the present fence line 2.61 chains North from the margin of the Kalamazoo River where a stone is set in the ground from which a Hickory 20 inches in diameter bears South 43 degrees 45 minutes West at a distance of 39 links and a Maple 12 inches in diameter bears North 30 degrees 30 minutes West 11½ links, thence North 55 degrees 25 minutes West 6.88 chains, thence North 7 degrees 45 minutes West 2.82 chains to a point 1½ rods Northerly of a dike now being constructed by second party (Plainwell Water Power Company), then North 89 degrees 5 minutes West 3.45 chains parallel to said dike and 1½ rods Northerly therefrom to the margin of the Kalamazoo River, thence South 28 degrees 15 minutes East 4.27 chains, thence South 13 degrees 55 minutes East 1.92 chains, thence South 18 degrees East 2.15 chains, thence South 35 degrees East 2.94 chains, thence North 69 degrees 45 minutes East 1.13 chains, thence North 84 degrees 45 minutes East 3.74 chains, thence North 3 degrees West 2.61 chains to the point of beginning. The approximate location of this property is colored in red and marked 2 on Map B.

40 YR. AFF'T. RECORDED 1964

III

40 YR. AFF'T. RECORDED 1964

The right to flow perpetually that part of Section 33, Township 1 North, Range 11 West, which lies Southwesterly of the Kalamazoo River and that part of the East one-half of the Southeast one-quarter of Section 32 owned by first party (John D. Abbey and wife), lying South of said river as high as it may be necessary to overflow same by the Plainwell Water Power Company's dams in the Kalamazoo River below said premises, by maintaining said dams at the same height at which they are now maintained with two splashboards, each 12 inches wide.

This flowage right was conveyed by quitclaim deed dated May 29, 1906 from John D. Abbey and wife, to the Plainwell Water Power Company. This area is cross-hatched in green and labeled 3 on Map B.

IV

The circuit court decree previously referred to granted to the Plainwell Water Power Company flowage rights over the property of the plaintiff which would be overflowed by the maintenance of a dam at the height maintained at the time of the hearing of the cause (1909.) This property is a part of the W½ of the SE frl ¼ and the E½ of the SW frl ¼ of Section 32, and island number 2 on said Section 32. This area is cross-hatched in green and marked 4 on Map B.

V

By an instrument dated July 30, 1932 the Plainwell Water Power

COPY

Company was granted the perpetual easement to overflow, by a dam at the height then maintained, the following described property:

> The West 20 acres of that part of the NW¼ of the SW¼ of Section 33 lying North of the Kalamazoo River.

The height of the dam as then maintained was described as:

> "Three feet 4½ inches above the stone spillway as measured vertically at a point 3 feet out, at right angles from the Easterly abutment of the upper dam."

This area is cross-hatched in green and marked 5 on Map B.

VI

By a conveyance dated May 31, 1913 the Plainwell Water Power Company acquired from George T. Arnold and wife the right to overflow the North fraction of the SE¼ of Section 32, being that part of the said SE¼ lying Northeasterly of the Kalamazoo River and all islands in said river belonging to the grantors. This area is cross-hatched in green and marked 6 on Map B.

VII

On September 17, 1915, the Plainwell Water Power Company acquired a parcel of land described as commencing at a point in the center of Jersey Street, 19 chains and 41 links South of the center of Bridge Street, thence South along the center of Jersey Street 4 chains and 1 link, thence East 6 chains and 1 link to mill race, thence down said mill race to a point 19 chains and 41 links South of the center of Bridge Street and West to the place of beginning containing 2 acres of land, more or less. This property is marked in red and labeled 7 on Map B.

By conveyance dated June 6, 1934, Consumers Power Company acquired from Lower Peninsula Power Company, the entire assets of that company in Allegan, Barry, Kalamazoo and Kent Counties, including all real and personal property and all of the rights, powers, privileges, liberties, grants, licenses, immunities and concessions, which were owned by Lower Peninsula Power Company in those counties. By conveyance dated August 31, 1926, the Lower Peninsula Power Company had succeeded to the entire property, real, personal and mixed of every kind and character of the Eesley Light and Power Company. This property was, of course, also conveyed through to Consumers Power Company by the aforementioned deed dated June 6, 1934. From the information which I have available, it is impossible for me to determine exactly what personal property was included in these conveyances.

Our tax records show the 1953 taxes on Lot 27, the W½ of Lot 26,

COPY

Lot 24, Lot 25, except the West 24 feet thereof, and a parcel of land bounded on the North by the River, on the East by Lot 27 and on the South and West by the race and waste weir were $3,971. This property is valued at $110,000.

Yours very truly,

B. E. Hagen

B. E. Hagen

BEH:bb
Attachs.

QUIT-CLAIM DEED —SHORT FORM. No. 3. F. A. Onderdonk, Grand Rapids, Mich.

This Indenture,

Made ~~this~~ the 31st. day of May, in the year of our Lord one thousand nine hundred and thirteen.

BETWEEN George T. Arnold and Susan B. Arnold his wife, of Mackinac Island, Michigan, of the first part, and The Plainwell Water Power Company a domestic corporation with its principal office at Plainwell, Michigan, of the second part,

Witnesseth, That the said parties of the first part, for and in consideration of the sum of twelve hundred and fifty dollars to them in hand paid by the said party of the second part, the receipt whereof is hereby confessed and acknowledged, do by these presents grant, bargain, sell, remise, release, and forever QUIT-CLAIM unto the said party of the second part, and to its successors ~~heirs~~ and assigns, FOREVER, ~~all~~ ~~certain piece or parcel of land situate in the~~ ~~County and State of Michigan, known and described as follows:~~

the right to perpetually raise the water on, and overflow, to any depth, all that certain piece or parcel of land situate and being in the Township of Gun Plains, Allegan County, and State of Michigan, known and described as follows, to wit: the north fraction of the southeast quarter of section numbered thirty-two, being that part of the said southeast quarter of section numbered thirty-two, lying northeasterly of the center of the Kalamazoo River, and all islands in said River (on said section No. 32) if any belonging to said first parties or either of them on said southeast quarter, and all rights, claims and demands of every kind and nature which the said parties of the first part or either of them now have against the said party of the second part on account of said party of the second part heretofore raising the water on said premises, or overflowing the same. (A part of said consideration being received by the said parties of the first part from said party of the second part in full payment of all of said rights, claims and demands.)

Together with all and singular the hereditaments and appurtenances thereunto belonging or in anywise appertaining: To Have and To Hold the said flowage rights, and other rights claims and demands, to the said party of the second part, and to its successors ~~heirs~~ and assigns, to the sole and only proper use, benefit and behoof, of the said party of the second part, its successors ~~heirs~~ and assigns, Forever.

In Witness Whereof, the said parties of the first part, have hereunto set their ~~hands~~ and seals the day and year first above written.

Signed, Sealed and Delivered in Presence of

(Signed) Murr M. Carter

(Signed) Frank Brenckman

(Signed) Geo. T. Arnold [L. S.]

(Signed) Susan B. Arnold [L. S.]

[L. S.]

[L. S.]

K00001042

STATE OF MICHIGAN, } ss.

County of Mackinac

On this 17th day of June in the year one thousand, nine hundred and thirteen, before me, ~~the subscriber~~ a notary public in and for said County, personally appeared George T. Arnold and Susan B. Arnold his wife,

to me known to be the same persons described in, and who executed the within instrument, who severally acknowledged the same to be their free act and deed.

Frank Brenckman

Notary Public

My commission as such Notary Public expires

Feby 19 A.D. 1916

(NOTARIAL SEAL)

No. 3.

IT-CLAIM DEED

SHORT FORM.

George T. Arnold and wife,

TO

Chalswell Water Power Company

ATE OF MICHIGAN, } ss.

ed for Record the 18th

July A. D. 19 13, at

o'clock A. M., and Recorded in

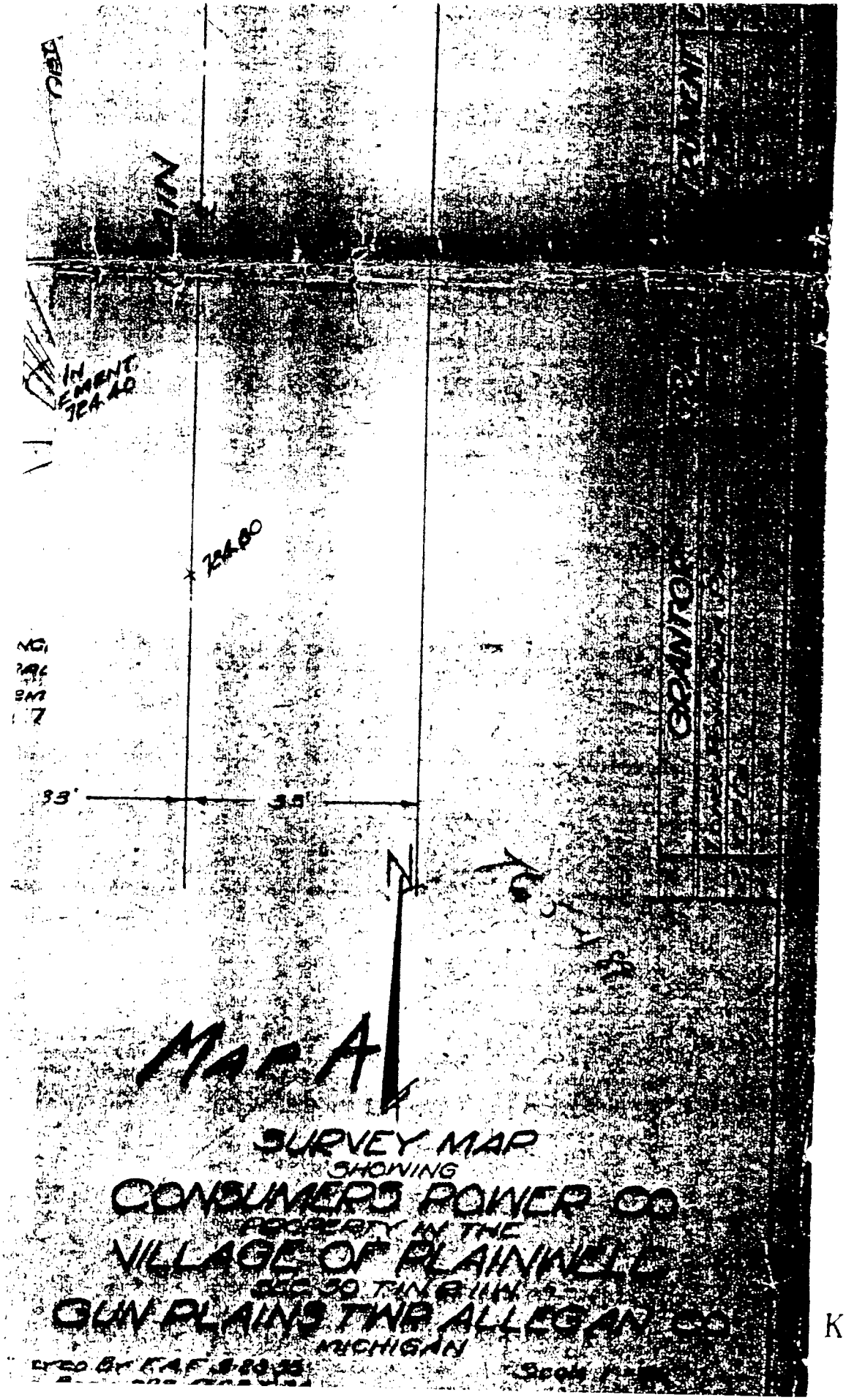
188 of Deeds, on page 5-6

Daugherty

Register of Deeds

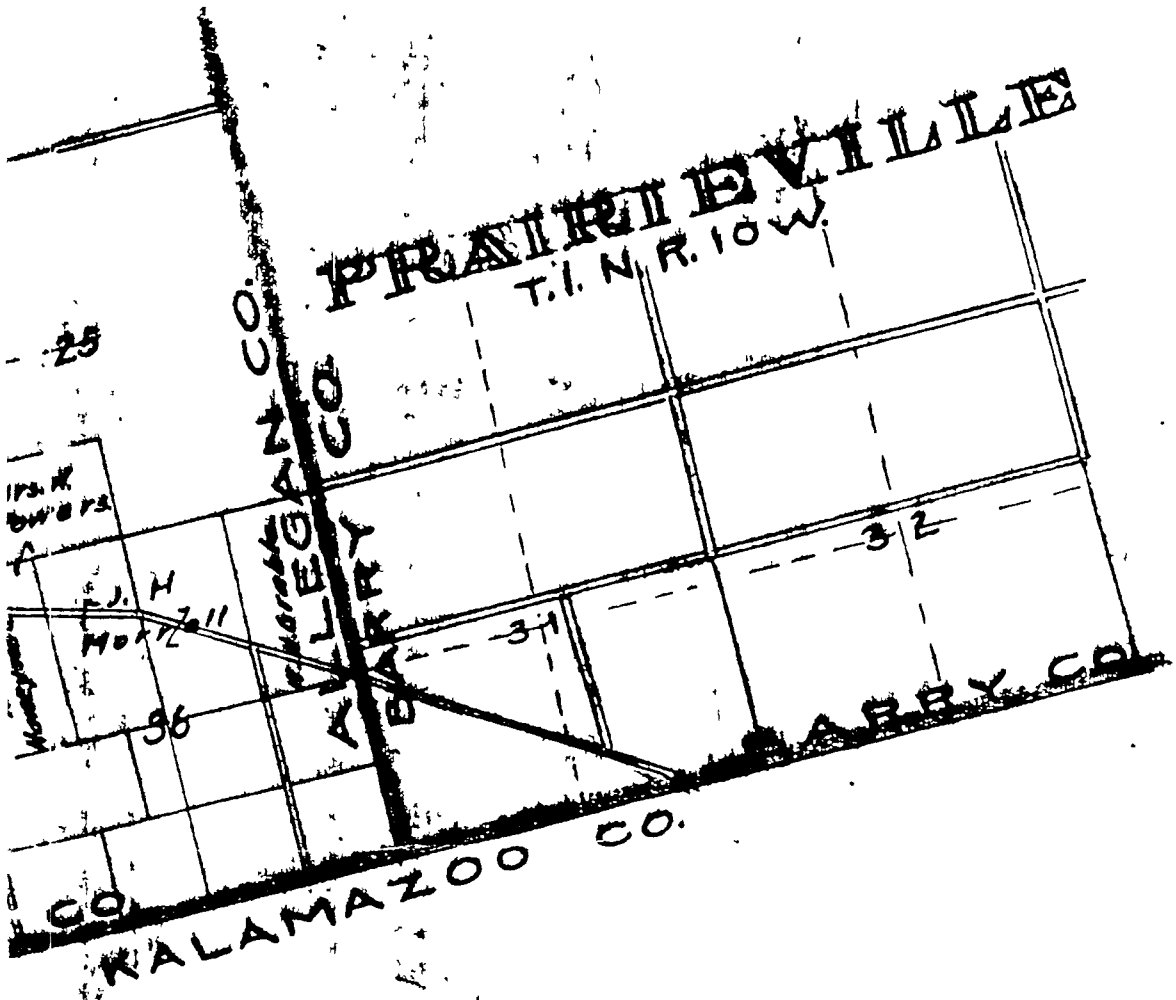
(REGISTER'S SEAL)

K00001043



IN
EMENT
724.40
724.80
33'
33'
GRANTOR
MAP A
SURVEY MAP
SHOWING
CONSUMERS POWER CO
PROPERTY IN THE
VILLAGE OF PLAINWELL
SEC 30 T1N R11W
GUN PLAINS TWP ALLEGAN CO
MICHIGAN

K00001044


PRAIRIEVILLE
T.1. N.R.10W.
ALLEGAN CO.
BARRY CO.
KALAMAZOO CO.
25
36
31
32

K00001045

MAP G

MAP OF THE

CENTRAL PART OF THE

VILLAGE OF PLAINWELL

MICHIGAN

K00001046

...il Water
6-4-10

Timb

...r sed

Form 47 50M 1-68

CLIPPING SHEET

CLIPPED FROM KALAMAZOO

CLIPPED BY LEL ARMSTRONG

DATE OF ISSUE OCTOBER 1, 1968 CITY KALAMAZOO

Consumers Power Company

Plainwell Mill Race Has Run Its Course

By ROGER DIXON
Gazette Correspondent

PLAINWELL — The Plainwell Mill Race, originally built by the Planing Lumber Co., is now idle after 135 years of service to the community.

The Race Dam, located off North Main Street a block from the intersection of M-89 and Main Street, was built on a branch of the Kalamazoo River in 1833. Two other dams south of town divert water through the race to the power station.

Over the years, the Race Dam has been used to create power to plane lumber, pump water to city residents, operate the paper mill, grind flour, saw timber, and generate electricity as a substation for Consumers Power Co.

The power station has been owned by a variety of organizations through the years, with the City of Plainwell, the Michigan Paper Co., and Consumers serving as co-owners in the plant's operation from 1872 until 1956.

At that time, Consumers Power sold their two-fifths share of the race to the Hamilton Paper Co., which had taken over the Michigan Paper Co., giving them 80 per cent ownership. Plainwell then tried to sell (for $1) their share to the paper company, which refused to buy.

However, an agreement was drawn up at that time which stated that the Hamilton Paper Co. would operate the race without expense to the city. Weyerhaeuser Co., which bought out Hamilton, assumed the same responsibility when they came to Plainwell.

And, the race has been used since that time, but according to company engineers, the wheels are no longer operable at the Race Dam and other dams are not needed. Therefore, the race is not being maintained and the Race Dam is open.

The Plainwell City Council, upon notification of the situation, forwarded a letter to Weyerhaeuser officially stating their opposition to letting the dams fall into a state of decay.

However, the letter is just that — a letter. It is official and is designed to free the city of responsibility if spring flooding develops due to excess water that would normally have been diverted into the race.

The race will not disappear immediately. But gradually the dams that created it will wash away from the Plainwell scene as a lack of upkeep and interest permits this segment of local history to join the river it has used for so many years.

OCT 2 1968

K00001047

Form 47 Dum 04

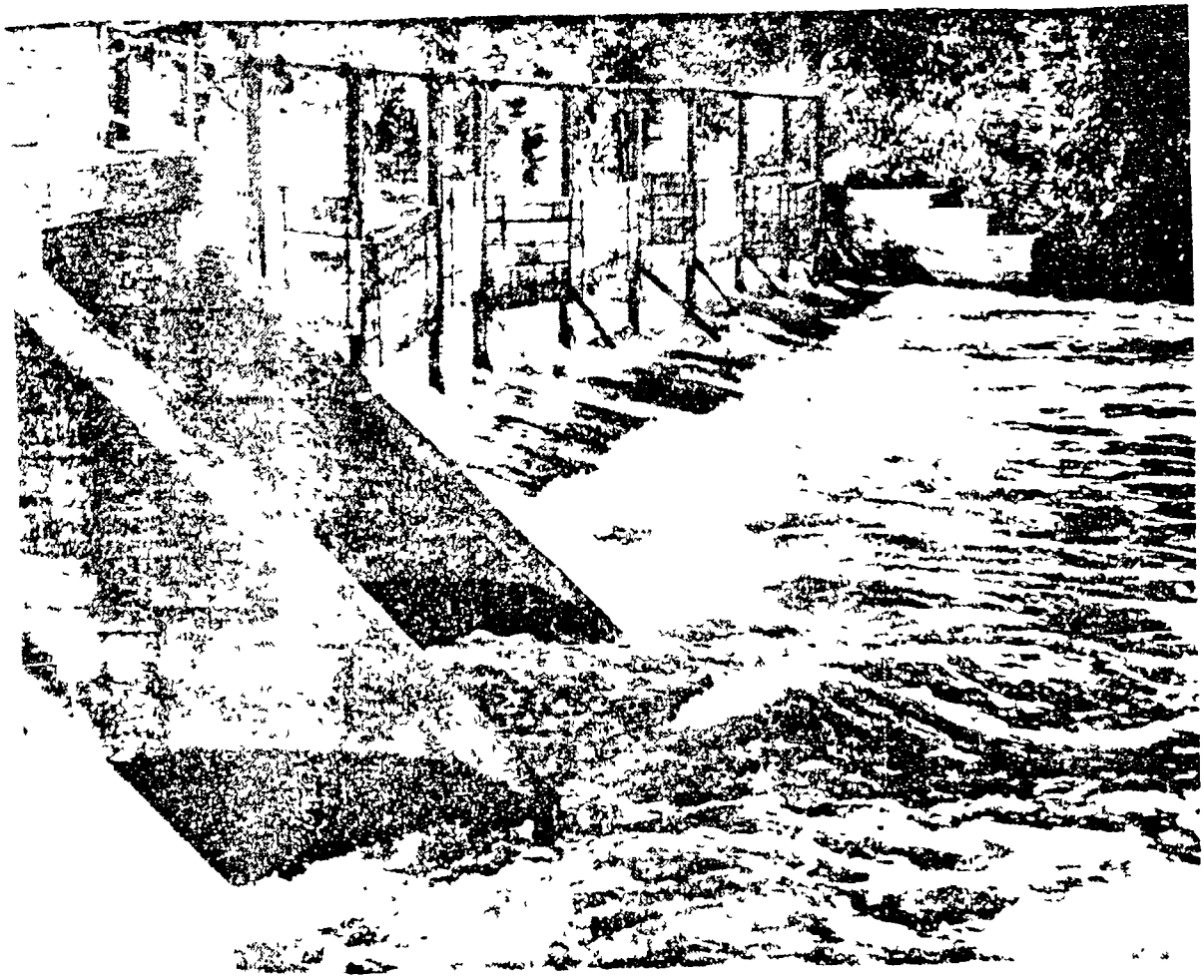
CLIPPING SHEET

CLIPPED FROM

CLIPPED BY

DATE OF ISSUE CITY

Consumers Power Company



PLAINWELL MILL RACE IDLING DOWN AFTER 135 YEARS OF SERVICE TO COMMUNITY
Employed to Create Power, Pump Water, Saw Timber, Grind Flour For Plainwell Citizens

Ross Paul photo

OCT 2 1968

K00001048

ER BASIN CODE	RETIRED PLANT/ SITE NAME	OWNER	STREAM,CONFLUENT STREAM	ST	INST. CAP. (KW)	HEAD (FT)	RETIRE- MENT DATE	BMIDP	CLASS.
343000MA0	THOMPSONVILLE	CHERRYLAND RUR ELEC	BETSIE R	MI	120		1947	22RTY	Q
343000PA0	THOMPSONVILLE	THOMPSONVILLE CITY	BETSIE R	MI	112			22RTY	Q
411000MA0	STRONACH	CONSUMERS POWER CO	MANISTEE R	MI	1,300	18		22RTY	Q
747000MA0	HESPERIA	MI PUB SERV CO	WHITE R	MI	149	10		22RTY	Q
748000MA0	WHITE CLOUD VILLA	WHITE CLOUD,VILLAGE OF	S BR WHITE R	MI	60	17		22RTN	Q
815000MA0	NEWAYGO	NEWAYGO,CITY OF ET AL	MUSKEGON R	MI	1,600	18	1968	22RPY	GD
816000EA0	ROWE	ROWE MFG CO	PENOYER CR,MUSKEGON R	MI	75	30		22RTN	Q
834000MA0	MUSKEGON RIVER	BIG RAPIDS,CITY OF	MUSKEGON R	MI	746	16	1965	22RPY	GD
834000PA0	BIG RAPIDS	BIG RAPIDS,CITY OF	MUSKEGON R	MI	1,000	20	1966	22RPY	GD
836000CA0	HERSEY	MCINTYRE,FRANK	HERSEY R	MI	104	11		22RTY	Q
836000JA0	REED CITY	REED CITY	HERSEY R	MI	260	17	1950	22RTY	GDD
837000GA0	HERSEY		MUSKEGON R	MI	4,800	18		22RTY	Q
837000NA0	EVART		MUSKEGON R	MI	2,500	11		22RTY	Q
843000PA0	FALMOUTH	GARDNER,GLEN	CLAM R	MI	130	12		22RTY	Q
1110000CA0	HUHN	D G HUHN & CO	LAKE CR	MI	75	22		22RTY	Q
1173000MA0	GRAND RAPIDS	GRAND RAPIDS,CITY OF	GRAND R	MI	400	17	1960	22RPY	GD
1175000MA0	GRAND RAPIDS	GRAND RAPIDS,CITY OF	GRAND R	MI		94	1956	22RTN	Q
1210000JA0	ADA	CONSUMERS POWER CO	THORNAPPLE R	MI	2,000	22	1970	22RTN	Q
1230000MA0	MIDDLEVILLE	CAMERON GAS & ELECTRIC	THORNAPPLE R	MI	350	12	1973	22RPY	G
1300000PA0	FREEPORT		GRAND R	MI			1935	22RTN	Q
1410000MA0	LOWELL	LOWELL,VILLAGE OF	FLAT R	MI	630	19	1972	22RTY	GDE
1410000TA0	SMYRNA	CONSUMERS POWER CO	FLAT R	MI	200	8		22RTY	Q
1421000MA0	KING MILLING	KING MILLING CO	FLAT R	MI	170			22RTN	Q
1470000MA0	FRANKLIN STREET	GREENVILLE,CITY OF	FLAT R	MI	700	12	1950	22RPY	GD
1510000MA0	BELDING	BELDING,CITY OF	GRAND R	MI			1962	22RTN	Q
1590000LA0	LYONS	CONSUMERS POWER CO	GRAND R	MI	440	10		22RTY	Q
1690000MA0	ELSIE	BOUCK, FLOYD W	MAPLE R	MI	60	7		22RTY	Q
1700000HA0	WAGAR	CONSUMERS POWER CO	GRAND R	MI	375	10		22RTN	Q
1810000CA0	PORTLAND	VALLEY CITY MILLING	LOOKING GLASS R	MI	112	7		22RTY	Q
1810000MA0	WACAUSTO DAM		LOOKING GLASS R	MI				22RTN	Q
1910000JA0	UNIVERSITY DAM		GRAND R	MI				22RTN	Q
1929700CA0	WILLIAMSTON	STEWART & PFEIFFLE	RED CEDAR R	MI	112	10		22RTY	Q
1986000QA0	WATERLOO	WATERLOO ICE CO	PORTAGE R,GRAND R	MI	100			22RTN	Q
1990000MA0	JACKSON	THORREZ & MAES MFG	GRAND R	MI	529		1946	22RTY	Q
1992000MA0	MI CENTER DAM		MICHIGAN CENTER CR,GRAND	MI				22RTN	Q
3220000MA0	HAMILTON		KALAMAZOO R	MI			1930	22RTN	Q
3233000HA0	ALLEGAN	CONSUMERS POWER CO	KALAMAZOO R	MI	650	12	1965	22RTY	Q
3233000JA0	ALLEGAN DAM	IMPERIAL CARVING CO	KALAMAZOO R	MI			1965	22RTN	Q
3233000KA0	BARDEEN	OTSEGO PWR CO	KALAMAZOO R	MI	892	12		22RTY	Q
3233000MA0	TROWBRIDGE	STS CONSULTANTS LTD	KALAMAZOO R	MI	1,500	22	1965	22RPY	Q
3233000PA0	OTSEGO DAM	ALLEGAN,COUNTY OF	KALAMAZOO R	MI	1,700	15	1965	22RPN	GD
3233000SA0	PLAINWELL 1	LANGE,ERIC H	KALAMAZOO R	MI	900	13	1965	22RPY	GD
3235000MA0	PLAINWELL 2	HAMILTON PAPER CO	KALAMAZOO R	MI	200	10	1965	22RTY	Q
3250000PA0	HORTON MILL	SEYMOUR,G R	KALAMAZOO R	MI	23	8		22RTN	Q
3279000HA0	BATTLE CREEK	CONSUMERS POWER CO	KALAMAZOO R	MI	175	10	1952	22RTY	Q

K00001049

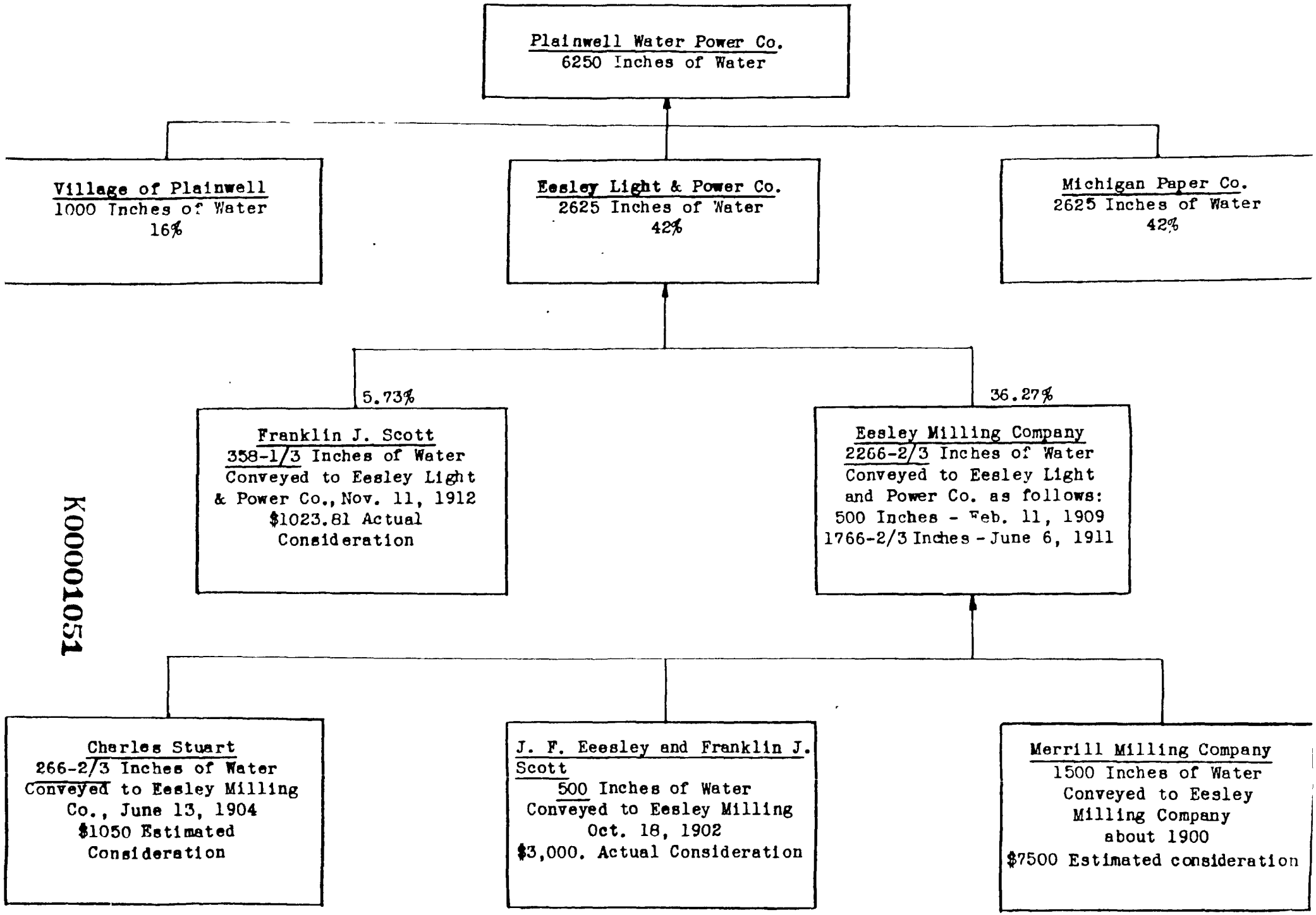
- RECAPITULATION.-

Michigan Paper Company through Corbyn now owns as first right the following inches of water,	400
H.H.Brownell through Patterson now owns first right,	100
Eesley Light and Power Company now owns first right, inches,	100
H.H.Brownell through Patterson owns, subject to 600 inches,	150
Brownell Milling Company through Cushman owns, subject to first right of 750,	600
Brownell Milling Company now owns, subject to 1550 inches,	200
Eesley Light and Power Company, through Curtis, subject to 1550 inches, now owns, inches,	100
Michigan Paper Company, through Cushman-Lyon, subject to 1750 now own, inches,	100
Eesley Light and Power Company, through Cressy & Curtis, now own common right, inches,	66 2/3
Michigan Paper Company, through Page & Lyon, now own inches,	1000
Village of Plainwell, through Corbyn, Dunham & Corbyn, subject to rise and fall of Kalamazoo River, inches,	1000
J.F.Eesley Milling Company, through Dunham, Corbyn & Corbyn and Merrill & McCourtie, subject to rise and fall of the Kalamazoo River and subject to the rights of parties purchasing prior to August 28th. 71, either by deed or contract,	1000
J.F.Eesley Milling Co., through Dunham, Corbyn & Corbyn and Merrill & McCourtie, inches,	1000
Michigan Paper Co., through Dunham & Corbyn,	433 1/3

as of c. 1880

K00001050

HISTORY CHART OF EESLEY LIGHT AND POWER COMPANY WATER RIGHTS



K00001051

PLAINWELL HYDRO PLANT NO. 2
Refer to W. B. Tippy's Letter, March 4, 1943

The Plainwell Hydro Plant Property is set up on books of company as follows:

Land	$ 1,633.44	
Structures	2,377.68	
Dams	25,021.73	
Hydro Equipment	20,824.01	
	$ 49,856.86	As of December 31, 1941
Hydro Equipment	112.95	Added in 1942
	$ 49,969.81	As of December 31, 1942

This plant was acquired January 1, 1934 from the Lower Peninsula Power Company.

Plant Capacity

No. 1 Allis-Chalmers Generator, 200 kva (150 kw).
Turbine, Allis-Chalmers, 62" vertical runner, 200 hp.

The water from dam is brought to plant through a canal about one mile long and the dam and the canal are owned by an association:

Consumers Power Company	-	2,625 parts	- 42%
Michigan Paper Company	-	2,625 "	- 42%
Village of Plainwell	-	1,000 "	- 16%

The average yearly output by Consumers Power Company is estimated at 943,000 kwh, an average of 107 kw per hour.

Rate 16 (Annual Load Factor)

Assume that output could be obtained by generating during hours in which demand is determined at 125 kva - not more than 137.5 kva other periods.

Earnings under rate	$ 8,569.00
Average Operating Costs	2,927.00
Net Income	$ 5,642.00

A suggested value for property - $ 56,500.00

K00001052

Rate 14 (Industrial Power Service)

Monthly Billing Demand -	125 kva
Earnings Under Rate -	$11,009.00
Average Operating Costs-	2,927.00
	$ 8,082.00

A suggested value for property - $81,000.00

If property should be considered as available - For Sale or Lease:

(a) Sell for $ 56,500.00 - $ 81,000.00.
Provision in deal that power generated would not be used in competition with the power of Consumers Power Company.

(b) If sold, tie up by contract, surplus power that will be available. Michigan Paper Company advises that they only want power week-ends.

(c) Consider leasing the property for $ 500.00 per month - Michigan Paper Company to pay all taxes, insurance and maintenance of property and sell surplus.

Recommendations

Consumers Power Company tried to purchase the electric property at Plainwell many times, before it actually acquired same. Unless a sale can be consummated for a good price, and Consumers Power Company properly protected so that in the future it will not be subject to adverse competition (Michigan Paper Company might contract to supply power for the village water pumping), it would seem best to forget same. Any offered price to Michigan Paper Company may have an adverse effect on Tax Assessment.

Compiled at Jackson, Michigan,
Compiled by P.P.M. & H.G.H.,
April 16, 1943.

TROWBRIDGE DAM
J.Bernier

INFORMATION REQUESTS

1. Identify all persons consulted in the preparation of your responses to these Information Requests.

   James R. Bernier, Sr. Natural Resource Manager – Hydro Operations
   Robert M. Neustifter, Attorney – Regulatory Section
   Margaret J. Kaiser, Corporate Records

2. Identify all documents consulted, examined, or referred to in the preparation of your responses to these Information Requests, and provide copies of all such documents If, in lieu of or along with a textual response to any specific Request, you refer to a document that you believe contains information responsive to that Request, you must identify the specific location (page number, paragraph number) in the document where responsive information can be located.

   See general objections

3. If you have reason to believe that there may be any person able to provide a more detailed or complete response to any Information Request, or who may be able to provide additional responsive documents, identify any and all such persons.

   None known.

4. Identify and generally describe each Consumers Energy facility at or near the Site, as that term is define in Attachment 3 (Definitions). For each Consumers Energy facility, provide:

   Trowbridge Dam

   a. the address of the facility;

      SW¼, Section 12, T1N, R13W, Trowbridge Township, Allegan County, MI

   b. past and present EPA ID numbers, RCRA numbers and NPDES numbers for the facility; and

      None known.

K00001054

c the current owner of the facility

State of Michigan, Department of Natural Resources (MDNR)
Stevens T. Mason Building
P O Box 30028
Lansing, MI 48909-7528

5. Identify all prior owners and operators of each facility, and their dates of ownership and/or operation.

Consumers Power Company (now Consumers Energy), 1899 to September 29, 1967

6. Provide copies of all local, state, and federal environmental permits ever granted for each facility or any part thereof (e g., RCRA permits, NPDES permits, etc)

None known.

7. For each facility, identify and describe all types of monitoring reports, monitoring data, and documentation sent to or received by federal or state regulatory authorities regarding any materials containing hazardous substances used, generated, stored, treated or disposed at or from the facility.

None

8. Identify and describe the nature of all past and current operations and production processes at each facility. Identify, if available, all current and previous SIC codes associated with each facility.

The facility was used for the production of hydroelectric power until December 30, 1965, SIC code 4911.

9. Identify each product produced at the facility. Further identify the mass quantity of each product produced on an annual basis.

Electric power was produced – quantity unknown Installed capacity was 1,500 kw..

10. Identify and describe any and all activities or efforts to take production facilities out of operation, and include the dates of each such activity or effort.

Available information indicates that the generator was disposed in 1966 or 1967, after production ceased and prior to the sale to MDNR. The turbines were left in place, but MDNR is believed to have undertaken subsequent demolition activities. The disposition of station transformers and other equipment is unknown.

11 For each facility, identify and provide any data, estimates, analyses or other information regarding any material used, treated, stored or disposed that contained or may have contained PCBs. To the extent available, provide all such data, estimates, analyses or other information on an annual basis.

None known

12 For each facility, identify any data, estimates, analyses or other information regarding the concentration of PCBs in any material used, treated, stored or disposed there To the extent available, provide all such data, estimates, analyses or other information on an annual basis.

None known

13 To the extent not already provided in response to Request #11, provide the following information:

a. the type and quantity, on an annual basis, of any oils or other lubricants used, treated, stored or disposed at each facility that are known or suspected to have contained PCBs;

None known.

b. the number, handling and disposition of all transformers and conductors at each facility; and

Unknown

c. data, analysis and other information regarding leaks, discharges or other releases from any transformer, conductor or other equipment using oils or lubricants at each facility.

None known

14. To the extent not already provided in response to Request #12, identify any data, estimates, analyses or other information regarding the concentration of PCBs in the materials identified in your response to Request #13.

None known.

15. Describe the procedures used by you or anyone on your behalf to test PCB concentrations in the materials identified in your response to Requests #11 and #13, above. Include in your response test methods and dates.

None

K00001056

16 Describe the procedures followed by you, or anyone on your behalf, to prevent, mitigate or address the release or threat of release of any material identified in your response to Requests #11 and #13, above.

Not applicable

17. Provide a figure delineating the groundwater flow direction on your property.

No information available.

18. Identify the depth(s) to groundwater at your property.

No information available

19. For each production process at each facility, identify and describe each waste stream from its creation to final disposition.

Used oil from generator bearings is believed to have been recycled.

20. For each facility, identify all past and present waste units (e.g., underground storage tanks, above ground storage tanks, waste piles, landfills, surface impoundments, lagoons, dry wells, septic systems, floor drains, ponds, pits, machine pits, container storage areas). For each such waste unit identified, provide the following information.

a The location of all past and present waste units whether currently in operation or not.

None known

b. The type of unit (e.g., underground storage tank, lagoon, dry well, etc)

None known

c. The dates that the unit was in use

None known

d. The purpose of past and/or present usage (e.g , storage, spill containment, waste disposal).

None known

e. The quantity and type(s) of materials (e.g., manufacturing materials, wastes, hazardous substances, pollutants and contaminants) located in each unit.

None known

K00001057

f. If the unit is no longer in use, describe how was such unit closed, and what actions were taken to prevent or address potential or actual releases of waste constituents from the unit(s). Include all analytical data from such closure

None known

21. For each facility, identify any data, estimates, analyses or other information about the presence of PCBs in each waste stream created To the extent available, provide such information on an annual basis.

None known.

22 For each facility, identify any data, estimates, analyses or other information about the concentration of PCBs in each waste stream created To the extent available, provide such information on an annual basis.

None known.

23. For each facility, describe the procedures used by you, your predecessor(s), or anyone on behalf of you or a predecessor, to test the PCB concentration in each waste produced, stored, treated or disposed at that facility. Include in your response test methods, media tested, and dates.

None

24. For each facility, identify each off-Site location at which wastes that contained or potentially contained PCBs were disposed. Further identify the dates of each such off-Site disposal, and the nature, quantity and PCB concentration of any such wastes

None known.

25. For each facility, and for each waste produced, stored, treated or disposed at that facility.

a identify the PCB concentration of any waste;

None known

b if the waste contained detectable concentration of PCBs, describe each occasion on which a release of such waste occurred or threatened to occur; and

None known

c. describe the procedures and measures taken by you, or anyone on your behalf, to prevent, mitigate or address the release or threat of release of PCBs or other hazardous materials

None known

K00001058

26. For each release described in response to Request #25 above, describe the quantity of PCB-contaminated wastes that were released or threatened to be released, and state whether any PCBs contained in the wastes contributed to the presence, or threatened to contribute to the presence, of PCBs in the Kalamazoo River.

None

27. For each facility, identify any data, estimates, analyses or other information about the history of flooding, or any other infiltration of water, from the Kalamazoo River.

The dam was in the Kalamazoo River

28. To the extent not provided in your response to Request #19, describe each wastewater stream, waste oil stream, and wastewater/waste oil mixture stream at each facility, from its creation in the production process to final discharge point In your response include a complete description of the fate of any wastewater stream, waste oil stream, and wastewater/waste oil mixture stream produced at each facility (e.g., on-site treatment, discharge to a POTW, discharge to a storm sewer outfall, direct discharge to the Kalamazoo River).

No known wastewater streams except employee sanitary waste

29. To the extent not provided in response to Requests #19 and #28, identify the quantity of all (a) wastewater, (b) waste oil, and (c) wastewater/waste oil mixture produced, on a monthly basis, from each production process at each facility

None known.

30. To the extent not provided in response to Requests #21 and #22, identify any data, estimates, analyses or other information about the presence and/or concentration of PCBs in the wastewater, waste oil and wastewater/waste oil mixture produced from each production process at each facility. To the extent available, provide such information on a monthly basis.

None.

31. For each facility, identify any data, estimates, analyses or other information regarding the effectiveness of the treatment system(s) at that facility, if any, to remove PCBs from each wastewater stream, waste oil stream and wastewater/waste oil mixture stream

None

32. Identify any data, estimates, analyses or other information regarding procedures and measures taken by you, or by anyone on your behalf, to prevent, mitigate or address the release or threat of release of PCBs from wastewater, waste oils, or wastewater/waste oil mixtures to the Kalamazoo River

Unknown.

K00001059

33. For any POTW identified in response to Request #28, provide, for each facility and on a monthly basis, all information regarding the amount of wastewater, waste oil and wastewater/waste oil mixture discharged to a POTW, the concentration of PCBs in the wastewater, waste oil and wastewater/waste oil mixtures discharged to the POTW from that facility and, to the extent such information is available, the PCB concentration in the effluent from the POTW.

Not applicable.

34. For each facility, identify each pipe, conduit, storm sewer, sewer line or other outfall that, directly or indirectly, terminates in the Kalamazoo River or its tributaries, past or present, into which treated, untreated or bypassed wastewater, waste oil, or any other waste (including wastewater/waste oil mixtures), from that facility was discharged. Include a figure identifying the source and location of each pipe, conduit, storm sewer, sewer line or other outfall.

None known.

35. For each pipe, conduit, storm sewer, sewer line or other outfall identified in your response to Request #34, identify dates of use and each outfall's source at the facility. Further provide, on a monthly basis, the volume of wastewater, waste oil or other waste (including wastewater/waste oil mixtures) discharged from the facility into each pipe, conduit, storm sewer, sewer line or other outfall.

Not Applicable

36. For each pipe, conduit, storm sewer, sewer line or other outfall identified in response to Request #34, identify all influent and effluent quality data. Include to the extent such information is available, the PCB concentration of all influent and effluent, on a monthly basis.

Not Applicable

37. For each pipe, conduit, storm sewer, sewer line or other outfall identified in response to Request #34, identify all bypasses or spills into the Kalamazoo River or its tributaries.

Not Applicable

K00001060

38. For each facility, identify any data, estimates, analyses or other information regarding the mass quantity of PCBs disposed into the Kalamazoo River as a result of wastewater, waste oil or wastewater/waste oil discharges from the production processes. To the extent available, provide such information on an annual basis

None known.

39 For each facility, identify any data, analyses or other information regarding the nature and quantity of hazardous substances, including PCBs, in the sediments, soil, groundwater and surface water at that facility Identify the concentration levels of PCBs for all samples collected at the facility or at any property abutting the facility

None.

40. For each facility, provide information regarding any environmental response activities involving or potentially involving PCBs or PCB-containing materials conducted at that facility, or on the Kalamazoo River, its tributaries, or other abutting property, at your direction or under your control. Indicate the date(s) on which such response activity was performed, what work was performed, the expenses incurred, the results of the response activity and, if it has not concluded, when the environmental response is expected to conclude.

None.

41. Have you incurred any costs associated with the investigation, remediation or other action to address contamination at the Site or any portion thereof? If yes, identify all costs incurred by you through the date of this Information Request

No.

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THIS INDENTURE, Made this [illegible] day of [illegible], 1967, Between CONSUMERS POWER COMPANY, a corporation duly authorized to do business in Michigan, with its principal office therein at 212 West Michigan Avenue, Jackson, Michigan, as first party, and the STATE OF MICHIGAN, Lansing, Michigan, as second party,

WITNESSETH:

That said first party, for and in consideration of the sum of One Dollar ($1.00) and other good and valuable considerations, the receipt thereof is hereby confessed and acknowledged by first party, first party does by these presents bargain, sell, remise, release and QUITCLAIM unto the said second party, all those certain pieces or parcels of land situate in the Townships of Otsego and Trowbridge, County of Allegan and State of Michigan, known and described as follows, to wit:

Parcel 1. (Kronberg)

Commencing on the west line of Section twelve (12) in Town one (1) North of Range thirteen (13) west at a point six hundred eighty two (682) feet south of the west quarter post of said section, thence east parallel with the east and west quarter line of said Section, thirteen hundred thirty two (1332) feet more or less to a point on the face of the bluff at an elevation of one hundred eleven and one-half (111 1/2) feet (Allegan Village Datum), thence easterly along the face of the bluff at said elevation to the north and south quarter line of Section twelve (12) thence south along quarter line to center of Kalamazoo River, thence westerly in the center of the river to west line of said Section twelve (12), thence north on Section line to the place of beginning, excepting therefrom a parcel of land located in the Northwest one-quarter (NW-1/4) of the Southwest one-quarter (SW-1/4) of Section twelve (12), Township one (1) North, Range thirteen (13) West, described as beginning at a point on the West line of said section, seven hundred fifteen (715) feet distant South of the West quarter corner of said section; running thence East parallel with the East and West quarter line of said section, two hundred fifty (250) feet; thence South parallel with the West line of said section, two hundred twenty-five (225) feet; thence Southwesterly in a straight line to a point on the West line of said section, which point is two hundred ninety (290) feet distant South of the place of beginning, said distance being measured along the West line of said section; thence North along the West line of said section, two hundred ninety (290) feet to the place of beginning.

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Parcel 2. (Sherwood)

The south six and two thirds (6 2/3) acres of the west twenty acres of that part of the south east quarter of section twelve (12) in Town one (1) North Range thirteen (13) west, lying north of the Kalamazoo River. Said six and two thirds (6 2/3) acres are bounded on the north by the top of first bluff or terrace north of the river, on the east and on the west by the boundaries of said twenty acres, and on the south by the Kalamazoo River.

Parcel 3. (Rogers)

The north fraction of the south east quarter of Section twelve (12) in Town one (1) North Range thirteen (13) west, except the west twenty (20) acres thereof, also excepting eight and thirty four one hundredths (8 34/100) acres in the northwest corner hereof, bounded on the north by the east and west quarter line of said Section twelve (12) on the south east by the top of the bluff and on the west by the east line of the west twenty (20) acres of the north fraction of south-east quarter of said Section twelve (12).

Hereby intending to convey all rights in the islands in the river adjacent to above described land.

Parcel 4. (Vilkes)

Eleven and one-half (11 1/2) acres in south-east corner of south east quarter of north east quarter of Section twelve (12) in Town one (1) North Range thirteen (13) West, said eleven and one half (11 1/2) acres being bounded on the east by township line, on the south by east and west quarter line of said Section twelve (12) and on the northwesterly side by the top of the first bluff, said line being more fully shown by survey and map made by W. G. Pargo of Jackson, Michigan, said description not to include more than eleven and one half (11 1/2) acres.

Parcel 5. (Strong-Torkin)

The southwest fraction of the southwest quarter of Section twelve (12) in Town one (1) North Range thirteen (13) west except the south twenty five (25) acres thereof, being the same property conveyed to Kalamazoo Valley Electric Company by deed from Chas. W. Trisbie and wife recorded in Liber 137 of Deeds at pages 33-34, Allegan County records.

Parcel 6. (Merchant)

All that part of the southeast fraction of the south-west quarter of Section twelve (12) in Town one (1) North Range

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thirteen (13) west bounded as follows; On the north by the Kalamazoo River, on the east by the north and south quarter line of Section twelve (12) on the south and southwest following the top of the bluff to the point where it meets the river at the northwest corner of the above described fractional forty (40).

Parcel 7. (Williams)

So much of the following described land as lies north of the top of the bluff to-wit, The south fraction of the southeast quarter of Section twelve (12) in Town one (1) north Range thirteen west except the east sixty-two (62) acres thereof, being the same land conveyed to Chas. F. Frisbie by Deed dated July 30, 1897 recorded August 7, 1897 in Liber 133 of Deeds, page 400, Allegan County records.

Parcel 8. (Ames)

The west twenty (20) acres of the east sixty two (62) acres of that part of the southeast quarter of Section twelve (12) in Town one (1) north Range thirteen (13) west, lying south of the Kalamazoo River, except eleven and forty six one hundredths (11.46) acres of same lying south of the top of the bluff.

Parcel 9. (Stewart)

One and one-half acres (1 1/2) acres of land in Northwest corner of southeast quarter of southeast quarter of Section twelve (12) in Town one (1) North Range thirteen (13) West, bounded on the north by the Kalamazoo River, on the margin thereof at ordinary stage of water, on the west by land owned by Cyrus W. Ames, on the south and east by the bottom of the second bluff or bank at an elevation of one hundred nine and one-half (109 1/2) feet, Allegan Village Datum, being the same land conveyed to Charles F. Frisbie by deed dated June 17, 1897 recorded June 22, 1897 in Liber 133 of Deeds, page 304, Allegan County records.

Parcel 10. (Williams)

That part of the east twenty one acres of the south east quarter of Section twelve (12) in Town one (1) North of Range thirteen (13) west described as follows: Bounded on the north by the Kalamazoo River, on the east by the east line of Section twelve on the south by the top of the bluff and on the west by the east line of Henry Stewart's land, the lands herein conveyed being the same land conveyed to Charles F. Frisbie by deed dated August 4, 1897, recorded August 7, 1897 in Liber 133 of Deeds, page 399, Allegan County records.

Parcel 11. (Eldred)

That part of the west half of the west half of Section seven (7) in Town one (1) North of Range twelve (12) West, north of the Kalamazoo River described as follows,-

Bounded on the south by the Kalamazoo River, on the west by the west line of Section seven (7) on the east by west line of Hannah Seward's land, being the West one-eighth line of Section seven (7), and on the north by the bottom of the bluff at an elevation of one hundred nine and one-half, (109 1/2) feet (Allegan Village Datum) intending to include the right of first parties in the islands adjoining said premises. Containing about twenty seven (27) acres of land. Said boundaries being more fully shown by topographical map made by W. G. Fargo.

Parcel 12. (Seward)

All of the following described land lying south and east of the top of the bluff, to-wit,- Commencing at the north-west corner of the east half of the north-west quarter of Section seven (7) in Town one (1) North Range twelve (12) West, running thence east to center of old plank road leading from Allegan to Otsego, thence south-easterly in center of said road to a road intersecting first named road, thence southerly in the direction of said intersecting road and in the center thereof to the Kalamazoo River, thence down said river to west line of east half of north-west quarter Section seven (7); thence north on eighth line to beginning, subject to Right of Way dated October 23, 1930, granted by Consumers Power Company to Grover C. Dillman, State Highway Commissioner of the State of Michigan, the lands herein conveyed being part of the lands conveyed to Charles H. Frishie by Deed dated June 10, 1897, recorded June 26, 1897 in Liber 133, page 311, Allegan County records.

Parcel 13. (Wood)

Commencing at a point thirty nine (39) rods and twelve (12) links south three (3) degrees thirty (30) minutes west from the north quarter post of Section seven (7) in Town one (1) North Range twelve (12) West, said point being at the intersection of the highway leading from Allegan to Otsego with the River Road; thence south eighteen and one half (18 1/2) degrees west to Kalamazoo River, thence along the Kalamazoo River southerly to the east and west quarter line of said Section seven (7); thence east along quarter line to a point one hundred thirty (130) rods west of the east quarter post of said Section seven (7); thence north eight and one fourth (8 1/4) degrees east to center of highway leading from Allegan to Otsego, thence northwesterly along center of said highway to place of beginning, subject to Right of Way dated October 27, 1930, granted by Consumers Power Company to Grover C. Dillman, State Highway Commissioner of the State of Michigan.

Parcel 14. (Kelley)

Commencing on the north east corner of land formerly owned by Solomon C. Butters, being about ten (10) rods east of the north quarter post of Section seven (7) in Town one (1) North Range twelve (12) west, thence east to eighth line, thence south thirty two (32) rods; thence west thirty (30) rods; thence south eight and one fourth degrees (8 1/4) west to center of Kalamazoo and Allegan Plank Road; thence westerly in center of said road to the south east corner of said Butter's land, thence north-easterly to place of beginning, subject to Right of Way for highway purposes dated October 23, 1930 granted by Consumers Power Company to Grover C. Dillman, State Highway Commissioner of the State of Michigan.

Also the south west quarter of the south east quarter of Section six (6) in Town one (1) North Range twelve (12) west, containing fifty four (54) acres more or less.

Excepting from said two described parcels, so much of same as lies above an elevation of one hundred nine and one-half (109 1/2) feet, Allegan Village Datum. Containing twenty six and one half (26 1/2) acres of flowage more or less. The lands conveyed in this parcel 14 are part of the lands conveyed to Charles W. Trisbie by deed dated July 29, 1897, recorded August 19, 1897 in Liber 133, page 429, Allegan County records.

Parcel 15. (Guest)

So much of the following described land as lies west of the bottom of the bluff and south of the highway, leading from Allegan to Otsego, to wit,- Commencing on the quarter line one hundred thirty (130) rods west of the east quarter post of Section seven (7) in Town one (1) North Range twelve (12) West, and running thence east fifty (50) rods to eighth line; thence north on said eighth line one hundred twenty eight (128) rods to lands of Caleb Kelley, thence west thirty (30) rods, thence south eight and one fourth (8 1/4) degrees west to place of beginning, subject to Right of Way for highway purposes, dated October 23, 1930, granted by Consumers Power Company to Grover C. Dillman, State Highway Commissioner of the State of Michigan.

Also the north fraction of the southeast quarter of Section seven (7) in said Town and Range; except so much of same as lies east of the bottom of the bluff (bottom of the bluff in the last two descriptions to be taken at an elevation of one hundred nine and one-half (109 1/2) feet, Allegan Village Datum.) Which said last described fractional parcel is partly in the southwest quarter of Section seven (7).

Parcel 16. (Remain)

The north seventy-three and fifty-three one-hundredths (73.53) acres of the southwest fractional quarter of Section

seven (7) in Town one (1) North Range twelve (12) west, except twenty eight (28) acres more or less lying above an elevation of one hundred eleven and one-half (111 1/2) feet, Allegan Village Datum.

Parcel 17. (Stockdale)

Twelve (12) acres off the east end of the south forty five (45) acres of the southwest fraction of Section seven (7) in Town one (1) North Range twelve (12) west said twelve acres being bounded as follows, on the north by land of Charles Germain, on the east by the Kalamazoo River, on the south by land of Cornelius Engles; on the west by the top of the first bluff; also conveying any rights acquired by first parties in an island adjoining said premises in Kalamazoo River, being the same land conveyed to Charles K. Trisbie by deed dated July 14, 1897 and recorded August 19, 1897 in Liber 133 of Deeds, page 431, Allegan County records.

Parcel 18. (Walter)

Three and fifty one one hundredths (3.51) acres of land on south side of north half of the south east quarter of Section seven (7) Town one (1) North Range twelve (12) west bounded as follows: On the south by the south line of said eighty (80) acres, on the north and northeast and northwest by a line along the foot of the bluff at an elevation of one hundred nine and one half (109 1/2) feet, Allegan Village Datum.

Parcel 19. (Hare)

So much of the following as lies below an elevation of one hundred and nine and one-half (109 1/2) feet Allegan Village Datum, the south fractional half of the southeast quarter of Section seven (7) in Town one (1) North Range twelve (12) west containing about fifty-two and seventy nine one hundredths (52.79) acres of flowage.

Parcel 20. (Switzenberger)

A piece of land containing about five and one-half (5 1/2) acres in the northwest corner of the south east quarter of the south east quarter (1/4) of Section six (6), Township one (1) North Range twelve (12) west, said piece of land being bounded on the west by the east line of land formerly owned by Caleb Kelley, on the north by the North line of said south east quarter (1/4) of said south east quarter (1/4) of Section six (6) and on the south and east by a line following the top of the rise of the land. Said south and east line being more fully shown by the topographical map of the Kalamazoo River, made by W. G. Harpo, March, 1877, as surveyed by him, being the same land conveyed to Charles K. Trisbie by deed dated November 1,

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1897, recorded January 13, 1898 in Liber 135 of Deeds, page 180, Allegan County records.

Parcel 21. (Harter et al.)

Two (2) acres of land, more or less, lying in the South west corner of the South half of the South west quarter of Section eight (8) Town one (1) North Range twelve (12) West. Said land lying below an elevation of one hundred twelve and one-half (112 1/2) feet Allegan Village datum.

Parcel 22. (Cornelius Engles)

All that part of the east half of the northwest quarter of Section eighteen (18) in Town one (1) North Range twelve (12) west bounded as follows,- On the north by the north line of said Section eighteen (18) on the east by the Kalamazoo River, on the south and west by a line along the bluff at an elevation of one hundred nine and one-half (109 1/2) feet Allegan Village Datum, containing six and ninety-eight one hundredths (6.98) acres of land.

Parcel 23. (Augustus C. Engles)

Forty three one hundredths (43/100) of an acre on the northeast quarter of Section eighteen (18) Town one (1) North Range twelve (12) west.

Bounded on the north by the Kalamazoo River, on the east by lands formerly owned by Mrs. Charles Merriam, on the south by a line along the bluff at an elevation of one hundred nine and one-half (109 1/2) feet Allegan Village Datum, and on the west by the north and south quarter line of said section eighteen (18), being the same lands conveyed to Charles H. Frisbee by deed dated July 27, 1897 and recorded July 28, 1897 in Liber 139 of Deeds, page 372, Allegan County records.

Parcel 24. (Merriam)

So much of the following described land as lies north of the center of the highway, and east of land conveyed to Augustus C. Engles, to-wit,- The west sixty three and forty two and one-half one hundredths (63.42½/100) acres of the north sixty acres of the west half of the south east quarter and west half of the northeast quarter lying South of the Kalamazoo River of Section eighteen (18) in Town one (1) North Range twelve (12) west.

Parcel 25. (Levins)

So much of the following described parcels of land as lie below an elevation of one hundred nine and one-half

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(109 1/2) feet Allegan Village Datum, to-wit,- That part of the east half of the northeast quarter of Section eighteen (18) in Town one (1) North Range twelve (12) west, that lies south of the Kalamazoo River (except twenty (20) acres off from the west side thereof) and that lies north of the top of the bluff. Said bluff being most of the way just south of and running nearly parallel with the highway. Also a triangular piece of land off the west half of northwest quarter of Section seventeen (17) in said Town and Range, bounded on the South by the highway, on the west by the west line of Section seventeen (17) and on the east and north by the Kalamazoo River, Also a triangular piece of land on the southeast corner of the said east half of the northeast quarter of said Section eighteen (18) bounded on the east by the section line, on the south by the quarter line and on the north and west by the bluff. All of that part of the east forty three and forty two one hundredths (43 42/100) acres of the north sixty (60) acres of the west half of the south east quarter and west half of the northeast quarter lying South of Kalamazoo River of Section eighteen (18) in Town one (1) North Range twelve (12) West bounded as follows, On the north by the Kalamazoo River; on the east by the west line of land formerly belonging to A. Adams, on the south by the center of the highway and on the west by land of Elizabeth Merriam.

Parcel 26. (A. Adams)

One and sixty one-hundredths (1.60) of an acre of land off the following description lying below an elevation of one hundred nine and one-half (109 1/2) feet Allegan Village Datum, to-wit, The north eight (8) acres of following; Commencing at southwest corner of east half of northeast quarter of Section eighteen (18) Town one (1) North Range twelve (12) west thence north to bank of River, thence easterly with bank of River to a point to give sufficient width east and west to contain twenty (20) acres, then south to quarter line, then west to beginning.

Parcel 27. (Rice)

So much of the following as lies below an elevation of one hundred nine and one-half (109 1/2) feet, Allegan Village Datum.

