



STATE OF MISSISSIPPI

HALEY BARBOUR

GOVERNOR

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

August 18, 2006

Tim Hassett
Hercules Incorporated
Hercules Plaza
1313 North Market Street
Wilmington, DE 19894-0001

Re: Annual Monitoring Report dated July 2006
Hercules Inc. Hattiesburg facility
Hattiesburg, Forrest County, Mississippi

FILE COPY

Dear Mr. Hassett:

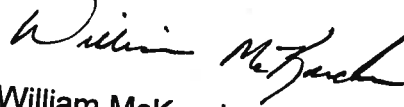
The Mississippi Department of Environmental Quality (MDEQ) has completed a review of the above referenced document and has the following comments:

1. MDEQ has evaluated the Hercules, Inc. request to discontinue the sampling and analysis for dioxathion and dioxenethion and based on sampling data for the facility, will approve a reduction in sampling frequency and number of wells to be sampled for dioxathion and dioxenethion. MDEQ requests that Hercules, Inc. conduct sampling and analysis for dioxathion and dioxenethion to occur in May 2007 and on an annual basis thereafter. The wells to be sampled for dioxathion and dioxenethion are MW-4, MW-8 and MW-13 thru MW-17.
2. MDEQ must be notified within 10 working days prior to any field activities.
3. Reports must be submitted to MDEQ for review and approval within 45 days of completion of the field activities.
4. A sufficient number of properly sized and properly preserved sample containers must be available for MDEQ personnel to split samples, if necessary.

Now that one year of quarterly sampling has been completed, the Corrective Action Plan calls for execution of a Restrictive Use Agreed Order by Hercules, Inc. to place land use restrictions on the property. Enclosed are DRAFT copies

of the Restrictive Use Agreed Order and Notice of Land Use Restrictions. Please review and provide comments to MDEQ by September 15, 2006. If you have any questions or comments, please contact me at (601) 961-5731.

Sincerely,



William McKercher
Project Manager
Groundwater Assessment and
Remediation Division (GARD)

cc: Michael T. Slack, P.E. – MDEQ
Walter Langhans – Hercules, Inc.
Charlie Jordan – Hercules, Inc.
Charles Coney – Eco-Systems, Inc.

K:\Common\Brownfields\Wmckercher\Hercules\RE 2006 Annual Report.doc

Mississippi Department of Environmental Quality
NOTICE OF LAND USE RESTRICTIONS

A Restrictive Use Agreed Order has been developed with regard to property located at 613 West 7th Street, Hattiesburg, MS as shown in the attached survey plat. This property, hereafter referred to as the "Site," is situated in Section «SECTION», Township «TOWNSHIP», Range «RANGE», Forrest County, Mississippi, and being more particularly described by metes and bounds as follows, to-wit:

«LEGALDESCRIP»

The Restricted Use Areas of the Site are contaminated with Benzene (CAS #71432), Chlorobenzene (CAS #108907), Carbon Tetrachloride (CAS #56235), Chloroform (CAS #67663), 1,2-Dichloroethane (CAS #107062) and Toluene (CAS #105553) at levels in excess of the Target Remediation Goals (TRGs) as established by the Mississippi Department of Environmental Quality (MDEQ). Other contaminants that do not exceed TRGs have also been identified. In order to protect public health and the environment, certain restrictions must be placed on the use of the Restricted Areas of the Site.

The following is a listing of all restrictions for the Restricted Areas of the Site:

1. There shall be no excavating, drilling or other activities to depths that could create exposure to contaminated media without approval from MDEQ;
2. The groundwater at the Site shall not be used, unless otherwise approved by MDEQ;
3. All monitoring wells at the Site shall be protected and maintained. In the event that a monitoring well is destroyed or damaged, a plan for repair, reinstallation or abandonment of the well(s) must be submitted to MDEQ for approval; and
4. No wells shall be installed without prior approval from MDEQ.

Prior to executing any deed or other instrument conveying an interest in the Restricted Areas of the Site, the following conditions must be met:

1. Any conveyance of the Restricted Areas of the property must contain as covenants the restrictions listed above with a statement that the covenants run with the land and continue into perpetuity unless otherwise ordered by the Mississippi Commission on Environmental Quality;
2. Notice must be provided to MDEQ at least 30 days prior to any property transaction involving the Site; and
3. Prior to any change in use of the Site or any portion of the Site, notice shall be given to the MDEQ.

This Notice may be executed in counterparts.

The parties that have a legal or equitable surface interest in the Site follow:

1. Hercules, Inc.
2. Other?

STATE OF MISSISSIPPI

COUNTY OF FORREST

Executed, this the _____ day of _____, 2006.

BY: _____

TITLE: _____

PERSONALLY appeared before me, the undersigned authority in and for the jurisdiction aforesaid, on this the _____ day of _____, 2006 within my jurisdiction, the within named _____ acknowledged that (he)(she) is _____ of Hercules, Inc., a _____ corporation, and that for and on behalf of the said corporation, and as its act and deed (he)(she) executed the above and foregoing instrument, after first having been duly authorized by said corporation so to do.

SWORN TO AND SUBSCRIBED BEFORE ME, this the _____ day of _____, 2006.

NOTARY PUBLIC

MY COMMISSION EXPIRES:

\\AIR3\Haz Waste Files\Common\Brownfields\Wmckercher\Hercules\DRAFT Hercules Deed Notice.doc

BEFORE THE MISSISSIPPI COMMISSION ON ENVIRONMENTAL QUALITY

MISSISSIPPI COMMISSION ON
ENVIRONMENTAL QUALITY

COMPLAINANT

Order No. **DRAFT**

VS.

HERCULES, INC.
ATTENTION: MR. TIM HASSETT
Hercules Plaza
1313 North Market Street
Wilmington, DE 19894-0001

RESPONDENT

RESTRICTIVE USE AGREED ORDER

COME NOW the Mississippi Commission on Environmental Quality (Commission) and Hercules, Inc. (Respondent) in the above captioned cause agree as follows:

1. The purpose of this Restrictive Use Agreed Order is to restrict the use and activities on the Site described below to insure protection of human health and the environment.
2. The Respondent has an interest in a tract of land located in Hattiesburg, MS, known as the "Hercules, Inc. Restricted Area" and hereafter referred to as the "Site." Attachment I is a survey plat depicting the boundaries of the Site. A legal description of the Site follows:

[SITE LEGAL DESCRIPTION]
3. The Site is contaminated with Benzene (CAS #71432), Chlorobenzene (CAS #108907), Carbon Tetrachloride (CAS #56235), Chloroform (CAS #67663), 1,2-Dichloroethane (CAS #107062) and Toluene (CAS #105553) at levels in excess of the Target Remediation Goals (TRGs) as established by the Mississippi Department of Environmental Quality (MDEQ).
4. The staff of the Commission has evaluated this Restrictive Use Agreed Order and believes once the requirements of it have been completed that (1) the Site will be protective of the public health and the environment and (2) no further corrective action will be required at this time.

5. The following is a description of all restrictions and requirements for the Site:
- (a) There shall be no excavating, drilling, or other activities that could create exposure to contaminated media without prior approval from MDEQ.
 - (b) The groundwater at the Site shall not be used without prior approval from MDEQ;
 - (c) All monitoring wells at the Site shall be protected and maintained. In the event that a monitoring well is destroyed or damaged, a plan for repair, reinstallation or abandonment of the well(s) must be submitted to MDEQ for approval within 30 days after a well is destroyed or damaged;
 - (d) No wells shall be installed without prior approval from MDEQ;
 - (e) All required groundwater monitoring shall be conducted as described in the approved Compliance Monitoring Plan, page 12 of the Corrective Action Plan Revision 01 dated January 20, 2005, unless otherwise approved by MDEQ;
 - (f) All required corrective action shall be conducted as described in the approved Corrective Action Plan Revision 01, dated January 20, 2005, unless otherwise approved by MDEQ;
 - (g) Any necessary corrective action required following completion of the Corrective Action Plan Revision 01 in (f) above shall be implemented as described in the approved Contingency Plan, page 15 of the Corrective Action Plan Revision 01 dated January 20, 2005, unless otherwise approved by MDEQ;
 - (h) A sign of a size, shape, construction, and layout approved by MDEQ, shall be posted at the physical location of the site and shall read as follows:

STOP – CALL BEFORE YOU DIG
(601) 961-5171
Request to Speak with Someone in Assessment Remediation Branch
Regarding Site 40470039
 - (i) All required institutional controls shall be implemented;
 - (j) Financial Assurance in an amount sufficient to implement the Contingency Plan, page 15 of the Corrective Action Plan Revision 01 dated January 20, 2005, shall be available, unless waived by MDEQ. Cost estimates and duration may be adjusted on a periodic basis with the approval of MDEQ; and

- (k) Beginning on October 31, 2006, and annually thereafter, Respondent shall submit certification in a form required by MDEQ that all the requirements listed in #5 (a) through (j) have been maintained. The annual certification must include a list of all surface owners and leaseholders of the Site.
6. The Respondent shall restrict the entire facility to non-residential use which would also exclude schools, parks, day care facilities, or similar facilities where children are present without additional sampling and prior approval from MDEQ.
 7. Respondent shall retain responsibility for the requirements listed in #5 above, until the Commission approves the transfer of those responsibilities to another party (e.g., the prospective purchaser) by entering into an Agreed Order with the other party.
 8. Prior to any change in use of the Site or any portion of the Site, written notice shall be given to and approval obtained from the MDEQ.
 9. Written notice must be provided to MDEQ 30 days prior to any property transaction involving the Site. Any conveyance must contain as covenants the requirements listed in #5 and 6 with a statement that the covenants run with the land and continue into perpetuity unless otherwise ordered by the Commission.
 10. Within fifteen (15) days after execution of this Restrictive Use Agreed Order, Respondent shall file the Restrictive Use Notice, as approved by MDEQ, in the office of the Chancery Clerk of the County in which the Site is located for recording onto the land deed records in the appropriate sectional index.
 11. Within forty-five (45) days after execution of this Restrictive Use Agreed Order, the Respondent is required to submit to MDEQ certification signed by the Chancery Clerk of the County in which the Site is located that the requirements under paragraph 10 of this Restrictive Use Agreed Order have been completed.
 12. Nothing in this Restrictive Use Agreed Order shall be construed to convey or determine any interest in property.
 13. Nothing in this Restrictive Use Agreed Order shall be construed to be an allocation of costs or an indemnification by the State, MDEQ, or the Commission.
 14. Nothing in this Restrictive Use Agreed Order shall limit the rights of the MDEQ or the Commission in the event Respondent fails to comply with this Restrictive Use Agreed Order. The Restrictive Use Agreed Order shall be strictly construed to apply to those matters expressly resolved herein.

15. Nothing contained in this Restrictive Use Agreed Order shall limit the rights of Complainant to take enforcement or other actions against Respondent for violations not addressed herein and for future violations of environmental laws, rules, and regulations.
16. This Restrictive Use Agreed Order does not resolve any issues regarding liability and/or penalties for any violation of any federal and/or state order, permit, law, rule and/or regulation. The Commission specifically reserves any such action.
17. Respondent understands and acknowledges that it is entitled to an evidentiary hearing before the Commission pursuant to Section 49-17-31 (Rev. 2003), and that it has made an informed waiver of that right.

So ORDERED and AGREED, this the _____ day of _____, 2006.

Charles H. Chisolm
Executive Director
Mississippi Commission on
Environmental Quality

AGREED, this the _____ day of _____, 2006.

BY: _____

TITLE: _____

PERSONALLY appeared before me, the undersigned authority in and for the jurisdiction aforesaid, on this the _____ day of _____, 2006 within my jurisdiction, the within named _____ acknowledged that (he)(she) is _____ of Hercules, Inc., a _____ corporation, and that for and on behalf of the said corporation, and as its act and deed (he)(she) executed the above and foregoing instrument, after first having been duly authorized by said corporation so to do.

SWORN TO AND SUBSCRIBED BEFORE ME, this the _____ day of _____, 2006.

NOTARY PUBLIC

MY COMMISSION EXPIRES:

Eco-Systems, Inc.

Consultants, Engineers, and Scientists



July 25, 2006

Mr. William McKercher
Environmental Engineer
Office of Pollution Control
Mississippi Department of Environmental Quality (MDEQ)
P.O. Box 10385
Jackson, Mississippi 39289-0385



**Re: Annual Monitoring Report
Hercules Incorporated
Hattiesburg, Mississippi
ESI Project No. HER25080**

Dear Mr. Mckercher:

Eco-Systems, Inc. (Eco-Systems) is pleased to submit the enclosed two copies of the Annual Monitoring Report prepared on behalf of Hercules, Incorporated. The report includes discussion of the May 2006 surface water and groundwater monitoring event. The Annual Report also includes findings and conclusions for the 1st year of quarterly monitoring conducted in accordance with the Corrective Action Plan and recommendations for future monitoring events. The next quarterly monitoring event will be conducted in August 2006.

If you have any questions or require additional information, please do not hesitate to call Mr. Timothy Hassett at (302) 995-3456 or Charles Coney (Eco-Systems) at (601) 936-4440.

Sincerely,

Charles V. Coney, P.G.
Senior Scientist

cc: Timothy Hassett – Hercules Inc. w/ enclosure
C. S. Jordan – Hercules, Hattiesburg w/ enclosure



STATE OF MISSISSIPPI
HALEY BARBOUR
GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

MEMORANDUM

TO: Hercules, Inc – To File

FROM: William McKercher *WM*

DATE: June 12, 2006

RE: Site Visit – May 9, 2006

On May 9, 2006, I went to the Hercules, Inc. facility to observe the fourth quarterly groundwater-sampling event. I arrived at 12:30 am, and met with Chris Terrell of Eco-Systems, Inc. who was leading the groundwater sampling activities.

When I arrived, Terrell and his assistant were purging MW-18. Sampling was performed with a peristaltic pump via low flow sampling techniques. Parameters were collected for temperature, pH, specific conductivity, and turbidity. Once the parameters stabilized according to low flow specifications, samples were collected. I collected splits from MW-18 for MDEQ analysis. The purge water from MW-18 had a slight odor, but no observed sheen. After the sample containers were filled, Terrell moved to MW-19.

As Terrell set up on MW-19 and began purging, I drove around the site with Charlie Jordan, the on-site Hercules contact, to observe the on-going demolition operations on site. Jordan explained which areas were going to be dismantled and removed and which operations would remain active. Approximately 70% of the structures on site are being disassembled and taken down. Certified Asbestos crews were on-site handling demolition operations for buildings containing asbestos.

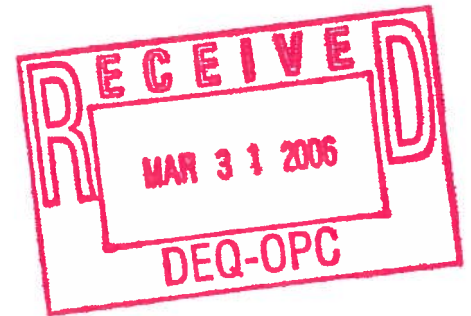
I collected splits for MDEQ analysis from monitoring wells MW-18 and MW-19 for VOC EPA Method 8260 analysis. However, due to scheduling issues, I was unable to get the samples to MDEQ's lab in a reasonable time period so the samples were not submitted for analysis.

Following the sampling of MW-18 and MW-19, Eco-Systems continued collecting groundwater samples from the remaining wells on site.



March 27, 2005

Mr. William McKercher
Environmental Engineer
Office of Pollution Control
Mississippi Department of Environmental Quality (MDEQ)
P.O. Box 10385
Jackson, Mississippi 39289-0385



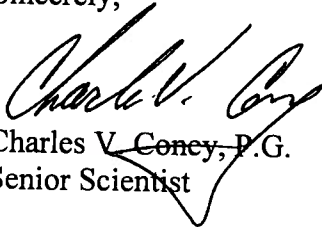
**Re: Report of Well Installation and
February 2006 Quarterly Sampling Results
Hercules Incorporated
Hattiesburg, Mississippi
ESI Project No. HER25080**

Dear Mr. Mckercher:

Eco-Systems, Inc. (Eco-Systems) is pleased to submit the enclosed Quarterly Monitoring Report for the February 2006 monitoring event prepared on behalf of Hercules, Incorporated. The Quarterly Monitoring Report discusses groundwater and surface water sampling and analytical results conducted in accordance with the Corrective Action Plan. The next quarterly monitoring event will be conducted in May 2006.

If you have any questions or require additional information, please do not hesitate to call Mr. Timothy Hassett at (302) 995-3456 or Charles Coney (Eco-Systems) at (601) 936-4440.

Sincerely,



Charles V. Coney, P.G.
Senior Scientist

cc: Timothy Hassett – Hercules Inc. w/ enclosure
C. S. Jordan – Hercules, Hattiesburg w/ enclosure



STATE OF MISSISSIPPI
HALEY BARBOUR
GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

MEMORANDUM

TO: Hercules, Inc – To File

FROM: William McKercher *WM*

DATE: February 10, 2006

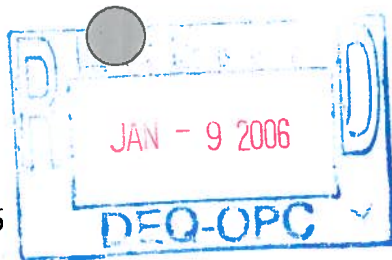
RE: Site Visit – February 1, 2006

On February 1, 2006, I went to the Hercules, Inc. facility to observe the third quarterly groundwater-sampling event. I arrived at 11:15 am, and met with Chris Terrell of Eco-Systems, Inc. who was leading the groundwater sampling activities. The 19th was the first of three days that Eco-Systems was planning on spending on site for the sampling activities. However, due to scheduling conflicts, the 19th was the only day I could be on site.

When I arrived, Terrell and his assistant were taking water levels from the wells in the "back 40". Once they completed collecting groundwater levels from those five wells, we moved to MW-18 to collect a groundwater sample so I would be able to get splits during the event. Sampling was performed with a peristaltic pump via low flow sampling techniques. Parameters were collected for temperature, pH, specific conductivity, and turbidity. Once the parameters stabilized according to low flow specifications, samples were collected at 12:50. The purge water from MW-18 had a slight odor, but no observed sheen. After the sample containers were filled, we moved to MW-19. There were no obvious odors in the purge water and no observed sheen. Samples were collected at 14:00.

I collected splits for MDEQ analysis from monitoring wells MW-18 and MW-19 for VOC EPA Method 8260 analysis.

Following the sampling of MW-18 and MW-19, Eco-Systems continued collecting water level measurements from the remaining wells and piezometers on site.



Eco-Systems, Inc.
Consultants, Engineers, and Scientists



January 9, 2006

Mr. William McKercher
Environmental Engineer
Office of Pollution Control
Mississippi Department of Environmental Quality (MDEQ)
P.O. Box 10385
Jackson, Mississippi 39289-0385

**Re: August 2005 Analytical Data
Hercules Incorporated
Hattiesburg, Mississippi
ESI Project No. HER25080**

Dear Mr. Mckercher:

Enclosed are two copies of the laboratory data for the August 2005 sampling event at the Hercules, Incorporated facility in Hattiesburg, Mississippi. I regret that the wrong data were inadvertently submitted with the report for the August 2005 sampling event, and I apologize for any inconvenience.

If you have any questions or require additional information, please do not hesitate to call Mr. Timothy Hassett at (302) 995-3456 or Charles Coney (Eco-Systems) at (601) 936-4440.

Sincerely,
Eco-Systems, Inc.

Charles V. Coney, P.G.
Senior Scientist

cc: Timothy Hassett – Hercules Inc. w/ enclosure
C. S. Jordan – Hercules, Hattiesburg w/ enclosure

Eco-Systems, Inc.

Consultants, Engineers, and Scientists



December 13, 2005

Mr. William McKercher
Environmental Engineer
Office of Pollution Control
Mississippi Department of Environmental Quality (MDEQ)
P.O. Box 10385
Jackson, Mississippi 39289-0385



**Re: Report of Well Installation and
November 2005 Quarterly Sampling Results
Hercules Incorporated
Hattiesburg, Mississippi
ESI Project No. HER25080**

FILE COPY

Dear Mr. Mckercher:

Eco-Systems, Inc. (Eco-Systems) is pleased to submit the enclosed Quarterly Monitoring Report for the November 2005 monitoring event prepared on behalf of Hercules, Incorporated. The Quarterly Monitoring Report discusses groundwater and surface water sampling and analytical results conducted in accordance with the Corrective Action Plan. The next quarterly monitoring event will be conducted in February 2006.

If you have any questions or require additional information, please do not hesitate to call Mr. Timothy Hassett at (302) 995-3456 or Charles Coney (Eco-Systems) at (601) 936-4440.

Sincerely,

Charles V. Coney, P.G.
Senior Scientist

cc: Timothy Hassett – Hercules Inc. w/ enclosure
C. S. Jordan – Hercules, Hattiesburg w/ enclosure



Willie
McKercher/HW/OPC/DEQ
12/08/2005 12:49 PM

To THassett1@Herc.com@INETDEQ
cc CJordan@Herc.com
bcc
Subject Re: Hattiesburg Update

MDEQ received the report on Dec. 6.

Willie McKercher
Mississippi Department of Environmental Quality
Phone: (601) 961-5731
Fax: (601) 961-5300
Willie_McKercher@deq.state.ms.us

THassett1@Herc.com



THassett1@Herc.com
12/06/2005 03:16 PM

To Willie_McKercher@deq.state.ms.us
cc
Subject Re: Hattiesburg Update

Wille,

Just wanted to confirm you received the first quarterly report....please call if you have any questions. TDH

THassett1@Herc.com
charles.coney@eco-systemsinc.com, CJordan@Herc.com, WLanghans@Herc.com
Update
Willie_McKercher@deq.state.ms.us
11/28/2005 06:00 PM
To:
cc:
Subject: Re: Hattiesburg

Tim,
I still do not have the August 2005 Groundwater Sampling Event report. There are only two days remaining in November, and your email below stated we would have the report by the end of October. Why has the August 2005 report not been submitted to MDEQ and when do you plan on submitting it for our review?

The report was due September 20, 2005, and due to further issues, MDEQ has

still not received it. The results from the November sampling event are due to MDEQ by December 19, 2005, 45 days from the end of the field activities as MDEQ and Hercules agreed upon for all groundwater sampling reports. Let's try to correct whatever hang-ups there are so we do not continually have this problem.

Willie McKercher
Mississippi Department of Environmental Quality
Phone: (601) 961-5731
Fax: (601) 961-5300
Willie_McKercher@deq.state.ms.us

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|                                     AM
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|           To:       Willie_McKercher@deq.state.ms.us
|
|           cc:       charles.coney@eco-systemsinc.com, CJordan@Herc.com,
|           WLanghans@Herc.com
|           Subject:  Re: Hatttiesburg Update
|
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Willie,

Yes ..we now have the last set of results from Bonner and should be getting an internal draft this week and can get a final to you about a week later. I asked Charles Coney about the Q4 sampling and he inofrmed me that he would like to do it the first week of November and would check with you....so that confirms it and for the first week of November. Will you be observing ? splitting ? - TDH

Tim Hassett
SHERA
Hercules Incorporated
Hercules Research Center
500 Hercules Road
Wilmington, Delaware 19808-1599
thassett1@herc.com
(302) 995-3456 phone
(302) 379-0512 cell
(302) 995-3485 fax

Willie_McKercher@deq.

THassett1@Herc.com

state.ms.us

To:

charles.coney@eco-systemsinc.com, CJordan@Herc.com, WLanghans@Herc.com

cc:

Hattiesburg Update

10/14/2005 05:26 PM

Subject: Re:

Tim,
What is the status of the groundwater sampling report from the August event? Sampling was completed the first week of August, and we still have not gotten it in yet. I spoke with Charles of Eco-Systems early in October and he told me there was a holdup with Bonner Analytical providing the sample results from their samples. Has that been resolved? I was hoping to see the report prior to the next round of sampling which would fall on the first week of November, two weeks away. Please update me with the status if known. Thank you.

Willie McKercher
Mississippi Department of Environmental Quality
Phone: (601) 961-5731
Fax: (601) 961-5300
Willie_McKercher@deq.state.ms.us

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	THassett1@Herc.co
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	04/11/2005 10:22
	AM
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| |
| | To: Willie_McKercher@deq.state.ms.us
| |
| | cc: CJordan@Herc.com, WLanghans@Herc.com,
| | charles.coney@eco-systemsinc.com
| | Subject: Re: Hattiesburg Update
| |
| |>
----->

I just reviewed a draft letter from EcoSystems which updates you and provides the details of the pilot source recovery and pump test. - TDH

Charles Coney - Can you get this out to Willie promptly ?

Tim Hassett
SHERA
Hercules Incorporated
Hercules Research Center
500 Hercules Road
Wilmington, Delaware 19808-1599
thassett1@herc.com
(302) 995-3456 phone
(302) 379-0512 cell
(302) 995-3485 fax

Willie_McKercher@deq.

THassett1@Herc.com

state.ms.us

To:

CJordan@Herc.com, wlanghans@Herc.com

cc:

Hattiesburg Update

04/11/2005 11:20 AM

Subject: Re:

Tim,
MDEQ has not received an update in regards to the CAP execution in some time. The CAP was approved January 25, 2005, and Hercules needs to be moving forward with those activities. I understand that by this point Hercules should have a contractor selected and that a plan for the pumping of MW-8 has probably been worked out. I would like to know when Hercules intends to be in the field carrying out the Corrective Action Plan measures.

Willie McKercher
Mississippi Department of Environmental Quality
Phone: (601) 961-5731
Fax: (601) 961-5300
Willie_McKercher@deq.state.ms.us

THassett1@Herc.com
m
03/10/2005 12:21
PM

To: Willie_McKercher@deq.state.ms.us
cc: CJordan@Herc.com
Subject: Hatttiesburg Update

Willie,

Bids are due tomorrow and we should select the contractor in about a week. As always we will notify you 10 days prior to sampling and also understand how many splits are needed so that we can get the bottles ordered. Some of the labs are indicating they may not be able to get to all the MDL's we put in the CAP but will do the best they can. Are you OK with this? - TDH

FYI - We are also going to try to pump MW-8 and see what happens.

Tim Hassett
SHERA
Hercules Incorporated
Hercules Research Center
500 Hercules Road
Wilmington, Delaware 19808-1599
thassett1@herc.com
(302) 995-3456 phone
(302) 379-0512 cell
(302) 995-3485 fax



Eco-Systems, Inc.
Consultants, Engineers, and Scientists



December 5, 2005

Mr. William McKercher
Environmental Engineer
Office of Pollution Control
Mississippi Department of Environmental Quality (MDEQ)
P.O. Box 10385
Jackson, Mississippi 39289-0385

**Re: Report of Well Installation and
August 2005 Quarterly Sampling Results
Hercules Incorporated
Hattiesburg, Mississippi
ESI Project No. HER25080**

FILE COPY

Dear Mr. Mckercher:

Eco-Systems, Inc. (Eco-Systems) is pleased to submit the enclosed Quarterly Groundwater Monitoring Report for the August 2005 monitoring event prepared on behalf of Hercules, Incorporated. The Quarterly Groundwater Monitoring Report also discusses well installation activities conducted in accordance with the Remedial Action Plan.

If you have any questions or require additional information, please do not hesitate to call Mr. Timothy Hassett at (302) 995-3456 or Charles Coney (Eco-Systems) at (601) 936-4440.

Sincerely,

Charles V. Coney, P.G.
Senior Scientist

cc: Timothy Hassett – Hercules Inc. w/ enclosure
C. S. Jordan – Hercules, Hattiesburg w/ enclosure



STATE OF MISSISSIPPI
HALEY BARBOUR
GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

MEMORANDUM

TO: Hercules, Inc. – To File

FROM: William McKercher *WJM*

DATE: September 23, 2005

RE: Site Visit – September 21, 2005

On September 21, 2005, I made a site inspection of the Hercules facility in Hattiesburg, MS. The purpose of the visit was to briefly inspect the facility to survey any damage to the facility or operations caused by Hurricane Katrina.

Upon arrival, I contacted Charlie Jordan, of Hercules, Inc., to guide me around the facility. At the time of the hurricane, the operation was closed down, so there were no active processes in operation. There are no trees within the fenced in area of the property (not including the “back forty”), so no blown down trees caused any damage within the facility property. The most notable damage was sheet metal from the storage facility roofs being blown loose. Sometimes the sheets only blew back and folded over, and in other cases the sheet metal blew completely free of the buildings. In those cases, it was fine because the buildings are slated to be taken down and demolished by the end of the year. In the “back forty”, there are trees on either side of Green’s Creek and the areas surrounding the sludge pits. In those stands of trees, there was significant tree damage, but nothing that stands as an environmental concern in regards to the active processes at the facility or that could possibly result in a release of contaminants to the environment.



Willie
McKercher/HW/OPC/DEQ
09/09/2005 10:38 AM

To Gloria Tatum/FS/OPC/DEQ
cc Jerry Banks/HW/OPC/DEQ@DEQ, Michael
Slack/HW/OPC/DEQ@DEQ
bcc
Subject Re: Hercules Update

Gloria,
I'll be in Atlanta Monday through Thursday of next week, but as soon as I return I will make a trip to Hattiesburg to look at the facility.

Willie McKercher
Mississippi Department of Environmental Quality
Phone: (601) 961-5731
Fax: (601) 961-5300
Willie_McKercher@deq.state.ms.us

Gloria Tatum/FS/OPC/DEQ

Gloria Tatum/FS/OPC/DEQ
09/08/2005 05:16 PM

To Willie McKercher/HW/OPC/DEQ@DEQ
cc Jerry Banks/HW/OPC/DEQ@DEQ, Michael
Slack/HW/OPC/DEQ@DEQ
Subject Re: Hercules Update

Thanks for the report. Good Job!

If possible, would you please make a note or memo to the files for documentation and future review in the event we get calls from individuals with concerns of how and if we performed an inspection or investigation at the site. At some point and time let's try to make a physical visit to the facility. Additionally, this will ensure we were checking during these trying times of devastation and destruction.

Willie McKercher/HW/OPC/DEQ



Willie
McKercher/HW/OPC/DEQ
09/08/2005 03:04 PM

To Jerry Banks/HW/OPC/DEQ@DEQ
cc Michael Slack/HW/OPC/DEQ@DEQ, Gloria
Tatum/FS/OPC/DEQ@DEQ
Subject Hercules Update

Jerry,
I managed to get ahold of the folks down at Hercules. They stated that they suffered very minimal damage. I think we have discussed this before, but Hercules has been in the process of taking down many of the old warehouse areas that are no longer in use on the property. The few that are remaining are in the center of the property near the old Delnav production area. Those few remaining buildings did have some of the tin roofing come loose, but there was no damage to any of the buildings near there active production areas on the Providence Street side of the property. They also reported a few trees had blow down, but they also were not located near any process areas and did not cause any damage to any

structures on site. They got power back Friday morning and were back in production Friday afternoon. Let me know if there is anything else you'd like for me to find out for you.

Willie McKercher
Mississippi Department of Environmental Quality
Phone: (601) 961-5731
Fax: (601) 961-5300
Willie_McKercher@deq.state.ms.us



STATE OF MISSISSIPPI
HALEY BARBOUR
GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

MEMORANDUM

TO: Hercules, Inc – To File

FROM: William McKercher *WJM*

DATE: August 12, 2005

RE: Site Visit – August 3, 2005

On August 3, 2005, at 9:50 am, I arrived at the Hercules, Inc. to meet with Chris Terrell and David Head of Eco-Systems, Inc. who were conducting the groundwater sampling activities.

By the time of my arrival, Head and Terrell had completed the groundwater sampling of monitoring wells MW-4 and MW-11. Head was completing the sampling of monitoring well MW-10, and Terrell was completing MW- 2. Once sampling was completed, Terrell moved to MW-5 and Head moved to MW-3. Sampling was performed with a peristaltic pump via low flow sampling technique. Parameters were collected for temperature, pH, specific conductivity, and turbidity. Once the parameters stabilized according to low flow specifications, samples were collected.

While I was present, Head and Terrell completed sampling for monitoring wells MW-2, MW-3, MW-5, MW-6, MW-7, MW-9, MW-12, MW-18, and MW-19.

I collected splits for MDEQ analysis from monitoring wells MW-12 and MW-19.

On August 2, 2005, Head and Terrell took water levels measurements from each monitoring well, piezometer, and stream staff gauge. They also collected the surface water samples from Green's Creek.



STATE OF MISSISSIPPI
HALEY BARBOUR
GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

MEMORANDUM

TO: Hercules, Inc – To File

FROM: William McKercher *WM*

DATE: May 2, 2005

RE: Site Visit – April 19, 2005

On April 19, 2005, I traveled to the Hercules, Inc. facility in Hattiesburg, MS to meet with Charles Coney of Eco-Systems, Inc. who was present on site for the purpose of installing seven additional wells and two piezometers on-site. He was present along with a drilling crew from Singley of Columbia, MS, and Charlie Jordan, representative of Hercules, Inc. The Singley crew was utilizing a hollow stem rig with 4-inch augers to drill and set the monitoring wells on site. Before my arrival, they had drilled and set one well casing, put in the sand pack, and placed in the hydrated bentonite pellets. I arrived on site as they began their second well. The augers were advanced to approximately 24 feet in depth. During advancement, the operators advanced a two-foot long split spoon sampler ahead of the augers to determine the geologic stratigraphy of the borehole. The soils were fairly consistent throughout the borehole, comprised mainly of a dark, rich organic topsoil washed from the stumps brought on site during processing and ground up stump material. At 20 feet clean coarse sand was encountered and the clay formation was tagged between 22-24 feet. The well casing was set to 24 feet with a sand pack set to 2 feet above the well screen. A hydrated bentonite seal was placed over the sand pack. Grout and surface pads would be completed the following day. As the Singley crew mobilized to the third location, Coney and I crossed the site to mark the locations for well placement of the two wells along Providence Street. Before my arrival, Coney had flagged the approximate locations of the wells and had Jordan check the locations for underground utilities. Jordan checked the areas and said they were all clear. I reviewed the locations and agreed with their placement. Afterwards we returned to the landfill area to watch the completion of the third well installation.



April 13, 2005

Mr. William McKercher
Environmental Engineer
Office of Pollution Control
Mississippi Department of Environmental Quality (MDEQ)
P.O. Box 10385
Jackson, Mississippi 39289-0385



**Re: Pumping Test and Pilot Recovery Plan
Hercules Incorporated
Hattiesburg, Mississippi
ESI Project No. HER25080**

Dear Mr. Mckercher:

Eco-Systems, Inc. (Eco-Systems) is pleased to submit this plan to conduct a pumping test and a plan to install and operate a pilot groundwater source recovery at the Hercules, Incorporated facility in Hattiesburg, Mississippi. Both the pumping test and the pilot recovery system are being implemented by Hercules to address concentrations of volatile organic compounds (VOCs) detected during site investigations in monitoring well MW-8 and other nearby locations. The approved Corrective Action Plan (CAP) specifies monitored natural attenuation to address groundwater issues at the site. Hercules is voluntarily conducting the pumping test and pilot groundwater recovery program to evaluate the potential benefits of a more active remedial alternative. Discussion of groundwater quality at the Hattiesburg facility has been included in the following reports, which were submitted to the Mississippi Department of Environmental Quality (MDEQ).

- Interim Groundwater Monitoring Report (Eco-Systems, January 2003),
- Hercules Site Investigation Report (Eco-Systems, April 2003), and
- Supplemental Site Investigation Report (Eco-Systems, November 2004)

Since the highest concentrations VOCs detected in groundwater at the site have come from samples collected from monitoring well MW-8, monitoring well MW-8 will be used to conduct both the pumping test and the pilot groundwater source recovery.

Pumping Test

The purpose of the pump test will be to determine the aquifer characteristics in the vicinity of Monitoring Well MW-8, and the steady-state flow rate for the monitoring well.

Monitoring Well MW-8 will be utilized as the pumping well. Existing piezometer, TP-10, which is located adjacent to Monitoring Well MW-8, will be utilized as an

observation well. Two additional piezometers will also be installed to serve as observation wells at distances of approximately 50 feet and 75 feet from MW-8. The piezometers will be advanced to a total depth of approximately 18 feet below ground surface (bgs) and screened across the water table. Piezometer construction will consist of 2-inch, inside diameter, PVC, casing and screen. The piezometers will be completed at the surface with 4-inch by 4-inch, steel, stick-up type, protective casings.

Prior to initiation of the aquifer test, water levels will be measured within each of the pump/observation wells using a water level indicator. The aquifer test will be conducted using a F & W, Model EKO5S pump. Observation well data will be measured using pressure transducers installed in each of the three observation wells and recorded using a Hermit 3000 Data Logger. Initially, step-down procedures will be conducted at approximately 15-minute intervals to determine the response of the aquifer. Once the maximum flow rate has been determined, the well will be pumped for a period of approximately 8-hours and the resulting changes in water levels will be recorded. Distance-time-drawdown and well performance data will be analyzed using Waterloo Hydrogeologic, Aquifer Test, Version 2.5.

Extracted liquids will be transferred directly into a tank staged near the well. The tank will be subsequently used as a recovery tank during the pilot source recovery project. Upon completion of the test, a sample will be collected from the tank and submitted to the analytical laboratory for analysis. If the contents of the tank are deemed RCRA Hazardous wastes they will be sent off-site for disposal to a permitted TSDF. If the contents are not RCRA hazardous waste they will be discharged to the plants industrial waste water collection system.

Eco-Systems will process the aquifer test data and prepare a brief written report. The report will include field procedures and results of the pump test.

Pilot Groundwater Source Recovery

A pilot groundwater source recovery system to extract groundwater from monitoring well MW-8 will be installed and operated. The purpose of the system will be to evaluate the potential to remove subsurface source materials for the VOC constituents that have been detected in groundwater. Installation of the system will be conducted in conjunction with the installation of monitoring wells and observations wells proposed for the site. Although the actual rate of liquid removal will be determined by the pump test, the removal rate is estimated at approximately 1-gallon per minute (1,440 gallons per day).

System Design Overview

The components of the system will be of a predetermined size capable of maintaining maximum recovery of groundwater from monitoring well MW-8. Components of the system will include a F&W (model EKO5S) pump, influent, power, and control line conduit, liquid recovery tank(s), and associated wiring and instrumentation. These components will be installed within an approximately 16-foot long by 10-foot wide,

secondary containment structure, constructed adjacent to Monitoring Well MW-8. Electrical components will be installed within a weatherproof panel adjacent to the tank.

A F&W (model EKO5S) pump with a maximum rating of 7.5 gallons per minute (gpm) will be used. Extracted liquids will be transferred from the well to the recovery tank using 3/8-inch, I.D., PVC piping. Pump control lines and level sensor lines will be routed from the well to the control panel using two, 1-inch, PVC pipes, installed adjacent to the recovery piping. The tank will be of closed-top design with drain and sample ports installed at or near the base of the tank. Level sensors will be installed to prevent overfilling of the tank. A PVC connector will be attached to the top of the Monitoring Well MW-8 to allow for the electrical, control, recovery lines, and a sample collection port.

The system will be fully instrumental and provided with automatic shutdown devices so that it may run with minimum attendance. Alarm switches, which automatically shutdown the unit should unstable conditions occur, will be located at critical points throughout the system. These include high level switches and alarms, which activate when the flow of water into the recovery tank is increased beyond the recommended system operating capacity. A level sensor will be installed within Monitoring Well MW-8 to prevent damage to the pump should water within the well fall below acceptable levels. Instantaneous and total flow meters will be installed in the recovery line.

The unit will be equipped with a telecommunication alarm system to provide immediate notification in the event of system shutdown. The alarm system will be programmed to dial multiple telephone numbers on an assigned time interval until the message is acknowledged to the telemetry system as received. The telemetry system provides diagnostics including information on the causes of shutdown (i.e. activated alarms). Prompt notification of a system shutdown will enable Eco-Systems personnel to mobilize to the site, perform maintenance, and restart the system. The major system parameters including instantaneous flow and total flow can also be monitored by remote computer or telephone.

Electrical equipment will meet, or exceed, local, state, and federal codes pertaining to design and installation requirements. The internal system electrical equipment will meet, or exceed, Class I, Division 2 NEC standards for explosion-proof equipment.

Operation and Maintenance

Full-scale operations will include operation and maintenance (O&M) of the system and continuing optimization of the system. A weekly visit will be made to maintain each of the system components, monitor effectiveness of the system, and maintain the operating efficiency of the system. System components will be regularly inspected and serviced, repaired, or replaced, as required. Eco-Systems will schedule service of the system immediately upon receiving notification of a system shutdown. Scheduled visits will also include collection of samples of the extracted liquids for laboratory analysis prior to disposal.

The pilot groundwater source recovery system will begin operation after completion of the pumping test and analysis. Based on analytical results and aquifer response, the system may be restarted to evaluate the potential advantage of operating the system.

System Breakdown, Decontamination, and Demobilization

Subsequent to completion of the pilot source recovery, the recovery system will be dismantled for decontamination and demobilization. Electrical service will be properly disconnected from the system and components de-energized. Electrical and control connections will be disconnected. Piping and secondary containment components will be dismantled and transported offsite for disposal. The tank will be decontaminated prior to removal. Monitoring Well MW-8 will be restored to its original condition for future monitoring.

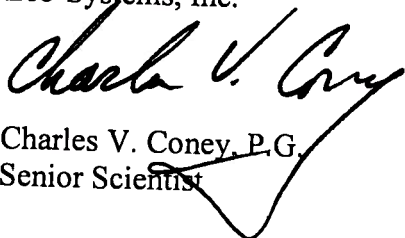
Schedule

Observation and monitoring well installation is scheduled to take place this month. The exact start date has not yet been determined. Assuming no difficulties in obtaining system components, the pumping test/pilot recovery system will be installed concurrently with the well installation. The pumping test will take place within approximately one week after system installation. After allowing one week to review the pumping test results, the pilot groundwater recovery system will begin operation. Quarterly groundwater monitoring according to the approved Corrective Action Plan (CAP) will commence in the first month of the first calendar quarter following shutdown of the pilot groundwater recovery system.

Closing

Eco-Systems will notify the MDEQ of exact mobilization dates for well installation, pump/recovery system installation, and the pumping test, as soon as they are determined. If you have any questions or would like additional information please contact Mr. Timothy Hassett (Hercules) at (302) 995-3456 or Charles Coney (Eco-Systems) at (601) 936-4440.

Sincerely,
Eco-Systems, Inc.



Charles V. Coney, P.G.
Senior Scientist

cc: Timothy Hassett – Hercules, Incorporated
Charles Jordan – Hercules, Incorporated



Willie McKercher
03/11/2005 12:37 PM

To: THassett1@Herc.com@INETDEQ
cc:
Subject: Re: Hattiesburg Update

Tim,

My calender is pretty much booked up until April 1st, so as far as field work goes, anything after that date should be ok. We've run into the lab/ MDL issue before, so they'll just need to get as close as they can as possible. What would be helpful in the report would be to have a comparision table between the lab's limits and the TRGs, notating those that could not reach the TRGs. Plan for groundwater splits from three wells by MDEQ for all parameters to be sampled.

Also, for the pumping of MW-8, can you please submit some sort of letter plan of how Hercules, Inc. intends to perform those activities; equipment, methods, handling of groundwater removed, etc. Please call if you have any questions. I will be checking messages while I am out, so I will return your call.

Willie McKercher
Mississippi Department of Environmental Quality
Phone: (601) 961-5731
Fax: (601) 961-5300
Willie_McKercher@deq.state.ms.us
THassett1@Herc.com



THassett1@Herc.com
03/10/2005 12:21 PM

To: Willie_McKercher@deq.state.ms.us
cc: CJordan@Herc.com
Subject: Hattiesburg Update

Willie,

Bids are due tomorrow and we should select the contractor in about a week. As always we will notify you 10 days prior to sampling and also understand how may splits are need so that we can get the bottles ordered. Some of the labs are indicating they may not be able to get to all the MDL's we put in the CAP but will do the best they can. Are you OK with this ? - TDH

FYI - We are also going to try to pump MW-8 and see what happens.

Tim Hassett
SHERA
Hercules Incorporated
Hercules Research Center
500 Hercules Road
Wilmington, Delaware 19808-1599
thassett1@herc.com
(302) 995-3456 phone
(302) 379-0512 cell
(302) 995-3485 fax



STATE OF MISSISSIPPI

HALEY BARBOUR

GOVERNOR

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

January 25, 2005

Tim Hassett
Hercules Incorporated
Hercules Research Center
500 Hercules Road
Wilmington, DE 19808-1599

FILE COPY

Re: Corrective Action Plan Revision 01 dated January 20, 2005
Hercules Inc. Hattiesburg facility
Hattiesburg, Forrest Co., Mississippi

Dear Mr. Hassett:

The Mississippi Department of Environmental Quality (MDEQ) has completed its review of the above referenced document and finds that Hercules, Inc. has revised the Corrective Action Plan to address the comments from the MDEQ comment letter dated December 13, 2004. MDEQ approves the Corrective Action Plan Revision 01 contingent upon the following:

1. MDEQ must be notified within 10 working days prior to any field activities.
2. A sufficient number of properly sized and properly preserved sample containers must be available for MDEQ personnel to split samples, if necessary.

If you have any questions or comments, please contact me at (601) 961-5731.

Sincerely,

William McKercher
Project Manager
Groundwater Assessment and
Remediation Division

cc: Phil Bass – MDEQ
Gloria Tatum – MDEQ
Michael T. Slack, P.E. – MDEQ
Walter Langhans – Hercules, Inc.
Charlie Jordan – Hercules, Inc.
Jeffery S. Duncan, P.G. – Groundwater & Environmental Services, Inc.

K:\Common\Brownfields\Wmckercher\Hercules\RE CAP Revision approval.doc

OFFICE OF POLLUTION CONTROL

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**Groundwater
& Environmental Services, Inc.**



5961 Live Oak Parkway, NW, Suite B • Norcross, Georgia 30093 • (866) 435-4424 • FAX (770) 441-9499

20 January 2005

Mr. William McKercher
Environmental Engineer
Office of Pollution Control
Mississippi Department of Environmental Quality (MDEQ)
P.O. Box 10385
Jackson, Mississippi 39289-0385

Re: Corrective Action Plan Revision 01
Hercules Incorporated
Hattiesburg, Mississippi

Dear Mr. McKercher:

On behalf of Hercules Incorporated (Hercules), Groundwater & Environmental Services, Inc. (GES) submits the enclosed Corrective Action Plan (CAP) Revision 01 for the above referenced facility. The CAP dated 5 November 2004 has been revised based on the 13 December 2004 letter received from the Mississippi Department of Environmental Quality (MDEQ).

If you have any questions or require additional information, please do not hesitate to call Mr. Timothy Hassett (Hercules) at (302) 995-03456 or Jeff Duncan (GES) at (770) 441-9400.

Sincerely,
Groundwater & Environmental Services, Inc.

Jeffery S. Duncan
Senior Project Manager

Enclosure: Corrective Action Plan Revision 01 (2 copies)

cc: Timothy Hassett – Hercules, Wilmington, DE (w/enclosure)
Charles Jordan – Hercules, Hattiesburg, MS (w/enclosure)



STATE OF MISSISSIPPI

HALEY BARBOUR

GOVERNOR

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

December 13, 2004

Tim Hassett
Hercules Incorporated
Hercules Research Center
500 Hercules Road
Wilmington, DE 19808-1599

FILE COPY

Re: Corrective Action Plan, dated November 2004
Hercules Inc. Hattiesburg facility
Hattiesburg, Forrest Co., Mississippi

Dear Mr. Hassett:

The Mississippi Department of Environmental Quality (MDEQ) has completed its review of the above referenced document and has the following comments:

1. Section 2.0, Conceptual Design, clearly states that Monitored Natural Attenuation (MNA) will be a component of the remedial design for all areas of concern. The Corrective Action Plan (CAP) fails to discuss a component of an MNA program, collection of MNA parameters. When will MNA parameters be sampled, and how often will those parameters be evaluated to determine that the natural environment is still suitable for natural attenuation?
2. As per the MDEQ Corrective Action Plan format, Section 2.0 fails to discuss how each of the design elements will eliminate or reduce risk to human health and the environment.
3. Section 3.0, System Components, states "All work will be completed in accordance with the Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (EISOPQAM) dated November 2001." However, the CAP fails to mention detailed groundwater and surface water sampling techniques.
4. Section 4.1, Deed Restrictions, states that the deed restrictions will be initiated within 30-days following MDEQ approval of the CAP. MDEQ requests that Hercules initiate the deed restrictions, within 30 days, after the first round of groundwater sampling results are submitted to MDEQ. This will help insure that the locations of the monitoring wells provide adequate coverage of the site.

OFFICE OF POLLUTION CONTROL

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5. Section 4.2, Groundwater and Surface Water Monitoring, should be modified to include a statement that a quarterly sampling report will be submitted within 45 days after the conclusion of each field sampling event.
6. Section 8.0, Compliance Monitoring Plan, should specifically define "trigger". A "trigger", in this sense, is normally considered three (3) consecutive sampling events in which wells are consistently above the MDEQ TRG concentrations.
7. Section 8.0, Compliance Monitoring Plan, states that downgradient monitoring wells, MW-4, MW-5, MW-10, MW-11, MW-12, MW-14 and MW-15, will be utilized for compliance monitoring. The analytical data generated from these wells would be evaluated to determine groundwater quality emanating from the landfill and groundwater area to Green's Creek. The purpose for the compliance monitoring plan is to determine that the groundwater contamination is neither expanding or migrating from the restricted use areas. For that reason, monitoring wells MW-6, MW-7, MW-9, MW-13, and MW-16 should also be included in the evaluations of those two areas.
8. Section 9.0, Contingency Plan, uses the phrase "sustained significant increase" in several places. It is necessary to define a "sustained significant increase" so that it will establish a quantitative measure by which Hercules and MDEQ can use in the decision making process.
9. Section 9.2, Landfill, states "Groundwater quality in the landfill area does not exhibit constituents above the TRGs and does not pose a potential groundwater exposure risk that would require a contingency plan." Site investigations to date do indicate that there are concentrations of constituents above TRGs in and near the landfill. The Remedial Action Evaluation Section 3 identifies this, and as such developed a horizontal containment plan in the event such measures become necessary. The horizontal containment plan should be discussed as the landfill's contingency plan.
10. Section 10.0, Quality Assurance Project Plan, states blind field duplicate samples will be collected at the rate of 1 per 20 samples. The EPA Region IV EISOPQAM, dated November 2001, calls for duplicate samples to be taken at a rate of 10%, or 1 per 10 samples collected.
11. Section 11.0, Health and Safety Plan - A copy of the Health and Safety Plan must be submitted as part of the Corrective Action Plan.
12. Figure 2 – Why is the proposed location of monitoring well MW-16 installed in the landfill? If MW-16 is to be installed as depicted on Figure 2, then how does Hercules intend to address the groundwater sampling results from temporary well GP-15? In the current arrangement, the GP-15 location would lie outside of the groundwater monitoring network.

Mr. Tim Hassett
Hercules, Inc.
December 13, 2004
Page 3

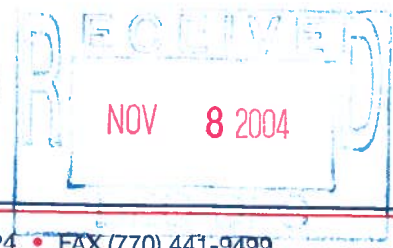
MDEQ requests that Hercules, Inc. submit a Revised Corrective Action Plan by January 7, 2004. If you have any questions or comments, please contact me at (601) 961-5731.

Sincerely,



William Mckercher
Project Manager
Groundwater Assessment and
Remediation Division

cc: Phil Bass – MDEQ
Gloria Tatum – MDEQ
Michael T. Slack, P.E. – MDEQ
Walter Langhans – Hercules, Inc.
Charlie Jordan – Hercules, Inc.
Jeffery S. Duncan, P.G. – Groundwater & Environmental Services, Inc.



5 November 2004

Mr. William McKercher
Environmental Engineer
Office of Pollution Control
Mississippi Department of Environmental Quality (MDEQ)
P.O. Box 10385
Jackson, Mississippi 39289-0385

Re: Corrective Action Plan
Hercules Incorporated
Hattiesburg, Mississippi

Dear Mr. McKercher:

On behalf of Hercules Incorporated (Hercules), Groundwater & Environmental Services, Inc. (GES) submits the enclosed Corrective Action Plan (CAP) for the above referenced facility. The CAP is submitted in response to the MDEQ request in a letter dated 12 August 2004.

GES has estimated a life-cycle cost estimate for *in-site* chemical oxidation of constituents in the Groundwater area. The revised cost is \$669,000. This estimate has been used in the Contingency Plan section and is the amount in which Hercules is prepared to purchase financial assurance.

If you have any questions or require additional information, please do not hesitate to call Mr. Timothy Hassett (Hercules) at (302) 995-03456 or Jeff Duncan (GES) at (770) 441-9400.

Sincerely,
Groundwater & Environmental Services, Inc.

Jeffery S. Duncan
Senior Project Manager

Enclosure: Corrective Action Plan (2 copies)

Cc: Timothy Hassett – Hercules, Wilmington, DE (w/enclosure)
Charles Jordan – Hercules, Hattiesburg, MS (w/enclosure)



28 September 2004

Mr. Jerry Banks
PO Box 10385
Mississippi Department of Environmental Quality
Jackson, Mississippi 39289-0385

Subject: EPD Response to Comments on Supplemental Site Investigation Report and Remedial Action Evaluation
Hercules Incorporated Hattiesburg Facility
Hattiesburg, Mississippi

Dear Mr. Banks:

Groundwater & Environmental Services, Inc. (GES), on behalf of our client, Hercules Incorporated (Hercules), presents this response to the Mississippi Department of Environmental Quality (MDEQ) comment letter dated 12 August 2004. The MDEQ letter was in reference to the Hercules Supplemental Site Investigation Report dated November 2003 and Remedial Action Evaluation dated July 2004. These documents were prepared by Eco-Systems, Inc. of Jackson, Mississippi on behalf of Hercules.

The MDEQ comments provided in the referenced letter dated 12 August 2004 are presented below in italics and the response for each comment prepared by GES for Hercules follow each comment.

Comment (1) There appears to be a discrepancy regarding the results of groundwater samples GP-2 and GP-4 from Bonner Analytical. In the field, the organic headspace analysis of GP-2 never exceeded 3.5 ppm and had no significant color. However, the organic headspace analysis for GP-4 reached levels of 1817 ppm (highest recorded concentration at the facility) with a very strong odor consistent to the water table and below. In this case, field records and observation strongly supports the possibility that the groundwater samples for GP-2 and Gp-4 were accidentally switched during the analysis. This possibility should be investigated and taken into account while preparing the Corrective Action Plan.

Response: Agreed. The discrepancy between the groundwater results between GP-2 and GP-4 will be considered while preparing the Corrective Action Plan (CAP). The proposed new wells in this area will provide further clarification on this issue.

Comment (2) The Supplemental Site Investigation Report fails to discuss the difference in groundwater sample results from GP-7 and its blind duplicate BD-1. The results of GP-7 indicated a detection of benzene at 89.6 ppb and BD-1 with a detection of benzene at 26.13 ppb, a difference of more than 25%. What does Hercules, Inc. provide as answer for this difference, and how does this relate to other samples collected during this time period?

Response: The difference in the groundwater results from GP-7 and its blind duplicate BD-1 may have been due to the temporary nature of the sampling point. The remaining

data generated during this effort will be effective in determining the locations of permanent monitoring wells. Moving forward, the permanent monitoring wells and planned monitoring activities in the area of GP-7 will clarify any discrepancies.

Comment (3) Page 6 of the Remedial Action Evaluation states, "Due to the age of the site and presence of sludge in the sludge pits for over 20 years, it is reasonable to assume that, any leaching of regulated chemical constituents present in the sludge has either already occurred or is in progress." MDEQ does not agree with this statement. The RCRA division of MDEQ required that Hercules, Inc. discontinue use of the sludge pits, and Hercules, Inc. finally complied with that request and ceased to use them in September 2002. It may be some time before sampling identifies leaching of the chemical constituents present in the sludge, regulated or otherwise.