The northwest fraction of the north east quarter of Section eighteen (18) in Town one (1) north range twelve (12) west, containing thirty four and thirty eight one hundredths (34.38) acres more or less by United States survey.

Being twenty one and thirty four one hundredths (21.34) acres of flowage.

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Parcel 28. (Benjamin Johnson)

So much of the following as lies below an elevation of one hundred and eleven (111) feet (Allegan Village Datum) intending to convey all the land that will be flowed by raising a dam on the Kalamazoo River in Section twelve (12) Township of Trowbridge, Allegan County, to an elevation of one hundred nine and one-half (109 1/2) feet (Allegan Village Datum). All of those certain pieces or parcels of land situate in and being in the Township of Otsego, County of Allegan, and State of Michigan and described as follows,-

The north east quarter of the south east quarter of Section eighteen (18) in Town one (1) North of Range twelve (12) West according to the Government Survey thereof, Also the south west fraction of the north west quarter of Section seventeen (17) excepting a piece heretofore deeded by Boyd Coates to Nahum Arms, described as follows, viz, commencing at a point on the north line of the highway leading from Philip Furlinghams to what was formerly known as the Chichester bridge, where the north line of said road intersects the east line of the farm of said Nahum Arms, thence east or easterly along the line of said road to Kalamazoo River, thence down the south bank of said river to said Arms land, south to beginning, containing one and one-half acres. Also the north fraction of the south west quarter of said Section seventeen (17) except a piece commencing on the south line of said above described land, forty nine (49) rods and five (5) links east of the south west corner, thence north seventy (70) degrees east thirty nine (39) rods to Kalamazoo River, thence up said river to a point where said south line intersects same, thence west forty eight (48) rods and twenty (20) links to place of beginning. Also commencing at the north west corner of the south half of the south west fractional quarter of Section seventeen (17) thence east forty nine (49) rods, five (5) links, thence south seventy (70) degrees, west twenty eight (28) rods, thence north sixty seven and one fourth degrees, east twenty-four (24) rods twenty links to place of beginning.

The above described lands being a part of the lands conveyed to Charles T. Trisbie by Deed dated January 6, 1899, recorded March 17, 1899 in Liber 199, page 41, Allegan County records.

Parcel 29. (Johnson-Sebring)

Ninety one hundredths of an acre (90/100) of land off that piece or parcel described as follows, to- it,- That part of the north fraction of southeast quarter and west fraction of northwest quarter of Section seventeen (17) in Town one (1) North Range twelve (12) west that lies east of the center of the highway running through the same. Said ninety one-hundredths (90/100) of an acre being off the east end of said description and being bounded on the north and east by the Kalamazoo River, and on the South and West by a line at an elevation of one

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hundred nine and one-half (109 1/2) feet, Allegan Village Datum, as shown by a topographical map of the Kalamazoo River made by William G. Fargo.

Parcel 30. (Parish)

All that part of the west fraction of the north west quarter of Section seventeen (17) in Town one (1) North Range twelve (12) west, bounded as follows,- On the northeast and east by the bottom of the bluff (taken at an elevation of one hundred nine and one-half (109 1/2) feet Allegan Village Datum. On the east by the west line of W. R. Tubb's land and on the south and west by the Kalamazoo River, intending to include the right of first parties in the islands adjoining said premises. Containing eighteen and twelve one hundredths (18.12) acres more or less, being the same lands conveyed to Charles H. Frisbie by Deed dated July 9, 1897, recorded July 14, 1897 in Liber 133, page 341, Allegan County records.

Parcel 31. (Tubbs)

All that part of the southeast fractional quarter of the northwest quarter of Section seventeen (17) in Town one (1) North Range twelve (12) west, bounded as follows,- On the west by land of Ralph Parish, on the south by the Kalamazoo River, on the north by the bluff extending east to a point where the bluff meets the river, containing two (2) acres of land, being the same land conveyed to Charles H. Frisbie by Deed dated August 31, 1897, recorded August 31, 1897 in Liber 133, page 467, Allegan County records.

Parcel 32. (Prower-Brown)

Nine (9) acres on northeast quarter of the Southwest quarter of Section seventeen (17) Town one (1) North Range twelve (12) West, bounded on the north and west by Kalamazoo River on the south and east by a line along the surface of the ground at an elevation of one hundred nine and one-half (109 1/2) feet Allegan Village Datum.

Also conveying and transferring the dam, waste gates, flume, powerhouse and other buildings, water wheels, turbine, turbine gates and controls and all other equipment used or usable in connection therewith at, on or about the premises known as the Trowbridge Dam located in the S/ 1/4 of Section 12, T1N, R13W, Trowbridge Township, Allegan County, Michigan, excepting and reserving, however, to the Grantors herein all electric generating equipment, switches, transformers, circuit breakers and other equipment used or usable in connection with the generation and transmission of electric energy, together

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with the right to remove same on or before July 1, 1967. Also conveying all water power developed by said dam and the right to flow, percolate, saturate and injure by alluvial deposit all lands lying upstream from said dam, whether such rights have been acquired by grant, adverse possession or otherwise, which are necessary and appurtenant to the operation of said dam at its present height and now owned or held by the Grantors herein.

Also conveying and transferring all of the right, title and interest of First Party in the rights and privileges under that certain grant or franchise granted to Charles H. Frisbie, his successors and assigns, on June 26, 1897 by the Board of Supervisors of Allegan County, Michigan, to construct a dam across the Kalamazoo River in Section 12 of T1N, R13W, Trowbridge Township, Allegan County, Michigan.

EXCEPTING AND RESERVING to First Party, its successors and assigns, Forever, from the land described in Parcel 1 and from this conveyance a parcel of land described as follows:

> A parcel of land in the SE 1/4 of Section 12, T1N, R13W, to find the place of beginning of said parcel of land commence at the West 1/4 post of said section; thence S 00° 23' 20" E along the West line of said section 723.10 feet; thence East 555.35 feet to the place of beginning of this description, said point being hereafter referred to as Point "A"; thence continuing East 58 feet; thence South 64 feet to a point hereinafter referred to as Point "B"; thence West 58 feet; thence North 64 feet to the place of beginning, being a parcel of land upon which Grantors' existing electric substation is located and hereinafter referred to as the substation site. Also EXCEPTING AND RESERVING in connection with the above described substation site the easement and right to construct and maintain a roadway 24 feet in width as a means of ingress and egress to the above substation site, the center line of said roadway being described as follows:
>
> > To find the place of beginning commence at the West 1/4 post of Section 12, T1N, R13W, and run thence S 00° 23' 20" E along the West line of said section 7[illegible]2 feet to the place of beginning of the center line of said roadway; running thence N 89° 51' 30" E 5[illegible]2 feet to a point of curve with a 53-foot radius; thence along said curve to the right an arc distance of 1[illegible] feet to a point; thence N 60° [illegible]' [illegible]" [illegible] a distance of [illegible] feet to a point of terminus, said point being N [illegible]° [illegible]1' [illegible]" E a distance of 3[illegible] feet from the place of beginning,

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together with the right to extend the center line of said roadway Southerly to a point 12 feet Easterly of the Northeast corner of the substation site and to extend said roadway Northerly to a point on the South line of the substation site 12 feet Westerly of the Southeast corner thereof.

Also EXCEPTING AND RESERVING to First Party, its successors and assigns, Forever, from Parcels 1 and 5 as herein described, the easement and right to erect, lay and maintain lines of towers, pole structures, poles, wires, cables, conduits and other fixtures and appurtenances for the purpose of transmitting and distributing electricity and/or conducting a communication business on, over, under and across said Parcels 1 and 5, including all public highways upon or adjacent to said parcels of land. The routes to be taken by said lines of towers, pole structures, poles, wires, cables and conduits on, over, under and across said land being more specifically described as follows:

One line to extend in a Northerly direction from the substation site hereinbefore described, beginning at a point approximately 27 feet East of Point "A", as set forth in the description of said substation site, and running thence N 02° 01' E to the Northerly line of the land described in Parcel 1 above.

Also one line to run in an Easterly and Westerly direction described as beginning at a point on the West line of the substation site approximately 27 feet South of said Point "A"; running thence N 85° 20' W 194.75 feet; thence N 02° 50' W to the West line of Section 12, T1N, R13W.

Also one line described as beginning on the East line of the substation site at a point 35 feet North of Point "B", as set forth in the substation site description herein; thence running N 39° 29' E a distance of 40 feet; thence S 04° 33' W to the South line of Parcel 5.

Also one line described as beginning at a point on the South line of the substation site hereinbefore described at a point 32 feet West of Point "B"; running thence S 0[illegible]° 13' [illegible] to the present generator building located on Parcel 1 herein described,

together with the full right and authority to First Party, its successors, licensees, lessees or assigns, and its and their agents and employees, to enter at all times upon said Parcels 1 and 5 for the purpose of patrolling, constructing, repairing,

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removing, replacing, improving, enlarging and maintaining such wires, cables, conduits, structures, towers, pole structures, poles and other supports, with all necessary braces, guys, anchors and transformers, and stringing thereon and suspending therefrom lines of wire, cables or other conductors for the transmission of electrical energy and/or communication, and to trim, remove, destroy or otherwise control any trees or brush now growing or hereafter growing upon a strip of land 95 feet wide on each side of the center line of said electric lines, as the same now exist and as described herein. It is agreed that no buildings or other structures will be placed under such wires and/or over such cables without the written consent of First Party. It is further understood and agreed that nonuse or a limited use of the rights herein reserved shall not prevent First Party from later making use of the easements to the full extent herein reserved.

Also EXCEPTING AND RESERVING to First Party the right to maintain the batteries and oil circuit breaker controls located in the so-called generator building on Parcel 1, together with the control leads extending between said building and the substation site; also all outdoor lighting on or near said building.

Also EXCEPTING AND RESERVING to First Party, its successors and assigns, the easement and right to construct, maintain, repair and enlarge all existing electric distribution lines, as the same are now located on the premises herein conveyed, whether said lines are herein specifically described or not, together with the right to enter upon the premises where such existing distribution electric lines may be located for the purposes of maintaining, repairing and enlarging same, and the right to cut and trim such trees and brush as may, in the opinion of First Party, interfere or threaten to interfere with the use, operation and maintenance of said lines.

Together with all and singular the hereditaments and appurtenances thereunto belonging or in anywise appertaining: TO HAVE AND TO HOLD the said above-described premises unto the said second party and to its successors and assigns to the sole and only proper use, benefit and behoof of the said second party, its successors and assigns, Forever.

IN WITNESS WHEREOF, the said first party has caused this instrument to be executed in its corporate name and by its duly authorized officers as of the day and year first above written.

K00001074

Signed, Sealed and Delivered
in Presence of:

Frances S. Schefer

LUCILLE M. DARLING

CONSUMERS POWER COMPANY

By W. C. Schmidt
W. C. Schmidt
Senior Vice President

Attest: P. A. Perry
P. A. PERRY
ASST. Secretary

APPROVED AS TO FORM

STATE OF MICHIGAN)
) SS
County of Jackson)

On this 29th day of September, 1967, before me, a Notary Public in and for said County, personally appeared W. C. Schmidt, to me personally known, who being by me duly sworn, did say that he is a Senior Vice President of Consumers Power Company, the corporation named in and which executed the within instrument, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors; and said W. C. Schmidt, acknowledged said instrument to be the free act and deed of said corporation.

Willoween R. Smith
Notary Public, Jackson County,
Michigan

My Commission Expires September 7, 1970.

K00001075

DISPOSITION OF MINOR HYDRO, DIESEL AND STEAM PLANTS

Retirements Since 1950
As of June 27, 1973

Plant	Nameplate Rating Kw	Official Retirement Date	Last Operating Date	Disposition of Dam	Disposition of Equipment	Disposition of Building and Land
East Jordan Hydro	240	Sept 11, 1950		City of East Jordan	Removed - Junked	City of East Jordan
Greenville Hydro	300	Apr -, 1951	5-12-50	City of Greenville	Removed - Sold	CP Co. Use
Maple River Hydro	192	Dec -, 1951	11- 8-51	Emmet County	Removed - Junked	Emmet County
Hesperia Diesel	330	Oct -, 1952	3-15-51		Removed - Sold	Village of Hesperia
West Branch Hydro	75	Nov -, 1952	3-29-52	Demolished	Removed - Junked	Powerhouse - Demolished Land - CP Co.
Morley Hydro	150	Nov -, 1952	11-26-51	Village of Morley	Removed - Sold	Village of Morley
Albion Hydro	150	Dec -, 1952	2-21-51	City of Albion	Generator - Removed & Sold	Land South of Erie Street to City of Albion
White Cloud Diesel	576	Dec -, 1952	8-11-52		Removed - Sold	City of White Cloud
Blissfield Steam	1,250	Dec -, 1952	11- 1-50		Generator - Removed & Sold	Office Space
Stover Hydro	120	Dec 30, 1952	12-31-52	Bellaire Conservation Club	Turbine - Junked Generator - Sold as Motor	Bellaire Conservation Club
Montague Diesel	3,480	Dec -, 1952	10-17-52		Removed - Sold	Muskegon Distribution Dept
Hesperia Hydro	200	Dec -, 1952	12-31-52	Village of Hesperia	Removed - Junked	Village of Hesperia
Grayling Hydro	90	Jan 2, 1953	12-31-52	Sold - Salling Hanson Co.	Removed - Sold	Sold - Salling Hanson Co.
Bellaire Diesel	148	Feb 4, 1953	CP Co. Never Operated		Removed - Sold	City of Bellaire
Rugg Hydro	160	Mar 26, 1953	3-25-53	Kalkaska County	Removed - Junked	Kalkaska County
Reed City Hydro	150	May 11, 1953	3-23-53	Reed City	Removed - Junked	Reed City
North Monroe Street Hydro	150	July 9, 1953	12-15-52	City of Battle Creek	Removed - Sold	City of Battle Creek
Baldwin Diesel	330	Aug 19, 1953	8-18-53		Removed - Sold	CP Co. Distribution Dept
Shiawassee Hydro	150	Aug 26, 1953	1-29-53	Shiawassee and Vernon Townships	Removed - Sold	Shiawassee and Vernon Townships
Stronach Hydro	800	Sept 14, 1953	8- 7-53	CP Co. - Dam Intact	Removed - Junked	House - Sold Land - CP Co. Powerhouse - Demolished
Cereseo Hydro	600	Nov 16, 1953	7-19-52	Sold - R.M. and F.D. Lutz	Removed - Junked	Sold - R.M. and F.D. Lutz
Centreville Hydro	150	Feb 18, 1954	2-17-54	Village of Centreville	Removed - Junked	Village of Centreville
Boyne Falls Hydro	80	Apr 16, 1954	4-13-54	Village of Boyne Falls	Removed - Junked	Village of Boyne Falls
Ludington Steam	2,500	Apr 20, 1954	1-29-53		Removed - Junked	Consumers Power Company
				Tecumseh Products	Removed - Junked	Tecumseh Products

K00001076

Plainwell No. 2 Hydro	150	May 7, 1956	5- 7-56	Michigan Paper Co.	Michigan Paper Co.	City of Plainwell
Smyrna Hydro	240	June 1, 1956	6-10-56	Township Otisco	Generator - Sold in Mexico Other Equipment - Junked	Township of Otisco
Hubbardston Hydro	240	Nov 12, 1956	11-10-56	Village of Hubbardston	Removed - Junked	Village of Hubbardston
Wager Hydro	450	Nov 12, 1956	7- 5-56	Demolished	Removed - Junked	Raymond Robinson
Lyons Hydro	450	Oct 2, 1957	4-30-56	Village of Lyons	Removed - Sold	Village of Lyons
Elk St. Stm (Boilers 1-6)	20,000	Apr 18, 1957	4-17-57		Removed - Sold	Consumers Power Company
Elk St. Stm (Units 2 & 3)	-	Oct 1, 1958	12-12-57		Removed - Sold	Consumers Power Company
Beaverton Hydro	970	Feb 20, 1961	2-20-61	City of Beaverton	Removed - Sold	City of Beaverton
Chapel Hydro	430	Feb 16, 1962	2-14-62	Gladwin County	Removed - Sold or Junked	Gladwin County
Grayling Diesel	2,550	Feb 19, 1962	2-19-62		Removed - Sold or Junked	City of Grayling
Mills Street Steam	7,600	Mar 16, 1962	5-24-56		Removed - Sold	Auto-Ion Chemical Company
Cheboygan Diesel	2,400	June 15, 1962	5-25-62		Removed - Sold	Consumers Power Company
Belding Hydro	400	July 27, 1962	7-27-62	City of Belding	Removed - Junked	City of Belding
Boyne Diesel	4,098	July 31, 1962	7-31-62		Removed - Sold	Consumers Power Company
Boyne River Hydro	500	Jan 4, 1963	10-12-62	Boyne Mountain Lodge, Inc.	Removed - Sold	Boyne Mountain Lodge, Inc.
Homestead Hydro	600	Dec 1, 1963	11-30-63	Sold - G. A. Derks	Generator - Junked Turbine - Left	Sold - G. A. Derks
Fulton Street Steam	1,500	Apr 20, 1964	4-19-64		Removed - Junked	Consumers Power Company
Saginaw River No. 4 Boiler	-	Aug 1, 1965	3-10-65		See Below, February 1972	Consumers Power Company
Central Plant Hydro	400	Dec 27, 1965	12-26-65	Demolished	Removed - Junked	
LaBarge Hydro	700	Dec 27, 1965	12-27-65	*	Generator - Sold or Junked Turbine - Left	
Lowell Hydro	900	Dec 27, 1965	12-27-65	Kent County	Generator - Sold as Motor Turbine - Left	Kent County
Newaygo Hydro	1,880	Dec 27, 1965	12-27-65	Michigan Department of Conservation	Generators #3, 4 - Sold Generators #1, 2 & Turb - Left	Michigan Dept of Conservation
Plainwell Hydro	900	Dec 27, 1965	12-27-65	Michigan Department of Conservation	Generator - Junked Turbine - Left	Michigan Dept of Conservation
Otsego Hydro	1,700	Dec 28, 1965	12-28-65	Michigan Department of Conservation	Generator - Junked Turbine - Left	Michigan Dept of Conservation
Allegan Hydro	650	Dec 29, 1965	12-29-65	Imperial Wood Carving Co.	Left	Imperial Wood Carving Co.
Cheboygan Hydro	1,800	Dec 29, 1965	12-29-65	Michigan Waterways Commission	Generator - Junked Turbine - Left	Charmin Paper Company
Elk Rapids Hydro	1,050	Dec 29, 1965	12-29-65	Antrim County	Generator - Junked Turbine - Left	Antrim County
Alverno Hydro	800	Dec 30, 1965	12-30-65	*	Generator - Junked Turbine - Left	
Trowbridge Hydro	1,500	Dec 30, 1965	12-30-65	Michigan Department of Conservation	Generator - Junked Turbine - Left	Michigan Dept of Conservation
Saginaw River Boilers No. 1, 2, 3, 5 & 6, Turbines No. 1, 2, & House Unit A	40,000	Feb 28, 1968	12-21-68		See Below, February 1972	Consumers Power Company
					Removed - Sold	

K00001077

"Now, if we put a hydro plant right here, we'd really have something," he said. "How far would you guess we are from Kalamazoo?"

"I'd say about 22 miles," J. B. said. "Not more than 25 anyway."

W. A. nodded and stood in silence for a few more minutes. "Those mill outfits at Plainwell, Otsego, and Allegan are using 30 feet of the drop," he said then. "That leaves 70. You can get a lot of power out of 70 feet, and we could sure use it. Can you build a transmission line 25 miles long and still have power left at the other end?"

"I don't know, Will," said J. B. "It's never been done before, not that I heard. There'd be a lot of problems all right. What do you think, George?"

"It's worth a try, Mr. Foote," Stecker said, "but the devil of it is, we really won't know if it works until we've built it. Twenty-some miles of wire, that's a lot of wire." Stecker was probably thinking about power loss, but W. A. didn't worry himself too much about the technical aspects. He figured that J. B. and Stecker could lick most anything along those lines. What W. A. Foote worried about, as always, was money. "That's not only a lot of wire," he said, "it's a lot of everything else too. We'll have to make surveys and buy riparian rights and build dams. The wire is the least of it." Without cracking a smile, he looked at the two other men and said, "If necessary, we'll use iron wire. That way, if it doesn't work, we can always sell it off for fencing."

W. A. had made his big decision on the spot. Only here and in other similar out-country locations could he get the power he needed at a price that he could afford to ask his backers for. Only from streams like the Kalamazoo could he supply the industrial centers of Michigan the way he wanted to.

With Charles Frisbie, of Jackson, who was one of the directors of the Ceresco Company, as his partner and with William G. Fargo, also of Jackson, as engineer, Foote

BUSH, GEORGE, FUTURE BUILDERS, THE STORY OF MICHIGAN'S CONSUMERS POWER COMPANY, McGRAW-HILL PUBLISHING, @1973, pp. 74-85

K00001078

immediately launched into surveys of the area and purchased real estate and riparian rights along much of the Kalamazoo between Plainwell and Allegan. Four power sites were plotted: one between Plainwell and Otsego, to be known as Plainwell Dam; one, 2 miles downstream from Otsego, just below the Kalamazoo's confluence with Pine Creek, which was to be called the Pine Creek Dam but which was later named Otsego Dam; and a third, 4 miles farther still downstream, to be called Trowbridge Dam, for the township in which it was located. The fourth site, just outside the upstream city limits of Allegan, was not named and was never developed.

Trowbridge Dam was the first to go under construction. Local people called it the "Big Dam." No wonder—such a big earthmoving project had never before been seen in Michigan. William G. Fargo, who with his Fargo Engineering Company of Jackson would now team up with Foote for many years and many ventures, began excavations in the spring of 1898. This was not an easy job. In the East, such dams as were then built could be anchored in the bedrock natural to the area, but in west central Michigan, substantial rock was not indigenous. Fargo's men had to cope with soft soil. After diverting the stream by means of temporary earthworks, they built the dam itself, much as a child would build one in a sandbox, except that they did have horses and some primitive machinery to help them. They hitched up teams of horses to big scoops (called "scrapers") that were dragged along in the dirt. Each scoop had a pair of handles, and a workman walked behind it, holding these handles, and with his weight and the bulging muscles of his arms and back, he pressed the scoop into the ground like a plow. The horses strained and the men sweated and cursed, and when the scoops were full they were brought over to where the dirt was wanted, and it was dumped out.

Scoop after scoop of earth was piled up until the barricade was built up high enough and tamped tight enough to form a dam that could contain a pond of water 22 feet deep. Trow-

K00001079

bridge's spillway itself was 80 feet long, and it had three tainter gates[14] of timber, 12½ by 24 feet in dimension. The dam's penstock—its pit for the wheel that drove the dynamo—was 74 by 90 feet, an underwater cave walled in by timber and masonry rubble. This hydraulic unit was designed to yield 2,000 horsepower, driving a 2,500-volt General Electric generator.[15] A wooden powerhouse, set on a suspended foundation of stone and timber, covered the wheel pit. Fargo managed to complete the job in little more than a year, and by September 20, 1899, all the machinery was installed, and the wires strung. Trowbridge was ready for its first big test.

So was the engineering team—J. B. Foote and his right-hand man, George Stecker. Until the moment when water roared through the penstock, ramming the wheel into motion, no one, not even J. B. and George themselves, could be absolutely sure that this very iffy project would work. Electric technology was not yet so far advanced as to be predictable by calculation. The approach was largely empirical: try it and see. If the results were as hoped for, everything was fine. If not, one looked for the bug in the system and often had to start all over again from scratch. But Trowbridge was too complex for this, and it had cost too much. On the bank, next to the dam, a transformer stood ready to step the voltage up to 22,000, an unprecedented pressure. From this transformer, the line led 24 miles into Kalamazoo, an unprecedented distance, and over cheap, low-quality iron wire at that. Would this pioneer effort really work? If it didn't, it could well doom W. A. Foote's dreams, and those of J. B. Foote and George Stecker as well.

Stecker was a simple, unassuming man. It may be recalled that he hadn't even completed high school when he went to work. Already as a boy he'd made up his mind to go into the electric business, and he had been begging the linemen of the Albion Electric Company to let him tend the solder pot for them—without pay. Later, when he'd finally gotten on the payroll, one of his jobs was to unload all the coal for the Albion plant by hand. At the same time, exhausted as he had to be at

K00001080

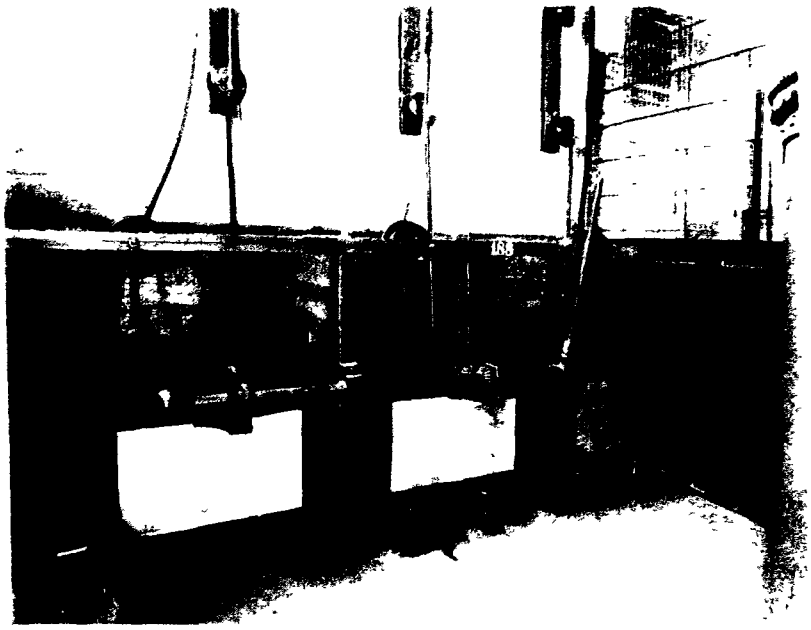
night from this backbreaking labor, he'd completed his high school studies after hours. Now, ten years older but still a young man in his mid-twenties, he was the project's chief engineer under J. B. Foote. This was the time and place to prove his mettle.

First he designed a regulator that would maintain a steady electric load even as demands on the line changed from minute to minute, for electric railways were just coming into widespread use, and one of Trowbridge's purposes was to supply the trolleys that stopped and started, slowed down and speeded up, all day long and of course without notice.[16] The next problem was that to carry a steady load over a high-voltage line, there had to be some means of switching the electricity from one line to another in case of trouble, like a short circuit, which could happen at any time and often did. Such high-voltage switching had never been done before, and no such switch was on the market. Stecker tackled the challenge and came up with an air-break switch, which became known as the "Stecker switch," but he figured it wasn't quite good enough to handle such a heavy load. At last, after months of work, J. B. and Stecker developed a circuit breaker that blocked the high-voltage flow by means of an oil barrier. It had been built in a machine shop in Jackson, where a German workman dubbed it the "wagon box" because that's what its oil tank reminded him of. A set of three such wagon-box switches were now installed at Trowbridge, and everything was set to go.[17]

When the big moment came, J. B. was waiting at the Kalamazoo end of the line to see whether the lights would go on. W. A. Foote and George Stecker, the latter standing by in case any minor trouble developed, were at the dam for its inauguration. W. A. didn't make a big thing of it. He gave the go-ahead order simply by nodding to the man in charge of the powerhouse. "Okay," was all he said. His matter-of-fact face gave away nothing that went on inside him as the gate was opened.

Water burst through the penstock and gushed down into the stream below the dam, raising a spray of white out of the

K00001081



WAGON-BOX SWITCHES

These old circuit breakers may not have looked like much, but they were really something. In fact, this set of three remained in service at Trowbridge for more than fifty years after the device, capable of handling high voltages, was invented by J. B. Foote and George Stecker. Eventually, of course, more sophisticated models were developed on the basis of the prototype. (Consumers Power photo)

sudden turbulence. The generator sang, wires crackled, and an incandescent bulb in the powerhouse flared into light. W. A. Foote's expression still did not change. What had happened so far didn't prove anything. Only J. B. in Kalamazoo could tell whether the power from the dam actually had reached all the way into the city, but W. A. at Trowbridge had to sweat it out. There was no immediate way to get word to him; telephones had existed for some time, but long-distance lines were still rare, particularly in the back country.[18] W. A. left the powerhouse. Outside he formally shook Fargo's hand. "Thank you," he said simply. Then he went off by himself and paced back and forth on the dam, dressed in knickers and high-laced boots, his wide-brimmed hat clamped tightly on his head against a gusty

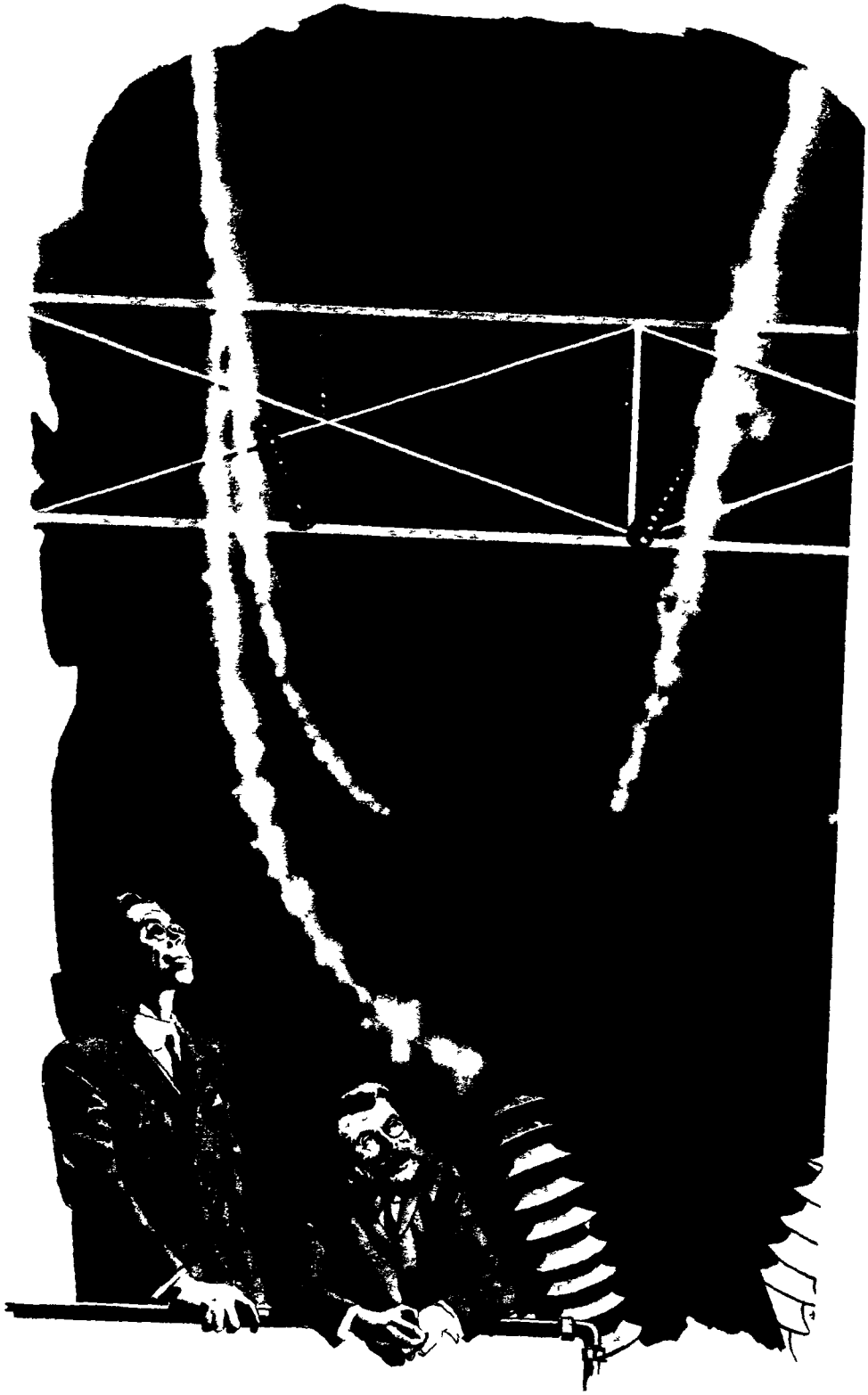
K00001082

wind. Stecker also came out, but remained near the powerhouse. He was standing by for trouble.

One hour passed. Two hours. Still no message from J. B. at the Kalamazoo end of the line. A low sun glinted yellow through the autumn-dry trees. W. A. Foote was still pacing, inscrutable as he always was in periods of stress. The minutes dragged. Suddenly there was a commotion in the crowd that lined the Kalamazoo's western bank. W. A. turned and quickened his steps. George Stecker came running. A horse galloped up the dam road, raising dust and foaming at the mouth and neighing as its rider reined it to a rearing, sliding halt. The horseman waved his hat and let out a rebel yell. "It's workin'," he shouted. "The lights is workin'!"

Stecker sighed with relief. He was almost dizzy for a moment, and he didn't notice W. A. coming up to him. Foote put his hand on Stecker's shoulder. Stecker looked up. Foote was grinning. "Well, George," he said softly so that no one else could hear him, "I guess after this I won't have to borrow your wages anymore."

K00001083



K00001084

5

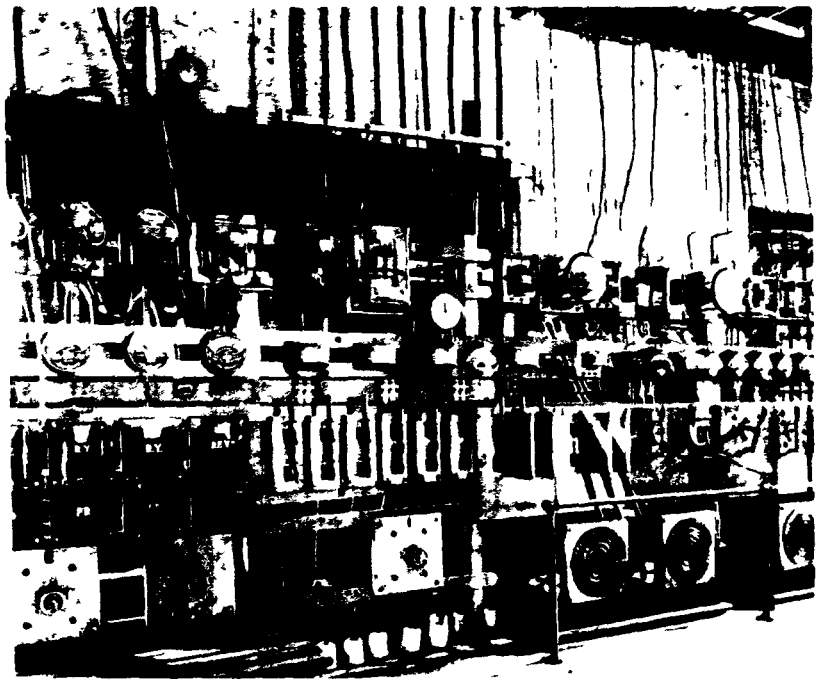
High Voltage

Today, Trowbridge and the other dams Foote built along the Kalamazoo—Otsego Dam and Plainwell Number 1 and Number 2—are no longer active. As the jargon of the electric business has it, they are "down," shut down, that is, but they are still standing. They are being maintained by the Michigan Department of Natural Resources within the river park lands donated by Consumers Power to the state. The old tainter gates, whose timber eventually was replaced with iron, are a little rusty now; the only time they're worked is in the autumn when conservation men fill the dam ponds in order to attract ducks and geese winging their way south for the winter. The flowage lands turn into a jungle of marsh grasses and reeds in spring and summer, lush and green, and the rapid waters below the spillways of the dams are favorites with fishermen, for that's exactly the kind of water that trout like. Trowbridge's original wooden powerhouse was destroyed by fire in 1911 and was replaced with an attractive structure of red

K00001085

brick. You can get quite close to it, walking up the dam from the west bank, the side on which the horseback rider delivered J. B. Foote's message, but on the dam itself a fence bars your way, which is as it should be, for it's quite a drop.

J. B.'s wagon-box switches are not at Trowbridge anymore. They've been taken out and, last anyone knew, were stored in one of the Consumers Power warehouses in Jackson. Not that they are useless museum pieces. If the dam were still active, they'd be right there, clicking along. They looked strangely unsophisticated; yet they were a brilliant mechanism, and they performed their job for about fifty-five years, until well after World War II. As time went on, the wagon boxes handled even higher voltages without any trouble, first 40,000 at Trowbridge in 1903 and later as much as 70,000 here and at other dams.[1]



WHERE J. B. WAITED FOR THE JUICE FROM TROWBRIDGE

The high-voltage line from Trowbridge Dam fed into this switchboard of the original Kalamazoo steam plant at the corner of Water and Edwards Streets. (Consumers Power photo)

K00001086

MICHIGAN'S FIRST BIG DAM

Here is Trowbridge in 1899, two years after completion of the project which proved that electricity could be transmitted over relatively long distances—in this case, an astounding 24 miles. The wooden powerhouse was destroyed by fire some years later. The dam still exists, but it is no longer in operation. (General Electric Company photo)

Only W. A. Foote's money-saving iron wire gave a little difficulty at first. It contracted in the cold of Michigan's winter, and as a result it sometimes broke. But this shortcoming was soon fixed. As the Trowbridge venture proved successful, it became easier for W. A. to raise money, and the iron lines were replaced with more expensive aluminum wire. Modern as this sounds, the early-day transmission lines looked nothing like they do today. They were strung on wooden poles, not much more than 20 feet tall. Eventually such poles were replaced with slightly higher "windmill towers" of steel—so called because that's what they were originally designed for. They were three-legged structures, coming to a point at the top. You can still see windmill towers like that on many middle western farms.[2]

With Trowbridge, the future course of Foote's electrical enterprises became clearly charted. High-voltage power sources could be utilized to supply distant communities, and by the same token the electrical services in these communities could be interconnected, forming a network of usefulness for the citizens of Michigan.

K00001087

OVERISEL COMPRESSOR STATION
GAKelterborn

INFORMATION REQUESTS

1. Identify all persons consulted in the preparation of your responses to these Information Requests.

   Gary A. Kelterborn, Director of Remediation Management, Environmental Department

   Margaret J. Kaiser, Corporate Records

2. Identify all documents consulted, examined, or referred to in the preparation of your responses to these Information Requests, and provide copies of all such documents. If, in lieu of or along with a textual response to any specific Request, you refer to a document that you believe contains information responsive to that Request, you must identify the specific location (page number, paragraph number) in the document where responsive information can be located.

   See general objections.

3. If you have reason to believe that there may be any person able to provide a more detailed or complete response to any Information Request, or who may be able to provide additional responsive documents, identify any and all such persons.

   None known.

4. Identify and generally describe each Consumers Energy facility at or near the Site, as that term is define in Attachment 3 (Definitions). For each Consumers Energy facility, provide:

Overisel Gas Compressor Station

a. the address of the facility;

4131 138th Avenue
Hamilton, MI 49419

b. past and present EPA ID numbers, RCRA numbers and NPDES numbers for the facility; and

RCRA ID Number MID 982 418 691

c. the current owner of the facility

Consumers Energy Company

5. Identify all prior owners and operators of each facility, and their dates of ownership and/or operation.

The facility was constructed for Consumers Power Company, now known as Consumers Energy Company.

6. Provide copies of all local, state, and federal environmental permits ever granted for each facility or any part thereof (e.g., RCRA permits, NPDES permits, etc).

None known.

7. For each facility, identify and describe all types of monitoring reports, monitoring data, and documentation sent to or received by federal or state regulatory authorities regarding any materials containing hazardous substances used, generated, stored, treated or disposed at or from the facility.

See EPCRA Tier II reports at response pages 3469 to 3586
Hazardous chemicals listed are Triethylene Glycol, Sulfa-Scrub (contains methanol and ethanolamine), used oil and lubricating oil.
See RCRA Biennial Reports at response pages 3686 to 3708
Hazardous wastes listed are from 1993 – arsenic-contaminated wastewater and petroleum naphtha solvent.
See PCB reports at response pages K146 to K434 and K635-K838.
These documents reflect the PCB study and cleanup at the Overisel site.

8. Identify and describe the nature of all past and current operations and production processes at each facility. Identify, if available, all current and previous SIC codes associated with each facility.

   This is not a production facility. The Overisel Compressor Station provides supplemental gas compression for compressed natural gas in the Company's pipelines. SIC code 4924, Natural Gas Distribution.

9. Identify each product produced at the facility. Further identify the mass quantity of each product produced on an annual basis.

   The facility does not produce any product.

10. Identify and describe any and all activities or efforts to take production facilities out of operation, and include the dates of each such activity or effort.

    There are no production facilities at this location.

11. For each facility, identify and provide any data, estimates, analyses or other information regarding any material used, treated, stored or disposed that contained or may have contained PCBs. To the extent available, provide all such data, estimates, analyses or other information on an annual basis.

    The Overisel Compressor Station is believed to have used one 55-gallon drum of Pydraul AC, a lubricant that contained PCB. This was used as a lubricant in the air compressor system, sometime during 1963 to 1965. Pydraul AC contained 57% PCB Aroclor-1254.

12. For each facility, identify any data, estimates, analyses or other information regarding the concentration of PCBs in any material used, treated, stored or disposed there. To the extent available, provide all such data, estimates, analyses or other information on an annual basis.

    See reports at response pages K1 to K838, K2919 to K2992 and K3000 to K3235. The release of PCB was discovered in 1989 and reports from that date and subsequent years.

13. To the extent not already provided in response to Request #11, provide the following information:

    a. the type and quantity, on an annual basis, of any oils or other lubricants used, treated, stored or disposed at each facility that are known or suspected to have contained PCBs;

       See response to question 11.

    b. the number, handling and disposition of all transformers and conductors at each facility; and

       None.

    c. data, analysis and other information regarding leaks, discharges or other releases from any transformer, conductor or other equipment using oils or lubricants at each facility.

       See response to question 11.

14. To the extent not already provided in response to Request #12, identify any data, estimates, analyses or other information regarding the concentration of PCBs in the materials identified in your response to Request #13.

    See response to question 11.

15. Describe the procedures used by you or anyone on your behalf to test PCB concentrations in the materials identified in your response to Requests #11 and #13, above. Include in your response test methods and dates.

    See response to question 11 for full PCB reports.

16. Describe the procedures followed by you, or anyone on your behalf, to prevent, mitigate or address the release or threat of release of any material identified in your response to Requests #11 and #13, above.

    Upon discovering a PCB release, the Company undertook a comprehensive response action to mitigate and address the release. See the Overisel Compressor Station PCB Action Plan at response pages K146 to K434 for specific actions taken with respect to this facility. See also the Company's general response to question 16 describing procedures used to prevent PCB contamination and generally respond to PCB issues throughout the Company.

17. Provide a figure delineating the groundwater flow direction on your property.

    Figures of groundwater contours is located at response pages K576, K577 and K607,

18. Identify the depth(s) to groundwater at your property.

Groundwater was generally found at a shallow depth at the site, within several feet of the surface.

19. For each production process at each facility, identify and describe each waste stream from its creation to final disposition.

See waste manifests in response pages K3891 to K3951.
Wastes include
Petroleum Naphtha used for parts cleaning
Floor drain wastes
Miscellaneous solid wastes
Crankcase Oil
Disposal locations for the various substances are listed on the manifest listing at response pages K3884 to K3888.

PCB wastes from cleanup were disposed at Recovery Specialists, CWM Chemical Services, and Safety Kleen Corporation.

20. For each facility, identify all past and present waste units (e.g., underground storage tanks, above ground storage tanks, waste piles, landfills, surface impoundments, lagoons, dry wells, septic systems, floor drains, ponds, pits, machine pits, container storage areas). For each such waste unit identified, provide the following information:

a. The location of all past and present waste units whether currently in operation or not.

Oil water separator – location shown on drawing at response page K0153
Floor Drain collection tank in compressor building.

b. The type of unit (e.g., underground storage tank, lagoon, dry well, etc).

Oil water separator
Pit at discharge from oil water separator
Underground tank

c. The dates that the unit was in use.

Probably for entire life of facility

d. The purpose of past and/or present usage (e.g., storage, spill containment, waste disposal).

Spill containment

e. The quantity and type(s) of materials (e.g., manufacturing materials, wastes, hazardous substances, pollutants and contaminants) located in each unit.

Not known

f. If the unit is no longer in use, describe how was such unit closed, and what actions were taken to prevent or address potential or actual releases of waste constituents from the unit(s). Include all analytical data from such closure.

Not applicable

21. For each facility, identify any data, estimates, analyses or other information about the presence of PCBs in each waste stream created. To the extent available, provide such information on an annual basis.

A PCB cleanup was performed – see the complete reports at response pages K0001 to K0434, K2919 to K2992 and K3000 to K3235.

22. For each facility, identify any data, estimates, analyses or other information about the concentration of PCBs in each waste stream created. To the extent available, provide such information on an annual basis.

    See response to question 21.

23. For each facility, describe the procedures used by you, your predecessor(s), or anyone on behalf of you or a predecessor, to test the PCB concentration in each waste produced, stored, treated or disposed at that facility. Include in your response test methods, media tested, and dates.

    See response to question 21.

24. For each facility, identify each off-Site location at which wastes that contained or potentially contained PCBs were disposed. Further identify the dates of each such off-Site disposal, and the nature, quantity and PCB concentration of any such wastes.

    See response to questions 19 and 21

25. For each facility, and for each waste produced, stored, treated or disposed at that facility:

    a. identify the PCB concentration of any waste;

       See response to question 21

    b. if the waste contained detectable concentration of PCBs, describe each occasion on which a release of such waste occurred or threatened to occur; and

       See response to question 21

    c. describe the procedures and measures taken by you, or anyone on your behalf, to prevent, mitigate or address the release or threat of release of PCBs or other hazardous materials.

       See response to question 16.

26. For each release described in response to Request #25 above, describe the quantity of PCB-contaminated wastes that were released or threatened to be released, and state whether any PCBs contained in the wastes contributed to the presence, or threatened to contribute to the presence, of PCBs in the Kalamazoo River.

Approximately one 55-gallon drum of PCB lubricant was used at the site. Some of that was released to the environment. The vast majority of the PCB was contained in the buildings and equipment at the site or in the soil. Complete study material is provided (see responses to questions 16 and 21). There was no confirmed release of PCB to the Kalamazoo River. Some PCB did reach an oil/water separator. The water outflow from the separator went to a pit and any overflow of water from the pit would have gone down hill to the Buscnerr Drain. Testing in the Buscnerr Drain (sometimes referred to as a Creek) showed 0.11 to 0.15 ug/liter of PCB. No PCB was detectible in sediments in the drain. . The Buscnerr Drain flows to the Rabbit River, which flows into the Kalamazoo River near Lake Michigan. PCB testing in the Rabbit River did not detect any PCB. On this basis, there was no confirmed release of PCB from the Overisel Compressor Station to the Kalamazoo River. If any did reach the Kalamazoo River, it would have been an exceedingly small amount, and would have entered downstream of virtually all of the Kalamazoo River Superfund Site response activities.

27. For each facility, identify any data, estimates, analyses or other information about the history of flooding, or any other infiltration of water, from the Kalamazoo River.

Unknown.

28. To the extent not provided in your response to Request #19, describe each wastewater stream, waste oil stream, and wastewater/waste oil mixture stream at each facility, from its creation in the production process to final discharge point. In your response include a complete description of the fate of any wastewater stream, waste oil stream, and wastewater/waste oil mixture stream produced at each facility (e.g., on-site treatment, discharge to a POTW, discharge to a storm sewer outfall, direct discharge to the Kalamazoo River).

See responses above.

29. To the extent not provided in response to Requests #19 and #28, identify the quantity of all (a) wastewater, (b) waste oil, and (c) wastewater/waste oil mixture produced, on a monthly basis, from each production process at each facility.

The facility has no production processes.

30. To the extent not provided in response to Requests #21 and #22, identify any data, estimates, analyses or other information about the presence and/or concentration of PCBs in the wastewater, waste oil and wastewater/waste oil mixture produced from each production process at each facility. To the extent available, provide such information on a monthly basis.

See above.

31. For each facility, identify any data, estimates, analyses or other information regarding the effectiveness of the treatment system(s) at that facility, if any, to remove PCBs from each wastewater stream, waste oil stream and wastewater/waste oil mixture stream.

None.

32. Identify any data, estimates, analyses or other information regarding procedures and measures taken by you, or by anyone on your behalf, to prevent, mitigate or address the release or threat of release of PCBs from wastewater, waste oils, or wastewater/waste oil mixtures to the Kalamazoo River.

See response to question 16..

33. For any POTW identified in response to Request #28, provide, for each facility and on a monthly basis, all information regarding the amount of wastewater, waste oil and wastewater/waste oil mixture discharged to a POTW, the concentration of PCBs in the wastewater, waste oil and wastewater/waste oil mixtures discharged to the POTW from that facility and, to the extent such information is available, the PCB concentration in the effluent from the POTW.

Not applicable.

34. For each facility, identify each pipe, conduit, storm sewer, sewer line or other outfall that, directly or indirectly, terminates in the Kalamazoo River or its tributaries, past or present, into which treated, untreated or bypassed wastewater, waste oil, or any other waste (including wastewater/waste oil mixtures), from that facility was discharged. Include a figure identifying the source and location of each pipe, conduit, storm sewer, sewer line or other outfall.

See information provided above, concerning outfall from an oil/water separator.

35. For each pipe, conduit, storm sewer, sewer line or other outfall identified in your response to Request #34, identify dates of use and each outfall's source at the facility. Further provide, on a monthly basis, the volume of wastewater, waste oil or other waste (including wastewater/waste oil mixtures) discharged from the facility into each pipe, conduit, storm sewer, sewer line or other outfall.

The outfall has probably been there for the life of the facility. Quantities of water going through it are unknown.

36. For each pipe, conduit, storm sewer, sewer line or other outfall identified in response to Request #34, identify all influent and effluent quality data. Include to the extent such information is available, the PCB concentration of all influent and effluent, on a monthly basis.

Unknown, except for the data taken at the time of study and remedial action, described above.

37. For each pipe, conduit, storm sewer, sewer line or other outfall identified in response to Request #34, identify all bypasses or spills into the Kalamazoo River or its tributaries.

Not Applicable

38. For each facility, identify any data, estimates, analyses or other information regarding the mass quantity of PCBs disposed into the Kalamazoo River as a result of wastewater, waste oil or wastewater/waste oil discharges from the production processes. To the extent available, provide such information on an annual basis.

There is no confirmed release of PCB into the Kalamazoo River from the site.

39. For each facility, identify any data, analyses or other information regarding the nature and quantity of hazardous substances, including PCBs, in the sediments, soil, groundwater and surface water at that facility. Identify the concentration levels of PCBs for all samples collected at the facility or at any property abutting the facility.

See full documentation identified above.

40. For each facility, provide information regarding any environmental response activities involving or potentially involving PCBs or PCB-containing materials conducted at that facility, or on the Kalamazoo River, its tributaries, or other abutting property, at your direction or under your control. Indicate the date(s) on which such response activity was performed, what work was performed, the expenses incurred, the results of the response activity and, if it has not concluded, when the environmental response is expected to conclude.

See response to question 16, above.

41. Have you incurred any costs associated with the investigation, remediation or other action to address contamination at the Site or any portion thereof? If yes, identify all costs incurred by you through the date of this Information Request.

The Company does not believe it has incurred costs connected with the Site. If any connection might be made at any time between the Overisel Compressor Station or any other location and the Kalamazoo River Superfund Site, the Company reserves the right to claim its response action costs at the Compressor station, or such other site, as response action costs for the Superfund Site.

SAMPLE IDENTIFICATION LOG

Analysis Number OV1
Analysis Date 4/18/89

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-001	4-18-89	9:50 AM	REC	Miscellaneous starting air piping manifold in comp. bldg.	1.1
ØV-002	4-18-89	11:56 AM	REC	Second rinsate, ~~[illegible]~~ same system as ØV-001.	0.5
ØV-003	4-18-89	5:15 PM	REC	Compressor Bldg. air piping. Complete system to west wall vertical value.	4.1

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Chain-of-Custody Record

K00002919

Initiated By _____ Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

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SAMPLE IDENTIFICATION LOG

Analysis Number ØV 2
Analysis Date 4-19-89

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-004	4-19-89	9:20AM	REC	Starting Air System in Comp. Bldg. All engines and heater to West wall. Second flush	4.3
ØV-005	4-19-89	11:48AM	REC	Same as ØV-004. Third flush.	2.0
ØV-006	4-19-89	1:04PM	REC	Same as ØV-004. Fourth flush	1.6
ØV-007	4-19-89	4:15PM	REC	Manifold consisting of old air comp. piping and aftercooler. First flush.	2.3
ØV-008	4-19-89	5:35PM	REC	Same system as ØV-007. Second flush.	RUN ON ØV-3

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Chain-of-Custody Record

K00002920

Initiated By _____ Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

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SAMPLE IDENTIFICATION LOG

Analysis Number QV-3
Analysis Date 4-20-89

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-008	4/19		REC	SAME AS QV-007 SECOND FLUSH	2.3
ØV-009	4-20-89	2:20 AM	REC	All piping in Aux. bldg., All yard piping First flush.	10.7

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Chain-of-Custody Record

Initiated By [signature] Relinquished By K00002921
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

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SAMPLE IDENTIFICATION LOG

Analysis Number ØV-4
Analysis Date 4-21-89

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-010	4-21-89	9:00AM	REC	Starting air from West wall of engine room through yard & aux. bldg. second flush	14.3
ØV-011	4-21-89	11:10AM	REC	SAME AS Ø-010 THIRD FLUSH	7.5
ØV-012	4-21-89	4:00PM	REC	Distillate Sample - Quadrex clean tanks	0.02
ØV-013	4-21-89	4:35PM	REC	Same as ØV-010. fourth flush.	1.0
ØV-014	4-21-89	5:40PM	REC	Same as ØV-010. fifth flush	ON OV-5

Chain-of-Custody Record

Initiated By [signature] Relinquished By

Accepted By Relinquished By

Accepted By Terminated By

K00002922

SAMPLE IDENTIFICATION LOG

Analysis Number ØV-5
Analysis Date 4-22-89

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-14	4/22	5:40	REC	SAME AS ØV-010 FIFTH FLUSH	1.6
ØV-15	4/22	11:00	REC	CLEAN DISTILLATE	0.003

FROM ØV-4

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Chain-of-Custody Record

Initiated By _____ Relinquished By _____

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

K00002923

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SAMPLE IDENTIFICATION LOG

Analysis Number ØV-006
Analysis Date 4-24-89

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-016	4-24-89	2:32 PM	REC	West #1 air receiver - first flush.	123
ØV-017	↓	4:00	RJH	SAME AS 016 SECOND FLUSH	22

Chain-of-Custody Record

Initiated By [signature] Relinquished By _____

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

K00002924

SAMPLE IDENTIFICATION LOG

Analysis Number ØV-7
Analysis Date 4-25-89

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-18	4-25-89	11:00	RJH	SAME AS ØV-17 THIRD FLUSH	23
ØV-19	|	3:15	RJH	SAME AS ØV-18 FORTH FLUSH	53
ØV-20	4-25-89	4:00PM	REC	clean tank sample	0.05
ØV-21	4-25-89	4:25PM	REC	~~[illegible]~~ Air Receiver #2 - first sample / second flush.	>770

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Chain-of-Custody Record

K00002925

Initiated By [signature] Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

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SAMPLE IDENTIFICATION LOG

Analysis Number ØV-8
Analysis Date 4-26-89

Sample Control Number	Sample Collection Date mmddyy	Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-22	4-26-89	8:34	REC	Air Receiver #1 - fifth flush	83
ØV-23	4-26-89	9:35	REC	air Receiver #1 - sixth flush	5
ØV-24	4-26-89	10:30	RJH	AIR RECIEVER #1 - SEVENTH FLUSH	1.1
ØV-25	4-26-89	2:30	REC	air Receiver #2 - third flush - second specimen.	140
ØV-26	4-26-89	2:45	REC	Quadrex "dirty tank" specimen.	275
ØV-27	4-26-89	4:00	REC	Air Receiver #2 - fourth flush - third specimen	48
ØV-28	4-26-89		RJH	AIR RECIEVER #2 FIFTH FLUSH fourth specimen	30

Chain-of-Custody Record

K00002926

Initiated By [signature] Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

SAMPLE IDENTIFICATION LOG

Analysis Number ØV-9
Analysis Date

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-29	4-27-89	8:20	REC	Air Receiver #2 - sixth flush - fifth specimen	24
ØV-30	4-27-89	11:11	REC	Air Receiver #2 - seventh flush - sixth specimen	21
ØV-31	4-27-89	12:00	REC	Air Receiver #2 - eight flush - seventh sample	3.5
ØV-32	4-27-89	4:10	RJH	AIR RECIEVER #3 FIRST SAMPLE	24
ØV-33	4-27-89	5:10	RJH	SAME AS ØV-32 SECOND SAMPLE	68

Chain-of-Custody Record

Initiated By _____ Relinquished By _____

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

K00002927

SAMPLE IDENTIFICATION LOG

Analysis Number ØV-10
Analysis Date 4-28-89

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-34	4-28-89	9:10	RVH	AIR RECIEVER #3 THIRD SAMPLE	4.7
ØV-35	4-28-89	10:20	RVH	SAME AS OV-34 [redacted] 4th SAMPLE	0.38
ØV-36	4-28-89	3:45	REC	Air Receiver #4 - first sample.	23
ØV-37	4-28-89	5:00	RVH	SAME AS 36 SECOND SAMPLE	4.8
ØV-38	4-28-89	5:40	RVH	SAME AS 37 THIRD SAMPLE	9.3
ØV-39	4-29-89	7:45	REC	Quadrex "dirty tank" sample	210
ØV-40	4-29-89	9:30	RVH	SAME AS 38 FORTH SAMPLE	
ØV-41	4-29-89	3:30	RVH	CLEAN DISTALITE	0.28 0.27

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Chain-of-Custody Record

Initiated By [signature] Relinquished By K00002928

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

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SAMPLE IDENTIFICATION LOG

Analysis Number OV1
Analysis Date 4/19/89

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-001	4-18-89	9:50 AM	REC	Miscellaneous starting air piping manifold in comp. bldg.	1.1
ØV-002	4-18-89	11:56 AM	REC	Second rinsate. ~~[illegible]~~ same system as ØV-001.	0.5
ØV-003	4-18-89	5:15 PM	REC	Compressor Bldg. air piping. Complete system to west wall vertical value.	4.1

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Chain-of-Custody Record

K00002929

Initiated By _____ Relinquished By _____
Accepted By [illegible] 04-29-89 Relinquished By _____
Accepted By _____ Terminated By _____

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SAMPLE IDENTIFICATION LOG

Analysis Number ØV 2
Analysis Date 4-19-89

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-004	4-19-89	9:20AM	REC	Starting Air System in Comp. Bldg. all engines and heater to West wall. Second flush	4.3
ØV-005	4-19-89	11:48AM	REC	Same as ØV-004. Third flush.	2.0
ØV-006	4-19-89	1:04PM	REC	Same as ØV-004. Fourth flush	1.6
ØV-007	4-19-89	4:15PM	REC	Manifold consisting of old air comp. piping and aftercoolers. First flush.	2.3
ØV-008	4-19-89	5:35PM	REC	Same system as ØV-007. Second flush	RUN ON ØV-3

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Chain-of-Custody Record

K00002930

Initiated By _____ Relinquished By _____
Accepted By flow J 04-29-89 Relinquished By _____
Accepted By _____ Terminated By _____

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SAMPLE IDENTIFICATION LOG

Analysis Number QV-3
Analysis Date 4-20-89

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-008	4/19		REC	SAME AS QV-007 SECOND FLUSH	2.3
ØV-009	4-20-89	2:20 AM	REC	all piping in aux. bldg., all yard piping First flush.	10.7

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Chain-of-Custody Record

Initiated By [signature] Relinquished By K00002931

Accepted By [signature] 04-29-89 Relinquished By

Accepted By Terminated By

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SAMPLE IDENTIFICATION LOG

Analysis Number ØV-4
Analysis Date 4-21-89

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-010	4-21-89	9:00AM	REC	Starting Air from West wall of engine room through yard & aux. bldg. second flush	14.3
ØV-011	4-21-89	11:10AM	REC	SAME AS Ø-010 THIRD FLUSH	7.5
ØV-012	4-21-89	4:00 PM	REC	Distillate Sample - Quadrex clean tanks	0.02
ØV-013	4-21-89	4:35PM	REC	Same as ØV-010. fourth flush.	1.0
ØV-014	4-21-89	5:40PM	REC	Same as ØV-010. fifth flush	ON OV-5

Chain-of-Custody Record

K00002932

Initiated By [signature] Relinquished By _____
Accepted By [signature] 04-29-89 Relinquished By _____
Accepted By _____ Terminated By _____

SAMPLE IDENTIFICATION LOG

Analysis Number ØV-5
Analysis Date 4-22-89

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-14	4/22 21	5:40	REC	SAME AS ØV-010 FIFTH FLUSH	1.6 FROM ØV-4
ØV-15	4/22	11:00	REC	CLEAN DISTALLATE	0.003

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Chain-of-Custody Record

Initiated By _____ Relinquished By _____

Accepted By KWJ 04-29-89 Relinquished By _____

Accepted By _____ Terminated By _____

K00002933

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SAMPLE IDENTIFICATION LOG

Analysis Number ØV-006
Analysis Date 4-24-89

Sample Control Number	Sample Collection Date mmddyy	Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-016	4-24-89	2:32 PM	REC	West #1 air receiver - first flush.	123
ØV-017	↓	4:00	RJH	SAME AS 016 SECOND FLUSH	22

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Chain-of-Custody Record

K00002934

Initiated By [signature] Relinquished By _____
Accepted By [signature] 04-29-89 Relinquished By _____
Accepted By _____ Terminated By _____

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SAMPLE IDENTIFICATION LOG

Analysis Number ØV-7
Analysis Date 4-25-89

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-18	4-25-89	11:00	RJH	SAME AS ØV-17 THIRD FLUSH	23
ØV-19		3:15	RJH	SAME AS ØV-18 FORTH FLUSH	53
ØV-20	4-25-89	4:00PM	REC	Clean tank sample	0.05
ØV-21	4-25-89	4:25PM	REC	~~Tank~~ Air Receiver #2 - first sample/ second flush.	>770