Response: The intention of the statement on page 6 was that over the past several years the facility has gradually shut down several process operations. Any chemical constituents present in the most recent sludge were also most likely present in sludge from the earlier years of operation. The proposed permanent monitoring well system and monitoring plan will be sufficient in evaluating potential leaching from the sludge pits.

Comment (4) Page 6 of the Remedial Action Evaluation states, "Due to the age of the site and the likelihood that the VOCs detected in groundwater samples at the site have been present for over 20 years, it is reasonable to assume that, if additional constituents are not introduced to the groundwater, groundwater conditions either remain constant or, possibly, improve." What is the basis for saying that VOCs discovered in groundwater are more than 20 years old?

Response: The intention of the statement found on page 19 was that the VOCs detected in the groundwater are likely representative of the VOCs that have been present in the materials at the site for over 20 years. The proposed permanent monitoring well system and monitoring plan will be sufficient to evaluate trends in groundwater conditions at the site.

Comment (5) The Remedial Action Evaluation reports that Hercules, Inc. intends to propose a groundwater-sampling schedule for annual sampling. MDEQ requests that the Corrective Action Plan propose quarterly sampling for a minimum of two years to demonstrate that the plume is not expanding or migration. This also provides the Department with information on how the groundwater is affected by seasonal changes (i.e., heavy rainfall versus dry periods). Once the two-year period has been completed, MDEQ will evaluate a reduction in sampling frequency to either semi-annual or annual sampling.

Response: The CAP will propose quarterly sampling for the period of two years. The second annual sampling report will include a post-two year monitoring frequency proposal.

Comment (6) MDEQ is requiring two (2) additional permanent monitoring wells to be installed on the site, aside from the five (5) already proposed. The purpose for the wells is point-of-compliance to show there is no migration of contaminants from the site for use in deed restriction. The first well should be placed close to the Pinova production area near Providence Street and the second well should be located near peizometer TP-14. MDEQ personnel present at the time of installation must approve the location of all seven (7) monitoring wells to be installed on site. Please be advised that additional sampling locations may be required as the investigation progresses.

Response: The locations of the proposed new monitoring wells will be presented in the CAP.

Comment (7) MDEQ requests that Hercules, Inc. close the "sump" located in the Former Delnav Production Area. The deteriorating concrete and large volume of water stored in the "sump" suggest that it may be hydraulically loading the area, causing the unnecessary expansion and migration of the contaminant plume in that area.

Response: The sump was properly closed by filling with clean backfill on 6 September 2004.

Comment (8) MDEQ requests that Hercules, Inc. submit the appendix 9 listings for their analytical data with all future sampling reports.

Response: The CAP will include a Compliance Monitoring Plan which will provide the Appendix 9 listing for future sampling at the Facility. All future sampling will follow the approved CAP.

Comment (9) MDEQ recommends that Hercules, Inc. utilize some type of active abatement of concentrations of VOCs in groundwater in the vicinity of monitoring well MW-8, which in turn may greatly reduce the time period spent monitoring groundwater.

Response: Understood. Due to the questions raised by MDEQ about the groundwater in the area of MW-8, GP-2 and GP-4, we propose to implement the monitoring plan first prior to evaluating the need for active abatement in the vicinity of MW-8.

Comment (10) On July 31, 2004, a meeting was held with the Mobile-Bouie Community Group that was attended by MDEQ representatives and Walt Langhans, the Hattiesburg Plant Manager. During that meeting, the question was asked if it was possible to enhance the looks of the facility by improving its vast available green spaces. It may benefit Hercules, Inc. to evaluate the possibility of phytoremediation alternatives that may aid Hercules, Inc. in the remediation of contaminants and improve the appearance of the plant to the local community.

Response: We propose to implement the monitoring plan as proposed in order to further evaluate phytoremediation as an alternative remedial action.

Mr. Jerry Banks
28 September 2004
Page 4 of 4



Unless indication is received otherwise from MDEQ, the CAP will be prepared in accordance with the Remedial Action Evaluation dated July 2004 and the response to comments presented herein. We respectfully request a 30-day extension to the requested CAP due date of 8 October 2004 (i.e., on or before 7 November 2004).

We look forward to working with MDEQ on this project and welcome the opportunity to discuss these items with MDEQ. Please contact me if you have any questions.

Sincerely,

GROUNDWATER & ENVIRONMENTAL SERVICES, INC.

A handwritten signature in blue ink, appearing to read "Jeffery S. Duncan", with a long horizontal flourish extending to the right.

Jeffery S. Duncan P.G.
Senior Project Manager

cc: Mr. Tim Hassett – Hercules Incorporated, Wilmington, DE
Mr. Charlie Jordan – Hercules Incorporated, Hattiesburg, MS
Mr. Walt Langhans – Hercules Incorporated, Hattiesburg, MS
Ms. Cathy Warner – GES, Inc., Richmond, VA



July 16, 2004

Mr. William McKercher
Environmental Engineer
Office of Pollution Control
Mississippi Department of Environmental Quality (MDEQ)
P.O. Box 10385
Jackson, Mississippi 39289-0385

**Re: Remedial Action Evaluation
Hercules Incorporated
Hattiesburg, Mississippi
ESI Project No. HER24069**



Dear Mr. Mckercher:

Eco-Systems, Inc. (Eco-Systems) is pleased to submit the enclosed Remedial Action Evaluation (RAE) prepared on behalf of Hercules, Incorporated. The RAE discusses potential remedial alternatives for the sludge pits, the landfill, groundwater, and Green's Creek at the Hercules facility in Hattiesburg, Mississippi. The RAE also includes recommendations for remedial activities at each of the four areas.

If you have any questions or require additional information, please do not hesitate to call Mr. Timothy Hassett at (302) 995-3456 or Charles Coney (Eco-Systems) at (601) 936-4440.

Sincerely,

Charles V. Coney, P.G.
Senior Scientist

cc: Timothy Hassett – Hercules Inc. w/ enclosure
C. S. Jordan – Hercules, Hattiesburg w/ enclosure

Scant evidence found of Hercules contamination

By Keith Watkins
American Staff Writer

Environmental lead both on and off the property of Hercules Inc. chemical plant in Picayune, Miss., shows scant evidence of contamination, a state environmental engineer said Saturday.

White, McKenney, an environmental engineer with the state Department of Environment and Forestry, said the results of the 20th anniversary of the plant's opening at a community meeting that only trace amounts of lead chemicals were found in the soil and water samples the agency has drawn from areas outside the plant's 20-acre site along West

Spanish Street, the most densely populated area of Picayune. The lead levels found on the grounds of the plant's former DuPont petrochemical plant were conducted earlier this year.

The thick layer of clay under the topsoil likely has prevented the contaminants from seeping into the ground, White said. "I'm sure that was a relief," McKenney said.

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Leo Spinks, a resident of the McKee-Bowles neighborhood in Picayune, says he has lived in the area for 20 years. He says he has never seen any signs of contamination in the area.

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EPA cleanup to resume

BY JASON NIBLETT
Item Staff Writer

The Environmental Protection Agency project to clean up the old Picayune Wood Treating facility should continue sometime within the next month.

EPA Remedial Project Manager Humberto Guzman said the project, now listed as a Superfund National Priority List project, could cost up to \$20 million by the time everything is finished. He said the federal government will pick up most of that tab, but the state usually pays about 10 percent in this type of instance. The local government shouldn't have to pay any.

EPA

Continued from page 1A

chromium, copper, lead, cyanide, and benzene.

"We've taken care of the dangerous part," Guzman said. "We don't see any hazard to the public but the property is contaminated."

The EPA has been involved with the contaminated site since 1999. They have taken about 36 samples from Mill Creek between the property and the Pearl River. The EPA also is conducting soil sampling. The cost for the project has a price tag of about \$3 million so far.

There are a lot of people that are near the site daily. Picayune Wood

thing. The EPA usually seeks some reimbursement from the property owners. That may not happen in Picayune.

"The fellow went out of business," Guzman said. "I'm not sure how much we're going to be able to collect from him."

The Picayune Wood Treating facility was one of nine sites from across the nation added to the critical cleanup list. The list identifies abandoned or uncontrolled hazardous waste sites that warrant long term action.

The site at 403 Davis St. takes up about 29 acres. Soil samples so far show the presence of arsenic.

Treating is bordered by a residential, commercial, and industrial area to the north; a commercial and industrial area to the east; an abandoned lumber yard, a public park, residences and a daycare center to the south; and Southside Elementary School and houses to the west. The nearest drinking water wells, operated by the City of Picayune, are within a quarter of a mile of the contamination.

Mill Creek was once used by children and adults for swimming at the adjacent public park. It's now been fenced off partially and access is restricted. The water continues to the Pearl River and people still use it for swimming, fishing, and boating.

It's almost rather mild in comparison to some of the other sites across the state," Guzman said. "I'm not sure how much we're going to be able to collect from him."

The thick layer of clay under the topsoil likely has prevented the contaminants from seeping into the ground, White said. "I'm sure that was a relief," McKenney said.

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STATE OF MISSISSIPPI
HALEY BARBOUR
GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

August 12, 2004

Tim Hassett
Hercules Incorporated
Hercules Research Center
500 Hercules Road
Wilmington, DE 19808-1599

FILE COPY

Re: Supplemental Site Investigation Report dated November 2003
Remedial Action Evaluation dated July 2004
Hercules Inc. Hattiesburg facility
Hattiesburg, Mississippi

Dear Mr. Hassett:

The Mississippi Department of Environmental Quality (MDEQ) has completed its review of the above referenced documents and has the following comments:

1. There appears to be a discrepancy regarding the results of groundwater samples GP-2 and GP-4 from Bonner Analytical. In the field, the organic headspace analysis of GP-2 never exceeded 3.5 ppm and had no significant odor. However, the organic headspace analysis for GP-4 reached levels of 1817 ppm (highest recorded concentration at the facility) with a very strong odor consistent to the water table and below. In this case, field records and observation strongly supports the possibility that the groundwater samples for GP-2 and GP-4 were accidentally switched during the analysis. This possibility should be investigated and taken into account while preparing the Corrective Action Plan.
2. The Supplemental Site Investigation Report fails to discuss the difference in groundwater sample results from GP-7 and its blind duplicate BD-1. The results of GP-7 indicated a detection of benzene at 89.6 ppb and BD-1 with a detection of benzene at 26.13 ppb, a difference of more than 25%. What does Hercules, Inc. provide as answer for this difference, and how does this relate to the other samples collected during this time period?
3. Page 6 of the Remedial Action Evaluation states, "Due to the age of the site and presence of sludge in the sludge pits for over 20 years, it is reasonable to assume that, any leaching of regulated chemical constituents present in the sludge has either already occurred or is in progress." MDEQ does not agree with this statement. The RCRA division of MDEQ required that Hercules, Inc. discontinue use of the sludge pits, and Hercules, Inc. finally complied with that request and ceased to use them in September of 2002. It may be some time before sampling identifies leaching of chemical constituents present in the sludge, regulated or otherwise.

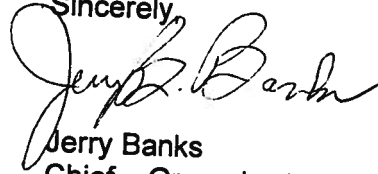
4. Page 6 of the Remedial Action Evaluation states, "Due to the age of the site and the likelihood that the VOCs detected in groundwater samples at the site have been present for over 20 years, it is reasonable to assume that, if additional constituents are not introduced to the groundwater, groundwater conditions either remain constant or, possibly, improve." What is the basis for saying that VOCs discovered in groundwater are more than 20 years old?
5. The Remedial Action Evaluation reports that Hercules, Inc. intends to propose a groundwater-sampling schedule for annual sampling. MDEQ requests that the Corrective Action Plan propose quarterly sampling for a minimum of two years to demonstrate that the plume is not expanding or migrating. This also provides the Department with information on how the groundwater is affected by seasonal changes (i.e., heavy rainfall versus dry periods). Once the two-year period has been completed, MDEQ will evaluate a reduction in sampling frequency to either semi-annual or annual sampling.
6. MDEQ is requiring two (2) additional permanent monitoring wells to be installed on the site, aside from the five (5) already proposed. The purpose for the wells is point-of-compliance to show there is no migration of contaminants from the site for use in deed restriction. The first well should be placed close to the Pinova production area near Providence Street and the second well should be located near peizometer TP-14. MDEQ personnel present at the time of installation must approve the location of all seven (7) monitoring wells to be installed on site. Please be advised that additional sampling locations may be required as the investigation progresses.
7. MDEQ requests that Hercules, Inc. close the "sump" located in the Former Delnav Production Area. The deteriorating concrete and large volume of water stored in the "sump" suggest that it may be hydraulically loading the area, causing the unnecessary expansion and migration of the contaminant plume in that area.
8. MDEQ requests that Hercules, Inc. submit the appendix 9 listings for their analytical data with all future sampling reports.
9. MDEQ recommends that Hercules, Inc. utilize some type of active abatement of concentrations of VOCs in groundwater in the vicinity of monitoring well MW-8, which in turn may greatly reduce the time period spent monitoring groundwater.
10. On July 31, 2004, a meeting was held with the Mobile-Bouie Community Group that was attended by MDEQ representatives and Walt Langhans, the Hattiesburg Plant Manager. During that meeting, the question was asked if it was possible to enhance the looks of the facility by improving its vast available green spaces. It may benefit Hercules, Inc. to evaluate the possibility of phytoremediation alternatives that may aid Hercules, Inc. in the remediation of contaminants and improve the appearance of the plant to the local community.

Mr. Tim Hassett
Hercules, Inc.
August 11, 2004
Page 3

MDEQ requests that Hercules, Inc. submit a Corrective Action Plan by October 8, 2004, in the approved MDEQ format. The Corrective Action Plan should include a Compliance Monitoring Plan and a Contingency Plan. The Contingency Plan should include the discussion of "triggers" which would call for the implementation of the contingency measures, as well as the necessary financial assurance.

If you have any questions or comments, please contact Mr. William McKercher at (601) 961-5731.

Sincerely,



Jerry Banks
Chief – Groundwater Assessment
and Remediation Division

cc: Phil Bass – MDEQ
Gloria Tatum – MDEQ
Michael Slack – MDEQ
Walter Langhans – Hercules, Inc.
Gay Trovei – Hercules, Inc.
Charlie Jordan – Hercules, Inc.
Charles Coney – EcoSystems, Inc

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Local/State

Online edition: www.hattiesburgamerican.com

Scant evidence found of Hercules contamination

By Kevin Walters
American Staff Writer
kwalters@hattiesb.gannett.com

Environmental tests both on and off the property of Hattiesburg's 61-year-old Hercules Inc. chemical plant continue to turn up scant evidence of contamination, a state environmental engineer said Saturday.

Willie McKercher, an environmental engineer with the state Department of Environmental Quality, told about 40 residents of the Mobile-Boulevard Neighborhood Association and city officials at a community meeting that only trace amounts of a few chemicals — out of 400 chemicals the agency tests for — have been detected in the soil and water samples the agency has drawn from areas outside the plant's 200-acre site along West

"It's almost rather mild in some of the other sites across the state."

— Willie McKercher, an environmental engineer with the state Department of Environmental Quality

Seventh Street

Inside the plant, the most elevated concentration of contaminants found so far are in the groundwater at the plant's former Deltan pesticide production area, McKercher said. Testing was conducted earlier this year.

"It's almost rather mild in comparison to some of the other sites across the state," McKercher said.

"The thick layer of clay under the topsoil likely has prevented the contaminants from seeping out of the plant's property over time," he said.

"I'm sure that was a coincidence," McKercher said.

"They just got lucky with the way they placed the plant. It's a layer that's confining the contamination to just shallow groundwater in the very top 20 feet of soil."

Glenn Tatum, environmental justice coordinator for the MDEQ, said the agency brokered the meeting between the association and the company — the first between the two — by trying to "connect the dots" and improve relations between the two parties.

Though Mobile-Boulevard resident Lajana Thomas was pleased the MDEQ and the company addressed residents' public concerns, she remains



On the left, a child lives in a mobile home in the Mobile-Boulevard neighborhood.

worried about the historical effects of pollution before environmental protection laws were enacted.

"Our concern is not so much as to how they're containing the chemical spills or wastes they say is contained just inside the plant now," Thomas said. "We're talking about the '20s up until now, for instance, when you could take a match and throw it in a ditch and the blaze would go straight to the river."

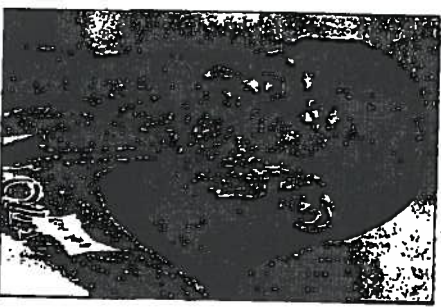
But the agency can only tell people what can be found at the site now, McKercher said. Once a wood-based chemical producer and

Hattiesburg's biggest employer with more than 1,000 employees, the Hercules plant now has fewer than 40 employees and solely provides chemicals to the paper industry. The global company is based in Wilmington, Del., and had \$1.85 billion in sales last year.

The plant was the subject of a series of stories in April in the *Hattiesburg American* detailing the plant's environmental and social history in the city and its possible future.

Plant manager Walt Langhans addressed rumors that the plant might be closing.

"I have no information that would suggest that that's going to happen," he said, pointing out that the South is a key area to the paper industry and the plant's role as a chemical provider is part of the largest division within the company.

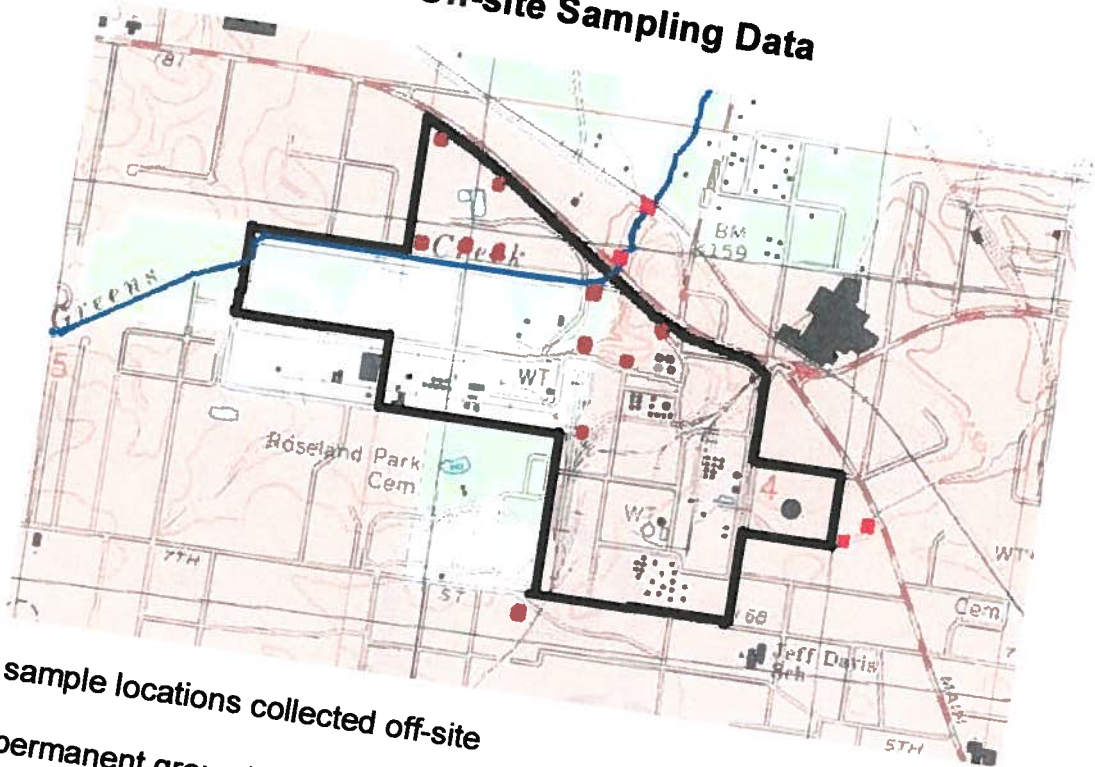


SAVANNAH, Miss.: Hattiesburg American

Leo Spells, a resident of the Mobile-Boulevard neighborhood for 20 years, listens to Walt Langhans of Hercules explain what kind of products Hercules makes at the Mobile-Boulevard Neighborhood Association meeting Saturday at the C.E. Roy Community Center.

**Hercules Inc. Facility
Hattiesburg, MS**

Off-site Sampling Data



- - denotes sample locations collected off-site
- - denotes permanent groundwater monitoring locations

Samples HERC 413-S1 and HERC 413-S2 were collected from Green's Creek across Hwy 42 from the Hercules facility. Samples HERC 413-S3 and HERC 413-S4 were collected down-gradient of the Hercules NPDES Tank.

Compound (PPM)	HERC 413-S1 Soil	HERC 413-S2 Soil	HERC 413-S3 Soil	HERC 413-S4 Soil	MDEQ TRG Soil
Hexachlorobenzene	nd	nd	nd	nd	0.399
Toluene	nd	nd	0.264	0.45	38
4,4-DDD	nd	nd	nd	nd	2.66
4,4-DDE	nd	nd	nd	nd	1.88
Dioxathion	nd	nd	nd	nd	117
Dioxathiene	nd	nd	nd	nd	none

Compound (PPB)	HERC 413-S1 Surface water	HERC 413-S2 Surface water	HERC 413-S3 Surface water	HERC 413-S4 Surface water	MDEQ TRG Surface water
Hexachlorobenzene	nd	nd	not sampled	nd	1
Toluene	nd	nd	not sampled	nd	1000
4,4-DDD	nd	nd	not sampled	nd	0.279
4,4-DDE	nd	nd	not sampled	nd	0.197
Dioxathion	nd	nd	not sampled	nd	54.8
Dioxathiene	nd	nd	not sampled	nd	none

nd - means there were no detection of the chemical in the sample

Two soil samples were also collected from the rear parking lot area of St. Paul's Church.

Compound (PPM)	S-1 Soil	S-2 Soil	MDEQ TRG Soil
Hexachlorobenzene	0.211	0.247	0.399
Toluene	0.127	nd	38
Diethylphthalate	0.977	1.00	1970
4,4-DDD	nd	0.00944	2.66
4,4-DDE	nd	0.0574	1.88
cis-Dioxathion	nd	nd	nd
trans-Dioxathion	nd	nd	nd
Dioxathiene	nd	nd	nd

nd – means there were no detection of the chemical in the sample

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04/21/2004



Dwindling Hercules plant, neighbors look to future

State DEQ is reviewing plans for environmental cleanup, battles simmering over efforts of dam Bowie

Handwritten note:
Please copy for my home
Dorothy Jones
w/enc

HATTIESBURG (AP) — The aging Hercules line plant, a once-thriving part of Hattiesburg now reduced to a 40-person staff, may appear to be going, but it hasn't gone yet. It is a major part of that West Seventh Street neighborhood, if for no other reason than the sheer size of its 200-acre plant.

However, it is only one part of the bigger picture for its West Seventh Street neighborhood and the Bowie River. How the plant, the neighborhood and the river keep pace during the rest of the century depends, in part, on how successful the people who are interested in trying to improve all of them are.

Councilwoman Deborah Demard, who represents the neighborhood where the plant is located, characterizes Hercules as a blight on the neighborhood. She favors reinvestment by the company to clean up the site and remove any pollution.

"I don't want anything to remain there to be a contamination and make people sick," she said.

While many questions remain, there are some certainties ahead which include cleanup at the plant.

Hercules officials have given their plan for cleaning up contaminants from their site to the Mississippi Department of Environmental Quality for review.

Now the agency will review the plan, make recommendations and return it to the plant for further review, said Jerry Hanks, chief of MDEQ's Groundwater

Office of Pollution Control.

Last summer, the company joined the MDEQ's Uncontrolled Sites Voluntary Evaluation Program, which allows companies with pollution issues to seek assistance from the MDEQ. Banks told city and county leaders in February about the MDEQ's cleanup.

"So far there has been very few contaminated chemicals found," Banks said, "and all that has been found in the testing has been confined to the property."

Some anomalies have turned up in the assessment, Banks said, though he could not elaborate yet. Given the plants 81-year history, engineers will likely find barrels of buried chemicals at Hercules, he said.

"It's not going to surprise any of us if there are some things (buried)," he said. Banks told a group of Hattiesburg residents in April that the pollution found at the plant was minimal and confined to the 200-acre site but he added: "Sometimes we get surprises. We think everything is okay and it's not okay."

The Rev. Bruce Betts, who grew up in a neighborhood by the plant and now operates a church inside what was once Jeff Davis Elementary School on West Seventh Street, says his church will be a necessary presence in the old neighborhood and views the plant as a mixed blessing.

"My concern is that they would leave it abandoned and whatever was buried under the place, if it is buried, would get out of control," Betts said.

A portion of the West Seventh Street neighborhood around the plant will get a complete facelift courtesy of the new 16-acre Vickers Estates subdivision that's being constructed near the plant between West Seventh and Fourth streets. The \$6 million project, which should be completed by December, includes 51 new houses that will cost \$80,000 to \$85,000 each, as well as new streets, curbs and lighting.

"The homes are targeted for moderate-income families interested in owning a home for the first time," said Helton Johnson, executive director of the Pearl River Valley Opportunity Inc. which is building the project.

"Our whole deal here is homeownership. It's renting to own these houses. You can't own them if you're looking to be on assistance for the rest of your life. We're very interested in people who have jobs, but maybe not enough income to go out and purchase a house," Johnson said.

Extensive environmental tests were conducted on the property before the first shovel of dirt was turned, Johnson said. He called Hercules a non-facility.

"Everything came back squeaky clean," he said.

Hercules cut its staff to 40 people this year.

"If the plant were to completely close," Johnson said, "it would not affect progress on the subdivision, but it would hurt the community yet only to a degree."

"I really think the city and the county has basically been expecting things like

this to happen with that plant," he said about the most recent cutbacks.

"Although it doesn't lessen the hurting, I believe the community is braced for it."

The river is one of the main tributaries to the Pascagoula River, which is the largest physically unmodified river ecosystem in the lower 48 states.

The Bowie River was also used by Hercules for dumping its treated and untreated wastes through no monitoring by the state below the Hercules discharge area has been done, said Jeff Thomas, chief of the MDEQ's Water Quality Assessment Division.

A portion of the river near Hattiesburg was the subject of a 2000 plan called the Bowie River Urban Watershed project to possibly build a \$14.3 million low-head dam on the Bowie River along with a chain of lakes.

The Pat Harrison Waterway District, the cities of Pearl and Hattiesburg and Forrest County paid \$65,000 for a feasibility study about the idea.

If the plan was ever brought into reality, it would increase the city's water supply, reduce the risk of flooding and would be used for recreation. The plan is on hold, in part, because the U.S. Fish and Wildlife Service has deemed the river a critical habitat for federally protected fish who spawn in part of it.

Decades before, Hercules built a low-head dam that took the place of a natural spawning habitat in the Pascagoula River of the Gulf sturgeon, a threatened species.

"It is the only spawning habitat that has been documented with absolute certainty," said Steve Koss, an ichthyologist at the University of Southern Mississippi.

A strong grass-roots movement against the project sprang up after the plan was announced but discussions about the matter have waned.

"It has gone underground," said Ron Blackwell, member of the Pine Woods Audubon Society which had opposed the plan. "There's been no public meetings in the last couple of years, and I think the supporters are just biding their time."

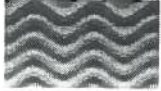
Those on both sides say interest in the plan is still there, though no public meetings about the project have been held for years. Does something need to be done in that area?

"Absolutely," said Chris Bowen, executive director of the Pat Harrison Waterway District. "It's been mined for years. The landscape looks like something off of a moonscape in areas."

Larry Harrington, who led a group of residents in favor of the plan, still believes progress can be made on the plan, if local and federal elected leaders support the project.

He envisioned it possibly taking a decade or longer to come to fruition, if it found support.

"We planted the seed and the idea," Harrington said. "We showed the possibility and the proposal is \$60,000 worth of work, and there is a propensity for this to happen. It's tenshish."



Willie McKercher
04/27/2004 06:08 PM

To: THassett1@Herc.com@INETDEQ
cc: Trey Hess/HW/OPC/DEQ@DEQ, Michael Slack/HW/OPC/DEQ@DEQ
Subject: Hercules Work Plan for Remedial Action Evaluation

Tim,

I have had a chance to look over the letter you submitted for my review. The actions proposed were to help you meet the needs of putting together the Remedial Action Evaluation. I see were these actions will help you to fill some data gaps. Please proceed with the proposed work plan for additional assessment activities. In review of the schedule, it appears that the field activities and report should be able to be completed by the end of June. Therefore, we'll set a deadline of June 30, 2004 for the Remedial Action Evaluation Report. At that time, Hercules should be able to move forward and begin working on the Corrective Action Plan.

Willie McKercher
Mississippi Department of Environmental Quality
Phone: (601) 961-5731
Fax: (601) 961-5300
Willie_McKercher@deq.state.ms.us



April 23, 2004

Hercules Incorporated
Research Center
500 Hercules Road
Wilmington, DE 19808-1599
(302) 995-3000
www.herc.com

Mr. William McKercher
Mississippi Department of Environmental Quality
101 West Capitol Street
P O Box 10385
Jackson, MS 39289-0385



RE: Hercules Hattiesburg Plant – Workplan for Remedial Action Evaluation

Dear Mr. McKercher:

As indicated on the letter to the Mississippi Department of Environmental Quality (MDEQ) dated March 18, 2004 and discussed earlier this month, Hercules has prepared a Letter Workplan to collect data and information necessary to prepare a Remedial Action Evaluation (RAE). We believe the following studies should suffice to develop the Remedial Action Options and Cost Estimates.

- 1) Conduct boundary/topographic survey of sludge pits.
- 2) Install one stratigraphic boring in the proximity of the sludge pits and two to four in the vicinity of the landfill area. Refer to Attached figure.
- 3) Conduct Geotechnical Analyses of samples in accordance with the following table.

ASTM TEST	Grain Size	Density	Permeability	Permeability	Unconfined Compressive Stress	Consolidation
	D422/D1140	D2397	D5084 D9100	D2434	D2166	D2435
Location						
Sludge Pits	3 samples	3 Samples	3 Samples	3 Samples	3 Samples	3 Samples
Stratigraphic Boring			3 Samples			

All work will be conducted in accordance with USEPA Region IV's Environmental Investigations Standard Operating Procedures and Quality Assurance Manual, (EISOPQAM) November 2001 as appropriate.

The following is the proposed schedule for this work:

Task/Milestone

MDEQ Review & Approval
 Procure Services/Mobilize
 Conduct Field Work
 Conduct Lab Work
 Prepare & Submit Remedial Action Evaluation

Duration

1 - 2 Weeks
 1 - 2 Weeks
 1 - 2 Weeks
 1 - 2 Weeks
 4 - 6 Weeks

Mr. William McKercher
MDEQ/Hercules Hattiesburg Plant
April 23, 2004

Once MDEQ has had time to review the report, we would like to schedule a meeting to discuss the Remedial Action Evaluation Report and discuss the next steps in the MDEQ's process. Please contact me at (302) 995-3456 or Charlie Jordan (601) 545-3450 ext. 3360 if you have any questions.

Sincerely,

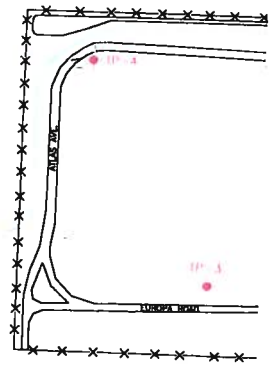
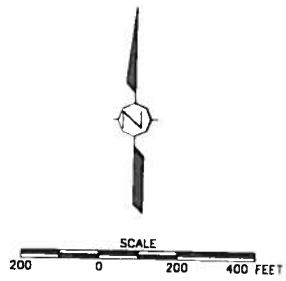


Timothy D. Hassett
Hercules Incorporated
Staff Environmental Engineer

cc:

Mr. Jerry Banks – MDEQ
Mr. Trey Hess- MDEQ
C. S. Jordan – Hercules/Hattiesburg
W. D. Langhans – Hercules/Hattiesburg
G. R. Trovei – Hercules/SHERA
Caleb Dana - EcoSystems
File: Hattiesburg #102

RESIDENTIAL/



RESIDENTIAL/COMMERCIAL

ZEO
CO



TO
RIVER

NOTES
1. BASE MAP 1

ns, Inc.
and Scientists
le, AL • Houston, TX

PROPOSED STRATEGIC BORINGS
HERCULES INCORPORATED
HATTIESBURG, MISSISSIPPI

PROJECT No. HER24089	
CAD FILE NAME STRATEGIC BORING	
FIGURE 0	REVISION 0



STATE OF MISSISSIPPI
GOVERNOR HALEY BARBOUR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

MEMORANDUM

TO: Hercules Inc. Hattiesburg File

FROM: Andy McCain *AM*

DATE: April 14, 2004

RE: Site Visit – April 13, 2004

On April 13, 2004 Tony Russell, James Radich, Willie Mckercher and I went to Hattiesburg to collect soil and surface water samples pertaining to Hercules Inc.

At 8:30 AM we met with Glen Jones from Bonner Analytical in the parking lot of Warehouse Furniture which is adjacent to Green's creek on Hwy 43. We drove around to a location several hundred yards down stream where Green's creek crosses under a bridge and took both surface water samples and soil samples at approximately 9:15 AM. The soil sample was a transect from both sides and the middle using a hand auger. Soil and water samples were collected for VOCs, SVOCs and Dioxithion and labeled Herc413-S2. Splits of each were given to Bonner.

We returned to the Warehouse Furniture parking lot and took soil and surface water samples form Green's Creek 50 yards north of Hwy 43 at approximately 10:00AM. The soil sample was a transect of sides and middle using a hand auger. Soil and water samples were collected for VOCs, SVOCs, and Dioxithion and labeled Herc413-S1. Splits of each were given to Bonner.

At approximately 10:20AM soil and surface water samples were taken about 100 yards south west of Hwy 43 from a small creek that runs to the east of the Hercules property and lies south of the large storage tank used for process water. Soil samples were taken with a hand auger and were a transect across creek. Soil and water samples were collected for VOCs, SVOCs and Dioxithion and labeled Herc413-S4. Splits of each were given to Bonner.

At approximately 11:45AM soil samples were collected on same creek several hundred yards upstream to the south east of the large process water storage tank. Soil samples were taken with a spoon. Water was not collected because it was too dry. Samples were

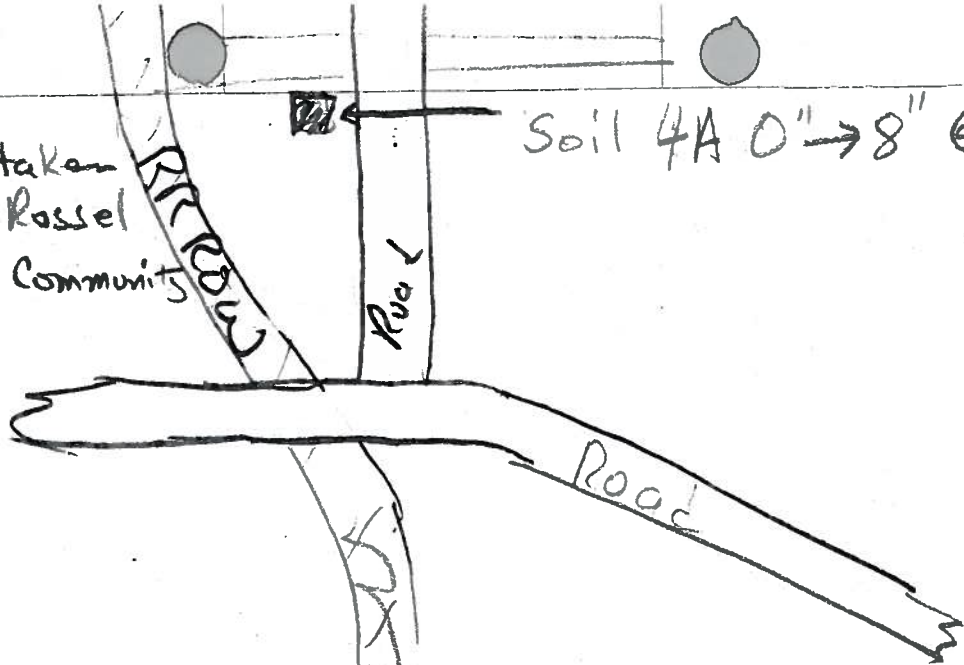
taken for VOCs, SVOCs, and Dioxithion and labeled Herc413-S3. Splits of each were given to Bonner. Glen Jones then left.

All above water samples were taken by Willie Mckercher and soil samples taken by Tony Russell.

After lunch we went to the old railroad right of way that runs north and south just to the east of the Compress building for the M B Community Center. Samples were taken according to the attached map by Tony Russell and James Radich. Samples were taken for VOCs, SVOCs, Pesticides/PCBs and Metals.

Samples taken
by Tony Rossel
for M.B. Community
4/13/04

Soil 4A 0" → 8" @ 14:50



Soil S1A 0" → 4" @ 13:20p

Soil S2B 1' → 2' @ 13:45

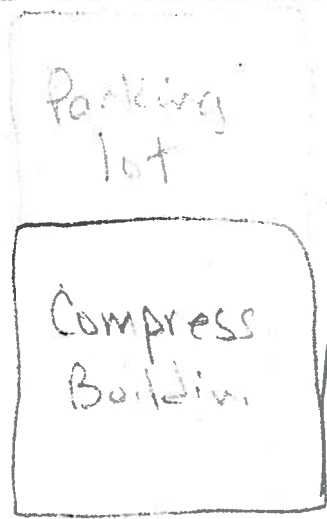
West
Side of culvert

50 yds
East of ROW
in Ditch



Soil 3A Surface @ 14:15

Water 3A @ 14:20



East of Row
in Ditch



Soil S2A 0" → 4" @ 13:35

Soil S2B 6" → 10" @ 13:55



13/42
42-391
42-392
42-393
42-394
42-395
42-396
42-397
42-398
42-399
500 SHEETS FULLER 5 SQUARE
50 SHEETS EYE-EASE 5 SQUARE
100 SHEETS EYE-EASE 5 SQUARE
200 SHEETS EYE-EASE 5 SQUARE
200 RECYCLED WHITE 5 SQUARE
200 RECYCLED WHITE 5 SQUARE
Made in U.S.A.



**Hercules, Inc.
Offsite Drainage Ditch Sampling Locations
April 14, 2004**

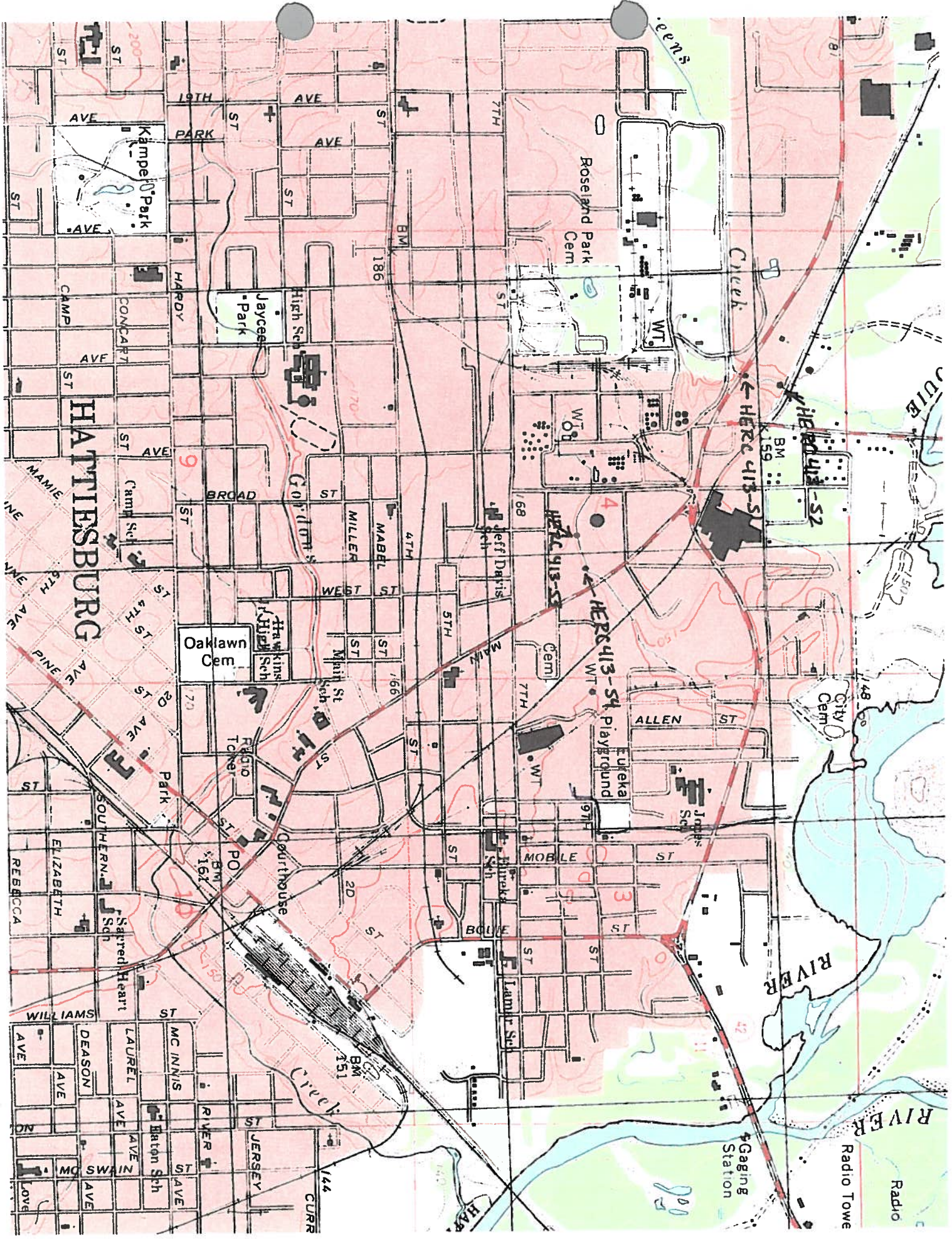


S-2

S-1

S-3

S-4



Hercules Sampling Event 4/13/04



hattiesburgamerican.com



turtle creek n

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Local News - Monday, April 12, 2004

SUBSCRIBE TO THE HATTIESBURG AMERICAN

Hercules: Life in a company town

Despite bad smell, community bonded with its chemical plant

By Kevin Walters; KWalters@hattiesb.gannett.com
American Staff Writer

For much of its 81 years, the Hercules Inc. chemical refinery on West Seventh Street defined life in Hattiesburg.

When the chemical plant's whistle sounded each day, hundreds of workers trooped through its gates.

During election years, politicians gathered at its entrance, canvassing for votes.

If employees needed food, clothing or shelter, Hercules provided it, either through the plant commissary or the houses Hercules built within its 200-acre compound. Along with its own on-site bowling alley, employee newspaper, The Extractor, credit union and barber shop, the plant once operated its own blood bank.

That's fitting considering that as Hattiesburg's largest employer, Hercules was the city's lifeblood.

"It was the economic backbone of the city," said Hattiesburg lawyer Jolly Matthews III, 63, whose father was a railroad engineer at the plant for 33 years. "It was like getting (a job) on the railroad in the old days."

Hercules and Hattiesburg thrived for much of the 20th century, but no longer. Hercules is now a nearly silenced giant.

Hulking metal equipment rusts on grassy stretches of its property. Weeds sprout among the unused cross ties of the plant's rail spur where railroad cars brimming with stumps once rumbled. Once crammed with automobiles, its parking lot



This vintage photo shows the Hercules company basketball team from 1931. The chemical plant had a huge social impact on Hattiesburg, and provided housing and recreation for employees.

along West Seventh Street goes virtually unused as its staff, once 1,400 strong, has been reduced to only 40 people.

Talk of Hercules elicits curiosity, anger, and melancholy from the people whose lives were intertwined with the plant and who remember when the city and Hercules were synonymous with prosperity and the fulfillment of the American dream for blue collar workers. For many, the descent of the Hercules plant signifies a larger death: the loss of a way of life in Hattiesburg.

"It's almost unbelievable," said Moran Pope Jr. Pope, 81, was Hattiesburg's mayor from 1953 to 1957. "It's a sad situation in a way, I guess. It's the end of an era."

The Wilmington, Del. company was founded in 1912 as part of anti-trust litigation against the DuPont company.

By 1920, the Hercules Powder Co. was an explosives manufacturer looking to make up for financial losses it sustained when World War I ended.

Rather than make more explosives, the company sought to open its first "naval stores" plant that would focus on manufacturing rosin, turpentine and pine oil - known collectively as naval stores because the wood-based products were used to preserve ships.

To begin the plant's operation, the company needed land and pine stumps, which were the source of the rosin used in the manufacturing process. Hercules chose Hattiesburg because of the gigantic surplus of virgin pine stumps left over from the clear-cut logging operations of the 1880s.

Hattiesburg, a struggling town of about 16,000 in 1920, welcomed Hercules as a potential suitor. At the time, jobs were often even scarcer than paved roads.

The popular expression of the era, "Where the pavement ends, Mississippi begins," rang true, recalled plant retiree Richard Boyd, 87.

"The highways were just as dusty and you'd ride on there, I guess, making 40 mph," he said.

The company paid the now-defunct Hattiesburg's Newman Lumber Co. 75 cents an acre to harvest 75,000 virgin timber stumps. In the process, it created between 250 and 300 jobs at its \$500,000 Hattiesburg plant when construction was completed in 1923.

"Hercules can be identified, then, as a key industry that brought a much-needed balance to the commercial life of the city not only by providing employment opportunities for several hundred workers in the plant itself, but also by indirectly assisting in the long-term agricultural growth of the region," wrote William Schmidt in "Hattiesburg: A Pictorial History."

The rosin in the stumps helped make everything from paper to adhesives to chewing gum to ink. And the often arduous work of extracting and hauling stumps to Hercules created jobs dependent on its operation.

As a girl, Sylena Knight, 86, a Petal resident, helped her father and her four half-sisters drag the stumps from the ground after they had been blown free by dynamite.

She laughed remembering the headache-inducing explosions that sometimes ripped out five stumps in a row.

"Oh, it was hard work, but we were young," Knight said. "We had a lot of fun doing it. Then when they blew up, the big old stumps would split wide open."

At one point, the company had so many stumps stockpiled at its site that lightning rods were installed on the heaps of wood to prevent accidental fires.

At its height of operations in the mid 1970s and 1980s, Hercules often operated 24 hours a day, seven days a week.

If the work brought the people within Hercules' gates, the employees created the town-within-a-town forging their own often tightknit community.

"We really took an interest in each other's welfare, health - everything," said current Forrest County supervisor Charles Marshall, 58, a Hercules retiree. "It was a big family, and we enjoyed going to work."

The familial atmosphere meant most everyone had a nickname. Plant retiree Buford McClain, 61, worked alongside men he knew as "Wolfman," "Bulldog", "Possum," "Yard Dog" and "Lil' Abner." McClain happened to be "Porkchop."

"When my wife and I would go to town we always ran into someone from the plant," McClain remembered. "I would call them by their nickname and my wife would ask me why I did that. My response was that I did not know their real name, only their nickname."

Home yards away from the workplace

For a time, families could be found living within the 200-acre plant's gates in housing built by Hercules. Mary Lott, 62, now lives in the Jackson suburb of Brandon, but she grew up in a house inside the plant.

The daughter of a Hercules pipefitter, Lott's family lived in one of about 17 houses the company built along what is now Mississippi 42. Some of the bungalows had garages and some had screened-in porches with columns. The four-room house she and her family lived in cost \$6 a month and they stayed there until 1951 when the homes were torn down.

Her first bicycle - a Schwinn - came from the Hercules commissary located across West Seventh Street which also sold groceries and clothing. Employees could bowl at the bowling alley upstairs or get a haircut at the barbershop downstairs.

As a boy, Matthews often got 35-cent haircuts in a barber's chair at Hercules' barber shop.

Matthews remembers many things about his father and the plant. But one of his strongest memories of Hercules was the black walnut and cherry vanilla ice cream sold in the commissary.

"That's the first time I ever had cherry ice cream," Matthews said. "It had real cherries in it."

He also remembers the little train nicknamed "Toodles," one of the plant's two

train engines. "Toodles" gained local notoriety for the time its boiler was left unattended. The engine built up enough steam to go careening through downtown Hattiesburg.

Like his father before him - and like numerous others fathers, sons and nephews who followed each other through Hercules' gates - Matthews worked at Hercules, too. He took a summer job in 1965 with the "bull gang", the nickname for the group of unsalaried workers who performed any number of menial tasks around the plant such as picking up garbage or digging the enormous ditches.

"We dug some of the dadgumdest holes you've ever seen in your life," Matthews said. "We dug a hole that was 20 by 20 by 20 - probably spent a day and a half digging it. The engineers walked over there together and said, 'Fill it back up.' I am not kidding you."

Not all memories are fond of plant

If others have fond memories of the plant, some others have only bitterness. According to Mary Frances Blackard, her contempt for the Hercules plant is a family tradition.

Her great-aunts went door-to-door in the neighborhood near Hercules in 1923 petitioning neighbors to oppose the plant, Blackard said.

Though Blackard grew up in Florida, she often visited relatives in the sprawling house on West Eighth Street in Hattiesburg where Blackard lives now.

Her memories of trips to Hattiesburg as a girl are marked by memories of the pervasive stench from the plant. Like other neighborhood kids, she often played in the open ditch near West Eighth Street that she said took waste from inside the plant down to the Bouie River.

She remembered pieces of soot floating down from the smokestacks and coating the roofs of houses, cars and porches of nearby homes.

"The black soot was everywhere all the time," Blackard recalled. "It came down like black, crispy snowflakes."

Even though she has complained frequently about the fumes and odors from the plant since she's lived near Hercules, she admits that its importance to Hattiesburg cannot be overlooked.

"Hattiesburg is and always has been a very hard area for income," Blackard said. "It gave a lot of jobs for this area."

As the plant's staff has withered during the last decade, its financial importance has steadily eroded too.

In 2002, the company paid \$161,276.16 in taxes on property valued at \$1.4 million, a drop from a decade ago when the company paid in total taxes of \$238,520.19 on property valued at \$2.2 million, records show.

Matthews described a time when Hercules meant everything to Hattiesburg and vice versa. Its presence supported families who had few, if any, opportunities to earn a living and better themselves.

Though now they're scarcer than a virgin pine stump, a job at Hercules once meant more than just money. The job meant pride.

"It's so disheartening," Matthews said about the plant now. "You ought not to be sentimental to a large corporation."

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Originally published Monday, April 12, 2004



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Local News - Sunday, April 11, 2004

SUBSCRIBE TO THE HATTIESBURG AMERICAN

Residents say plant cause of sickness Smells are intolerable, some near facility say

By Kevin Walters

American Staff Writer KWalters@hattiesb.gannett.com; - Clayton Nelson, Hattiesburg resident

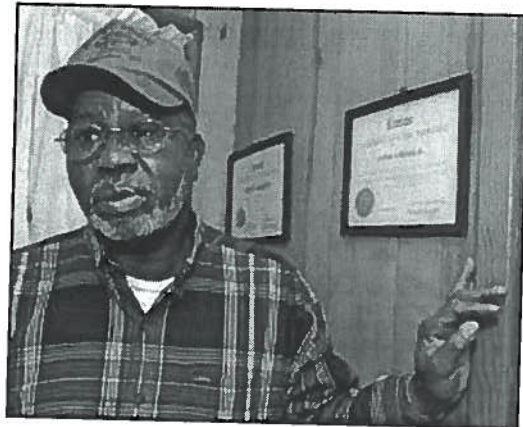
As acorns tumbled from the oaks sprawling around Willie Ashford's red brick house on West Eighth Street, she narrowed her eyes and recounted how she'd grown to despise her home.

"This house was like a dream house to me," said Ashford, 57, as she rocked on her front porch. "To know what I done been through with it, Lord knows in heaven, I can't hardly wait to get up out of here. I can't."

It wasn't her home she ultimately blamed for her troubles, but the nearby Hercules Inc. chemical plant. She and many of her neighbors blame the plant for health problems and an economic malaise that she says has made it nearly impossible to sell houses in the neighborhood.

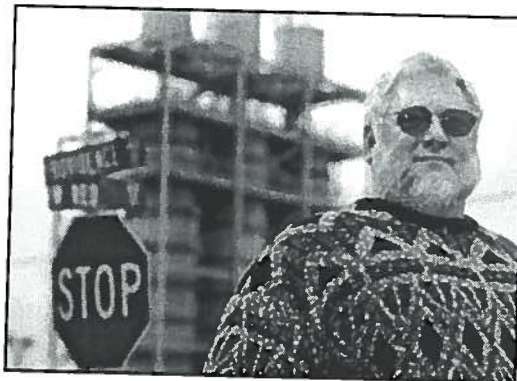
Sitting on her porch with her husband, Arthur Ashford, 60, a Hercules retiree, the couple recounted a litany of health problems they blame on 13 years' exposure to the plant's smoke, fumes and a 1997 chemical spill in their yard.

Willie Ashford said her health problems ranged from headaches to numbness in her extremities to memory loss. By January, the



GAVIN AVERILL Hattiesburg American

For more than 20 years Arthur Ashford worked for Hercules Inc.'s Hattiesburg plant. He lived nearby and says exposure to toxic chemicals from the plant has hurt the health of both he and his wife.



GAVIN AVERILL Hattiesburg American

The smell from Hercules Inc.'s Hattiesburg

Ashfords had become so worn down by persistent health and financial problems that they moved out of the home and foreclosure proceedings have begun on it, Forrest County records show.

plant was 'ungodly,' said Jay Leff, who owns Solar Supply on West Eighth Street.

Though Hercules' importance to the city's economy has declined, its ties to the neighborhood are still deep.

Hercules retiree Clayton Nelson, 84, paid \$2,500 for his home along West Seventh Street in 1938. Ten of his neighbors were co-workers at the plant at one point.

"Now I'm the only one," he said.

Nelson has had two burglaries at his home in recent years, including one where thieves broke down his front door. He has installed a home security system since then, but says the neighborhood still scares him sometimes.

"My children have been fussing at me for years for not moving," Nelson said. "Matter of fact, I'll agree with them. I should've moved a long time ago. It's got to the point now where I have to stay here."

Although the plant hardly resembles the booming giant it once was, there are still foul smells that emanate from it as they have for more than 70 years, he said.

"At night-time you can't raise the windows up because of the fumes that come from (the plant)," said Earnestine Mack, 49, a homemaker who has lived on West Eighth Street since 1991.

As the plant's operations have dwindled, the foul odors have lessened.

"It used to be ungodly," said Jay Leff, 56, manager of Solar Supply of Louisiana, a wholesale air conditioner company on Providence Street. "At times it still smells like a septic tank."

West Eighth Street resident and aerobics instructor Mary Frances Blackard, 53, is the picture of good health. She said the plant's fumes contributed to of health problems of family members who once lived in that house.

"When I can't breathe there's a problem," Blackard said. "When I say this stuff makes me nauseous, it takes my breath away. It's real."

From her home's black wrought-iron gates, the Hercules facility can clearly be seen nearby along Providence Street.

Blackard can recall being awakened early in the the morning by odors from the plant. She says the stench has diminished in the last six months.

"Your eyes would just pour," Blackard said. "It happened mostly on the weekend, late at night, holidays, downtimes - and you would wake up in the middle of the night. It would be so strong you thought you were dreaming it, but you weren't. It was real."

But Arthur Ashford recalled a "raunchy" low-lying fog creeping through his

backyard one day in 1996 and finding Hercules employees there. The chemical fog, Arthur Ashford said, came from a 5 million gallon tank at the plant.

The event occurred in October 1996, according to a April 1997 MDEQ memo about the incident obtained by the Hattiesburg American under a Freedom of Information Act request. According to the memo, the MDEQ cannot "require Hercules to 'clean' this house, and it is difficult for us to determine the extent of the problem, since our office was not notified until 5 months after the alleged incident took place."

All the plant officials said they could do was clean up the spill and nothing more, Arthur Ashford said. The Ashfords said Hercules officials later offered to pay for their medical bills.