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Chain-of-Custody Record

Initiated By [signature] Relinquished By

Accepted By [signature] 04-25-89 Relinquished By

Accepted By Terminated By

K00002935

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SAMPLE IDENTIFICATION LOG

Analysis Number ØV-8
Analysis Date 4-26-89

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-22	4-26-89	8:34	REC	Air Receiver #1 - fifth flush	83
ØV-23	4-26-89	9:35	REC	Air Receiver #1 - sixth flush	5
ØV-24	4-26-89	10:30	RIH	AIR RECIEVER #1 - SEVENTH FLUSH	1.1
ØV-25	4-26-89	2:30	REC	Air Receiver #2 - third flush - second specimen.	140
ØV-26	4-26-89	2:45	REC	Quadrex "dirty tank" specimen.	275
ØV-27	4-26-89	4:00	REC	Air Receiver #2 - fourth flush - third specimen	48
ØV-28	4-26-89		RIH	AIR RECIEVER #2 FIFTH FLUSH fourth specimen	30

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Chain-of-Custody Record

K00002936

Initiated By [signature] Relinquished By
Accepted By [signature] 04-27-89 Relinquished By
Accepted By Terminated By

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SAMPLE IDENTIFICATION LOG

Analysis Number ØV-9
Analysis Date _____

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-29	4-27-89	8:20	REC	Air Receiver #2 - sixth flush - fifth specimen	24
ØV-30	4-27-89	11:11	REC	Air Receiver #2 - seventh flush - sixth specimen	21
ØV-31	4-27-89	12:00	REC	Air Receiver #2 - eight flush - seventh sample	3.5
ØV-32	4-27-89	4:10	RVH	AIR RECEIVER #3 FIRST SAMPLE	24
ØV-33	4-27-89	5:10	RVH	SAME AS ØV-32 SECOND SAMPLE	68

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Chain-of-Custody Record

K00002937

Initiated By _____ Relinquished By _____
Accepted By HWO 04-28-89 Relinquished By _____
Accepted By _____ Terminated By _____

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SAMPLE IDENTIFICATION LOG

Analysis Number ØV-10
Analysis Date 4-28-89
4-29-89

Sample Control Number	Sample Date mmddyy	Collection Time hrmin	By xxx	Sample Description	PCB Result mg/kg
ØV-34	4-28-89	9:10	RJH	AIR RECIEVER #3 THIRD SAMPLE	4.7
ØV-35	4-28-89	10:20	RJH	SAME AS OV-34 [redacted] 4th SAMPLE	0.38
ØV-36	4-28-89	3:45	REC	Air Receiver #4 - first sample.	23
ØV-37	4-28-89	5:00	RJH	SAME AS 36 SECOND SAMPLE	4.8
ØV-38	4-28-89	5:40	RJH	SAME AS 37 THIRD SAMPLE	9.3
ØV-39	4-29-89	7:45	REC	Quadrex "dirty tank" sample	210
ØV-40	4-29-89	9:30	RJH	SAME AS 38 FORTH SAMPLE	
ØV-41	4-29-89	3:30	RJH	CLEAN DISTALITE	0.28 0.27

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Chain-of-Custody Record

Initiated By [signature] Relinquished By _____

Accepted By [signature] 04-29-89 Relinquished By _____

Accepted By _____ Terminated By _____

K00002938

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CALIBRATION LOG

Analysis Number OV1
Analysis Date 4/13/89

Calibration Standard 1254

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Calib On Run Y/N	Re-Analysis Results
1.00	0.95	+/- 0.05	243	Y	.99
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
0.10	0.092	+/- 0.02	244	Y	0.096
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			

Final Calibrations Run Numbers: Standard Conc 1.00 ug/mL _____
Standard Conc 0.10 ug/mL _____

QC Calibration Check Standard

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Analysis Results
0.20		+/- 0.02		
0.20		+/- 0.02		
0.20		+/- 0.02		

End-Of-Analysis Calibration Check

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc
1.00	1.05	+/- 0.10	0.10		+/-0.03
1.00		+/- 0.10	0.10		+/-0.03

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Chain-of-Custody Record K00002939

Initiated By [signature] Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

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SAMPLE ANALYSIS WORKSHEET

Analysis Number OVI
Analysis Date 4-18-89

Sample Control Number	Original Sample Volume mL (A)	Final Sample Volume mL (B)	Dilution: Sample/ Final mL/mL (C)/(D)	PCBE Analyte Result ug/mL (E)	Calculated PCB Result mg/kg (F)	Analysis Run Number
OV-001	1mL	10mL	NEAT	0.177	1.11	246
OV-002	1mL	10mL	NEAT	0.081	0.51	248
OV-003	1mL	10mL	NEAT	0.65	4.1	251

++

Chain-of-Custody Record

K00002940

Initiated By Robert Howe
Accepted By
Accepted By

Relinquished By
Relinquished By
Terminated By

++

QC SPIKE ANALYSIS

Analysis Number OV1
Analysis Date 4/18/89

Sample Analyte Control Number OV-001

==========

Sample Analyte PCBE Result 0.177 ug/mL

QC Spike Concentration 0.1 ug/mL

==========

Sample Spike Preparation

Sample Analyte Volume 0.10 mL

QC Spike Volume 0.10 mL

Total Sample Spike Volume 0.20 mL

==========

Sample Spike Concentration

Sample Analyte 0.1 mL x Sample Analyte 0.177 ug/mL = 0.0177 ug

QC Spike 0.1 mL x QC Spike 0.100 ug/mL = 0.0100 ug

Total Volume 0.2 mL Total PCB 0.0277 ug

QC Spike Conc = Total PCB ug / Total Volume mL

= 0.0277 ug / 0.20 mL = 0.139 ug/mL

==========

Sample Spike Analysis Result 0.154 ug/mL

==========

Percent Recovery = (Analyte Spike Results / QC Spike Conc) x 100%

= (0.154 ug/mL / 0.139 ug/mL) x 100%

= 111 %

==========

==========
++
Chain-of-Custody Record

K00002941

Initiated By _____ Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____
++

DISK LOG

Disk Number	Analysis Date	Analysis Number	Sample Control Number	Run Number	Disk File Number
WP2	4/18/89	OV1	1.0 CALIB	243	A:Q83BQ3KE.BNC
	4/18/89	OV1	.1 CALIB	244	A:Q83BØCDA.BNC
		OV1	OV-001	246	A:Q83B4EBD.BNC
		OV1	OV-002	248	A:Q83B72F8.BNC
OV1		OV1	OV-003	251	A:Q83BB62B.BNC

++

Chain-of-Custody Record

Initiated By _____ Relinquished By _____

Accepted By _____ Relinquished By _____

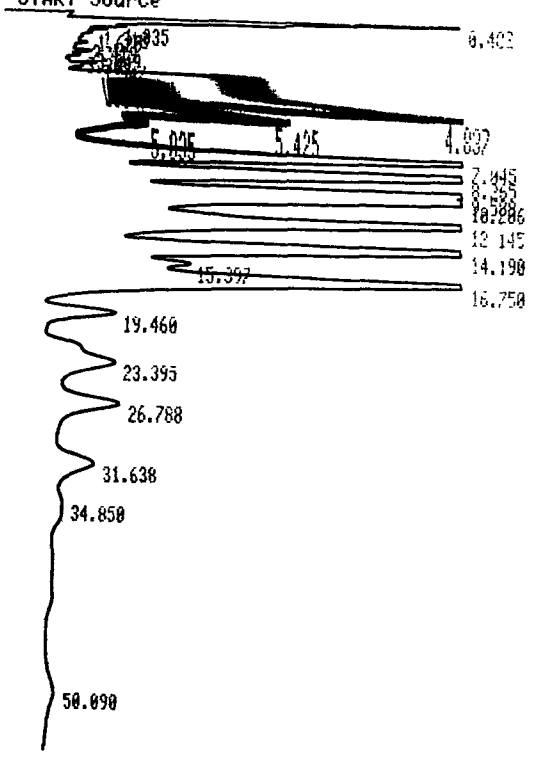
Accepted By _____ Terminated By _____

K00002942

++

* READY WITH 'PCBE'

* RUN # 252 APR 18, 1989 18:17:23
START-Source



TIMETABLE STOP

Closing signal file A:Q83BBE33.BNC

RUN# 252 APR 18, 1989 18:17:23

SIGNAL FILE: A:Q83BBE33.BNC

PCBE

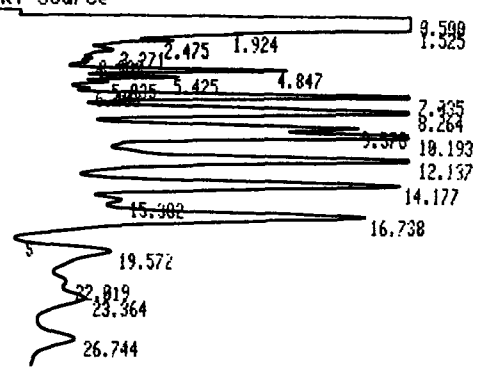
NORM

RT	TYPE	AREA	WIDTH	HEIGHT
.482	BB	3338458	.050	1112938
1.035	BP	9204	.115	1339
1.318	PV	8142	.100	1352
1.629	VP	4542	.121	625
2.419	VV	7638	.148	859
3.049	VV	16490	.179	1532
3.365	VP	8902	.172	363
3.947	PV	32748	.235	2327
4.837	VV	550623	.293	31062
5.425	VV	289711	.290	16625
5.835	VV	152550	.418	6088
7.045	VV	1445034	.456	52867
8.265	VV	2013410	.700	47945
9.588	VV	1345528	.599	37468
10.206	VV	1949391	.616	52745
12.145	VV	2512726	.965	43420
14.190	VV	2098819	.885	39544
15.397	VV	455141	.725	10458
16.750	VP	2299117	1.074	35665
19.460	PP	276046	.883	5210
23.395	PV	636711	2.046	5187
26.788	VV	634083	1.910	5532
31.638	VV	463288	2.136	3515
34.850	VV	255428	3.349	1271
50.090 I	VP	157709	3.713	708

RT	CAL#	APCT	NAME
.482		.000	
1.035		.000	
1.318		.000	
1.629		.000	
2.419	2	.043	P021
3.049	3	.094	P028
3.365	4	.051	P032
3.947	5	.186	P037
4.837	7	3.128	P047
5.425	8	1.646	P054
5.835	9	.867	P058
7.045	10R	8.210	P070
8.265	11	11.439	P084
9.588	12	7.645	P098
10.206	13	11.075	P104
12.145	15	14.276	P125
14.190	16R	11.924	P146
15.397	17	2.586	P160
16.750	18	13.862	P174
19.460	19	1.568	P203
23.395	20	3.617	P232
26.788	21	3.603	P280
31.638	22	2.632	P332
34.850	23	1.451	P372
50.090	25	.896	P528

TOTAL AREA=2.0961E+07
MUL FACTOR=1.0000E+00

* RUN # 251 APR 18, 1989 17:43:06
START-Source



STOP

Closing signal file A:Q83BB62B.BNC

RUN# 251 APR 18, 1989 17:43:06

SIGNAL FILE: A:Q83BB62B.BNC

PCBE

NORM

RT	TYPE	AREA	WIDTH	HEIGHT
.500	SPB	120439480	.246	8171139
1.525	TBB	156824	.078	33313
1.924	TBB	10086	.106	1587
2.475	TBB	27400	.144	3162
3.271	TBV	48347	.425	1894
3.939	TVV	12903	.205	1047
4.219	TVP	15105	.241	1045
4.847	TPV	284472	.293	16207
5.425	TVV	132966	.268	8282
5.835	TVV	57199	.296	3223
6.403	TVV	33009	.274	2006
7.035	TVV	824230	.442	31077
8.264	TVV	1219458	.674	30138
9.578	TVV	808242	.588	22916
10.193	TVV	1161226	.597	32406
12.137	TVV	1644555	.915	29950
14.177	TVV	1433742	.876	27385
15.382	TVV	304385	.716	7087
16.738	TVB	1693158	1.106	25514
19.572	BV	670436	1.556	7179
22.019	VV	276740	1.181	3905
23.364	VV	548448	1.754	5211
26.744 I	VH	566457	2.089	4519

RT	CAL#	APCT	NAME
.500		.000	
1.525		.000	
1.924		.000	
2.475	2	.240	P021
3.271		.000	
3.939	5	.113	P037
4.219	6	.132	P040
4.847	7	2.494	P047
5.425	8	1.166	P054
5.835	9	.502	P058
6.403		.000	
7.035	10R	7.227	P070
8.264	11	10.693	P084
9.578	12	7.087	P098
10.193	13	10.182	P104
12.137	15	14.420	P125
14.177	16R	12.572	P146
15.382	17	2.669	P160
16.738	18	14.847	P174
19.572	19	5.879	P203
22.019		.000	
23.364	20	4.809	P232
26.744	21	4.967	P280

TOTAL AREA=1.3237E+08
MUL FACTOR=1.0000E+00

*
BASIC WORKING - PLEASE WAIT

METHOD NAME = M:PCBE.MET M = 3

QUANTITATED FOR PCB1254 ONLY

ANALYTE PCB, UG/ML = 0.648977

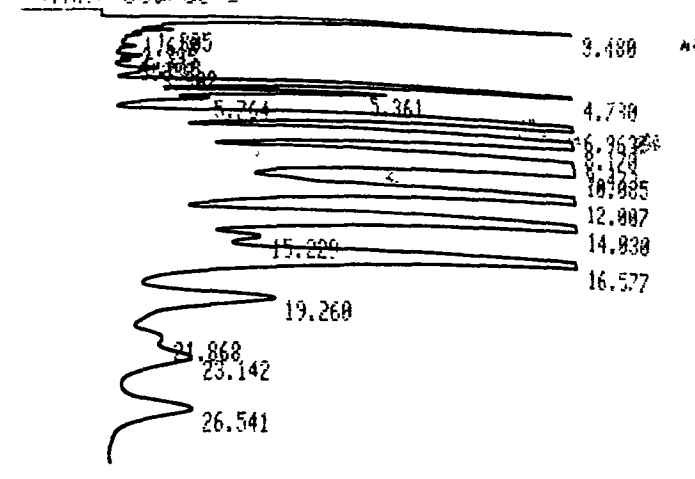
REPORTED CONCENTRATIONS AS

E1242	E1254	E1260
0	31.432	0
0	13.6782	0
0	6.75045	0
0	77.8386	0
0	105.644	0
0	46.3835	0
0	83.243	0
0	102.79	0
0	76.0593	0

K00002944

* READY WITH 'E1254'

* RUN # 243 APR 18, 1989 04:59:57
START-Source 1



TIMETABLE STOP

Closing signal file A:Q83B034E.BNC

RUN# 243 APR 18, 1989 04:59:57

SIGNAL FILE: A:Q83B034E.BNC

PCB 1254

ESTD

RT	TYPE	AREA	WIDTH	HEIGHT
.480	SPB	3062978	.049	1046164
1.305	TBB	8704	.073	1990
1.618	BB	1258	.036	578
2.395	BV	9269	.161	959
3.018	PV	15430	.168	1533
3.332	VP	8953	.167	893
3.902	PV	35728	.233	2558
4.780	VV	539283	.284	31602
5.361	VV	276301	.282	16356
5.764	VV	112654	.333	5646
6.963	VV	1366875	.444	51356
8.170	VV	1941766	.685	47212
9.473	VV	1277571	.588	36221
10.085	VV	1863821	.607	51213
12.007	VV	2373416	.940	42102
14.030	VV	1945359	.858	37807
15.229	VV	378680	.717	8797
16.577	VV	2135792	1.064	33444
19.260	VV	759006	1.294	9775
21.868	VV	193073	1.042	3087
23.142	VV	437259	1.496	4873
26.541	VP	438485	1.481	4934

RT	CAL#	NG/ML	NAME
.480		.000	
1.305		.000	
1.618		.000	
2.395		.000	
3.018		.000	
3.332		.000	
3.902		.000	
4.780	1	58.475	P047
5.361	2	27.777	P054
5.764	3	13.942	P058
6.963	4R	126.243	P070
8.170	5	166.493	P084
9.473	6	71.368	P098
10.085	7	131.957	P104
12.007	8	144.964	P125
14.030	9R	99.570	P146
15.229	10	12.664	P160
16.577	11	79.523	P174
19.260	12	17.438	P203
21.868		.000	
23.142	13	9.447	P232
26.541		.000	

TOTAL AREA=1.9182E+07
MUL FACTOR=1.0000E+00

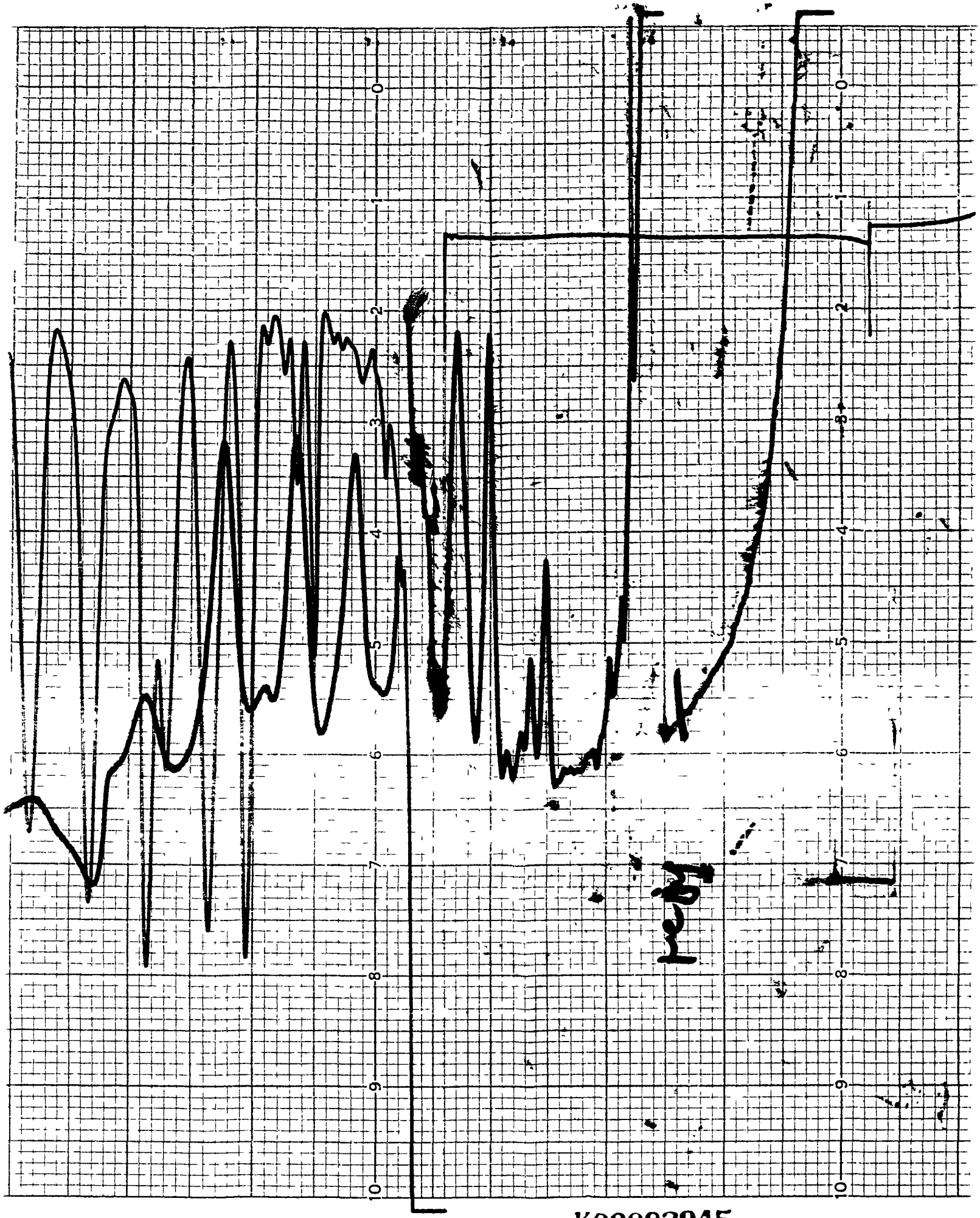
GRP#	NG/ML	NAME
1	9.5041E+02	PCBs

*
BASIC WORKING - PLEASE WAIT

METHOD NAME = M:E1254.MET M = 3

LEVEL 1 = 0.1 PPM (L=1)
LEVEL 2 = 1.0 PPM (L=2)

TO UPDATE CALIBRATION TABLE ENTER
(COLIB) -L (ENTER)



K00002945

CALIBRATION LOG

Analysis Number WP2-007
Analysis Date 4-18/19-89

Calibration Standard 1260

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Calib On Run Y/N	Re-Analysis Results
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
0.10	0.11	+/- 0.02	259	Y	0.098
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			

Final Calibrations Run Numbers: Standard Conc 1.00 ug/mL _____
Standard Conc 0.01 ug/mL _____

QC Calibration Check Standard

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Analysis Results
0.20		+/- 0.02		
0.20		+/- 0.02		
0.20		+/- 0.02		

End-Of-Analysis Calibration Check

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc
1.00		+/- 0.10	0.10		+/-0.03
1.00		+/- 0.10	0.10		+/-0.03

Chain-of-Custody Record

K00002946

Initiated By _____ Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

CALIBRATION LOG

Analysis Number ØV2
Analysis Date 4-19-89

Calibration Standard 1254

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Calib On Run Y/N	Re-Analysis Results
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			

Final Calibrations Run Numbers: Standard Conc 1.00 ug/mL _____
Standard Conc 0.01 ug/mL _____

QC Calibration Check Standard

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Analysis Results
0.20	0.23	+/- 0.02	254	
0.20		+/- 0.02		
0.20		+/- 0.02		

End-Of-Analysis Calibration Check

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc
1.00	0.95	+/- 0.10	0.10		+/-0.03
1.00		+/- 0.10	0.10		+/-0.03

Chain-of-Custody Record

K00002947

Initiated By [signature] Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

DISK LOG

Disk Number	Analysis Date	Analysis Number	Sample Control Number	Run Number	Disk File Number
ØV 1	4-19-89	ØV 2	QC CHECK		
↓	↓	ØV 2	ØV-004	255	A:Q83C9767BNC
		↓	ØV-005	257	A:Q83CBF9D.BNC
			ØV-006	258	A:Q83CC9DC.BNC
↓	↓	↓	OV-007	260	A:Q83CF8D6 BNC

++

Chain-of-Custody Record

Initiated By [signature] Relinquished By _____ K00002948

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

++

SAMPLE ANALYSIS WORKSHEET

Analysis Number ØV 2
Analysis Date 4-19-89

Sample Control Number	Original Sample Volume mL (A)	Final Sample Volume mL (B)	Dilution: Sample/ Final mL/mL (C)/(D)	PCBE Analyte Result ug/L (E)	Calculated PCB Result mg/kg (F)	Analysis Run Number
ØV 004	1 mL	10 mL	NEAT	0.695	4.3	255
ØV 005	1 mL	10 mL	NEAT	0.324	2.0	257
ØV 006	1 mL	10 mL	NEAT	0.260	1.6	258
ØV 007	1 mL	10 mL	NEAT	0.364	2.3	260

++

Chain-of-Custody Record

Initiated By Robert J. Howe Relinquished By _____

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

K00002949

++

QC SPIKE ANALYSIS

Analysis Number QV-2
Analysis Date 4-19-89

Sample Analyte Control Number Ø-004

==========

Sample Analyte PCBE Result 0.695 ug/mL

QC Spike Concentration 0.2 ug/mL

==========

Sample Spike Preparation

Sample Analyte Volume 0.15 mL

QC Spike Volume 0.1 mL

Total Sample Spike Volume 0.25 mL

==========

Sample Spike Concentration

Sample Analyte .15 mL x Sample Analyte 0.695 ug/mL = 0.10 ug

QC Spike 0.10 mL x QC Spike 0.2 ug/mL = 0.02 ug

Total Volume 0.25 mL Total PCB 0.12 ug

QC Spike Conc = Total PCB ug / Total Volume mL

= 0.12 ug / 0.25 mL = 0.48 ug/mL

==========

Sample Spike Analysis Result _____ ug/mL

==========

Percent Recovery = (Analyte Spike Results / QC Spike Conc) x 100%

= (0.54 ug/mL / 0.48 ug/mL) x 100%

= 113 %

==========

==========
++
Chain-of-Custody Record
Initiated By [signature] Relinquished By K00002950
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____
++

K00002951
0
1
2
3
4
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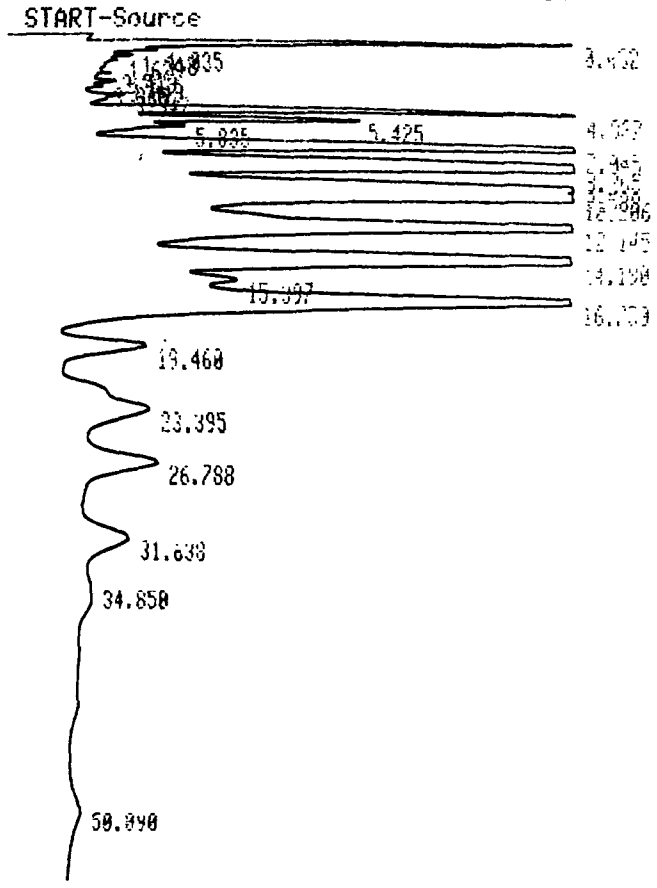
6
7
8
9
10

*AN A:Q83BBE33.BNC
RUN # 252 APR 18, 1989 18:17:23
START-Source



TIMETABLE STOP

Closing signal file A:Q83BBE33.BNA

RUN# 252 APR 18, 1989 18:17:23

SIGNAL FILE: A:Q83BBE33.BNA

PCBE

NORM

RT	TYPE	AREA	WIDTH	HEIGHT
.482	BB	3338458	.050	1112932
1.035	BP	9204	.115	1330
1.318	PV	8142	.100	1352
1.629	VP	4542	.121	625
2.419	VV	7638	.148	859
3.049	VV	16490	.179	1532
3.365	VP	8902	.172	363
3.947	PV	32748	.235	2327
4.837	VV	550623	.293	31362
5.425	VV	289711	.290	16625
5.835	VV	152550	.418	6088
7.045	VV	1445034	.456	52867
8.265	VV	2013410	.700	47945
9.588	VV	1345528	.599	37468
10.206	VV	1949391	.616	52745
12.145	VV	2512726	.965	43420
14.190	VV	2098819	.885	39544
15.397	VV	455141	.725	10458
16.750	VP	2299117	1.074	35665
19.460	PP	276046	.883	5210
23.395	PV	636711	2.046	5187
26.788	VV	634083	1.910	5532
31.638	VV	463288	2.136	3615
34.850	VV	255428	3.349	1271
50.090 I	VP	157709	3.713	708

RT	CAL#	APCT	NAME
.482		.000	
1.035		.000	
1.318		.000	
1.629		.000	
2.419	2	.043	P021
3.049	3	.094	P028
3.365	4	.051	P032
3.947	5	.186	P037
4.837	7	3.128	P047
5.425	8	1.646	P054
5.835	9	.867	P058
7.045	10R	8.210	P070
8.265	11	11.439	P084
9.588	12	7.645	P098
10.206	13	11.075	P104
12.145	15	14.276	P125
14.190	16R	11.924	P146
15.397	17	2.586	P160
16.750	18	13.062	P174
19.460	19	1.568	P203
23.395	20	3.617	P232
26.788	21	3.603	P280
31.638	22	2.632	P332
34.850	23	1.451	P372
50.090	25	.896	P528

TOTAL AREA=2.0961E+07
MUL FACTOR=1.0000E+00

*

K0000292952

SAMPLE ANALYSIS WORKSHEET

Analysis Number ØV-4
Analysis Date 4-21-89

Sample Control Number	Original Sample Volume mL (A)	Final Sample Volume mL (B)	Dilution: Sample/ Final mL/mL (C)/(D)	PCBE Analyte Result ug/L (E)	Calculated PCB Result mg/kg (F)	Analysis Run Number
ØV-10	1mL	10mL	5/25 1/5	0.457	14.3	274
ØV-11	1mL	10mL	1/2	0.602	7.5	275
ØV-12	1mL	10mL	NEAT	0.003	0.02	277
ØV-13	1mL	10mL	NEAT	0.164	1.0	278

++

Chain-of-Custody Record

Initiated By [signature] Relinquished By _____

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

K00002959

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DISK LOG

Disk Number	Analysis Date	Analysis Number	Sample Control Number	Run Number	Disk File Number
OV-1	4-21-89	OV-4	ØV-010	274	A: Q83F3FC7.BNC
			Ø-011	275	A: Q83F540B.BNC
			SPIKE	276	
			ØV-012	277	A: Q83F9577.BNC
			ØV013	278	A: Q83F9E26

++

Chain-of-Custody Record

K00002960

Initiated By _____ Relinquished By _____

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

++

QC SPIKE ANALYSIS

Analysis Number ØV-4
Analysis Date 4-21-89

Sample Analyte Control Number ØV-011

==========

Sample Analyte PCBE Result .602 ug/mL

QC Spike Concentration 0.1 ug/mL

==========

Sample Spike Preparation

Sample Analyte Volume .150 mL

QC Spike Volume .100 mL

Total Sample Spike Volume .250 mL

==========

Sample Spike Concentration

Sample Analyte .150 mL x Sample Analyte .602 ug/mL = 0.09 ug

QC Spike .100 mL x QC Spike 0.1 ug/mL = 0.01 ug

Total Volume .250 mL Total PCB 0.10 ug

QC Spike Conc = Total PCB ug / Total Volume mL

= 0.10 ug / .250 mL = 0.4 ug/mL

==========

Sample Spike Analysis Result _____ ug/mL

==========

Percent Recovery = (Analyte Spike Results / QC Spike Conc) x 100%

= (0.47 ug/mL / 0.4 ug/mL) x 100%

= 118 %

==========

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++

Chain-of-Custody Record

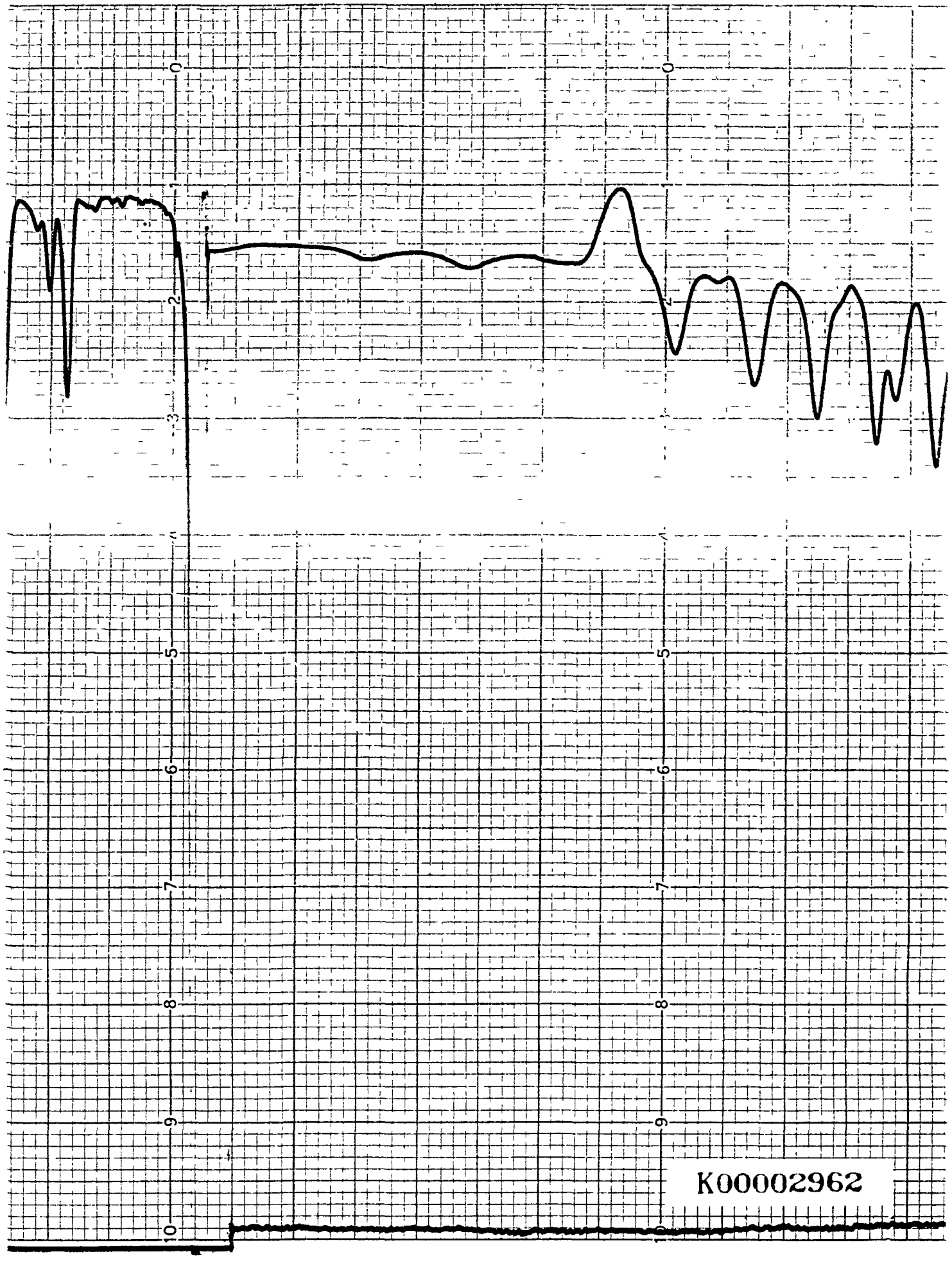
Initiated By [signature] Relinquished By _____

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

++

K00002961



K00002962

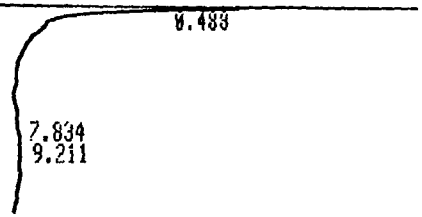
K00002963

* PLOT

STOP

* READY WITH 'WASH-E'

* RUN # 270 APR 21, 1989 07:57:40
START-Source



STOP

Closing signal file A:Q83F217D.BNC

RUN# 270 APR 21, 1989 07:57:48

SIGNAL FILE: A:Q83F217D.BNC

HEXANE

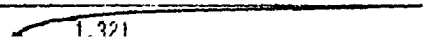
NORM

RT	AREA	TYPE	CAL#	AMOUNT
.488	467175	PB		.000
7.834	27771	BV	26	32.741
9.211	57048	VV	12	67.259

TOTAL AREA= 551994
MUL FACTOR=1.0000E+00

* READY WITH 'E1254'

* RUN # 271 APR 21, 1989 08:13:31
START-Source



QC SPIKE ANALYSIS

Analysis Number ØV 3
Analysis Date 4-20-89

Sample Analyte Control Number QV-009

==========

Sample Analyte PCBE Result 0.856 ug/mL

QC Spike Concentration 0.2 ug/mL

==========

Sample Spike Preparation

Sample Analyte Volume ~~[illegible]~~ 0.05 mL

QC Spike Volume 0.150 mL

Total Sample Spike Volume 0.20 mL

==========

Sample Spike Concentration

Sample Analyte .05 mL x Sample Analyte 0.856 ug/mL = 0.043 ug

QC Spike 0.15 mL x QC Spike 0.2 ug/mL = 0.03 ug

Total Volume 0.2 mL Total PCB 0.073 ug

QC Spike Conc = Total PCB ug / Total Volume mL

= 0.073 ug / 0.2 mL = 0.37 ug/mL

==========

Sample Spike Analysis Result 0.46 ug/mL

==========

Percent Recovery = (Analyte Spike Results / QC Spike Conc) x 100%

= (0.46 ug/mL / 0.37 ug/mL) x 100%

= 124 %

==========

==========

++

Chain-of-Custody Record

Initiated By Robert J Vance Relinquished By K00002953

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

++

SAMPLE ANALYSIS WORKSHEET

Analysis Number QV-3
Analysis Date 4-20-89

Sample Control Number	Original Sample Volume mL (A)	Final Sample Volume mL (B)	Dilution: Sample/ Final mL/mL (C)/(D)	PCBE Analyte Result ug/L (E)	Calculated PCB Result mg/kg (F)	Analysis Run Number
QV 008	1mL	10mL	NEAT	0374	2.3	264
QV 009	1mL	10mL	1:2	0.856	10.7	266

++

Chain-of-Custody Record

Initiated By [signature] Relinquished By _____

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

++

K00002954

DISK LOG

Disk Number	Analysis Date	Analysis Number	Sample Control Number	Run Number	Disk File Number
OV-1	4-20-89	ØV-3	ØV-008	264	A: Q83DD5DØ.BNC
↓	↓	ØV-3	ØV-009	266	A: Q83E2F59.BNC
↓	↓	ØV-3	QC SPIKE	267	

++

Chain-of-Custody Record

K00002955

Initiated By Robert G Horne Relinquished By _____

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

++

CALIBRATION LOG

Analysis Number ØV-3
Analysis Date 4-20-89

Calibration Standard 1254

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Calib On Run Y/N	Re-Analysis Results
1.00	~~1.05~~	+/- 0.05		~~N~~	—
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			

Final Calibrations Run Numbers: Standard Conc 1.00 ug/mL _____
Standard Conc 0.01 ug/mL _____

QC Calibration Check Standard

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Analysis Results
0.20	0.23	+/- 0.02	263	
0.20		+/- 0.02		
0.20		+/- 0.02		

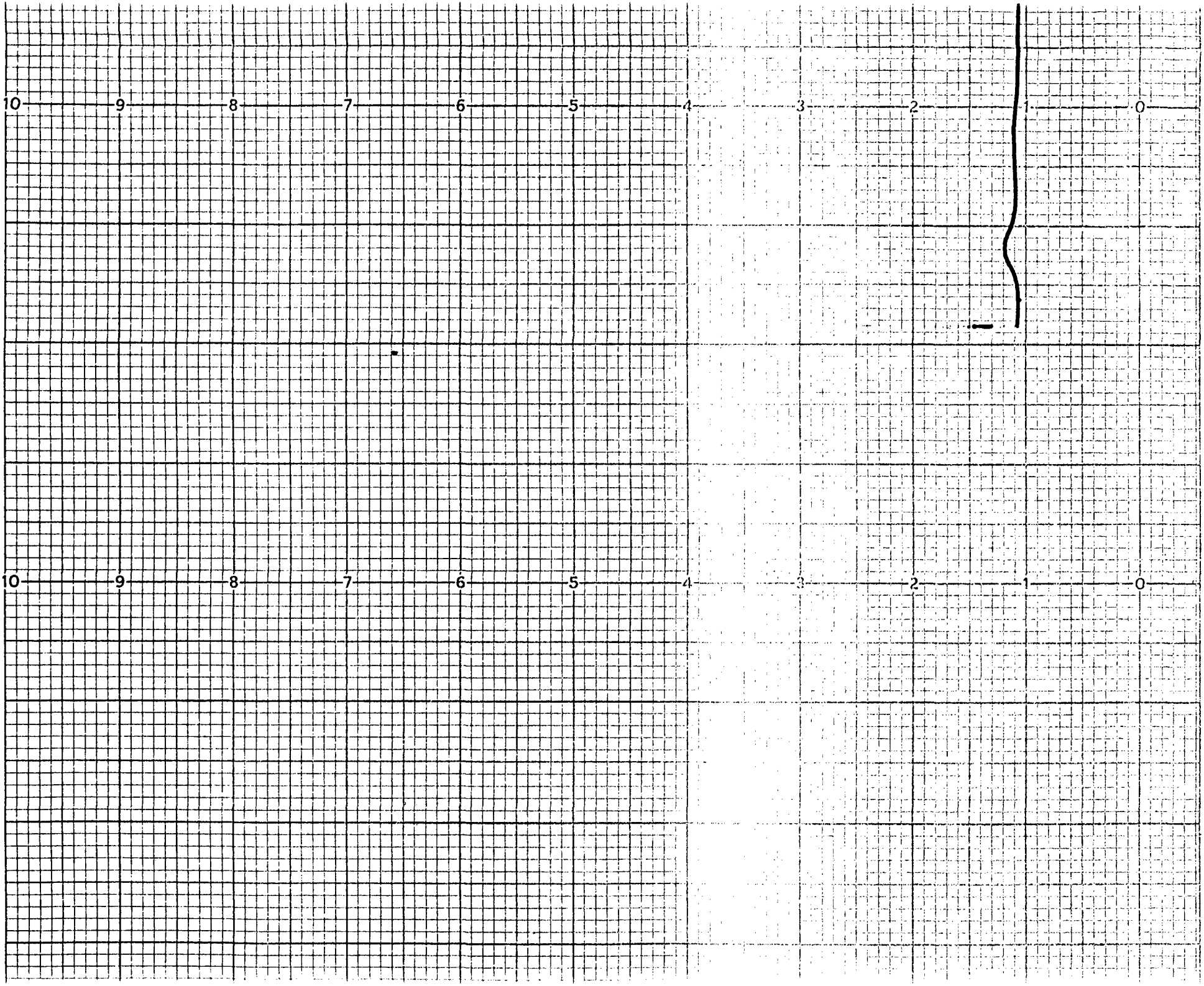
End-Of-Analysis Calibration Check

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc
1.00	1.05	+/- 0.10	0.10		+/-0.03
1.00		+/- 0.10	0.10		+/-0.03

++

Chain-of-Custody Record
Initiated By Robert A Howe
Accepted By _____
Accepted By _____
Relinquished By K00002956
Relinquished By _____
Terminated By _____

++



K00002957

50.812 25 .370 P528

TOTAL AREA=2.1376E+07
MUL FACTOR=1.0000E+00

*
BASIC WORKING - PLEASE WAIT

METHOD NAME = M:PCBE.MET M = 3

QUANTITATED FOR PCB1254 ONLY

ANALYTE PCB- UG/ML = 1.05322

REPORTED CONCENTRATIONS AS

E1242	E1254	E1260
0	66.5695	0
0	31.0246	0
0	15.3623	0
0	138.877	0
0	182.024	0
0	78.5267	0
0	142.53	0
0	159.562	0
0	110.151	0
0	14.4745	0
0	87.0058	0
0	17.0217	0
0	10.091	0
0	0	0
0	0	0
0	0	0

FOJ - BYE

* READY WITH 'E1254'

* READY WITH 'WASH-E'

K00002958

SAMPLE ANALYSIS WORKSHEET

Analysis Number ØV-5
Analysis Date 4-22-89

Sample Control Number	Original Sample Volume mL (A)	Final Sample Volume mL (B)	Dilution: Sample/ Final mL/mL (C)/(D)	PCBE Analyte Result ug/L (E)	Calculated PCB Result mg/kg (F)	Analysis Run Number
ØV-14	1 mL	10mL	NEAT	0.257	1.6	281
ØV-15	1 mL	10mL	NEAT	0.00044	0.003	285

++

Chain-of-Custody Record

K00002964

Initiated By [signature] Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

++

DISK LOG

Disk Number	Analysis Date	Analysis Number	Sample Control Number	Run Number	Disk File Number
ØV-1	4-22-89	ØV-5	ØV-014	281	A:Q84074F1.BNC
↓	↓	↓	ØV-015	285	A:Q840A558.BNC

++

Chain-of-Custody Record

Initiated By _____ Relinquished By _____

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

K00002965

++

CALIBRATION LOG

Analysis Number 9V-5
Analysis Date 4-22-89

Calibration Standard E1254

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Calib On Run Y/N	Re-Analysis Results
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			

Final Calibrations Run Numbers: Standard Conc 1.00 ug/mL _____
Standard Conc 0.01 ug/mL _____

QC Calibration Check Standard

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Analysis Results
0.20	0.26	+/- 0.02	280	
0.20		+/- 0.02		
0.20		+/- 0.02		

End-Of-Analysis Calibration Check

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc
1.00	1.15	+/- 0.10	0.10		+/-0.03
1.00		+/- 0.10	0.10		+/-0.03

++

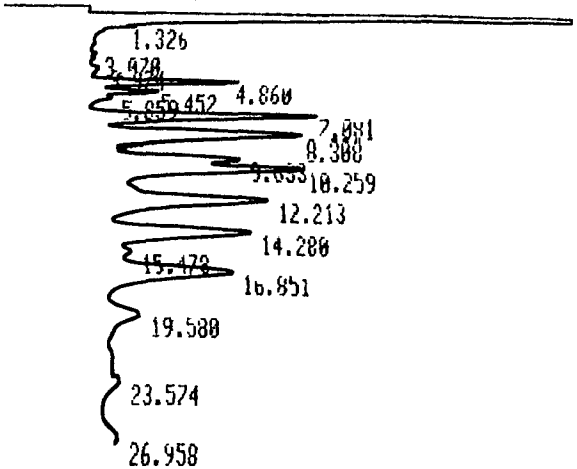
Chain-of-Custody Record K00002966

Initiated By [signature] Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

++

* READY WITH 'PCBE'

* RUN # 280 APR 22, 1989 07:33:38
START-Source



STOP

Closing signal file A:Q8406D53.BNC

RUN# 280 APR 22, 1989 07:33:38

SIGNAL FILE: A:Q8406D53.BNC

PCBE

NORM

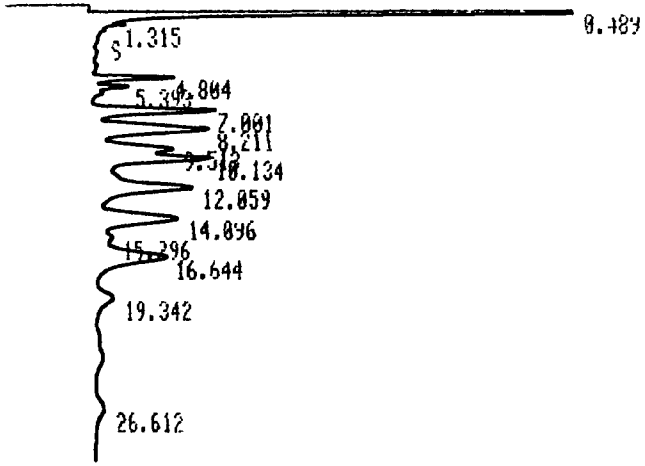
RT	TYPE	AREA	WIDTH	HEIGHT
1.326	BP	1461	.029	833
3.070	PV	4121	.192	357
3.974	PV	14379	.434	552
4.860	VV	161899	.304	8876
5.452	VV	72719	.297	4084
5.859	VV	28934	.355	1360
7.081	VV	368038	.451	13607
8.308	VV	531373	.701	12636
9.633	VV	324997	.603	8982
10.259	VV	484658	.636	12692
12.213	VV	629652	.999	10509
14.280	VV	505933	.897	9405
15.478	VV	97985	.724	2257
16.851	VV	562275	1.137	8244
19.580	VV	261437	1.651	2639
23.574	VV	136416	1.652	1376
26.958	I VH	95142	1.199	1322

RT	CAL#	APCT	NAME
1.326		.000	
3.070	2	.096	[illegible]

*

* READY WITH 'E1254'

* RUN # 283 APR 22, 1989 09:20:48
START-Source



TIMETABLE STOP

Closing signal file A:Q8408670.BNC

RUN# 283 APR 22, 1989 09:20:48

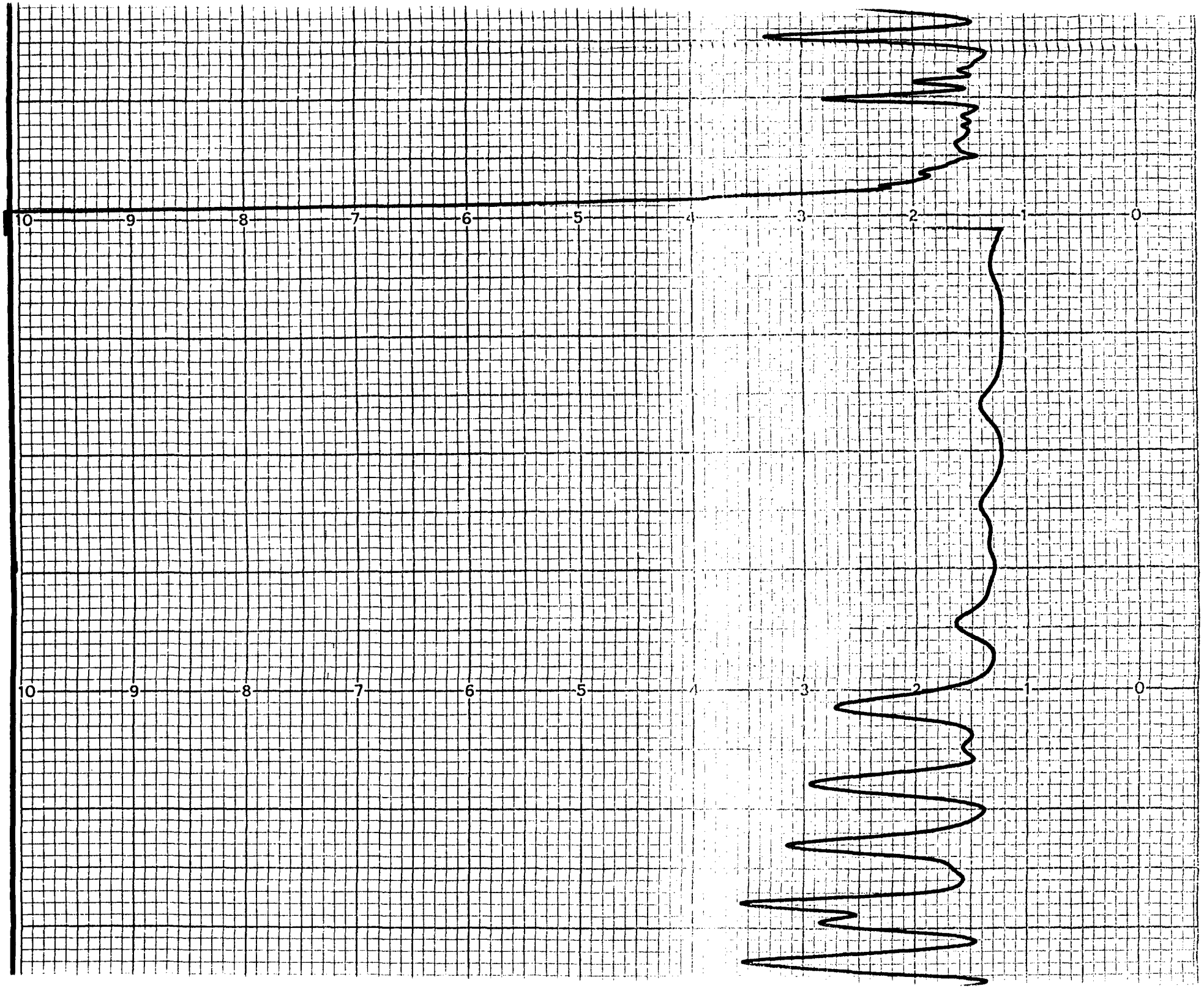
SIGNAL FILE: A:Q8408670.BNC

PCB 1254

ESTD

RT	TYPE	AREA	WIDTH	HEIGHT
.489	SPB	3236002	.061	885789
1.315	TBP	3808	.068	935
4.804	PV	80134	.277	4818
5.393	VV	34068	.271	2099
7.001	PV	187936	.428	7313
8.211	VV	273376	.663	6873
9.513	VV	166468	.587	4724
10.134	VV	247780	.604	6840
12.059	VV	322915	.920	5847
14.096	VV	249295	.843	[illegible]

K00002967

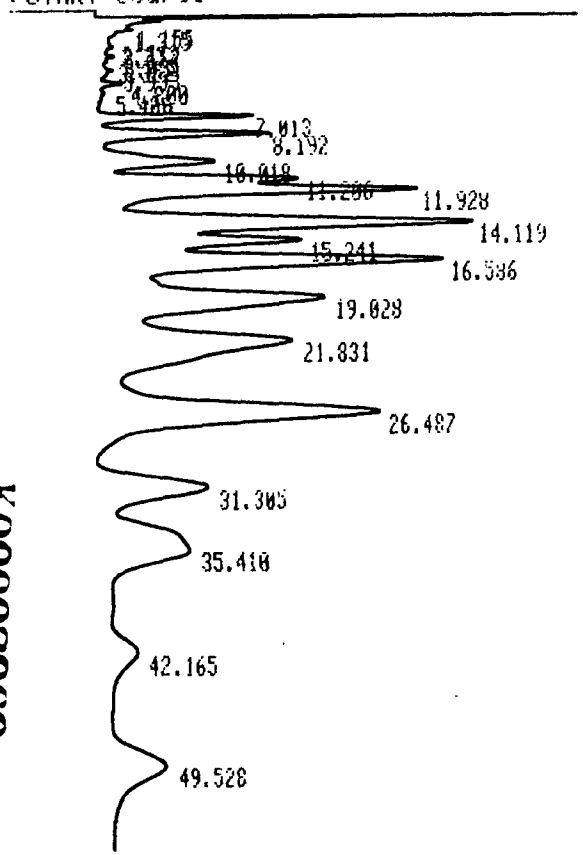


K00002968

* READY WITH 'E1260'

* RUN # 284 APR 22, 1989 10:11:18

.START-Source



TIMETABLE STOP

Closing signal file A:Q8409247.BNC

RUN# 284 APR 22, 1989 10:11:18

K00002969

SAMPLE ANALYSIS WORKSHEET

Analysis Number ØV-006
Analysis Date 4-24-89

Sample Control Number	Original Sample Volume mL (A)	Final Sample Volume mL (B)	Dilution: Sample/ Final mL/mL (C)/(D)	PCBE Analyte Result ug/L (E)	Calculated PCB Result mg/kg (F)	Analysis Run Number
ØV-16	1mL	10mL	1:25	0.790	123	292
ØV-17	1mL	10mL	1:10	0.355	22	293

++

Chain-of-Custody Record

Initiated By [signature] Relinquished By K00002970

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

++

DISK LOG

Disk Number	Analysis Date	Analysis Number	Sample Control Number	Run Number	Disk File Number
ØV-1	4-24-89	ØV ~~016~~ 006	ØV-016	292	A: Q8437AB7.BNC
		ØV-~~017~~ 006	Ø-017	293	A: Q8438E74.BNC

++

Chain-of-Custody Record

K00002971

Initiated By _____ Relinquished By _____

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

++

CALIBRATION LOG

Analysis Number PN-206
Analysis Date 4-24-89

Calibration Standard EL254

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Calib On Run Y/N	Re-Analysis Results
1.00	1.15	+/- 0.05	288	Y	.99
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
0.10	0.104	+/- 0.02	289	Y	0.96
0.10	0.96	+/- 0.02	289	Y	0.96
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			

Final Calibrations Run Numbers: Standard Conc 1.00 ug/mL _____
Standard Conc 0.01 ug/mL _____

QC Calibration Check Standard

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Analysis Results
0.20	0.28	+/- 0.02	287	0.24
0.20		+/- 0.02		
0.20		+/- 0.02		

End-Of-Analysis Calibration Check

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc
1.00	1.10	+/- 0.10	0.10		+/-0.03
1.00		+/- 0.10	0.10		+/-0.03

296

Chain-of-Custody Record

K00002972

Initiated By [signature] Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

QC SPIKE ANALYSIS

Analysis Number ØV-006
Analysis Date 4-24-89

Sample Analyte Control Number ØV-016

==========

Sample Analyte PCBE Result .790 ug/mL

QC Spike Concentration 0.1 ug/mL

==========

Sample Spike Preparation

Sample Analyte Volume .050 mL

QC Spike Volume .150 mL

Total Sample Spike Volume .200 mL

==========

Sample Spike Concentration

Sample Analyte .05 mL x Sample Analyte .79 ug/mL = 0.0395 ug

QC Spike .15 mL x QC Spike 0.1 ug/mL = 0.015 ug

Total Volume .200 mL Total PCB 0.055 ug

QC Spike Conc = Total PCB ug / Total Volume mL

= 0.055 ug / .2 mL = 0.27 ug/mL

==========

Sample Spike Analysis Result 0.34 ug/mL

==========

Percent Recovery = (Analyte Spike Results / QC Spike Conc) x 100%

= (.34 ug/mL / .27 ug/mL) x 100%

= 125 %

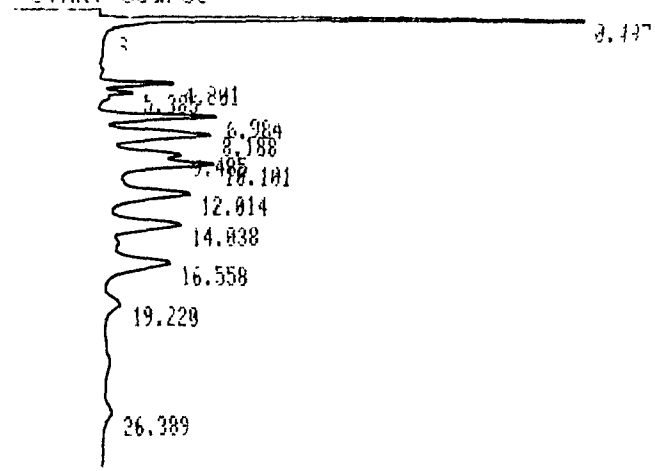
==========

==========
++
Chain-of-Custody Record K00002973

Initiated By [signature] Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____
++

K00002974
0
1
2
3
4
5
6
7
8
9
10

*AN A:Q8432201.BNC
RUN # 289 APR 24, 1989 08:49:04
START-Source



TIMETABLE STOP

Closing signal file A:Q8432201.BNA

RUN# 289 APR 24, 1989 08:49:04

SIGNAL FILE: A:Q8432201.BNA

PCB 1254

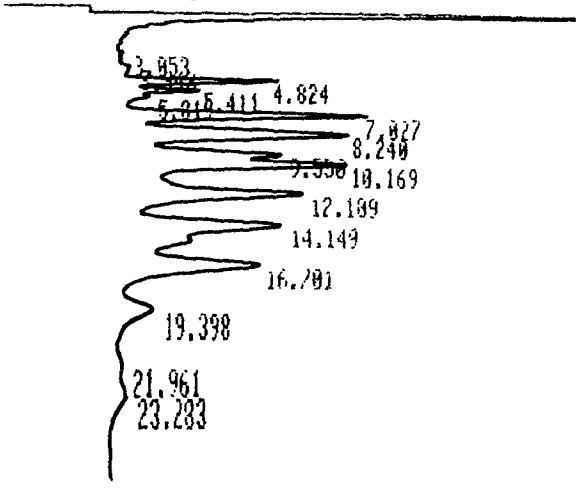
ESTD

RT	TYPE	AREA	WIDTH	HEIGHT
.497	SBB	3019088	.052	965581
4.801	PV	78463	.293	4457
5.385	VV	35197	.293	1999
6.984	PV	183208	.432	7061
8.188	VV	271947	.682	6650
9.485	VV	176699	.606	4861
10.101	VV	266097	.648	6845
12.014	VV	322237	.989	5432
14.038	VV	253526	.878	4813
16.558	VV	268105	1.067	4186
19.220	VV	89211	1.329	1119
26.389	VP	60004	1.675	597

RT	CAL#	NG/ML	NAME
.497		.000	
4.801	1	[illegible]	[illegible]

K00002975

* RUN # 287 APR 24, 1989 07:56:40
START-Source



STOP

Closing signal file A:08431109.BNC

RUN# 287 APR 24, 1989 07:56:40

SIGNAL FILE: A:08431109.BNC

PCBE

NORM

RT	TYPE	AREA	WIDTH	HEIGHT
3.053	PV	3538	.172	342
3.943	VV	12135	.271	746
4.824	VV	177272	.308	9608
5.411	VV	88724	.307	4810
5.819	VV	50226	.443	1390
7.027	VV	412413	.465	14701
8.240	VV	580640	.707	13688
9.550	VV	356586	.609	9756
10.169	VV	525123	.642	13634
12.109	VV	669281	1.009	11057
14.149	VV	540090	.920	9789
16.701	VV	574382	1.115	8587
19.398	VV	184254	1.329	2310
21.961	VV	43242	1.110	649
23.283	VP	75118	1.351	927

RT	CAL#	APCT	NAME
3.053	3	.083	P028
3.943	5	.286	P037
4.824	7	4.171	P047
5.411	8	2.088	P054
5.819	9	[illegible]	P056

K00002976

SAMPLE ANALYSIS WORKSHEET

Analysis Number ØV-7
Analysis Date 4-25-89

Sample Control Number	Original Sample Volume mL (A)	Final Sample Volume mL (B)	Dilution: Sample/ Final mL/mL (C)/(D)	PCBE Analyte Result ug/L (E)	Calculated PCB Result mg/kg (F)	Analysis Run Number
ØV-18	1mL	10mL	1:10	0.38	23	299
ØV-19	1mL	10mL	1:50	0.172	53	~~300~~ 301
ØV-20	1mL	10mL	NEAT	0.0084	0.05	303
ØV-21	1mL	10mL	1:50	2.47	>770	302

++

Chain-of-Custody Record

Initiated By [signature] Relinquished By _____ K00002977

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

++

DISK LOG

Disk Number	Analysis Date	Analysis Number	Sample Control Number	Run Number	Disk File Number
ØV-1	4-25-89	ØV-7	ØV-18	299	A:Q844A48A.BNC
			ØV-19	301	A:Q844DAE8.BNC
			ØV-20	303	A:Q844F8B7.BNC
			ØV-21	302	A:Q844EE17.BNC

++

Chain-of-Custody Record

Initiated By [signature] Relinquished By _____ K00002978

Accepted By _____ Relinquished By _____

Accepted By _____ Terminated By _____

++

QC SPIKE ANALYSIS

Analysis Number ØV-7
Analysis Date 4-25-89

Sample Analyte Control Number ØV-18

==========

Sample Analyte PCBE Result 0.38 ug/mL

QC Spike Concentration 0.2 ug/mL

==========

Sample Spike Preparation

Sample Analyte Volume .100 mL

QC Spike Volume .100 mL

Total Sample Spike Volume .200 mL

==========

Sample Spike Concentration

Sample Analyte .1 mL x Sample Analyte .38 ug/mL = 0.038 ug

QC Spike .1 mL x QC Spike .2 ug/mL = 0.02 ug

Total Volume .2 mL Total PCB 0.058 ug

QC Spike Conc = Total PCB ug / Total Volume mL

= 0.058 ug / .2 mL = 0.29 ug/mL

==========

Sample Spike Analysis Result .4 ug/mL

==========

Percent Recovery = (Analyte Spike Results / QC Spike Conc) x 100%

= (.4 ug/mL / 0.29 ug/mL) x 100%

= 137 %

==========

==========
++
Chain-of-Custody Record
Initiated By [signature] Relinquished By
Accepted By Relinquished By
Accepted By Terminated By
++

K00002979

CALIBRATION LOG

Analysis Number ØV-7
Analysis Date 4-25-89

Calibration Standard _____

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Calib On Run Y/N	Re-Analysis Results
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			

Final Calibrations Run Numbers: Standard Conc 1.00 ug/mL _____
Standard Conc 0.01 ug/mL _____

QC Calibration Check Standard

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Analysis Results
0.20	0.23	+/- 0.02	297	
0.20		+/- 0.02		
0.20		+/- 0.02		

End-Of-Analysis Calibration Check

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc
1.00		+/- 0.10	0.10		+/-0.03
1.00		+/- 0.10	0.10		+/-0.03

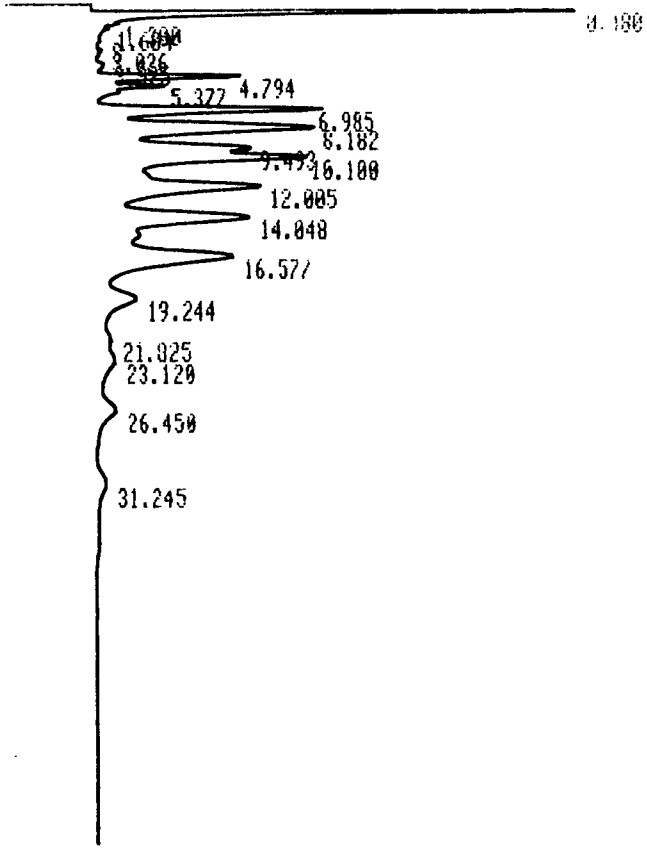
Chain-of-Custody Record
Initiated By [signature] Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

K00002980

* READY WITH 'PCBE'

* RUN # 297 APR 25, 1989 08:21:48

START-Source



TIMETABLE STOP

Closing signal file A:Q8446D1D.BNC

RUN# 297 APR 25, 1989 08:21:48

SIGNAL FILE: A:Q8446D1D.BNC

PCBE

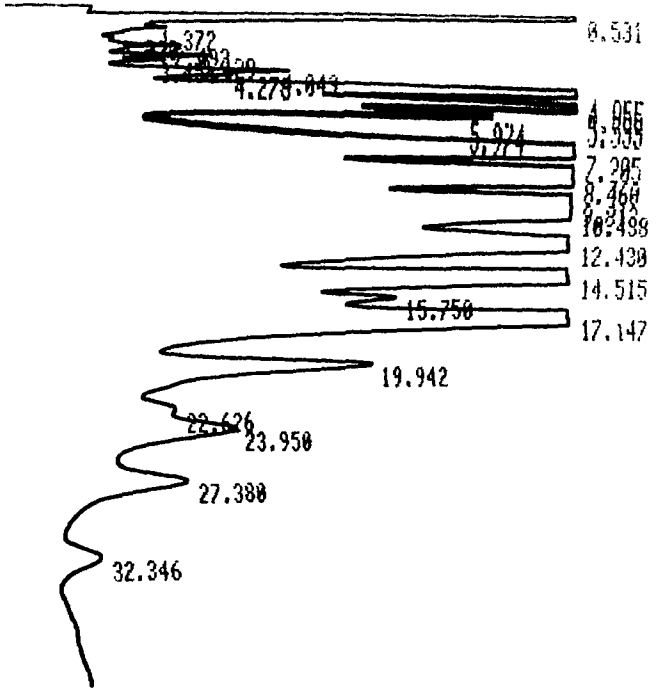
NORM

RT	TYPE	AREA	WIDTH	HEIGHT
.480	SBB	8581235	.049	2942442
1.300	TBP	1938	.071	453
1.604	TPB	1638	.078	348
3.026	PV	3830	.195	328

K00002981

* READY WITH 'PCBE'

* RUN # 302 APR 25, 1989 17:32:07
START-Source



STOP

Closing signal file A:Q844EE17.BHC

RUN# 302 APR 25, 1989 17:32:07

SIGNAL FILE: A:Q844EE17.BHC

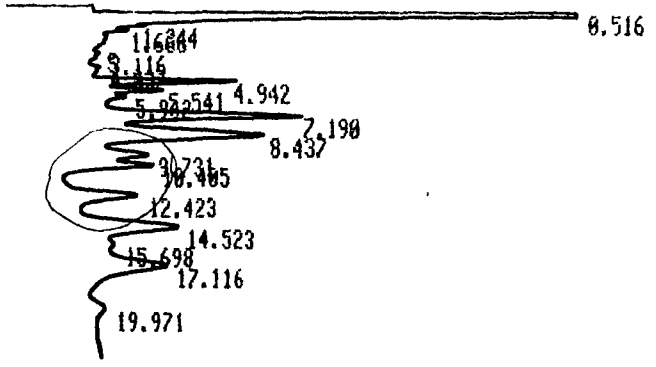
PCBE

NORM

RT	TYPE	AREA	WIDTH	HEIGHT
.531	SPB	31236272	.080	6478003
1.372	BB	12025	.132	1516
2.020	BV	5737	.145	659
2.492	VV	79082	.281	4680
3.129	VV	74442	.189	6576
3.454	VV	44213	.197	3736
4.049	VV	173661	.259	11187
4.278	VV	145050	.309	7827
4.955	VV	1825632	.319	95295

* READY WITH 'PCBE'

* RUN # 301 APR 25, 1989 16:10:15
START-Source



STOP

Closing signal file A:Q844DAE8.BHC

RUN# 301 APR 25, 1989 16:10:15

SIGNAL FILE: A:Q844DAE8.BHC

PCBE

NORM

RT	TYPE	AREA	WIDTH	HEIGHT
.516	SBB	46702016	.093	8358371
1.344	TBP	3456	.071	815
1.666	TPP	6292	.105	1000
3.116	BV	4662	.210	370
4.037	PV	9659	.231	696
4.942	VV	175516	.324	9039
5.541	VV	93476	.325	4793
5.962	VV	82740	.527	2617
7.190	VV	457517	.568	13436
8.437	VV	556231	.817	11345
9.731	VV	190351	.665	4770
10.405	VP	160842	.510	5261
12.423	PV	189045	.740	4258
14.523	VV	364959	.994	6119
15.698	VV	97642	.771	2111
17.116	VV	364830	1.222	4975
19.971	VB	44407	.979	756

RT	CAL#	APCT	NAME
.516		.000	
1.344		.000	

K00002982

PRINTED IN U.S.A.