"I got so mad the devil told me, 'Go in there and get your gun and blow them all up,'" Arthur Ashford said. "But I came in the house, I thought, 'Sit down.' They didn't do anything they were supposed to do. No hospital bills, no doctors' bills, nothing."

"They were saying how sorry they were," Willie Ashford recalled. "They even asked me to stay out of my house until they got that ditch back there cleaned."

Soon after the spill, Willie Ashford said she moved out of the house. She says her her health has not improved.

Current Hercules plant manager Walt Langhans stated in an e-mail he wasn't familiar with the incident.

Not everyone in the area is angry about the way the plant has operated.

For the past 20 years, Elaine Mathis, 55, owner of Gateway Learning Center on West Eighth Street, said she has never had health problems she attributed to the plant in her kindergarten.

"Occasionally we have had a smell (from the plant), but that's really the only problem I've had with them," Mathis said.

West Eighth Street resident Earl Graves, 79, who has lived less than 100 yards away from the plant's chain-link fence along Providence Street for 43 years, doesn't have an unkind word about his neighbor Hercules.

"I don't think as far as a health hazard that it has ever been a health hazard," Graves said. "I've never had any respiratory illness or anything like that."

The odors from the plant had little impact on his life, although he said Hercules once paid to repaint his son's first car after smoke from the plant ruined the paint.


He said most of the time he never smells anything offensive.

Graves recounted a conversation with a former worker about the foul smells at the plant that put the impact of the odors in perspective for him: "He said, 'I'm going to tell you what (the scent) means to me. It means my bread and butter.' He said, 'What would we be without Hercules?' What I'm saying, it was bread and butter to many people."

Graves vows never to leave the neighborhood.

"This is home," he said. "Whenever you have to haul me out, I'll leave. But this is home."

"My children have been fussing at me for years for not moving. Matter of fact, I'll agree with them. I should've moved a long time ago. It's got to the point now where I have to stay here."

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Originally published Sunday, April 11, 2004

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Mississippi Department of Environmental Quality
Meeting Attendees List

Date	March 10, 2004
Company & Site	Hercules, Inc – Hattiesburg, MS
Location	101 Capitol Center

Participant	Company Organization	Email Address	Phone Number
Jerry Banks	MDEQ	Jerry_Banks@deq.state.ms.us	601-961-5221
Trey Hess	MDEQ	Trey_Hess@deq.state.ms.us	601-961-5654
Willie McKercher	MDEQ	Willie_McKercher@deq.state.ms.us	601-961-5731
Tim Hassett	Hercules, Inc.	Thassett@Herc.com	302-995-3456
Charlie Jordan	Hercules, Inc.	CJordan@Herc.com	601-584-3360
Walter Langhans	Hercules, Inc.	WLanghans@Herc.com	601-584-3226
Caleb Dana	Ecosystems, Inc.	ecosys@earthlink.net	601-936-4440

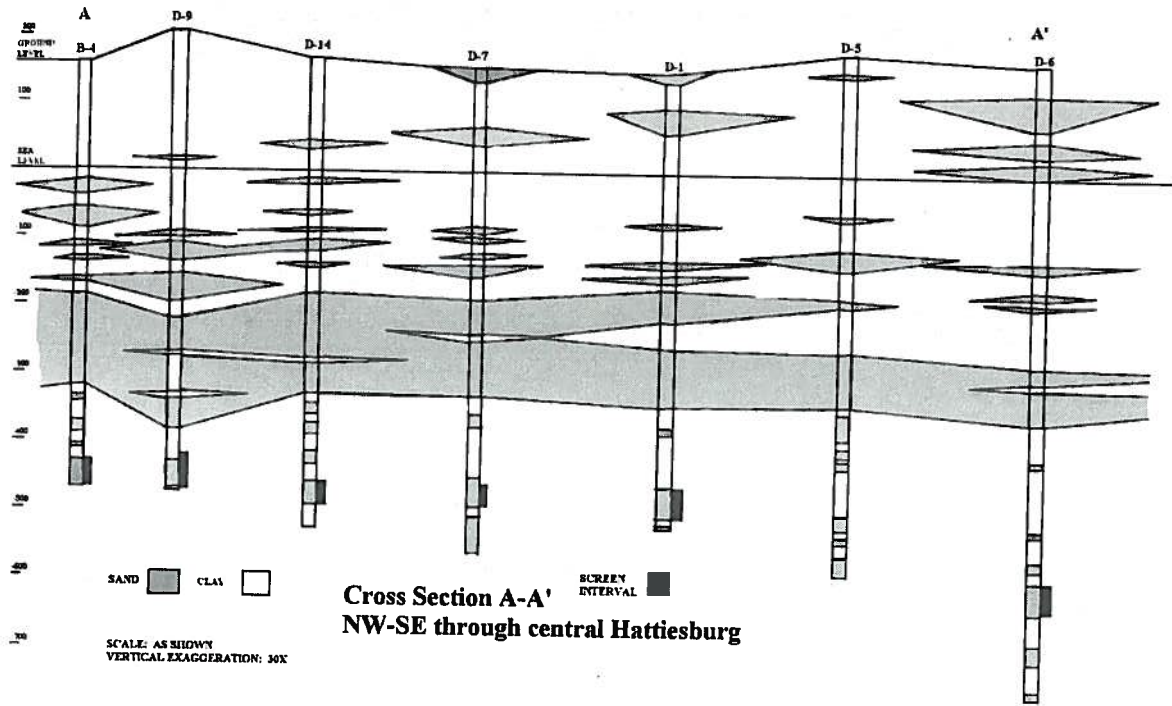
Hercules, Inc. Meeting with the Mississippi Department of Environmental Quality
March 10, 2004 – 10:00 AM

Agenda

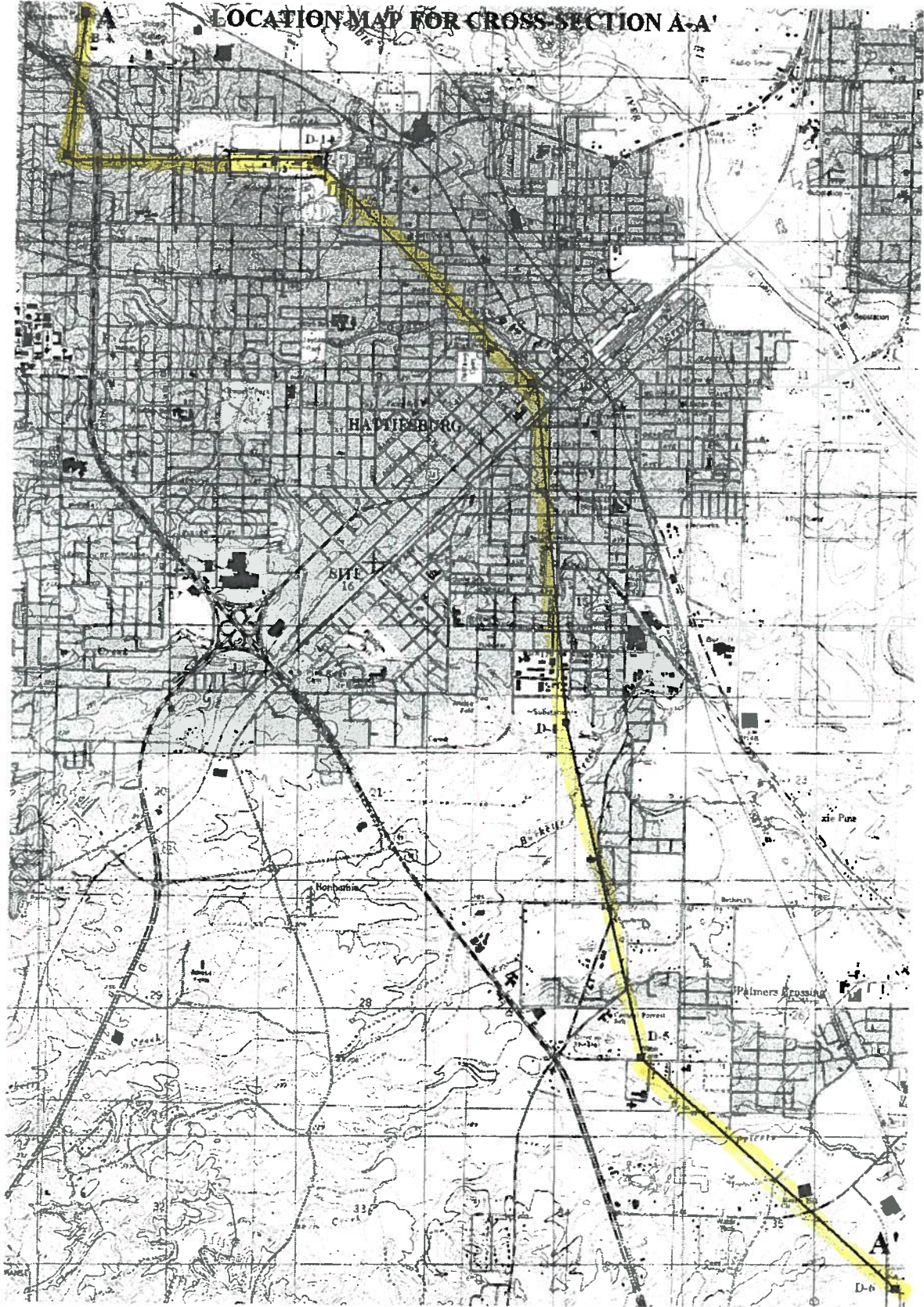
- 1) Introductions – T. Hassett
- 2) Environmental Justice Issues – Hattiesburg Area/Hercules - MDEQ
- 3) Purpose - Clarify MDEQ Program Requirements
- 3) Review of Status and Site History – T. Hassett
 - Chronology of Involvement with MDEQ
 - Presentation of Site Investigation
 - Identification & Clarification of Potential Risks
- 4) Discussion of Future Site Actions– Open Discussion
 - Overall objectives of the Groundwater Assessment & Remediation Division (GARD)
 - i. Areas of Concern
 1. Former Industrial Landfill
 2. Wastewater Sludge pits
 3. Former Delnav Production Area
 4. Groundwater
 5. Green's Creek
 - ii. Remedial Action Evaluation
 1. Identification of Remedial Options
 2. Cost Estimates
 3. Financial Assurance
 4. Deadlines / Scheduling
 - iii. Communications
- 5) Review and Closure of Meeting – W. McKercher/T.Hassett

Hattiesburg Site Chronology

- 1992 Black & Veatch Conducted an ESI on behalf of EPA Region IV
- 1993 Black Veatch Publishes Report
- 1994 Russell Smith letter to Charlie Jordan
- BATCO prepares workplan for installation of monitoring wells
- 1997 BATCO Workplan Approved – May
- Wells installed - June
- Wells monitored quarterly 12/97 – 12/98
- 1998 Draft UAO -
- Meeting with MDEQ – 12/3 - *Tony & Brian*
- Meeting MDEQ and MSU Chemists – 12/19
- 1999 Meeting with MDEQ - January
- Workplan Submitted- February
- Workplan Approved - April
- Meeting with MDEQ – May
- Bonner Report - August
- Meeting with MDEQ & MSU – August
- 2000 Sigma – Aldrich Synthesizes Standards
- 2001 Standards arrive- June
- MDL Study GW – August
- 2002 MDL GW Study Approved – April
- MDL Study Soil to Dr. Alley - August
- Meeting with MDEQ – August
- Protocol Samples Collected - October
- MDEQ Approves Protocol Results – November
- Groundwater Samples Collected -December
- 2003 Groundwater Re-sampled -February
- Sediment/Surface Water Sampled -February
- Report Submitted - April
- Workplan Submitted – April
- Workplan Initiated – August
- Report Submitted – November
- Received Request for Remedial Action Evaluation (RAE) – December
- Requested extension and received Clarification from MDEQ - December
- 2004 Submitted RAE – February
- Received comments from MDEQ on RAE Requesting an FS like document- February
- Meeting with MDEQ - March



LOCATION MAP FOR CROSS SECTION A-A'

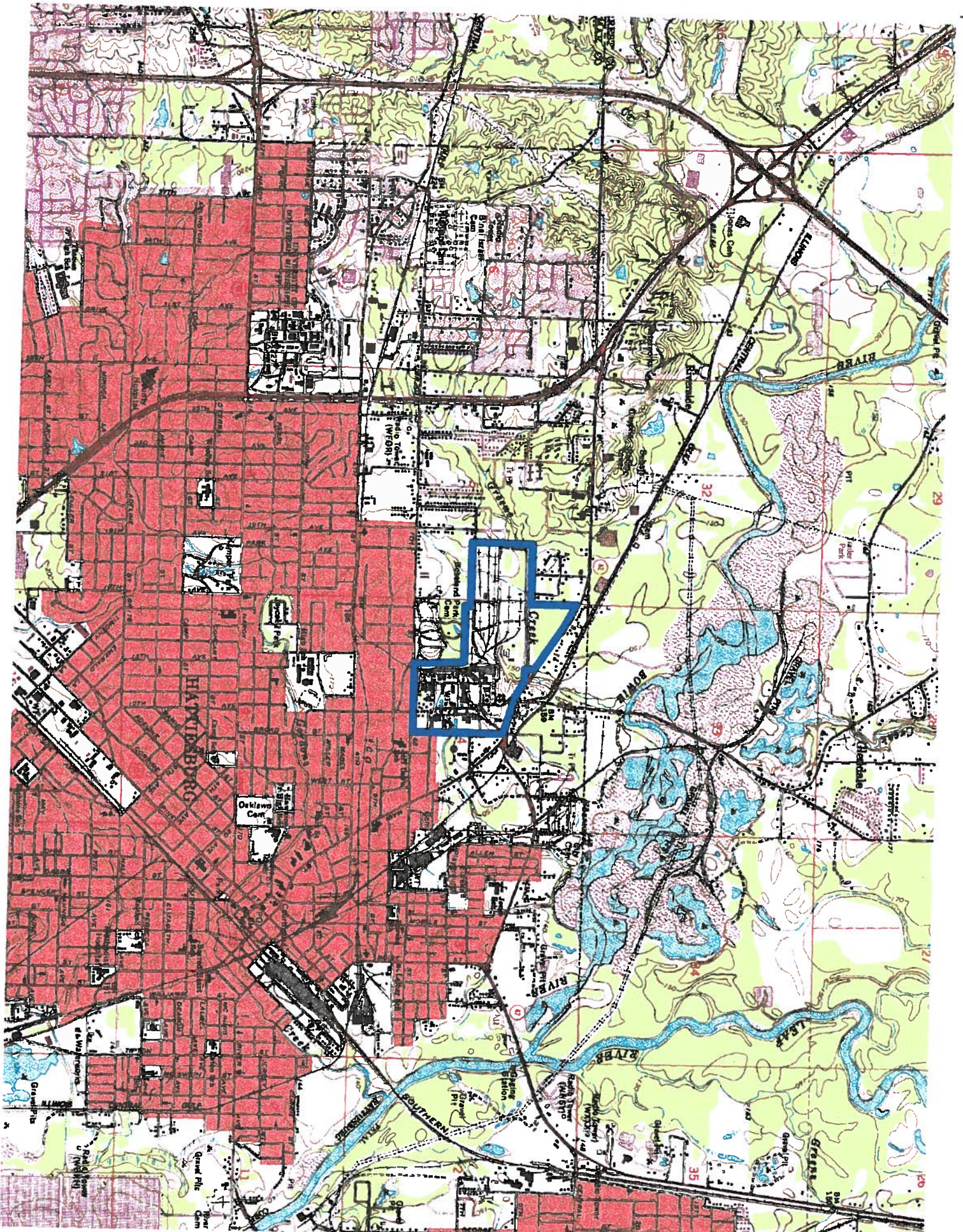


Hercules Hattiesburg Plant

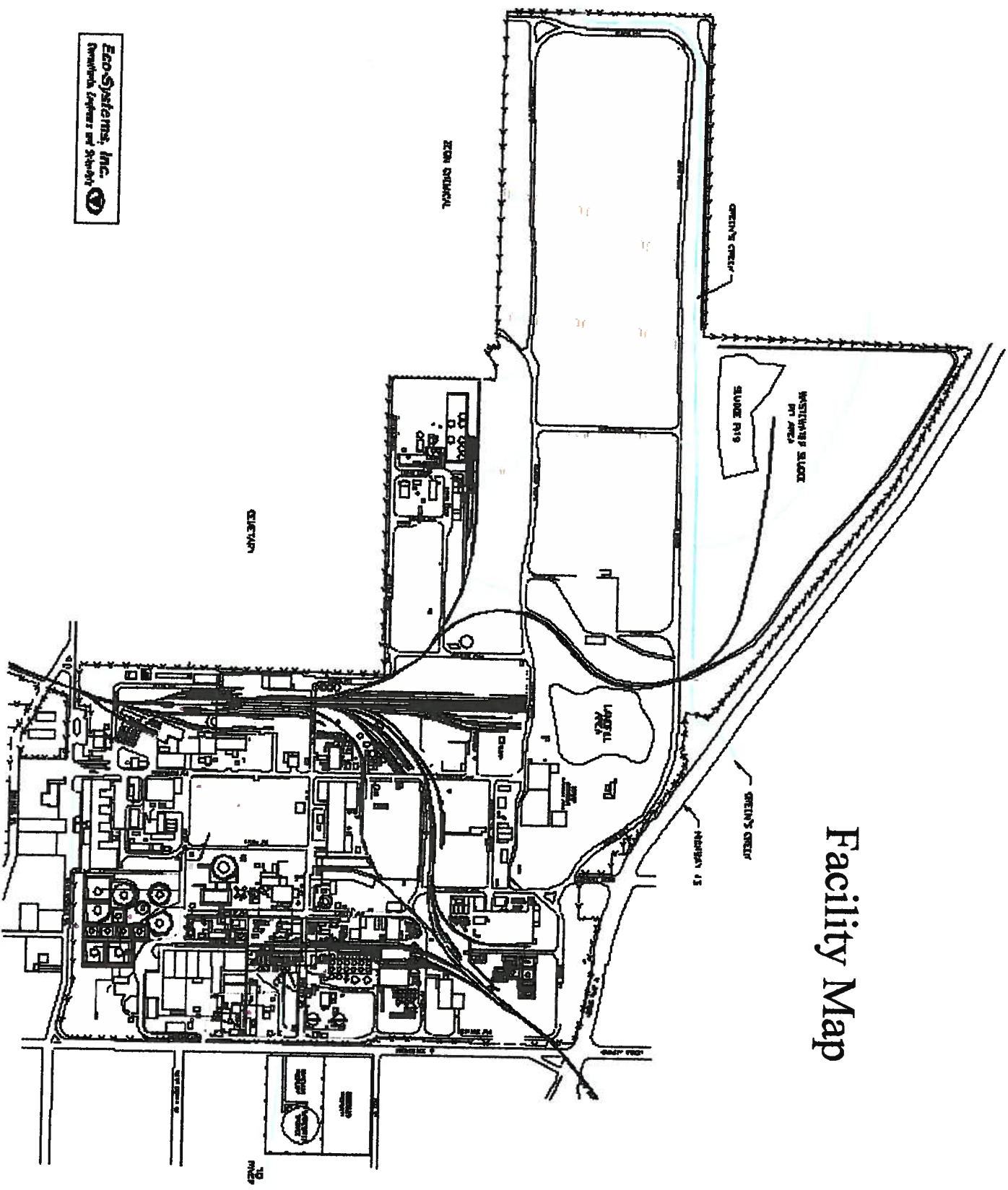
Overview of Site Investigation

Overview of Site Investigation

- Site Setting
- Site Geology
- Site Hydrogeology
 - Underlain by clay
 - Groundwater flow ~10-70 ft/yr

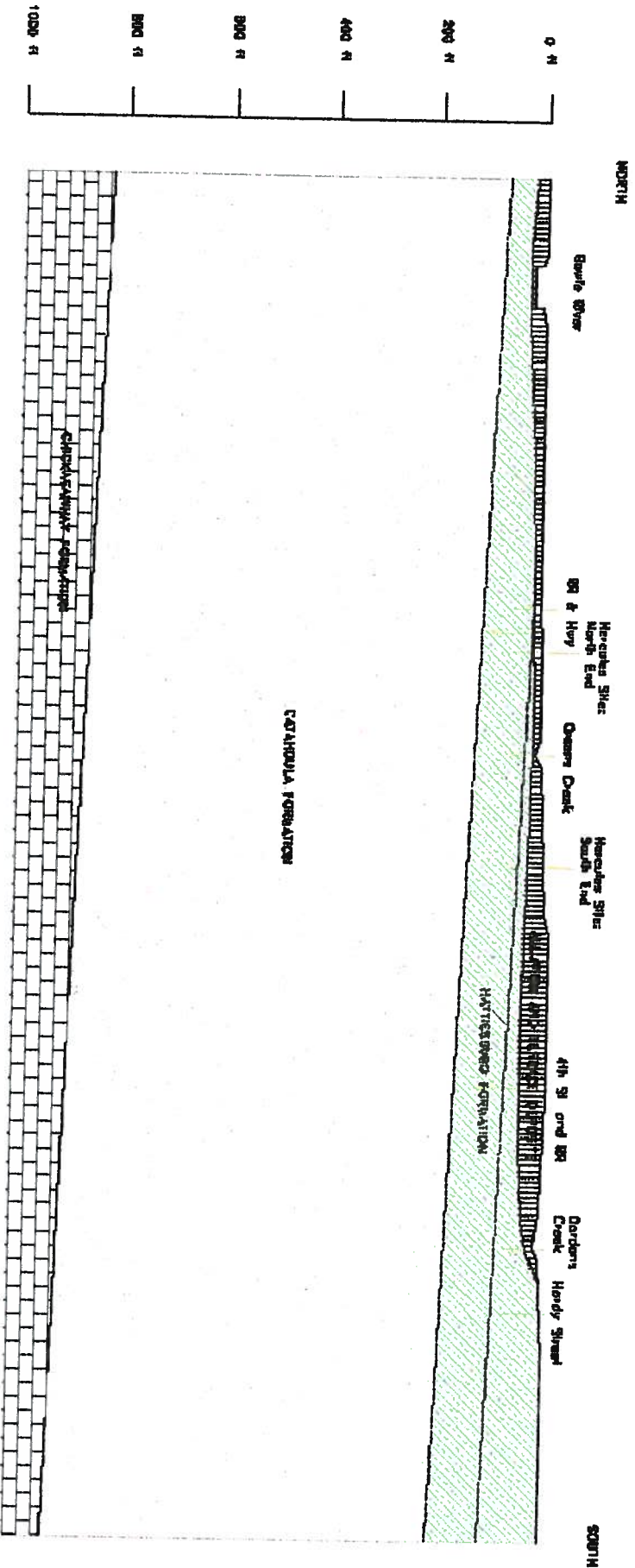


Facility Map



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Environmental Engineers and Scientists

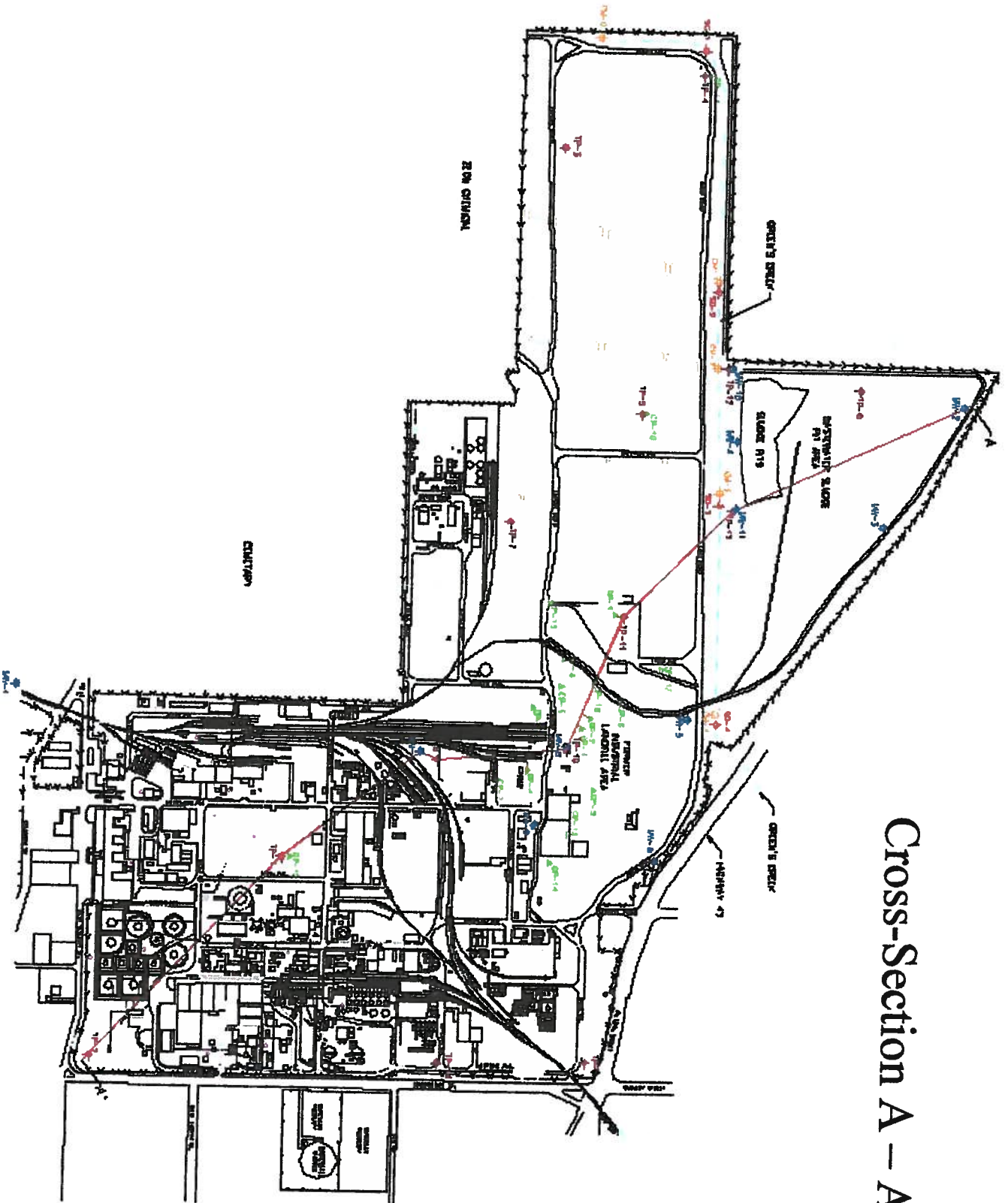
Regional Cross-Section



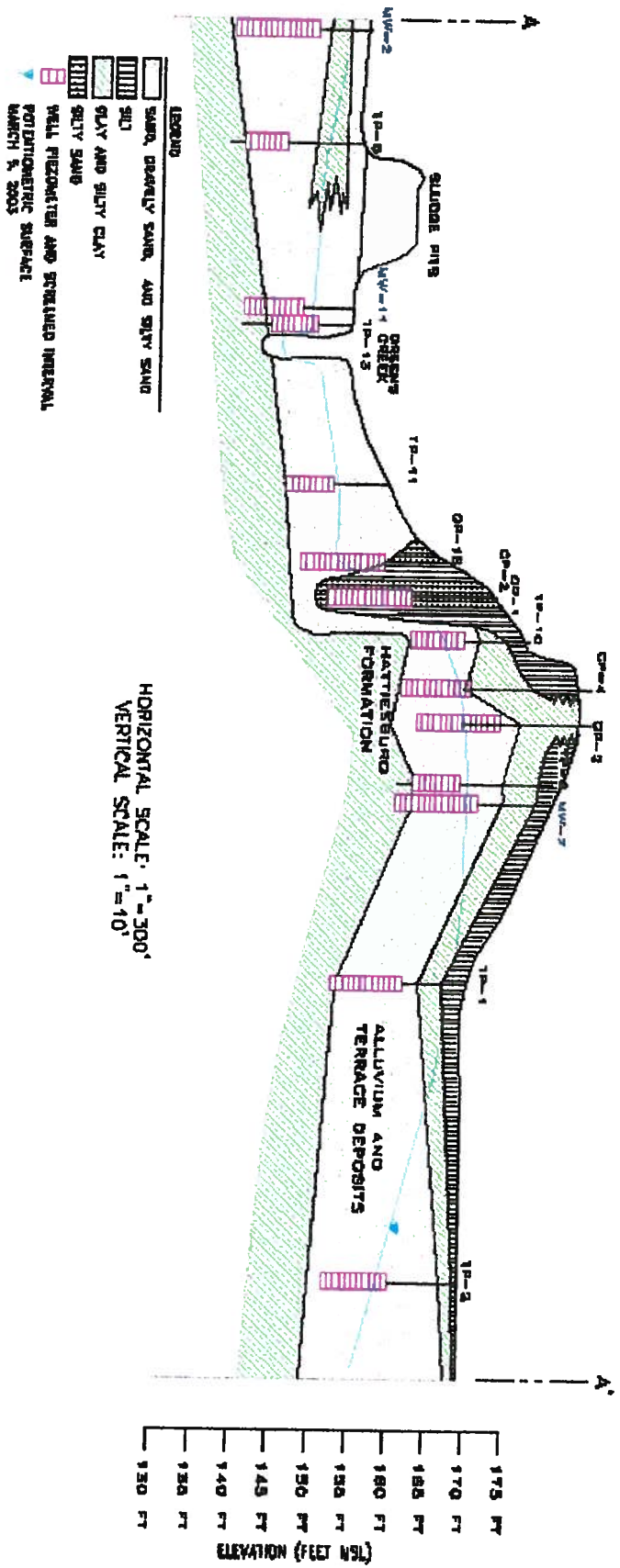
- LEGEND**
-  SILTY SAND
 -  CLAY AND SILTY CLAY
 -  SAND, GRAVELLY SAND, AND SILTY SAND
 -  LIMESTONE

HORIZONTAL SCALE: 1"=1200'
 VERTICAL SCALE: 1"=200'

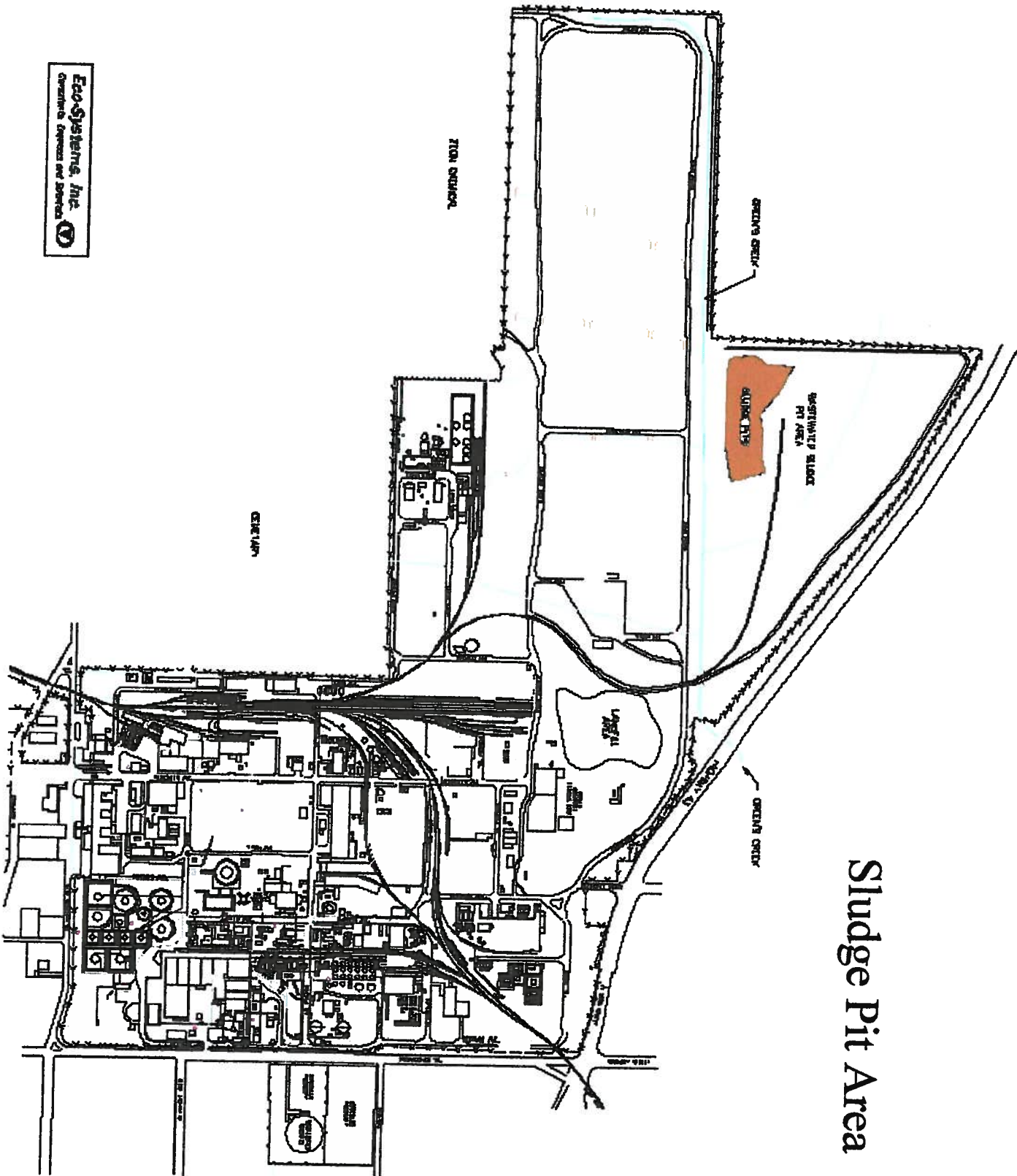
Cross-Section A - A'



Cross-Section A - A'

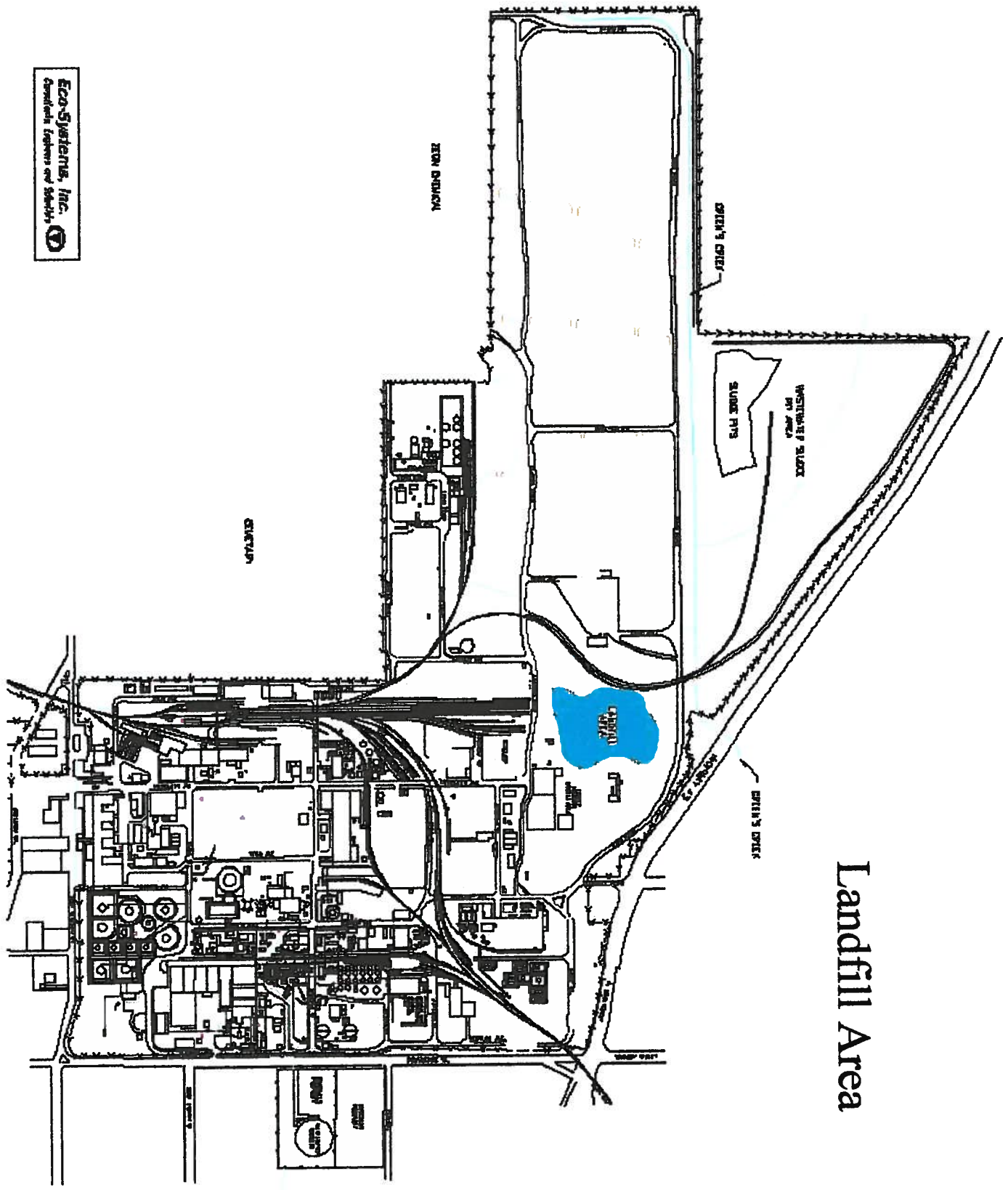


Sludge Pit Area



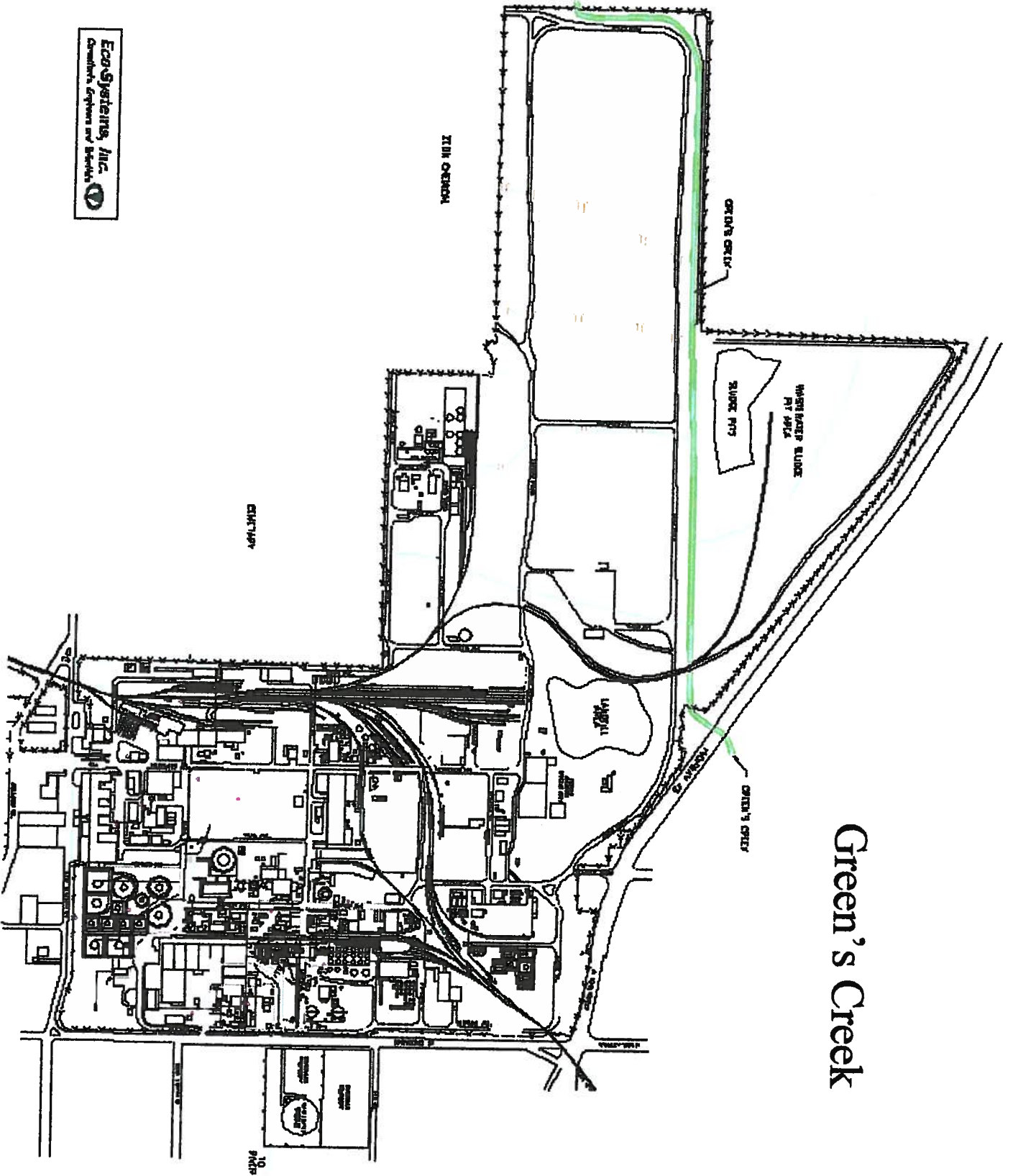
Eco-Systems, Inc.
 Consulting Engineers and Architects

Landfill Area



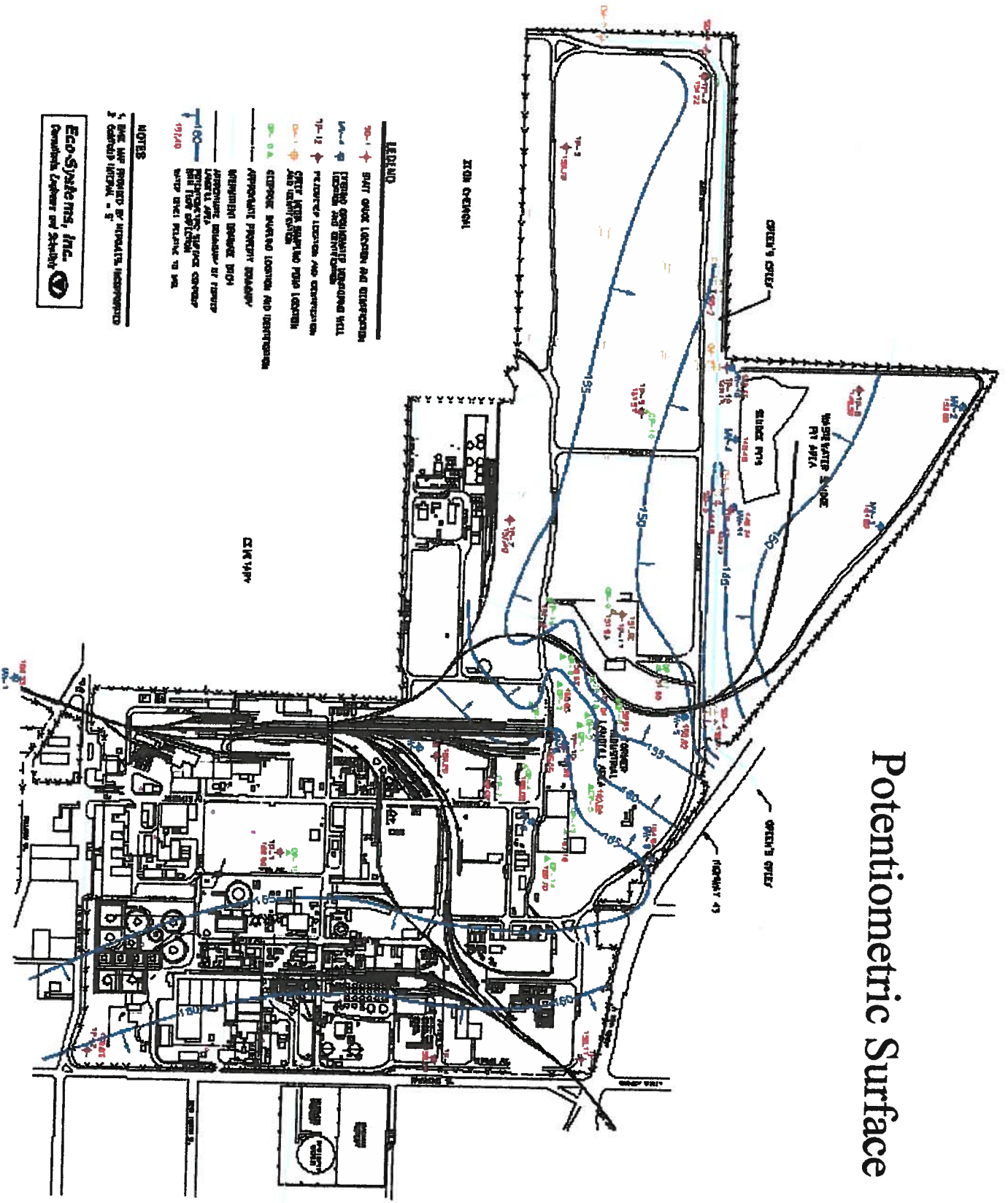
Eco-Systems, Inc.
Construction Systems and Services

Green's Creek



EcoSystems, Inc.
Consulting, Systems and Services

Potentiometric Surface



IRON OCEAN

LEGEND

- 30-1 + BATT QUAD LOCATION AND DIRECTION
- 10-1 + TRENCH CONSTRUCTION REQUIREMENT WALL LOCATION AND DIRECTION
- 10-12 + FENCE/POST LOCATION AND DIRECTION
- 00-1 + SITE AREA BOUNDARY FROM LOCATION AND DIRECTION
- 00-0A + GEOTECH SURVEY LOCATION AND DIRECTION
- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE BOUNDARY DITCH
- APPROXIMATE BOUNDARY OF TRENCH LOCATION AND DIRECTION
- APPROXIMATE VES. SURFACE CONTOUR WITH TYPICAL ELEVATION
- 09/240

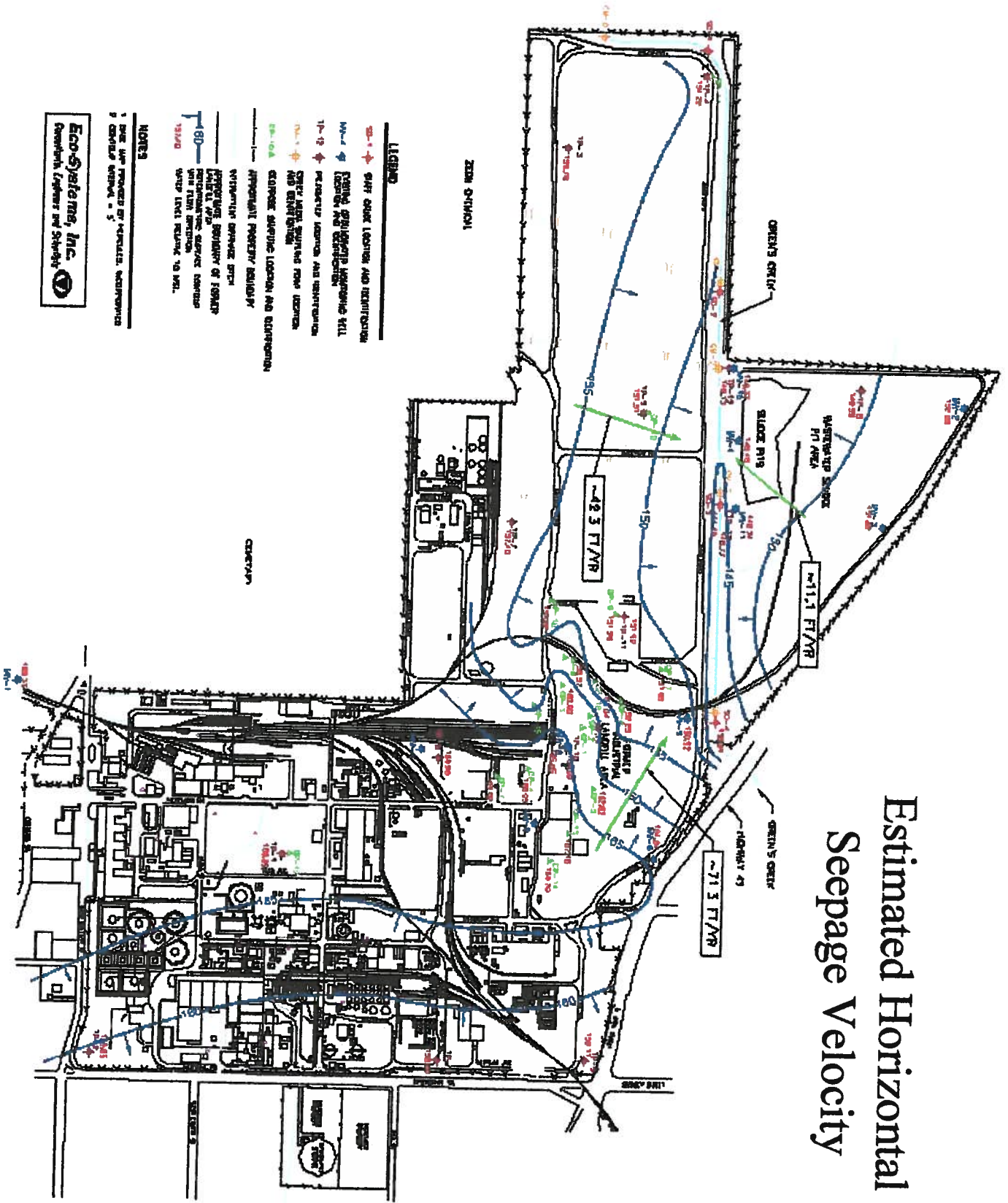
NOTES

- 1. THIS MAP PROVIDED BY AIRPOLARIS, INCORPORATED
- 2. SHEET NO. 10000 - 5

Eco-Systems, Inc.
Environmental Engineers and Scientists

TO
 PLAN

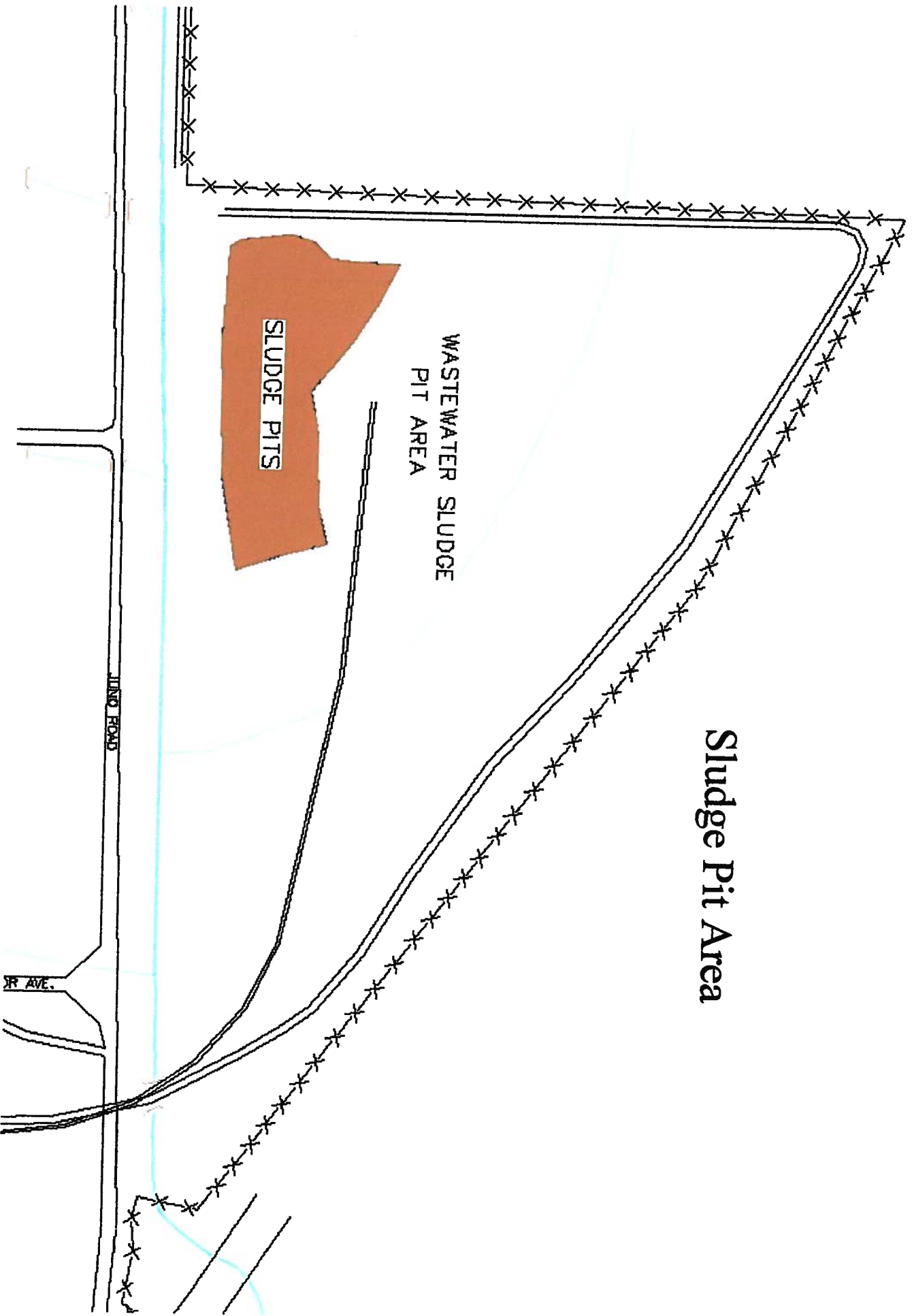
Estimated Horizontal Seepage Velocity



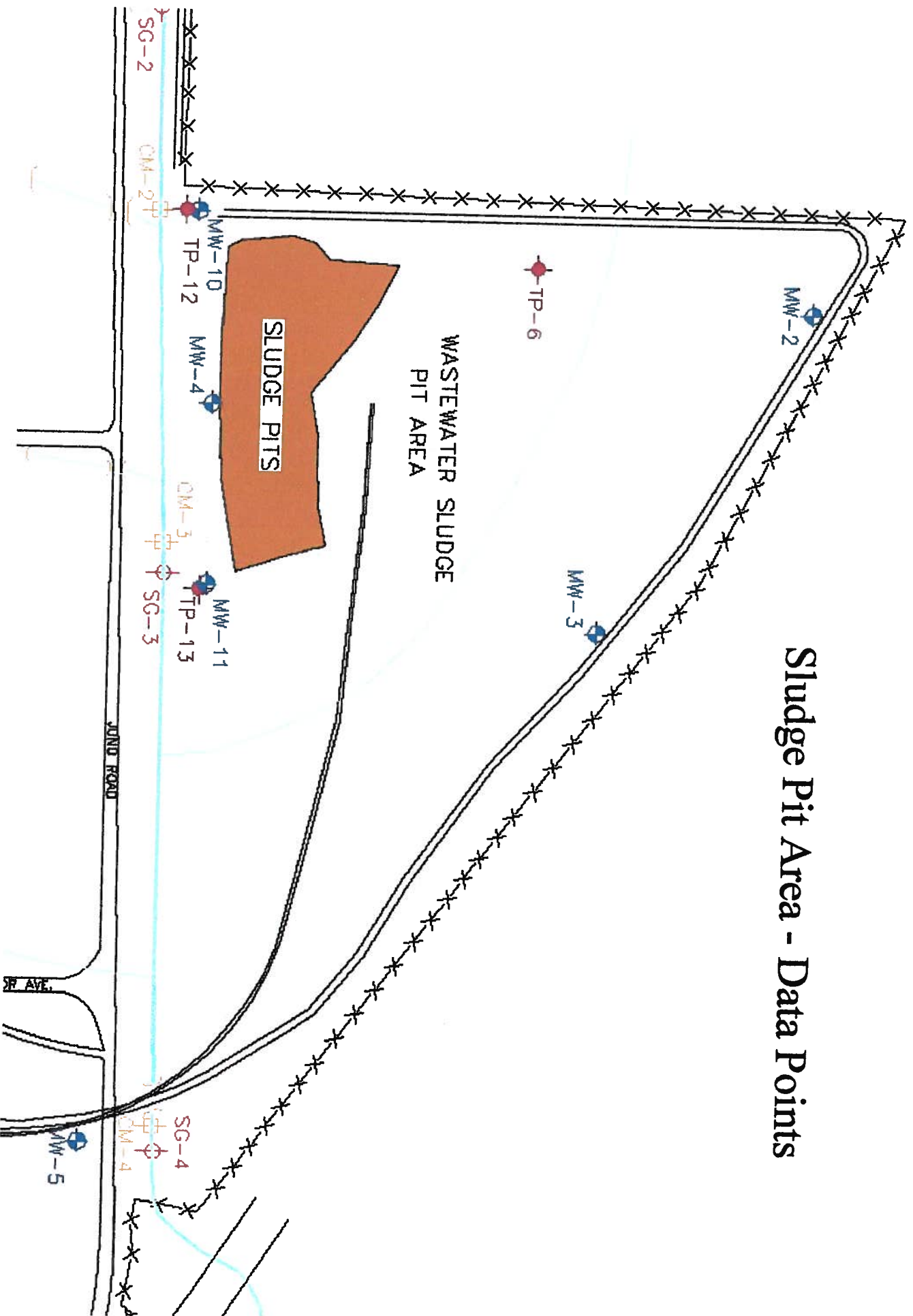
EcoSystems, Inc.
Environmental Engineers and Scientists