SAMPLE ANALYSIS WORKSHEET

Analysis Number ØV-8
Analysis Date 4-26-89

Sample Control Number	Original Sample Volume mL (A)	Final Sample Volume mL (B)	Dilution: Sample/ Final mL/mL (C)/(D)	PCBE Analyte Result ug/L (E)	Calculated PCB Result mg/kg (F)	Analysis Run Number
ØV-22	1mL	10mL	1:25	0.53	83	306
ØV-23	1mL	10mL	NEAT	0.80	5	307
ØV-24	1mL	10mL	NEAT	0.171	1.1	308
ØV-25	1mL	10mL	1:25	0.894	140	309
ØV-26	1mL	10mL	1:100	0.441	275	310
ØV-27	1mL	10mL	1:10	0.765	47.8	311
ØV-28	1mL	10mL	1:10	0.481	30	312

++

Chain-of-Custody Record

K00002984

Initiated By _____ Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

++

CALIBRATION LOG

Analysis Number ØV-8
Analysis Date 4-26-91

Calibration Standard E1254

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Calib On Run Y/N	Re-Analysis Results
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			

Final Calibrations Run Numbers: Standard Conc 1.00 ug/mL _____
Standard Conc 0.01 ug/mL _____

QC Calibration Check Standard

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Analysis Results
0.20	.25	+/- 0.02	306	
0.20		+/- 0.02		
0.20		+/- 0.02		

End-Of-Analysis Calibration Check

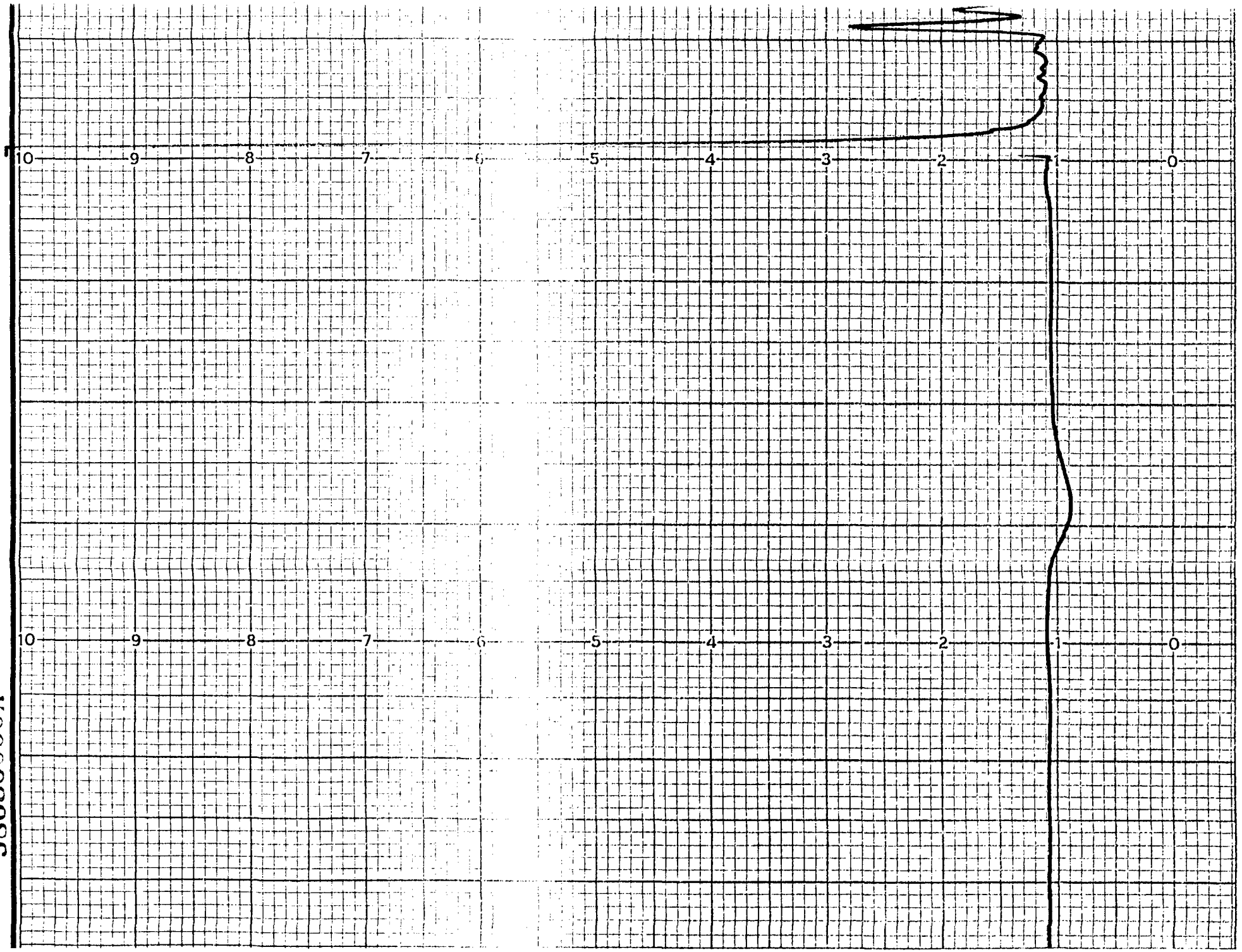
Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc
1.00	0.99	+/- 0.10	0.10		+/-0.03
1.00		+/- 0.10	0.10		+/-0.03

++

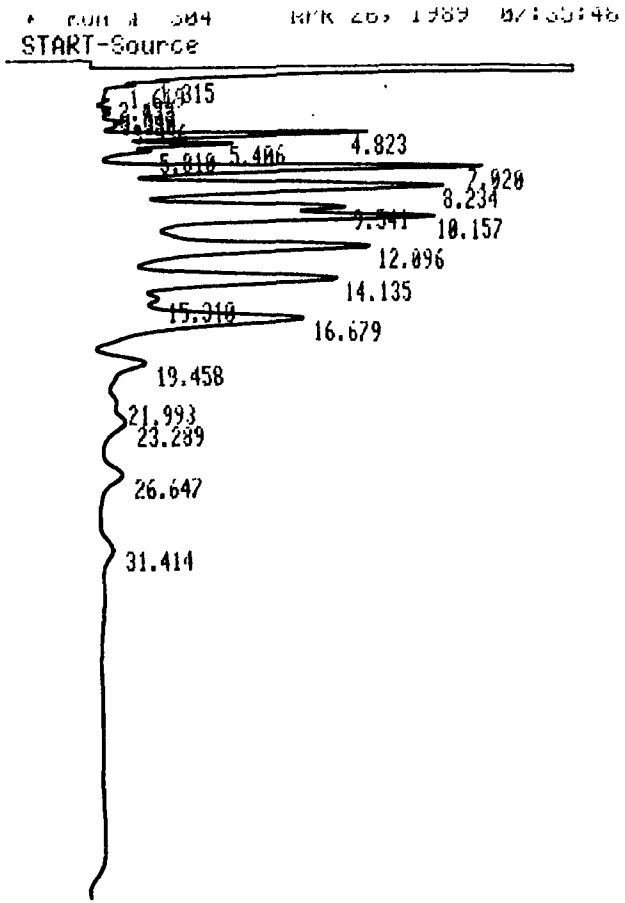
Chain-of-Custody Record K00002985

Initiated By [signature] Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

++



K00002986



STOP

Closing signal file A:Q845B3D5.BNC

RUN# 304 APR 26, 1989 07:35:48

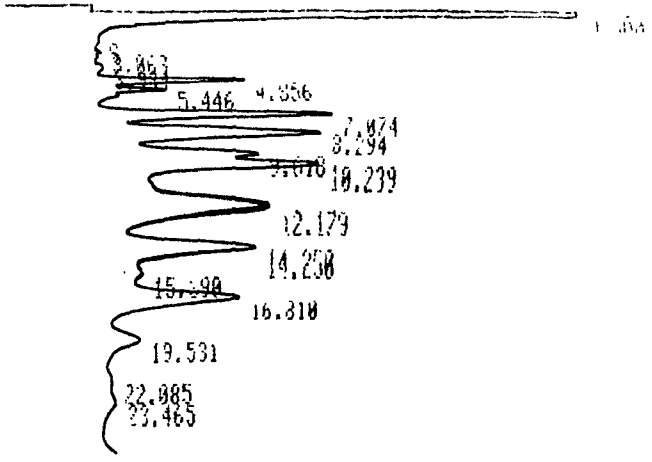
SIGNAL FILE: A:Q845B3D5.BNC

PCBE

NORM

RT	TYPE	AREA	WIDTH	HEIGHT
1.315	BP	1306	.019	1129
1.619	PP	2796	.059	787
2.432	VV	4697	.151	518
3.047	PV	8535	.178	801
3.370	VV	12161	.262	775
3.936	VV	27104	.287	1575
4.823	VV	297200	.308	16107
5.406	VV	144386	.298	8070
5.810	VV	70609	.368	3201
7.020	VV	638215	.463	22973
8.234	VV	883266	.715	20584

*AN A:0845C31D.BNC
RUN # 305 APR 26, 1989 08:41:01
START-Source



END OF SIGNAL

Closing signal file A:0845C31D.BNA

RUN# 305 APR 26, 1989 08:41:01

SIGNAL FILE: A:0845C31D.BNA

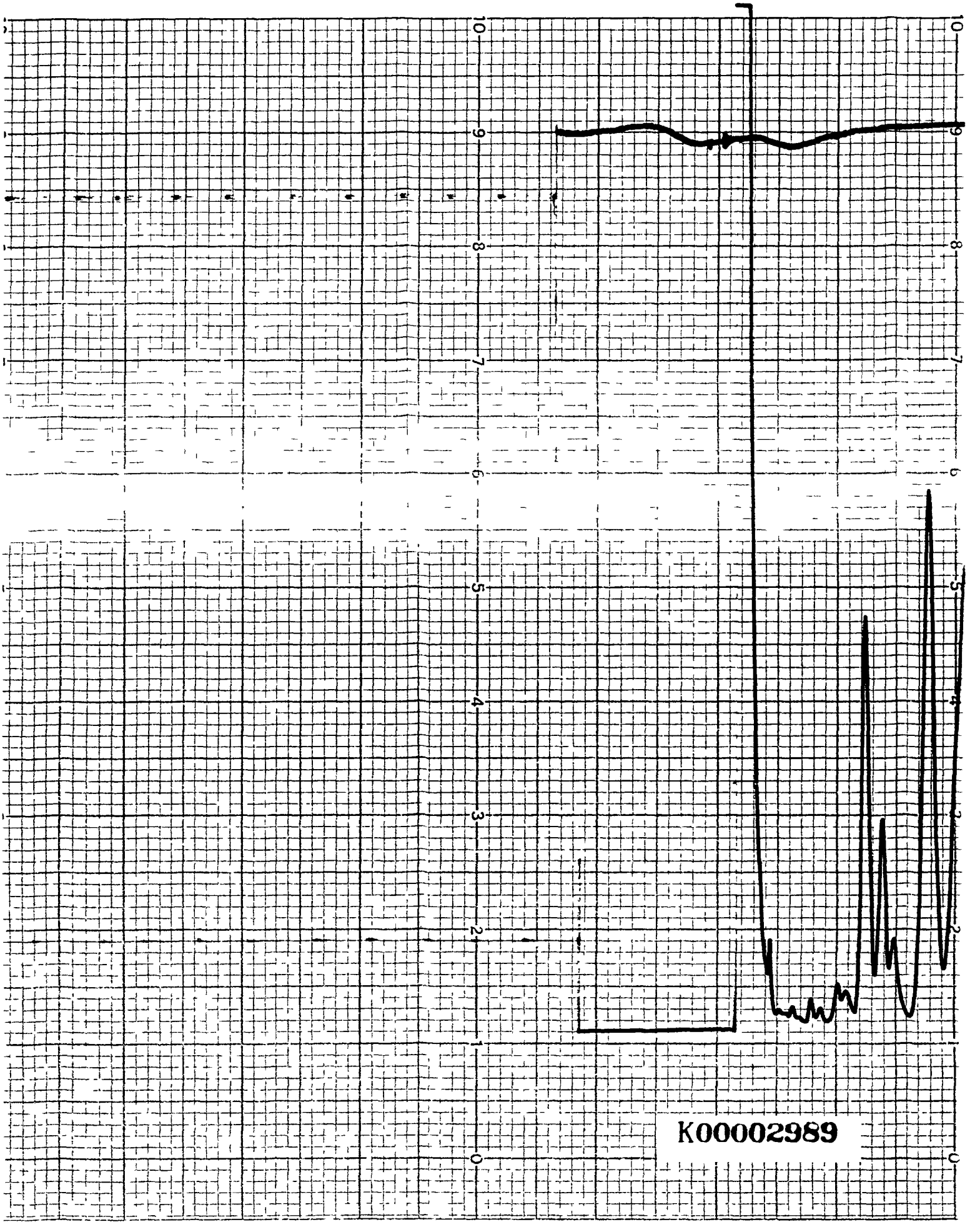
PCBE

NORM

RT	TYPE	AREA	WIDTH	HEIGHT
.500	SPB	42120128	.085	8268682
3.063	PV	3894	.190	342
3.984	PV	14020	.474	493
4.856	VV	170501	.318	8937
5.446	VV	79497	.317	4180
7.074	VV	395125	.468	14077
8.294	VV	592678	.742	13304
9.618	VV	359804	.624	9616
10.239	VV	550574	.693	13242
12.179	VV	696257	1.129	10276
14.250	VV	544283	.963	9420
15.390	VV	115498	.722	2665
16.810	VV	606941	1.198	8444
19.531	VV	217072	1.478	2447
22.085	VV	58999	1.182	832
23.465	VV	100340	1.671	1001

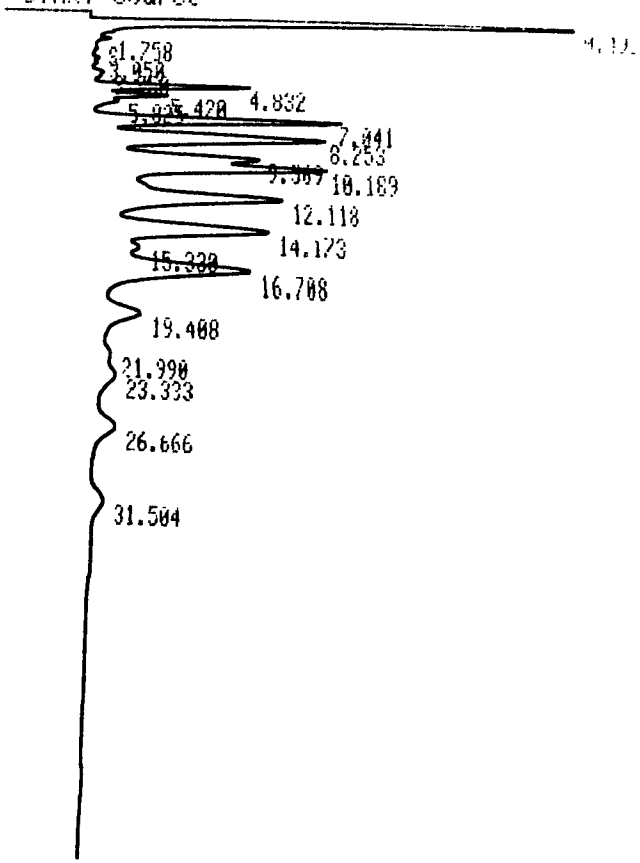
RT	CAL#	APCT	NAME
.500		.000	
3.063	3	.088	P028

K00002988


K00002989

* READY WITH 'PCBE'

* RUN # 320 APR 28, 1989 07:53:21
START-Source



TIMETABLE STOP

Closing signal file A:Q8485AF2.BNC

RUN# 320 APR 28, 1989 07:53:21

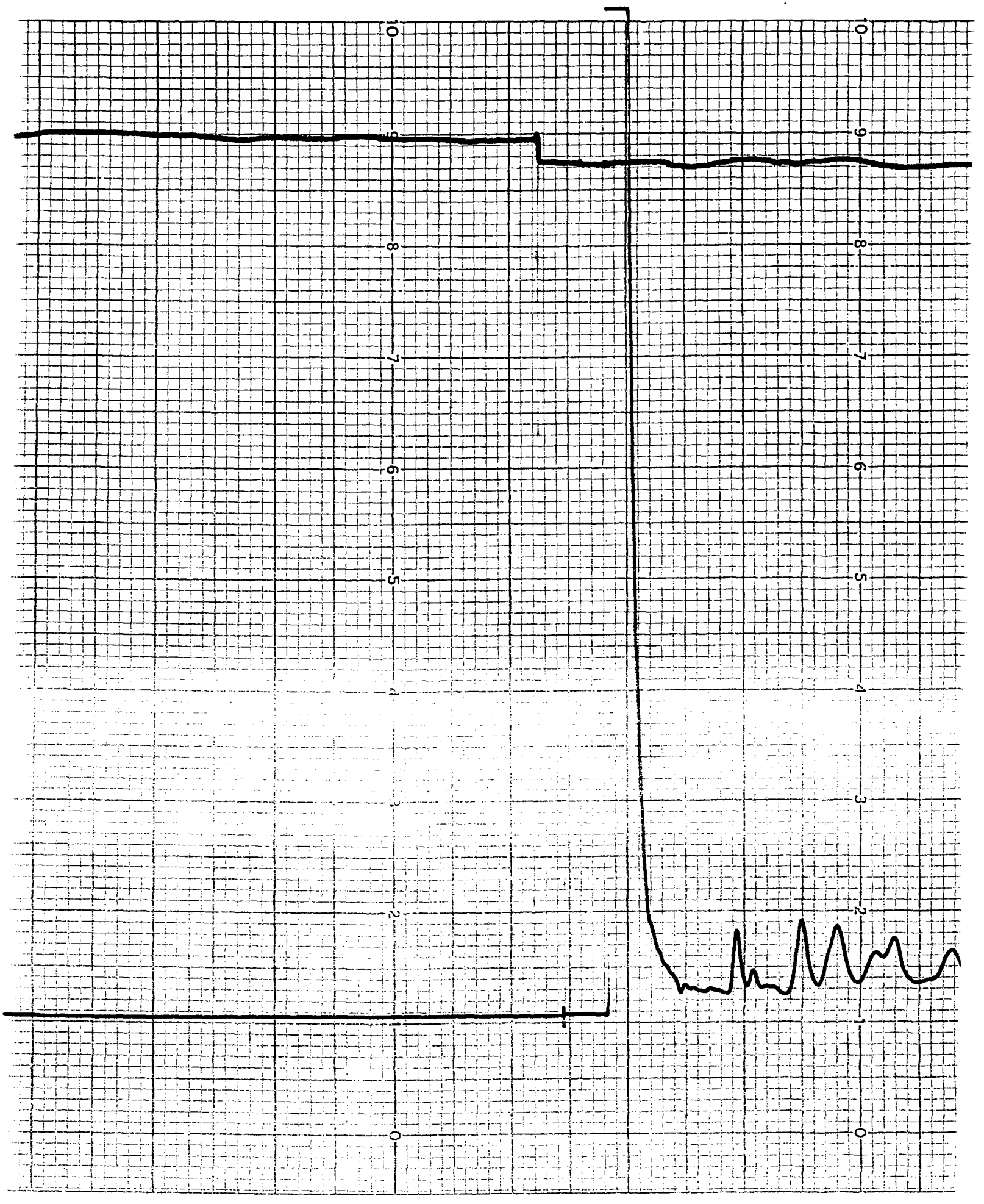
SIGNAL FILE: A:Q8485AF2.BNC

PCBE

NORM

RT	TYPE	AREA	WIDTH	HEIGHT
.493	SPB	11475448	.054	3570173
1.758	TBB	5508	.136	677
3.050	PV	3955	.179	369

K00002990



K00002991

K00002992

SAMPLE ANALYSIS WORKSHEET

Analysis Number ØV-~~8~~9
Analysis Date _____

Sample Control Number	Original Sample Volume mL (A)	Final Sample Volume mL (B)	Dilution: Sample/ Final mL/mL (C)/(D)	PCBE Analyte Result ug/L (E)	Calculated PCB Result mg/kg (F)	Analysis Run Number
ØV-29	1mL	10mL	1:10	.382	23.9	314
ØV-30	1mL	10mL	1:10	.333	20.8	315
ØV-31	1mL	10mL	NEAT	0.559	3.5	316
ØV-32	1mL	10mL	1:25	0.154	24	317
ØV-33	1mL	10mL	1:10	0.108	68	319

++

Chain-of-Custody Record

Initiated By [signature] Relinquished By _____ K00002993
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

++

CAUTION
CONTAINS
PCBs

(Polychlorinated Biphenyls)

A toxic environmental contaminant requiring special handling and disposal in accordance with U.S. Environmental Protection Agency Regulations 40 CFR 761-For Disposal Information contact the nearest U.S. E.P.A. Office.

In case of accident or spill, call toll free the U.S. Coast Guard National Response Center:

800-424-8802

Also contact: _____

Tel. No. _____

K00002994

CALIBRATION LOG

Analysis Number WP2-007
Analysis Date 041589

Calibration Standard 1254

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Calib On Run Y/N	Re-Analysis Results
1.00	1.05/0.99	+/- 0.05	226	~~N~~ Y	NA
1.00	NA	+/- 0.05	NA	NA	NA
1.00	NA	+/- 0.05	NA	NA	NA
1.00	NA	+/- 0.05	NA	NA	NA
1.00	NA	+/- 0.05	NA	NA	NA
0.10	0.099	+/- 0.02	225	~~Y~~ N	0.099
0.10	NA	+/- 0.02	NA	NA	NA
0.10	NA	+/- 0.02	NA	NA	NA
0.10	NA	+/- 0.02	NA	NA	NA
0.10	NA	+/- 0.02	NA	NA	NA

Final Calibrations Run Numbers: Standard Conc 1.00 ug/mL _____
Standard Conc 0.01 ug/mL _____

QC Calibration Check Standard

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Analysis Results
0.20		+/- 0.02		
0.20		+/- 0.02		
0.20	NA	+/- 0.02	NA	NA

End-Of-Analysis Calibration Check

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc
1.00		+/- 0.10	0.10		+/-0.03
1.00	NA	+/- 0.10	0.10	NA	+/-0.03

++

Chain-of-Custody Record K00002995
Initiated By [signature] 041589 Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

++

QC SPIKE ANALYSIS

Analysis Number ØV-8
Analysis Date 4-26-89

Sample Analyte Control Number _____

==========

Sample Analyte PCBE Result _____ ug/mL

QC Spike Concentration _____ ug/mL

==========

Sample Spike Preparation

Sample Analyte Volume _____ mL

QC Spike Volume _____ mL

Total Sample Spike Volume _____ mL

==========

Sample Spike Concentration

Sample Analyte _____ mL x Sample Analyte _____ ug/mL = _____ug

QC Spike _____ mL x QC Spike _____ ug/mL = _____ug

Total Volume _____ mL Total PCB _____ug

QC Spike Conc = Total PCB ug / Total Volume mL

= _____ ug / _____ mL = _____ug/mL

==========

Sample Spike Analysis Result _____ ug/mL

==========

Percent Recovery = (Analyte Spike Results / QC Spike Conc) x 100%

= (_____ ug/mL / _____ ug/mL) x 100%

= _____%

==========

==========
++
Chain-of-Custody Record K00002996

Initiated By _____ Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____
++

CALIBRATION LOG

Analysis Number ØV-10
Analysis Date 4-29-89

Calibration Standard _____

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Calib On Run Y/N	Re-Analysis Results
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
1.00		+/- 0.05			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			
0.10		+/- 0.02			

Final Calibrations Run Numbers: Standard Conc 1.00 ug/mL _____
Standard Conc 0.01 ug/mL _____

QC Calibration Check Standard

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Run Number	Re-Analysis Results
0.20	0.24	+/- 0.02		
0.20		+/- 0.02		
0.20		+/- 0.02		

End-Of-Analysis Calibration Check

Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc	Std Conc ug/mL	Analysis Result ug/mL	Acceptance Criteria Std Conc
1.00	1.04	+/- 0.10	0.10		+/-0.03
1.00		+/- 0.10	0.10		+/-0.03

++

Chain-of-Custody Record

K00002997

Initiated By _____ Relinquished By _____
Accepted By _____ Relinquished By _____
Accepted By _____ Terminated By _____

++

	ORIGINAL VOL	FINAL VOLUME	ANALYTE RESULT	PCB
ØV-34	1mL	10mL	0.750	4.7
ØV-35	1mL	10mL	0.061	0.38
ØV-36	1mL	10mL 1:10 DIL	0.36	22.5
ØV-37	1mL	10mL	0.77	4.8
ØV-38	1mL	10mL	1.43	9.3
ØV-39	1mL	10mL 1:100	0.335	210
ØV-40	1mL	10mL NEAT	0.273	1.7
ØV-41	1mL	10mL NEAT	0.043 0.044	0.27 0.28

K00002998

09/29/89

END of Rec

554 1.00

0.996

K00002999

Overside Compressor Station.

Project #	Sample #	Area Description	Date
872-492B	1 → 19	Air Logs	09-16-87
88-135	no 1 → 19		
	20-33	Analogs	01-21-88
88-162	no 1-33		
	34-49	Analogs	01-28-88
492A	1-24	Outpatch	9-16-
502	25-73		9-28
690	74-100		11-03
829	101-119		11-23
135	120-131		12-01

K00003000

Overisel gas C.S. directions

option 1:

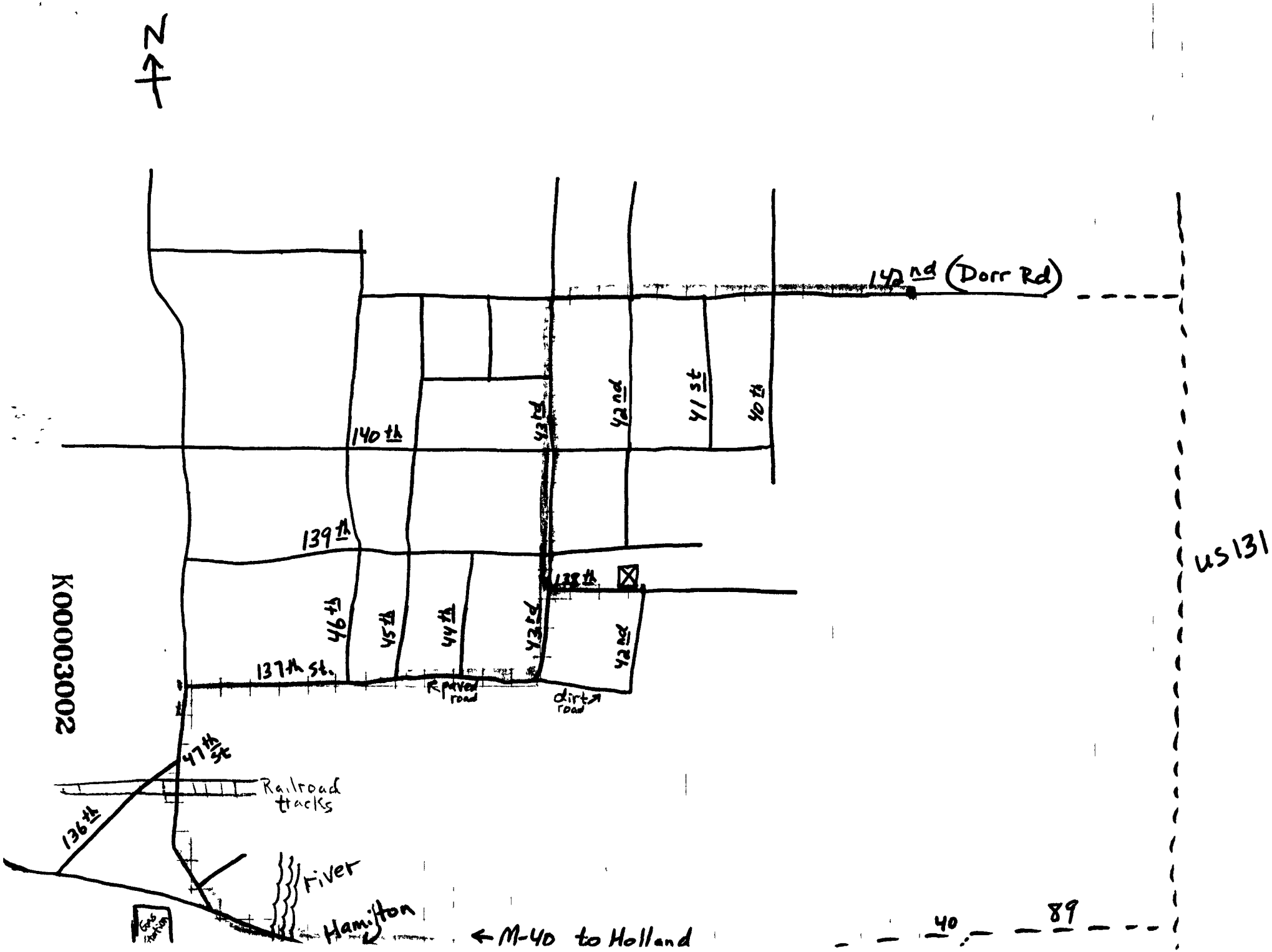
I94 W to 131 N (right)
131 N to the Door Exit (142nd st.)
W on 142 (left)
turn S on 43rd st. (left)
turn E on 138th st. (left)
Go about 1 mile (2nd hill) to the plant — plant is on the left (N)

option 2:

I94 W to 131 N (right)
131 N to 89 W (go past the exit for 89 E)
89 W to 40 (89 turns into 40)
take 40 until about the center of the town of Hamilton
N on 47th st. (right) across from the gas station
turn E (right) on the first road outside of town (137th st)
Follow the paved curve on 137th st. You are now on 43rd st. N
turn right (E) at the top of the hill onto 138th st.
Go about 1 mile (2nd hill) to the plant — plant is on the left (N)

you must read the signs carefully in Allegan to avoid making a wrong turn

K00003001


N
142nd (Dorr Rd)
140th
139th
138th
137th St.
47th
46th
45th
44th
43rd
42nd
41st
40th
paved road
dirt road
47th St
Railroad tracks
136th
River
Hamilton
← M-40 to Holland
40
89
US 131
K00003002

CONSUMERS POWER COMPANY

LABORATORY AND FIELD
TECHNICAL SERVICES DEPARTMENT
CHEMICAL DIVISION
ENGINEERING EVALUATIONS & METALLURGY DIVISION
VIBRATION & MECHANICAL PROJECTS DIVISION
WORK REQUEST

992

NOTE: FILL OUT FORM COMPLETELY PER INSTRUCTIONS ON THE REVERSE SIDE.

1. Requesting Party Information
   Name BW Rosher Location P12-103 Phone
   Dept Req.Dept. ID Number
2. Project W.O., FERC or Area and Function Number 3330-2535.1
3. Request Date 07/01/87 Required Completion Date 07/15/87
4. Report Distribution (Name, Room Number/Location)
5. QA Program Requirements
   Is our QA Program required to be applied to the work requested? Yes ____ No ✓
   Remarks
6. UFI Number(s)
7. Material Description and Origin Diesel Compressor
8. Mfr ID No CPCo Stock No
9. Requested Test, Analysis, Study, etc
   PCB sampling and analysis
10. Reason for Test na
11. Acceptance Criteria na
12. Applicable Test Procedures EPA/ASTM
13. Reference Documents NA
14. Material Disposition na

10 - Sampling
14 water
14 sediment

LAB SERVICES USE ONLY

Project Number 5187L2500-992 Receipt Date 7/1/87 Due Date 7/15/87

Project Description Diesel - PCB - Phase 2

Project Leader HWV Assigned To DJS/HWV/GLC Est Hours

Recharge Number 3330-2535.1 Requesting Dept ID Number

Sec Supvr Approval HWV Div/Dept Supvr Approval

K00003003

5187175009 92 CHM

PROJECT NUMBER Overisel on 7/1 992 NUMBER OF SAMPLES 28

CODE	NUMBER	TESTS	INDIVIDUAL	LABOR	(HOURS)	COST
		Sampling	DJS	10	46	460
	14	PCB Water		@	100	1400
	14	PCB Soil (River Sediments)		@	40	560
						2420

EXPENSES	INDIVIDUAL	MEALS $12	MEALS $21	MILEAGE 21¢	COST	LODGING	COST
	DJS		X	270 @ .21 = 56.70			

Charged out 07/24/87

Recharge # _____

Requesting Dept _____

% Complete 99 Card Code 1

CODES

R=RUSH (X 1.75) OS=SUNDAY (X 1.5)

TOTAL COST _____

O=OVERTIME (X 1.3) OH=HOLIDAY (X 2.0)

TOTAL _____

K00003004

CONSUMERS POWER COMPANY

LABORATORY AND FIELD
TECHNICAL SERVICES DEPARTMENT
CHEMICAL DIVISION
ENGINEERING EVALUATIONS & METALLURGY DIVISION
VIBRATION & MECHANICAL PROJECTS DIVISION
WORK REQUEST

843

NOTE: FILL OUT FORM COMPLETELY PER INSTRUCTIONS ON THE REVERSE SIDE.

1. Requesting Party Information
   Name BW Rosher Location P12-103 Phone
   Dept Req.Dept. ID Number
2. Project W.O., FERC or Area and Function Number 3330-2535.1
3. Request Date 6/3/87 Required Completion Date 6/30/87
4. Report Distribution (Name, Room Number/Location)
5. QA Program Requirements
   Is our QA Program required to be applied to the work requested? Yes ____ No ✓
   Remarks
6. UFI Number(s)
7. Material Description and Origin
   Overisel Compressor Station
8. Mfr ID No CPCo Stock No
9. Requested Test, Analysis, Study, etc
   PCB Sampling & Analysis
10. Reason for Test na | 10hrs Sampling
11. Acceptance Criteria na | 5 water, 3 oil, 2 sludge
12. Applicable Test Procedures EPA/ASTM
13. Reference Documents na
14. Material Disposition na

LAB SERVICES USE ONLY

Project Number 5.18.21.7.5.0.0.843 Receipt Date 6/3/87 Due Date 6/30/87

Project Description Overisel - PCB - Phase-1

Project Leader HWJ Assigned To HWJ/DTS/GLC Est Hours

Recharge Number 3330-2535.1 Requesting Dept ID Number

Sec Supvr Approval HWJ Div/Dept Supvr Approval

K00003005

5187175008 43 CHM

PROJECT NUMBER Overisel on 6/3 843 NUMBER OF SAMPLES 10

CODE	NUMBER	TESTS	INDIVIDUAL	LABOR	(HOURS)	COST
		Sampling	DJS	10	@ 46	460
	5	PCB water		@	100	500
	3	PCB Oil		@	40	120
	2	PCB Sludge		@	75.-	150
		includes additional cleanup required				1230

EXPENSES	INDIVIDUAL	MEALS $12	MEALS $21	MILEAGE 21¢	COST	LODGING	COST
	DJS	X		250 @ .21 -	52.50		

charged out 07/24/87

Recharge # _____

Requesting Dept _____

% Complete 99 Card Code 1

CODES

R=RUSH (X 1.75) OS=SUNDAY (X 1.5)

TOTAL COST _____

O=OVERTIME (X 1.3) OH=HOLIDAY (X 2.0)

TOTAL _____

1186-013-5M

K00003006

Overisel Compressor Station - PCB
Sampling Date 06-03-87 (DSS - BWR) Phase 1

Control Number	Sample Point Location - Description	Sample Type	PCB 1254	Units
87-843-1	Air Drier Filter - No sample available	—	—	—
87-843-2	Air Compressor Oil Collection System Oily water (100 ml), Bottom Oil (10 ml)	Oily Water	<1	mg/kg
	✓	Btm Oil	320	mg/kg
87-843-3	Floor Drain - Aux Bldg ✓	Water	7.7	ug/L
87-843-4	Oil-Water Separator - East Chamber Water and Bottom Sludge ✓	Water	750	ug/L
	✓	Btm Sludge	610	mg/kg
87-843-5	Oil-Water Separator Discharge ✓	Water	870	ug/L
87-843-6	Air Storage Tank Condensate Discharge ✓	Water	41	ug/L
87-843-7	#5 Jet Compressor Oil ✓	Oil	19 *	mg/kg
87-843-8	Slop Tank - Compressor Bldg Floor Drain Collection Tank - Water and Sludge ✓	Water	180	ug/L
	K00003007 ✓	Sludge	270	mg/kg
	* Detected as Aroclor-1242 (1248)			

6-3-87 29
Sample Date

Chem 843 - Overisel

1qt 1) liquids out of filter for compressors (Air dryer filter, bottom wing nut)

oil bottle 2) lube oil out of (air compressor oil collection system) (white bucket)

3) floor drain (aux bldg) - near air compressors

bailer 4) Oil/H_2O Separator East Chamber Sludge
1 H_2O + 1 sludge contains driveway drains + engine room roof drain

1qt 5) Oil/H_2O Sep Discharge H_2O

1qt 6) Air Storage Tank Condensate Discharge

oil bottle 7) #5 Jet Compressor Oil

qt 8) (Slop Tank) - bailer Compressor Bldg floor drain collection tank.

1 - None available
2 - OK
3 - OK
4 - H_2O + Sludge - OK
5 - OK
8 - OK
6 - Only small volume available
7 - OK

Sampled by: DJS

B Rasher and Weingardt on site

K00003008

Overisel Compressor Station - PCB
Sampling Date 06-03-87 (DSS - BWR)

Control Number	Sample Point Location - Description	Sample Type	PCB 1254	Units
87-843-1	Air Drier Filter - No sample available	—	—	—
87-843-2	Air Compressor Oil Collection System Oily water (100ml), Bottom Oil (10ml)	Oily Water	<1	mg/kg
		Btm Oil	320	mg/kg
87-843-3	Floor Drain - Aux Bldg	Water	7.7	ug/L
87-843-4	Oil-Water Separator - East Chamber Water and Bottom Sludge	Water	750	ug/L
		Btm Sludge	610	mg/kg
87-843-5	Oil-Water Separator Discharge	Water	870	ug/L
87-843-6	Air Storage Tank Condensate Discharge	Water	41	ug/L
87-843-7	#5 Jet Compressor Oil	Oil	19 *	mg/kg
87-843-8	Slop Tank - Compressor Bldg Floor Drain Collection Tank - Water and Sludge	Water	180	ug/L
		Sludge	270	mg/kg
	* Detected as Aroclor-1242 (1248)			

K00003009

Overiset Water and Sediment Samples July 1, 1987 DJ Snedeker

992

		Left	Mid	Right
Rabbit R. at Hamilton falls	Water	3	2	1
	Sediment	—	—	4
Rabbit R at 38th St. bridge	Water	7	6	5
	Sediment	10	9	8
Bussener Dr. 125 ft downstream of wier	Water	13	12	11
	Sediment	16	15	14
Bussener Dr at wier	Water	19	18	17
	Sediment	22	21	20

Oil-water separator discharge — Water 23

Sediment E 24
Mid 25
W 26

Bussener Drain 15 5 ft down from wier — Water 27, Sediment 28

28

water 14
Sediment 14

K00003010

Overiset Water and Sediment Samples July 1, 1987 DJ Snedeker

992

		Left	Mid	Right
Rabbit R. at Hamilton falls	Water	3	2	1
	Sediment	—	—	4 <1
Rabbit R at 38th St. bridge	Water	7	6	5
	Sediment	10 <1.0	9 <1	8 <1
Bussener Dr. 125 ft downstream of wier	Water	13	12	11
	Sediment	16 <1	15 0.2	14 0.1
Bussener Dr at wier	Water	19	18	17
	Sediment	22 0.8	21 0.4	20 0.1

Oil-water separator discharge — Water 23

Sediment E 24 1420
Mid 25 2400
W 26 250

Bussener Drain 15.5 ft down from wier — Water 27
Sediment 28 0.2

28

water 14
Sediment 14

ppm mg/kg

K00003011

Overiset Water and Sediment Samples July 1, 1987 DJ Snedeker

Phase 2

992

		Left	Mid	Right
Rabbit R. at Hamilton falls	Water	3	2	1
	Sediment	—	—	4
Rabbit R at 38th St. bridge	Water	7	6	5
	Sediment	10	9	8
Bussener Dr. 125 ft downstream of wier	Water	13	12	11
	Sediment	16	15	14
Bussener Dr at wier	Water	19	18	17
	Sediment	22	21	20

Oil-water separator discharge — Water 23

Sediment E 24
Mid 25
W 26

Bussener Drain 15 5 ft down from wier — Water 27, Sediment 28

28

water 14
Sediment 14

K00003012

Control Number	Sample Location		Sample Type	PCB	Units
87-992-23	Oil-Water Separator Discharge		Water	410	ug/L
87-992-24	"	-E	Sediment	1400	mg/kg
87-992-25	"	-Mid	Sediment	2400	mg/kg
87-992-26	"	-W	Sediment	250	mg/kg
87-992-27	Bussener Drain 15.5' Down From Wier		Water	0.11	ug/L
87-992-28	"		Sediment	<1*	mg/kg

* For sediment samples only - Detected as A1254 but <1mg/kg

K00003013

Control Number	Sample Location		Sample Type	PCB	Units
87-992-13	Bussener Dr 125' Downstream of wier	- Left	Water	0.15	ug/L
		- Left	Sediment	<1	mg/kg
87-992-16	"	- mid	Water	<0.11	ug/L
87-992-12	"	- mid	Sediment	<1 *	mg/kg
87-992-15	"	- Right	Water	<0.11	ug/L
87-992-11	"	- Right	Sediment	<1 *	mg/kg
87-992-14	"				
87-992-19	Bussener Dr at wier	- Left	Water	<0.11	ug/L
		- Left	Sediment	<1 *	mg/k
87-992-22	"	- mid	Water	<0.11	ug/L
87-992-18	"	- mid	Sediment	<1 *	mg/kg
87-992-21	"	- Right	Water	<0.11	ug/L
87-992-17	"	- Right	Sediment	<1 *	mg/kg
87-992-20	"				

K00003014

7-13-87

Overisel Compressor Station - PCB Results
Sampling Date - July 01, 1987
Phase 2

Control Number	Sample Location		Sample Type	PCB	Units
87-992-03	Rabbit River at Hamilton Falls	- Left	Water	<0.11	ug/L
87-992-02	"	- Mid	Water	<0.11	ug/L
87-992-01	"	- Right	Water	<0.11	ug/L
87-992-04	"	- Right	Sediment	<1	mg/kg
87-992-07	Rabbit River 38th St Bridge	- Left	Water	<0.11	ug/L
87-992-10	"	- Left	Sediment	<1	mg/kg
87-992-06	"	- Mid	Water	<0.11	ug/L
87-992-09	"	- Mid	Sediment	<1	mg/kg
87-992-05	"	- Right	Water	<0.11	ug/L
87-992-08	"	- Right	Sediment	<1	mg/kg

K00003015

Water & Sediment Samples – A1242 and A1260 analyzed for but not detected

Detection Limits

	Water Sample	Sediment Samples
A1242	< 0.065 ug/L	<1 mg/kg
A1254	< 0.11 ug/L	<1 mg/kg
A1260	<0.18 ug/L	<1 mg/kg

Water Sample Spike recovery as A1254 = 88%
at ~~[illegible]~~ 1ug/L spike

Voegt
07/14/87

K00003016

MEM OVFL
DATA NOT SAVED

REPORT # 60 13 JUL. 1987 12:52 PCB-C

CHANNEL: 14 METHOD: PCB-C

SAMPLE: VC42-C INJECTED ON: 11 JUL. 1987 20:13

MIN AR	MV/M	DELAY	DVT	FACTOR	ID-LVL	REF-RTW	%RTW
100	.300	0.00	0.00	1.0000E+ 0	0	.30	5

RT	ITM	FACTOR	AREA		ARCT	NAME
.47		0.00000	466068	BC	0.000	
.58		0.00000	14969	TT	0.000	
.79		0.00000	913	TT	0.000	
1.21		0.00000	26452	VV	0.000	
1.43		0.00000	1911	VV	0.000	
1.74	1.71	1.00000	511	VV	.334	P011
1.97	1.97	1.00000	1523	VV	.995	P016
2.13	2.13#	1.00000	7087	VV	4.631	#P021
2.43		0.00000	891	VV	0.000	
2.65	2.65#	1.00000	11890	VV	7.769	#P028
2.92	2.97	1.00000	8743	VV	5.713	P032
3.38	3.38	1.00000	27256	VV	17.807	P037
3.58		0.00000	16870	VV	0.000	
4.22	4.14	1.00000	14644	VV	9.569	P040
4.63	4.60	1.00000	12362	VV	8.078	P054
4.93	4.90	1.00000	9692	VV	6.333	P058
5.84	5.84#	1.00000	22307	VV	14.576	#P070
6.48	6.48	1.00000	8962	VV	5.856	P078
6.90	6.87	1.00000	2944	VV	1.924	P084
7.97	7.98	1.00000	3854	VV	2.518	P098
8.45	8.45#	1.00000	3890	VV	2.542	#P104
8.93	9.12	1.00000	775	VV	.506	P117
10.02	9.96	1.00000	2583	VB	1.688	P125
11.56	11.56#	1.00000	1908	BB	1.247	#P146
13.62		0.00000	3009	BP	0.000	

K00003017

REPORT # 67 13 JUL, 1987 11:[illegible] PCB

CHANNEL: 14 METHOD: [illegible]

SAMPLE: S42-C INJECTED ON: 11 JUL, 1987 20:14

MIN AR	MV M	DELAY	DVT	FACTOR	ID-LVL	REF-RTW	%RTW
100	.300	0.00	0.00	1.0000E+0	0	.30	5

RT	ITM	FACTOR	AREA		NGT	NAME
.47		0.0000E+ 0	[illegible]	BS	0.000	
.58		0.0000E+ 0	[illegible]	TT	0.000	
.79		0.0000E+ 0	[illegible]	TT	0.000	
1.21		0.0000E+ 0	[illegible]	VV	0.000	
1.43		0.0000E+ 0	[illegible]	VV	0.000	
1.74	1.78	0.0000E+ 0	511	VV	0.000	P011
1.97	2.06	1.9022E- 3	[illegible]	VV	2.897	P016
2.13	2.13#	1.7342E- 3	[illegible]	VV	12.290	#P021
2.43		0.0000E+ 0	891	VV	0.000	
2.65	2.65#	9.1750E- 4	[illegible]	VV	10.909	#P028
2.92		0.0000E+ 0	[illegible]	VV	0.000	
3.38	3.38#	4.2162E- 4	[illegible]	VV	11.490	#P037
3.58	3.63	6.5737E- 4	[illegible]	VV	11.090	P040
4.22	4.22#	6.0036E- 4	[illegible]	VV	8.792	#P047
4.63	4.63	5.4958E- 4	[illegible]	VV	6.794	P054
4.93	4.94	5.7728E- 4	[illegible]	VV	5.595	P058
5.84	5.84#	4.6133E- 4	[illegible]	VV	10.291	#P070
6.48	6.46	4.0136E- 4	[illegible]	VV	3.597	P078
6.90	6.88	9.1640E- 4	[illegible]	VV	2.698	P084
7.97	7.97	3.8894E- 4	[illegible]	VV	1.499	P098
8.45	8.42	5.9069E- 4	[illegible]	VV	[illegible]	P104
8.93		0.0000E+ 0	775	VV	0.000	
10.02		0.0000E+ 0	[illegible]	VB	0.000	
11.56		0.0000E+ 0	1900	BB	0.000	
13.62	13.62#	0.0000E+ 0	[illegible]	BB	0.000	#P125
15.33	15.56	0.0000E+ 0	1331	BV	0.000	P146
[illegible]		0.0000E+ 0	[illegible]	VB	0.000	

K00003018

```
LIST AUTO SEQ
AUTO LIQUID SAMPLER
   1.POSITION = FRONT(1)
   2.# PRE WASHES = 5
   3.# PUMPS = 5
   4.STOP # = 2
   5.# INJ/BTL = 2
   6.FIRST SAMPLE = 5
   7.LAST SAMPLE = 5
   8.POST BTL = OFF(0)
   9.# POST WASHES = OFF(0)

EDIT AUTO SEQ 6, 2

EDIT AUTO SEQ 7, 22

SAMPLE TBL
  SAMPLE # :  ID CODE   :

1            BLANK%
             MT
2            HEXANE
3            S42-C
4            C54%
             S54-C
5            S60-C
6            V1
7            V2
8            V3
9            V4
 ??
10           V5
11           V6
12           V7
13           V8
14           V9
15           V10
16           V11
```

GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK
GC GC-WAI 7/4703/HP
K00003019

REPORT # 40 12 JUL, 1987 9:17 PCB-C

CHANNEL: 14 METHOD: PCB-C

SAMPLE: HP5880-PCB-C INJECTED ON: 12 JUL, 1987 8:38

MIN AR	MV/M	DELAY	DVT	FACTOR	ID-LVL	REF-RTW	%RTW
100	.300	0.00	0.00	1.0000E+ 0	0	.30	5

SIGNAL >1V
ENDED NOT ON BL
RUN ABORTED

#12
#

RT	ITM	FACTOR	AREA		APCT	NAME
.47		0.00000	10885962	^S	0.000	
1.03		0.00000	1016	TB	0.000	
1.19		0.00000	2145	BB	0.000	
1.45		0.00000	245	BB	0.000	
2.10	2.10#	1.00000	526	BV	2.666	#P021
2.61	2.61#	1.00000	299	BB	1.518	#P028
2.93	3.03	1.00000	226	BB	1.147	P032
3.17		0.00000	290	BV	0.000	
3.36	3.39	1.00000	270	VB	1.366	P037
4.11	4.21	1.00000	1264	BV	6.409	P040
4.58	4.58	1.00000	572	VB	2.900	P047
5.83	5.83#	1.00000	2558	BB	12.969	#P070
6.85	6.85	1.00000	2265	BB	11.482	P084
7.92	8.00	1.00000	340	BB	1.721	P098
8.41	8.41#	1.00000	1172	BB	5.944	#P104
9.95	9.91	1.00000	2401	BB	12.173	P125
11.56	11.56#	1.00000	3880	BV	19.672	#P146
13.56		0.00000	6876	VB	0.000	
15.92	15.92#	1.00000	1993	BB	10.106	#P203
21.69	21.69#	1.00000	1958	BB	9.926	#P280
36.73		0.00000	4038	BF	0.000	

TOTAL AREA = 10920300

BASIC PROGRAM WORKING

K00003020

STORED AS FILE 10

14

REPORT # 25 11 JUL, 1987 18:20 PCB-C

CHANNEL: 14 METHOD: PCB-C

SAMPLE: INJECTED ON: 11 JUL, 1987 16:19

MIN AR	%/M	DELAY	DVT	FACTOR	ID-LVL	REF-RTW	%RTW
100	.300	0.00	0.00	1.0000E+ 0	0	.30	5

RT	ITM	FACTOR	AREA		APCT	NAME
.47		0.00000	456858	BS	0.000	
.58		0.00000	8216	TT	0.000	
.79		0.00000	691	TT	0.000	
1.21		0.00000	23379	BV	0.000	
1.43		0.00000	2185	VV	0.000	
1.74	1.72	1.00000	453	VV	.342	P011
1.97	1.96	1.00000	1278	VV	.964	P016
2.13	2.13#	1.00000	6841	VV	5.163	#P021
2.43		0.00000	1015	VV	0.000	
2.65	2.65#	1.00000	11980	VV	9.042	#P028
2.92	2.89	1.00000	8637	VV	6.518	P032
3.38	3.39	1.00000	26259	VV	19.819	P037
3.59		0.00000	16300	VV	0.000	
4.23	4.21	1.00000	13431	VV	10.137	P040
4.63	4.62	1.00000	11681	VV	8.816	P054
4.93	4.93	1.00000	9015	VV	6.804	P058
5.85	5.85#	1.00000	21117	VV	15.938	#P070
6.48	6.52	1.00000	8402	VV	6.341	P078
6.90	6.91	1.00000	2648	VV	1.999	P084
8.05	7.98	1.00000	4485	VV	3.385	P098
8.45	8.45#	1.00000	6270	VB	4.732	#P104

TOTAL AREA = 641141

K00003021

REPORT # 63 13 JUL, 1987 13:50 PCB-C

CHANNEL: 14 METHOD: PCB-C

SAMPLE: V1 INJECTED ON: 12 JUL, 1987 1:00

MIN AR	MV/M	DELAY	DVT	FACTOR	ID-LVL	REF-RTW	%RTW
100	.300	0.00	0.00	1.0000E+ 0	0	.30	5

RT	ITM	FACTOR	AREA	APCT	NAME
.48		0.00000	6441901 ^S	0.000	
.75		0.00000	348 TT	0.000	
.95		0.00000	192 TB	0.000	
1.20		0.00000	765 BB	0.000	
1.43		0.00000	137 BB	0.000	
1.98	1.98#	1.00000	679 BV	3.624	#P021
2.32	2.32#	1.00000	197 VB	1.052	#P028
2.64	2.76	1.00000	169 BB	.903	P032
2.90		0.00000	144 BB	0.000	
3.37		0.00000	262 BB	0.000	
4.09	4.04	1.00000	2943 BV	15.706	P040
4.60	4.49	1.00000	2830 VB	15.102	P054
5.86	5.86#	1.00000	994 BB	5.303	#P070
6.87	6.87	1.00000	1361 BB	7.262	P084
8.42	8.42#	1.00000	564 BB	3.010	#P104
9.99	10.00	1.00000	384 BB	2.051	P125
11.72	11.72#	1.00000	2553 BB	13.624	#P146
13.53		0.00000	1109 BB	0.000	
20.08		0.00000	1222 BB	0.000	
21.30	21.80	1.00000	576 BB	3.074	#P280
22.33		0.00000	429 BB	0.000	
23.07		0.00000	339 BB	0.000	
26.75	25.61	1.00000	2029 BV	10.830	P332
27.65	28.41	1.00000	420 VB	2.243	P372
30.95		0.00000	1062 BV	0.000	
31.96		0.00000	312 VB	0.000	
36.75		0.00000	593 BB	0.000	
41.47	39.79	1.00000	3039 BB	16.214	P525

TOTAL AREA = 6467552

BASIC PROGRAM WORKING

SAMPLE REPORTING V1 PCB-C 14

Y1=5.22388 Y2=1.76314 Y3=1.61789 S=8.60491

X1=6.80402 X2=6.45334 X3=4.22243

PCB42= 5.22388E-03 PCT42= 60.7082

PCB54= 1.76314E-03 PCT54= 20.4899

PCB60= 1.61789E-03 PCT60= 18.802

TOTAL PCB UG/ML = 8.60491E-03

STANDARD METHOD CALCULATION PRINT

I	A(I,2)	B(I,2)	C(I,2)
1	0	2.13707	.506498
2	0	2.00074	.750855
3	1.17762	0	0
4	.155315	.358598	.2275
5	0	0	0
6	.110636	.840551	0
7	0	0	.186657
8	1.76672	.25233	.933028
9	1.55517	0	0
10	0	.116575	.332501
11	.45842	.553679	0
12	0	0	0
13	1.24699	.193801	.115166
14	0	0	.389937
15	.333148	0	.551616
16	0	0	0
17	0	0	.228673
18	0	0	0

END OF CALCULATION PRINT

MEM OVFL
DATA NOT SAVED

K00003022

REPORT # 56 13 JUL, 1987 12:04 PCB-C

CHANNEL: 14 METHOD: PCB-C

SAMPLE: HP5880-PCB-C INJECTED ON: 13 JUL, 1987 11:24

MIN AR	MV/M	DELAY	DVT	FACTOR	ID-LVL	REF-RTW	%RTW
100	.300	0.00	0.00	1.0000E+ 0	0	.30	5

ENDED NOT ON BL

RT	ITM	FACTOR	AREA	APCT	NAME
.49		0.00000	220255 BV	0.000	
.76		0.00000	1855 VV	0.000	
.96		0.00000	224 VB	0.000	
1.20		0.00000	283 VB	0.000	
1.44		0.00000	304 BB	0.000	
1.72	1.67	1.00000	438 BB	.002	P011
2.11	2.11#	1.00000	2871 P[illegible]	.012	#P021
2.33		0.00000	1549 [illegible]	0.000	
2.64	2.64#	1.00000	11588 VV	.049	#P028
2.90	3.01	1.00000	7760 VV	.033	P032
3.36	3.41	1.00000	57201 VV	.242	P037
3.57		0.00000	40066 VV	0.000	
4.09	4.21	1.00000	749832 VV	3.169	P040
4.57	4.62	1.00000	426658 VV	1.803	P047
4.90	4.95	1.00000	249253 VV	1.054	P058
5.89	5.89#	1.00000	2314969 VV	9.785	#P070
6.87	6.89	1.00000	3115345 VV	13.168	P084
7.93	7.98	1.00000	2389373 VV	10.099	P098
8.42	8.42#	1.00000	2758597 VV	11.660	#P104
8.91	9.24	1.00000	331096 VV	1.399	P117
9.96	9.94	1.00000	3649301 VV	15.424	P125
10.57		0.00000	346093 VV	0.000	
11.56	11.56#	1.00000	3293337 VV	13.920	#P146
12.58	12.58	1.00000	648452 VV	2.741	P160
13.65		0.00000	3786309 VV	0.000	
15.81	15.81#	1.00000	1268474 VV	5.361	#P203
18.80	18.19	1.00000	1135820 VV	4.801	P232
21.58	21.58#	1.00000	701886 VV	2.967	#P280
25.38	25.33	1.00000	475664 VV	2.010	P332
28.04	28.04	1.00000	43840 VV	.185	P372
28.91		0.00000	63401 VV	0.000	
31.17		0.00000	34252 VV	0.000	
34.17	34.09	1.00000	27539 VF	.116	P448

TOTAL AREA = 28153892

BASIC PROGRAM WORKING
SAMPLE REPORTING HP5880-PC PCB-C 14
Y1=2089.86 Y2=2074.15 Y3=2225.69 S=6389.7
X1=7073.77 X2=7073.77 X3=9392.37
PCB42= 2.08986 PCT42= 32.7067
PCB54= 2.07415 PCT54= 32.4609
PCB60= 2.22569 PCT60= 34.8324
TOTAL PCB UG/ML = 6.3897

STORED AS FILE 13 HP5880-PCB-C 14

REPORT # 64 13 JUL, 1987 14:17 PCB-C

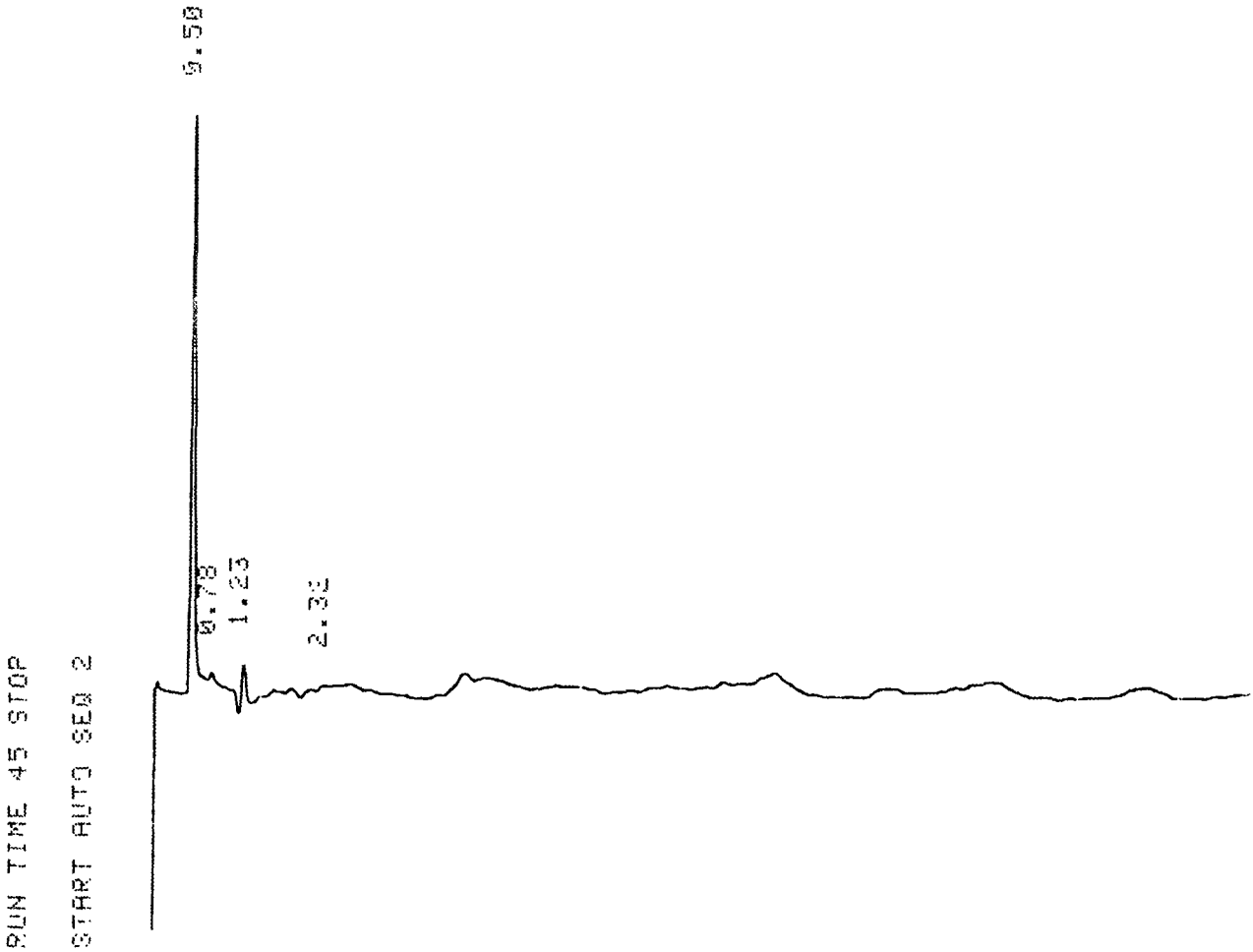
CHANNEL: 14 METHOD: PCB-C

SAMPLE: V2 INJECTED ON: 12 JUL, 1987 2:33

MIN AP	MV/M	DELAY	DVT	FACTOR	ID-LVL	REF-RTW	%RTW
100	.300	0.00	0.00	1.0000E+ 0	0	.30	5

RT	ITM	FACTOR	AREA	APCT	NAME
.48		0.00000	4793181 I	0.000	
.76		0.00000	546 TT	0.000	
1.19		0.00000	575 BB	0.000	
1.98	1.98#	1.00000	462 BV	3.111	#P021
2.11		0.00000	269 VV	0.000	
2.32		0.00000	157 VB	0.000	
2.64	2.64#	1.00000	173 BV	1.165	#P028
2.90		0.00000	166 VB	0.000	
3.36	3.41	1.00000	287 BB	1.933	P037
4.09	4.22	1.00000	1325 BV	8.910	P040
4.61	4.62	1.00000	2040 VB	13.718	P047
6.86	6.88	1.00000	192 BB	1.293	P084
8.38	8.38#	1.00000	2483 BB	16.704	#P104
9.98	9.94	1.00000	685 BB	4.610	P125
11.62	11.62#	1.00000	806 BB	5.422	#P146
13.63		0.00000	1362 BB	0.000	
16.76		0.00000	320 BB	0.000	
18.28	18.32	1.00000	1538 BB	10.344	P232
19.91		0.00000	328 BB	0.000	
29.23	28.17	1.00000	1592 BB	10.708	P372
32.49		0.00000	1578 BV	0.000	
34.97	34.27	1.00000	2261 VB	15.210	P448
36.65		0.00000	872 BV	0.000	
37.62		0.00000	452 VB	0.000	
39.63	39.44	1.00000	1021 BV	6.869	P525
40.37		0.00000	[illegible]	0.000	

K00003024



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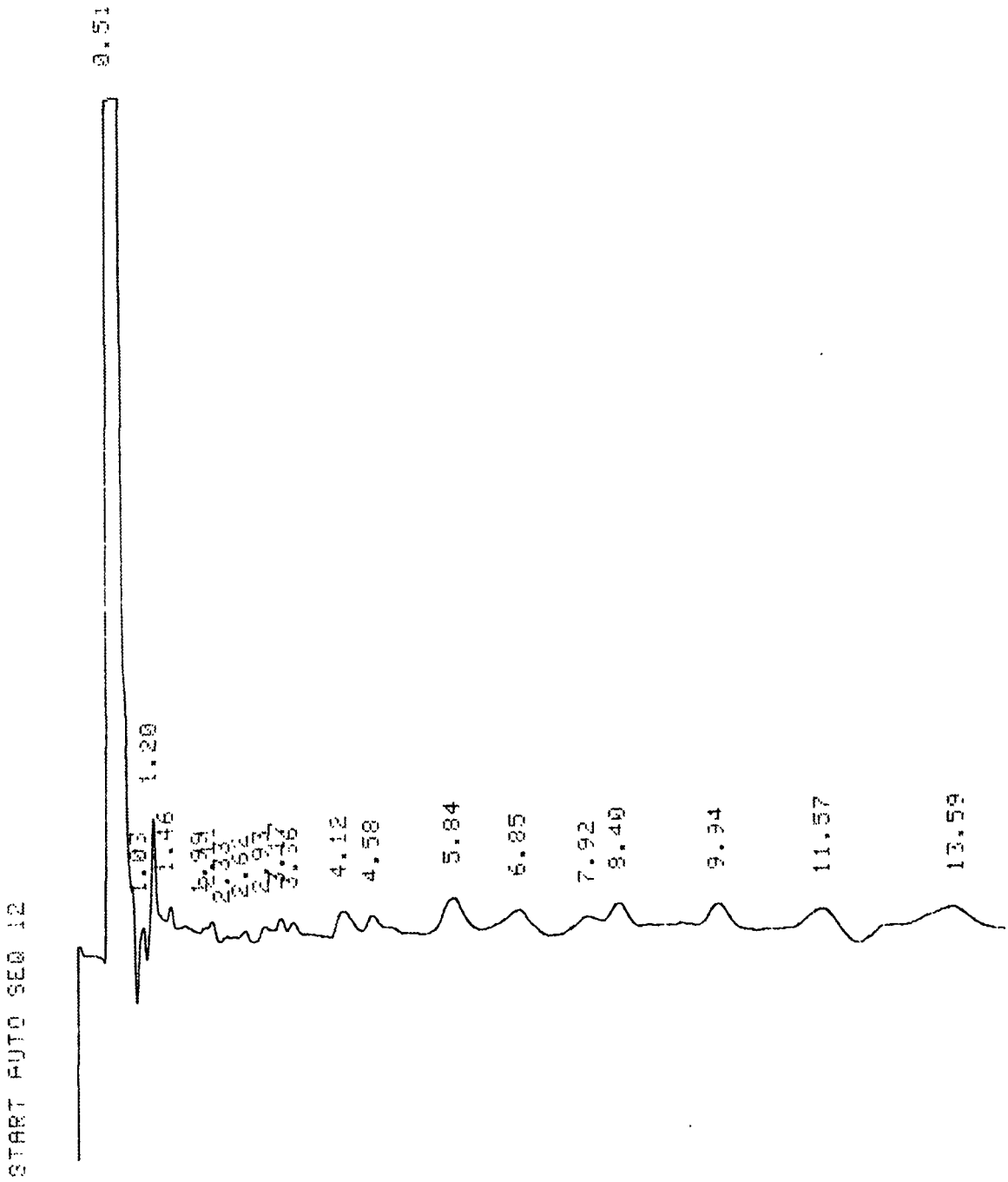
K00003025



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K00003026

1 mT

2 Hexane

3 ✓ ~~S42-C~~ ✓ ~~1926~~ 2013 (9)

4 ~~S54-C~~ ✓ ~~2148~~ (16)

5 ~~S60-C~~ ✓ ~~2324~~ (21)

6 ~~V1~~ ~~0059~~ (25)

7 ~~V2~~ ~~0233~~ (30)

8 ~~V3~~ ~~0406~~ (36)

9 ~~V4~~ ~~0540~~ (40)

10 ~~V5~~ ~~07[illegible]~~ (45)

11 V6 XXXXXX

12 ~~V[illegible]~~ ~~0837~~ (53)

13 ~~V8~~ ~~0930~~ (56)

14 ~~V9~~ ~~0947~~ (59)

15 ~~V10~~ ~~1012~~ (62)

16 ~~V~~ ~~[illegible]~~ (65)

17 ~~V12~~ ~~1101~~ (68)

18 V[illegible] 1145 (71)

19 ~~V1[illegible]~~ ~~1204~~ (1)

20 ~~V[illegible]~~ ~~1227~~ (4)

21 V16 (7)

22 V17

23

0.05 x 10

$\frac{0.5}{0.95}$ = 0.6 ml

0.10 x 10 $\frac{1}{2}$ = (16)

K00003027

13 992-18 / Bussener Drain
<0.11 Overisel Comp
at Weir
Mid 61
* note ~ 1/2 of sample extract spilled

14 992-27 ✓ Bussener Drain
0.11 Overisel Comp
15.5' Downstream of Weir
Left Bank

15 992-01 ✓ Hamilton MI
<0.11 Rabbit River Falls
Right Bank 62'

16 992-Q2 / Method Blank

17 992-Q3 / Spike 1254 0.1 ug/L
~0.10 ug/

K00003028

7 992-19 ✓ Bussaner Drain Overseal Comp
L11 at Weir Left Bank 9'

8 L.O.11 992-05 ✓ Rabbit River - 38th Street Bridge
18' right bank

9 L.O.11 992-Q1 ✓ Method Blank.

10 L.O.11 992-07 ✓ Rabbit River - 38th Street Bridge
right Bank 55'

11 O.11 992-06 ✓ Rabbit River - 38th Street Bridge
right Bank - 37'

12 L.O.11 992-17 Bussaner Drain - Overseal Comp
at Weir right Bank 3'

K00003029

07/01/87
BWR//DJJ

PCB ppb

Ext #	Control Number	Sample ID
1	41992-03 ✓	Hamilton MI - Rabbit River Falls Right ~~Bank~~ Bank 20'
2	41992-02 ✓	Hamilton MI - Rabbit River Falls Right ~~Bank~~ Bank 40'
3	41992-12 ✓	Bussener Drain - Overside Comp Downstream 125 Mid - 6'
4	41992-11 ✓	Bussener Drain - Overside Comp Downstream 125' Right Bank 3'
5	41992-13 ✓ (0.15)	Bussener Drain - Overside Comp Downstream 125 Left Bank 9'
6	41992-23 ✓	Oil/Water Separator Discharge Overside Comp Mid Water

K00003030

992- 9

10

16

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17

K00003031

LOCATION Overisel Gas Comp. Station

Project Number 5188175529 45 Report Date

Borehole ID 88MW-4A & 88MW-4

Sample Date 062288 Collected By STS

Received Date 062288 & 062388 Analysis Number 1554 & 1555

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88-945-1	4A	drill fluid	19½		<1
-2	↓	1	15-16½		<1
-3	↓	2	16½-18		<1
-4	↓	3	18-19½		<1
-7	4	1	5-6½		<1
-5	↓	2	6½-8		<1
-6	↓	3	8-9½		<1

K00003032

LOCATION Overisel Gas Comp. Station

Project Number 518817~~781~~552383 Report Date

Borehole ID 88SB-1, 88mw-1

Sample Date 030488 Collected By STS

Received Date 030488 Analysis Number 1476

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-1	1	1	0-2	unk.	1
-2	1	2	2-4		<1
-3	1	3	4-6		1
-4	1	4	6-8		<1 detected
-5	1	5	8-10		<1
-6	1	6	10-12		<1
-7	1	7	12-14		2
-8	1	8	14-16		<1
-9	1	9	16-18		28
-10	1	10	18-20		16
-11	mw-1	1	15-17		<1
-12	mw-1	2	17-19		<1

K00003033

LOCATION Overisel Gas Comp. Station

Project Number 518817~~781~~552383 Report Date

Borehole ID 88MW-2

Sample Date 030788 Collected By STS

Received Date 030788 Analysis Number 1477

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-13	MW-2	1	7-9	unk.	<1
-14	MW-2	2	9-11		<1

K00003034

LOCATION Overisel Gas Comp. Station

Project Number 518817~~781~~552383 Report Date

Borehole ID 885B-2, 885B-1A

Sample Date 030788 & 030888 Collected By STS

Received Date 030888 Analysis Number 1478, 1479

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-15	5B-2	1	0-2		1
-16	"	2	2-4		<1
-17	"	3	4-6		<1
-18	"	4	6-8		<1
-19	"	5	8-10		<1
-20	"	6	10-12		<1 detected
-21	"	7	12-14		5
-22	"	8	14-16		<1 detected
-23	"	9	16-18		1
-24	"	10	18-20		7
-25	5B-1A	1	20-22		<1
-26	"	2	22-24		<1
-27	"	3	24-26		<1
-28	"	4	26-28		<1
-29	"	5	28-30		<1
-30	"	Drilling Mud	25		8
-31	"	"	28		12

K00003035

LOCATION Overset Gas Comp. Station

Project Number 518817~~781~~552383 Report Date

Borehole ID 88SB-5 88SB-6

Sample Date 030888 030988 Collected By STS

Received Date 030988 Analysis Number 1479, 1480

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-32	SB-5	1	0-2		<1
-33		2	2-4		<1
34		3	4-6		<1
35		4	6-8		<1
36		5	8-10		<1
37		6	10-12		<1
38		7	12-14		15
39		8	14-16		27
40		9	16-18		4
41		10	18-20		2
88383-42	SB-6	1	0-2		1
43		2	2-4		<1
44		3	4-6		<1
45		4	6-8		1
46		5	8-10		<1
47		6	10-12		<1
48		7	12-14		<1
49		8	14-16		<1
50		9	16-18		1
51		10	18-20		<1 detected

CONT'D ON NEXT SHEET

K00003036

LOCATION Overisel Gas Comp. Station

Project Number 518817~~781~~552383 Report Date

Borehole ID 88SB-3, 88SB-4

Sample Date 030988 Collected By STS

Received Date 031088 Analysis Number 1480, 1481, 1482

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/Kg
88383-55	SB-3	1	0-2		2
-56	"	2	2-4		<1
-57	"	3	4-6		1
-58	"	4	6-8		<1
-59	"	5	8-10		<1
-60	"	6	10-12		<1
-61	"	7	12-14		<1
-62	"	8	14-16		<1
-63	"	9	16-18		1
-64	"	10	18-20		1
-65	"	11	20-22		2
-66	SB-4	1	0-2		82
-67	"	2	2-4		<1
-68	"	3	4-6		2
-69	"	4	6-8		1
-70	"	5	8-10		<1
-71	"	6	10-12		<1
-72	"	7	12-14		1
-73	"	8	14-16		1
-74	"	9	16-18		1
-75	"	10	18-20		<1 detected
-76	"	11	20-22		8

K00003037

LOCATION Oversel Gas Comp. Station

Project Number 518817 ~~281~~ 552 383 Report Date

Borehole ID 88SB-6

Sample Date 030988 Collected By STS

Received Date 030988 Analysis Number 1479 (CONT'D), 1480

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-52	SB-6	11	20-22		<1
53	↓	12	22-24		12
54	SB-1A	MUD	28		

K00003038

LOCATION Overisel Gas Comp. Station

Project Number 5188/7552383 Report Date

Borehole ID 88SB-3, 88MW-2A, 88SB-7

Sample Date 030988, 031088 Collected By STS

Received Date 031188 Analysis Number 1482

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-77	SB-3	12	22-24	unk.	<1
-78	"	13	24-26		<1
-79	"	14	26-28		<1
-80	"	15	28-30		<1
-81	"	drilling mud	18		1
-82	"	"	28		1
-83	MW-2A	1	16-18		<1
-84	"	2	18-20		<1
-85	"	wash water	unk.		<1
-86	SB-7	1	0-2		3
-87	"	2	2-4		<1
-88	"	3	4-6		<1 detected
-89	"	4	6-8		<1
-90	"	5	8-10		<1
-91	"	6	10-12		<1
-92	"	7	12-14		<1
-93	"	8	14-16		<1
-94	"	9	16-18		1
-95	"	10	18-20		4
-96	"	11	20-22		<1
-97	"	wash water & dirt	20		2 (dirt) <1 H2O

K00003039

LOCATION Overisel Gas Comp. Station

Project Number 5188175523 83 Report Date

Borehole ID 88MW-3

Sample Date 031488 Collected By

Received Date 031488 Analysis Number 1484

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-98	MW-3	1	6-8		<1
-99	"	2	8-10		<1

K00003040

LOCATION Overisel Gas Comp. Station

Project Number 518817552383 Report Date

Borehole ID 88MW-3A, 88SB-11

Sample Date 031688, 031788 Collected By STS

Received Date 031788 Analysis Number 1487, 1488

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCE mg/kg
88383-138	MW-3A	1	16-18		<1
-139	"	2	18-20		<1
-140	"	wash water	20		<1
88383 -141	SB-11	1	2-4		5400
-142	"	2	4-6		1
-143	"	3	6-8		<1 detected
-144	"	4	8-10		<1 detected
-145	"	5	10-12		<1
-146	"	6	12-14		78
-147	"	7	14-16		<1
-148	"	8	16-18		<1
-149	"	9	18-20		<1
-150	"	10	20-22		<1
-151	"	11	22-24		<1
-152	"	12	24-26		<1
-153	"	13	26-28		<1
-154	"	14	28-30		<1
-155	"	drilling mud	18-20		36
-156	"	"	24		10
-157	"	"	28		6

K00003041

LOCATION Overisel Gas Comp. Station

Project Number 518817552383 Report Date

Borehole ID 88SB-8, 88SB-9

Sample Date 031488, 031588 Collected By STS

Received Date 031588 Analysis Number 1484, ~~1488~~ 1489

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-100	88SB-8	1	0-2		<1
-101	"	2	2-4		<1
-102	"	3	4-6		3
-103	"	4	6-8		<1
-104	"	5	8-10		<1
-105	"	6	10-12		<1
-106	"	7	12-14		2
-107	"	8	14-16		<1
-108	"	9	16-18		<1
-109	"	10	18-20		<1
-110	"	11	20-22		<1
-111	"	12	22-24		<1
88383-112	SB-9	1	0-2		<1
-113	"	2	2-4		<1
-114	"	3	4-6		<1
-115	"	4	6-8		<1
-116	"	5	8-10		<1
-117	"	6	10-12		<1
-118	"	7	12-14		<1
-119	"	8	14-16		<1
-120	"	9	16-18	K00003042	<1

LOCATION Overisel Gas Comp. Station

Project Number 518817552383 Report Date

Borehole ID 88SB-9, 88SB-10

Sample Date 031588, 031688 Collected By STS

Received Date 031688 Analysis Number 1485, 1488, 1487

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-121	SB-9	10	18-20		<1
-122	"	11	20-22		<1
-123	"	12	22-24		<1
-124	"	drilling mud	22		<1
88383-125	SB-10	1	0-2		<1
-126	"	2	2-4		<1
-127	"	3	4-6		<1
-128	"	4	6-8		<1
-129	"	5	8-10		<1
-130	"	6	10-12		<1
-131	"	7	12-14		<1
-132	"	8	14-16		<1
-133	"	9	16-18		<1
-134	"	10	18-20		<1
-135	"	11	20-22		<1
-136	"	12	22-24		<1
-137	"	drilling mud	22		<1
				K00003043	

LOCATION Ouensel

Project Number 518817 552-383 Report Date

Borehole ID 88 mw -1

Sample Date 03 04 88 Collected By STS

Received Date 030488 Analysis Number 1476

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-11	mw-1	1	15-17		<1
12		2	17-19		<1
				K00003044	

LOCATION Overisel

Project Number 518817552-383 Report Date

Borehole ID 88 mw-2

Sample Date 030788 Collected By STS

Received Date 030788 Analysis Number 1477

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCE mg/kg
88383-13	mw-2	1	7-9		<1
14		2	9-11		<1

K00003045

LOCATION Duensel

Project Number 518817 552-383 Report Date

Borehole ID mw 2A

Sample Date 031088 Collected By STS

Received Date 031188 Analysis Number 1482

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-83	mw 2A	1	16-18		<1
84		2	18-20		<1
85		wash water	unk		<1
				K00003046	

LOCATION Overisel

Project Number 518817552-383 Report Date

Borehole ID 88mw-3

Sample Date 031488 Collected By STS

Received Date 031488 Analysis Number 1484

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-98	mw3	1	6-8		<1
99	mw3	2	8-10		<1

K00003047

LOCATION Overise 1

Project Number 518817552-383 Report Date

Borehole ID 88MW-3A

Sample Date 031688 Collected By STS

Received Date 031788 Analysis Number 1487

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-138	MW3A	1	16-18		<1
139		2	18-20		<1
140		wash water	20		<1

K00003048

LOCATION Oversel

Project Number 518817552-383 Report Date

Borehole ID 88SB-1

Sample Date 030488 Collected By STS

Received Date 030488 Analysis Number 1476

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-1	SB-1	1	0-2		1
2		2	2-4		<1
3		3	4-6		1
4		4	6-8		<1 *
5		5	8-10		<1
6		6	10-12		<1
7		7	12-14		2
8		8	14-16		<1
9		9	16-18		28
10		10	18-20		16

* Result <1 But Detectable

K00003049

LOCATION Doerisel

Project Number 518817 552-383 Report Date

Borehole ID 88SB-1A

Sample Date 030888 Collected By STS

Received Date 030888 Analysis Number 1478/1479

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-25	SB-1A	1	20-22		<1
26		2	22-24		<1
27		3	24-26		<1
28		4	26-28		<1
29		5	28-30		<1
30		Mud	25		8
31		Mud	28		12
54	SB-1A	mud	28		16
	(030988)				

K00003050

LOCATION Overisel

Project Number 5188/7552-383 Report Date

Borehole ID 88 SB-2

Sample Date 03 07 88 Collected By STS

Received Date 03 08 88 Analysis Number 1478/1479

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-15	SB-2	1	0-2		1
16		2	2-4		<1
17		3	4-6		<1
18		4	6-8		<1
19		5	8-10		<1
20		6	10-12		<1*
21		7	12-14		5
22		8	14-16		<1*
23		9	16-18		1
24		10	18-20		7
	* Result <1 But Detectable				

K00003051

LOCATION Ouensel

Project Number 518817552-383 Report Date

Borehole ID 885B-3

Sample Date 030988 Collected By STS

Received Date 031088 Analysis Number 1480/1481/1482

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-55	SB-3	1	0-2		2
56		2	2-4		<1
57		3	4-6		1
58		4	6-8		<1
59		5	8-10		<1
60		6	10-12		<1
61		7	12-14		<1
62		8	14-16		<1
63		9	16-18		1
64		10	18-20		1
65		11	20-22		2
77		12	22-24		<1
78		13	24-26		<1
79		14	26-28		<1
80		15	28-30		<1
81		mud	18		1
82		mud	28		1
				K00003052	

LOCATION Ouensel

Project Number 518817 552-383 Report Date

Borehole ID 88 SB-4

Sample Date 030988 Collected By STS

Received Date 031088 Analysis Number 1480/1481/1482

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCE mg/kg
88383-66	SB-4	1	0-2		82
67		2	2-4		<1
68		3	4-6		2
69		4	6-8		1
70		5	8-10		<1
71		6	10-12		<1
72		7	12-14		1
73		8	14-16		1
74		9	16-18		1
75		10	18-20		<1*
76		11	20-22		8

* Result <1 But Detected

K00003053

LOCATION Overisel

Project Number 5188/7552-383 Report Date

Borehole ID 88SB-5

Sample Date 030888 Collected By STS

Received Date 030988 Analysis Number 1479/1480

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-32	SB-5	1	0-2		<1
33		2	2-4		<1
34		3	4-6		<1
35		4	6-8		<1
36		5	8-10		<1
37		6	10-12		<1
38		7	12-14		15
39		8	14-16		27
40		9	16-18		4
41		10	18-20		2

K00003054

LOCATION Overise 1

Project Number 518817552383 Report Date

Borehole ID 88SB-6

Sample Date 030988 Collected By STS

Received Date 030988 Analysis Number 1479/1480

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-42	SB-6	1	0-2		1
43		2	2-4		<1
44		3	4-6		<1
45		4	6-8		1
46		5	8-10		<1
47		6	10-12		<1
48		7	12-14		<1
49		8	14-16		<1
50		9	16-18		1
51		10	18-20		<1*
52		11	20-22		<1
53		12	22-24		12
				K00003055	

LOCATION Overisel

Project Number 518817552-383 Report Date

Borehole ID 88SB-7

Sample Date 03/08/88 Collected By STS

Received Date 03/11/88 Analysis Number 1482

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-86	SB7	1	0-2		3
87		2	2-4		<1
88		3	4-6		<1*
89		4	6-8		<1
90		5	8-10		<1
91		6	10-12		<1
92		7	12-14		<1
93		8	14-16		<1
94		9	16-18		1
95		10	18-20		4
96		11	20-22		<1
97		wash water	20		<1
		Sediment	20		2

* Result <1 But Detected

K00003056

LOCATION Overisel

Project Number 518817552-383 Report Date

Borehole ID 88SB-8

Sample Date 0314 88, 031588 Collected By SJS

Received Date 031588 Analysis Number 1484, 1482

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-100	SB8	1	0-2		<1
101		2	2-4		<1
102		3	4-6		3
103		4	6-8		<1
104		5	8-10		<1
105		6	10-12		<1
106		7	12-14		2
107		8	14-16		<1
108		9	16-18		<1
109		10	18-20		<1
110		11	20-22		<1
111		12	22-24		<1
				K00003057	

LOCATION Overisel

Project Number 518817 552-383 Report Date

Borehole ID 88 SB-9

Sample Date 031488, 031588 Collected By STS

Received Date 031588 Analysis Number 1484, 1487

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88-383-112	SB9	1	0-2		<1
113		2	2-4		<1
114		3	4-6		<1
115		4	6-8		<1
116		5	8-10		<1
117		6	10-12		<1
118		7	12-14		<1
119		8	14-16		<1
120		9	16-18		<1
121		10	18-20		<1
122		11	20-22		<1
123		12	22-24		<1
124		mud	22		<1
				K00003058	

LOCATION Overisel

Project Number 518817552-383 Report Date

Borehole ID 88SB-10

Sample Date 031688 Collected By STS

Received Date 031688 Analysis Number 1485, 1487

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88-383-125	SB10	1	0-2		<1
126		2	2-4		<1
127		3	4-6		<1
128		4	6-8		<1
129		5	8-10		<1
130		6	10-12		<1
131		7	12-14		<1
132		8	14-16		<1
133		9	16-18		<1
134		10	18-20		<1
135		11	20-22		<1
136		12	22-24		<1
137		MUD	22		<1
				K00003059	

LOCATION Overisel

Project Number 518817552-383 Report Date

Borehole ID 88SB-11

Sample Date 031688, 031788 Collected By STS

Received Date 031788 Analysis Number 1487, 1488

Control Number	Borehole Number	Sample Number	Depth (ft)	Sample Section	PCB mg/kg
88383-141	SB-11	1	2-4		5400
142		2	4-6		1
143		3	6-8		<1*
144		4	8-10		<1*
145		5	10-12		<1
146		6	12-14		78
147		7	14-16		<1
148		8	16-18		<1
149		9	18-20		<1
150		10	20-22		<1
151		11	22-24		<1
152		12	24-26		<1
153		13	26-28		<1
154		14	28-30		<1
155		mud	18-20		36
156		mud	24		10
157		mud	28		6
				K00003060	
	* Result <1		But Detected		

Overisel

#	Description	ppm PCBs	Anal. #
[redacted]			
88-827-47	Below Previous sample 88827-29	9	1554
-48	" " " " -32	7	↓
88-946-1	Drip Sample – Aux. Bldg, Emergency Gen. Starting Motor - Lube Bowl	12	1554
-2	" – " " " " Starting Air - Blowdown	<5	
-3	" – " " Compressor #1 Blowdown	430	
-4	" – " " " #2 Blowdown	<5	
-5	" – " " Air Receiver tank Blowdown	170	
-6	" – " " Outlet filter - Inst. Air dryer	330	
-9	" – " " Condensate Blowdown at Air Logs	<5 (3)	
-10	" – Compressor Building Engine Room / Inlet condensate Blowdown under grating	<5	
-12	" – Starting air engine #1	<5	
-18	" – Starting air engine #4	> 1200	
-23	" – Engine pre-lube pump #1	> 17500	↓

K00003061

#88-946

OVERSEAS CAR RESTORATION
SUMMARY OF SYSTEM COLLECTION POINTS
(PCB CONCENTRATION)

A. RECIPROCATING ENGINES

ENGINE	—	NO 1	NO 2	NO 3	NO 4
STARTING AIR	—	SP-12 (ST)	SP-14 (NS)	SP-16 (NS)	SP-18 (S
CONTROL PANEL INST. AIR	—	SP-11 (NS)	SP-13 (NS)	SP-15 (NS)	SP-17 (NS
TURBINE BY-PASS INST AIR	—	SP-22 (NS)	SP-[illegible] (NS)	SP-20 (NS)	SP-1[illegible] (
ENGINE PRE-LUBE PUMP	—	SP-23 (ST)	SP-25 (NS)	SP-27 (NS)	SP-2[illegible] (NS
TURBINE PRE LUBE PUMP	—	SP-24 (NS)	SP-26 (NS)	SP-28 (NS)	SP 3[illegible] (NS

~~SP-11, 13, 23, 25~~
~~CANT SAMPLE COMP ENG RUNNING~~

#23 - small sample taken

SP-NO. - SAMPLE POINT NO.
ST - SAMPLE TAKEN
NS - NO SAMPLE

SAMPLED BY [signature]

K00003062

B. MISCELLANEOUS (CONTINUED)

YARD AREA

AUTOMATIC DUMPS

WEST	SP-46 (NS)
MIDDLE	SP-47 (NS)
EAST	SP-48 (NS)
AUTOMATIC SALT IN DUMP	SP-49 (NS)
HOUSE AIR - #2 LIGHT POLE	SP-50 (NS)
AUTOMATIC DUMP [illegible]	
WEST	SP-51 (NS)
EAST	SP-52 (NS)
NORTH HOUSE AIR - DEHY AREA	SP-53 (NS)
[illegible]	
NORTH	SP-54 (NS)
SOUTH	SP-55 (NS)
GLYCOL RECLAIMER - ELECTRONIC CONTROL	SP-56 (NS)
NORTH CONC FILTER	
WEST	SP-57 (NS)
EAST	SP-58 (NS)
HOUSE AIR - EAST SIDE OF WAREHOUSE (INSIDE)	SP-59 (NS)

C. GAS TURBINES

TURBINE #6	SP-60 (NS)
TURBINE #7	SP-61 (NS)

SAMPLED BY: [illegible]

K00003063

B. MISCELLANEOUS

AUXILIARY BUILDING

EMERGENCY GENERATOR

STARTING MOTOR - LUBE B[illegible]	SP-1 (ST)
STARTING AIR - BLOWDOWN	SP-2 (ST)
COMPRESSOR [illegible]	SP-3 (ST)
COMPRESSOR [illegible] - BLOWDOWN	SP-4 (ST)
AIR RECEIVER TANK - BLOWDOWN	SP-5 (ST)
OUTLET FILTER - INST AIR DRIER	SP-6 (ST)
HOUSE AIR	
NEAR [illegible] WEST SIDE [illegible]	SP- (NS)
NEAR WALL [illegible] SHOP	SP-8 (NS)
OUTSIDE	
CONDENSATE BLOWDOWN AT AIR LOGS	SP-9 (ST)
COMPRESSOR BUILDING	
ENG ROOM INLET [illegible]	SP-10 (ST)
CRANE	
EXHAUST FILTER (LARGE	SP-31 (NS)
EXHAUST FILTER (SM[illegible]	SP-32 (NS)
[illegible]	
[illegible]	SP-33 (NS)
N.E. CORNER OF [illegible]	SP-34 (NS)
INSTRUMENT AIR	
SIGNAL [illegible] (MAIN CONTROL PANEL)	SP-35 (NS)
YARD AREA	
SALEM FIELD REGULATORS	
WEST	SP-36 (NS)
MIDDLE	SP-37 (NS)
EAST	SP-38 (NS)
[illegible]	
[illegible]	SP-39 (NS)
MIDDLE	SP-40 (NS)
EAST	SP-4[illegible] (NS)
FIELD [illegible] (FR[illegible])	
NO [illegible]	SP-4[illegible] (NS)
NO [illegible]	SP-4[illegible] (NS)
NO [illegible]	SP-44 (NS)
NO 4	SP-45 (NS

SAMPLED BY: [signature]

K00003064

To BW Rasher, P12-103

From HW Voigt, T-260 HWV

Date April 19, 1988

Subject OVERISEL COMPRESSOR STATION -

Monitoring Well Samples - PCB Results

cc

File Index #
518817-552-480

==========

On March 25, 1988 personnel from the Chemical Division of Laboratory Services completed Depth-To-Water (DWL) measurements and collected groundwater samples from 5 monitoring well installations at the Overisel Compressor Station. Water samples were analyzed for PCB concentration.

METHODS

Depth-To-Water Measurements - Wetted Taped Method.

Water Sample Collection - Water samples were collected with a bailer after 2 gallons of water was removed.

PCB Analysis - EPA Method 608.

RESULTS

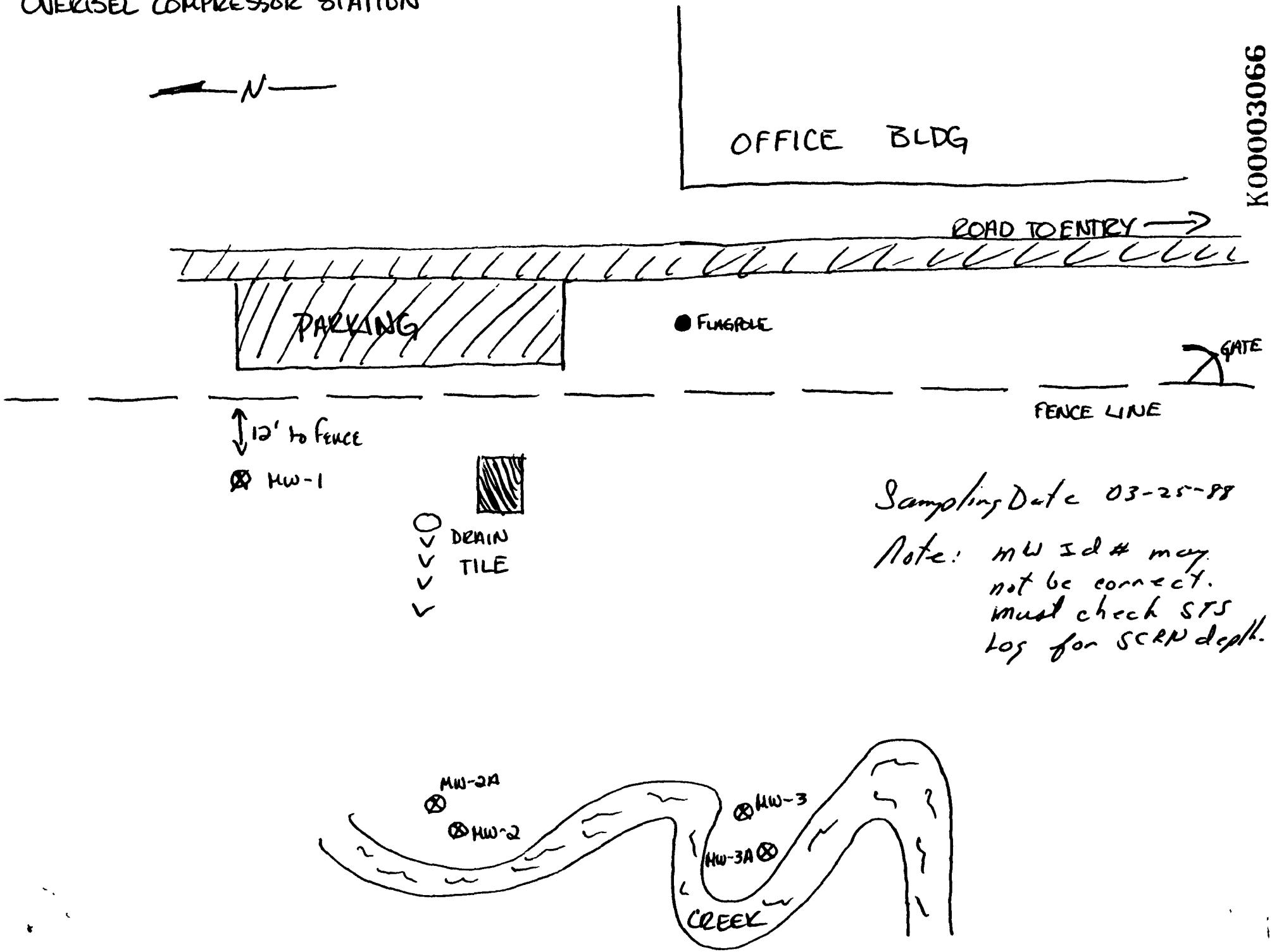
Control Number	Monitoring Well ID	Depth-To-Water (ft)	Bottom Of Screen (ft)	PCB * A-1254 ug/L
88480A	MW - 1	13.66	21.78	<0.53
88480B	MW - 2	3.01	12.04	<0.53
88480C	MW - 2A	3.00	23.15	<0.53
88480D	MW - 3	2.95	11.50	<0.53
88480E	MW - 3A	1.87	18.37	<0.53
88480F	Field Blank	NA	NA	<0.53

* Sample detection limit <0.53 ug/L, PCB as A-1254

K00003065

hwv

OVERISEL COMPRESSOR STATION



Sampling Date 03-25-88

Note: MW Id # may not be correct. must check STS log for SCRN depth.

K00003066

MONITORING WELL - DEPTH-TO-WATER MEASUREMENTS

LOCATION OVERISEL COMPRESSOR STATION

DATE 25-MAR-88 PROJECT NUMBER 518817-552-480

WELL ID Number	Time	Trial - 1 Top-Of Casing (ft)	Trial - 1 Wetted Tape (ft)	Trial - 1 DWL (ft)	Trial - 2 Top-of Casing (ft)	Trial - 2 Wetted Tape (ft)	Trial - 2 DWL (ft)	SCRN Depth (ft)
MW-1	10:50a.	15.0	1.34	13.66	16.0	2.34	13.66	21.78
MW-2A	11:20a	4.0	1.00	3.00	5.0	2.00	3.00	23.15
MW-2	11:22a.	4.0	0.99	3.01	5.0	1.99	3.01	12.04
MW-3	11:45a.	4.0	1.05	2.95	5.0	2.05	2.95	11.50
MW-3A	11:47a.	3.0	1.13	1.87	4.0	2.13	1.87	18.37

Note: Measurements are taken to the nearest 0.01 ft.

Remarks: WEATHER: SUNNY & WARM

Note: mw Id # may not be correct — must check STS log for SCRN depth.

K00003067

Measurements Taken By JKH/MAH

Reviewed By HW Vogt Date 03-28-88

To BW Rasher, P12-103

From HW Voigt, T-260

Date July 18, 1988

Subject OVERISEL COMPRESSOR STATION -

Monitoring Well MW-4 and MW-4A PCB Results

cc

File Index #
528817-552-082

==========

On July 12, 1988 personnel from the Chemical Division of L&FTS completed Depth-To-Water (DWL) measurements and collected groundwater samples from MW - 4 and MW - 4A monitoring well installations at the Overisel Compressor Station. Water samples were analyzed for PCB concentration.

METHODS

Depth-To-Water Measurements - Wetted Taped Method.

Water Sample Collection - The monitoring wells were pumped to a constant specific conductance and pH reading (20 gallons at one gallon per minute) and the water sample collected with a clean bailer. MW - 4 stabilized at a specific conductance of 390 umhos/cm and a pH of 7.5. MW - 4A stabilized at a specific conductance of 410 umhos/cm and a pH of 7.5.

PCB Analysis - EPA Method 608.

RESULTS

Control Number	Monitoring Well ID	Depth-To-Water (ft)	PCB * A1254 ug/L
88082-1	MW - 4	2.71	1.90
88082-2	MW - 4A	2.75	0.83
88082-3	Field Blank		<0.53
88082-4	Method Blank		<0.53

* Sample detection limit <0.53 ug/L, PCB as A-1254

hwv

K00003068

To BW Rasher, P12-103

From HW Voigt, T-260

Date July 18, 1988

Subject OVERISEL COMPRESSOR STATION -

Monitoring Well MW-4 and MW-4A PCB Results

cc

File Index #
528817-552-082

==========

On July 12, 1988 personnel from the Chemical Division of L&FTS completed Depth-To-Water (DWL) measurements and collected groundwater samples from MW - 4 and MW - 4A monitoring well installations at the Overisel Compressor Station. Water samples were analyzed for PCB concentration.

METHODS

Depth-To-Water Measurements - Wetted Taped Method.

Water Sample Collection - The monitoring wells were pumped to a constant specific conductance and pH reading (20 gallons at one gallon per minute) and the water sample collected with a clean bailer. MW - 4 stabilized at a specific conductance of 390 umhos/cm and a pH of 7.5. MW - 4A stabilized at a specific conductance of 410 umhos/cm and a pH of 7.5.

PCB Analysis - EPA Method 608.

RESULTS

Control Number	Monitoring Well ID	Depth-To-Water (ft)	PCB * A1254 ug/L
88082-1	MW - 4	2.71	1.90
88082-2	MW - 4A	2.75	0.83
88082-3	Field Blank		<0.53
88082-4	Method Blank		<0.53

* Sample detection limit <0.53 ug/L, PCB as A-1254

K00003069

hwv

To BW Rasher, P12-103

From HW Voigt, T-260

Date July 18, 1988

Subject OVERISEL COMPRESSOR STATION -

Monitoring Well MW-4 and MW-4A PCB Results

cc

File Index #
528817-552-082

==========

On July 12, 1988 personnel from the Chemical Division of L&FTS completed Depth-To-Water (DWL) measurements and collected groundwater samples from MW - 4 and MW - 4A monitoring well installations at the Overisel Compressor Station. Water samples were analyzed for PCB concentration.

METHODS

Depth-To-Water Measurements - Wetted Taped Method.

Water Sample Collection - The monitoring wells were pumped to a constant specific conductance and pH reading (20 gallons at one gallon per minute) and the water sample collected with a clean bailer. MW - 4 stabilized at a specific conductance of 390 umhos/cm and a pH of 7.5. MW - 4A stabilized at a specific conductance of 410 umhos/cm and a pH of 7.5.

PCB Analysis - EPA Method 608.

RESULTS

Control Number	Monitoring Well ID	Depth-To-Water (ft)	PCB * A1254 ug/L
88082-1	MW - 4	2.71	1.90
88082-2	MW - 4A	2.75	0.83
88082-3	Field Blank		<0.53
88082-4	Method Blank		<0.53

* Sample detection limit <0.53 ug/L, PCB as A-1254

hwv

K00003070

To BW Rasher, P12-103

From HW Voigt, T-260

Date July 18, 1988

Subject OVERISEL COMPRESSOR STATION -

Monitoring Well MW-4 and MW-4A PCB Results

cc

File Index #
528817-552-082

==========

On July 12, 1988 personnel from the Chemical Division of L&FTS completed Depth-To-Water (DWL) measurements and collected groundwater samples from MW - 4 and MW - 4A monitoring well installations at the Overisel Compressor Station. Water samples were analyzed for PCB concentration.

METHODS

Depth-To-Water Measurements - Wetted Taped Method.

Water Sample Collection - The monitoring wells were pumped to a constant specific conductance and pH reading (20 gallons at one gallon per minute) and the water sample collected with a clean bailer. MW - 4 stabilized at a specific conductance of 390 umhos/cm and a pH of 7.5. MW - 4A stabilized at a specific conductance of 410 umhos/cm and a pH of 7.5.

PCB Analysis - EPA Method 608.

RESULTS

Control Number	Monitoring Well ID	Depth-To-Water (ft)	PCB * A1254 ug/L
88082-1	MW - 4	2.71	1.90
88082-2	MW - 4A	2.75	0.83
88082-3	Field Blank		<0.53
88082-4	Method Blank		<0.53

* Sample detection limit <0.53 ug/L, PCB as A-1254

hwv

K00003071

To BW Rasher, P12-103

From HW Voigt, T-260

Date July 18, 1988

Subject OVERISEL COMPRESSOR STATION -

Monitoring Well MW-4 and MW-4A PCB Results

cc

File Index #
528817-552-082

==========

On July 12, 1988 personnel from the Chemical Division of L&FTS completed Depth-To-Water (DWL) measurements and collected groundwater samples from MW - 4 and MW - 4A monitoring well installations at the Overisel Compressor Station. Water samples were analyzed for PCB concentration.

METHODS

Depth-To-Water Measurements - Wetted Taped Method.

Water Sample Collection - The monitoring wells were pumped to a constant specific conductance and pH reading (20 gallons at one gallon per minute) and the water sample collected with a clean bailer. MW - 4 stabilized at a specific conductance of 390 umhos/cm and a pH of 7.5. MW - 4A stabilized at a specific conductance of 410 umhos/cm and a pH of 7.5.

PCB Analysis - EPA Method 608.

RESULTS

Control Number	Monitoring Well ID	Depth-To-Water (ft)	PCB * A1254 ug/L
88082-1	MW - 4	2.71	1.90
88082-2	MW - 4A	2.75	0.83
88082-3	Field Blank		<0.53
88082-4	Method Blank		<0.53

* Sample detection limit <0.53 ug/L, PCB as A-1254

hwv

K00003072

Notes:

→ Smelled oil in well samples of MW-1

→ possible oil smell at air tank #10 & 14 samples

→ no difficulty in obtaining 12 full bails

→ Key #1417 for well locks

→ no 753 for air storage tank samp

K00003073

Steady-state measurements
Overisel Compressor Station
Monitoring wells 4 & 4A

DATE: 12-JUL-88
ANALYST: [illegible]

		CONDUC.	pH
MW-4A			
	10 gals	400	7.5
	15 gals	390	7.5
	20 gals	390	7.5
MW-4			
	10 gals	410	7.5
	15 gals	410	7.5
	20 gals	410	7.5

mw 4 1.90 ppb

mw 4A 0.83

88-552

108

K00003074

MOMITORING WELL DEPTH-TO-WATER MEASUREMENTS

LOCATION Ovensel Compressor Station

DATE Ø 12-JUL-88 PROJECT NUMBER

WELL ID Number	Time	Trial-1 Top-Of Casing (ft)	Trial-1 Wetted Tape (ft)	Trial-1 DWL (ft)	Trial-2 Top-Of Casing (ft)	Trial-2 Wetted Tape (ft)	Trial-2 DWL (ft)	SCRN (ft)
4A	10:52	4.0	1.25	2.75	5.0	2.25	2.75	
4	10:57	4.0	1.29	2.71	5.0	2.29	2.71	

Notes : DWL measurements are read to the nearest 0.01 ft.

Remarks:

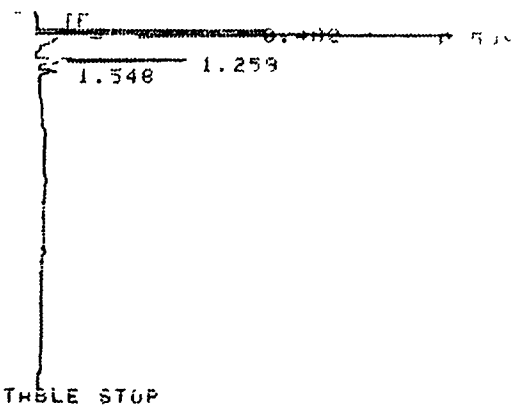
Measurements Taken By SKH/MH 12 JUL-88

K00003075

Reviewed By Date

****

```
STOP

OPERATION TERMINATED ABNORMALLY
(EXCEPTION  9902)
IN LINE 101
STOPPED RUN  JUL 14, 1988  [illegible]


AUTO CALIBRATION SEQUENCE
ABORT PROGRAM IF KEY 0' IS ASSIGNED

SEQUENCE STARTING POINTS ARE:
                    0  =  PROGRAM ABORT
                    1  =  SE01  =  [illegible]
                    2  =  SE02  =  [illegible]
                    3  =  SE03  =  [illegible]
                    4  =  SE04     [illegible]

ENTER SEQUENCE START POINT    [illegible]

YOUR START POINT IS            1

START AUTO SEQUENCE (Y/N)     [illegible]
NOW LOADING U:WASH_U.MET


 Waiting for System Readiness
RUN #  242      JUL 14, 1988  [illegible]
START Source
```




```
TIMETABLE STOP
```

Overall

MW 4 & 4A

7/12/88

88-

K00003076

To GDDykstra, Overisel Compressor Station

From HWVoigt, T-260, Jackson

Date July 8, 1988

Subject WASTE MATERIAL ANALYSIS REPORT

CONSUMERS POWER COMPANY

Internal Correspondence

CC BWRasher, P-12-103 PSZombo, P-11-203 File Index: 528817-510-010
WJWilson, P-12-308

The following waste material/oil samples were received by the Chemical Division of L&FTS for characterization of physical and chemical properties.

Facility Name

Overisel Compressor Station

Sample Date: 06-24-88 Received Date: 06-24-88

Lab Number	Facility Number	Sample Origin and Physical Appearance
88-1010-1	BBL-1	Water - MW4 & 4A
88-1010-2	BBL-2	Water - MW4 & 4A
88-1010-3	BBL-3	Soil - MW4 & 4A
88-1010-4	BBL-4	Soil - MW4 & 4A
88-1010-5	-	Air Compressor Condensate

Test Parameter	Sample Analysis Results				
Lab Number	88-1010-1	88-1010-2	88-1010-3	88-1010-4	88-1010-5
Facility Number	BBL-1	BBL-2	BBL-3	BBL-4	-
Flash Point-D93, °F	-	-	-	-	-
PH, Units	-	-	-	-	-
PCB, ug/g	<1	<1		10	<1
Metals, ppm	**********				
Copper	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA
Cl-Solvents, ppm	**********				
Methylene Chloride	NA	NA	NA	NA	NA
111-Trichloroethane	NA	NA	NA	NA	NA
112-Trichloroethene	NA	NA	NA	NA	NA
Perchloroethylene	NA	NA	NA	NA	NA
Freon-113	NA	NA	NA	NA	NA
112-Trichloroethane	NA	NA	NA	NA	NA
Total Halogens, ppm	NA	NA	NA	NA	NA

Data Reference: PCB-1562

Reviewed by: MWJ Date: 7/8/88

Metals reported as _____ total metals _____ extracted metals. (NA - Not Analyzed)

Flash point indicated as "BP" indicates no flash point at boiling point

K00003077

To GDDykstra, Overisel Compressor Station

From HWVoigt, T-260, Jackson

Date July 8, 1988

Subject WASTE MATERIAL ANALYSIS REPORT

CONSUMERS POWER COMPANY

Internal Correspondence

CC BWRasher, P-12-103 PSZombo, P-11-203 WJWilson, P-12-308

File Index: 528817-510-010

The following waste material/oil samples were received by the Chemical Division of L&FTS for characterization of physical and chemical properties.

Facility Name

Overisel Compressor Station

Sample Date: 06-24-88 Received Date: 06-24-88

Lab Number	Facility Number	Sample Origin and Physical Appearance
88-1010-1	BBL-1	Water - MW4 & 4A
88-1010-2	BBL-2	Water - MW4 & 4A
88-1010-3	BBL-3	Soil - MW4 & 4A
88-1010-4	BBL-4	Soil - MW4 & 4A
88-1010-5	-	Air Compressor Condensate

Test Parameter	Sample Analysis Results				
Lab Number	88-1010-1	88-1010-2	88-1010-3	88-1010-4	88-1010-5
Facility Number	BBL-1	BBL-2	BBL-3	BBL-4	-
Flash Point-D93, °F	-	-	-	-	-
PH, Units	-	-	-	-	-
PCB, ug/g	<1	<1		10	<1
Metals, ppm	**********				
Copper	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA
Cl-Solvents, ppm	**********				
Methylene Chloride	NA	NA	NA	NA	NA
111-Trichloroethane	NA	NA	NA	NA	NA
112-Trichloroethene	NA	NA	NA	NA	NA
Perchloroethylene	NA	NA	NA	NA	NA
Freon-113	NA	NA	NA	NA	NA
112-Trichloroethane	NA	NA	NA	NA	NA
Total Halogens, ppm	NA	NA	NA	NA	NA

Data Reference: PCB-1562

Reviewed by: MWJ Date: 7/8/88

Metals reported as _____ total metals _____ extracted metals. (NA - Not Analyzed)

Flash point indicated as "BP" indicates no flash point at boiling point

K00003078

COMPRESSOR STATION PCB

STATION Outrisel

AREA STS Drilling Mud - Drums

SAMPLE DATE 05/26/88 REPORT DATE 05/31/88

Control Number	PCB mg/L Water Phase	PCB mg/kg Mud Phase	Description - Drum Label *
88827 -1	<1	<1	18'-24', 885B-8
2	<1	NS	Unidentified
3	<1	NS	Unidentified
4	<1	NS	Unidentified
5	<1	10	Unidentified
6	<1	<1	885B-10
7	<1	5	20'-30', 885B-1A
8	<1	<1	885B-3
9	<1	NS	Con Liquid
10	<1	NS	Con Liquid
11	<1	32	Unidentified
12	<1	32	Con Liquid
13	<1	<1	Unidentified

NS = no sample of mud phase present.

* Drum were re-labeled 05/26/88 (Blue Paint) as 1 to 13 as above

PCB # 1536

K00003079

DRUM I.D. & CONTENTS

Soil Drums	Liquid Drums	Paper + Plastics Con	Paper Plastic Recycle
1. 88SB-9 0-16'	X 88SB-9 Drill Mud 16-24'	LM	1.
2. 88SB-7 0-22'	X 88SB-8 Drill Mud 18-24' ✓		
3. 88SB-8 0-18'	X. 88SB-11 Drill Mud 14-30'		
4. 88MW-2 0-10' 88MW-2A 0-20'	X Outfall Pond Water		
5. 88 MW-3A 0-20'	X. Outfall Pond Water		
6. 88 SB-10 0-22'	X. Outfall Pond Water		
7. 88 SB-1 0-20'	X Spoon Wash Con Liquid		
8. 88SB-3 0-18'	X 88SB-10 Drilling Mud ✓		
9. 88 SB-5 0-18'	X 88SB-1A Drilling Mud 20-30' ✓		
10. 88SB-6 0-24'	X. 88SB-3 Drill Mud ✓		
11. 88SB-1A 0-30' 88SB-5 0-14'	X Spoon Wash Con Liquid		
12. 88SB-4 0-22'	X. Personal Decon Con Liquid		
↑ NOT SAMPLED	X. Personal Decon Con Liquid		

These drums were sampled & numbered in the field 052688

Numbers do not correspond to description given on this page.