NOTES
1 DATE WHEN PROJECT BY FIELDWORK INITIATED
2 DATE OF VISIT - 5

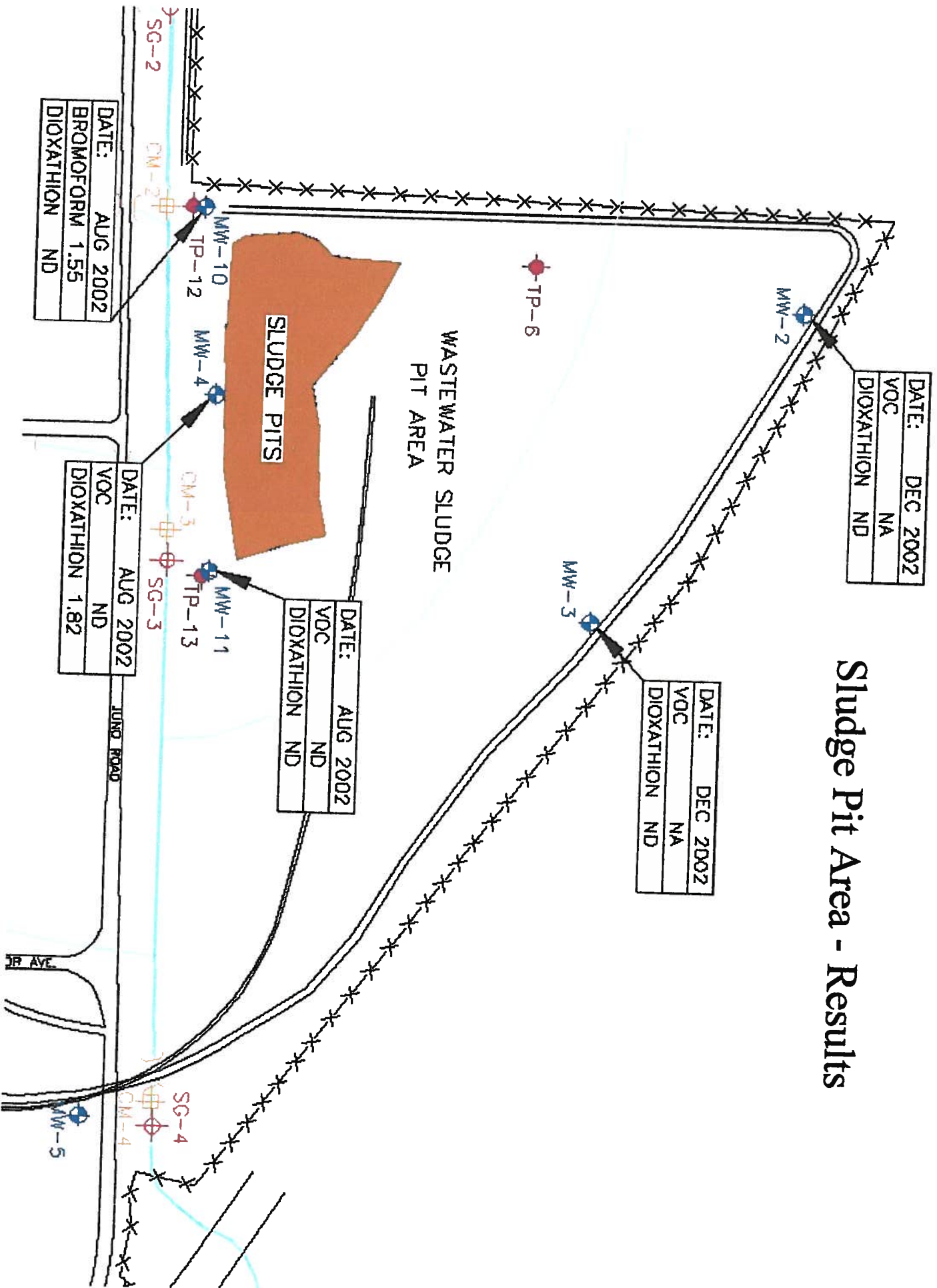
Sludge Pit Area

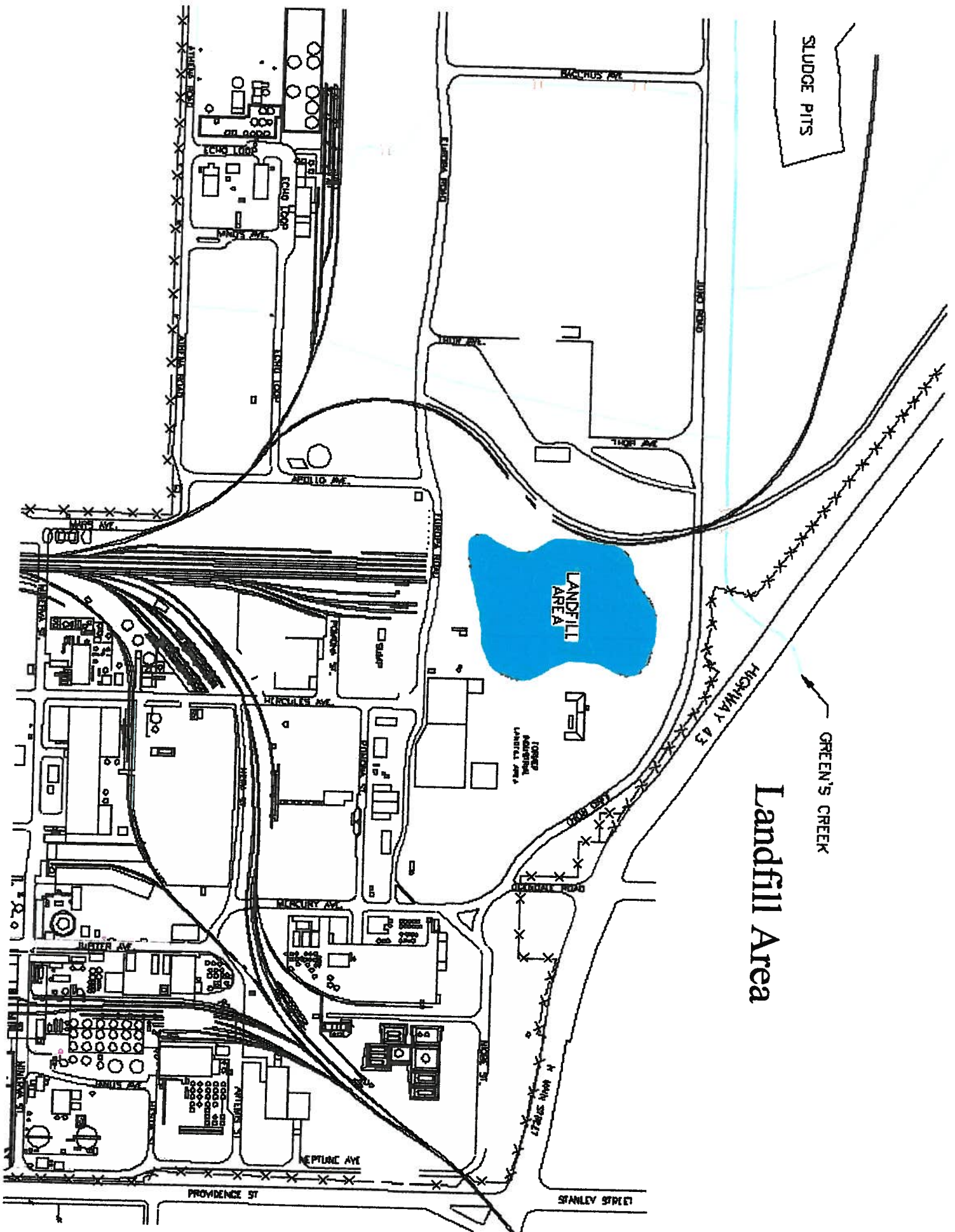


Sludge Pit Area - Data Points



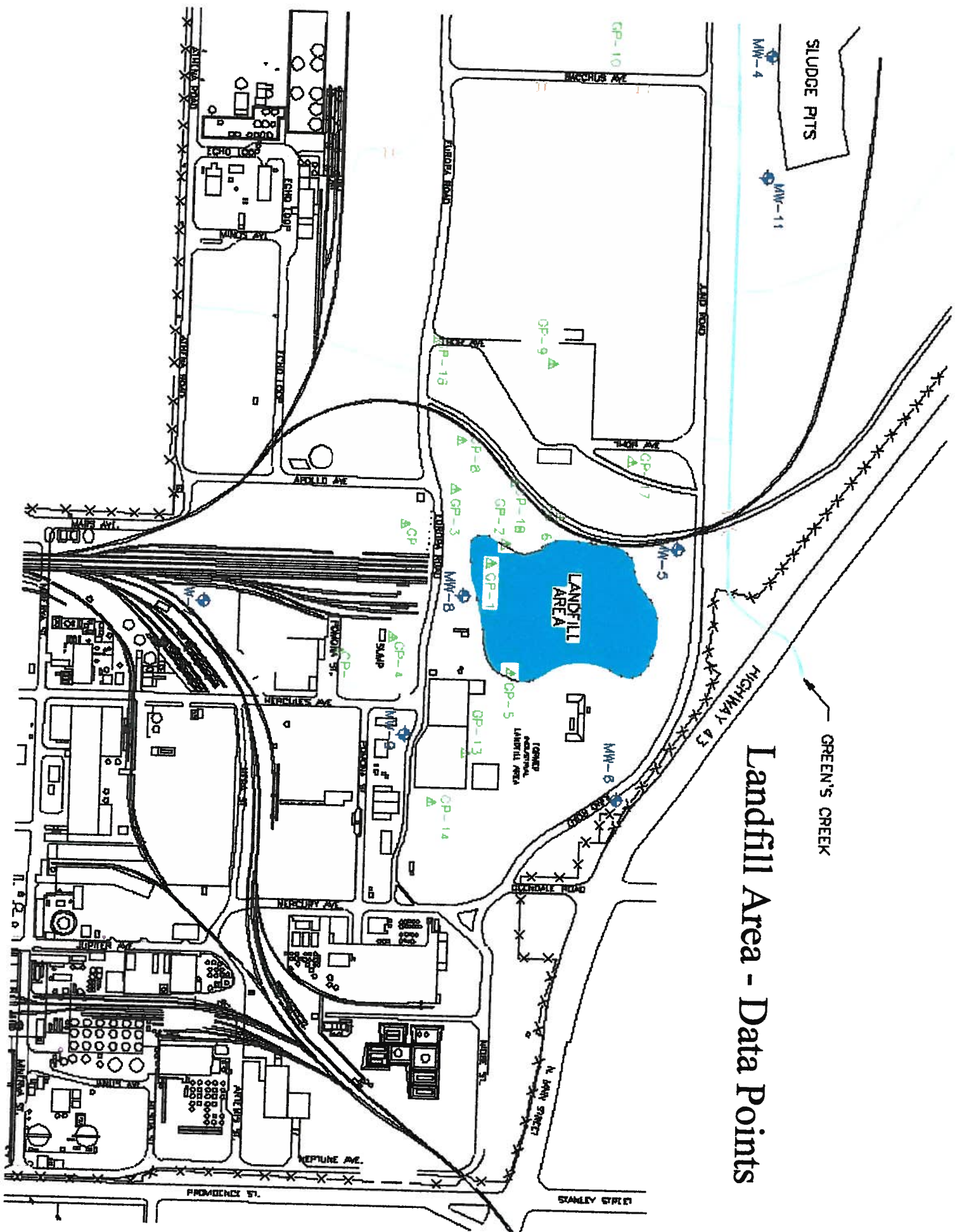
Sludge Pit Area - Results





Landfill Area

Landfill Area - Data Points



Landfill Area Results

SLUDGE PITS

GREEN'S CREEK

MW-4

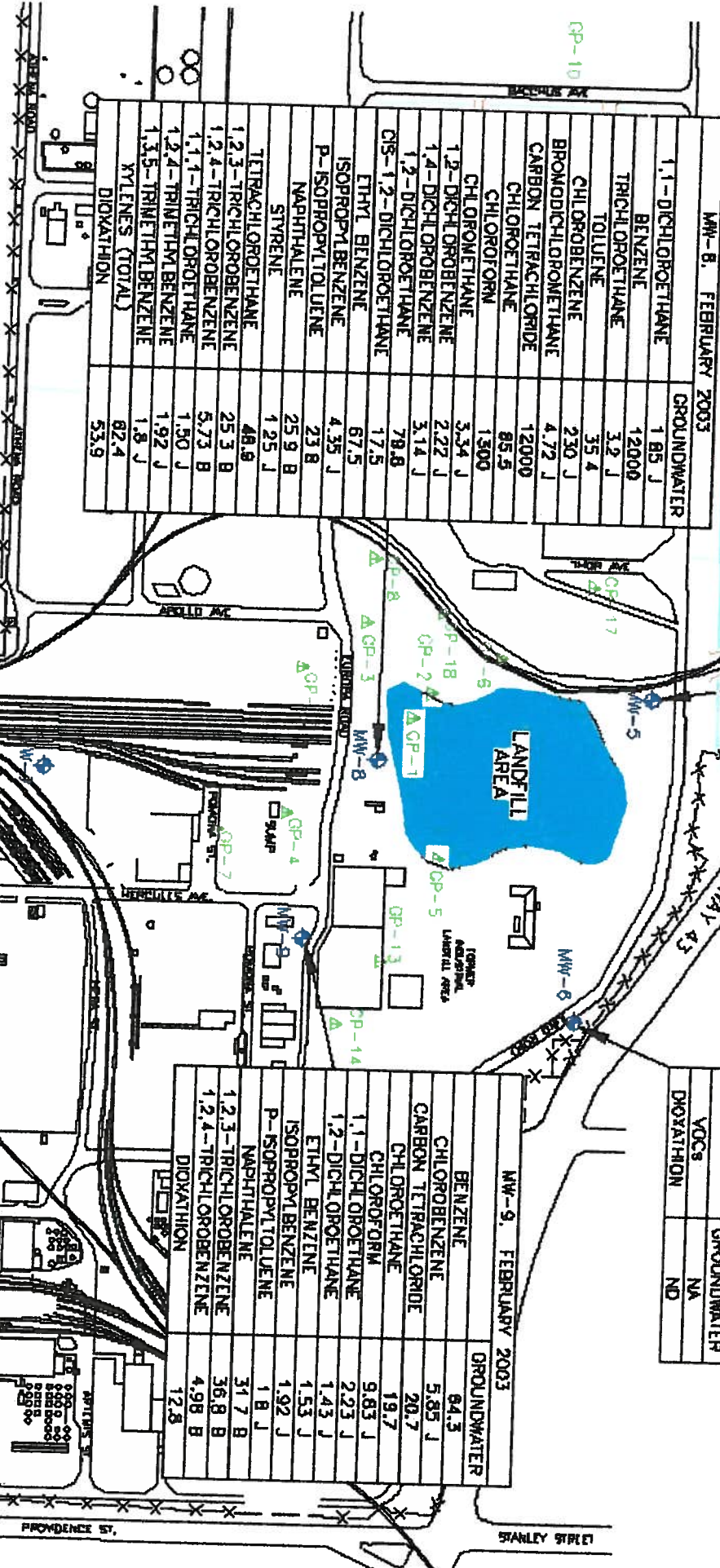
MW-11

MW-5, FEBRUARY 2003	GROUNDWATER
VOCS	NA
DIOXATHION	ND

MW-6, FEBRUARY 2003	GROUNDWATER
VOCS	NA
DIOXATHION	ND

MW-8, FEBRUARY 2003	GROUNDWATER
1,1-DICHLOROETHANE	185 J
BENZENE	12000
TRICHLOROETHANE	3.2 J
TOLUENE	35.4
CHLOROBIENZENE	230 J
BROMODICHLOROETHANE	4.72 J
CARBON TETRACHLORIDE	12000
CHLOROETHANE	85.5
CHLOROFORM	1500
CHLOROMETHANE	3.54 J
1,2-DICHLOROETHENE	2.22 J
1,4-DICHLOROETHENE	3.14 J
1,2-DICHLOROETHANE	78.8
OS-1,2-DICHLOROETHANE	17.5
ETHYL BENZENE	67.5
ISOPROPYL BENZENE	4.35 J
P-ISOPROPYL TOLENE	23.8
NAPHTHALENE	25.9 B
STYRENE	1.25 J
TETRACHLOROETHANE	48.6
1,2,3-TRICHLOROETHENE	25.3 B
1,2,4-TRICHLOROETHENE	5.73 B
1,1,1-TRICHLOROETHANE	1.50 J
1,2,4-TRIMETHYLBENZENE	1.92 J
1,3,5-TRIMETHYLBENZENE	1.8 J
XYLENES (TOTAL)	82.4
DIOXATHION	53.9

MW-9, FEBRUARY 2003	GROUNDWATER
BENZENE	64.3
CHLOROBIENZENE	5.85 J
CARBON TETRACHLORIDE	20.7
CHLOROETHANE	19.7
CHLOROFORM	9.83 J
1,1-DICHLOROETHANE	2.23 J
1,2-DICHLOROETHANE	1.43 J
ETHYL BENZENE	1.53 J
ISOPROPYL BENZENE	1.92 J
P-ISOPROPYL TOLENE	1.8 J
NAPHTHALENE	31.7 B
1,2,3-TRICHLOROETHENE	36.8 B
1,2,4-TRICHLOROETHENE	4.98 B
DIOXATHION	12.8



Landfill Area Results cont'd

SLUDGE PITS
MW-4
MW-11

GP-6, AUGUST 2003	GROUNDWATER
TOLUENE	13.0
DIOXATHION	ND

GP-18, AUGUST 2003	GROUNDWATER
VOCs	NA
DIOXATHION	ND

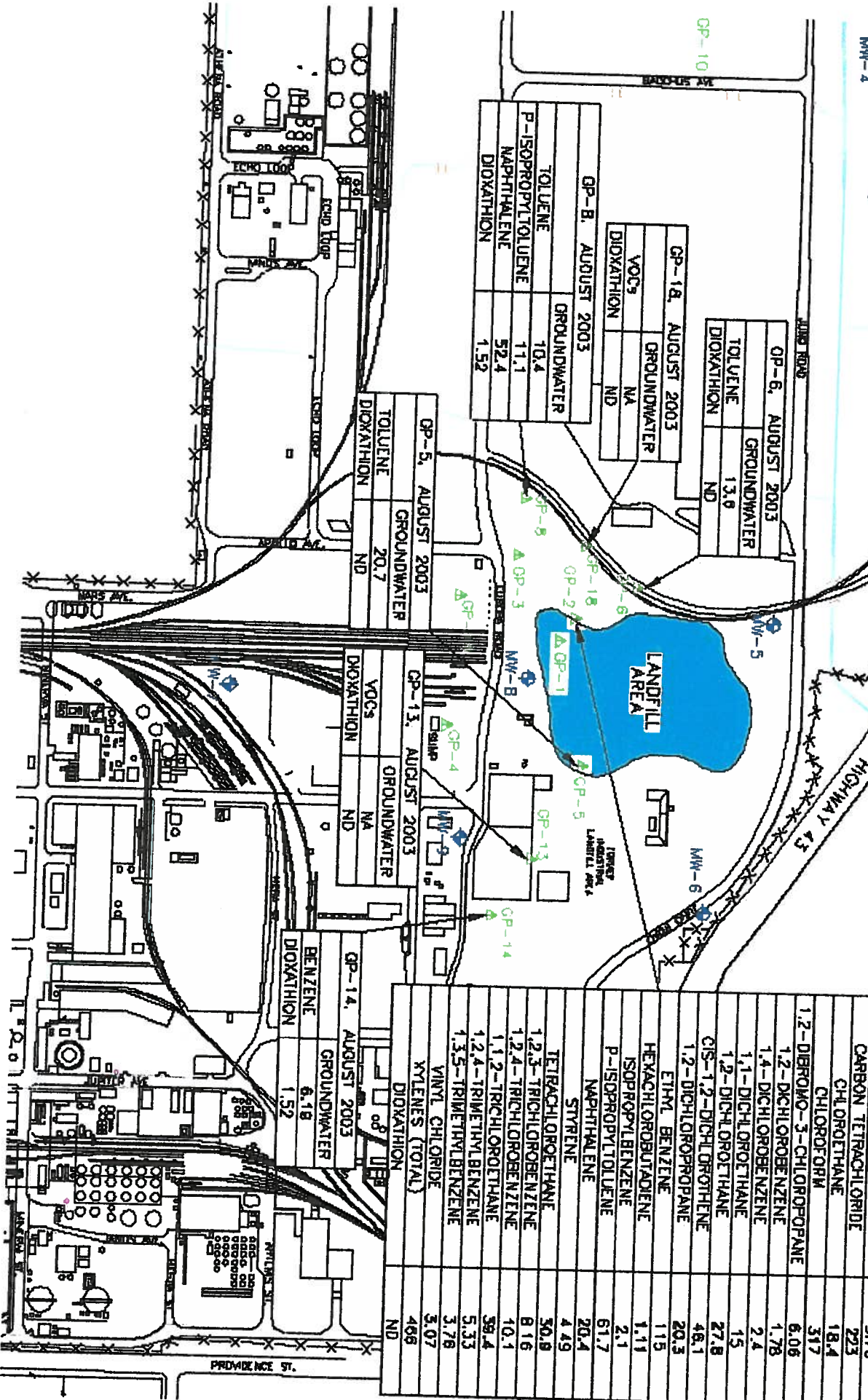
GP-B, AUGUST 2003	GROUNDWATER
TOLUENE	10.4
P-ISOPROPYLTOLUENE	11.1
NAPHTHALENE	52.4
DIOXATHION	1.52

GP-5, AUGUST 2003	GROUNDWATER
TOLUENE	20.7
DIOXATHION	ND

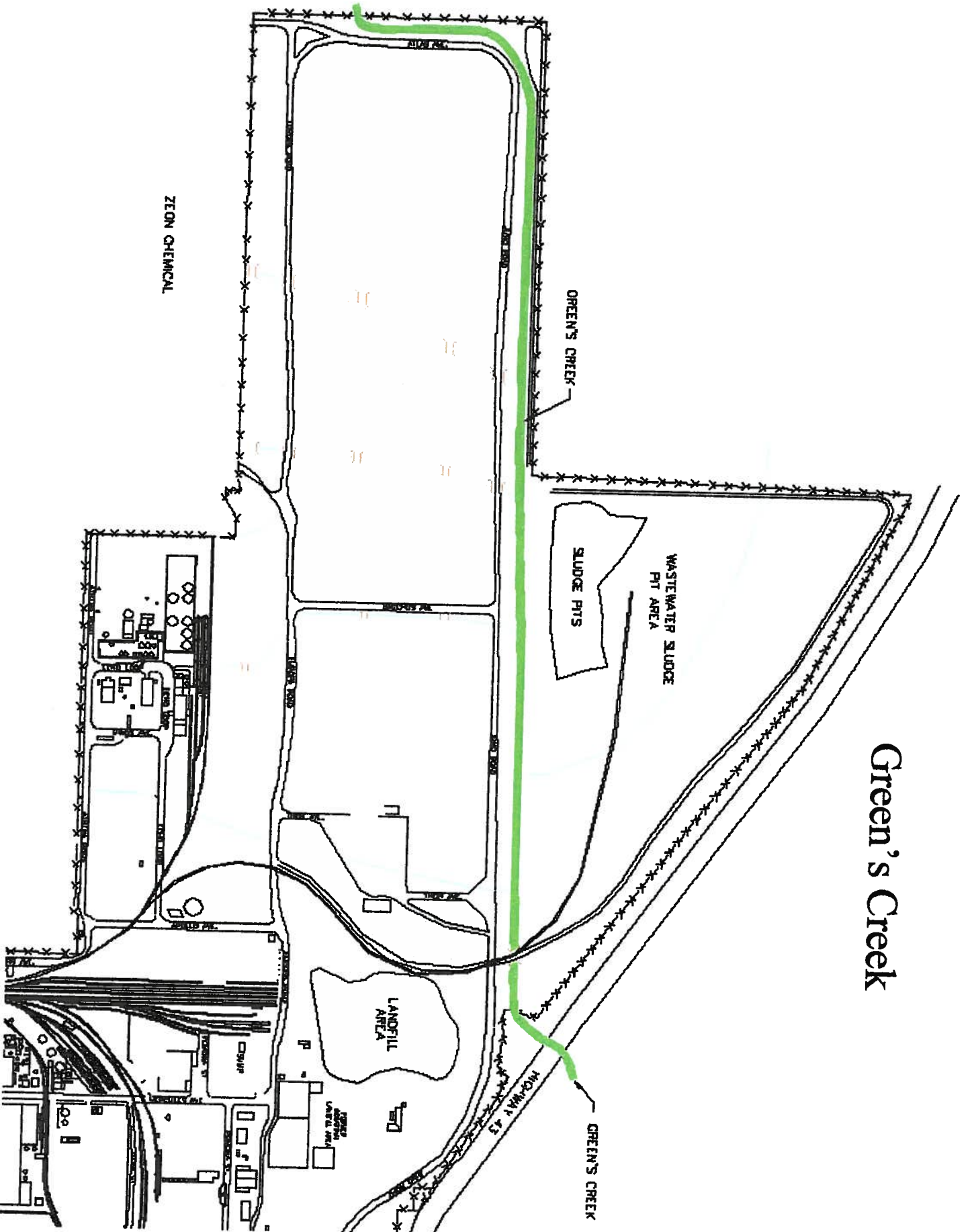
GP-13, AUGUST 2003	GROUNDWATER
VOCs	NA
DIOXATHION	ND