(MH)

Sample numbers correspond to blue painted numbers on barrels

Pat Zombo

18 BBLS LIQUID

24

K00003080

COMPRESSOR STATION PCB CLEANUP

— Cleanup Verification Sampling —

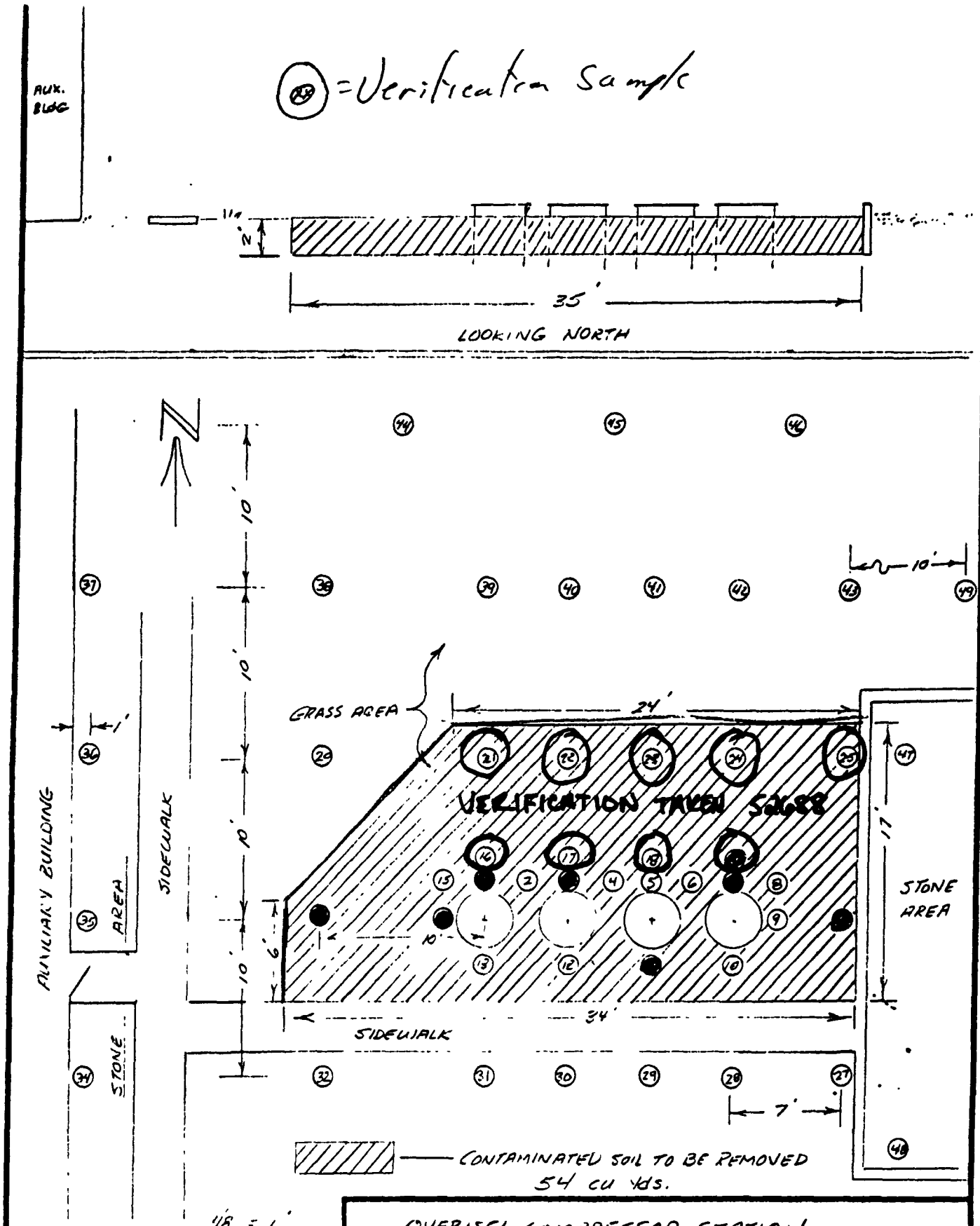
STATION Ouachita

AREA Air Loss Excavation - North

SAMPLE DATE 052688 REPORT DATE 060188

Control Number	PCB mg/kg	Sample Location
88827-17	2	At Sample Point #16 (09-10-87)
18	5	#17
19	23	#18
20	32	#19
21	11	#21
22	3	#22
23	23	#23
24	10	#24
25	9	#25

K00003081



OVERISEL COMPRESSOR STATION			
W.O. 3495	FILE NO.	AREA - AIR LOGS	5-3-88
CONSUMERS POWER CO. GAS P.& T. ENGINEERING	DR RLM	CK RLM	APP.	NO. 1 OF 3

K00003082

COMPRESSOR STATION PCB CLEANUP

— Cleanup Verification Sampling —

STATION Overisel

AREA Emergency Generator Vent

SAMPLE DATE 05 26 88 REPORT DATE 060188

Control Number	PCB mg/kg	Sample Location	
88827-15	16	Surface	2' from curb
16	1	12' depth	& 1½' from
			cooling fan pad
			K00003083

COMPRESSOR STATION PCB CLEANUP

— Cleanup Verification Sampling —

STATION Overisel

AREA Fill Sand

SAMPLE DATE 052688 REPORT DATE 060188

Control Number	PCB mg/kg	Sample Location
88827-14	<1	Fill Sand
		K00003084

COMPRESSOR STATION P.C.B. CLEAN-UP

— CLEAN-UP VERIFICATION SAMPLING —

STATION OVERISEL

AREA ~~Ø~~ AIR LOGS

SAMPLING DATE 06-21-88 REPORT DATE _____

CONTROL NUMBER	PCB mg/kg	SAMPLE DESCRIPTION OR LOCATION	DISTANCE BELOW SURFACE LEVEL
88827-47	9	PREVIOUS SAMPLE VERIFICATION OF 88827-~~30~~29	[+4]
88827-48	7	PREVIOUS SAMPLE VERIFICATION OF 88827-32	[+4]
			K00003085

COMPRESSOR STATION P.C.B. CLEAN-UP

— CLEAN-UP VERIFICATION SAMPLING —

STATION OVERISEL

AREA AIR LOGS

SAMPLING DATE 06-09-88 REPORT DATE _____

CONTROL NUMBER	PCB mg/kg	SAMPLE DESCRIPTION OR LOCATION	DISTANCE BELOW SURFACE LEVEL
88827-26	13	PREVIOUS SAMPLE SITE NUMBER-15	[+2']
-27	22	NUMBER-1	[+2']
-28	22	-2	[+2']
-29	30	-3	[+2']
-30	22	-4	[+2']
-31	19	-5	[+2']
-32	37	-6	[+2']
-33	14	-7	[+2']
-34	4	-8	[+2']
-35	19	-33	[+2']

K00003086

COMPRESSOR STATION P.C.B. CLEAN-UP

— CLEAN-UP VERIFICATION SAMPLING —

STATION OVERISEL

AREA AIR LOGS

SAMPLING DATE 06-09-88 REPORT DATE _____

CONTROL NUMBER	PCB mg/kg	SAMPLE DESCRIPTION OR LOCATION	DISTANCE BELOW SURFACE LEVEL
88827-36	9	PREVIOUS SAMPLE SITE NUMBER - 14	[+2']
-37	5	- 9	[+2']
-38	<1	-26	[+2']
-39	1	- 13	[+2']
-40	5	- 12	[+2']
-41	5	- 11	[+2']
-42	2	-10	[+2']
-43	12	-21	[+2'6"]
-44	16	-23	[+3']
-45	18	- 18	[+3']

K00003087

COMPRESSOR STATION P.C.B. CLEAN-UP

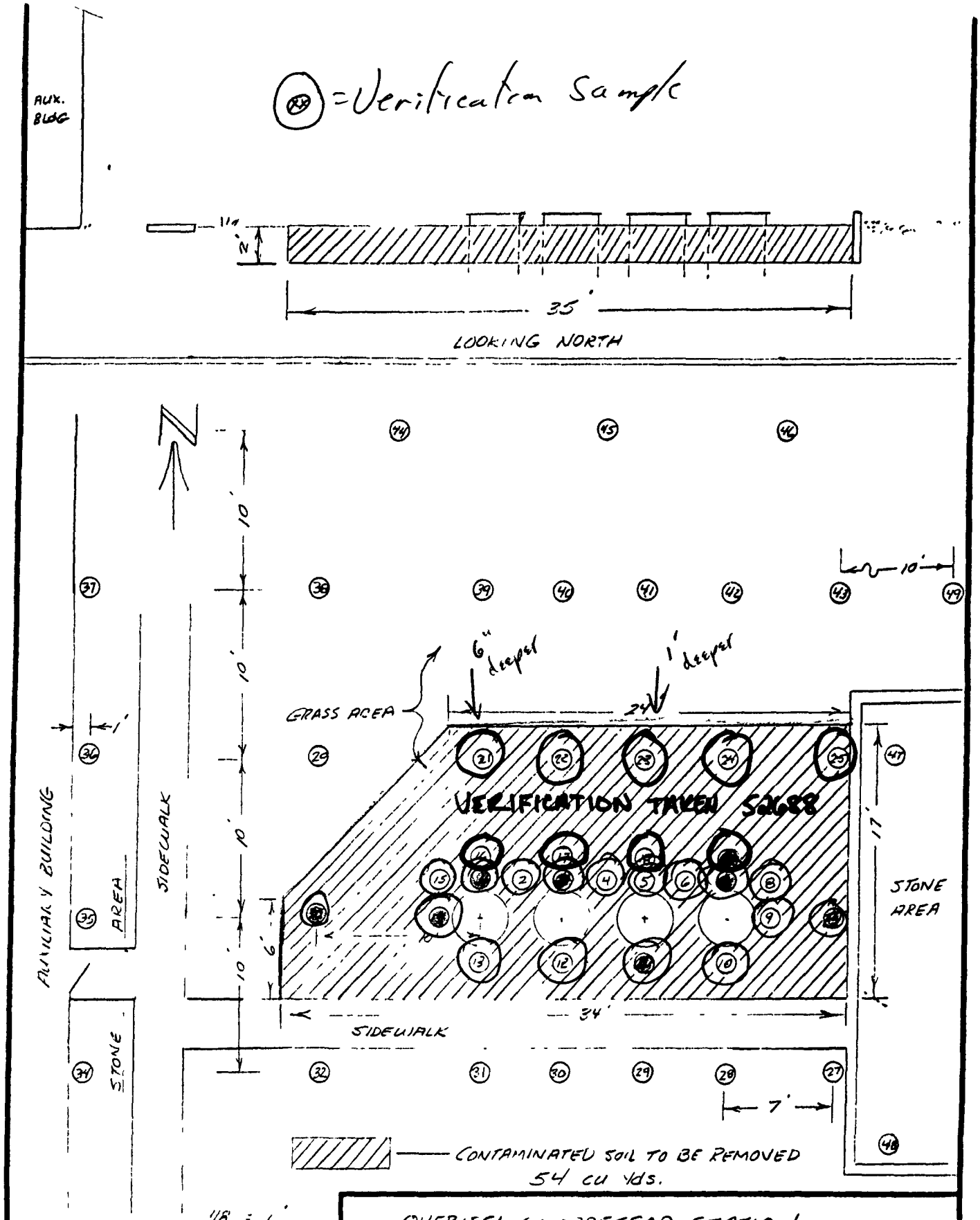
— CLEAN-UP VERIFICATION SAMPLING —

STATION OVERISEL

AREA AIR LOGS

SAMPLING DATE 06-09-88 REPORT DATE _____

CONTROL NUMBER	PCB mg/kg	SAMPLE DESCRIPTION OR LOCATION	DISTANCE BELOW SURFACE LEVEL
88807-46	14	PREVIOUS SAMPLE SITE NUMBER - 19	[+3']
			K00003088



OVERISEL COMPRESSOR STATION		
WO 3495	FILE NO	AREA - AIR LOGS 5-3-88
CONSUMERS POWER CO. GAS P.& T. ENGINEERING	DR RLM / CK RLM / APP.	NO. 1 OF 3

K00003089

COMPRESSOR STATION PCB CLEANUP

— Cleanup Verification Sampling —

STATION Overisel

AREA Fill Sand

SAMPLE DATE 052688 REPORT DATE 060188

Control Number	PCB mg/kg	Sample Location
88827-14	<1	Fill Sand
		K00003090

COMPRESSOR STATION PCB CLEANUP

— Cleanup Verification Sampling —

STATION Overisel

AREA Emergency Generator Vent

SAMPLE DATE 052688 REPORT DATE 060188

Control Number	PCB mg/kg	Sample Location	
88827-15	16	Surface	[2' from curb
16	1	12' depth	& 1½' from
			cooling fan pad

K00003091

COMPRESSOR STATION PCB CLEANUP

— Cleanup Verification Sampling —

STATION Quenisel

AREA Air Loss Excavation - North

SAMPLE DATE 052688 REPORT DATE 060188

Control Number	PCB mg/kg	Sample Location
88827-17	2	At Sample Point #16 (09-10-87)
18	5	#17
19	23	#18
20	32	#19
21	11	#21
22	3	#22
23	23	#23
24	10	#24
25	9	#25

K00003092

COMPRESSOR STATION PCB

STATION Overisel

AREA STS Drilling Mud - Drums

SAMPLE DATE 05/26/88 REPORT DATE 05/31/88

Control Number	PCB mg/L Water Phase	PCB mg/kg Mud Phase	Description - Drum Label *
88827 -1	<1	<1	18'-24', 885B-8
2	<1	NS	Unidentified
3	<1	NS	Unidentified
4	<1	NS	Unidentified
5	<1	10	Unidentified
6	<1	<1	885B-10
7	<1	5	20'-30', 885B-1A
8	<1	<1	885B-3
9	<1	NS	Con Liquid
10	<1	NS	Con Liquid
11	<1	32	Unidentified
12	<1	32	Con Liquid
13	<1	<1	Unidentified

NS = no sample of mud phase present.

* Drum were re-labeled 05/26/88 (Blue Paint) as 1 to 13 as above

PCB # 1536

K00003093

DRUM I.D. & CONTENTS

Soil Drums	Liquid Drums	Paper + Plastics Con	Paper + Plastic Non-Con
1. 88SB-9 0-16'	X 88SB-9 Drill Mud 16-24'	4M	1.
2. 88SB-7 0-22'	X 88SB-8 Drill Mud 18-24' ✓		
3. 88SB-8 0-18'	X 88SB-11 Drill Mud 14-30'		
4. 88MW-2 0-10' 88MW-2A 0-20'	X Outfall Pond Water		
5. 88MW-3A 0-20'	X Outfall Pond Water		
6. 88SB-10 0-22'	X Outfall Pond Water		
7. 88SB-1 0-20'	X Spoon Wash Con Liquid		
8. 88SB-3 0-18'	X 88SB-10 Drilling Mud ✓		
9. 88SB-5 14-18'	X 88SB-1A Drilling Mud 20-30' ✓		
10. 88SB-6 0-24'	X 88SB-3 Drill Mud ✓		
11. 88SB-1A 0-30' 88SB-5 0-14'	X Spoon Wash Con Liquid		
12. 88SB-4 0-22'	X Personal Decon Con Liquid		
↑ NOT SAMPLED	X Personal Decon Con Liquid		

These drums were sampled & numbered in the field

052688

Numbers do not correspond to description given on this page.

[signature]

(M)

Sample numbers correspond to blue painted numbers on barrels

Pat 20MLO

18 BBLS Liquid

24

K00003094

Sampled S0 & S1 of emergency generator air vent front of office bldg labled as

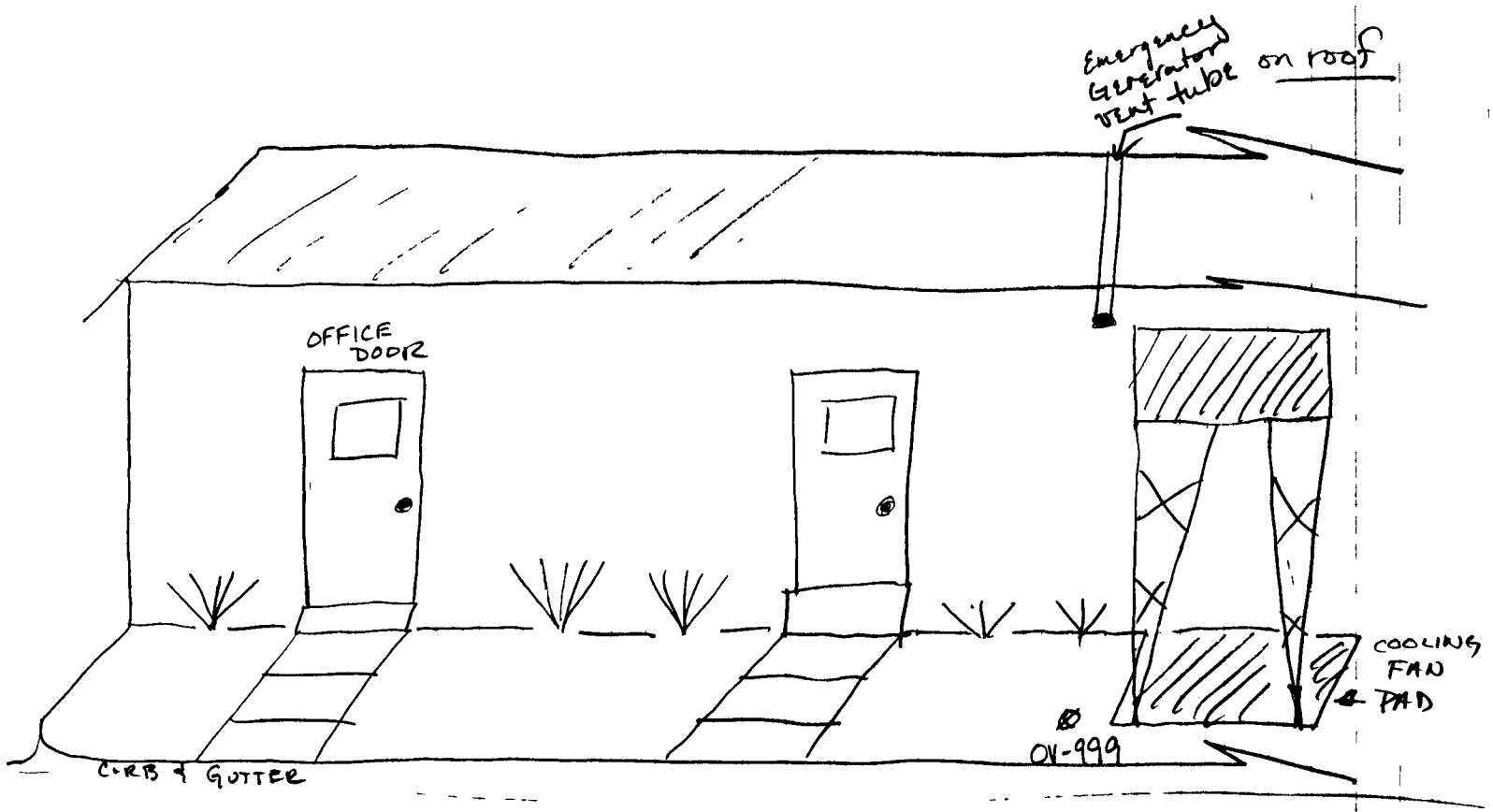
OV-999-S0 — [illegible]
OV-999-S1 — 176

K00003095

Overisel -

	#	water	solid (mud)
88-827	1	<1	<1
	2	<1	—
	3	<1	—
	4	<1	—
	5	<1	10
	6	<1	<1
	7	<1	5
	8	<1	<1
	9	<1	—
	10	<1	—
	11	<1	32
	12	<1	32
	13	<1	<1

K00003096



Sampled approximately 2 feet from curb & gutter and 1 1/2 feet from cooling fan pad, directly below the emergency generator vent.

K00003097

Overisel gas comp. station / 518817 552827

Analysis #1536

Lab control #	Description	ppm PCBs
88-827-1	H_2O & drilling mud, 18'-24', 88SB-8	<1
-2	H_2O, unidentified bbl. #2	<1
-3	H_2O, unidentified bbl. #3	<1
-4	H_2O, unidentified bbl. #4	<1
-5	drilling mud, unidentified bbl. #5	10
-6	88SB-10	<1
-7	drilling mud, 20'-30', 88SB-1A	5
-8	drilling mud & H_2O, 88SB-3	<1 (detected)
-9	H_2O, unidentified bbl. #9, "Con Liquid"	<1 (detected) ≥ 0.2 ppm
-10	H_2O, unidentified bbl. #10, "Con Liquid"	<1
-11	~~drilling mud~~ solids from unidentified bbl. #11	32
-12	drilling mud, unidentified bbl #12, "Con Liquid"	32
-13	drilling mud & H_2O, unidentified bbl. #13	<1
-14	Fill sand	<1
-15	99950	16
-16	99951	1
-17	Air logs, Location #16	2
-18	Air logs, Location #17	5
-19	" " #18	23
-20	" " #19	32
-21	" " #21	11
-22	" " #22	3
-23	" " #23	23
-24	" " #24	10
-25	" " #25	9

THESE RESULTS GIVEN TO B. MOORE VIA PHONE ON 053188 at 11:10 a.m. by [illegible]

K00003098

AREA - AIR LOGS
SAMPLING DATE 09-10-87
REPORT DATE AND RESULTS 02-01-88

SAMPLE POINT NUMBER		SURFACE SOIL PCB mg/kg	12" DEPTH SOIL PCB mg/kg	
872-492 B	1	17	37	UNDER VALVE
	2	4	24	
	3	10	31	UNDER VALVE
	4	13	23	
	5	18	11	UNDER VALVE
	6	10	23	
	7	7	25	UNDER VALVE
	8	8	14	
	9	18	17	
	10	15	1	
	11	36	3	
	12	16	3	
	13	9	3	
	14	14	38	
	15	8	14	
VERIFY 52688	16	6	17	MH
"	17	6	11	MH
"	18	8	22	MH
"	19	9	27	MH
	20	8	3	
VERIFY 52688	21	6	20	MH
"	22	5	11	MH
"	23	11	23	MH
"	24	7	13	MH
"	25	4	12	MH
	26	12	27	
	27	5	<1	

OVERISEL COMPRESSOR STATION

W.O. 3495 | FILE NO.

AREA - AIR LOGS 5-3-88

CONSUMERS POWER CO.
GAS P. & T. ENGINEERING

DR RLM | CK RLM | APP. | NO. 2 OF 3

K00003099

AREA AIR LOGS
SAMPLING DATE 09-10-87
REPORT DATE AND RESULTS 02-01-88

SAMPLE POINT NUMBER	SURFACE SOIL PCB MG/KG	12" DEPTH SOIL PCB MG/KG	
812-492 B 28	9	1	
29	19	2	
30	10	1	
31	23	3	
32	9	1	
33	13	27	
34	5	1	
35	5	9	
36	5	9	
37	10	6	
38	13	1	
39	5	1	
40	6	17	
41	4	18	
42	13	13	
43	7	5	
44	2	1	
45	5	8	
46	8	13	
47	6	2	
48	1	<1	
49	6	3	

OVERISEL COMPRESSOR STATION

W.O. | FILE NO.

AREA - AIR LOGS 5-3-88

CONSUMERS POWER CO.
GAS P.& T. ENGINEERING

DR RLM | CK RLM | APP. | NO. 3 OF 3

K00003100

1545
Overised

88 827 -	26	13
	27	22
	28	22
	29	30
	30	22
	31	19
	32	37
	33	19
	34	4
	35	19
	36	9
	37	5
	38	21
	39	1
	40	5
	41	5
	42	2
	43	12
	44	16
	45	18
	46	14

K00003101

B

50 ✓

151

152 ✓

251 ✓

351

352 ✓

451

551

552 ✓

651 ✓

K00003102

E

50

151

152

251

252

351

451

452

453

551

552

K00003103

F

50 ✓
151
152
153 ✓

251
252
253 ✓

351
352 ✓

451
452 ✓

551
552
553 ✓

K00003104

G

50

151

152

251

351

352

451

452

551

552

651

652

K00003105

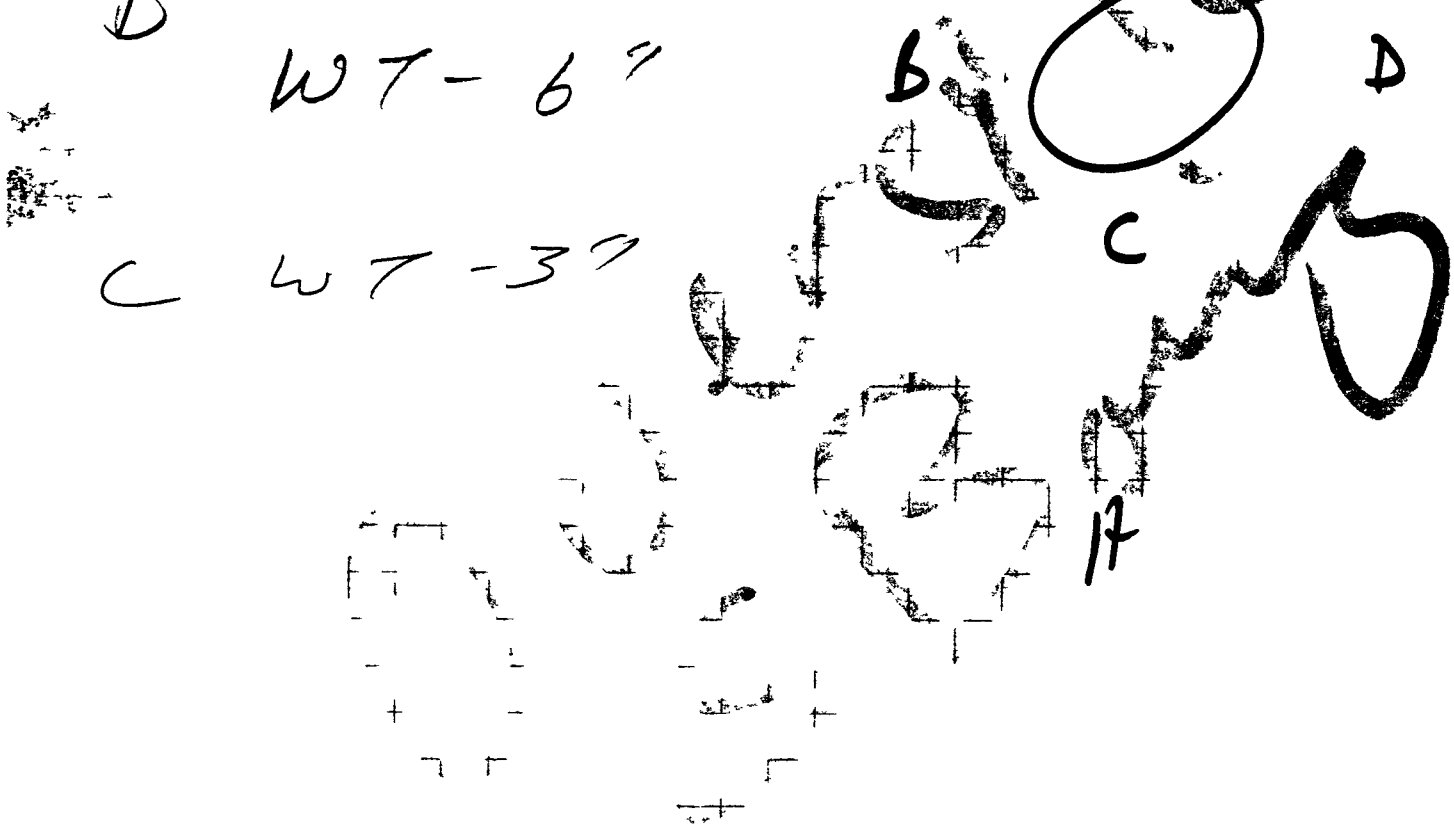
K00003106

ASO - Surface

AS1	0 - 1.5	R 14	1-1 1-2	T-7 7-B
AS2	1.5 - 3. washin	R 18	2-1 2-2 2-3	T-6 6-12 12-B
WT	18"			

B WT - 6"

C WT - 3"



991-5P2

K00003107

ASO ✓

1S1 ✓

A2S1

2S2 ✓

K00003108

Form 433 3000M 3-87

OFFICE MEMO

To Gordon	Date 7/19
From Bruce Rasher	Time 10:40

- [ ] As Requested
- [ ] For Your Information
- [ ] As Discussed
- [ ] Take Appropriate Action
- [ ] Investigate and Report
- [ ] Note and See Me
- [ ] Return With More Details
- [ ] Review the Attached
- [ ] Prepare Reply
- [ ] Review and Approve
- [ ] Sign

6/29

Message/Comments

needs to know date Overview air system report was issued

06/10/88

88-827 =

-946 = 1 To 2

6/23

K00003109

	Date Rec'd	chem #	site	Code	# of Samples		
	3/1	350	Northville	553	92		
STS	3/4	383	~~#~~ overisel	552	12		
STS	3/7	383	Overisel	552	2		
STS	3/8	383	Overisel	552	17	97	
STS	3/9	"	"	"	23		
STS	3/10	"	"	"	22		
STS	3/11	"	"	"	21		
STS	3/14	"	"	"	2	157	157
STS	3/15	"	"	"	21		
STS	3/16	"	"	"	17	60	
STS	3/17	"	"	"	20		

K00003110

Ray - 991

St Clair 990

K00003111

87-873-1

South Air Compressor
Condensate H_2O

190ml water
3 ml oil (top) brown

K00003112

87 873-2

North Air Compressor
Condensate water

50% Top Brown Oil
50% water (87m phase)

Oil - 120

K00003113

87 873-3

Aux Rm Floor Drain
(North) - no sample

K00003114

87-873-4

Trane Trap - Aux Bldg

Oil

110

#1302

K00003115

87-873-5

~~Soils~~

Soil sample on ground below air dryer vent Aux Bldg

Sat

85

K00003116

87-873-6

Aux Pit Drain Pipe
4"

250 ml H_2O
cloudy water

K00003117

7

Manhole Surface
water & bottom sludge

Water 10%

Sludge 90% gray sludge

55000

PCB 1302

K00003118

8

Oil/Water separator
on West End
chamber
~~Water and~~ wet gray Sludge

5,100

#1302

K00003119

9

Sol
S0, S1 S2 S3

S0	20000
S1	4900
S2	8600
S3	~~4300~~ 420

K00003120

S0 S1 S2 S3

S0	380
S1	97
S2	93
S3	20

11

Air Storage Tank
Drips log

10 ml dark oil
400 ml yellow
water

oil 1600

K00003122

12

Access Conduit
Air Storage Tank
2nd from East

K00003123

13

North Engine Room
Instrument Air
Drip -

Water

K00003124

-14

Congressman Bldg
Floor Drain
Collection Tank

K00003125

87-873

1

2 oil

3

4

5

6

7

8

9

10

11 oil

12

13

14

K00003126

87-843-4 610

~~87-823-953 420~~

from 1304

25-200

K00003127

873-1 2ml oil / 10ml H_2O

873-13 2 ml water

873-11 5ml oil 900ml yellow water

843-8 900ml H_2O
50ml Btm Sludge

843-6 100 water

873-6 ✓

843-3 ✓

[illegible]

K00003128

843-1

Air Dryer Filter -

no sample

Roach & West Ave.

2631-195

122-~~26~~ --6

radio Roan Lansing

K00003129

8432

Air Compressor – Lube Oil

Oil collection system

Cloudy Water 100 ml

Clear Oil 10 ml

K00003130

-3

Aux Bldg - Floor Drain
near air compressor
cloudy water

5

K00003131

4 -

Oil - Water Separation
East Chemical
Sludge
Blast Semi Solid

K00003132

5 -

Oil - Water Separator
Discharge Water

K00003133

6

Air Storage Tank
Condensate Drainage

cloudy water
100ml

K00003134

7

#5 Jet Compressor
Oil

Oil & Sludge

K00003135

8

~~Ro~~ 5 log Tank

Compressor Bldg
Floor drain
collection Tank

cloudy water
Blow Sludge

K00003136

843

1 ~~[illegible]~~ ncl
2 ~~Btm~~ 320 Top <1
3 [illegible]
4 600
5 done
6 ~~50~~ 4
7 28
8 270
9
10
11
12
13
14

873

1
2 btm done
3
4
5 done
6
7 done
8 done
9 done
10 done
11 ~~done~~ Top oil done
12 done
13 done
14

K00003137

843-3 expt

843-2 top Cab 10ml for Expt.

843-6 expt all

843-8 50ml expt

873-11-100ml to expt

1 10ml to expt

13 all to expt

873 - 1 Top Oil

~~873 - 1 Top Oil~~

K00003139

20 1 843-3 (9.7) 250 (neat)

21 2 873-6 13.6 250 (~~1/10~~) 1/10

22 3 Pt 2 Barrel 250 1/10

23 4 Pt 1 Barrel 250

24 5 873-13 all 10ml

25 6 873-11 25ml (water only

26 7 843-8 25ml (water only)

27 8 843-6 all 50ml

28 9 873-1 25ml H2O only

K00003140

A1	812 - N Well	1 gt	done	
A2	812 - S Well	1 gt		
A3	812 - W Well	1 gt		
A4	WP 211-212	1 gt	87-885	1
A5	WP 213-214	(700 ml)		2
A6	WP 112-111	1 gt		3
A7	Blank 1L			

B1	873-7	730 a	
B2	873-8	2500 ug/L a	
B3	843-4	750 a ✓	
B4	873-12	525 a	
B5	873-14	4.5	a 1306
B6	843-5	870 ✓	

C1	843-3	250 ml	neat	7.7 ug/L
C2	876-6	250 ml	~~1/100~~	
C3	Pt 2 Barrel	250	1/100	
C4	Pt 1 Barrel	250	1/100	
C5	873-13	10 ml	1/100	
C6	873-11	25 ml	1/100	
C7	843-8	25 ml	1/100	
C8	843-6	50 ml	1/100	
C9	873-1	25 ml	neat	

K00003141

Overisel Compressor Station

Sampling for 09-16/17-87

Site Contact Glen Dykstra

Sample Point

1- Oil-Water Separator Discharge Point

2- Air Storage Tank Discharge To Ground

3- Air Dryer System Discharge To Ground

4- Three each Jet Compressor Lube Oil (Gearbox Oil)

K00003142

Sample Points

Air Log

Oil-Water Separator Discharge Point

a) One sample point at center of pit - if possible sample for depth with hand auger. max depth 24"

b) Construct a grid with 5' sample point intervals grid should be 20 x 20 sample surface and 12' depth samples core

2- Air Storage Discharge To Ground

a) Sample surface and 12" depth core samples

3- Air Dryer System Discharge To Ground

a) Sample surface and 12" depth core samples

4- Jet Compressor Lube

a) Sample lube from gear box on 3 Jet

K00003143

1-4)

Overisel gas Comp. Station 09-16-87 & 09-17-87 Ghc

Notes on Sample points

(1) Air storage & Air Dryer ~~to~~ ground discharges

(a) Originally, discharge for one system went to the air log & the other to the oil-water separator. The air log was then discharged to ground. The air log discharge has since been modified so all waste is barreled. See separate sheet for the air log soil sampling grid.

(2) Jet Compressor lube

(a) Only one gearbox had not been drained of all oil. This was sampled and labeled as 1-1.

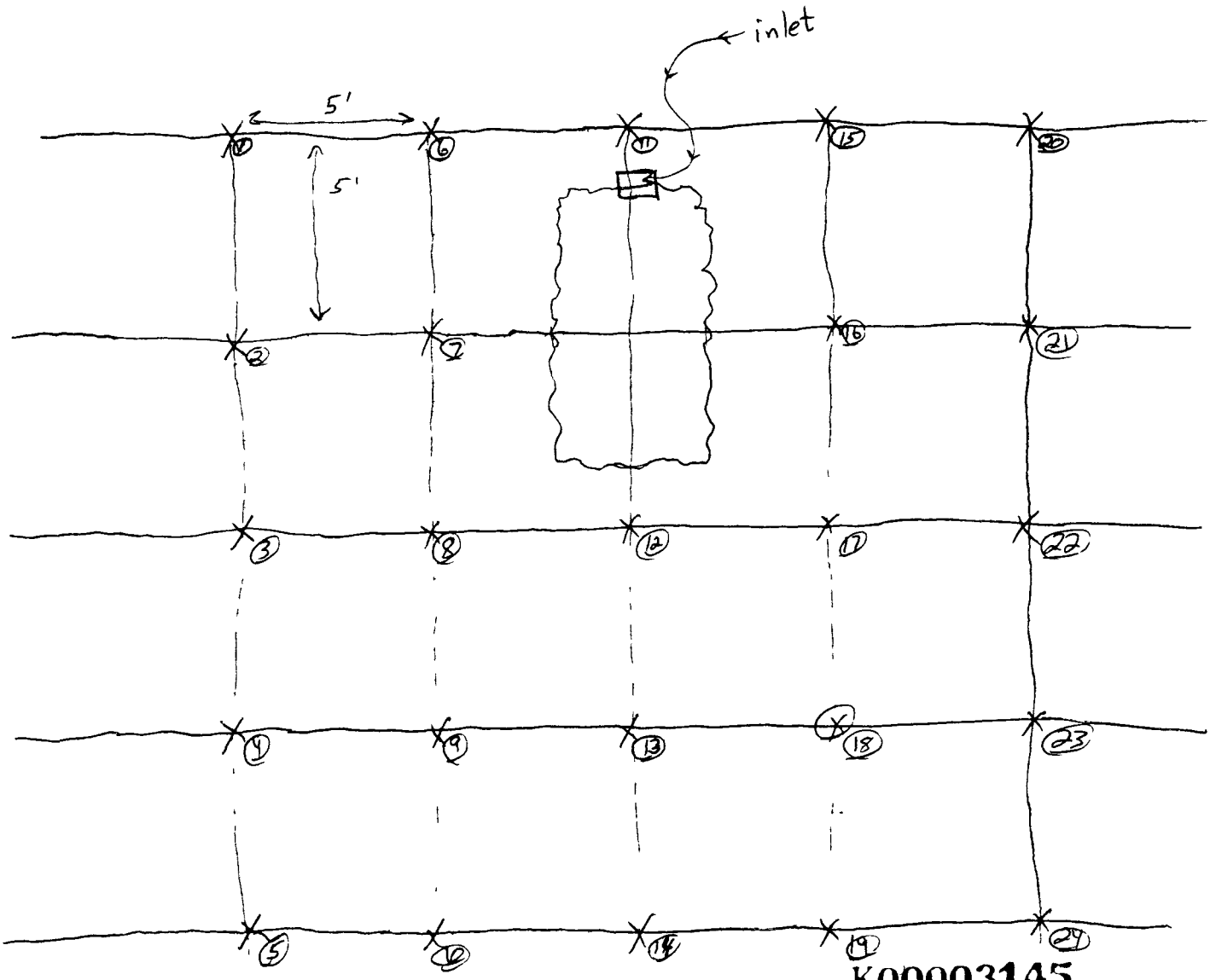
K00003144

Oil-water Separator Discharge point soil sampling grid - 09/687 & 09/787/6

3-4

N

1. top view
2. samples logged as: YASX
   y = 1 thru 24
   x = 0, 1, 2
3. The discharge inlet to pit was cemented closed, however ~~some~~ some H_2O was leaking through. This was sampled in a 4oz. bottle & labeled as 2-1.
4. Samples from the center of the pit are labeled as 2-2 (0"-6" depth) & 2-3 (x 6"-12" depth)
5. Each square below is 1'. (Still-water lagoon is ≈ 4'x7')

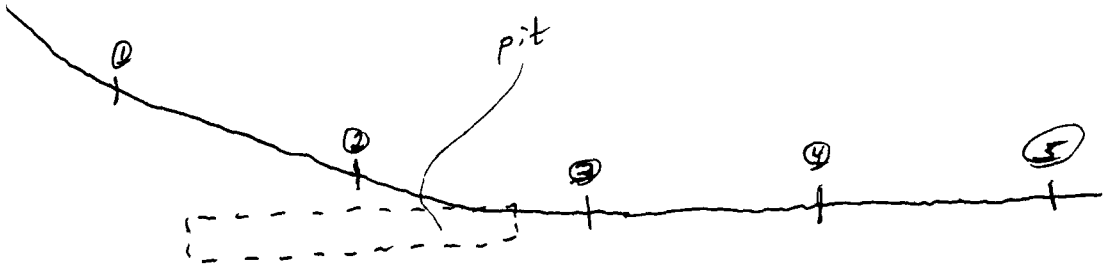


K00003145

4-4

discharge point side view

approximate sample locations vs. slope



K00003146

1-4

Overisel gas Comp. Station 09-16-87 & 09-17-87 Ghc

Notes on Sample points

1. Air storage & Air Dryer ground discharges

a. Originally, discharge for one system went to the air log & the other to the oil-water separator. The air log was then discharged to ground. The air log discharge has since been modified so all waste is barreled. See separate sheet for the air log soil sampling grid.

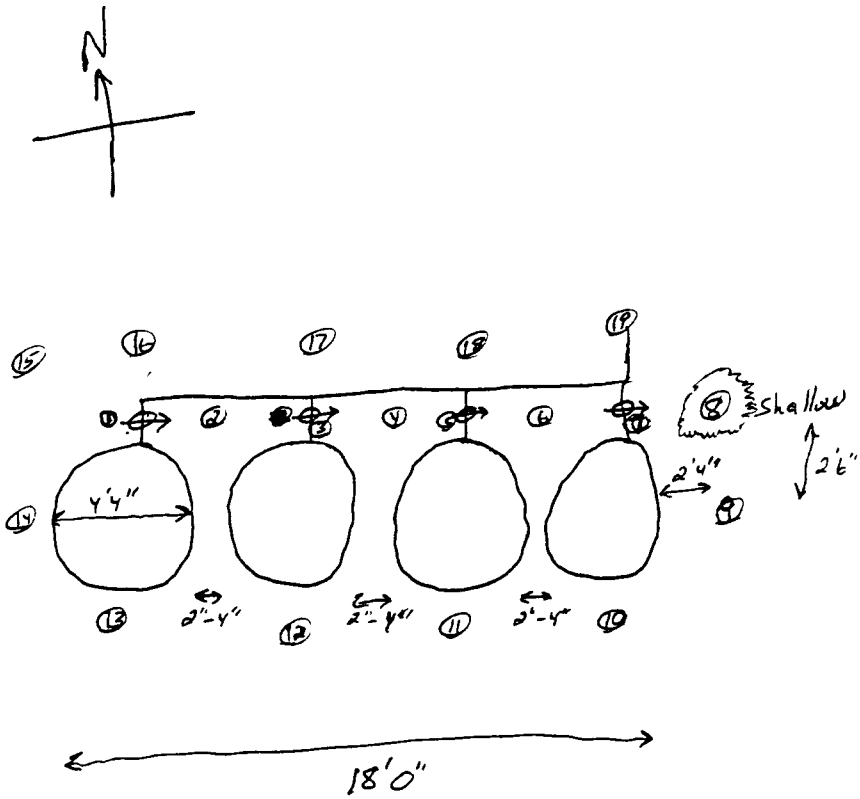
2. Jet compressor lube

a. Only one gearbox had not been drained of all oil. This was sampled and labeled as 1-1.

K00003147

2-4

Air Log Soil Sampling Grid 091689 & 091787/GLC



① ⊖→ = valve

② Samples 9-14 are typically 8"-12" from edge of air log housings

③ Samples 16-19 are ~2' N from their respective valves

④ Samples 1,3,5,7 are directly under or next to valves

⑤ Samples 2,4,6 are in line with 1,3,5,7 and are at the midpoints between air log housings

K00003148

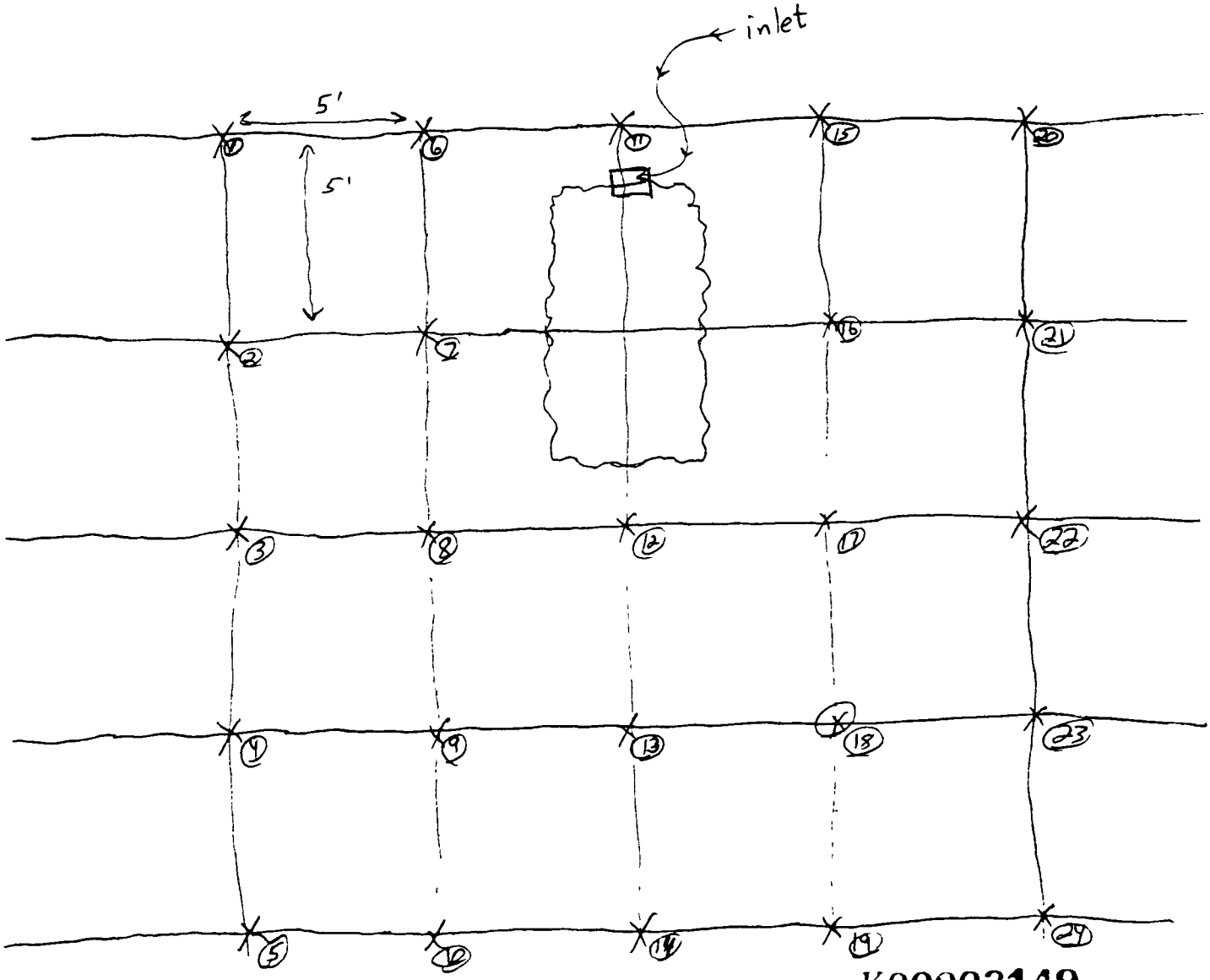
⑥ Samples are logged as : yBSx
y = 1 thru 19
x = 0, 1, 2

Oil-water Separator Discharge point soil sampling grid - 091687 & 091787

3.4

N

1. top view
2. samples logged as: YASX
   y = 1 thru 24
   x = 0, 1, 2
3. The discharge inlet to pit was cemented closed, however some H_2O was leaking through. This was sampled in a 4oz. bottle & labeled as 2-1.
4. Samples from the center of the pit are labeled as 2-2 (0"-6" depth) & 2-3 (x 6"-12" depth)
5. Each square below is 1'. (Still-water lagoon is ≈ 4'x7')

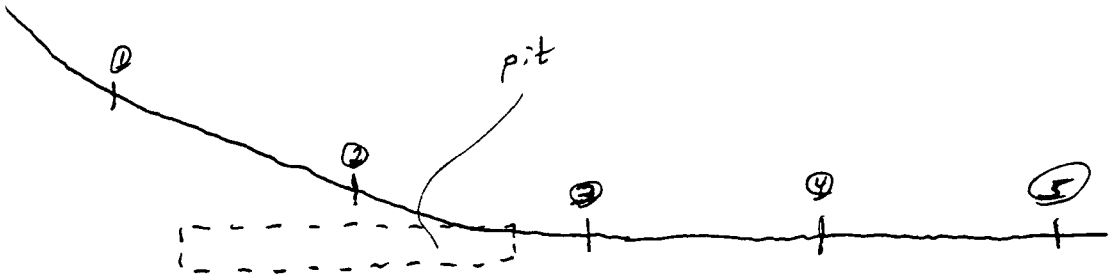


K00003149

4-4

discharge point side view

approximate sample locations vs. slope



K00003150

To BWR
From HWU
Date 10-19-87

Subject Overisel PCB

Additional results from

Overisel Compressor Station
Air Logs

Sample at 12" Depth
Locations 8, 9, 10
12, 13, 14
15, 16, 17
18, 19.

This will complete Air Logs site

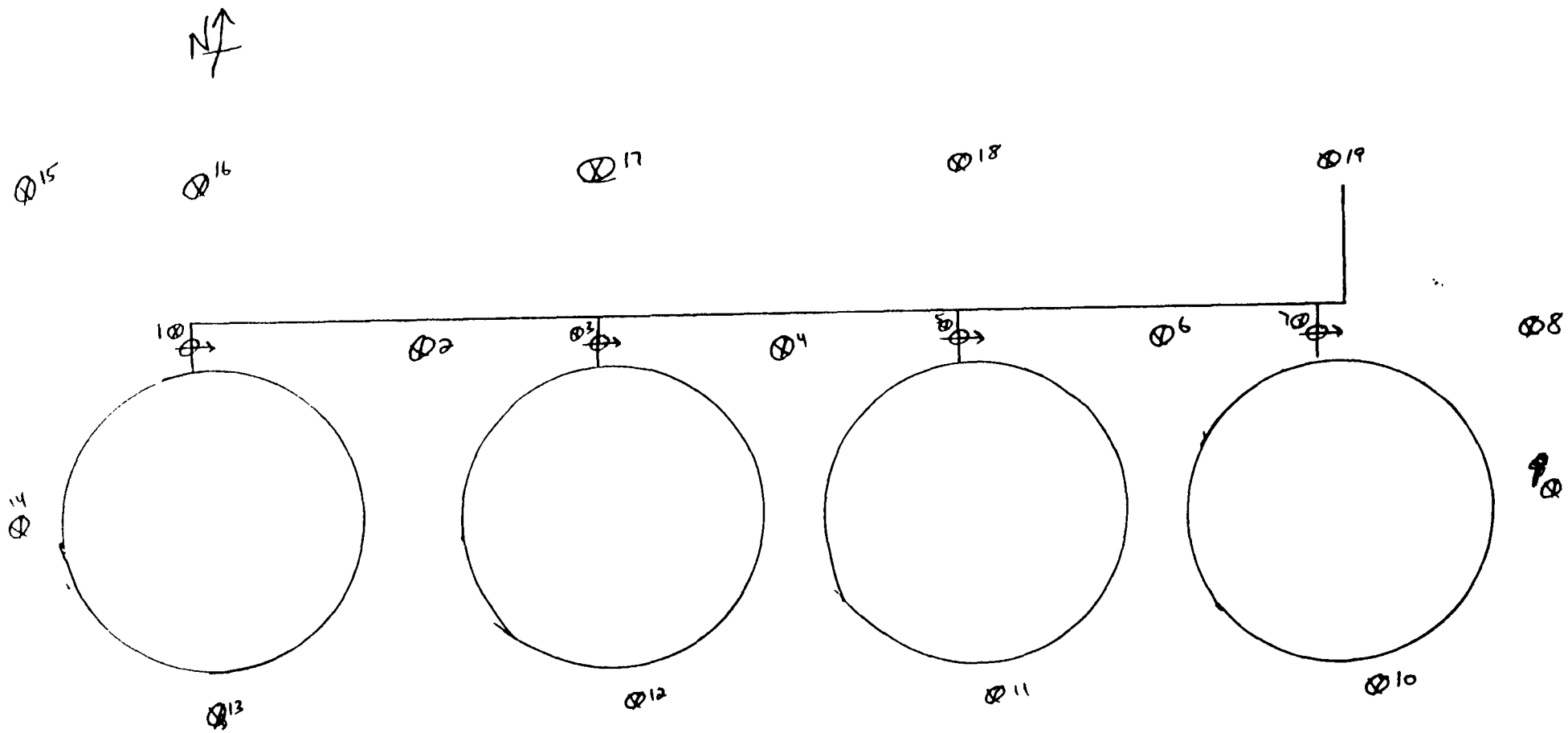
K00003151

OVERISEL COMPRESSOR STATION

Area - Air Logs
Sampling Date - 09-16-87
Project # 528717781-492

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872492B 1	17	37
2	4	24
3	10	31
4	13	23
5	18	11
6	10	23
7	7	25
8	8	14
9	18	17
10	15	1
11	36	3
12	16	3
13	9	3
14	14	38
15	8	14
16	6	17
17	6	11
18	8	22
19	9	27

overisel air logs (Not to scale)



K00003153

To BWR
From HWU
Date 10-18-87
Subject Overisel PCB

1- Need To Complete Analysis For Selected 12" Depths At Air Logs - done 10/19/87

2- Need To Expand Grid At Overflow Discharge - Can Be Done Week of Oct 19th.

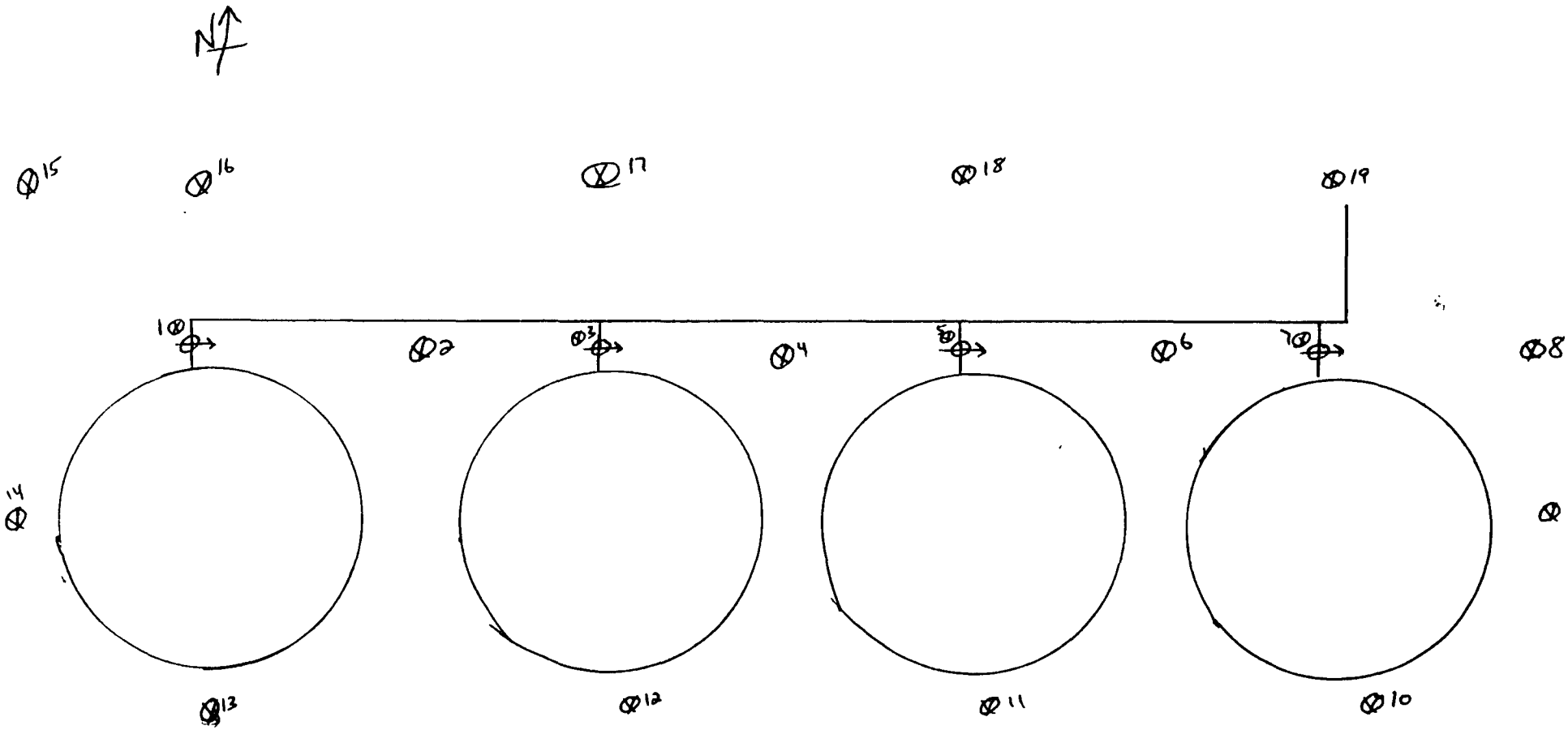
3- Need to Complete Analysis For Selected 12" Depth Samples At Overflow Discharge -

4- Attached Sheets Should Get You Started

Voigt

K00003154

overisel air logs (Not to scale)



K00003155

OVERISEL COMPRESSOR STATION

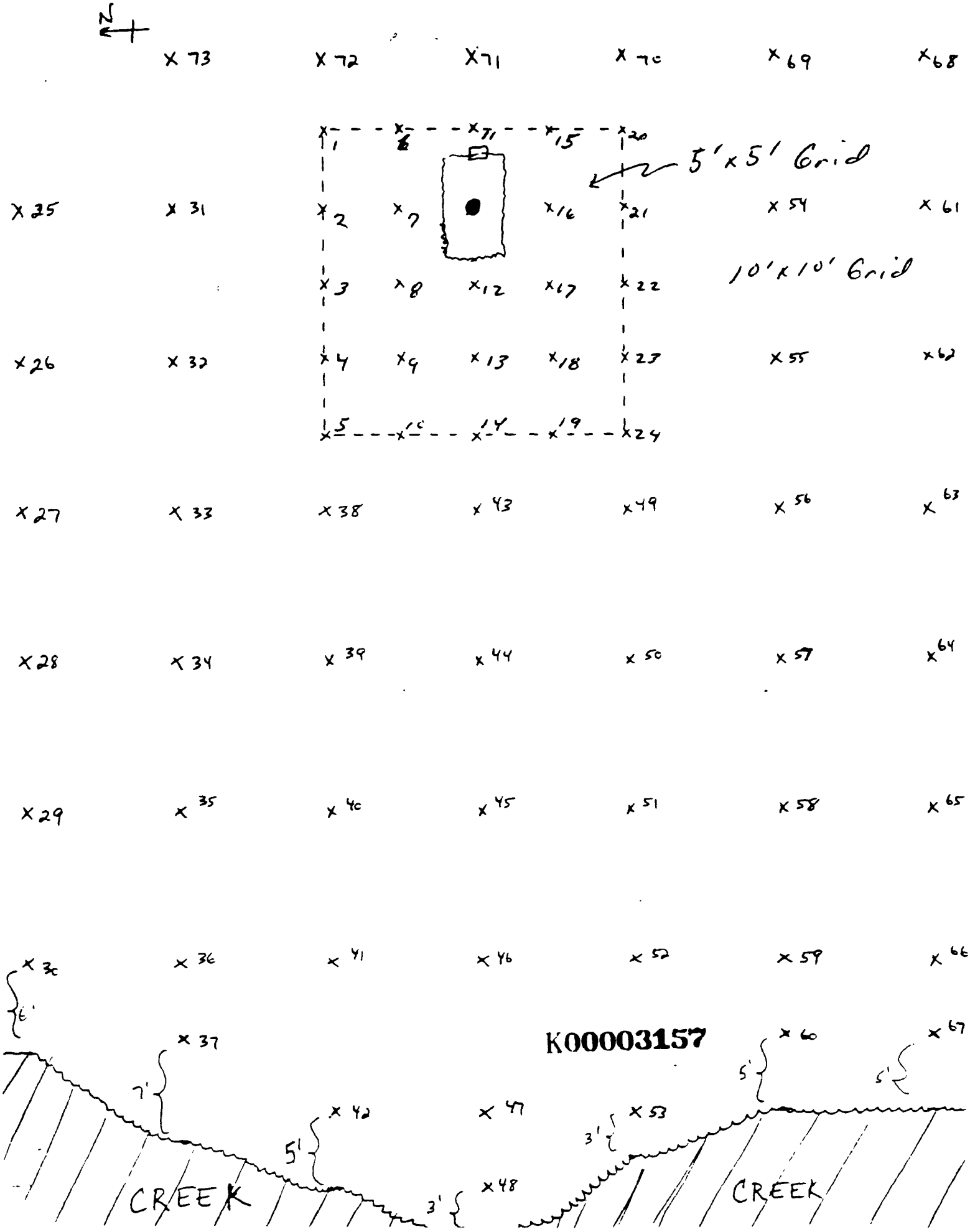
Area - Air Logs
Sampling Date - 09-16-87
Project # 528717781-492

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872492B 1	17	37
2	4	24
3	10	31
4	13	23
5	18	11
6	10	23
7	7	25
8	8	
9	18	
10	15	
11	36	3
12	16	
13	9	
14	14	
15	8	
16	6	
17	6	
18	8	
19	9	

K00003156

Overhead Gas Comp. Station

(Expanded Grid for Oil/Water Sep. Discharge Point)



K00003157

OVERISEL COMPRESSOR STATION

Area - Overflow Discharge
Sampling Date - 09-16-87
Project # 528717781-492

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872492A-1	1	
2	8	
3	9	
4	25	
5	120	
6	2	
7	530	7
8	3500	
9	490	4
10	660	
11	9	
12	1200 ~~750*~~	
13	200 ~~160*~~	
14	230 ~~200*~~	
15	31	
16	4400	14
17	2700	
18	3400	1100
19	260 *	
20	57	K00003158
21	100	

* Over Calculation Linear Range

OVERISEL COMPRESSOR STATION

Area - Overflow Discharge
Sampling Date - 09-16-87
Project # 528717781-492

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872492A-22	860	
23	1800	
24	150	

K00003159

OVERISEL COMPRESSOR STATION

Area - Overflow Discharge
Sampling Date - 09-28-87
Project # 528717-781-502

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872502-A 25	5	
26	2	
27	6	<1
28	1	
29	2	
30	<1	<1
31	12	<1
32	17	
33	13	<1
34	9	
35	1	
36	<1	
37	<1	<1
38	800	1
39	10	
40	9	
41	1	
42	<1	<1
43	3900	83
44	520	2
45	11	

K00003160

OVERISEL COMPRESSOR STATION

Area - Overflow Discharge
Sampling Date - 09-28-87
Project #

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872502A - 46	1	
47	1	<1
48	1	<1
49	450	3
50	3100	6
51	67	
52	5	
53	3	<4**
54	38	2
55	110	3
56	830	15
57	820	12
58	140	2
59	9	
60	9	<1
61	5	
62	62	<1
63	530	8
64	310	4
65	5	<1
66	1	<1

** Sample Detection Limit

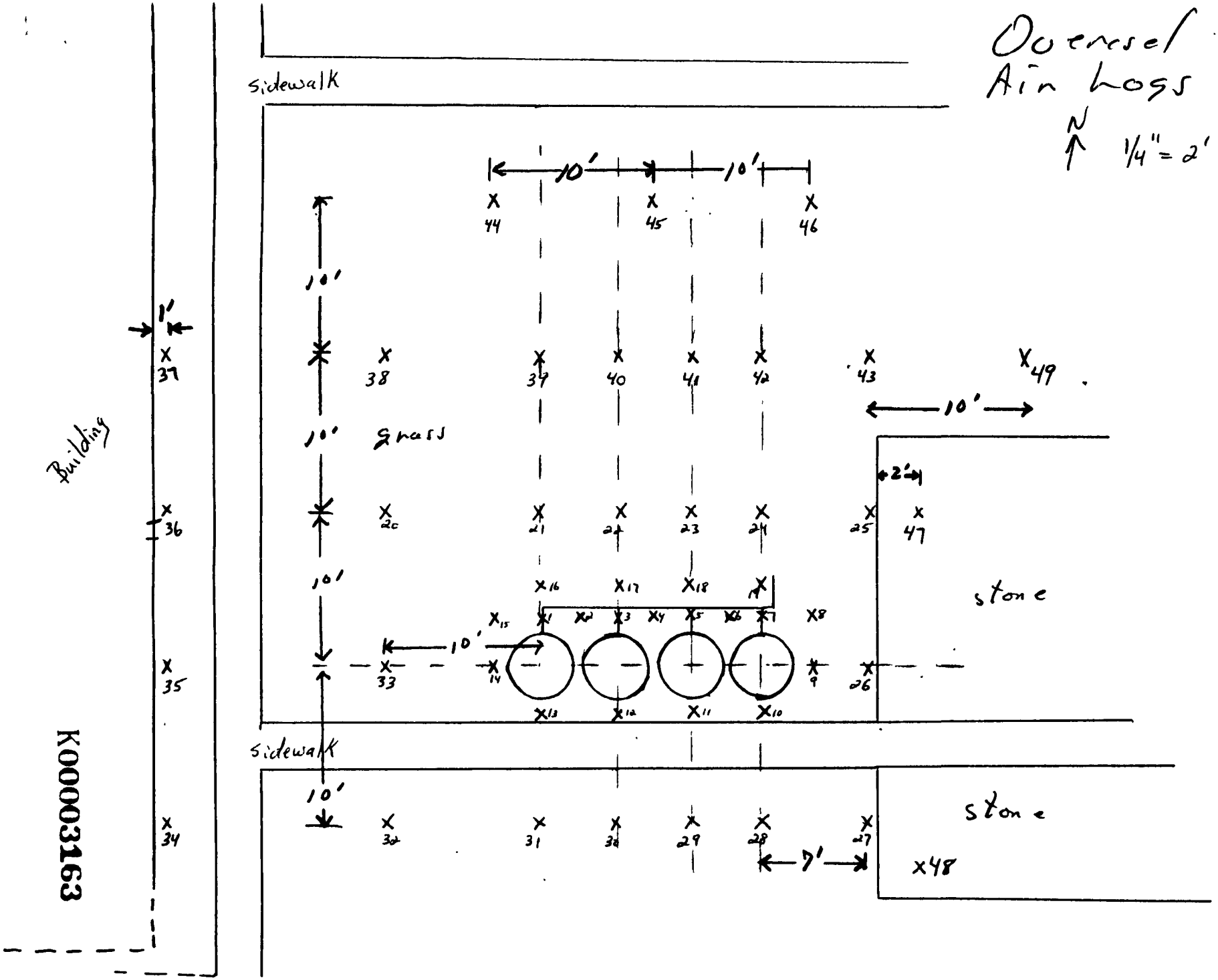
K00003161

OVERISEL COMPRESSOR STATION

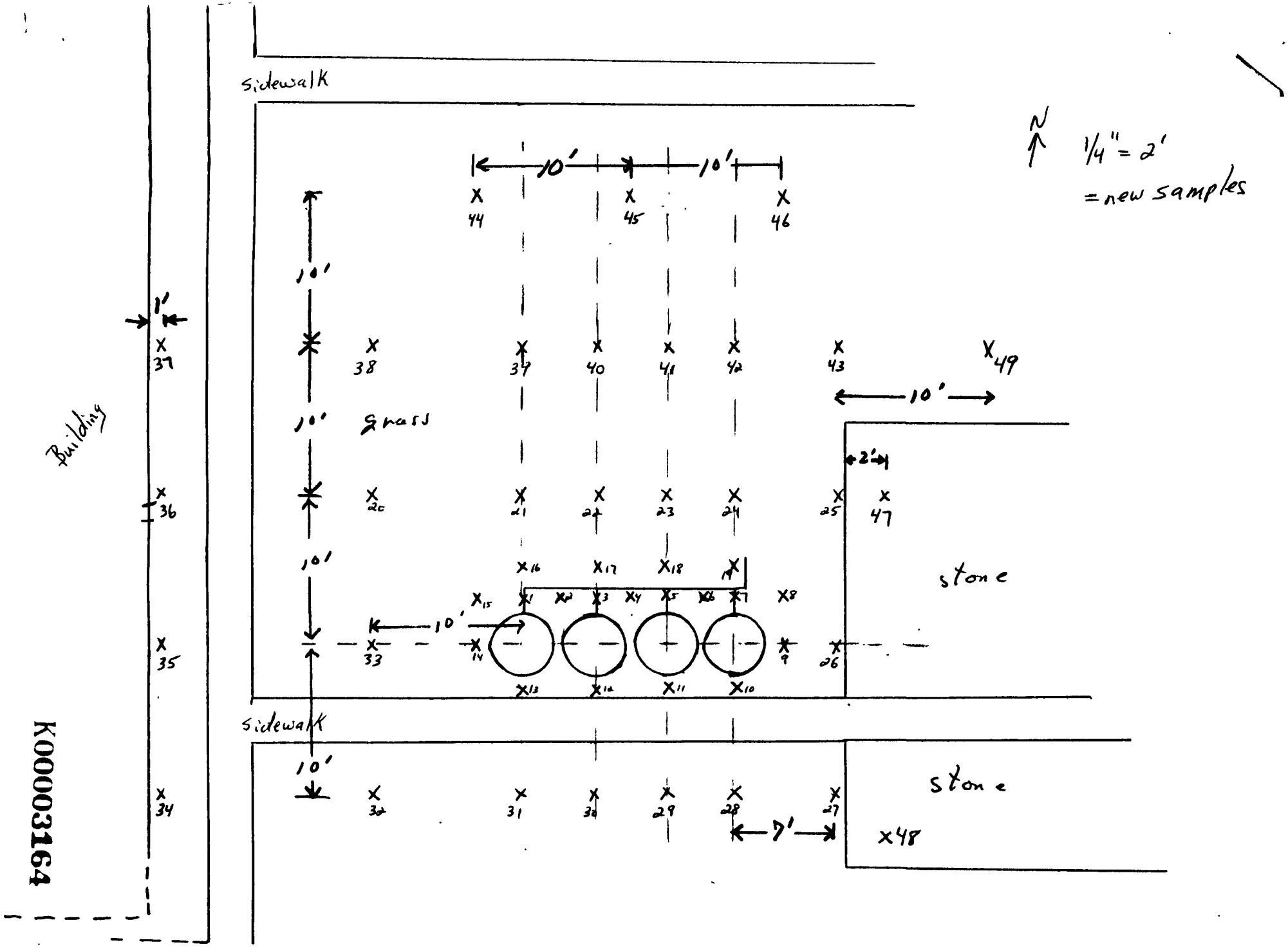
Area - Overflow Discharge
Sampling Date - 09-28-87
Project # 528717 781-502

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872502A-67	1	
68	1	
69	3	
70	3	
71	17	
72	1	
73	3	

K00003162


Overcast
Air Logs
N
1/4" = 2'
sidewalk
10'
10'
44
45
46
10'
1'
37
38
39
40
41
42
43
49
10'
10'
grass
2'
36
20
21
22
23
24
25
47
10'
stone
10'
33
14
9
26
35
sidewalk
10'
stone
34
32
31
30
29
28
27
7'
48
Building

K00003163


N
1/4" = 2'
= new samples
Sidewalk
Sidewalk
Building
Grass
stone
stone
10'
10'
10'
10'
10'
10'
10'
10'
1'
2'
7'
44
45
46
37
38
39
40
41
42
43
49
36
20
21
22
23
24
25
47
16
17
18
15
1
2
3
4
5
6
7
8
35
33
14
9
26
13
12
11
10
34
32
31
30
29
28
27
48

K00003164

Oversiel - Air Storage Tanks

Sample Points #	Location
1, 3, 5, 7	Directly below valve
2, 4, 6	In line with 1, 3, 5, 7 and at midpoints between air logs
9, 10, 11, 12, 13, 14	1' from air log
16, 17, 18, 19	2' North of Air Log Valves
8	In line with # 9 and # 7
15	Inline with # 1 and # 14
21, 22, 23, 24	10' North ℄ of Air Tank on ℄ of valves
28, 29, 30, 31	10' South ℄ of Air Tank on ℄ of valves

K00003165

OVERISEL COMPRESSOR STATION

Area - Air Logs
Sampling Date - 09-16-87
Project # 872-492B
Report Date - 02-01-88 * results

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872-492B # 1	17	37
2	4	24
3	10	31
4	13	23
5	18	11
6	12	23
7	7	25
8	8	14 *
9	18	17 *
10	15	1 *
11	36	3
12	16	3 *
13	9	3 *
14	14	38 *
15	8	14 *
16	6	17 *
17	6	11 *
18	8	22 *
19	9	27 *
		K00003166

OVERISEL COMPRESSOR STATION

Area - Airhogs
Sampling Date - 01-21-88
Project # 88-135
Report Date - 02-01-88

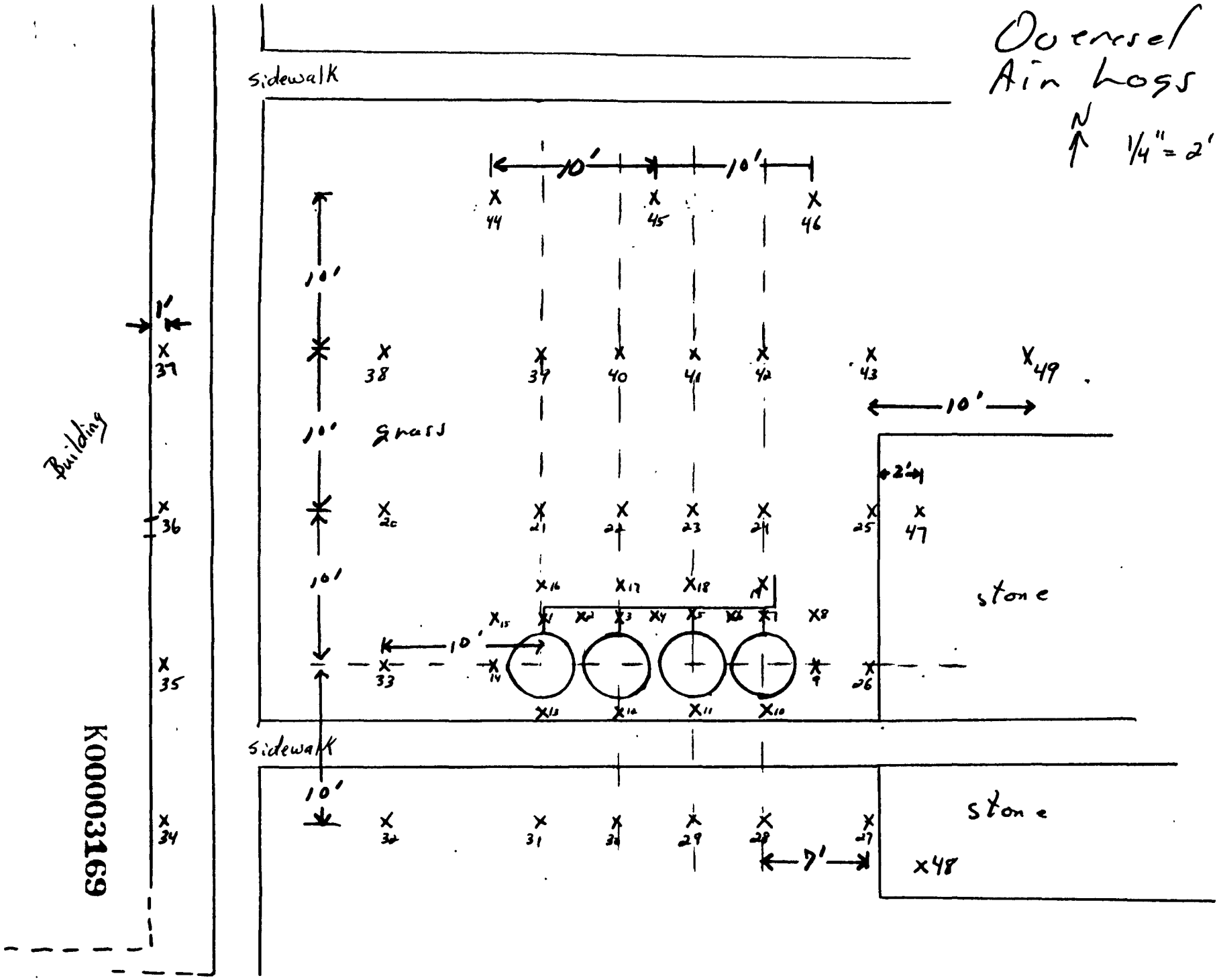
Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
88-135B #20	8	3
21	6	20
22	5	11
23	11	23
24	7	13
25	4	12
26	12	27
27	5	<1
28	9	1
29	19	2
30	10	1
31	23	3
32	9	1
33	13	27
		K00003167

UVERISEL COMPRESSOR STATION

Area - Air Logs
Sampling Date - 01-28-88
Project # 88-162
Report Date - 02-01-88

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
88162B # 34	5	1
35	5	9
36	5	9
37	10	6
38	13	1
39	5	1
40	6	17
41	4	18
42	13	13
43	7	5
44	2	1
45	5	8
46	8	13
47	6 *	2
48	1	<1
49	6	3
		K00003168

* >3 But <6


Overseal
Air Logs
N
1/4" = 2'
sidewalk
10'
10'
44
45
46
10'
1'
37
38
39
40
41
42
43
49
10'
grass
10'
2'
36
20
21
22
23
24
25
47
10'
stone
10'
33
14
9
26
35
sidewalk
10'
stone
34
32
31
30
29
28
27
7'
48
Building

K00003169

Overisel - Air Storage Tanks

Sample Points #	Location
1, 3, 5, 7	Directly below valve
2, 4, 6	In line with 1, 3, 5, 7 and at midpoints between air logs
9, 10, 11, 12, 13, 14	1' from air log
16, 17, 18, 19	2' North of Air Log Valves
8	In line with # 9 and # 7
15	Inline with # 1 and # 14
21, 22, 23, 24	10' North ℄ of Air Tank on ℄ of valves
28, 29, 30, 31	10' South ℄ of Air Tank on ℄ of valves

K00003170

UVERISEL COMPRESSOR STATION

Area - Air Logs
Sampling Date - 09-16-87
Project # 872-492B
Report Date - 02-01-88 * results

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872-492B # 1	17	37
2	4	24
3	10	31
4	13	23
5	18	11
6	12	23
7	7	25
8	8	14
9	18	17
10	15	1
11	36	3
12	16	3
13	9	3
14	14	38
15	8	14
16	6	17
17	6	11
18	8	22
19	9	27
		K00003171

UVERISEL COMPRESSOR STATION

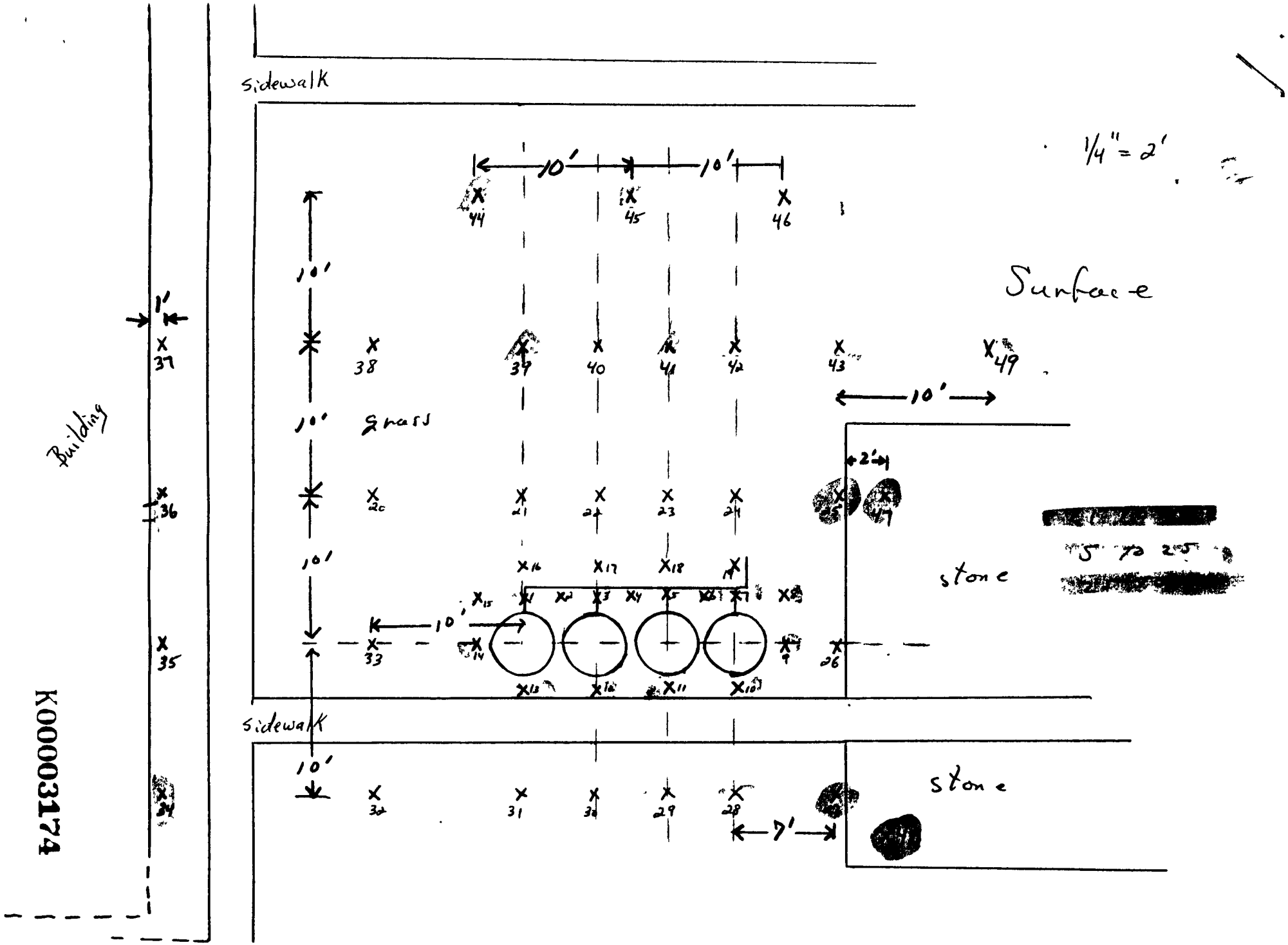
Area - Air hogs
Sampling Date - 01-21-88
Project # 88-135
Report Date - 02-01-88

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
88-135B #20	8	3
21	6	20
22	5	11
23	11	23
24	7	13
25	4	12
26	12	27
27	5	<1
28	9	1
29	19	2
30	10	1
31	23	3
32	9	1
33	13	27
		K00003172

Area - Air Logs
Sampling Date - 01-28-88
Project # 88-162
Report Date - 02-01-88

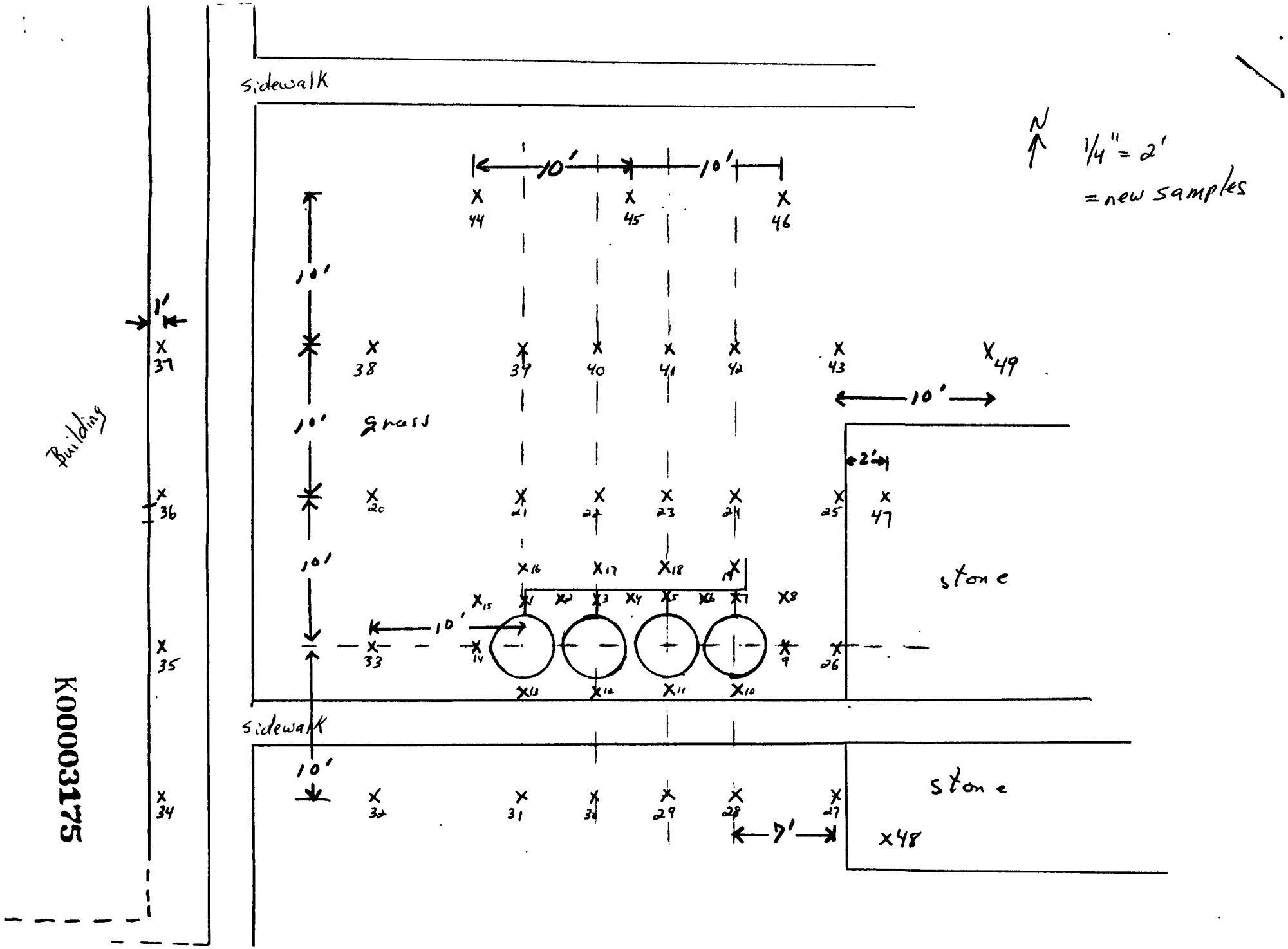
Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
88162B # 34	5	1
35	5	9
36	5	9
37	10	6
38	13	1
39	5	1
40	6	17
41	4	18
42	13	13
43	7	5
44	2	1
45	5	8
46	8	13
47	6 *	2
48	1	<1
49	6	3
		K00003173

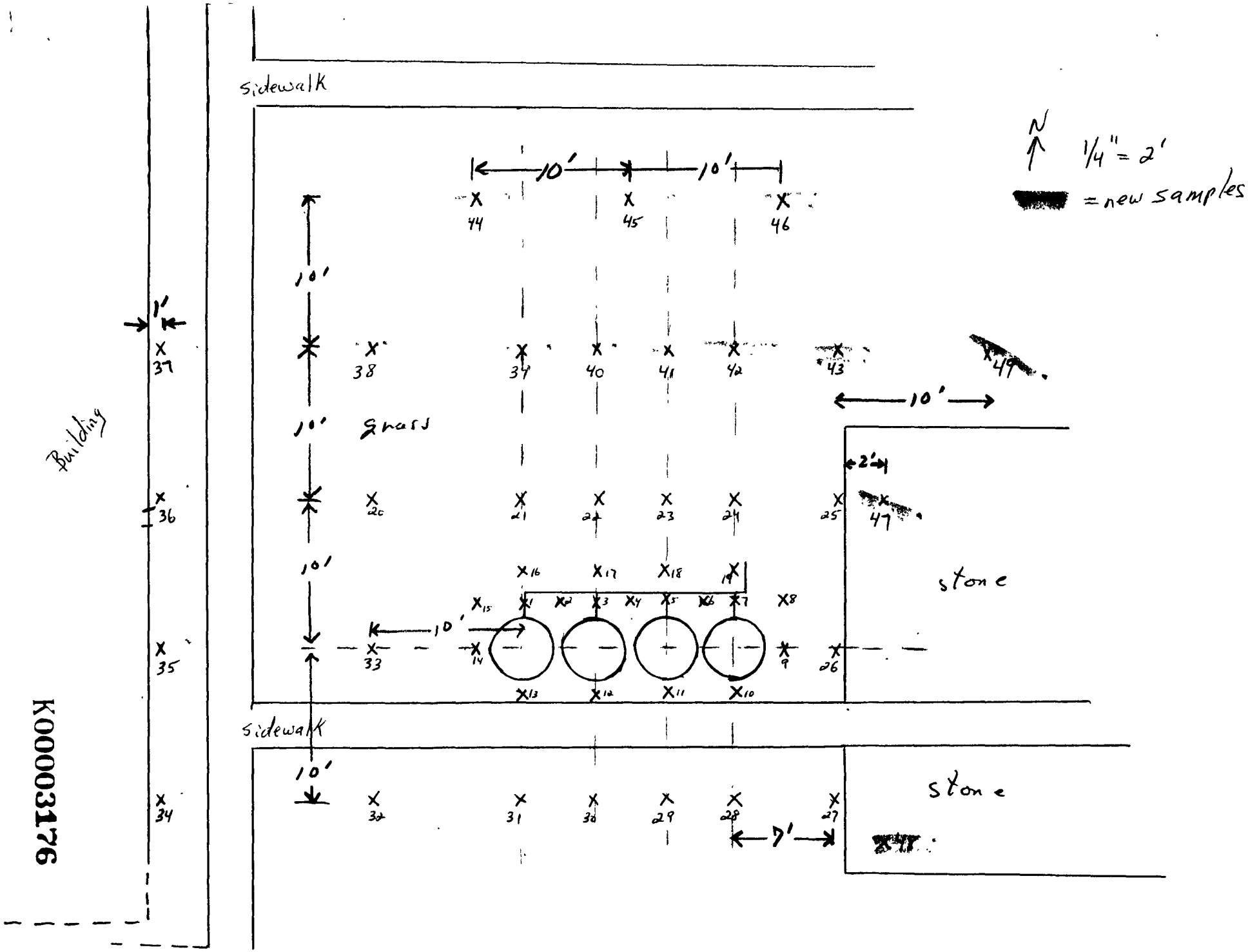
* >3 But <6



1/4" = 2'
Surface
sidewalk
sidewalk
Building
grass
stone
stone
10'
10'
10'
10'
10'
10'
10'
10'
1'
2'
7'

K00003174


sidewalk
N
1/4" = 2'
= new samples
10'
10'
44
45
46
10'
1'
37
38
39
40
41
42
43
49
10'
grass
10'
2'
36
20
21
22
23
24
25
47
10'
16
17
18
15
1
2
3
4
5
6
7
8
stone
10'
33
14
9
26
13
12
11
10
sidewalk
10'
stone
34
32
31
30
29
28
27
7'
48
Building
K0000031275


N
1/4" = 2'
= new samples
sidewalk
10'
10'
44
45
46
10'
1'
37
38
39
40
41
42
43
49
10'
grass
10'
2'
36
20
21
22
23
24
25
47
10'
16
17
18
19
15
1
2
3
4
5
6
7
8
10'
33
14
9
26
13
12
11
10
stone
sidewalk
10'
35
34
32
31
30
29
28
27
7'
stone
Building

K00003176

Overisel Air Logs — Set "B"

ID #	Sample point	ppm PCB Surface, 0"-1"	6"-12" depth
88-162	34	5	1
	35	5	9 *
	36	5	9 *
	37	10	6
	38	13	1
	39	5	1
	40	6	17 *
	41	4	18 *
	42	13	13
	43	7	5
	44	2	1
	45	5	8 *
	46	8	13 *
	47	6	2
	48	1	<1
	49	6	3

* 6"-12" > 0"-1"

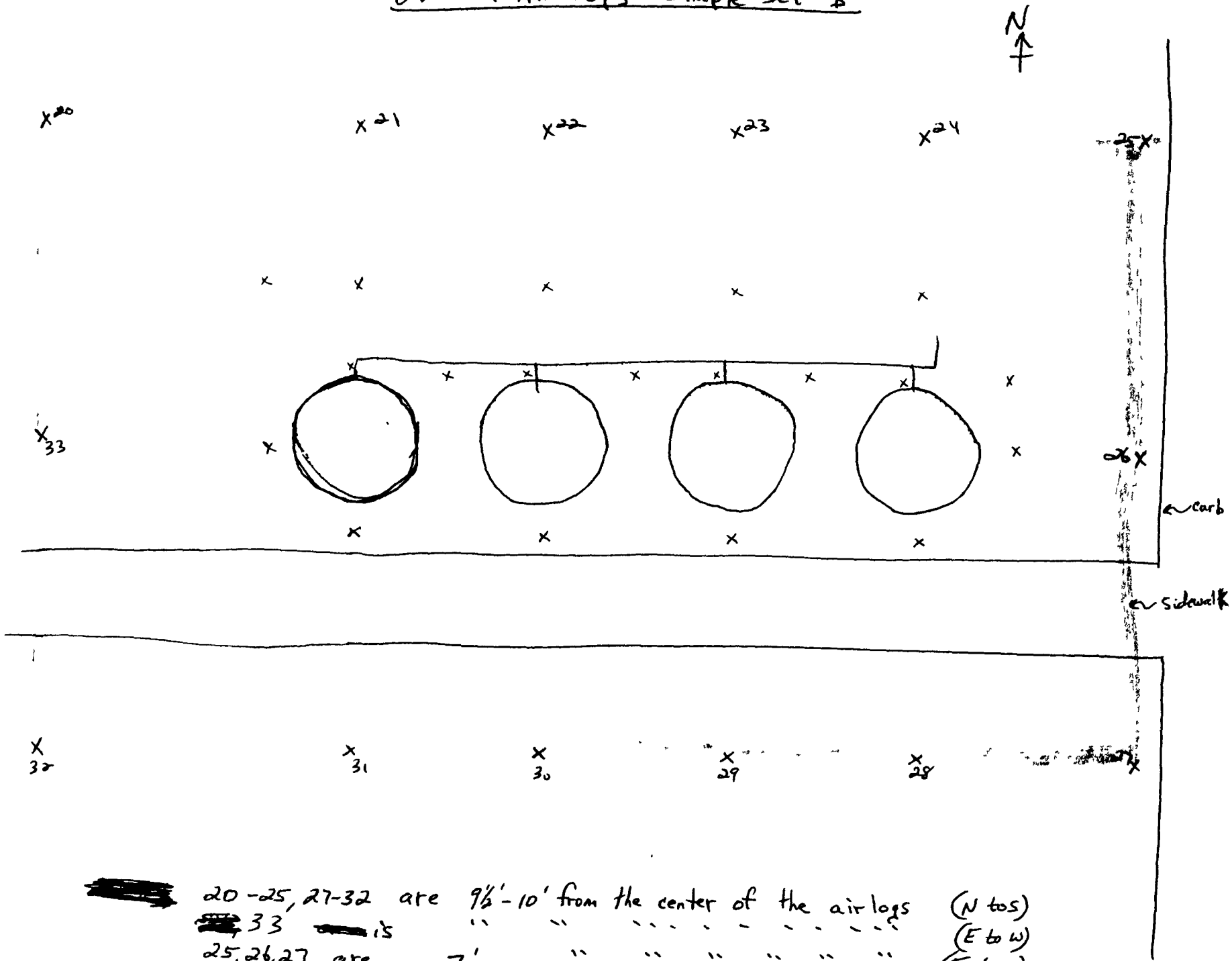
K00003177

Overisel Air Logs

ID #	Sample point	ppm PCB Surface, 0"-1"	6"-12" depth
88-135	20B	8	3
	21B	6	20
	22B	5	11
	23B	11	23
	24B	7	13
	25B	4	12
	26B	12	27
	27B	5	<1
	28B	9	1
	29B	19	2
	30B	10	1
	31B	23	3
	32B	9	1
	33B	13	27

K00003178

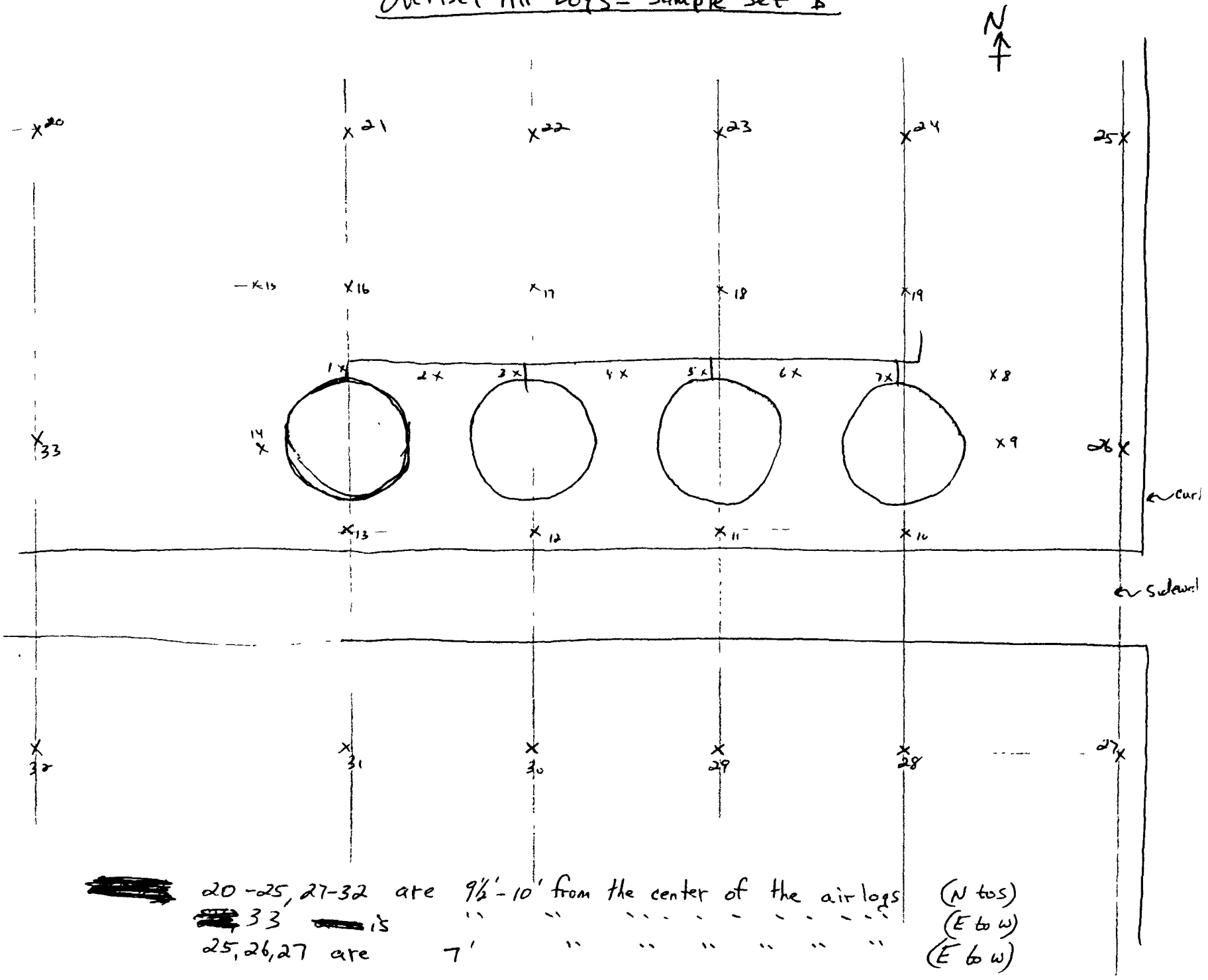
Overisel Air Logs – Sample Set "B"



[redacted] 20-25, 27-32 are 9½'-10' from the center of the air logs (N to S)
[redacted] 33 [redacted] is " " " " " " " (E to W)
25, 26, 27 are 7' " " " " " " (E to W)

K00003179

Overisel Air Logs – Sample Set "B"



[redacted] 20-25, 27-32 are 9½'-10' from the center of the air logs (N to S)
[redacted] 33 [redacted] 15 " " " " " " " (E to W)
25, 26, 27 are 7' " " " " " " (E to W)

K00003180

OVERISEL COMPRESSOR STATION

Area - Air Logs
Sampling Date - 09-16-87
Project # 528717781-492

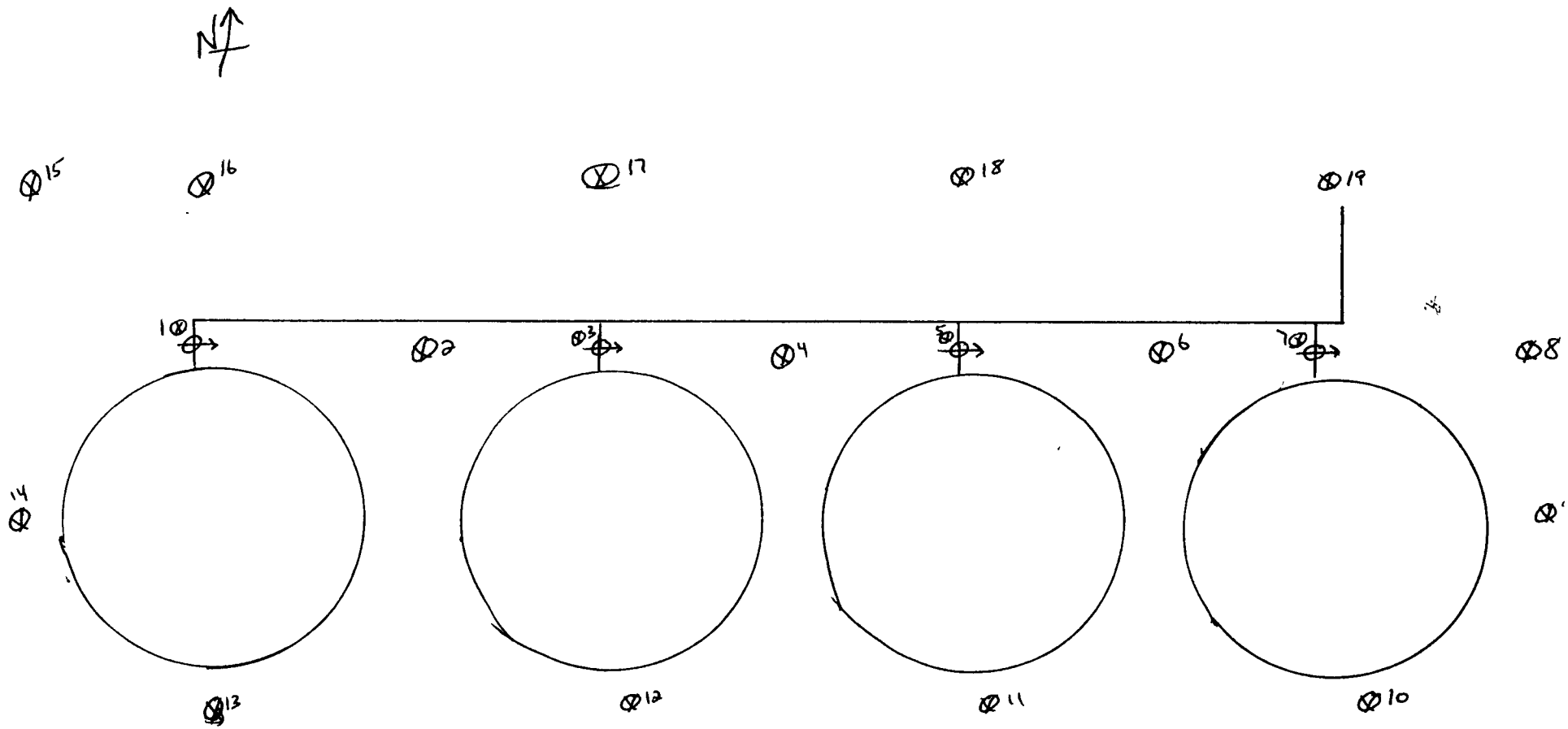
Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872492B 1	17	37
2	4	24
3	10	31
4	13	23
5	18	11
6	10	23
7	7	25
8	8	
9	18	
10	15	
11	36	3
12	16	
13	9	
14	14	
15	8	
16	6	
17	6	
18	8	
19	9	
		K00003181

Overisel Air Logs

ID #	Sample point	ppm PCB Surface, 0"-1"	6"-12" depth
872-492	1B	17	37
	2B	4	24
	3B	10	31
	4B	13	23
	5B	18	11
	6B	10	23
	7B	7	25
	8B	8	14
	9B	18	17
	10B	15	1
	11B	36	3
	12B	16	3
	13B	9	3
	14B	14	38
	15B	8	14
	16B	6	17
	17B	6	11
	18B	8	22
	19B	9	27

K00003182

Overisel air logs (Not to scale)



K000003183

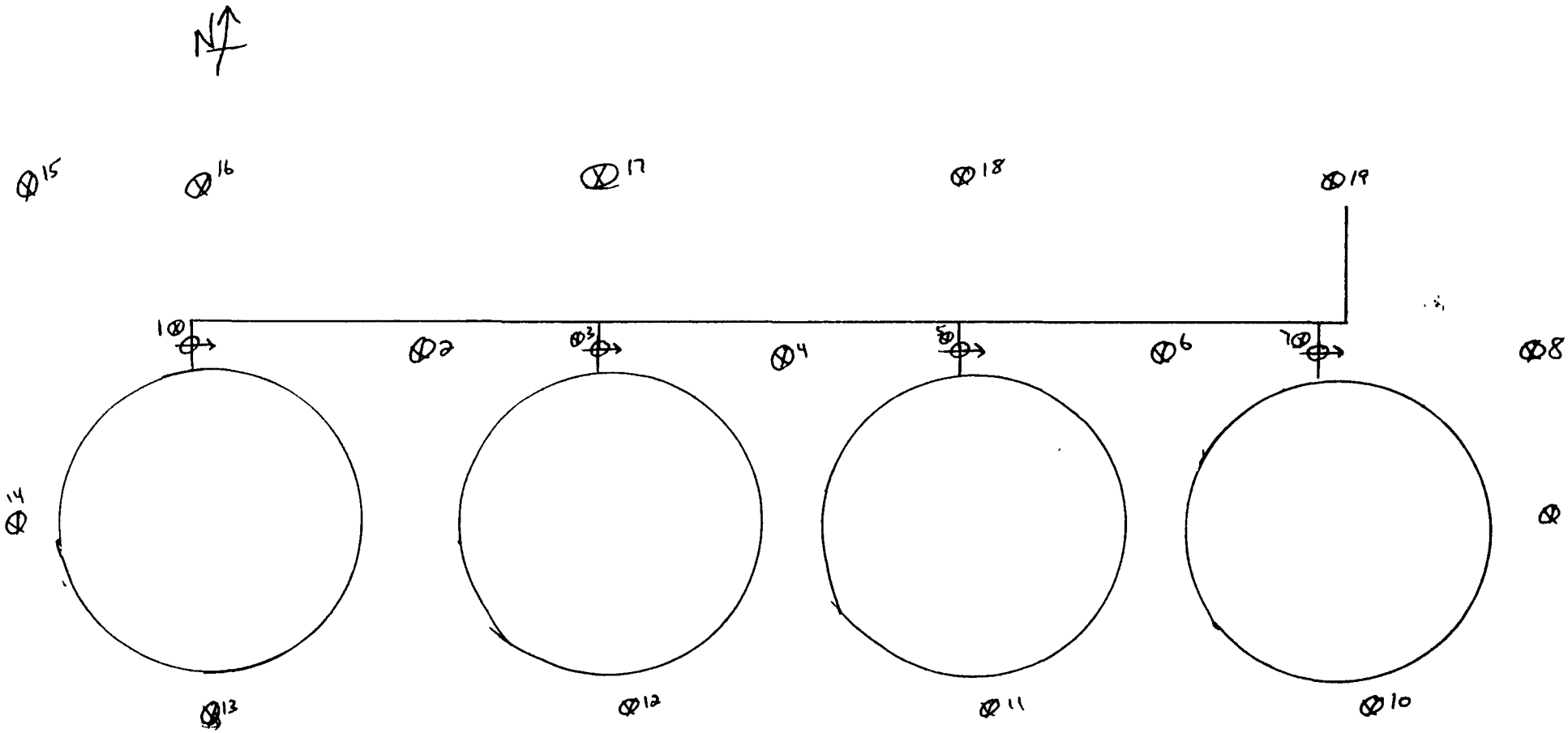
OVERISEL COMPRESSOR STATION

Area - Air Logs
Sampling Date - 09-16-87
Project # 528717781-492

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872492B 1	17	37
2	4	24
3	10	31
4	13	23
5	18	11
6	10	23
7	7	25
8	8	
9	18	
10	15	
11	36	3
12	16	
13	9	
14	14	
15	8	
16	6	
17	6	
18	8	
19	9	

K00003184

Overisel air logs (Not to scale)



K000003185

Overisel Air Logs Soil Sampling

~~Page 20~~

Analysis # 1373, 1374

Sample point	S0, ppm PCB	S2, ppm PCB
1	17	37
2	4	24
3	10	31
4	13	23
5	18	11
6	10	23
7	7	25
8	8	NA
9	18	NA
10	15	NA
11	36	NA
12	16	NA
13	9	NA
14	14	NA
15	8	NA
16	6	NA
17	6	NA
18	8	NA
19	9	NA

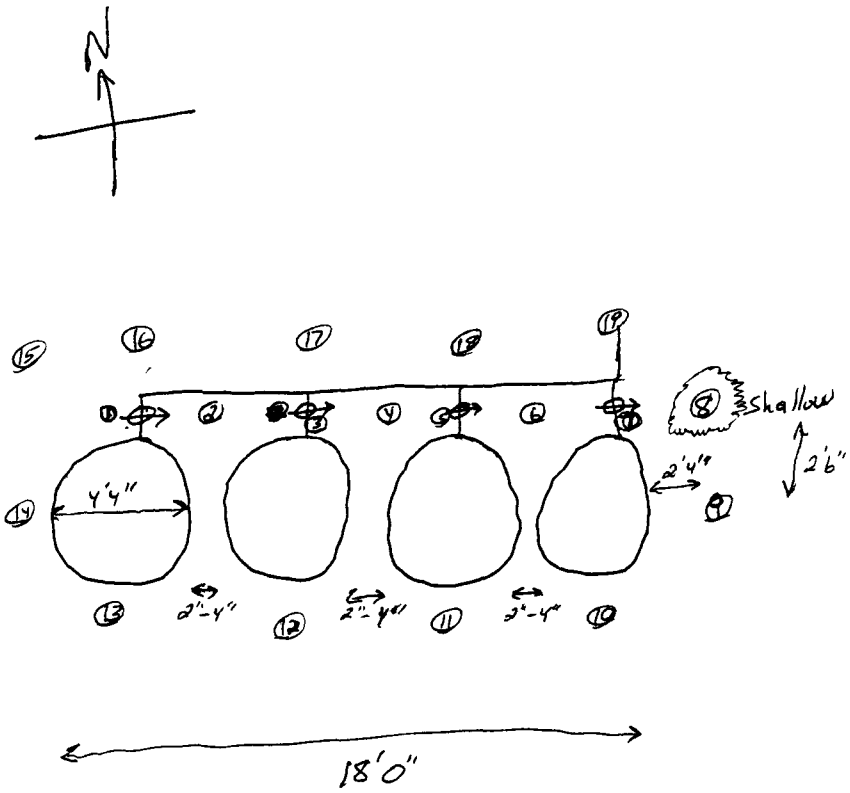
* NA = Not Analyzed

2-4

2-4

Air Log Soil Sampling Grid

091687 & 091787/GLC



① ⊖→ = valve

② Samples 9-14 are typically 8"-12" from edge of air log housings

③ Samples 16-19 are ~2' N from their respective valves

④ Samples 1,3,5,7 are directly under or next to valves

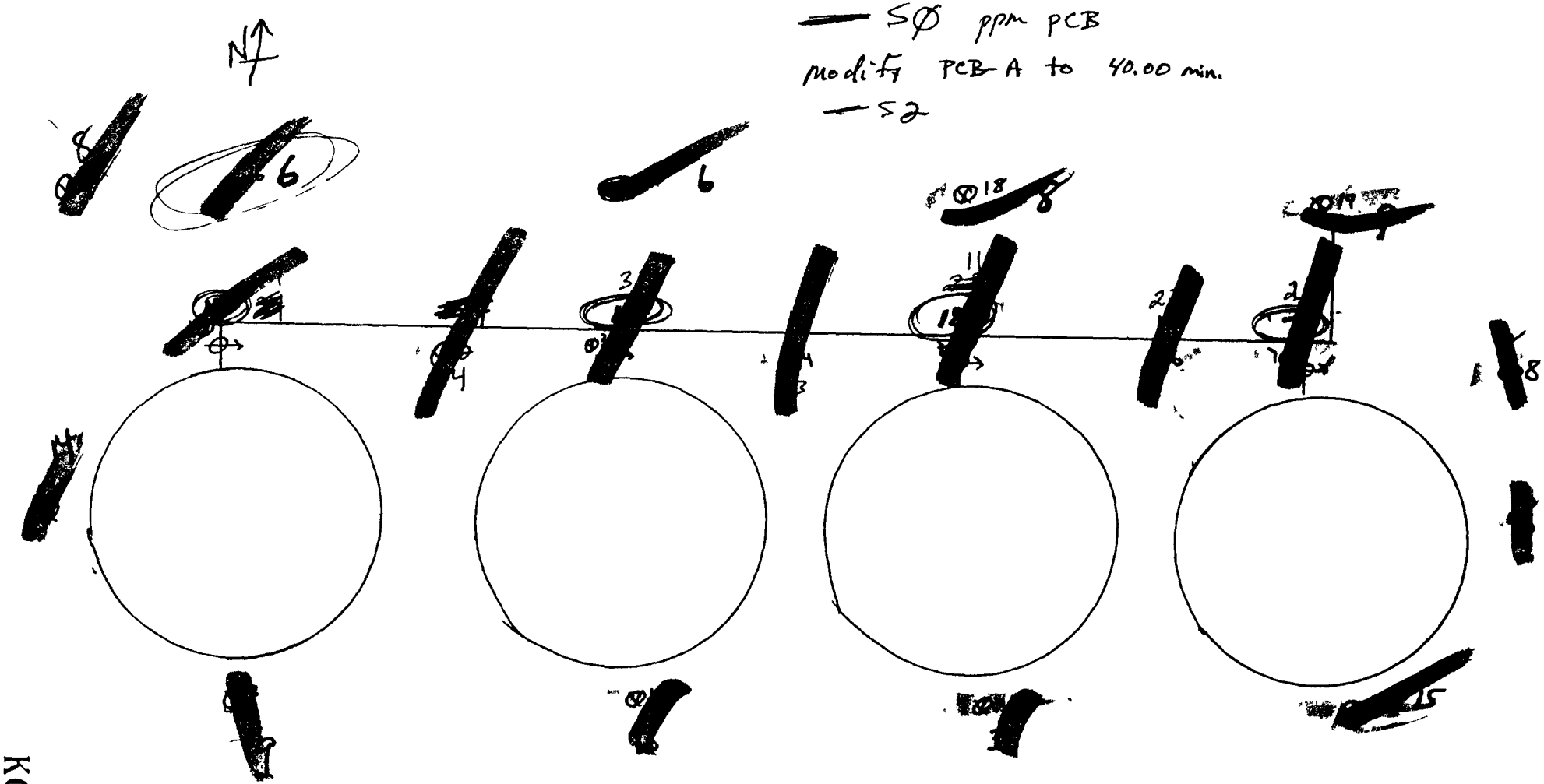
⑤ Samples 2,4,6 are in line with 1,3,5,7 and are at the midpoints between air log housings

⑥ Samples are logged as : yBSx
y = 1 thru 19
x = 0, 1, 2

K00003187

Overisel air logs (Not to scale)

— 50 ppm PCB
modify PCB-A to 40.00 min.
— 52



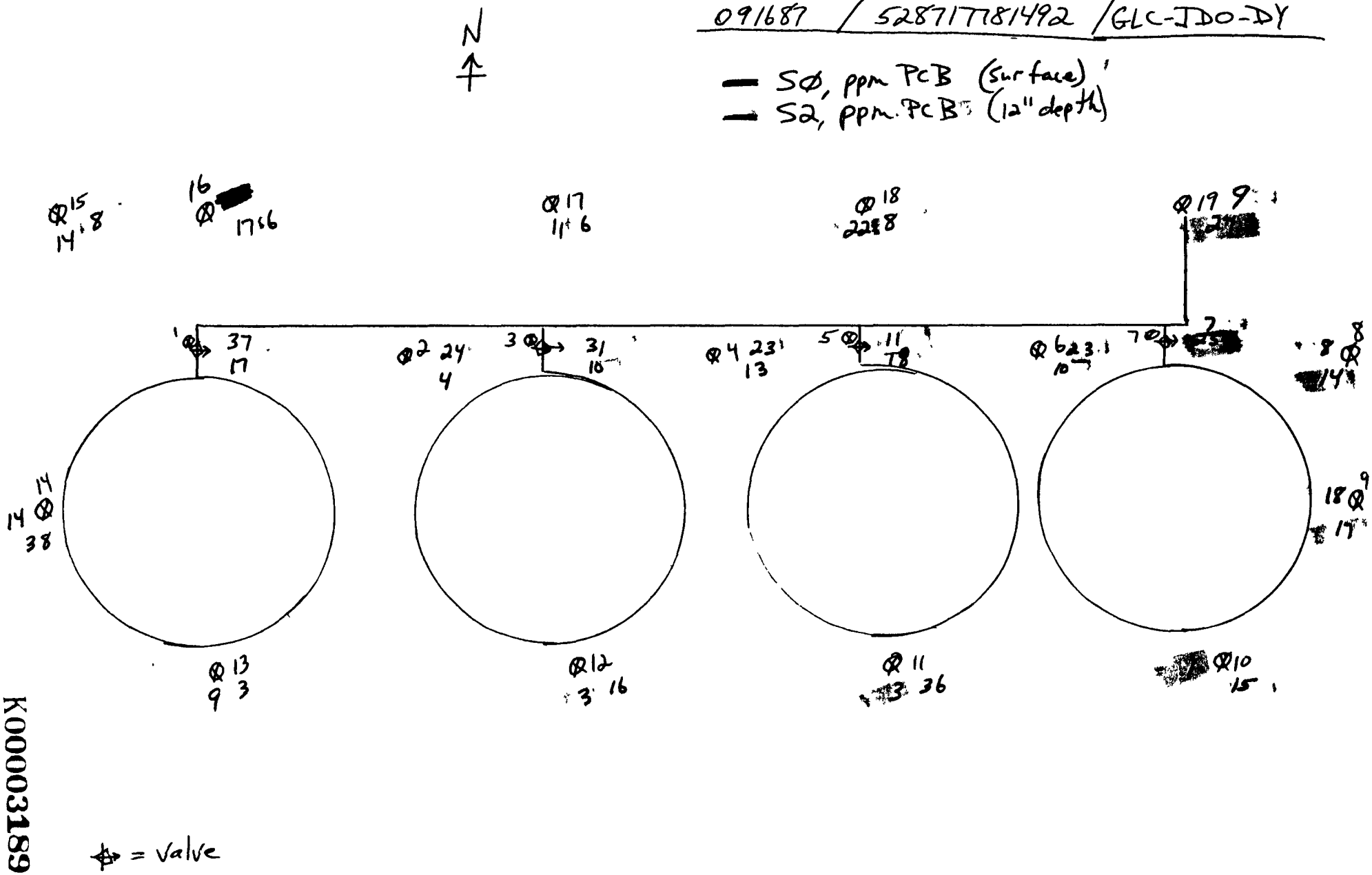
[redacted]

Sample Set B

K000003188

Overisel Air Logs (Not to Scale)

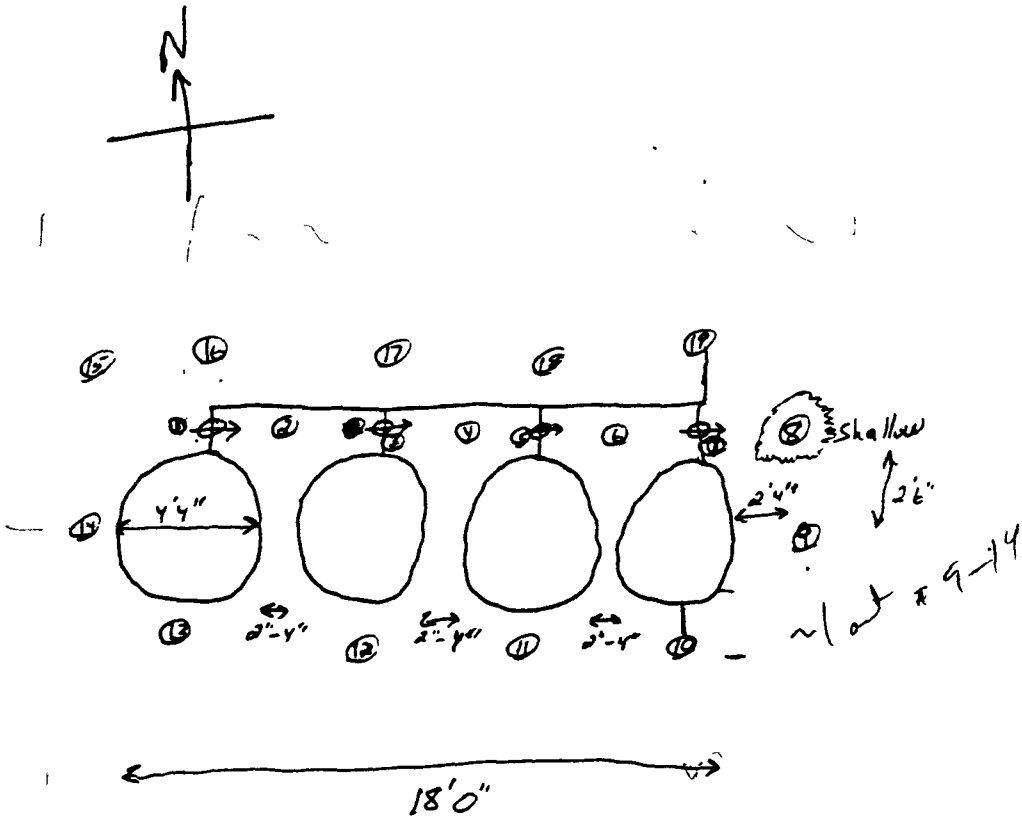
091687 / 528717781492 / GLC-JDO-DY



K00003189

Air Log Soil Sampling Grid

091689 & 091789/GLC



① ⊖→ = valve

② Samples 9-14 are typically 8"-12" from edge of air log housings ✓

③ Samples 16-19 are ~2'N from their respective valves

④ Samples 1,3,5,7 are directly under or next to valves ✓

⑤ Samples 2,4,6 are in line with 1,3,5,7 and are at the ✓ midpoints between air log housings