GP-14, AUGUST 2003	GROUNDWATER
BENZENE	6.18
DIOXATHION	1.52

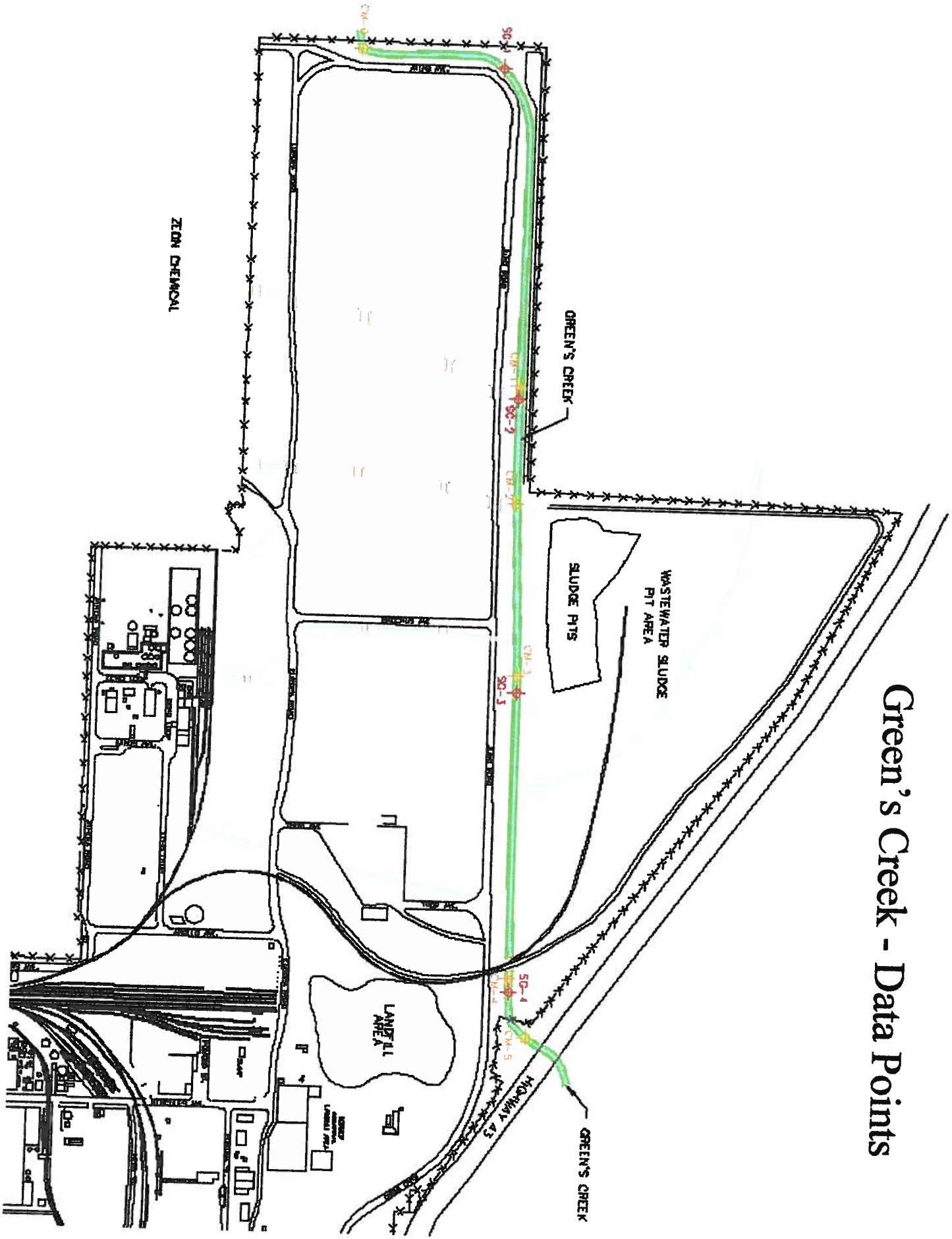
GP-2, AUGUST 2003	GROUNDWATER
1,1-DICHLOROETHANE	19
BENZENE	70500
TRICHLOROETHANE	2.33
TOLUENE	4800
CHLOROBENZENE	71.2
BROMODICHLOROMETHANE	1.71
N-BUTYLBENZENE	3.78
CARBON TETRACHLORIDE	223
CHLOROTHANE	18.4
CHLOROFORM	317
1,2-DIBROMO-3-CHLOROPROPANE	6.06
1,2-DICHLOROBENZENE	1.78
1,4-DICHLOROBENZENE	2.4
1,1-DICHLOROETHANE	15
1,2-DICHLOROETHANE	27.8
CIS-1,2-DICHLOROTHENE	46.1
1,2-DICHLOROPROPANE	20.3
ETHYL BENZENE	115
HEXACHLOROBUTADIENE	1.11
ISOPROPYLBENZENE	2.1
P-ISOPROPYLTOLUENE	61.7
NAPHTHALENE	20.4
STYRENE	4.49
TETRACHLOROETHANE	50.8
1,2,3-TRICHLOROETHANE	8.16
1,2,4-TRICHLOROETHANE	10.1
1,1,2-TRICHLOROETHANE	59.4
1,2,4-TRIMETHYLBENZENE	5.33
1,3,5-TRIMETHYLBENZENE	3.78
VINYL CHLORIDE	3.07
XYLENES (TOTAL)	468
DIOXATHION	ND



Green's Creek



Green's Creek - Data Points



Green's Creek Results

CM-1, SEPT. 2003

	WATER	SEDIMENT
VOLUME	4.88	7.28
CHLOROBENZENE	6.99	ND
BROMOBENZENE	1.1	ND
2-CHLOROPHENOL	1.1	ND
CHLOROPHENOL	2.53	ND
1,2-DICHLOROPHENOL	4.17	ND
1,3-DICHLOROPHENOL	3.16	3.21 J
1,4-DICHLOROPHENOL	3.42	ND
1,2,4-TRICHLOROPHENOL	8.25	ND
1,2-DICHLOROBENZENE	1.21	5.07
1,3-DICHLOROBENZENE	1.55	ND
1,4-DICHLOROBENZENE	1.47	ND
1,2,3-TRICHLOROBENZENE	2.32	ND
1,2,4-TRICHLOROBENZENE	6.84	ND
1,2,4,5-TETRACHLOROBENZENE	1.80 J	ND
1,2,4,6-TETRACHLOROBENZENE	1.3	ND
1,2,3,4-TETRACHLOROBENZENE	1.72	ND
XYLENES (TOTAL)	7.41	ND
DIOXATHION	ND	ND

CM-1, FEB. 2003

	WATER	SEDIMENT
BENZENE	2.82 J	3.1 J
CARBON TETRACHLORIDE	3.03 J	ND
CHLOROTHANE	20.5	ND
CHLOROPHENE	2.34 J	ND
1,2-DICHLOROPHENOL	20.7 B	17.4 B
1,3-DICHLOROPHENOL	30.2 B	19.0 B
1,4-DICHLOROPHENOL	3.38 B	10.2 B
BROMOETHANE	ND	ND
N-BUTYL BENZENE	3.97 J	ND
1,2-DICHLOROBENZENE	1.78 J	3.35 J
1,3-DICHLOROBENZENE	ND	ND
N-PROPYL BENZENE	2.11 J	ND
1,2,4-TRIMETHYLBENZENE	ND	14.8 J
1,3,5-TRIMETHYLBENZENE	ND	11.8 J
DIOXATHION	ND	7.92

CM-2, FEB. 2003

	WATER	SEDIMENT
BENZENE	3.65 J	ND
CARBON TETRACHLORIDE	ND	ND
CHLOROTHANE	11.42 J	ND
CHLOROPHENE	ND	ND
1,2-DICHLOROPHENOL	20.1 B	14.7 B
1,3-DICHLOROPHENOL	23.0 B	21.5 B
1,4-DICHLOROPHENOL	2.13 B	8.1 B
BROMOETHANE	ND	ND
N-BUTYL BENZENE	ND	ND
1,2-DICHLOROBENZENE	ND	ND
1,3-DICHLOROBENZENE	ND	5.07 J
N-PROPYL BENZENE	ND	ND
1,2,4-TRIMETHYLBENZENE	ND	4.87 J
1,3,5-TRIMETHYLBENZENE	ND	3.82 J
DIOXATHION	ND	1.770

CM-2, FEB. 2003

	WATER	SEDIMENT
BENZENE	4.54 J	ND
CARBON TETRACHLORIDE	ND	ND
CHLOROTHANE	ND	ND
CHLOROPHENE	ND	ND
1,2-DICHLOROPHENOL	2.91 B	10.8 B
1,3-DICHLOROPHENOL	5.51 B	15.1 B
1,4-DICHLOROPHENOL	5.51 B	3.04 B
BROMOETHANE	ND	2.11 J
N-BUTYL BENZENE	ND	ND
1,2-DICHLOROBENZENE	ND	ND
1,3-DICHLOROBENZENE	ND	3.18 J
N-PROPYL BENZENE	ND	3.11 J
1,2,4-TRIMETHYLBENZENE	ND	2.59 J
1,3,5-TRIMETHYLBENZENE	ND	2.24 J
DIOXATHION	ND	4.48

CM-0, SEPT. 2003

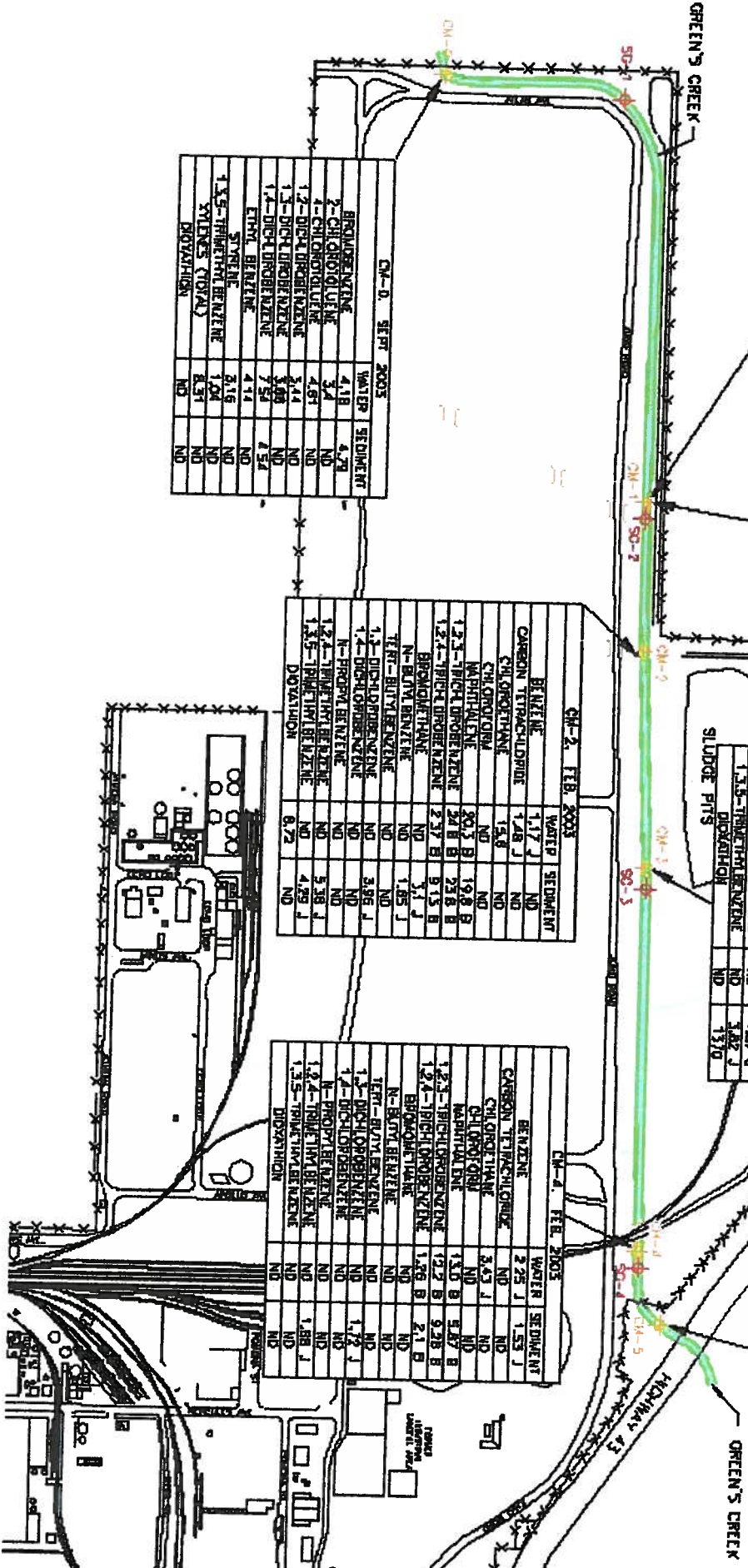
	WATER	SEDIMENT
BROMOETHANE	4.18	4.29
2-CHLOROPHENOL	3.4	ND
CHLOROPHENE	4.61	ND
1,2-DICHLOROPHENOL	3.44	ND
1,3-DICHLOROPHENOL	3.69	ND
1,4-DICHLOROPHENOL	3.59	ND
ETHYL BENZENE	4.14	ND
STYRENE	2.15	ND
1,3,5-TRIMETHYLBENZENE	1.04	ND
XYLENES (TOTAL)	6.57	ND
DIOXATHION	ND	ND

CM-2, FEB. 2003

	WATER	SEDIMENT
BENZENE	1.17 J	ND
CARBON TETRACHLORIDE	1.28 J	ND
CHLOROTHANE	15.8	ND
CHLOROPHENE	ND	ND
1,2,3-TRICHLOROPHENOL	90.3 B	19.8 B
1,3,4-TRICHLOROPHENOL	34.8 B	29.8 B
1,2,4-TRICHLOROPHENOL	2.37 B	9.15 B
BROMOETHANE	5.1 J	ND
N-BUTYL BENZENE	1.65 J	ND
1,2-DICHLOROBENZENE	ND	3.95 J
1,3-DICHLOROBENZENE	ND	ND
N-PROPYL BENZENE	ND	ND
1,2,4-TRIMETHYLBENZENE	ND	5.38 J
1,3,5-TRIMETHYLBENZENE	ND	4.29 J
DIOXATHION	8.72	ND

CM-4, FEB. 2003

	WATER	SEDIMENT
BENZENE	2.25 J	1.55 J
CARBON TETRACHLORIDE	ND	ND
CHLOROTHANE	3.43 J	ND
CHLOROPHENE	ND	ND
1,2,3-TRICHLOROPHENOL	13.0 B	5.87 B
1,3,4-TRICHLOROPHENOL	12.2 B	3.28 B
1,2,4-TRICHLOROPHENOL	1.26 B	2.1 B
BROMOETHANE	ND	ND
N-BUTYL BENZENE	ND	ND
1,2-DICHLOROBENZENE	ND	ND
1,3-DICHLOROBENZENE	ND	1.72 J
N-PROPYL BENZENE	ND	ND
1,2,4-TRIMETHYLBENZENE	ND	1.81 J
1,3,5-TRIMETHYLBENZENE	ND	ND
DIOXATHION	ND	ND



Qualitative Risk Evaluation - Current Land Use

- **Soil/Sludge/Sediment**
 - No Significant Contamination Revealed
 - No Exceedances of Tier 1 TRG's
 - Sludge Pit Material most likely lacks bearing capacity for worker exposure
- **Groundwater/Surface Water**
 - Localized Contamination in vicinity of MW-8 revealed
 - Nearest Private Well 0.3 Miles North of site (Black & Veatch 1993)
 - Most Likely Receptor for Groundwater is Green's Creek
 - No Exceedances of Tier 1 TRG's for Groundwater
 - Groundwater at Site boundary
 - Surface Water in Green's Creek
 - Except Naphthalene and Chloroethane
- **Conclusion**
 - No significant risk to Human Health under current land use conditions

Qualitative Risk Evaluation - Future Land Use

- **Soil/Sludge/Sediment**
 - No Significant Contamination Revealed
 - No Exceedances of Tier 1 Unrestricted TRG's
 - Sludge Pit Material most likely lacks bearing capacity for structural use
- **Groundwater/Surface Water**
 - Localized Contamination in vicinity of MW-8 revealed
 - Most Likely Receptor for Groundwater is Green's Creek
 - No Exceedances of Tier 1 TRG's for Groundwater
 - Groundwater at Site boundary
 - Surface Water in Green's Creek
- **Conclusion**
 - Potential risk to Human Health under future land use conditions.
 - Risk is primary from inappropriate use of sludge pits and
 - Installation of drinking water wells in surficial aquifer

Risk Management/Remedial Action Objectives

- **Sludge Pits**
 - Reduce Potential Risk of inappropriate use of sludge pits
 - Ensure constituents in sludge materials do not migrate to groundwater or surface water
- **Groundwater**
 - Reduce Potential Risk of ingestion of contaminated groundwater

DATA TABLES

GROUNDWATER SAMPLE ANALYTICAL RESULTS
MOST RECENT SAMPLING EVENT
HERCULES, INCORPORATED
HATTIESBURG, MISSISSIPPI

Concentrations in parts per billion (ppb)

Sample Date	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	TRG ¹
	Aug-03	Feb-03	Feb-03	Aug-03	Oct-02	Oct-02	Dec-02	Feb-03	Feb-03	Aug-03	Aug-03	
Volatiles												
1,1-dichloroethane	<1	na	na	<1	<1	<1	<1	<1	<1	<1	<1	7
trichloroethane	<1	na	na	<1	<1	<1	<1	<1	<1	<1	<1	5
toluene	<1	na	na	<1	<1	<1	<1	<1	<1	<1	<1	5
chlorobenzene	<1	na	na	<1	<1	<1	<1	<1	<1	<1	<1	1000
ortho-dichloromethane	<1	na	na	<1	<1	<1	<1	<1	<1	<1	<1	100
ortho-xylene	1.34	na	na	<1	<1	<1	<1	<10	<10	1.55	<1	0.168
tert-butylbenzene	<1	na	na	<1	<1	<1	<1	<10	<10	<1	<1	8.48
carbon tetrachloride	<1	na	na	<1	<1	<1	<1	<1	<10	<1	<1	243
chloroethane	<1	na	na	<1.2	<1.2	<1.2	<1.2	20.7	19.7	<1	<1	5
chloroform	<1	na	na	<1	<1	<1	<1.2	85.5	130.0	<1	<1	3.64
chloromethane	<1	na	na	<1	<1	<1	<1	130.0	19.7	<1	<1	0.155
1,2-dichlorobenzene	2.70	na	na	<1	<1	<1	<1	3.34 J	9.83 J	<1	<1	3.64
1,3-dichlorobenzene	1.39	na	na	<1	<1	<1	<1	2.22 J	<10	<1	<1	1.43
1,4-dichlorobenzene	2.20	na	na	<1	<1	<1	<1	<10	<10	<1	<1	600
1,1-dichloroethane	<1	na	na	<1	<1	<1	<1	3.14 J	<10	<1	<1	75
1,2-dichloroethane	<1	na	na	<1	<1	<1	<1	<10	2.23 J	<1	<1	798
cis-1,2-dichloroethane	<1	na	na	<1	<1	<1	<1	<10	1.43 J	<1	<1	5
ethylbenzene	<1	na	na	<1	<1	<1	<1	79.8	<10	<1	<1	70
hexachlorocyclopentadiene	5.05	na	na	<1	<1	<1	<1	17.5	<10	<1	<1	700
isopropylbenzene	<1	na	na	<1	<1	<1	<1	67.5	1.53 J	<1	<1	0.839
p-isopropyltoluene	1.34	na	na	<1	<1	<1	<1	<10	<10	<1	<1	679
methylbenzene	<1	na	na	<1	<1.1	<1.1	<1.1	4.35 J	1.92 J	<1	<1	na
tetrachloroethene	<1	na	na	<1	<1	<1	<1	23.8	1.8 J	<1	<1	na
1,2,3-trichlorobenzene	1.40 J	na	na	<1	<1	<1	<1	25.0 B	31.7 B	<1	<1	6.2
1,2,4-trichlorobenzene	1.23	na	na	<1	<1	<1	<1	1.25 J	<10	<1	<1	100
1,1,1-trichloroethane	<1	na	na	<1	<1	<1	<1	48.9	<10	<1	<1	5
1,2,4-trimethylbenzene	<1	na	na	<1	<1	<1	<1	25.3 B	36.8 B	<1	<1	na
1,3,5-trimethylbenzene	<1	na	na	<1	<1	<1	<1	5.73 B	4.98 B	<1	<1	70
xylene (total)	<1	na	na	<1	<1	<1	<1	1.50 J	<10	<1	<1	200
	<1	na	na	<1	<1	<1	<1	1.92 J	<10	<1	<1	12.3
	<1	na	na	<1	<1	<1	<1	1.8 J	<10	<1	<1	12.3
	<1	na	na	<1	<1.5	<1.5	<1.5	62.4	<15	<1	<1	1000

GROUNDWATER SAMPLE ANALYTICAL RESULTS
MOST RECENT SAMPLING EVENT
HERCULES, INCORPORATED
HATTESBURG, MISSISSIPPI

Concentrations in parts per billion (ppb)

Sample Date	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	TRG ²
Semi-Volatiles	Aug-03	Dec-02	Dec-02	Aug-03	Oct-02	Oct-02	Dec-02	Dec-02	Dec-02	Dec-02	Dec-02	
4-methylphenol	na	na	na	na	<87.0	<87.0	<87.0	13,161	<87.0	<87.0	<87.0	183
Dioxatiox	Aug-03	Dec-02	Dec-02	Aug-03	Dec-02	Dec-02	Dec-02	Dec-02	Dec-02	Aug-03	Dec-02	
cis-Dioxethion	<0.4	<0.48	<0.48	1.82	<0.48	<0.48	<0.48	<0.48	12.8	<0.4	<0.4	na
trans-Dioxethion	<0.4	<0.3	<0.3	<0.4	<0.3	<0.3	<0.3	53.9	<0.3	<0.4	<0.4	na
total	<0.4	<0.48	<0.48	1.82	<0.48	<0.48	<0.48	53.9	12.8	<0.4	<0.4	54.8
Dioxmethion	<0.4	<0.22	<0.22	6.34	<0.22	1.12	9.57	94.3	5.9	<0.4	6.24	na

Notes:

- 1 - Target Remediation Goals (TRG) are taken from the Tier 1 Target Remedial Goal Table of the Regulations Governing Brownfields Voluntary Cleanup and Redevelopment in Mississippi MDEQ, March 2001. Bold text indicates concentration above applicable TRGs.
- 2 - na = "not analyzed" or "not available", as applicable.
- 3 - J = Data flag for data for which the concentration is "estimate" because the level is below the PQL, but was detected.
- 4 - B = Data flag for data for which was also detected in the associated method blank sample.

**GROUNDWATER SAMPLE ANALYTICAL RESULTS - TEMPORARY MONITORING WELLS
 SAMPLES COLLECTED AUGUST 11-14, 2003
 HERCULES INCORPORATED
 HATTIESBURG, MISSISSIPPI**

Dioxanethin	Dioxanethin hexachlorocyclopentadiene per liter (ug/L)																TMC
	GR-2	GR-4	GR-5	GR-6	GR-7	GR-8	GR-9	GR-10	GR-11	GR-12	GR-13	GR-14	GR-15	GR-16	GR-18		
Dioxanethin	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Dioxanethin (CS)	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Dioxanethin (sums)	<0.4	1.92	<0.4	<0.4	0.604	1.92	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Total Dioxanethin (CS end-trace)	<0.8	1.92	<0.8	<0.8	0.604	1.92	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	54.8

* Indicates samples not detected or <0.2 shown in unshaded portions (MCL).
 MCL is not to be applied on this report.
 † sum of unshaded concentrations shown in MCL for total sum.
 NA - Not applicable.
 * Except for dioxanethin, Co. de (PAC) was taken from the 1st 100 of 1.5th of the flow. The results are shown in the Laboratory Change and
 Laboratory report in Mississippi HATTING March 2001. Both are identical to concentration shown in applicable TMC.

SURFACE WATER AND STREAM SEDIMENT ANALYTICAL RESULTS
GREENS CREEK - MOST RECENT SAMPLING EVENT
HERCULES, INCORPORATED
HATTIESBURG, MISSISSIPPI

Sample Date	SURFACE WATER										STREAM SEDIMENT									
	Concentrations in $\mu\text{g/L}$ (ppb)										Concentrations in $\mu\text{g/g}$ (ppm)									
	CM-0	CM-1	CM-2	CM-3	CM-4	CM-5	TRG ¹	CM-0	CM-1	CM-2	CM-3	CM-4	CM-5	TRG ²						
Volatiles	Sep-03	Sep-03	Feb-03	Feb-03	Feb-03	Feb-03	Sep-03	Sep-03	Feb-03	Feb-03	Feb-03	Feb-03	Feb-03							
benzene	<1	<1	1.17J	3.66J	2.25J	4.04J	5	<5	<5	<15.66	<22.68	1.57J	<18.8	887						
toluene	<1	4.66	<10	<10	<10	<10	1000	<5	7.28	<15.66	<22.68	<13.35	<18.8	38000						
ethylbenzene	<1	6.98	<10	<10	<10	<10	100	<5	<15.66	<22.68	<13.35	<18.8	1300							
propylbenzene	4.18	13	<10	<10	<10	<10	na	4.70J	7.67	<15.66	<22.68	<13.35	<18.8	na						
styrene	<5	<5	<10	<10	<10	<10	8.52	<5	3.17	<22.68	<13.35	2.11J	2970							
ortho-xylene	<1	<1	<10	<10	<10	<10	243	<5	1.65J	<22.68	<13.35	<18.8	3131000							
meta-xylene	<1	<1	1.46J	<10	<10	<10	5	<5	<15.66	<22.68	<13.35	<18.8	371							
para-xylene	<5	<5	15.6	8.42J	3.43J	<10	3.64	<5	<15.66	<22.68	<13.35	<22.56	220000							
1,2-dichlorobenzene	3.4	2.58	<10	<10	<10	<10	122	<5	<18.79	<27.22	<16.02	<18.8	279000							
1,3-dichlorobenzene	4.61	4.17	<10	<10	<10	<10	na	<5	<15.66	<22.68	<13.35	<18.8	1560000							
1,4-dichlorobenzene	3.44	3.76	<10	<10	<10	<10	600	<5	<15.66	<22.68	<13.35	<18.8	na							
1,2,4-trichlorobenzene	3.66	3.42	<10	<10	<10	<10	548	<5	3.21J	<15.66	<22.68	<13.35	<18.8							
1,3,5-trichlorobenzene	7.54	6.35	<10	<10	<10	<10	75	4.91J	5.07	<15.66	<22.68	<13.35	3.11J							
1,2-dibromobenzene	<1	1.71	<10	<10	<10	<10	5	<5	3.96J	5.07J	1.72J	3.19J	70400							
1,3-dibromobenzene	4.14	1.55	<10	<10	<10	<10	700	<5	<15.66	<22.68	<13.35	<18.8	26600							
1,4-dibromobenzene	<5	14.7	20.3B ⁴	20.1B	13.0B	7.61B	6.2	<5	<15.66	<22.68	<13.35	<18.8	405							
1,2,3-trichlorobenzene	3.16	2.36	<10	<10	<10	<10	100	<5	19.8B	14.7B	5.87B	10.8B	395000							
1,2,4-trichlorobenzene	<5	6.64	24.8B	23.0B	12.2B	5.94B	na	<5	<15.66	<22.68	<13.35	<18.8	194000							
1,2,6-trichlorobenzene	<5	1.80J	2.37B	2.13B	1.26B	<10	70	<5	28.8B	21.3B	9.26B	15.1B	394000							
1,2,3,5-tetrachlorobenzene	<1	1.3	<10	<10	<10	<10	12.3	<5	9.13B	6.1B	2.1B	3.64B	782000							
1,2,3,4-tetrachlorobenzene	1.04	1.57	<10	<10	<10	<10	12.3	<5	5.36J	4.87J	1.88J	2.59J	3910000							
1,2,3,5-tetrachlorobenzene	8.31	7.41	<15	<15	<15	<15	10000	<5	4.28J	3.82J	<13.35	2.24J	436000							
1,2,3,4,5-pentachlorobenzene	8.31	7.41	<15	<15	<15	<15	10000	<5	<23.49	<34.02	<20.03	<28.2	318000							
1,2,3,4,6-pentachlorobenzene	<0.4	<0.4	8.72	<4.75	<4.75	<4.75	na	<0.4	<13.4	<13.4	<13.4	<13.4	na							
1,2,3,4,6,7-hexachlorobenzene	<0.4	<0.4	<3.04	<3.04	<3.04	<3.04	na	<0.4	<14.9	1370	<14.9	448	na							
1,2,3,4,6,7,8-heptachlorobenzene	<0.4	<0.4	8.72	<4.75	<4.75	<4.75	54.8	<0.4	<14.9	1370	<14.9	448	117000							
1,2,3,4,6,7,8,9-octachlorobenzene	<0.4	<0.4	<2.19	3.16	<2.19	3.07	na	<0.4	<17.0	<17.0	<17.0	<17.0	na							

Notes:

1. Target Remediation Goals (TRG) are taken from the Tier 1 Target Remedial Goal Table of the Regulations Governing Brownfields Voluntary Cleanup and Redevelopment in Mississippi MDEQ, March 2001. Do not use table if concentrations above applicable TRG. TRGs shown are for groundwater.
2. TRG for Unrestricted Soil Use.
3. J = Data flag for data for which the concentration is "estimated" because the level is below the PQL, but was detected.
4. B = Data flag for data for which values also detected in the associated method blank sample.