⑥ Samples are logged as : yBSx
y = 1 thru 19
x = 0, 1, 2

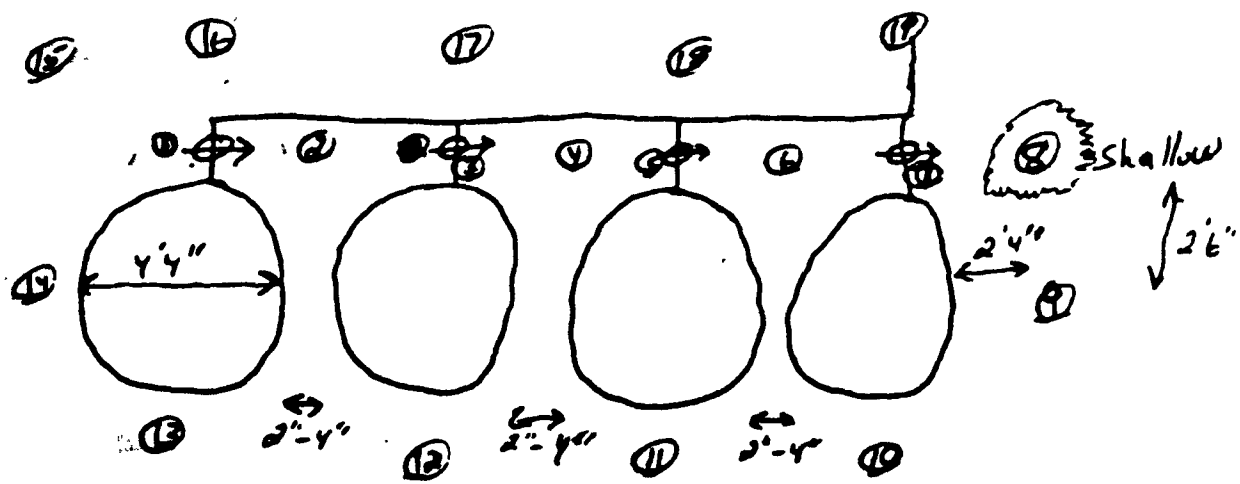
8/15

K00003190

Air Log Soil Sampling Grid

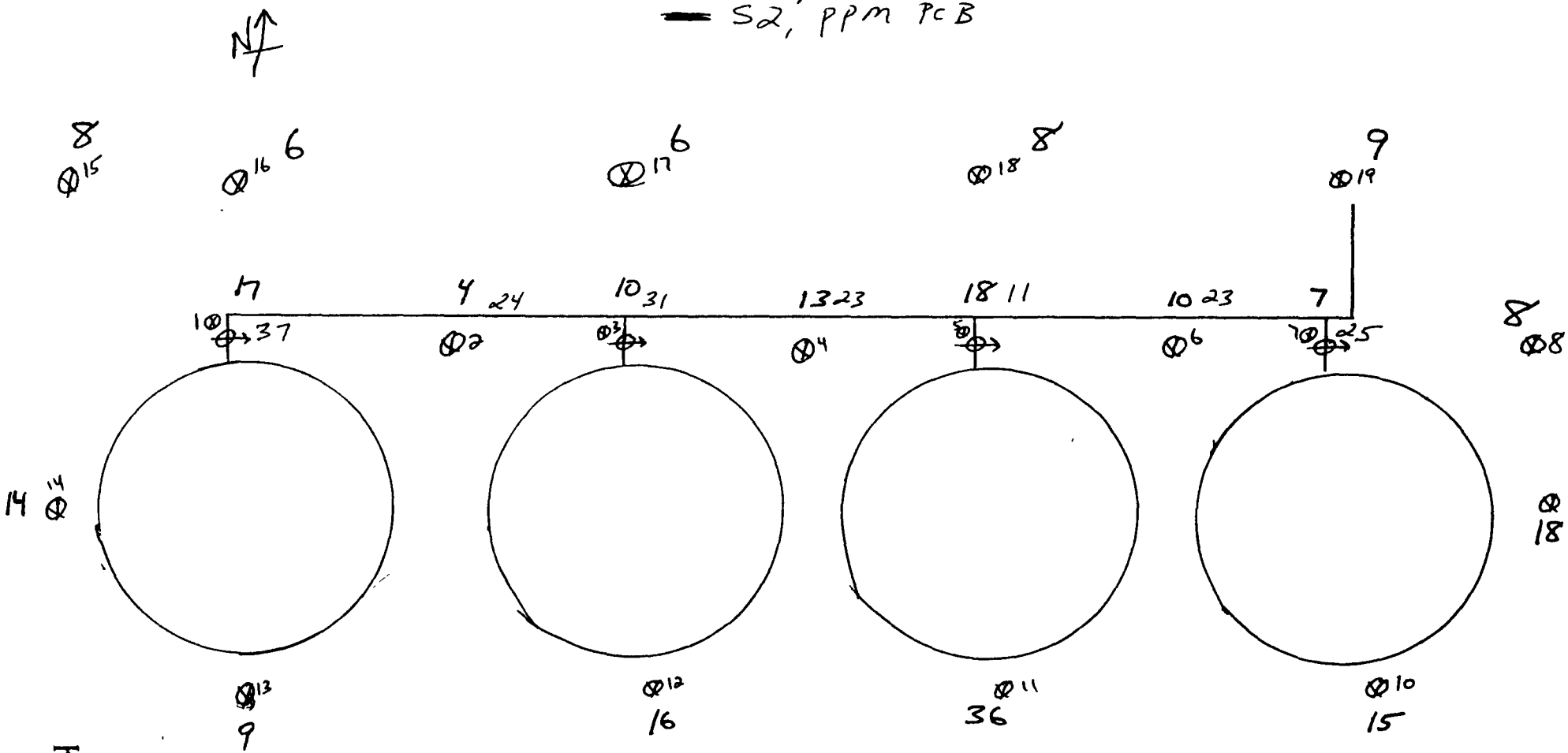
091689 & 09

K00003191



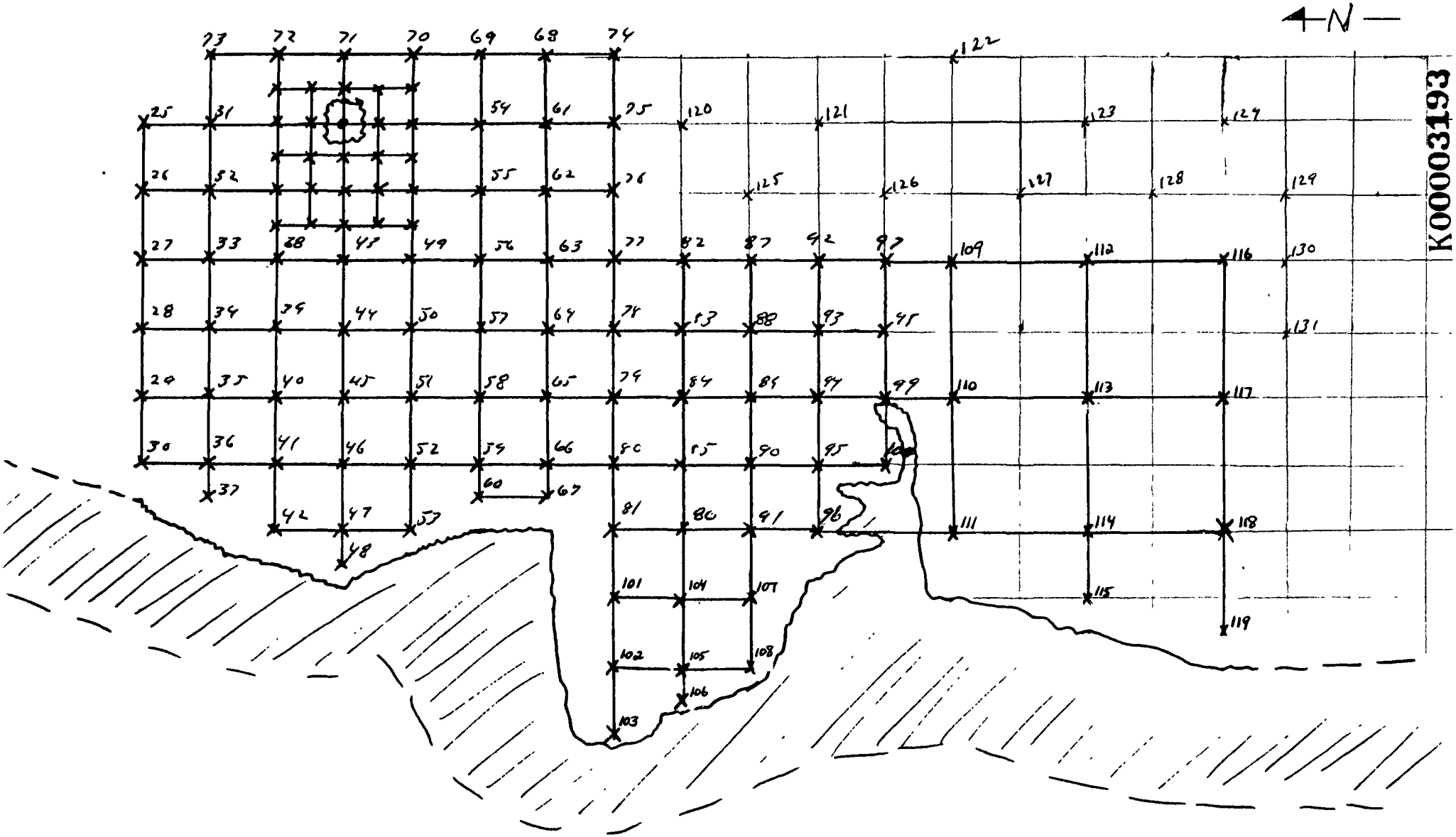
Overisel air logs (Not to scale)

S0, ppm PCB
S2, ppm PCB



K000003192

Overisel Gas Comp. Station Soil Sampling - Composite Grid - Oil/Water Sep. Discharge Point

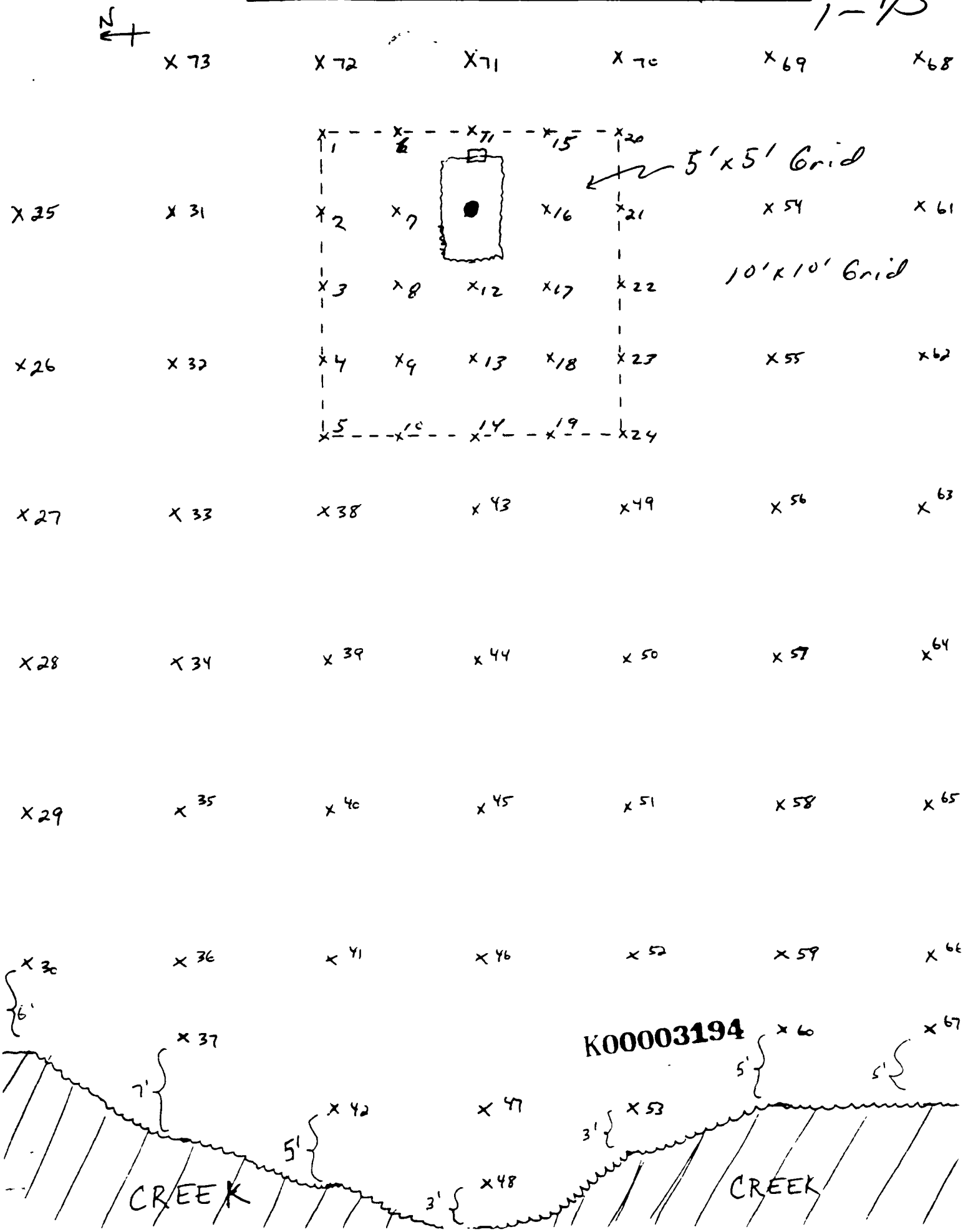


K00003193

Overisel Gas Comp. Station Soil Sampling - [illegible]

(Expanded Grid for Oil/Water Sep. Discharge Point)

1-73



K00003194

OVERISEL COMPRESSOR STATION

Area - Overflow Discharge
Sampling Date - 09-16-87
Project # 528717781-492

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872492A-1	1	
2	8	
3	9	
4	25	
5	120	
6	2	6
7	530	7
8	3500	2
9	490	4
10	660	10
11	9	6
12	1200 ~~750*~~	*130
13	200 ~~760*~~	6
14	230 ~~200*~~	6
15	31	2
16	4400	14
17	2700	51
18	3400	1100
19	260 *	890
20	57	
21	100	K00003195

* Over Calculation Linear Range

OVERISEL COMPRESSOR STATION

Area - Overflow Discharge
Sampling Date - 09-16-87
Project # 528717 781-492

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872492A-22	860	
23	1800	
24	150	
		K00003196

OVERISEL COMPRESSOR STATION

Area - Overflow Discharge
Sampling Date - 09-28-87
Project # 528717-781-502

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872502-A 25	5	
26	2	
27	6	<1
28	1	
29	2	
30	<1	<1
31	12	<1
32	17	4
33	13	<1
34	9	
35	1	
36	<1	
37	<1	<1
38	800	1
39	10	<1
40	9	<1
41	1	<1
42	<1	<1
43	3900	83
44	520	2
45	11	<1

OVERISEL COMPRESSOR STATION

Area - Overflow Discharge
Sampling Date - 09-28-87
Project #

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872502A-46	1	<1
47	1	<1
48	1	<1
49	450	3
50	3100	6
51	67	2
52	5	<1
53	3	<4**
54	38	2
55	110	3
56	830	15
57	820	12
58	140	2
59	9	
60	9	<1
61	5	
62	62	<1
63	530	8
64	310	4
65	5	<1
66	1	<1

** Sample Detection Limit

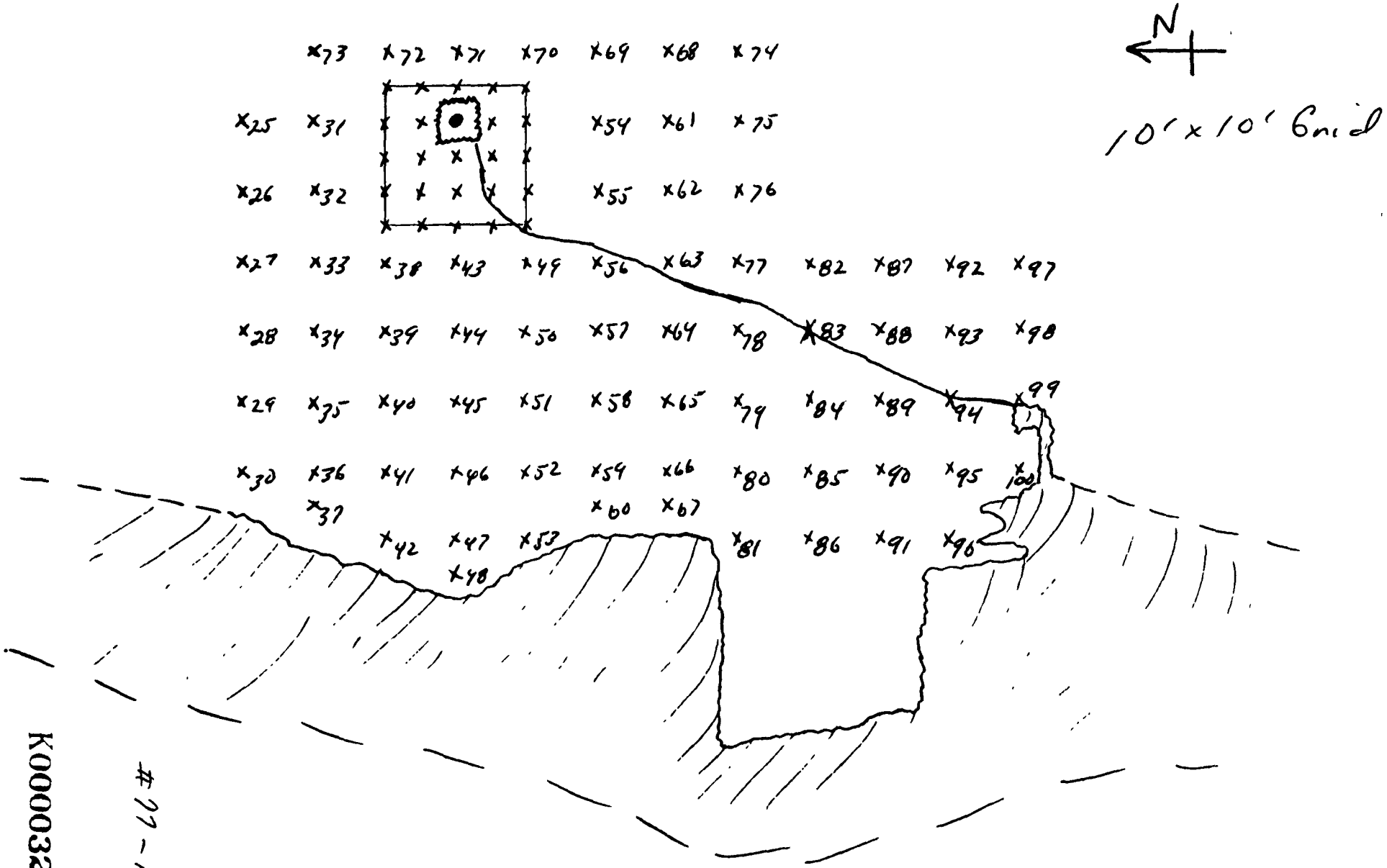
K00003198

OVERISEL COMPRESSOR STATION

Area - Overflow Discharge
Sampling Date - 09-28-87
Project # 528717 781-502

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872502A-67	1	
68	1	
69	3	<1
70	3	
71	17	8
72	1	<1
73	3	
		K00003199

Overisel Gas Comp. Station Soil Sampling – Composite Grid for 872-492, 872-502, 872-640 at the Oil/Water Separator Discharge Point



74-100

#77-100

K00003200

1103 / GLC

OVERISEL COMPRESSOR STATION

Oil-Water Separator Discharge

Sample Date -11-03-87 Project 872-690

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872-690- 74	1	<1
75	4	<1
76	21	2
77	110	3
78	>520 *	15
79	73	30
80	51	97
81	3	9
82	>380 *	4
83	>570 *	56
84	>200 *	33
85	68	17
86	7	12
87	>270 *	25
88	>300 *	51
89	>170 *	44
90	100	6
91	5	5
92	68	3
93	94	27

* Over Calibration Range

K00003201

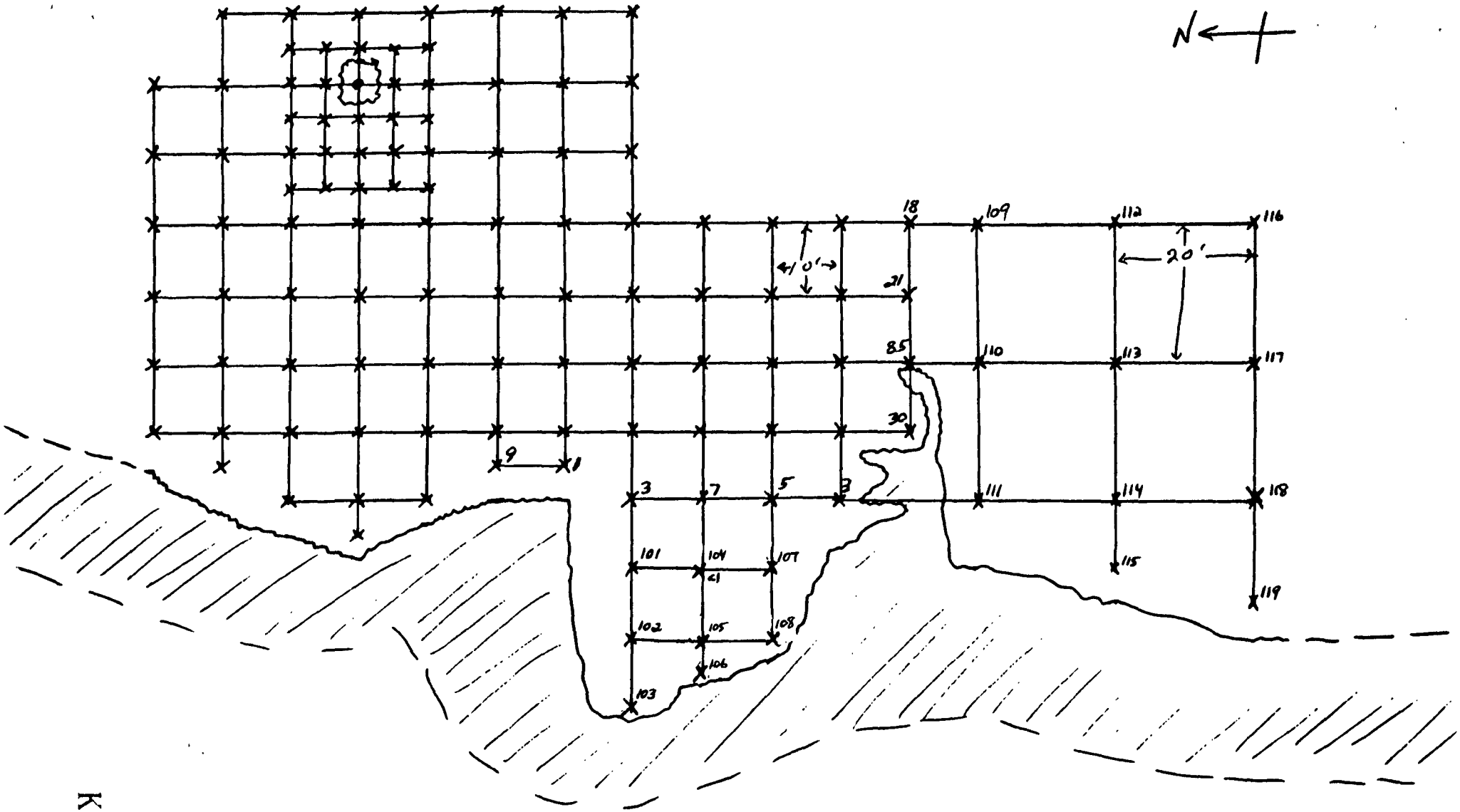
OVERISEL COMPRESSOR STATION

Oil-Water Separator Discharge

Sample Date 11-03-87 Project 872-690

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872-690- 94	> 180 *	120
95	27	10
96	3	5
97	18	1
98	21	4
99	85	13
100	30	36
		K00003202

* Over Calibration Range



101-119

K00003203

OVERISEL COMPRESSOR STATION

Oil-Water Separator Discharge

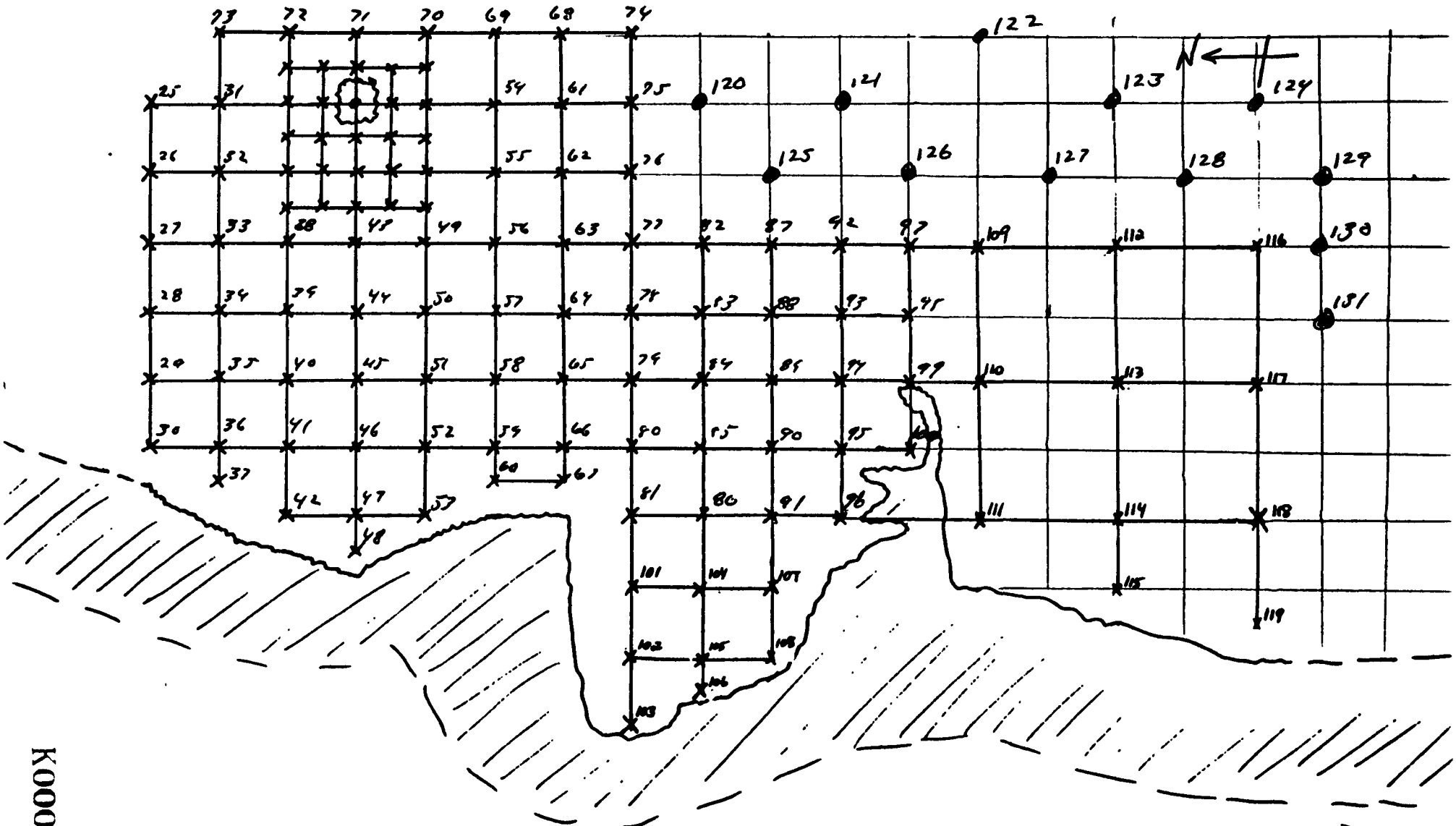
Sample Date 11-23-87 Project 872-829

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872-829A-101	1	<1
102	1	<1
103	<1	<1
104	1	<1
105	1	1
106	1	<1
107	4	4
108	1	22
109	15	4
110	8	3
111	1	1
112	5	3
113	4	<1
114	1	<1
115	1	1
116	6	8
117	1	<1
118	1	<1
119	1	<1
		K00003204

Expanded Sample Grid - 11-23-87

* Above Calibration Range

Overisel Gas Comp. Station Soil Sampling - Composite Grid - Oil/Water Sep. Discharge Point



● Jan 21, 1988 point #120 → 131

120-131

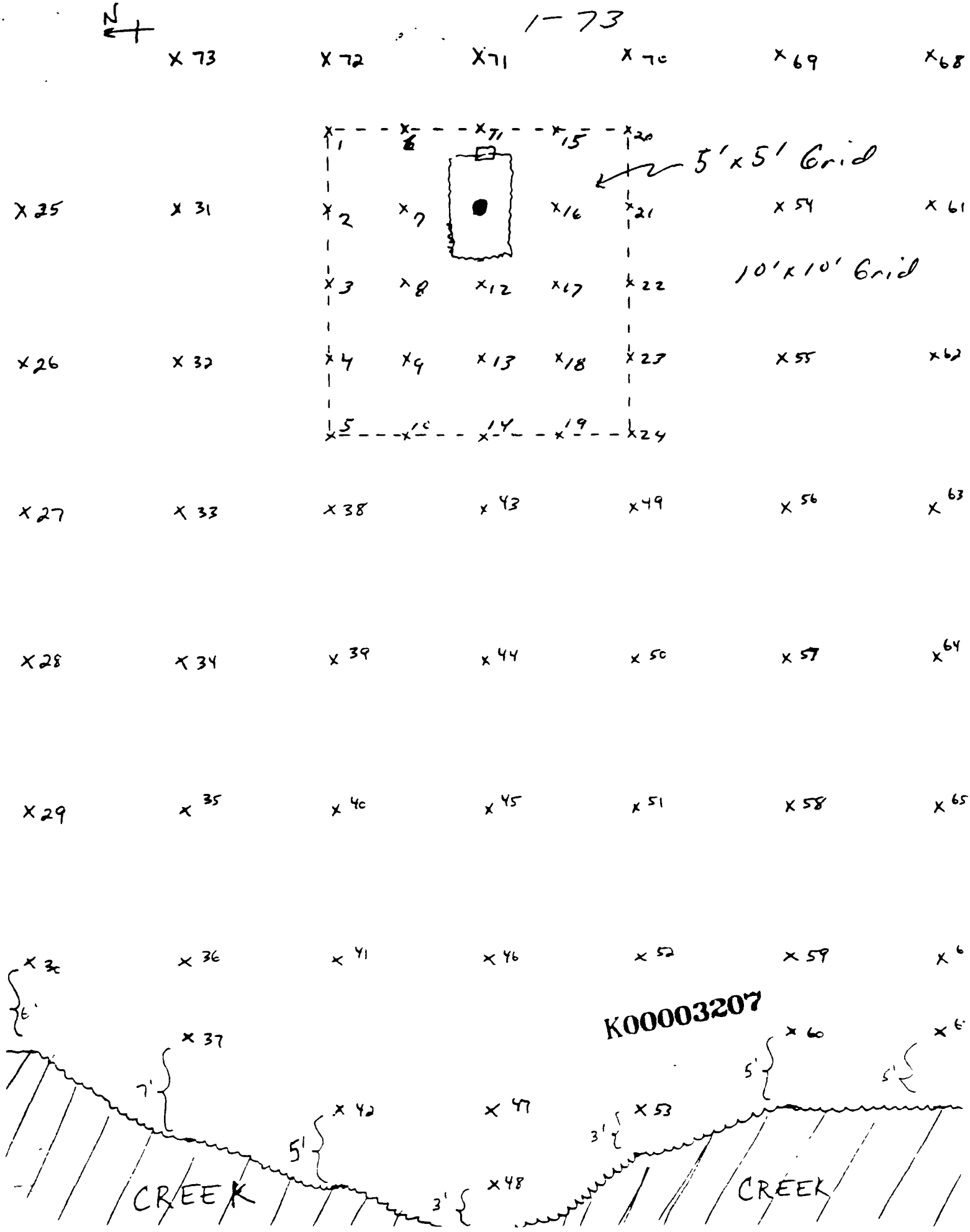
K00003205

OVERISEL COMPRESSOR STATION

Area - Overfill
Sampling Date - 01-21-88
Project # 88-135
Report Date - Feb 01, 1988

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
88-135 # 120	7	1
121	6	<1
122	11	<1
123	3	5
124	6	1
125	19	1
126	10	<1
127	8	2
128	5	2
129	4	<1
130	6	1
131	9	1
		K00003206

(Expanded Grid for Oil/Water Sep. Discharge Point)



K00003207

OVERISEL COMPRESSOR STATION

Area - Overflow Discharge
Sampling Date - 09-16-87
Project # 528717781-492

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872492A-1	1	
2	8	
3	9	
4	25	
5	120	
6	2	
7	530	7
8	3500	
9	490	4
10	660	
11	9	
12	1200 ~~750*~~	
13	200 ~~160*~~	
14	230 ~~200*~~	
15	31	
16	4400	14
17	2700	
18	3400	1100
19	260 *	
20	57	
21	100	K00003208

* Over Calculation Linear Range

OVERISEL COMPRESSOR STATION

Area - Overflow Discharge
Sampling Date - 09-16-87
Project # 528717 781-492

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872492A-22	860	
23	1800	
24	150	

K00003209

OVERISEL COMPRESSOR STATION

Area - Overflow Discharge
Sampling Date - 09-28-87
Project # 528717-781-502

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872502-A 25	5	
26	2	
27	6	<1
28	1	
29	2	
30	<1	<1
31	12	<1
32	17	
33	13	<1
34	9	
35	1	
36	<1	
37	<1	<1
38	800	1
39	10	
40	9	
41	1	
42	<1	<1
43	3900	83
44	520	2
45	11	

K00003210

OVERISEL COMPRESSOR STATION

Area - Overflow Discharge
Sampling Date - 09-28-87
Project #

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872502A - 46	1	
47	1	<1
48	1	<1
49	450	3
50	3100	6
51	67	
52	5	
53	3	<4**
54	38	2
55	110	3
56	830	15
57	820	12
58	140	2
59	9	
60	9	<1
61	5	
62	62	<1
63	530	8
64	310	4
65	5	<1
66	1	<1

** Sample Detection Limit

K00003211

OVERISEL COMPRESSOR STATION

Area - Overflow Discharge
Sampling Date - 09-28-87
Project # 528717 781-502

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872502A-67	1	
68	1	
69	3	
70	3	
71	17	
72	1	
73	3	

K00003212

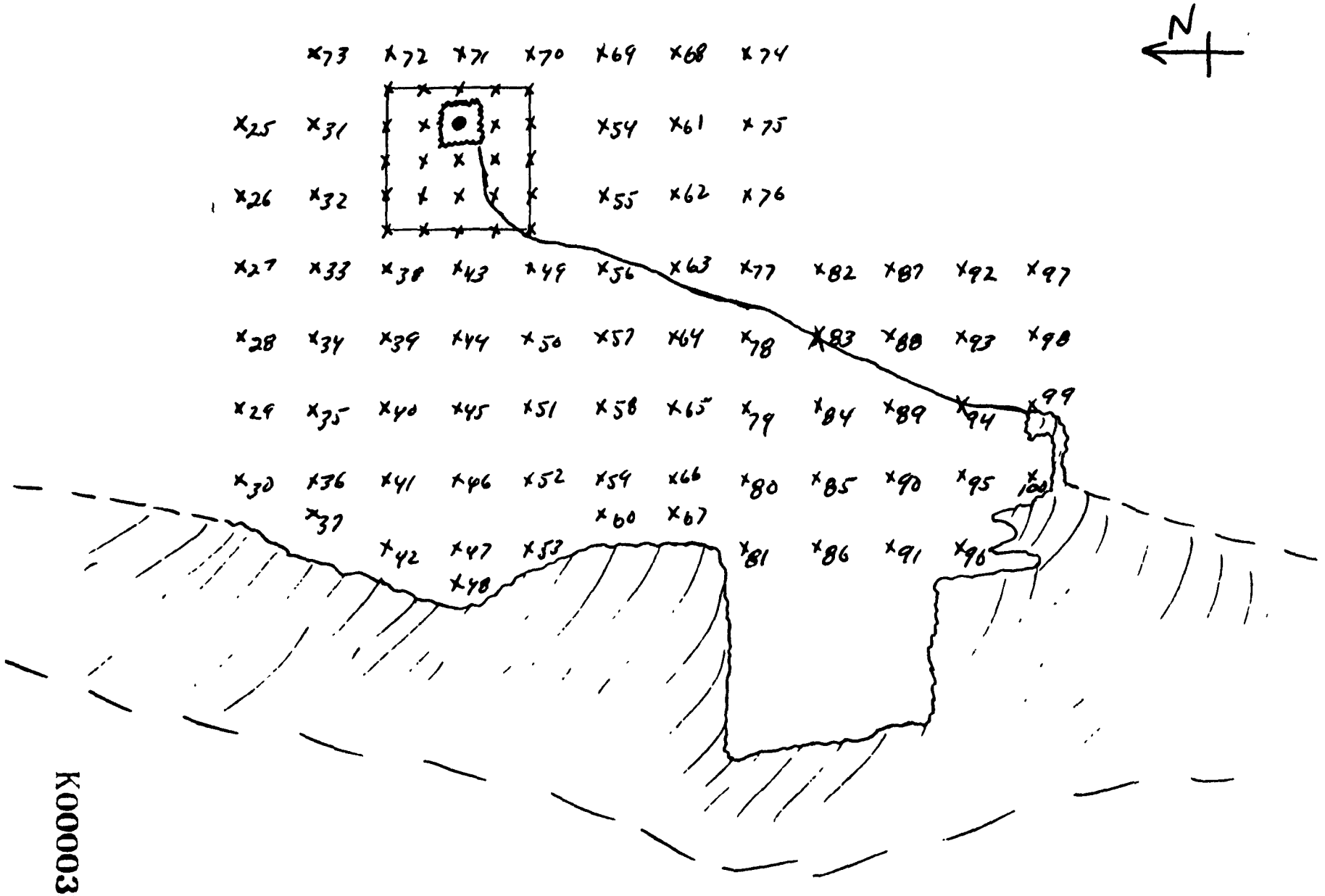
Overisel Overflow Discharge Soil Sampling

Analysis # 1372, 1373

Sample point	S0, ppm PCB	S2, ppm PCB
1	1	NA
2	8	NA
3	9	NA
4	25	NA
5	120	NA
6	2	NA
7	530	7
8	3500	NA
9	490	4
10	660	NA
11	9	NA
12	NA	NA
13	NA	NA
14	NA	NA
15	31	NA
16	4400	14
17	2700	NA
18	3400	1100
19	260	NA
20	57	NA
21	100	NA
22	860	NA
23	1800	NA
24	150	NA

* NA = Not Analyzed

Overisel Gas Comp. Station Soil Sampling – Composite Grid for 872-442, 872-502, 872-610 at the Oil/Water Separator Discharge Point



#94-100

D

K00003214

1103 / GLC

OVERISEL COMPRESSOR STATION

Oil-Water Separator Discharge

Sample Date 11-03-87 Project 872-690

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872-690- 74	1	<1
75	4	<1
76	21	2
77	110	3
78	>520 *	15
79	73	30
80	51	97
81	3	9
82	>380 *	4
83	>570 *	56
84	>200 *	33
85	68	17
86	7	12
87	>270 *	25
88	>300 *	51
89	>170 *	44
90	100	6
91	5	5
92	68	3
93	94	27

* Above Calibration Range

K00003215

OVERISEL COMPRESSOR STATION

Oil-Water Separator Discharge

Sample Date 11-03-87 Project 872-690

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872-690- 94	> 180 *	120
95	27	10
96	3	5
97	18	1
98	21	4
99	85	13
100	30	36
		K00003216

* Over Calibration Range

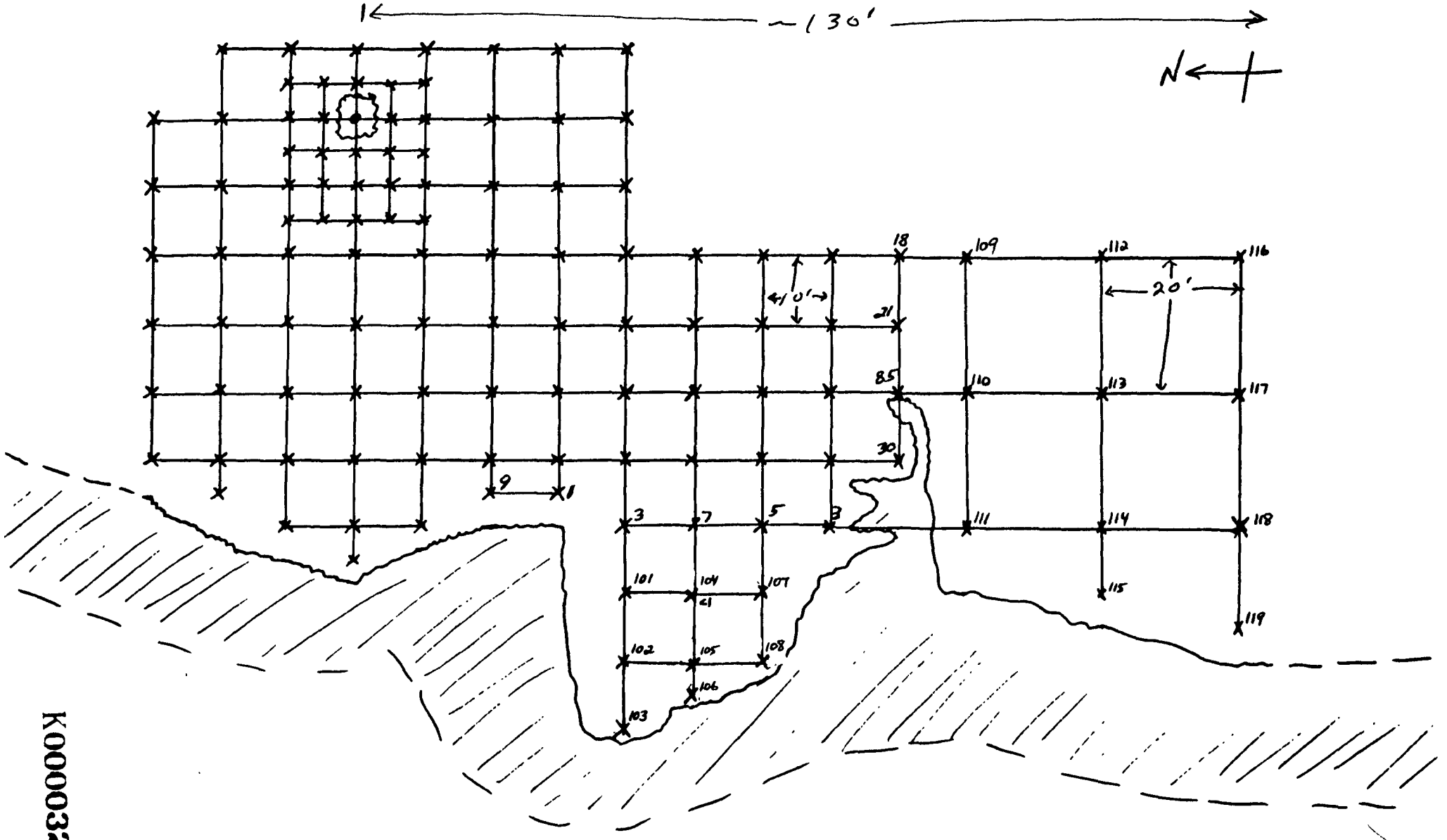
Overisel — 872-690

Sample point	ppm PCB at surface, 0"-1" (S0)	ppm PCB at ≈6"-12" depth (S2)
74	1	<1
75	4	<1
76	21	2
77	110	3
78	≥ 520	15
79	73	30
80	51	97 *
81	3	9 *
82	≥ 380	4
83	≥ 570	56
84	≥ 200	33
85	68	17
86	7	12 *
87	≥ 270	25
88	≥ 300	51
89	≥ 170	44
90	100	6
91	5	5
92	68	3
93	94	27
94	≥ 180	120
95	27	10
96	3	5 *
97	18	1
98	21	4
99	85	13
100	30	36 *

~~* Surface conc. > S2 conc.~~

K00003217

Overisel Gas Comp. Station Soil Sampling - Composite Grid - Oil/Water Sep. Discharge Point



K00003218

101-119

D

OVERISEL COMPRESSOR STATION

Oil-Water Separator Discharge

Sample Date 11-23-87 Project 872-829

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
872-829A-101	1	<1
102	1	<1
103	<1	<1
104	1	<1
105	1	1
106	1	<1
107	4	4
108	1	22
109	15	4
110	8	3
111	1	1
112	5	3
113	4	<1
114	1	<1
115	1	1
116	6	8
117	1	<1
118	1	<1
119	1	<1
		K00003219

Expanded Sample Grid - 11-23-87

* Lower Calibration Range

overisel PCBs

(overflow area)

PCB conc, ppm

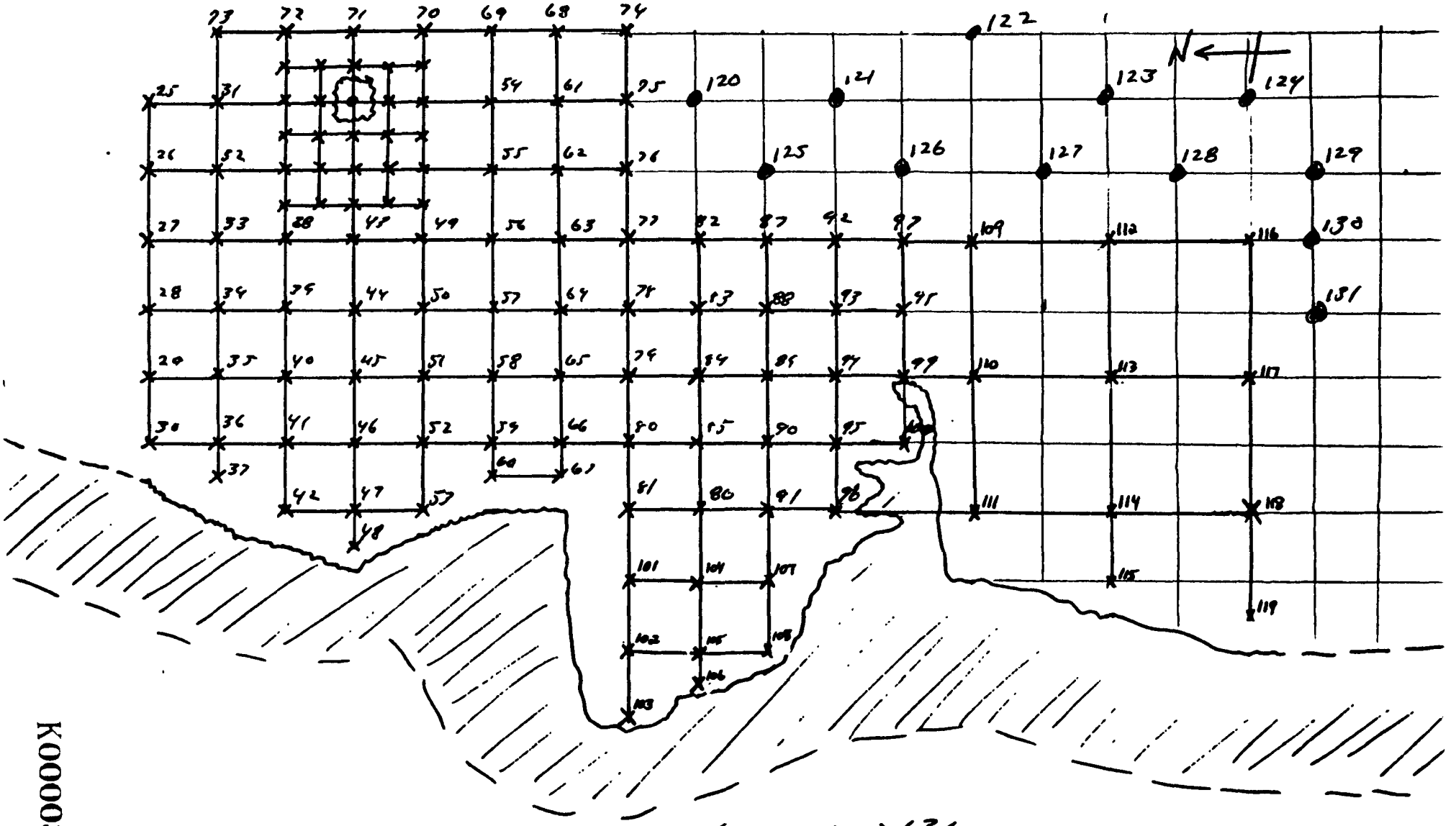
Sample point		Surface, 0"-1"	12" depth
872-829	101	1	<1
	102	1	<1
	103	<1	<1
	104	1	<1
	105	1	1
	106	1	<1
	107	4	4
	108	1	22 *
	109	15	4
	110	8	3
	111	1	1
	112	5	3
	113	4	<1
	114	1	<1
	115	1	1
	116	6	8 *
	117	1	<1
	118	1	<1
	119	1	<1

Sample #	ppm PCB
A S2-3	1
B Wash In	7
C 18-24	140
D 12-18	32

* S2 > S0

K00003220

Overisel Gas Comp. Station Soil Sampling - Composite Grid - Oil/Water Sep. Discharge Point



● Jan 21, 1988 point #120 → 131

120-131

D

K00003221

OVERISEL COMPRESSOR STATION

Area - OverFill
Sampling Date - 01-21-88
Project # 88-135
Report Date - Feb 01, 1988

Sample Point Number	Surface Soil PCB mg/kg	12" Depth Soil PCB mg/kg
88-135 # 120	7	1
121	6	<1
122	11	<1
123	3	5
124	6	1
125	19	1
126	10	<1
127	8	2
128	5	2
129	4	<1
130	6	1
131	9	1
		K00003222

Overisel ~~Air logs~~ Overflow Area

ID #	Sample point	ppm PCB Surface, 0"-1"	6"-12" depth
88-135	120	7	1
	121	6	<1
	122	11	<1
	123	3	5
	124	6	1
	125	19	1
	126	10	<1
	127	8	2
	128	5	~~1~~ 2
	129	4	<1
	130	6	1
	131	9	1

K00003223

OVERISEL COMPRESSOR STATION
Oil-Water Separator Discharge Pit
Sampling Date 11-23-87
872-824

Remarks

Discharge pit is filled with water and appears to have the potential to overflow during a heavy rain.

Ground is saturated with water

High depth-to-water around discharge pit may indicate storage of this water

All boreholes filled ~~wa~~ with water after first sample was pulled. Boreholes were terminated after first sample

Groundwater contamination is most probable

K00003224

OVERISEL COMPRESSOR STATION
Oil-Water Separator Discharge Pit
Sampling Date 11-23-87
872-829

Remarks

Discharge pit is filled with water and appears to have the potential to over-flow during a heavy rain.

Ground is saturated with water

High depth-to-water around discharge pit may indicate storage of this water

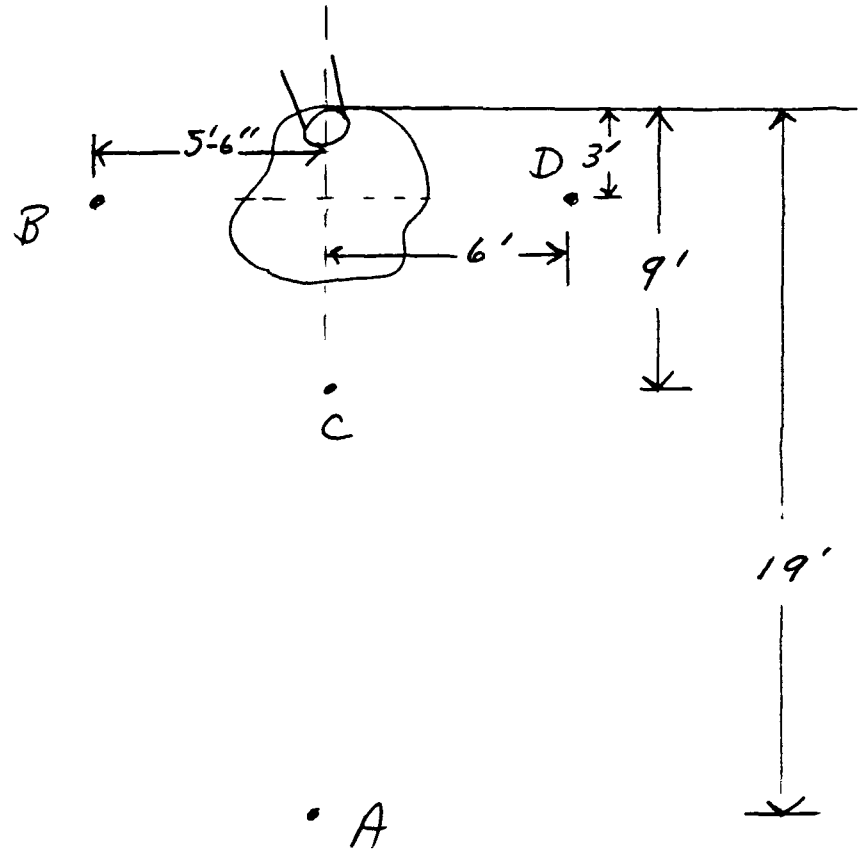
All boreholes filled ~~wa~~ with water after first sample was pulled. Boreholes were terminated after first sample

Groundwater contamination is most probable

K00003225

Overisel Compressor Station

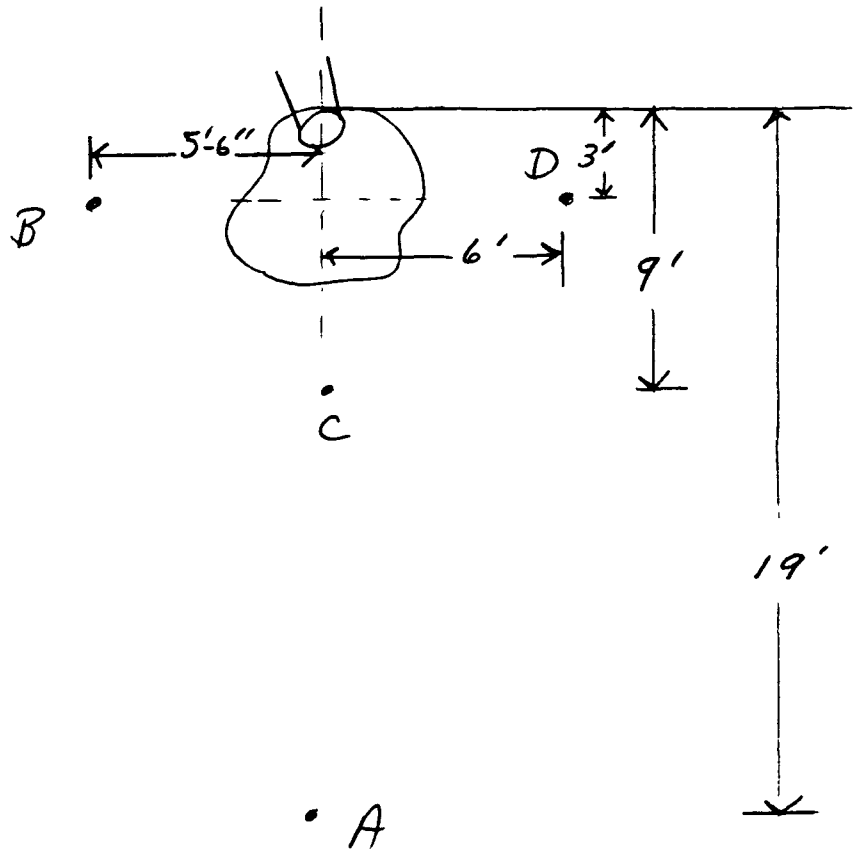
Oil-Water Separator Discharge
Sampling Date 11-23-97 # 872-829



K00003226

Oversel Compressor Station

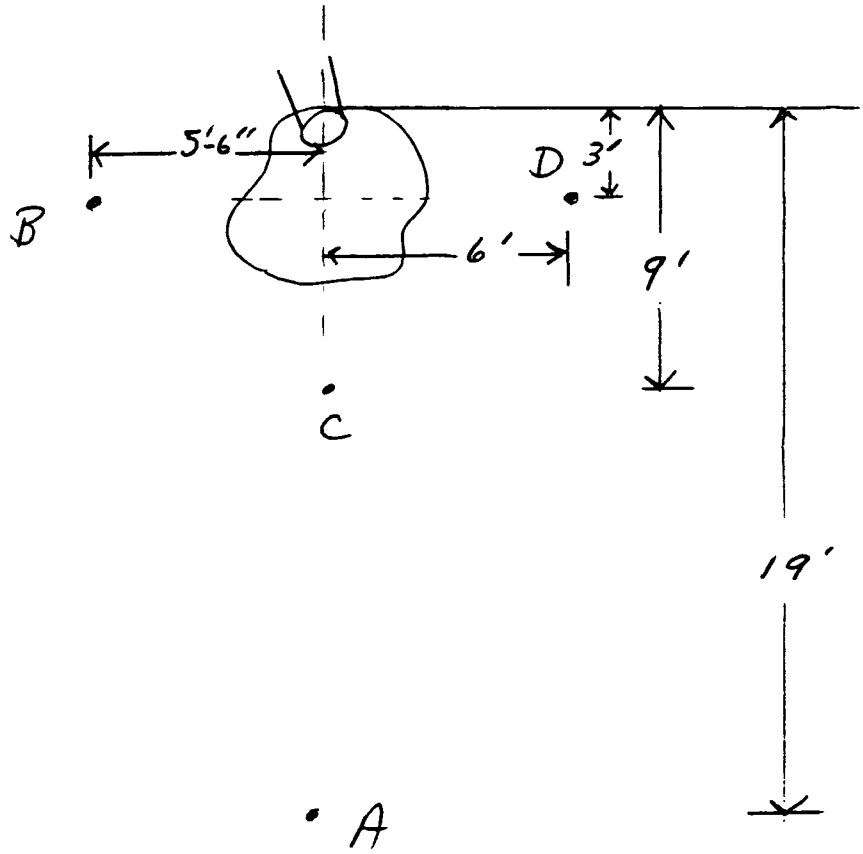
Oil-Water Separator Discharge
Sampling Date 11-23-97 # 872-829



K00003227

Overisel Compressor Station

Oil-Water Separator Discharge
Sampling Date 11-23-17 # 872-829



K00003228

OVERISEL COMPRESSOR STATION
Oil-Water Separator Discharge Pit
Sampling Date 11-23-87
872-829

Remarks

Discharge pit is filled with water and appears to have the potential to overflow during a heavy rain.

Ground is saturated with water

High depth-to-water around discharge pit may indicate storage of this water

All boreholes filled ~~wa~~ with water after first sample was pulled. Boreholes were terminated after first sample

Groundwater contamination is most probable

OVERISEL COMPRESSOR STATION
Oil-Water Separator Discharge Pit

11-23-87
872-829

Soil Boring Number	Sample Depth (ft)*	PCB mg/kg	Depth To Water (ft)*	Soil Type
A	1.5	1	1.5	Sand-Clay
B	1.5	7	0.8	Sand-Clay
C	1.5	140	0.4	Sand-Clay
D	1.5	32	0.5	Sand-Clay

* From Surface Grade

<u>Remarks</u> Attachment.

K00003230

OVERISEL COMPRESSOR STATION
Oil-Water Separator Discharge Pit

11-23-87
872-829

Soil Boring Number	Sample Depth (ft)*	PCB mg/kg	Depth To Water (ft)*	Soil Type
A	1.5	1	1.5	Sand-Clay
B	1.5	7	0.8	Sand-Clay
C	1.5	140	0.4	Sand-Clay
D	1.5	32	0.5	Sand-Clay

* From Surface Grade

Remarks Attachment.

K00003231

OVERISEL COMPRESSOR STATION
Oil-Water Separator Discharge Pit

11-23-87
872-829

Soil Boring Number	Sample Depth (ft)*	PCB mg/kg	Depth To Water (ft)*	Soil Type
A	1.5	1	1.5	Sand-Clay
B	1.5	7	0.8	Sand-Clay
C	1.5	140	0.4	Sand-Clay
D	1.5	32	0.5	Sand-Clay

* From Surface Grade

Remarks Attachment.

K00003232

OVERISEL COMPRESSOR STATION
Oil-Water Separator Discharge Pit
Sampling Date 11-23-87
872-829

Remarks

Discharge pit is filled with water and appears to have the potential to overflow during a heavy rain.

Ground is saturated with water

High depth-to-water around discharge pit may indicate storage of this water

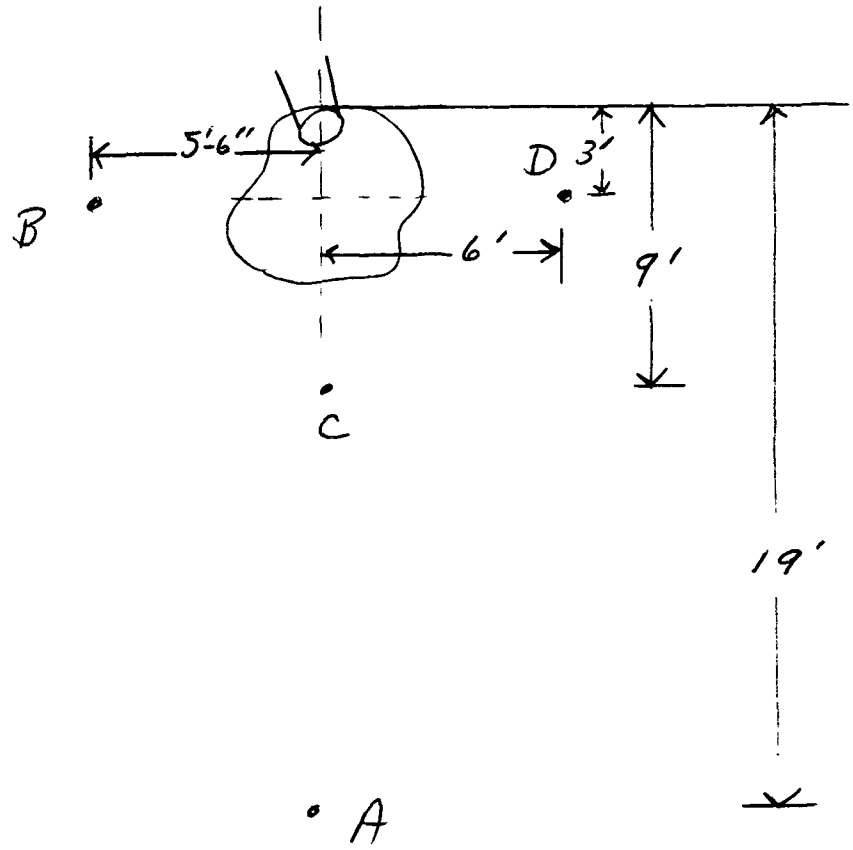
All boreholes filled ~~wa~~ with water after first sample was pulled. Boreholes were terminated after first sample

Groundwater contamination is most probable

K00003233

Overisel Compressor Station

Oil-Water Separator Discharge
Sampling Date 11-23-89 # 872-829



K00003234

OVERISEL COMPRESSOR STATION
Oil-Water Separator Discharge Pit

11-23-87
872-829

Soil Boring Number	Sample Depth (ft)*	PCB mg/kg	Depth To Water (ft)*	Soil Type
A	1.5	1	1.5	Sand-Clay
B	1.5	7	0.8	Sand-Clay
C	1.5	140	0.4	Sand-Clay
D	1.5	32	0.5	Sand-Clay

* From Surface Grade

Remarks Attachment.

K00003235